MINNESOTA

CRIME CONTROL PLANNING BOARD

EVALUATION UNIT

EVALUATION REPORT

An Evaluation Report

Prepared by:

EVALUATION UNIT

Crime Control Planning Board
444 Lafayette Road
St. Paul, Minnesota 55101

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Authored by:

Marjorie C. Gritzke

TECHNICAL INNOVATION AND THE COURTS:

AN ECONOMIC EVALUATION OF VIDEOTAPE USE

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CHAPTER 1

PURPOSE OF THE EVALUATION AND EQUIPMENT DESCRIPTION

A. PURPOSE OF THE EVALUATION

Case disposition often rests upon the evidence presented by an expert witness either in person or in written deposition form. However, with the advent of videotape technology, testimony may also be supplied using a medium which captures the witness's demeanor, namely videotaped testimony.

Law Enforcement Assistance Administration funds in the amount of $26,377 were awarded by the Minnesota Crime Control Planning Board to the Washington County Attorney's office for color videotape portable and studio equipment acquisition. These funds were supplemented by $1,465 in "match funds" from Washington County and by $1,466 in LAC (Legislative Advisory Commission) funds. Therefore, $29,308 has been awarded in governmental funds for equipment acquisition. After the appropriate bidding procedure was conducted and the equipment contract was awarded, the equipment was delivered on May 31, 1977. This evaluation covers the equipment's use for one year, from June 1, 1977, to May 31, 1978.

At least two applications were anticipated at initial funding:

1. To videotape expert testimony when the expert involved was unavailable during trial within the meaning of Rule 21[1] or when the defendant agrees to its use, and

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[1] *Minnesota Rules of Court 1978*, Rules of Criminal Procedures, Rule 21 (December, 1977).

2. To videotape crime scene descriptions.

However, this evaluation will demonstrate that while the equipment was not extensively used in the courtroom, it has been applied to other judicial uses and nonjudicial uses.

Yet, the stated project goals as submitted to the Judicial Planning Committee and Crime Control Planning Board are solely in terms of courtroom usage. Among the project goals are:

1. Reduced continuances per trial,
2. Reduced dismissals,
3. Reduced pleas to a lesser charge,
4. Reduced trips to crime scenes and/or reduced reliance upon word descriptions by investigators during trials, and
5. Eliminated delays in trial scheduling because of expert witness unavailability in 20 percent of the cases where taping testimony is feasible.

This evaluation uses *felony cases involving expert reports* which were disposed over the period June 1, 1976, to May 31, 1977, as a comparison group for similar project-year cases. Hence, selected felony case records from the project year will be compared to similar records from the preproject year in order to detect changes in continuances per trial, dismissals, pleas to a lesser charge, and other goal-related measures. Chapter II describes methodology for data collection and analysis of preproject and project cases.

Chapter III presents case-related descriptive analyses. Background information is provided concerning expert report occurrences per case, case types most likely to require expert information, and the probability of expert testimony occurrence given the presence of an expert report in the file. Such information specifies the target cases from

which needs for expert testimony or videotaped expert testimony are likely to arise.

Goal attainment is evaluated in Chapter IV using comparisons between cases from the preproject and project periods.

Alternative criminal justice applications for videotape based upon Washington County project records are described in Chapter V.

Chapter VI focuses on videotape operation cost. Three areas are investigated:

1. Cost/use simulations based upon the frequency of judicial and nonjudicial uses,
2. Equipment rental versus purchase cost comparisons, and
3. Color versus black-and-white videotape cost comparisons.

Considerations for future videotape use in other Minnesota county courts based upon evaluation results and cost simulations are presented in Chapter VII.

The final section (Chapter VIII) provides a summary of evaluation findings and presents the pros and cons of various future options for videotaping expert witness testimony for use in outstate Minnesota courtrooms.

B. EQUIPMENT DESCRIPTION

The package acquired by the Washington County Attorney's office is a color system using 3/4 inch videocassette tapes. Among the key hardware are:

1. Two cameras (one studio and one portable type),

2. Two videocassette recorders (one studio and one portable type) used in conjunction with the cameras and which transfer audio and visual information onto the tape,

3. One videocassette player for playback of tapes on a receiver, and

4. Three monitor/receivers upon which the audio and visual portions of the tape appear during presentations.

Other miscellaneous equipment includes 4 microphones, 1 mixer to blend the sounds from the 4 microphones, 2 tripods, 2 dollies, portable and studio lighting kits, thermal covers to protect the equipment during outdoor use, batteries for the portable equipment, videocassette tapes, and other minor equipment. As noted, two sets of taping equipment were acquired, one studio set and one portable set. While the studio equipment's courtroom use was anticipated, the portable equipment would best be used for crime scene descriptions and other taping uses outside the courtroom.

Next, the convenience of transporting the equipment is examined. Considering only the taping and not the playback of information, the primary studio equipment (camera and recorder) weigh 107 pounds and the studio player adds an additional 60 pounds. Therefore, the studio pieces' portability is limited. The primary portable package (camera and combination recorder/player) weighs 41 pounds or only 38 percent of the studio equipment's weight. The lighting equipment, if needed, weighs an additional 29 pounds. Note that the videocassette may be shown on a standard color television set if the appropriate adapter is connected to the player machine. This fact may eliminate the need to transport the receivers if playback at a location outside the courthouse is anticipated. The equipment can be transported although this may

increase the likelihood of damage (which may be covered by acquiring a service contract). Note that it is a regular practice of at least one major Twin Cities audio-visual equipment dealer to transport videotape equipment (both studio and portable types) by car to Duluth when the need for the specialized equipment arises in that location. Hence, transporting the equipment is possible.

This evaluation, being limited only to the equipment acquired by Washington County, cannot comment on the "best" model for courtroom use. Perhaps if other counties acquire similar equipment in the future and if the appropriate process evaluation data are collected, some conclusions as to the most appropriate model may be drawn. However, once again, drawing such conclusions will not be attempted in this report.

CHAPTER II
METHODOLOGY

A. METHODOLOGICAL SCOPE

This report employs statistical and cost simulation techniques to a threefold data base. The sources of data for this report are:

1. Preproject and project felony case information,
2. Project financial records, and
3. A statewide survey of equipment rental alternatives.

A description of each data source, the source's limitations, and measures derived from such source follows.

B. PREPROJECT AND PROJECT FELONY CASE INFORMATION

All closed felony case files in the Washington County Attorney's office from the period June 1, 1976-May 31, 1978, were examined. Also, cases opened from January 1, 1976, to May 31, 1976, but at the pretrial stage on May 31, were included for review. Only those files with at least one expert report, crime scene photos, and/or evidence of trial expert testimony were selected for this study. Of 508 felony files reviewed, 386 had no evidence of expert involvement or were settled prior to June 1, 1976, and 122 showed evidence of crime scene photos or expert information either in report or testimony form. Hence, only 24 percent of the felony cases surveyed over a 2 1/2 year period satisfied the selection criteria. Therefore, 76 percent of all felony cases in Washington

County over the sample period were eliminated from further study since videotape applicability can be regarded as minimal for such nonexpert-oriented cases having the absence of crime scene or expert information.

Comparison or preproject cases were selected using one of two criteria. First, the case was at the pretrial stage at June 1, 1976, or second, the case had its first appearance scheduled after June 1, 1976, but was closed before May 31, 1977. Sixty-one cases involved expert information or crime scene photos and satisfied one selection criterion. Of these 61, 14 were identified as involving expert witness or report unavailability which might have affected case disposition. The appropriate prosecutors from the county attorney's office were then surveyed regarding the unavailable information's impact on case outcome. This procedure identifies cases in the preproject period for which witness unavailability was a key factor in case outcome. This subset of cases specifies the preproject felonies for which videotape usage would have been needed.

The main criterion for selecting project cases with expert witness reports or crime photos was that the case was in progress over the period June 1, 1977–May 31, 1978, and was subsequently closed by May 31, 1978. Sixty-one cases met these criteria. Of these 61, one case involved attempted[1] or actual videotape use. While comparison of this subgroup with the preproject cases involving expert unavailability comprises a portion of the goal attainment analyses, it is expected that videotape availability may also encourage the defendant's counsel to settle prior to trial since the likelihood of expert witness unavailability

[1]Attempted videotape use involves settlement out of court prior to a prescheduled videotape session.

as a probable deciding factor for a favorable settlement is reduced. To elaborate, the Minnesota County Attorney's Council has found expert witness unavailability to be the fourth most important reason for delay in district court.[1] In turn, Landes' economic analyses of courts[2] conclude that increases in court delay cause prosecutors to reduce their minimum sentence offer thus leading to an increased chance of successful plea bargaining. Court delay, by increasing the amount of prosecutorial resources expended, provides an incentive for plea bargaining to a lesser sentence than is probable from trial. Videotape usage, by reducing delay, should reduce the incentive for plea bargaining to a lesser sentence. Hence, cases satisfying the project case selection criteria will be compared to similar preproject cases.

For each preproject or project case, the following information was gathered:

1. First court appearance date,
2. Case closure date of the Washington County Attorney's office,
3. Charge(s),
4. Number and reason(s) for continuances,
5. Expert report type and frequency,
6. Jury or court trial occurrence,
7. Expert testimony at trial,
8. Final disposition,
9. Defendant's prior record, and
10. Public defender usage.

From these data, various classificatory and quantitative measures were constructed and were subsequently used in the analyses. Among the measures defined were:

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[1]Minnesota County Attorney's Council, *Analysis and Evaluation Report* (January, 1977), p. 187.

[2]William M. Landes, "An Economic Analysis of the Courts," *Journal of Law and Economics*, XIV, 1 (April, 1971), pp. 165-214.

1. Delay. The number of days between first appearance and case closure excluding weekends and holidays.

2. Sentence/Disposition. The sentence/disposition status of a case has six categories:

a. Dismissal of charges,
b. Not guilty,
c. No incarceration,
d. Jail,
e. Prison, and
f. Extradited.

Paralleling the categories described in the Minnesota Crime Control Planning Board Research Report, *Sentencing in Minnesota District Courts* (St. Paul, 1978), the no incarceration category includes cases with disposition of a fine (or the workhouse should the fine not be paid), probation (including stay of imposition or execution of sentence), or a suspended jail sentence. Included in the jail category are defendants sentenced to serve time of one year or less. The prison category includes defendants sentenced to more than one year's incarceration.

3. Case Type. The most serious charge based upon statutory maximum sentence is delineated according to the following classifications:

a. Sex crime,
b. Other crime against persons,
c. Crime against property,
d. Drug crime, and
e. Miscellaneous crime.

Sex crimes were separated because recent legislation has added staff to the Bureau of Criminal Apprehension Lab (effective July, 1978) to handle the reports stemming from the increased reporting of sex crimes. This report will provide information concerning changes in the sex crime caseload in Washington County.

4. Expert Report Type. Expert reports were classified into five

categories:

a. Bureau of Criminal Apprehension (BCA) reports,
b. St. Paul Crime Lab reports,
c. Medical (nonpsychiatric) reports,
d. Psychiatric or psychological reports, and
e. Miscellaneous reports such as handwriting analyses, fraud investigation reports, crime scene photos, or victim injury photos.

5. Prior Record of Defendant. The prior record of a defendant was classified in one of three ways:

a. *None*--no convictions, petty misdemeanor convictions and/or one misdemeanor conviction.
b. *Light*--one felony conviction or more than one misdemeanor conviction.
c. *Heavy*--more than one felony conviction.

6. Severity of Crime. This denotes the statutory maximum number of years for the most serious charge filed in the case.

These six measures provide a means for evaluating the impact of videotape availability on delay and sentencing patterns.

C. PROJECT FINANCIAL RECORDS

Project financial records besides providing an inventory of equipment purchased by the project form a basis for determing usage costs and cost simulations. Since the equipment contract was awarded on a package bid basis, unit price for each equipment piece is unavailable. Hence, cost/use for each equipment piece based upon its expected lifetime frequency of use is unobtainable. Therefore, even though a playback machine may receive more use than a videotape camera, the cost analyses contained in this report treat the equipment use as a total package use, i.e., it implicitly assumes fixed proportions among the pieces or no output can be obtained without the total package being

available.

D. SURVEY OF EQUIPMENT RENTAL ALTERNATIVES

An informal telephone survey of selected audio-visual rental businesses throughout Minnesota was conducted in September, 1978. To achieve geographic dispersal of such businesses, selected businesses in the following cities were surveyed: Duluth, St. Cloud, Fergus Falls, Mankato, Rochester, and Fargo-Moorhead. Businesses were selected from telephone directories based upon advertisements of audio-visual rental equipment availability. Although this selection process is biased toward large businesses that are more likely to have advertisement resources, the general unavailability of rental equipment throughout the state indicates that expansion of the survey sample would not alter the results attained.

E. SUMMARY

This study uses 61 cases from the preproject period and 61 cases from the project period to gauge goal attainment. Selection of these cases is based upon the presence of expert reports, expert testimony records, and/or crime scene data in the Washington County Attorney's felony case files. Information from selected cases is used to formulate six variables employed in the impact evaluation of videotape availability upon delay and sentencing patterns. The six variables concern delay, sentence/disposition, case type, expert report type, prior record of defendant, and severity of crime.

