



PHILADELPHIA COURT OF COMMON PLEAS
OFFICE OF COURT ADMINISTRATION
PLANNING UNIT



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Pennsylvania Case Weight Study

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Of course, any errors of omission or inadequacies in analysis are strictly my own.

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I. Introduction

After detailing the different methods used nationally to determine the need for additional judgeships, attention will be centered on the case weight approach (Chapter II). While the present study will not attempt to provide a complete overview of the field, there will be some discussion and analysis of the more notable case weight approaches, e.g., California and the Federal system to mention but two (Chapter III).

In Chapter IV we will provide an historical overview as to the methods (or lack thereof) used in Pennsylvania to determine additional judgeships prior to the case weight study. We will detail how interest in case weighting developed in Pennsylvania and how attention was centered on the Delphi survey method as a means of developing case weights. We will explain the methodology behind the Delphi approach as this was developed by the Rand Corporation.

A description will be provided in Chapter V of the Pennsylvania case weight study detailing the methodology, results and significance of same.

Finally, Chapter VI will include some critical observations as to the applicability of the case weight approach and the uses of such an approach on a statewide and/or local level. As an example, a modification of the statewide case weights will be used to measure system performance in Philadelphia with suggestions for future possible applications.

II. Overview

A review of the relevant literature indicates a wide range of standards and methods which are utilized in determining judicial manpower requirements. These include approaches which emphasize population, number of filings, number of dispositions (including projections of future filings and dispositions) and many combinations thereof. For example,

- . The report of the Louisiana Judicial Council lists the following as criteria to be used in reaching a decision to appoint new judges: caseloads, dispositions and filings per judge.
- . The 1969-70 report of the Chief Court Administrator of the State of Connecticut bases recommendations for new judges on a ten-year trend analysis of criminal and civil cases and the time lag between filing and disposition.
- . The 16th annual report of the New York Judicial Conference (1971) lists a number of factors that go into any consideration of new judgeships. Among the criteria cited were: increases in cases, filings, dispositions, pending cases, default matrimonials; increases in population; number of judges presently available for trial work; ratio of judges to population; effects of tourism.
- . Florida used to base increases in judicial manpower on a population criterion of one judge per 50,000 persons supported by some twenty other factors.^{1.}

One of the more popular and widely used criterion for determining the need for additional judges has been population. Under this method varying states have set numerous ratios of judges to population -- say, one judge per 20,000 inhabitants, or one judge per 50,000. As population increases

or decreases so supposedly are the numbers of authorized judge-
ships. According to Christopher A. Manning this system has
several obvious advantages: 1) it operates automatically;
2) authorization for new judges comes from outside the political
process; 3) costs of operation are minimal; 4) it is easily under-
stood by the average citizen; and, 5) it is based on the principle
of equality.^{2.}

However, each of these reasons stated by Manning in support
of the population criterion can easily be used to support any
quantitative method of determining judge need, i.e., it is not the
population criterion that is the crucial issue but rather the use
of some sort of reliable standard per se. As Manning himself is
quick to note the crucial question is whether in fact there is any
correlation between increases and decreases in population and
subsequent increases and decreases in judicial demand (variation
in case filings).^{3.} Granted, there is sufficient criminal justice
research to suggest that there is some sort of correlation between
population and crime, e.g., areas of intense population concentration
or areas experiencing a sudden surge of population seem to bred a
proportionally higher ratio of crimes. However, there is no evidence
to help us determine the kind and exact number of cases that will
result from a certain percentage increase in population. Without
such knowledge we cannot adequately forecast judge need or plan for
the reallocation of judicial resources based on a population standard
alone.

Noting such deficiencies states have attempted to add a case
filing and/or disposition criterion to their population standard.