Cost analyses and cost simulations within this report are based upon project financial records. Also, a statewide survey of audio-visual equipment rental businesses was conducted and provides

information concerning the options for videotape acquisition by outstate counties.

CHAPTER III

PREPROJECT AND PROJECT FELONY CASE CHARACTERISTICS

A. TARGET CASES DEFINED

What felony cases are likely to result in videotape use? Given the felony cases handled by a county attorney's office over a specific time period, only a portion of these cases require an expert report based upon the nature of the crime(s) charged. From the cases with expert reports, a small number will actually result in a trial. The original grant, as written, assumes videotape testimony is offered for jury consideration at trial.[1] During the second year, the project is also considering the use of videotaped testimony at court trials but this evaluation considers the project's first-year progress only within the scope of jury trial use. However, since the absence of expert witness availability may force a settlement before trial, all felony cases involving expert reports are examined in this report. Highlighting these target cases provides a means by which similar counties may gauge their potential need for videotape equipment. The discussion that follows describes characteristics of these target cases in the preproject and project periods.

B. TARGET CASE CHARACTERISTICS

1. Introduction. Consider all cases involving expert information

[1] *Videotape equipment for courtroom use* (Grant G-26-77AD), p. 3.

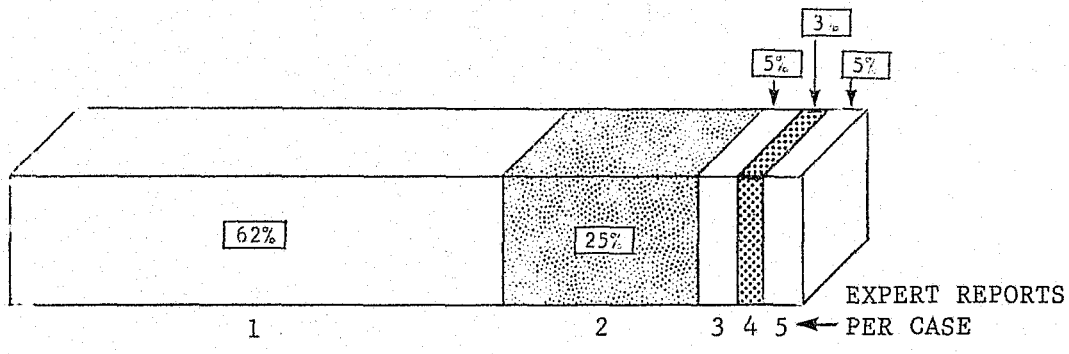
in the preproject and project periods. These two target case groups provide information concerning expert report incidence by crime type, crimes charged, severity of the most serious crime charged, and expert report origin. The following sections describe in more detail such target case characteristics.

2. Expert Report Frequency. Over 60 percent of all cases contain, at most, one report in the preproject and project periods. See Figure 1. Furthermore, in the preproject period, 87 percent of all cases contain two reports or less as compared to 93 percent of similar cases in the project period. Hence, very few cases, namely 13 percent or less in each period, involve more than two expert reports.

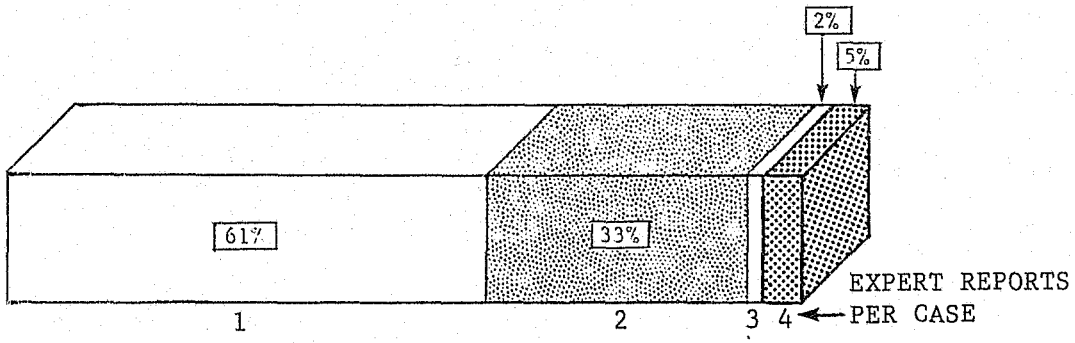
3. Percent of Cases Involving Expert Reports by Crime Type. According to Figure 2, drug-related cases comprise the largest single group of files with expert reports in the preproject and project periods. Such cases are 42.6 percent of target cases in the preproject period and 31.1 percent of such cases in the project period. In both periods, the next largest category of cases with expert reports (at least 18 percent of all cases) involve other crimes against persons. However, if sex crimes are added to other crimes against persons, this expanded violent crime category is larger (36.1 percent) than the drug-related category in the project period (31.1 percent). Between the preproject and project periods besides this increase in total crimes against persons, miscellaneous crime increased slightly from 4.9 percent to 9.8 percent and drug-related crime decreased from 42.6 to 31.1 percent of all target cases while crimes against property remained the same (23.0 percent). Note, also, that the data provide evidence that cases involving sex crimes have increased from 11.5 percent to 16.4

FIGURE 1

PERCENTAGE OF PREPROJECT AND PROJECT CASES
BY NUMBER OF EXPERT REPORTS PER CASE



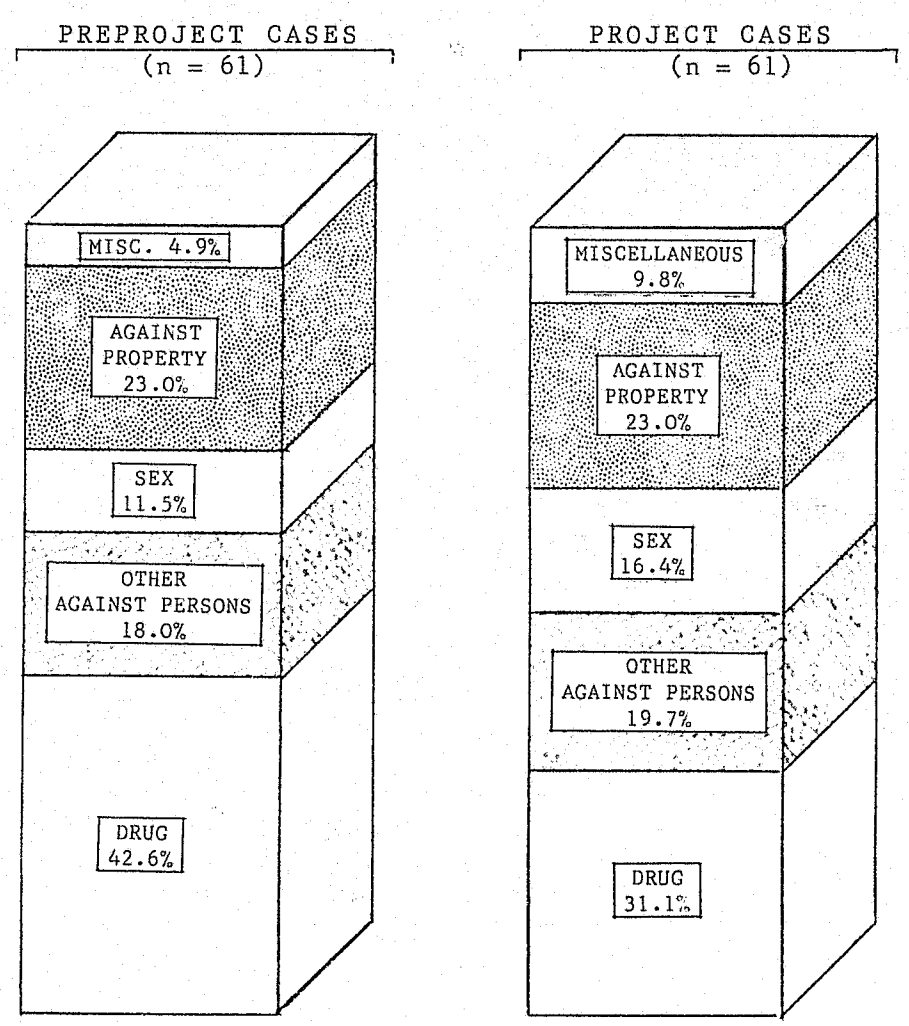
PREPROJECT CASES
(n = 61)



PROJECT CASES
(n = 61)

FIGURE 2

PERCENTAGE OF PREPROJECT AND PROJECT CASES INVOLVING EXPERT REPORTS BY CRIME TYPE



percent of all target cases between the preproject and project period. This phenomenon on a statewide basis led to the funding of two additional BCA lab personnel in fiscal year 1978.

4. Expert Reports per Case. Table 1 indicates that although an equal number of cases (61) in the preproject and project periods involved expert reports, total reports present in the files varied between the two periods. Total expert reports decreased from 100 in the preproject period to 92 in the project period. A preproject case involved 1.64 reports on average while a project case involve 1.51 reports on average. However, using a two-tailed t-test, the number of reports per case is not significantly different between the two periods ($t = 0.76$).

TABLE 1

CASE TYPE BY NUMBER OF CASES, NUMBER OF EXPERT REPORTS, AND EXPERT REPORTS PER CASE IN THE PREPROJECT AND PROJECT PERIODS

	NUMBER OF CASES		NUMBER OF EXPERT REPORTS		EXPERT REPORTS PER CASE	
CASE TYPE	Preproject	Project	Preproject	Project	Preproject	Project
Drug	26	19	29	24	1.11	1.26
Sex	7	10	23	17	3.29	1.70
Other Against Persons	11	12	24	26	2.18	2.17
Against Property	14	14	20	18	1.43	1.29
Miscellaneous	3	6	4	6	1.33	1.00
TOTAL:	61	61	100	92	--	--
AVERAGE:	--	--	--	--	1.64	1.51

5. Expert Reports per Case by Case Type. The most report intensive case types were sex crimes and other crimes against persons. According to Table 1, other crimes against persons involved 2.18 reports per case in the preproject period and 2.17 reports per case in the project period. Sex crimes had the highest report intensity (3.29 reports) in the preproject period but this dropped to 1.70 reports per case in

the project period. The case types having the fewest reports were drug cases in the preproject period (1.11 reports) and miscellaneous reports in the project period (1.00 reports).

6. Seriousness of Crime and Expert Report Frequency. More serious crimes require more expert reports per case than less serious crimes. According to Figure 3, cases involving a crime with a statutory maximum sentence of 10 years or more required more expert reports per case than cases involving a crime with a statutory maximum sentence of less than 10 years. In the preproject period, less serious crime involved 1.33 reports per case while more serious crime involved 3.44 reports per case. For the project period, similar figures are 1.43 reports per case for less serious cases and 1.90 reports per case for more serious cases. Also, the difference in the number of reports needed per case for each level of crime seriousness grew smaller in the project period. More serious cases involved more than 2.5 times the report level of less serious cases in the preproject period while more serious cases involved only 1.5 times the report level of less serious cases in the project period.

7. Expert Report Type Frequency. Figure 4 shows that the report most frequently encountered was a BCA report. Of the preproject period expert reports 41 percent and of the project period expert reports 42 percent were from the BCA. The St. Paul Police Crime Lab reports comprised approximately 17.5 percent of all reports in both periods. Since the Crime Lab performs functions similar to those of the BCA Lab and is geographically convenient to Washington County law enforcement agencies, Washington County's dependence on BCA Lab reports may appear understated when compared to a county farther from St. Paul. Between the preproject

FIGURE 3

PREPROJECT AND PROJECT EXPERT REPORTS PER CASE
BY CRIME SEVERITY

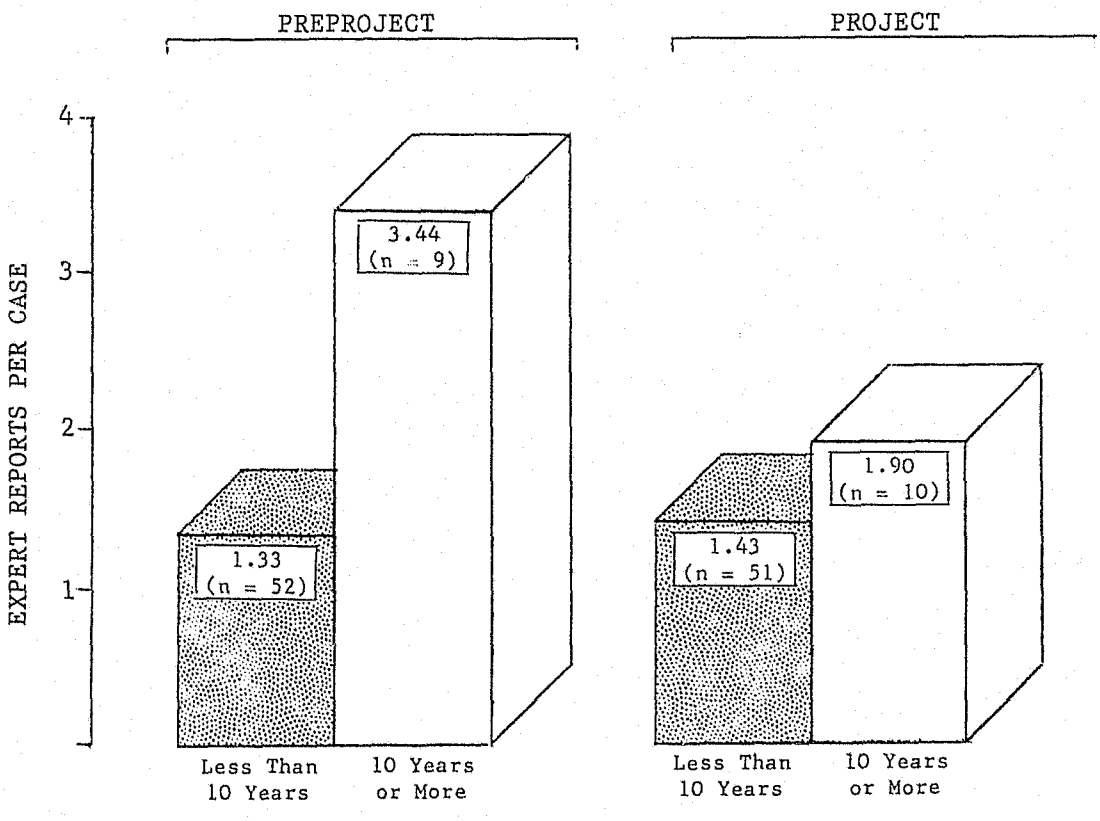
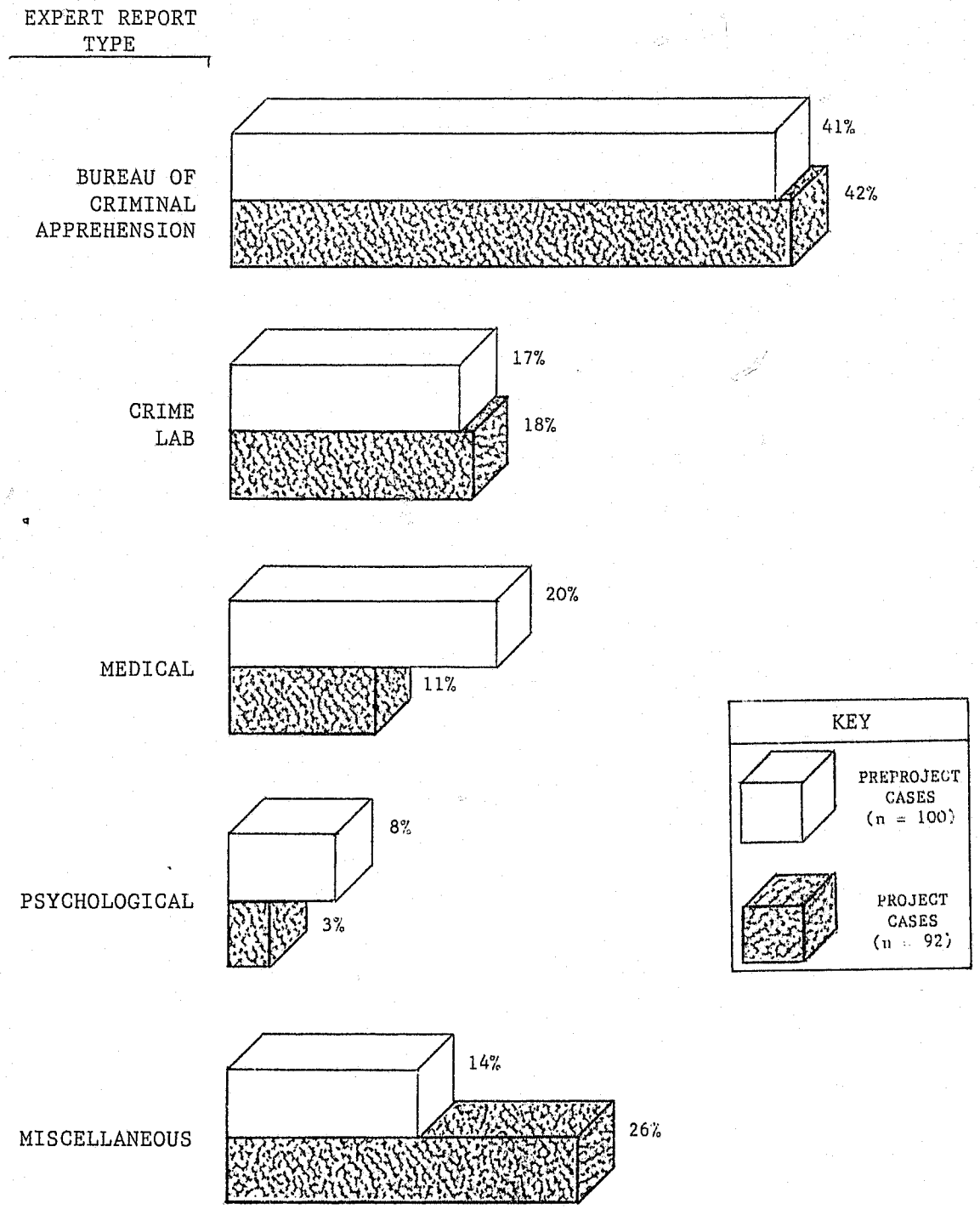


FIGURE 4

PERCENTAGE OF PREPROJECT AND PROJECT EXPERT REPORT CASES



and project periods, medical reports dropped from 20 percent to 11 percent of all reports while miscellaneous reports rose from 14 percent to 26 percent of all reports. In part, these phenomena can be attributed to a drop in the reports per case for sex cases and a rise in the total number of fraud cases. Sex cases primarily include medical reports while fraud cases include miscellaneous reports usually involving the records of welfare case workers.

8. Expert Report Type and Case Type. According to the numbers in the various rows of Table 2, most drug cases involved BCA reports while sex cases primarily involved BCA and medical reports. Other crimes against persons cases involved a mixture of BCA, medical, and miscellaneous reports. Crimes against property cases included primarily BCA reports in the preproject period and miscellaneous reports in the project period due to the project period increase in fraud cases. Miscellaneous cases usually made use of BCA reports.

Looking now at the columns of Table 2, over 40 percent of all BCA reports and over 35 percent of all Crime Lab reports in both periods were used on drug cases. Medical reports were predominately used for both categories of crimes against persons as expected. Psychological reports numbered only 8 in the preproject period, 6 of which were used in sex and other crimes against persons cases. The 3 project period psychological reports were used in the other crimes against persons category (2 reports) and in the crime against property category (1 report). Miscellaneous reports were primarily used for both types of crimes against persons and also for property crime in the preproject period and, in the project period, use shifted away from sex crime cases (no reports) and toward property crime cases (15 reports) and other crimes

TABLE 2

CASE TYPE BY EXPERT REPORT ORIGIN IN THE PREPROJECT AND PROJECT PERIODS

	EXPERT REPORT ORIGIN										
	BCA		CRIME LAB		MEDICAL		PSYCHOLOGICAL		MISCELLANEOUS		TOTAL
CASE TYPE	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
DRUG:											
Preproject	18	43.9%	9	52.9%	1	5.0%	1	12.5%	0	0.0%	29
Project	17	44.7%	6	37.5%	0	0.0%	0	0.0%	1	4.2%	24
SEX:											
Preproject	7	17.1	2	11.8	7	35.0	3	37.5	4	28.6	23
Project	7	18.4	3	18.8	6	60.0	0	0.0	0	0.0	16
OTHER AGAINST PERSONS:											
Preproject	5	12.2	2	11.8	9	45.0	3	37.5	5	35.7	24
Project	8	21.1	5	31.3	4	40.0	2	66.6	7	29.2	26
AGAINST PROPERTY:											
Preproject	8	19.5	4	23.5	3	15.0	1	12.5	4	28.6	20
Project	1	2.6	2	12.2	0	0.0	1	33.3	15	62.5	19
MISCELLANEOUS:											
Preproject	3	7.3	0	0.0	0	0.0	0	0.0	1	7.1	4
Project	5	13.2	0	0.0	0	0.0	0	0.0	1	4.2	6
TOTAL (Number, Percent):											
Preproject	41	100.0%	17	100.0%	20	100.0%	8	100.0%	14	100.0%	100
Project	38	100.0%	16	99.8%	11	100.0%	3	100.0%	24	100.1%	92

against persons (7 reports).

9. Expert Report Type and Seriousness of Crime. Figure 5 shows that BCA reports were used predominately for less serious crime cases since 75.6 percent of the preproject BCA reports and 84.2 percent of the project period BCA reports were used in cases with a statutory maximum sentence under 10 years. Medical and psychological reports in both periods were found predominately in more serious crime cases. Over 60 percent of all such reports were found in more serious crime cases in both periods. Crime Lab reports and miscellaneous reports when compared to crime seriousness show mixed results between the two periods. In the preproject year, 76.5 percent of the Crime Lab reports were used for less serious crime cases while 56.3 percent of such reports were used for more serious crime cases in the project period. Similarly, 57.1 percent of all miscellaneous reports were used for more serious crime cases in the preproject period, yet 87.5 percent of such reports were used in less serious crime cases in the project period.

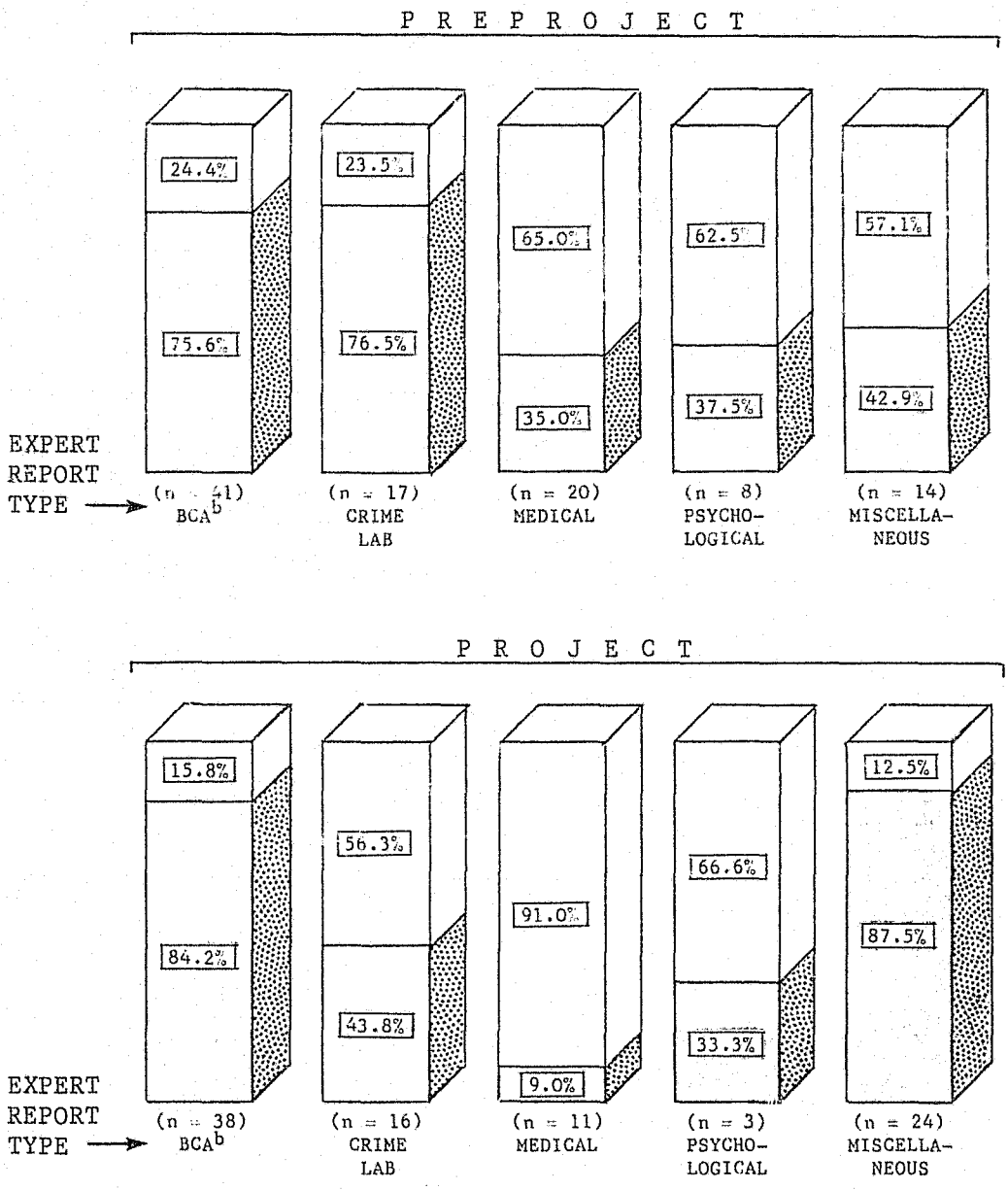
In summary, BCA reports were used predominately for less serious crime cases, medical and psychological reports were usually used in more serious crime cases while Crime Lab reports and miscellaneous reports show no clear pattern of usage with respect to case crime seriousness between the preproject and project period.

10. Summary of Target Case Characteristics. The surveyed cases involving expert information were found to have the following characteristics:

a. In the preproject and project periods, 90 percent of all cases on average involved 2 expert reports or less. Therefore, few cases involved more than 2 reports.