For example, Iowa uses a combined filing and population standard with a distinction between the base figures used in determining the need for additional judgeships based on the density of population represented by the presence of major cities. According to Manning in practice the formula gives districts with at least one city of 50,000 or more one judgeship per 550 court filings and 40,000 in population (or major fraction). In all districts without a major city there is to be one judgeship per 450 filings and 40,000 in population.⁴ While such an approach has the advantage of adding a degree of statistical sophistication to a pure population criterion, it still is a crude standard in that it makes no distinction between the kinds of case filings, nor does it take into account the past disposition performance record of judicial districts. Obviously, contrary to the law of identity in this situation a case is not a case. Different kind of cases make unequal demands on judicial and general court resources. Basic common sense indicates that a judge will have to spend more time and effort on a complex, multiple defendant felony case than he will have to on a simple misdemeanor violation. Again, without a system to take into account these obvious differences in cases adding-in other factors over and beyond population only improves our method of calculation by degrees. To achieve a real qualitative improvement in their methodology and to remedy the deficiencies in the previous enumerated methods to forecast judicial need many states have turned to a weighted caseload system. The next chapter will discuss this approach in depth.

III. Case Weighting In Detail

As part of this internship study, I asked the Research and Information Unit of the National Center for State Courts to provide information and selected readings on the use of weighted caseload figures to determine judicial manpower needs. As of September 21, 1977, according to their records and as the result of my own research, the following is a summary of the "state of the art" of weighted caseloads:

- . California - The system was first developed by the Administrative Office of the Courts in 1968 and was revised twice by Arthur Young and Company in subsequent years.
- . Federal Courts - A time study was completed by the Federal Judicial Center in 1970 for U.S. District Courts. The results are used to calculate the workload burden on Federal judges.
- . Florida - An adjusted weighted caseload study was completed in 1976 by W. E. Falck for the Florida Supreme Court.
- . New Jersey - Time summaries are submitted by the judges on a weekly basis and are used to develop a weighted caseload index. Assignment judges use the tables prepared in the Administrative Office to see that judges' workloads are equalized. The system is presently manually computed but a shift to computer is seen for the future.
- . Ohio - Hamilton County (Cincinnati) Court of Common Pleas contracted with Arthur Young to do a manpower requirement study. The system developed provides measures for arriving at judicial and non-judicial staffing needs by using a formula based on a weighted caseload index.

- . Georgia - A model case weight system has been developed for testing in Macon. If successful, it is projected for statewide implementation.
- . Virginia - A weighting system was developed by the Mid-Atlantic Regional Office of the National Center for State Courts. It is scheduled for implementation in 1977-1978.
- . Kentucky - A weighted caseload system has been developed for limited use in the state.
- . Washington - A system was developed by the Western Regional Office of the National Center for State Courts, implementation status is indefinite.
- . Puerto Rico - A system is currently under development.
- . Minnesota - A weighted caseload index for non-judicial (clerical/administrative) personnel was developed in a study done by Arthur Young and Company in Hennepin County.
- . Oklahoma, Missouri - Both states are in the development stage.

The basic idea underlying any case weight system is that it should be possible to calculate how much judicial time is required to dispose of a particular kind of case from past statistics collected on the time per disposition for each case taken either individually or in the aggregate. When combined with what is known about existing resources (for example, number of available judges and total judge time), one should be able to calculate judicial manpower needs based on pending caseloads and projections of future caseloads. However, given the simplicity of the mathematics there are numerous ways in which case weights can be formulated. Also, the development of weights has led to unforeseen difficulties.

California has had the longest experience with case weight systems among states beginning their initial efforts in 1966. The judicial weighted caseload system relies upon time studies to determine the average amount of judicial time necessary to process a case to disposition. This time is modified by the average ratio of dispositions to filings to achieve a time value based on filings. The time values for each case type comprise the weights used for determining a court's expected annual workload.

According to Arthur Young's study conducted in 1974 the expected annual workload for a court is determined by multiplying the forecasted filing volume in each case category by the corresponding filing weight. When added together, the products of the filing volumes and filing weights yield the expected total time, in minutes, to process those cases to disposition. Total expected process time comprises the first component of the weighted caseload system.

The time study is the most complex stage of the process for it is based principally on studies conducted by the California Judicial Council and estimates by the judges and court personnel. This process is costly, time consuming and, as experience has shown, it produces a statistic subject to great change. It involves timing each activity component, such as arraignment and pretrial conference for each case category. The timings are then multiplied by the frequency of their occurrence. The sum of the time/frequency component for a case category are its weight. When the system was first introduced in 1966 gross figures were used for civil and criminal trials and applied to all types of judicial proceedings. Later developments have lead to greater refinement and weights developed for each type of case.