FIGURE 5

PERCENTAGE OF PREPROJECT AND PROJECT EXPERT REPORT TYPES BY CRIME SEVERITY[a]



[a]Crime severity is measured by the statutory maximum sentence for the most serious charge.

[b]BCA (Bureau of Criminal Apprehension).

b. The largest group of cases with expert reports were drug cases comprising 42.6 percent of target cases in the preproject period and 31.1 percent of such cases in the project period.
c. A preproject case involved 1.64 reports on average while a project case involved 1.51 reports on average, yet this difference was not statistically significant.
d. Sex crimes and other crimes against persons were the most report intensive case types in the preproject and project periods. Sex crimes averaged 2.18 reports per case over the 2 periods while other crimes against persons averaged 2.50 reports per case.
e. More serious crime involved more expert reports than less serious crime. Crimes involving a crime with a statutory maximum sentence of 10 years or more averaged 2.67 reports per case while cases involving a crime with a statutory maximum sentence of less than 10 years involved 1.38 reports per case over the 2-year period surveyed.
f. The most frequently used report was a BCA report averaging 41.5 percent of all reports in both periods.
g. Most BCA and Crime Lab reports were predominately used in drug cases. Medical and psychological reports were primarily used for sex and other crimes against persons. Miscellaneous reports were usually used in miscellaneous and property crime.
h. In the preproject and project periods, a majority of BCA reports were used in less serious crime cases while medical and psychological reports were used in more serious crime cases. Crime Lab and miscellaneous reports showed no clear pattern of predominate usage between the two periods with respect to case crime seriousness.

Having examined the expert report characteristics of the target cases, the impact of the videotape equipment on the Washington County court system as measured by goal attainment will be investigated in the next chapter.

CHAPTER IV
GOAL ATTAINMENT EVALUATION

A. GOAL 1: REDUCED CONTINUANCES PER JURY TRIAL IN THE PROJECT PERIOD

Subjecting trial jurors to continuances because of expert witness unavailability should be reduced by the county attorney office's videotaping capacity. Baseline preproject data were collected on the number of jury trial continuances due to expert witness unavailability. According to Table 3, there were 7 continuances in the preproject target cases. However, none occurred during an actual jury trial. Therefore, there was no evidence in the preproject period that jurors were subjected to continuances due to expert unavailability.

Even in the project period, there were 2 continuances due to personal absences. However, the videotape equipment could not have averted these 2 project period continuances since both occurred prior to trial and the equipment was only intended for jury trial use.

In general, for all baseline cases with continuances, one would expect continuances at least to have an impact on case scheduling and should lead to case delay. Preproject cases with continuances lasted 77.4 days on average as compared to 66.4 days for other preproject cases. Even though cases with continuances lasted an average of 11 days longer than cases without continuances, this difference was not statistically significant ($t = 0.61$). *Hence, the baseline data does not support the contention that continuances based upon expert report, expert witness,*

TABLE 3

DESCRIPTIVE CHARACTERISTICS OF CASES WITH CONTINUANCES
IN THE PREPROJECT AND PROJECT PERIODS

CASE TYPE	REASON(S) FOR CONTINUANCE	CONTINUANCE OCCURRENCE	CASE OUTCOME	DELAY (days)[a]
PREPROJECT:				
Drug	BCA Report Absent	Prior to Trial	Plea (Original Charge)	26 days
Drug	Crime Lab Report Absent	Prior to Trial	Plea (Lesser Charge)	16
Sex	Defense Attorney Absent	Prior to Trial	Plea (Lesser Charge)	99
Other Against Person	Victim in Hospital	Prior to Trial	Plea (Serious Included Charge)	126
Other Against Person	Defense Psychological Exam Incomplete	Prior to Trial	Plea (Original Charge)	135
Against Property	BCA Expert Absent Defense Attorney Absent	Prior to Trial	Plea (Original Charge)	70
Against Property	BCA Expert Absent Defense Attorney Absent	Prior to Trial	Plea (Original Charge)	70
PROJECT:				
Drug	Law Enforcement Officer Absent	Prior to Trial	Plea (Original Charge)	22
Other Against Person	Defense Attorney Absent	Prior to Trial	Plea (Lesser Included Charge)	198

[a]Delay is measured by the number of days from first appearance to case closure by the Washington County attorney.

or attorney unavailability have a significant effect on court delay.

Also, the continuances did not appear to have a significant effect on preproject case outcome in general. In 71 percent of the continued preproject cases, a plea to original charge or most serious included charge was secured. A plea to a lesser charge resulted in the remaining 29 percent of the continued preproject cases. In other preproject plea bargained cases not involving a continuance, 63 percent were pled to the original or most serious included charge while 37 percent were pled to a lesser charge. Therefore, it appears that preproject cases with continuances did not show a marked tendency toward pleas to a lesser charge as compared to other plea bargained preproject cases.

In summary, the preproject data do not provide evidence that continuances during jury trial were a problem. Nontrial continuances did occur. However, the delay caused by such continuances was not statistically significant during the preproject period. Seven continuances were encountered in the preproject period while only 2 continuances were encountered in the project period. Hence, there was a reduction in the number of nontrial continuances from 7 to 2 between the two periods. Since the videotape equipment cannot remedy pretrial expert availability problems, this reduction in pretrial continuances cannot be attributed to the project.

B. GOAL 2: REDUCED DISMISSALS RESULTING FROM EXPERT WITNESS UNAVAILABILITY IN THE PROJECT PERIOD

In the preproject period, there were 11 dismissals while in the project period, there were 14 dismissals. Table 4 lists the case type and reason for each dismissal in each period. In no instance was the

TABLE 4

DESCRIPTIVE CHARACTERISTICS OF DISMISSED CASES
FROM PREPROJECT AND PROJECT PERIODS

PREPROJECT			PROJECT		
CASE TYPE	NUMBER OF DISMISSALS	(NUMBER OF CASES)/ REASON FOR DISMISSAL	CASE TYPE	NUMBER OF DISMISSALS	(NUMBER OF CASES)/ REASON FOR DISMISSAL
DRUG	6	(2) Evidence Suppressed (1) Double Jeopardy (1) Illegal Seizure (1) Evidence Destroyed (1) Substance Not Drugs	DRUG	2	(1) Substance Not Drugs (1) Plea Bargain on Second Case
SEX	2	(2) Victim Unable to Testify	SEX	5	(1) Victim Dropped Charges (1) Victim Unwilling to Testify (3) Insufficient Evidence
OTHER AGAINST PERSONS	1	(1) Victim Dropped Charges			
AGAINST PROPERTY	2	(1) Restitution Made (1) Plea Bargain on Second Case	AGAINST PROPERTY	6	(2) Insufficient Showing of Probable Cause (1) Insufficient Evidence (1) Restitution Made (1) Lie Detector Test Passed by Defendant (1) Not Proven Beyond a Reasonable Doubt
			MISCELLANEOUS	1	(1) Defendant Not Locatable
TOTAL DISMISSALS:	11		TOTAL DISMISSALS:	14	

lack of an expert witness or of an expert report a key factor leading to the dismissal of charges. Another case from the preproject period, not included in the sampled cases since it did not contain an expert report, involved a dismissal of charges after a key witness entered the army. However, the prosecuting attorney felt that other factors surrounding the case made it too weak to pursue. Hence, even in this instance, videotape use would not have been feasible.

Looking at the two periods together, the data point out that in 4 of the 7 dismissed sex cases, willingness or ability of the victim to testify was a key factor in charge dismissal. The drop in the number of drug charges dismissed parallels the overall decrease in drug cases from 42.6 percent to 31.1 percent of all cases with reports (see Figure 2). The increase in dismissed crime against property cases also follows the increased number of fraud cases in Washington County between the two periods.

Therefore, none of the reasons for case dismissal in either period involved expert information unavailability. *Hence, the data do not demonstrate that expert information unavailability as evidenced by expert report lateness or expert witness absence was a key factor in case dismissals in either the project or preproject period.* Since dismissal due to expert information unavailability was not a problem documented by the data, this goal is vacuous and hence, cannot possibly be attained by the project.

C. GOAL 3: REDUCED PLEAS TO A LESSER CHARGE FOR TARGET CASES IN THE PROJECT PERIOD

To gauge the baseline level of plea bargaining resulting from

expert witness unavailability, questions were submitted to the appropriate prosecuting attorney regarding 9 preproject cases suspected of having been plea bargained due to expert information unavailability. The prosecuting attorneys felt that the lack of or delayed delivery of expert information was not a factor in plea bargaining.

Table 5 shows that no plea bargaining resulted in the preproject period due to expert information unavailability. Also, the factor was not important in the project period. The third and fourth columns of the table show that of cases that were plea bargained in the preproject period, 70 percent or 32 cases were pled to original charge or most serious included charge and 30 percent or 14 cases were pled to a lesser charge or less serious included charge. In the project period, the figures are similar: 68 percent or 28 cases were pled to original charge or most serious included charge while 32 percent or 13 cases were pled to lesser charge or less serious included charge. Therefore, when expert information was available, little difference in plea bargaining existed between the preproject and project periods.

TABLE 5

PLEA BARGAINING, EXPERT INFORMATION AVAILABILITY, AND VIDEOTAPE USE IN THE PREPROJECT AND PROJECT PERIODS[a]

	EXPERT INFORMATION UNAVAILABLE		EXPERT INFORMATION AVAILABLE		VIDEOTAPE USE	
PLEA BARGAIN TYPE	Preproject	Project	Preproject	Project	Preproject	Project
Plea (Original Charge or Most Serious Included Charge)	0	0	32	28	N/A	1
Plea (Lesser Charge or Less Serious Included Charge)	0	0	14	13	N/A	0

[a]Availability of expert report or expert testimony at or prior to plea bargaining stage is indicated in case file.

Videotape use also includes attempted videotape use involving the prior scheduling of the expert witness for videotaping prior to plea bargaining.

In summary, once again the baseline data demonstrate that expert information unavailability was not a key factor in plea bargaining. Therefore, one cannot expect attainment of a goal to reduce pleas to a lesser charge in the project period. Nevertheless, the project attempted to use the videotape for a BCA expert's testimony but was able to secure a plea to the original charge immediately prior to taping.

D. GOAL 4: REDUCED TRIPS TO CRIME SCENES AND/OR REDUCED RELIANCE UPON WORD DESCRIPTIONS BY INVESTIGATORS DURING TRIAL

In the preproject period, 7 cases included crime scene or victim injury photos. Of these 7, only 1 case resulted in a trial during which crime scene photos were introduced. No trips to crime scenes occurred in the preproject sampled cases.

During the project period, 2 files included crime scene information. Videotape use was anticipated by the county attorney's office for a case involving a large drug manufacturing scheme, the equipment for which was stored outside the courthouse. However, the case was settled by plea bargaining to the original charge. The second file also resulted in plea bargaining prior to trial. Hence, the equipment was not directly used in the project period to reduce trips to crime scenes and/or reliance upon word descriptions by investigators during trail.

Therefore, in the preproject period, only 1 jury trial involved crime scene photo data while during the project period, no trials led to the presentation of crime scene photos. *Attainment of Goal 4 cannot, therefore, be gauged since no opportunities occurred during the project period for equipment utilization to present crime scene descriptions at trial.*

Beyond Goal 4's intent, it is recognized that a crime scene videotape, even if not used in court, may still function as an investigative tool for law enforcement officers.

E. GOAL 5: ELIMINATED DELAYS IN TRIAL SCHEDULING BECAUSE OF EXPERT WITNESS UNAVAILABILITY IN 20 PERCENT OF THE CASES WHERE TAPED TESTIMONY IS FEASIBLE

To evaluate this goal, an investigation of the causal factors underlying court delay in both periods were undertaken. Court delay in this report is measured from first appearance to case closure by the county attorney's office. To gauge the most important factors contributing to court delay, the following regression was run where variables to the right of the equal sign are expected to impact upon delay:

DELAY = Crime Type + Severity + Prior Record + Public Defender + Trial + Number of Crimes + Number of Reports + Group *where each variable is defined below.*

DELAY: Delay between first appearance and case closure.

CRIME TYPE: 0 for property, drug, and miscellaneous crime.
1 for sex crime and other crimes against persons.

SEVERITY: Statutory maximum sentence for the most serious crime charged.

PRIOR RECORD: 0 if the defendant had no prior record.
1 if the defendant had a prior record.

PUBLIC DEFENDER: 0 if a public defender was not used.
1 if a public defender was used.

TRIAL: 0 if no court or jury trial occurred.
1 if a court or jury trial occurred.

NUMBER OF CRIMES: Number of crimes charged.

NUMBER OF REPORTS: Number of expert reports included in the file.

GROUP: 0 for preproject period cases.
1 for project period cases.

Using a stepwise regression solution to the above linear equation utilizing all target case data, the following results were found.

1. After accounting for the impact of all other case-related variables (except Group), it was found that there was no significant difference in delay among cases processed before and after equipment acquisition. *Hence, the videotape equipment had no impact on court delay in target cases.* In technical terms, the coefficient on the Group variable was not significant.

2. *Whether the crime involved an attack against a person or not was a key factor in target case delay* since the coefficient on the crime type variable was significantly different from 0 using an *F* test at the 5 percent significance level. Sex crimes and other crimes against persons took longer to process than other crimes.