The second component of the Arthur Young weighted caseload system, referred to as the "judge year value", is the average amount of time available to each judicial position for processing cases. This value, as with the filing weight, is determined during a time study by compiling the total time expended on case related matters, making allowances for illness, conference and workshop time, and vacation to determine the amount of judicial time available in a year. The total expected process time for a court, divided by the judge year value, yields an estimate of the number of judicial positions needed by that court.

In a 1976 update conducted by the California Administrative Office of the Courts the case weighting methodology was changed slightly as follows: the total case-related time recorded for each of the eleven case categories was divided by the total number of dispositions for each category reported by the participating courts on their monthly Summary Reports to the Judicial Council for the period studied. This provided an average case time in minutes for each category. These times became the disposition weights. In order to obtain filing weights each of the disposition weights was then multiplied by the average ratio of dispositions to filings for that category during the period studied. The courts because of the time, effort and expense involved could not repeat the 1971 and 1974 methodology of the Arthur Young Company which separately timed each case category.

In its six years of operation, the California system has been continually refined and updated with the most recent revisions occurring in 1974 and 1976. Such changes have lead to a revision of all weighted categories; establishment of judge year values on a sliding scale (range estimate rather than point estimate using standard error of the means) according to the size of the court; the

making of two-year future projections of workload increases based on an analysis of the previous five years workload statistics using both a curvilinear and linear regression methodology; increased system flexibility through individual court analysis; automation of the weighting system; and revision of the format of judgeship reports.

In spite of the time, cost and effort (for example, a 1976 re-examination of case weights conducted over a period of 44 court days in 32 superior courts involved the maintenance of 25,000 daily logs) that has gone into this continuing study, however, the California case weighting system has been open to criticism. In fact, it is the opinion of Ralph N. Kleps, Director, California Administrative Office of the Courts, that the California system "is being subjected to more questions today than ever before." In spite of the obvious advantages of a weighted caseload system over mathematically more primitive methods to determine judicial manpower needs (e.g., population, new filings, etc.) the question can still be raised as to whether there is a quicker, less expensive method to arrive at the same results. Perhaps a better way to rephrase this question would be to note that the success of the California system is dependent on a highly complex, reliable statistical gathering network. Since most courts do not maintain reliable data on such simple things as gross filings and dispositions, can a methodology be developed to allow them to establish case weights as aids in resource allocation? It was this idea, more than anything else, that lead to the initiation of this research project.

The Federal Court experimentation with case weights precedes the California study with a measure called the "weighted caseload

index" being adopted by the Administrative Office in 1962. The most serious attempt at revising these weights occurred in the 1969-1970 study.

The 1969-1970 Federal District Court Time Study was the outgrowth of an inquiry by Mr. Ernest C. Friesen, Jr., then Director of the Administrative Office of the United States Courts and Dr. John C. Holden, Director of the Department of Agriculture Graduate School and was conducted under the auspices of Justice Tom C. Clarke, Director of the Federal Judicial Center. A decision was made early in study to limit reporting to a relatively short period (approximately ninety days) and to concentrate on securing maximum participation by the judges. The reporting format was designed to be relatively simple in order to minimize the reporting ordeal on the part of an already overburdened judiciary. The form also had to be computer compatible. The overall proportion of reporting judges averaged 62 per cent with high of 67.3 per cent and a low of 48.4 per cent. Similar to the California study, judges were asked to record time spent on different kinds of cases, involving all case related activities, as well as non-case related activities.

Instructive for our present purposes, the study encountered certain difficulties and raised many questions which are germane to any planned case weight study. Given a supposedly homogeneous federal system, those responsible for collecting and coding all the data encountered numerous statistical and interpretative problems. It became painfully obvious that different courts were counting different things and that the federal system did not have an exact statistical basis. Clearly, there is no accepted measure of workload at the federal level even today. In addition, since

the study was conducted only over a ninety day basis it raised questions about the data reliability.^{7.} Finally, the report raises doubts as to the confidence level of the weights attained given the wide variations in disposition time for each case category over all the courts researched. In the words of the report, "no single set of criteria gives promise of crystal clear nonambiguous answers to these critical questions."^{8.}

An analysis of variance was applied to the data in order to determine whether the magnitude of the variation displayed for each case category was greater than expected. However, the results were less precise than desired because:

- . the time data was not normally distributed
- . there was missing data
- . analysis of variance assumes equal variability to the different factors at any level and independence among the various bases of classifications, factors which were not rigorously present in the present study.