3. *The severity of the most serious crime charged did not significantly affect target case court processing time.*

4. *The defendant's prior record did not significantly affect court delay in target cases.*

5. *Whether the defendant used a public defender or not had no significant effect on target case court delay* even though economic theory predicts that the more resources a defendant can muster as evidenced by his retention of a private attorney, the more likely a prosecutor will submit a plea bargain (thus reducing court delay) in order to avoid using his resources in a long trial.

6. *The occurrence of a trial did not significantly increase court delay in target cases.* The reason for this result is, no doubt, due to the small number of trials that occurred (8 trials in 122 cases).

7. *The number of crimes charged bears no statistically significant relation to target case court processing delay.*

8. *The number of expert witness reports in the file also had no significant influence on target case delay.*

In conclusion, there were no significant differences in court delay between the preproject and project periods; only if the case involved a crime against a person was delay significantly increased.

From the survey of prosecuting attorneys, no baseline or preproject cases were identified as involving jury trial scheduling delay due to expert witness unavailability. Therefore, the expected number of project period cases entailing trial scheduling problems due to expert witness unavailability is 0.

Therefore, the regression analysis does not indicate that the videotape equipment reduced target case court delay in general. In particular, prosecuting attorneys could not identify baseline cases for which actual trial scheduling was delayed due to expert witness unavailability. Therefore, once again, the underlying need for the equipment was not justified by the baseline data and, hence, the goal could not be achieved since it is vacuous.

F. GOAL ATTAINMENT SUMMARY

In conclusion, baseline data from the preproject period do not

demonstrate that expert information unavailability resulted in trial continuances, case dismissals, or increased pleas to a lesser charge. Hence, the supposed need upon which goals to reduce trial-related continuances, dismissals, and pleas to a lesser charge were based simply does not exist according to preproject data. Hence, attainment of these goals is not possible.

There was 1 baseline case involving crime scene data presented at the trial stage. However, no instance arose in the project period for which the equipment could be used to tape crime scenes. Therefore, the goal to reduce trips to crime scenes and/or reduced reliance upon word descriptions by investigators during trial was not attained.

An investigation of court delay indicated that the equipment had no significant impact on delay. Indeed, the most important delay factor happens to be whether a crime against a person is charged. Sex crime cases and other cases involving crimes against persons took longer to process than other cases.

CHAPTER V
VIDEOTAPE USE OUTSIDE THE TRIAL COURTROOM

A. SCOPE OF THE ALTERNATIVE USES

Although the previous chapters point to minimal application of videotape during trial, the Washington County Attorney's office employed the equipment in a variety of ways for alternative judicial, police, corrections, and other needs. A brief description of videotape use in each area follows.

B. NONGOAL-RELATED JUDICIAL USE

1. Grand Jury Use. Two videotapes were made and shown to the Washington County Grand Jury in June, 1977. One videotape, involving the testimony of a witness hospitalized with a gunshot wound, eliminated reconvening the grand jury at the hospital and thus postponement of the indictment. The second tape involved the pretaped deposition of a witness who was on vacation during the grand jury's session. Both tapes were precipitated by the fact that the grand jury session was shortened due to a death in the grand jury foreman's family. Within two working days, the videotapes were made and replayed for the grand jury. This use points out that the videotape has greater flexibility for grand jury use since such presentations of evidence are made under less restrictive circumstances than jury trial presentations. Indeed, in this instance, the videotaped materials replace written sworn statements allowed under Rule 18.06 Subdivision (1) of the *Minnesota Court Rules*. Neither a

judge nor the (potential) defendant's attorney may actively participate in the testimony. By Minnesota Statute 628.63, the county attorney may be asked by the grand jury to examine witnesses. Hence, the videotape equipment is more easily used for grand jury testimony since fewer people need be present as compared to jury trial use, i.e., the defense attorney and judge need not be present for grand jury cases.

2. Jury Instruction. The Washington County Attorney's office has made its equipment available to District Judge John Thoreen for the purpose of taping instructions given to incoming jury panels for specific trials. After initial taping, each use of the tape for additional juror viewing will save approximately one hour of judge time. This use of the equipment is scheduled for late 1978.

3. Inebriacy Commitment Use. In 1979, the project anticipates using the equipment to videotape the testimony of medical doctors from St. Joseph's Hospital involved in inebriacy commitments. Under this use, the testimony of the patient's medical doctor would be taken at St. Joseph's Hospital in the presence of the patient's lawyer, the patient, and the Washington County Attorney's representative. The videotape and the patient would be returned to Washington County at which time the videotaped deposition of the doctor would be played as testimony from one of the two examiners necessary at commitment proceedings.

C. POLICE USES

1. Police Training. The videotape equipment was used as a supplementary training tool by the Washington County Police Training Coordinator. The equipment was used for 2 purposes:

a. To record training sessions for future use, and

b. To supplement the trainer's presentation.

In particular, the Police Training Crisis Intervention Course and the Crash Injury Management Course were taped during presentation to provide a future training tool. In the case of the Crisis Intervention Course, 35 of 52 class hours were taped. However, of these 35 hours of taping, only 6 one-hour tapes or 17 percent of the tapes were regarded as meriting future use. During the 40-hour Crash Management Course, 9 hours of videotapes were shown during the presentation. Therefore, 22.5 percent of the course presentations were in videotape mode.

2. Surveillance. During 1979, the Washington County Sheriff's office expects to use the equipment for surveillance purposes pending the acquisition of supplementary equipment.

D. CORRECTIONS USES

In January, 1978, the playback machine was used twice to present videotaped materials during the Volunteer Probation Officer Training offered by the Washington County Probation Department.

E. OTHER USES

1. Noncriminal--License Suspension Hearing. The videotape was used in October, 1977, to present the pretaped testimony of a juvenile who had moved out of state during a foster home license suspension hearing conducted by the state of Minnesota's Office of Hearing Examiners.

2. Noncriminal--Veteran's Preference Discharge Hearing. The

videotape equipment was used to record a civil service hearing involving an employee's dismissal. The taping was conducted in lieu of a court reporter's transcript. Since a record of the hearing is only needed in case of appeal and given the cost of a court reporter's time (estimated at $300 by the county attorney for this hearing), the videotape record-keeping method appears to be a cheaper alternative. In this instance, the discharged employee did not appeal the results of the hearing; hence, the tape was not subsequently used.

3. Continuing Legal Education. The videotape equipment was used in February, 1978, to present information to Washington County lawyers on the new rules of evidence endorsed by the Minnesota Supreme Court.

F. SUMMARY OF ALTERNATIVE USES

As shown in Table 6, the Washington County Attorney's office has used a cross-system approach in its videotape applications. The equipment has been used for training purposes in the police and corrections subsystems and also in the legal community in general. Grand jury testimony applications have been made and pretaped jury instructions are anticipated. The equipment has also been used to present testimony at noncriminal hearings. However, since the equipment has been applied in ways not anticipated by the scope of the project's goals, these uses cannot be evaluated with the same rigor as the courtroom applications. However, the cost analyses in the next chapter will account for such noncourtroom applications.

TABLE 6

SUMMARY OF VIDEOTAPE USE OUTSIDE CRIMINAL JURY TRIALS IN WASHINGTON COUNTY

CRIMINAL JUSTICE SUBSYSTEM AND OTHER USES	EVENT(S) VIDEOTAPED	DATES OF USE
JUDICIAL	Grand Jury Witness Testimony	June, 1977
	Jury Instruction[a]	--
	Inebriacy Commitment Use[a]	--
POLICE	Police Training Sessions	September-November, 1977 January-March, 1978 April-June, 1978
	Surveillance[a]	--
CORRECTIONS	Probation Officer Training Sessions	January, 1978
OTHER	Hearing Examiner Session	October, 1977
	Continuing Legal Education	February, 1978
	Veteran's Preference Discharge Hearing	February, 1978

[a]Anticipated use during the second project year.

CHAPTER VI
COST ANALYSES AND SIMULATIONS

A. INTRODUCTION

Chapters IV and V examined courtroom and alternative uses for the Washington County videotape equipment. This section presents equipment cost simulations based upon the intensity of use in and out of the courtroom. In the derivation and use of these simulations, the following steps occur.

First, the total and annual equipment costs based upon the initial purchase price and subsequent service costs are derived. Second, cost simulations based upon hours of use for judicial and nonjudicial applications and using the annual equipment costs are derived and compared to the cost of the next best alternative to outright equipment purchase, namely, equipment rental. From this analysis, the optimality of project use levels is gauged. Here, optimal use implies that the appropriate cost simulation for the actual hours of equipment use is less than the rental cost.

Finally, using prior research, an examination of the presentation mode, i.e., black-and-white presentations versus color presentations, is made and the appropriate cost comparison is conducted.

B. COST AGGREGATION LEVEL

Purchasing a videotape equipment package adds to the capital stock

of Washington County. Such capital generates a stream of services over the equipment's lifetime. Therefore, each table included within this chapter and the next considers the annual level of service derived from the equipment.

In order to conduct the cost analysis, the price of the total equipment package is considered, i.e., purchasing through a bid process does not facilitate the costing out of each equipment piece. Indeed, the productive process by which events are videotaped involves the use of various equipment pieces jointly, for example, camera use may entail lighting package use, etc. So, the individual pricing of each equipment piece is not necessary.

As stated before, actual equipment costs will be compared to the cost of the next best alternative, i.e., equipment rental. Personnel costs incurred during the actual operation of the equipment will be disregarded since both acquisition modes (rental versus purchase) entail the same level of personnel for taping operation.

The equipment cost analyses will also exclude certain operating and replacement costs (tapes, batteries, bulbs, electricity) because costs such as for tapes and electricity must be borne no matter whether the equipment is purchased or rented. However, such costs must be ultimately considered by decision-makers since resource use is involved. In Chapter VII, the costs of videocassette tapes are considered. Other small items such as bulbs have a relatively long lifetime (75-100 hours) and are a relatively minor part of total equipment costs; hence, their replacement over the equipment's lifetime is not considered.

C. TOTAL AND ANNUAL EQUIPMENT COST

To calculate the total equipment value, an annual service cost of $2,000 must be added to the equipment purchase cost. However, in order to add service contract costs to equipment costs, the future service contract costs must be discounted. It is by this discounting procedure that future dollar expenditures may be expressed in present-day dollar equivalents. Since money that is invested today has more value in the future, similarly future dollars are worth less today than their face value. Hence, it is the discounted service contract costs that are added to the purchase costs.

To derive the total equipment cost over the capital's expected 10-year lifetime, total expenditures on equipment less the items excluded from consideration as previously stated were added to future service contract costs (commencing in the second year of operation for this project) discounted at a 15 percent discount rate.[1] The equipment's total cost is found by the following formula:

$$C = P + S \text{ which may also be expressed as}$$

$$C = P + \sum_{k=2}^{10} s \left[\frac{1}{(1 + r)^k}\right]$$

where C = Total equipment cost,

P = Equipment purchase cost less tape cost,

S = Total discounted service contract cost,

s = Annual service contract cost commencing in the second year of operation,

[1]Cost estimates were also developed for a 5 percent and 10 percent discount rate but are not reported here since the final conclusions based upon such estimates did not vary substantially from those reported.

r = Discount rate, and

k = Year of operation.

As stated above, this formula is calculated using a 15 percent discount rate. The original bid price plus subsequent first-year equipment expenditures less tape cost is $20,839.52. The total discounted service contract cost is $8,293.10. Adding equipment cost to the total discounted service cost yields a total equipment cost of $29,132.62.

To find the annual equipment costs, the total figure (C) is divided by 10 since the equipment is expected to last one decade. It is the annual equipment cost of $2,913.26 that is used as a basis for the cost simulations.

D. COST SIMULATIONS

Cost simulations are developed that account for judicial and nonjudicial uses. Table 7 presents the cost per hour for varying levels of judicial and nonjudicial uses.

If only courtroom uses for the equipment are anticipated, the first row of the table is relevant. Each entry denotes the cost per hour of use for varying levels of judicial use. Indeed, Chapter IV focused only on these uses given the original goal specifications. Similarly, if only nonjudicial videotape uses are contemplated, the first column of cost figures are relevant for varying hours of use.