The extreme variability in time per case plagued attempts at greater precision at every turn of the study. It was precisely such wide time variations that led Los Angeles County to develop separate weights as part of the California study. It is a problem that has been encountered in other similar studies (e.g., Florida, Virginia and Washington case weight studies). Since the initial 1969-70 federal study, there seems to have been no attempt to constantly update the weights as was done in California or to use them in any real judicial manpower decision making. Perhaps this failure to use the weights is due in part to the initial 1969-70 study's failure to resolve the variability

9.
question. Again, without costly follow-up efforts involving more comprehensive time studies there is no convenient way of resolving this problem. This would suggest that much could be gained if a proper methodology were followed which could provide the means for resolving such difficulties.

In addition to California and the Federal Courts other case weighting systems deserve at least passing mention. A caseload study has been recently concluded by the National Center for State Courts for the State of Washington involving both the Superior and District Courts. Conducted between October 4th and November 30th, 1976, and involving 60 percent of the state judges the study is notable in that it presents a simpler methodology to develop case weights than applied in California. The weights are calculated by dividing the case-related time, bench or non-bench time spent working on matters relating to the disposition of a case, for the eleven case categories studied by the total number of dispositions during the same time period. This calculation provides an average case time in minutes for each category. These times are called "disposition weights." Filing weights are obtained by adjusting the weights by the ratio between filings and dispositions. The estimated workload is obtained by applying the filing weight to present or projected filings. The sum of the workload for all categories represents the total workload for the court.

The staffing estimates are obtained by dividing the workload by the judge year value which is the average amount of judicial time available for case-related activities. The judge year value is determined empirically through the time study.

Another caseload system under development by the National Center for State Courts, Mid-Atlantic Office, for the State of Virginia also presents some unique features. Some other weighted caseload systems develop averages by timing only some judges or courts; all of Virginia's circuits will be timed. Unlike some systems, Virginia's judges will report time working in their chambers. The major innovation of the Virginia system is to time each court for only two weeks during a calendar year. Since average disposition time is sought for the weight, all other systems have timed judicial activity for several months, so that at least some cases will start and be completed during the test period. Virginia's circuit court system will be timed for twelve months, but each court will contribute only two weeks to the total picture. Since all of Virginia's courts set their dockets during established "terms," the schedule for timing can be arranged so that a statistically valid average time can be achieved for the entire Commonwealth even though the two-week average for any one court might be quite misleading compared to its true workload over a year. In spite of the optimism voiced in the National Center report, one can easily wonder if the results of the study will in fact lead to acceptable average weights, or whether the study can escape the criticisms leveled by Robert W. Gillespie with regard to the 1969-70 Federal District Court Case Weight Study.

The Florida system created by Willim E. Falck involves the establishment of a uniform work year time value (standard judgeship measure), adjusting that figure to reflect the time available for the

disposition of cases, and then dividing it into the total time needed for disposing of a certain number of cases in the coming fiscal year. The total time needed to dispose of cases is determined by multiplying projected filings by the time each case takes on the average. The time each case takes on the average was determined in the time study conducted in each circuit. As described, the Florida system is quite similar to the previous mentioned caseload weighting systems.

In addition to the before mentioned case weight systems, there have been other interesting developments in this field that demand mention as follows:

- . Alabama - A report prepared by the Institute for Court Management for the Alabama Department of Court Management indicates how criteria can be developed for judicial manpower decisions in the absence of a solid statistical base and without having recourse to a time consuming and costly time study of judicial proceedings. The report uses population, filings, dispositions, pending cases and attorney data to base decisions concerning circuit boundary changes and the addition/deletion of judgeships.
- . Colorado - The goal of this project is to generate court caseload projections and to reveal the pertinent social factors which influence caseload using a regressive modeling technique. The methodology of this study will be to research localized areas, such as counties, and then generalize these relatively specialized results into results which can be applied to classes of counties which have demographic, socio-economic and political factors in common. By indicating areas where judicial activity is on the

rise beyond the current court capacities, plans can be formulated and acted upon before caseloads get backlogged. This is a current on-going project of the Planning Unit of the Colorado State Judiciary.

- . Michigan Law Review - David S. Clark and John Henry Merryman present a generalized formula for estimating the probable duration of litigation and apply same to the Italian preture courts of general civil jurisdiction over claims of moderate amounts, for each year from 1947 to 1970.
- . Clemson University - In the words of Project Director Rodney H. Mabry, the original intent of this study was "to devise a standard judicial service unit -- a system of weights which could be applied to various cases converting them into standard units. These standard units could then be summed to estimate the level of judicial activity being performed in given jurisdictions which would be comparable across jurisdictions. Indeed, we wished to devise this weighting system on a highly disaggregated basis in such a way that it would be applicable across the nation." 10.

Of all the systems enumerated in this report, it is the opinion of the present author that case weighting presents the most direct and efficient methodology to determine judicial manpower needs. However, most of the systems detailed in this study involve, to some degree at least, a costly and time consuming time study. Given the superiority inherent in the case weighting system to deal with different kinds of cases and a variety of judicial proceedings, is there some acceptable way of arriving at such case weights that dispenses with the need to conduct time studies? With this question in mind we turn to a discussion of Pennsylvania.

IV. Pennsylvania and the Delphi Method

Prior to 1974 Pennsylvania had no commonly agreed upon way to determine the need for additional judgeships. Rather, each judicial district when faced with a growing backlog problem, and perceiving this situation as calling for additional judges, developed its own arguments for increased resources based mainly on a population index, caseload statistics, or some combination of both.^{11.}

In a November 7, 1974 memorandum to the Chief Justice and Justices of the Pennsylvania Supreme Court, Carlile E. King, Deputy State Court Administrator, presented a method for determining judicial manpower needs based on a modification of the "Iowa Plan." The "King Formula" gave equal weight to population and filings. Basically, it operated on the assumption that there should be one judgeship for each 400 filings and 40,000 population. However, the King formula excluded Allegheny and Philadelphia counties and dealt only with counties that had at least two authorized judgeships, thereby dealing with only 32 out of Pennsylvania's 59 judicial districts. The formula also assumed some direct correlation between population and workload, a fact that has never been statistically confirmed. Finally, in dealing with raw filings it made the unwarranted assumption that all cases are the same. For all of these obvious inadequacies, the King formula proved insufficient.

In a July 9, 1975, the Honorable James J. Manderino, Majority Whip of the Pennsylvania House of Representatives, requested that each of the judicial districts assess a study which was formulated by two individuals from Westmoreland County. Basically, this approach,

which is known as the Mihalich and Martin (or M & M formula), operates as follows:

- . Follows the format of the Pennsylvania State Court Administrator's Annual Report (see Appendix A) by dividing cases by type and method of disposition -- including additional categories for "population" and "trial days consumed."
- . Assigns a scale number of 1 (least time consuming) to 10 (most time consuming) to each case category to represent the time and effort expended by judges to dispose of cases of that type.
- . Develops a methodology whereby the number of dispositions per case category is multiplied by the scale number to arrive at "evaluation points." Summing all evaluation points across all case categories and dividing by the number of authorized judgeships leads to a final "indicator number." By performing a similar process for all judicial districts, one can arrive at a ranking of all districts based on high and low indicator numbers, the assumption being that counties with high indicator numbers probably need additional judges, while counties with low indicator numbers are over-staffed.