More likely, both judicial and nonjudicial uses are planned. For example, if 6 hours of judicial use and 9 hours of nonjudicial use are planned annually, the cost per hour of use would be $194.22. This table will be used in section F of this chapter to gauge the cost of each hour

TABLE 7

PURCHASED EQUIPMENT COST PER HOUR FOR VARYING LEVELS OF JUDICIAL AND NONJUDICIAL USE[a]

HOURS OF NONJUDICIAL USE ANNUALLY	HOURS OF JUDICIAL USE ANNUALLY											
	0	1	2	3	4	5	6	7	8	9	10	15
0	---	$2,913.26	$1,456.63	$1,319.07	$ 728.32	$ 582.65	$ 485.64	$ 416.18	$ 364.16	$ 323.70	$ 291.33	$ 194.22
1	$2,913.26	1,456.63	1,319.07	728.32	582.65	485.64	416.18	364.16	323.70	291.33	264.84	182.08
2	$1,456.63	1,319.07	728.32	582.65	485.64	416.18	364.16	323.70	291.33	264.84	242.77	171.37
3	$1,319.07	728.32	582.65	485.64	416.18	364.16	323.70	291.33	264.84	242.77	224.10	161.85
4	$ 728.32	582.65	485.64	416.18	364.16	323.70	291.33	264.84	242.77	224.10	208.09	153.33
5	$ 582.65	485.64	416.18	364.16	323.70	291.33	264.84	242.77	224.10	208.09	194.22	145.66
6	$ 485.64	416.18	364.16	323.70	291.33	264.84	242.77	224.10	208.09	194.22	182.08	138.73
7	$ 416.18	364.16	323.70	291.33	264.84	242.77	224.10	208.09	194.22	182.08	171.37	132.42
8	$ 364.16	323.70	291.33	264.84	242.77	224.10	208.09	194.22	182.08	171.37	161.85	126.66
9	$ 323.70	291.33	264.84	242.77	224.10	208.09	194.22	182.08	171.37	161.85	153.33	121.39
10	$ 291.33	264.84	242.77	224.10	208.09	194.22	182.08	171.37	161.85	153.33	145.66	116.53
15	$ 194.22	182.08	171.37	161.85	153.33	145.66	138.73	132.42	126.66	121.39	116.53	97.11

[a]These figures are derived from annual equipment costs of $2,913.26. Annual equipment costs are the sum of specified equipment costs plus service contract costs discounted at a 15% rate. See Section C.

of project equipment operation.

E. ALTERNATIVE COST OF RENTAL EQUIPMENT

Rental videotape equipment is available from major Twin Cities camera shops and this rental availability provides an alternative to outright purchase.

To find rental equipment cost, the price of a standard rental package including camera, recorder/player, receiver, light kit, mixer, tripod, and 4 microphones is calculated. In this package price, the rental cost of a camera is calculated as the average of the rental costs for a portable camera and a studio camera since it is expected that these cameras are equally likely to be used by the renter.

Transportation costs between Stillwater and the Twin Cities for the 2 round trips involved in equipment pickup and return are calculated at $16.64 (52 miles per round trip × $0.16 per mile × 2 round trips).

To calculate the labor cost in rental equipment acquisition, the following derivations were made. Since the county attorney's office uses sheriff's deputies to run its equipment, it is also assumed such people would pick up and return rental equipment. Hence, the hourly cost of law enforcement activities is calculated. The October, 1973, payroll for police protection activities in Minnesota counties[1] was divided by the number of full-time equivalent employees to find the cost per person per month of $987.72. This is equivalent to an hourly labor cost of $6.17. However, since 1975 when labor costs were available,

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[1]U.S., Department of Justice, *Sourcebook of Criminal Justice Statistics, 1977* (Washington, D.C.: Government Printing Office, 1977), p. 70.

these figures were subsequently inflated by the GNP (gross national product) price deflator for state and local governmental goods and services[1] to find the hourly labor cost in current dollars of $7.30. It is calculated that if travel occurs at 40 mph on average, 2.31 labor hours are spent in rental equipment pickup and delivery. Therefore, the total labor cost involved in equipment rental is calculated at $16.86 (2.31 hours × $7.30).

Hence, the acquisition, use, and return of rental equipment costs $350.50 in resource costs.

F. OPTIMAL PURCHASED EQUIPMENT USE

The more frequently equipment is used, the lower the cost per hour of use, and the more likely that purchased equipment will be cheaper to use than rental equipment. Figure 6 demonstrates that the hourly cost declines sharply the more intensely the equipment is used. It costs $2,913.26 if the equipment is used annually for one hour, but this figure drops to $145.66 per hour if the equipment is used for 20 hours annually for each year of its life.

Superimposed on Figure 6 is the rental equipment cost of $350.50. Hence, to be optimally used, purchased equipment must be used more than 8.31 hours annually. Only if the equipment is used 8.31 hours or more will its hourly cost be lower than the rental cost.

Looking at Table 8 which is Table 7 with the optimal use level imposed on it, costs below the diagonal denote combinations of judicial

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[1]U.S., Department of Commerce, "General Business Indicators," *Survey of Current Business* 58 (August, 1978), Table S-2.

FIGURE 6

COST PER USE CURVES FOR PURCHASED AND RENTED EQUIPMENT

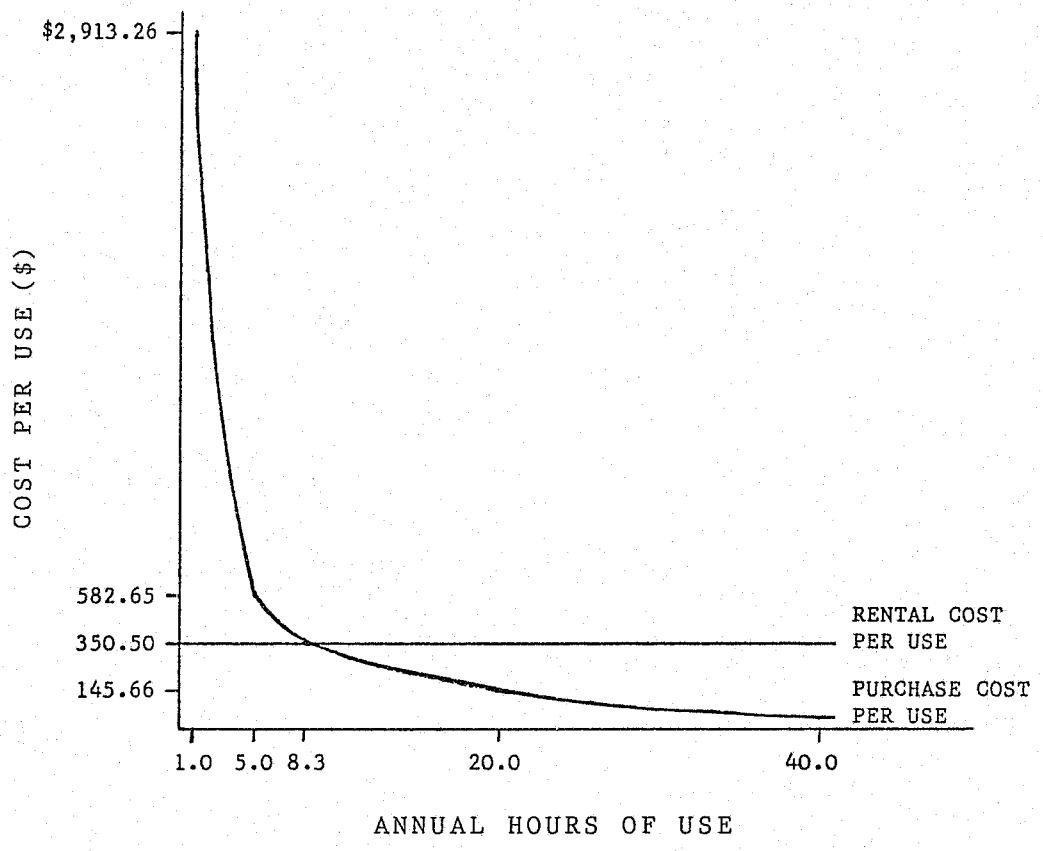

TABLE 8

OPTIMAL AND NONOPTIMAL HOUR AND COST CONFIGURATIONS FOR VARYING JUDICIAL AND NONJUDICIAL USE LEVELS OF PURCHASED EQUIPMENT[a]

HOURS OF NONJUDICIAL USE ANNUALLY	HOURS OF JUDICIAL USE ANNUALLY											
	0	1	2	3	4	5	6	7	8	9	10	15
0	---	$2,913.26	$1,456.63	$1,319.07	$ 728.32	$ 582.65	$ 485.64	$ 416.18	$ 364.16	$323.70	$291.33	$194.22
1	$2,913.26	1,456.63	1,319.07	728.32	582.65	485.64	416.18	364.16	$323.70	291.33	264.84	182.08
2	$1,456.63	1,319.07	728.32	582.65	485.64	416.18	364.16	$323.70	291.33	264.84	242.77	171.37
3	$1,319.07	728.32	582.65	485.64	416.18	364.16	$323.70	291.33	264.84	242.77	224.10	161.85
4	$ 728.32	582.65	485.64	416.18	364.16	$323.70	291.33	264.84	242.77	224.10	208.09	153.33
5	$ 582.65	485.64	416.18	364.16	$323.70	291.33	264.84	242.77	224.10	208.09	194.22	145.66
6	$ 485.64	416.18	364.16	$323.70	291.33	264.84	242.77	224.10	208.09	194.22	182.08	138.73
7	$ 416.18	364.16	$323.70	291.33	264.84	242.77	224.10	208.09	194.22	182.08	171.37	132.42
8	$ 364.16	$323.70	291.33	264.84	242.77	224.10	208.09	194.22	182.08	171.37	161.85	126.66
9	$323.70	291.33	264.84	242.77	224.10	208.09	194.22	182.08	171.37	161.85	153.33	121.39
10	$291.33	264.84	242.77	224.10	208.09	194.22	182.08	171.37	161.85	153.33	145.66	116.53
15	$194.22	182.08	171.37	161.85	153.33	145.66	138.73	132.42	126.66	121.39	116.53	97.11

[a]Optimal use of purchased equipment means that the cost per hour for purchased equipment is less than the cost per hour for rented equipment. Nonoptimal use of purchased equipment means that the cost per hour for purchased equipment is more than the cost per hour for rented equipment.

Nonoptimal use level.

Optimal use level.

and nonjudicial use intensities for which the hourly cost of purchased equipment is less than rental use.

The question now arises: Did the Washington County Videotape Project make sufficient use of its equipment during the first year of operation such that its hourly cost is less than rental cost? The exact hours of use are incomplete since an accurate log of taping time was not made for all uses by the project. However, the equipment was used 27 hours for videotape presentations during the Crash Management Injury Course, and 35 hours of tapes were made during the Police Training Crisis Intervention Course. Yet, only 6 hours of tapes were regarded as the best tapes in terms of most likely to be reused. At least one tape was subsequently replayed 4 times. Therefore, at least 37 hours of equipment use relevant for evaluation purposes occurred. However, the equipment was not used for any felony trials. One use was attempted but ruled out by a last minute guilty plea. Hence, the predominate use was in the nonjudicial area (at least 37 hours) while no videotapes were played during an actual criminal jury trial. No data are available on the length of the grand jury testimonies or other uses. Based upon 37 hours of use, the cost is $78.74 per hour. This figure is well below the rental figure of $350.50. Therefore, *the equipment was used frequently enough during its first year so that its hourly cost was well below the rental cost. Therefore, the equipment was used optimally according to the definition of optimality given in this chapter.*

G. THE FEASIBILITY AND COST OF BLACK-AND-WHITE PRESENTATIONS

The equipment purchased under this grant is color equipment. The question arises whether videotaping may be carried out using cheaper

black-and-white equipment. For example, color equipment rental costs $350.50 while black-and-white equipment rental is only $184.35 or this rental is only 52.6 percent of the color equipment rental cost.

However, prior research[1] does not explicitly point to the best presentation mode for judicial use: A typical jury panel was drawn and composed of 198 paid volunteers regarded as a representative adult sample from the Lansing, Michigan, area. These individuals were randomly assigned to 1 of 4 experimental conditions. The 4 conditions were color presentation with a strong witness, color presentation with a weak witness, black-and-white presentation with a strong witness, and black-and-white presentation with a weak witness. The same actor portrayed the strong- and weak-witness types. After the viewing, each juror completed a questionnaire designed to measure information retention and witness credibility. Analysis of the data from the 4 jury panels revealed that information retention scores for both witness types were higher for the black-and-white presentation than for the color presentation. However, significantly higher ratings of witness credibility (especially for the strong witness) were found for the color presentation. *Hence, if one uses color videotape equipment, perceived credibility of testifying witnesses is maximized; while if black-and-white equipment is used, trial-related information retention is maximized.* Neither this prior research nor this evaluation clearly points to the best videotape presentation mode for expert witness information presentation.

Therefore, no conclusions can be drawn as to the most appropriate

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[1]Gerald R. Miller et al., "Videotechnology in the Courtroom: Progress or Regress," *Detroit Journal of Urban Law* 55 (Spring, 1979), forthcoming.

presentation mode in terms of maximizing both information retention and witness credibility. However, the cost comparison made indicates that black-and-white equipment costs 52.6 percent less than color equipment if rental costs for each equipment type are considered. According to the theory of behavior under risk,[1] only if this reduced cost more than compensates the prosecutor for the reduced witness credibility, which increases the risk that he/she may not obtain the desired trial outcome, will using black-and-white presentations be feasible. *Prospectors who are risk takers are more likely to regard the lower black-and-white videotape costs as adequate compensation for increased risk than prosecutors who are risk averters.*

Since lab personnel often perform tests with color-coded results, the use of black-and-white videotapes may cause a loss of useful test result information to viewers. Also, on a black-and-white videotape, blood is indistinguishable from other dark materials such as dirt or oil. Therefore, the use of black-and-white videotape for lab personnel testimony is limited when color-coded test results are presented or when blood stains are shown.

H. SUMMARY

This chapter provides cost simulations for the project based upon judicial and nonjudicial hours of use and derived from project equipment expenditures. Applying the cost of rental equipment to these simulations provides the combinations of judicial and nonjudicial uses that must be achieved if the project's cost per hour of use is to be less

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[1]See for example, Kenneth J. Arrow, *Essays in the Theory of Risk-Bearing* (Chicago: Markham Publishing Company, 1971), pp. 90-120.

than equipment rental.

In particular, given incomplete project information, the project cost per hour is $78.74, as compared to a rental figure of $350.50. *Therefore, the equipment was used frequently enough during its first year so that its hourly cost is well below rental cost, however, none of the taping time involved goal-related activities, i.e., taped expert testimony during a jury trial.*

Black-and-white versus color presentations were also examined. Color-coded lab tests and blood stain samples are more easily recognized on a color videotape. Even though the rental cost of black-and-white equipment is 52.6 percent less than that of color equipment, prior research indicates that using black-and-white presentations will lead to a lower level of perceived witness credibility, yet a higher level of information retention than color equipment use. Not knowing the trade-off individual prosecutors make between the increased risk of unfavorable trial outcome due to decreased witness credibility and the resources saved by using black-and-white equipment, no conclusions can be drawn as to the best presentation mode.

CHAPTER VII

CONSIDERATIONS FOR FUTURE VIDEOTAPE USE BY OTHER COUNTIES

A. EQUIPMENT AVAILABILITY IN OUTSTATE MINNESOTA

To gauge videotape equipment availability in outstate Minnesota, i.e., in counties other than Hennepin and Ramsey, selected audio-visual equipment businesses in the following cities were surveyed in September, 1978: Duluth, St. Cloud, Fergus Falls, Mankato, Rochester, and Fargo-Moorhead. In no instance was videotape equipment appropriate for courtroom use readily available. However, one Duluth dealer could acquire the rental equipment by automobile shipment from its central Twin Cities branch but would only request such equipment if rental for more than one day was anticipated.

Based on the audio-visual equipment business survey, the conclusion is drawn that rental is only *directly* available from Twin Cities outlets. Hence, if an outstate county wishes to rent such equipment, transportation, labor, lodging, and meal costs associated with two round trips from the county seat to the Twin Cities must be considered along with the actual equipment rental costs to find total rental costs.

B. EQUIPMENT NEED: ESTIMATED JURY TRIAL USE

Courtroom use of videotape equipment for expert witness testimony will be related somewhat to the number of jury trials conducted in the county since goal-related use entails use only during jury trials. *The*

number of jury trials provides a rough upper bound on the expected number of possible expert witness testimony videotape uses within the county system. Indeed, out of this set of trials only those that require expert testimony and for which the expert is unavailable define those cases for which the videotape can be used. Washington County averaged 6.43 jury trials annually over the period 1970-1976.[1] However, over the preproject and project periods, only 2 trials per year or 31 percent of all jury trials entailed actual expert witness testimony. Of these trials, none involved a jury trial during which the expert was absent or delayed although one plea bargained case involved an attempted videotape use. *Yet the experience of Washington County does not necessarily rule out the need for videotape equipment in other counties.*

The information resulting from the following rental versus purchase analysis provides an indication of the minimum number of times per year purchased equipment would have to be used within each county for its cost per use to be less than total rental costs. For each county, this figure is then compared to the jury trials in the county which constitutes an upper bound on courtroom uses. This information, along with an estimate of videotape cost over the equipment's lifetime, is intended to guide the Judicial Planning Committee, the Crime Control Planning Board, and/or county boards as to whether a county contemplating the acquisition of videotape equipment for courtroom use should rent or buy such a package.

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[1]Minnesota, *Annual Reports, Minnesota Court, 1970-1975*, and *Minnesota State Court Report, 1976-1977*.

C. EQUIPMENT PURCHASE VERSUS RENTAL: ESTIMATED MINIMUM COUNTY USE LEVELS OF PURCHASED EQUIPMENT

For reasons cited in section A, if a county wishes to rent videotape equipment, such a package must be acquired from Twin Cities audio-visual rental outlets. In the following rental cost analysis, these costs are considered:

1. Cost of two round trips from each county seat in outstate Minnesota to Minneapolis/St. Paul--
   a. Labor costs,
   b. Transportation costs,
   c. Lodging/Meal costs, and
2. Rental costs for one or more days.

Mileage was calculated between each county seat and the Twin Cities. This figure was then multiplied by four to find the mileage entailed in two round trips to the Twin Cities and then multiplied by $0.16 to calculate transportation costs. Assuming an average speed of 40 mph is maintained during the trip, the total mileage figure is divided by 40 to estimate the labor hours needed to acquire and return the equipment. This figure was then multiplied by $7.30, the hourly rate derived in Chapter VI, to calculate labor costs. Overnight lodging is deemed necessary if one round trip entails more than 500 miles. The standard state lodge/meal costs were used to calculate such costs. Many counties may need to rent equipment for more than one day due to the physical impossibility of equipment acquisition, use, and return within one day. It is assumed that an 8-hour day constitutes one rental day. Hence, equipment use for more than 8 hours but less than 16 entails two rental days and so on. Most dealers charge one-half the first day rental rate for each day's use beyond the first day. To calculate the total cost associated with equipment rental, the following costs were

then summed for each county: transportation cost, labor cost, lodging/meal cost, and equipment rental cost. These cost estimates for each county are listed in Table 9.

Using the total rental costs and comparing them to the hourly costs associated with purchased equipment as derived in Chapter VI, the minimum number of uses purchased equipment must be used for its cost per use to be as cheap as rental is listed also in Table 9. These figures of minimum usage are now compared to the total number of jury trials in each county in 1976.

D. COMPARISON OF REPORTED JURY TRIALS IN 1976 AND MINIMUM COUNTY USE LEVELS FOR PURCHASED EQUIPMENT

Figure 7 presents the reported jury trials in 1976[1] for each county except Hennepin and Ramsey and the estimated minimum number of times the equipment must be used in order for purchase to be cheaper than rental.

In 65 counties, the minimum use levels are more than the number of jury trials. Hence, even if one expert witness is unavailable per trial (which is an overestimate), equipment purchases for each of these counties are not economically justified, yet, for the remaining 20 counties the minimum use levels equal or are less than the reported jury trials in 1976. This does not necessarily mean that these counties should buy videotape equipment because actual videotape use can only be expected for a subset of all jury trials. This is because not all jury trials entail expert witness use, and the expert witness need

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[1]Minnesota, *Minnesota State Court Report, 1976-1977* (1977), pp. 52-53.

TABLE 9

ESTIMATED VIDEOTAPE RENTAL COSTS AND MINIMUM USE LEVELS FOR PURCHASED EQUIPMENT IN 85 MINNESOTA COUNTIES[a]

JUDICIAL DISTRICT/ County	ESTIMATED VIDEOTAPE RENTAL COST	MINIMUM USE LEVELS FOR PURCHASED EQUIPMENT
DISTRICT 1		
McLeod	$ 384	8
Sibley	407	7
Carver	353	8
Le Sueur	387	8
Scott	347	8
Dakota	344	8
Goodhue	391	7
DISTRICT 3		
Rice	$ 386	8
Waseca	578	5
Steele	406	7
Dodge	599	5
Olmsted	589	5
Wabasha	592	5
Winona	637	5
Freeborn	608	5
Mower	612	5
Fillmore	628	5
Houston	852	5
DISTRICT 5		
Lincoln	$ 867	3
Lyon	676	4
Redwood	618	5
Brown	597	5
Nicollet	407	7
Blue Earth	640	5
Cottonwood	671	4
Murray	878	3
Pipestone	893	3
Rock	915	3
Nobles	872	3
Jackson	903	3
Martin	853	3
Faribault	853	3
Watonwan	842	3
DISTRICT 6		
Carlton	$ 676	4
Cook	1,202	3
Lake	867	3
St. Louis	869	2
DISTRICT 7		
Clay	$1,109	3
Becker	904	3
Otter Tail	875	3
Douglas	655	4
DISTRICT 7--cont'd.		
Wadena	$ 849	3
Todd	637	5
Morrison	607	5
Stearns	565	5
Benton	582	5
Mille Lacs	588	5
DISTRICT 8		
Wilkin	$ 909	3
Traverse	887	3
Grant	859	3
Big Stone	871	3
Pope	645	4
Swift	647	5
Lac Qui Parle	848	3
Chippewa	649	4
Kandiyohi	603	5
Renville	600	5
Meeker	410	7
Stevens	680	4
Yellow Medicine	633	5
DISTRICT 9		
Kittson	$1,451	2
Roseau	1,509	2
Marshall	1,509	2
Lake of the Woods	1,272	2
Koochiching	1,250	2
Beltrami	927	3
Pennington	1,255	2
Red Lake	1,224	2
Polk	1,207	2
Norman	1,212	2
Mahnomen	1,112	3
Clearwater	1,119	3
Hubbard	897	3
Cass	882	3
Crow Wing	647	5
Aitkin	847	3
Itasca	1,116	3
DISTRICT 10		
Pine	$ 403	7
Kanabec	401	7
Isanti	372	8
Anoka	346	8
Sherburne	358	8
Wright	369	8
Washington	351	8
Chisago	365	8

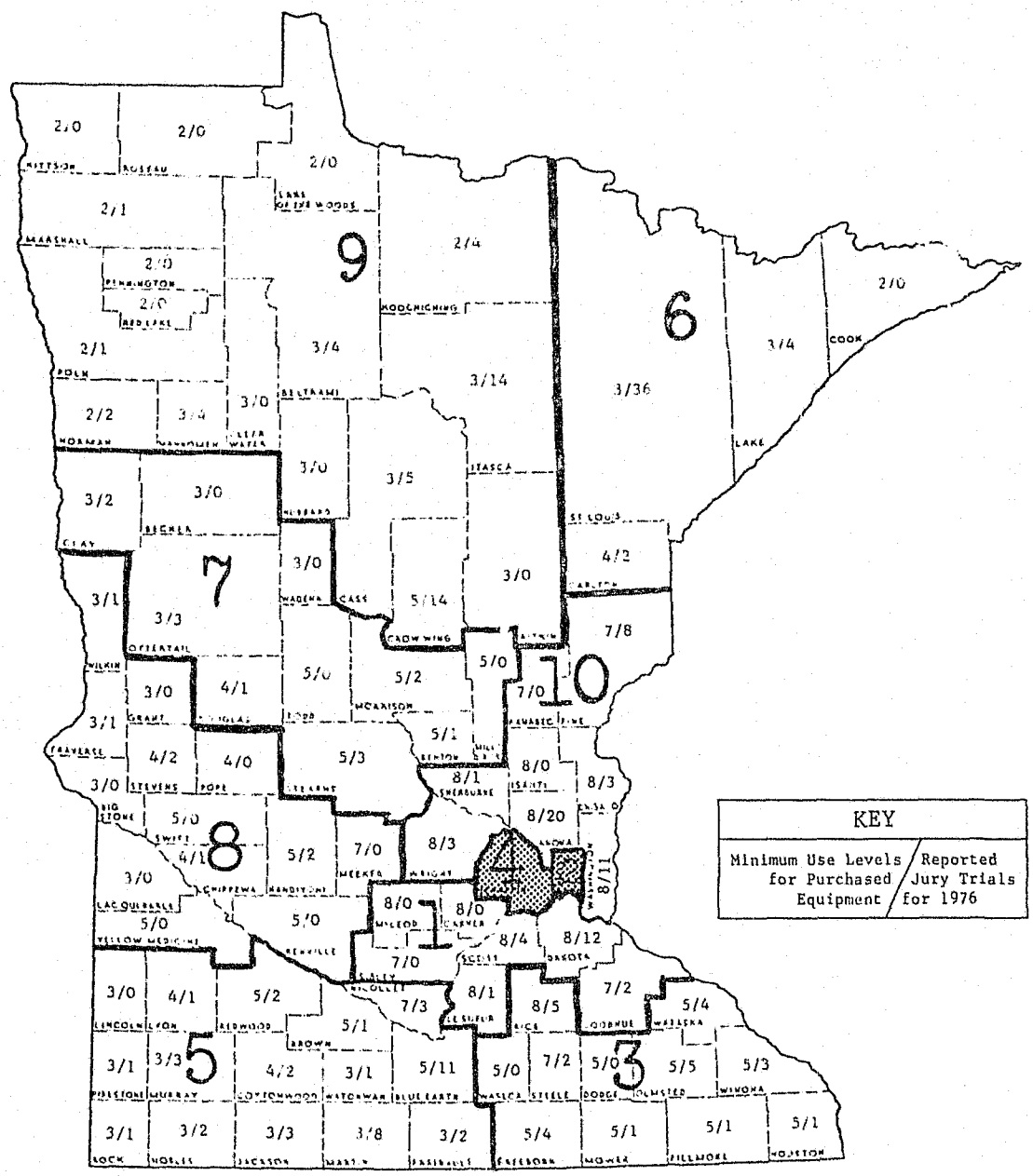
[a]Rental costs include equipment costs plus costs associated with equipment acquisition and return.

Minimum use levels denote the lowest possible number of uses for which the cost per use for purchased equipment is less than the cost per use for rented equipment.

Hennepin and Ramsey counties are omitted from this analysis.

FIGURE 7

MINIMUM USE LEVELS FOR PURCHASED EQUIPMENT AND REPORTED MINNESOTA JURY TRIALS FOR 1976 BY SELECTED COUNTIES[a]



[a]Minimum use levels denote the lowest possible number of uses for which the cost per use for purchased equipment is less than the cost per use for rented equipment.