In three separate correspondences dated August 11, October 1, and October 14, 1975, the Planning Unit of the Philadelphia Court of Common Pleas prepared replies to the Mihalich-Martin formula which raised the following criticisms and/or recommended the following changes in the M & M formula:

- . that the scale weights be amended (on a scale of 1 to 15) to more accurately reflect the judicial workload in Philadelphia (calculations and rankings of all judicial districts were made, see Appendix A for Philadelphia weights).
- . that the indicator number may not be an accurate enough barometer to make appointment decisions, since there existed no empirical verification of the assigned weights, i.e., there was no way of knowing how well the weights actually correlated with judicial output.
- . that the use of the population category was irrelevant and should be eliminated, since no causal link existed between population and judicial workload.
- . that the "trial days consumed category" was unnecessary, since the core of the M & M formula concerned itself with the method of disposition per each case category. As such, each scale weight included a measure of time expended on a case, so that to count "trial days consumed" as a separate category was to count the same thing twice.
- . that caseload backlog and credit for judges lent to other judicial districts were not addressed by the formula.
- . that the weights that were assigned to each category seemed to be somewhat arbitrary.
- . that for any objective analysis the data collected must be accurate. However, statistics reported in the State Court Annual Report were suspect.

The conclusion of our three month study of the M & M formula, then,

was that the state needed an objective means of determining judicial manpower requirements and that the M & M method was a step in the right direction and an improvement over the King formula. However, without some means of verifying either the M & M or Philadelphia scale weights, no one could be sure if the weights actually reflected judicial time and effort expended on particular cases. While everyone saw the need for such verification, resources were lacking to conduct a complicated statewide time study of judicial proceedings. Some other method needed to be found and it was with this idea in mind that our attention was directed at the Delphi survey technique.

The Delphi survey technique was developed as early as 1964 by the Rand Corporation based on earlier research conducted by Dalkey and Hammer in 1952.^{12.} The Delphi method was originally designed to achieve consensus on the part of research experts through a series of questionnaires. By successively questioning individual experts, without face-to-face confrontation, interspersed with controlled feedback of the group's opinion and of reasons offered in support of such opinions, the Rand Corporation was able to induce this group of experts to refine their estimates. The results of earlier studies in this area seem to confirm the following:

- . that the convergence of opinions was quite noticeable, though it may have been induced to an undesirably large extent by the experimental procedure.
- . that the convergence of the median opinions to the true values occurred in the majority of cases, an important fact if we were going to use a modified version of the Delphi technique to arrive

at case weight estimates in Pennsylvania.

- . that the use of self-appraised competence ratings in forming a consensus appeared to be a powerful tool for increasing the reliability of the group estimates.

Used primarily by the Rand Corporation as an aid in long range forecasting and planning, the Delphi method seems to be applicable elsewhere. Continued use at Rand indicates that the method is a powerful tool in generating group consensus and that median scores continue to approximate truth/reality in controlled experiments when appropriate safeguards and subsidiary techniques are used.^{13.}

It should be recognized at the outset that the use of expert opinion is not necessarily a retreat from data reliability. Judgement and informed opinion have always played a crucial role in human enterprise. Expert judgement can be incorporated into the structure of an investigation and can be made subject to some of the safeguards that are commonly used to assure reliability and replication in any scientific inquiry.

Perhaps one of the more imaginative adaptations of the Delphi method and a study that gave birth to the Pennsylvania Case Weight Study is a report entitled, "Experimental Court Case Weights Using the Delphi Method," by David P. Doane of the School of Economics and Management, Oakland University.

It should be clearly obvious that it is extremely difficult to take a totally time-motion approach to judicial procedures as was done in California. Not only would the application of such an approach appear to be impractical in Pennsylvania -- the time and money involved to conduct such time studies exceeding present resources -- but questions

can be raised as to whether such an approach would readily give us a fair estimate of judicial effort.

Obviously, we are not dealing with a mechanical or repetitive process where we have clearly defined steps when we talk about judicial procedures. To some degree each case is unique and requires a different response on the part of the judge. The best we can hope to do is to come to some average estimate of judicial time and effort per each kind of case and/or program area. This is precisely what each time study was forced to do, i.e., average out all the differences. Such averages raised questions about the reliability of the weights given the wide divergences in the source data (recall the Federal Court Time Study Project, 1969-70). If similar averages can be attained through using the Delphi method that in fact closely mirror the actual time and effort judges spend on cases, then we have registered a huge gain in using this method over the time study approach.