The source for the 1976 reported Minnesota jury trials is the *Minnesota State Court Report, 1976-77* (1977), pp. 52-53.

The large numbers within the darkened boundaries denote Minnesota judicial districts. Districts 2 and 4 (Ramsey and Hennepin counties) are not included.

not always be unavailable.

The conclusion that can be drawn from this analysis is that for at least 76 percent of all Minnesota counties (excluding Hennepin and Ramsey counties), purchase of videocassette equipment for the presentation of expert witness information appears uneconomical when compared to equipment rental costs. For the remaining 24 percent of the counties where the number of jury trials in 1976 exceeds the minimum use levels necessary for equipment purchase to be cheaper than rental, insufficient information concerning the actual frequency of expert witness unavailability per trial limits the conclusions that can be drawn using these data.

E. OTHER CONSIDERATIONS: VIDEOCASSETTE TAPE COST

Another cost which decision-makers must consider before purchasing a videotape package is the resources spent for videotapes over the equipment's lifetime.

Prior analyses in this report did not explicitly account for tape cost due to three factors. First, in equipment purchase versus rental comparisons, tapes must be purchased no matter if the equipment is rented or bought. So, this cost was not crucial to such a comparison. Second, videotapes are reusable so actual purchases need not bear a one-to-one correspondence to actual use. This function becomes irrelevant if tapes must be stored as legal evidence after a trial. If tapes are stored, other costs must be considered such as the value of storage space used and the cost of storage cabinets. Third, tape cost depends on the length used. No conclusions can be drawn from project

data as to the optimal tape length mix. The approximate playing time for various tape sizes includes 10, 20, 30, 40, and 60 minutes. The actual price per tape depends on tape playing time and the quantity purchased.

However, this section will provide some crude estimates of tape cost over the equipment's lifetime. The lifetime of the equipment is the planning cycle that decision-makers must consider for such related costs. In this case, the cycle is 10 years in length. The Washington County Videotape Project purchased 60-minute color tapes for $31.00 each. Table 10 presents the discounted costs of such videotapes over the equipment's lifetime based upon various annual tape purchase levels. For example, while purchasing 15 tapes per year or less only adds at most 8 percent to total equipment cost, the purchase of 50 tapes annually will add 27 percent to total equipment costs.

TABLE 10

TOTAL VIDEOCASSETTE COSTS OVER EQUIPMENT LIFETIME AND SUCH COSTS AS A PERCENTAGE OF TOTAL EQUIPMENT COSTS FOR SELECTED LEVELS OF ANNUAL VIDEOCASSETTE PURCHASES[a]

ANNUAL VIDEOCASSETTE PURCHASES	TOTAL VIDEOCASSETTE COSTS OVER EQUIPMENT LIFETIME	PERCENT OF TOTAL EQUIPMENT COSTS
1	$ 179.10	< 1%
5	778.17	3
10	1,556.40	5
15	2,334.57	8
20	3,112.77	11
30	4,669.18	16
40	6,225.57	21
50	7,781.97	27

[a]Total videotape costs are based upon the Washington County Videotape Project's financial records; calculations assume that 60-minute color videocassette tapes are purchased for $31.00 each. Future costs are discounted using a 15% discount rate.

Total equipment costs are net of videocassette costs. See Chapter VI.

Given the limited resources available to the criminal justice system, when final decisions are made on future videotape purchases, an estimate of future tape costs over the equipment's lifetime must be considered. This chapter provided a crude estimate of the magnitude of such costs. However, final cost considerations depend on the purposes for which the equipment is used, the need to store tapes, tape length used, and the quantity of tapes purchased.

F. SUMMARY

This chapter uses a cost simulation framework to gauge the cheapest alternative for videotape acquisition in outstate Minnesota counties. First, using telephone survey results, videotape rental equipment availability in outstate Minnesota from audio-visual outlets is gauged as virtually nonexistent. Next, a rough upper bound on possible expert testimony videotaping needs is found by investigating the number of jury trials in each county in 1976. This upper bound is then compared to the minimum number of times purchased equipment must be used for this alternative to be cheaper than rental. The total rental costs are the sum of equipment rental, labor, lodging/meal, and transportation costs for equipment acquisition from Twin Cities outlets. For each county, matching the rental costs to the cost simulations derived in Chapter VI provides information as to the minimum use needed for an equipment purchase to be feasible.

In 76 percent of outstate Minnesota counties, actual jury trials in 1976 (an upper bound on courtroom videotape use) are less than the minimum use levels needed to justify equipment purchase versus the rental alternative. In such counties, videotape purchase for expert

witness testimony purposes cannot be justified.

This chapter also gives cost estimates for varying videocassette purchase levels over the equipment's lifetime. The actual tape costs depend on such factors as the purposes for which the equipment is used, the need to store tapes, tape length used, and the quantity of tapes purchased in bulk order.

The next chapter provides the pros and cons of various options for statewide courtroom videotaping of unavailable expert witnesses.

CHAPTER VIII

FUTURE OPTIONS FOR VIDEOTAPING EXPERT WITNESS TESTIMONY IN MINNESOTA

A. INTRODUCTION

This evaluation bases its conclusions upon the analysis of information from Washington County Videotape Project records, Washington County Attorney felony files from the preproject and project periods, a telephone survey of audio-visual rental dealers throughout the state, and cost simulations. Because this evaluation examines the impact of videotape equipment acquisition on only *one* county, specific recommendations on videotape applicability to other Minnesota counties cannot be made. Rather, this section will present the pros and cons of various options for the future videotaping of expert witness testimony in Minnesota and will draw upon the evaluation results of the Washington County Videotape Project.

It is recognized that various legal issues such as the admissibility of videotaped testimony must be clarified before the widespread use of videotape equipment within Minnesota's legal system is possible. *Clarifying these underlying legal issues may be regarded as a prerequisite to an option choice.*

B. FUTURE OPTIONS FOR VIDEOTAPING EXPERT INFORMATION IN MINNESOTA

1. Option 1: Videotape acquisitions at the individual county level.

a. Pro: The use of videotape equipment during criminal trial proceedings in Washington County was minimal. The project did not tape the testimony of any expert witness for jury trials during the first project year although, for one case, a last minute plea bargain averted one scheduled taping session.

However, Washington County developed many cross-system applications for the equipment. Pretaped grand jury testimony was presented twice, and court reporter costs were averted by taping a hearing examiner session and veteran's preference discharge hearing. The equipment was also used for training purposes involving police, probation officers, and the legal community. Chapter VII demonstrated that in 76 percent of Minnesota counties, jury trials in 1976 occurred less frequently than the annual minimum number of uses needed to justify outright purchase rather than equipment rental. *Therefore, videotape purchase at the individual county level can only be justified for a majority of Minnesota counties if cross-system uses are anticipated over the lifetime of the equipment.*

b. Con: Chapter VII found that for 76 percent of Minnesota counties, jury trials in 1976 occurred less frequently than the minimum number of uses needed to justify outright purchase. For such counties, equipment rental is a cheaper alternative if use only within the judicial system is anticipated. In the remaining 24 percent of Minnesota counties, the fact that reported jury trials in 1976 are equal or greater than the annual minimum use levels needed for equipment purchase rather than rental does not necessarily justify outright purchase because the number of jury trials is merely an upper bound on the number of possible criminal proceeding uses for the equipment. Not all jury trials entail expert testimony and the expert need not be unavailable. Indeed, in Washington County, data from the preproject and project periods do not demonstrate that expert witness unavailability resulted in increased trial continuances, case dismissals, or pleas to a lesser charge. The equipment use and number of expert reports per case had no statistically significant impact on court delay. *Hence, the evaluation results for Washington County's project do not indicate that expert witness unavailability is a serious judicial problem although the scope of the evaluation does not justify the generalization of these results to other counties.*

2. Option 2: Videotape acquisition by selected counties.

   a. Pro: Two criteria determine whether a county should acquire rather than rent videotape equipment for taping expert witness testimony:

      1) The number of jury trials, and
      2) The frequency of expert witness availability at such trials.

      Chapter VII provides an indication of counties for which the number of jury trials equals or exceeds the number of equipment uses needed to justify outright purchase. This analysis provides a direction for further research. It is in these counties that the actual occurrence of expert witness availability needs to be further investigated.

   b. Con: If the cost per use of purchased equipment is below the rental cost, this does not necessarily justify channeling criminal justice resources into videotape equipment. Competing projects may have a greater impact on judicial problems as measured through cost-effectiveness or cost-benefit analyses than the videotape equipment. *The cost analyses presented here do not provide definitive answers to resource allocation problems within the criminal justice system.*

3. Option 3: Videotape equipment acquisition with use shared between counties possibly at the judicial district level.

   a. Pro: Acquisition at the judicial district level has at least two advantages:

      1) According to Table 11 which is derived from Figure 7, *the number of jury trials in each judicial district in 1976 exceeds the average minimum use level for the district needed to make outright purchase cheaper than rental.*

      2) *The equipment's use could be administered by the district court administrator and such person could also set priorities for nonjudicial uses.*

   b. Con: As cited in section B.1.b. of this chapter, the Washington County experience does not indicate that expert witness unavailability has an impact on court delay, dismissals, jury trial continuances, or plea bargaining. *Further equipment acquisition is not justified unless districts can document that expert witness unavailability has an impact on court*

delay, dismissals, jury trial continuances, or plea bargaining.

TABLE 11

TOTAL REPORTED JURY TRIALS IN 1976 AND AVERAGE MINIMUM USE LEVELS FOR PURCHASED VIDEOTAPE EQUIPMENT FOR SELECTED JUDICIAL DISTRICTS[a]

JUDICIAL DISTRICT	TOTAL REPORTED JURY TRIALS (1976)	AVERAGE MINIMUM USE LEVEL (Purchased Equipment)
1	19	7.7
3	26	5.5
5	43	3.8
6	42	3.0
7	15	4.1
8	7	4.2
9	49	2.6
10	46	7.6

[a] See figure 7 for data sources and derivations.

4. Option 4: Videotape equipment rental by each county as needed.

   a. Pro: *As Chapter VII indicates, this option appears to be cheaper than outright purchase for at least 76 percent of outstate Minnesota counties for which jury trials in 1976 were less than the minimum number of equipment uses needed to justify outright purchase.*

   b. Con: The equipment rental figures are based upon the assumption that equipment can be acquired and returned to Twin Cities audio-visual equipment dealers since a telephone survey of 6 cities throughout the state found that such equipment was not available from outstate audio-visual dealers. However, *it is not always likely that personnel will be available for equipment rental and return when the need arises.*

5. Option 5: Videotape equipment acquisition for BCA expert personnel use in Minnesota counties as needed.

   a. Pro: In Washington County, BCA reports accounted for 41.5 percent of all expert reports during the preproject and project periods. Given Washington County's proximity to St. Paul, Crime Lab reports were also used and amounted to another 17.3 percent of all reports. Had Washington County not had the Crime Lab as an alternative resource, surely BCA reports would have been more than 41.5 percent of all expert reports.

Therefore, *BCA reports were the most frequently encountered expert report (41.5 percent) in Washington County and other outstate counties may show a higher frequency. By making equipment available to BCA staff, they can readily videotape their testimony in courts as their schedule permits.*

b. Con: 1) Even though 41.5 percent of all expert reports in Washington County were BCA reports, roughly 80 percent of cases containing such reports involved a charge with a statutory maximum sentence of less than 10 years. The Minnesota Crime Control Planning Board Research Report, *Sentencing in Minnesota District Courts* (St. Paul, 1978) has found that *less serious crimes are more likely to be settled by a plea of guilty than cases that charge more serious crime (p. 63). Therefore, since cases involving BCA reports tend to involve less serious crime, they are more likely to be plea bargained, thus eliminating the need for expert testimony and its videotaping.*

2) Other expert reports made up 58.5 percent of all such reports in Washington County. *This option makes no provision for expert testimony from such sources should the need arise.*

3) *After videotaping, the BCA expert must make playback equipment available to the county for trial use thus necessitating shipping the equipment or a return trip by BCA personnel to pick up the equipment.*

The legislature has funded 2 additional BCA experts during fiscal year 1978 to provide testing and testimony. *Hence, in the future, the unavailability of BCA experts at trial may be less frequent due to added personnel.*

6. Option 6: Videotape acquisition administered by the County Attorney's Council and used by county attorneys as needed.

a. Pro: *The County Attorney's Council is the state agency most likely to be in direct communication with individual county attorneys and may be most able to distribute equipment in circumstances of expert witness unavailability.* In this manner, duplicate equipment need not be purchased throughout the state.

b. Con: 1) *The County Attorney's Council funding level does not cover the travel and staff expenses needed to make equipment available to the counties in need.*

2) *There is no guarantee that defense and/or non-judicial needs for videotape use would filter down to the County Attorney's Council,* nor is it clear its staff should be used for purposes not connected to the legislative mandate of the council.

C. SUMMARY

In conclusion, this section provides the pros and cons of 6 options related to the future of expert witness testimony videotaping in Minnesota. This discussion makes use of data and analyses conducted for the Washington County Videotape Project, the Judicial Planning Committee, and the Crime Control Planning Board (CCPB) by the Evaluation Unit of the CCPB. While no specific option is chosen as best, the choices are presented to decision-makers who will find such information useful in the further funding of such programs and in legislative requests.

END