Perhaps it was unfortunate that the author, David P. Doane, chose to use the inappropriate words "objective" and "subjective" to distinguish between the quantifiable time study approach at arriving at case weights and the Delphi method. No criteria, even mathematical ones, are totally objective. The acceptance of any standard involves a subjective decision of some sort. In turn, the Delphi method is not strictly subjective. Granted, the approach seeks to arrive at a consensus of opinion and we all know that opinions can be faulty. The important question is how would individual judges arrive at an estimate of average time and effort spent on individual cases if they were asked to do so as part of a Delphi survey. In a crude sort of way they must rely on some mathematical modeling technique, even if it means only doing rough calculations in their heads. The important point is that it can be safely assumed that judges would base such estimates on their own experiences,

that they would honestly and to the greatest degree of accuracy possible base their opinion on the actual amount of time they expended on cases. Research conducted by the Rand Corporation seems to indicate that Delphi participants do not simply make wild, unsubstantiated guesses. In fact, under controlled conditions such participants will change their responses so that overall there is a greater convergence to truth. In addition, there is some empirical evidence to suggest that weights attained through time studies and the Delphi method will be remarkable similar. 14.

Perhaps such Delphi case weight calculations are not as precise as some time and motion analyst would want, but they may be more accurate in that such judicial calculations include qualitative factors (e.g., degree of difficulty of case, technicality of points of law, etc., versus actual time spent on the case). It would appear that time alone should not be the only measure of judicial effort. Cases that take a long time to dispose may be rather simple in nature, while cases that take little time could conceivably be most complex. Rather than being unreliable, therefore, the Delphi method might be a better barometer of judicial effort in that it taps a very valuable resource, the individual experiences of judges sitting on the bench. More importantly, involving judges in the actual development of case weights without burdening them with time consuming record keeping chores should engender a sense of participation and make more readily acceptable any final method for determining additional judgeships that is developed.

Given the pioneering work of David Doane, contact was made with the Pennsylvania State Court Administrator's Office, especially Mr. Clifford Kirsch, with the suggestion that a similar effort be made in Pennsylvania.

After much discussion and numerous planning meetings a decision was finally made to conduct an experimental case weight study using the Delphi approach. We turn now to a discussion of the methodology behind this study and the results of same.

V. Pennsylvania Case Weight Study

There were many considerations that went into the design of the questionnaire used in the Pennsylvania Case Weight Study (see Appendix B). Since the Mihalich-Martin formula had received wide circulation among Pennsylvania judges, and since one of the aims of the present study was to verify the accuracy of the M & M and Philadelphia weights, the decision was made to follow the format of the M & M report with the following exceptions:

- . Population, defendant records received (criminal cases), new cases praeciped for trial (civil cases), arbitration and trial days consumed were dropped from consideration either because it was felt that these categories were irrelevant, amounted to counting the same thing twice, or involved no expenditure of judicial time and effort (e.g., arbitration hearings are conducted by a team of three lawyers).
- . The "Miscellaneous" disposition category was broken down into its component parts, that is: adoptions, post conviction hearing proceedings, child custody cases, summary criminal appeals, mental-health cases, condemnation cases and statutory appeals (in Appendix A the Delphi results in each of these areas have been averaged to produce a single weight under the "Miscellaneous" category for comparison with the M & M and Philadelphia weights).

Unlike the Doane study which asked participants to rank cases on a sliding scale of "very time consuming" to "least time consuming", we simply asked each judge to rank cases on a scale of one to ten individually depending on time and effort expended. We feel this approach is more

simple and direct and allows for a more accurate measure of time and effort, e.g., Doane had to convert his sliding ranking scale into a numeric scale for comparison purposes. Also, because of logistic, resource and time problems we were forced to use a mailed questionnaire and to only engage in a two-step survey process. Both the Rand Corporation and David P. Doane followed up their initial mailed questionnaire with a direct face-to-face interview. Rand also recommends at least four series of questionnaires to produce a better consensus of opinion. Recognizing our limitations, however, we still believe our methodology was sound. This was an experiment to prove the feasibility of using a survey technique to develop case weights. I believe we have proven this fact. Obviously, future efforts could involve follow-up questionnaires which could further refine our results. More importantly, we feel that further questionnaires would not drastically change our weights but rather would lead to further refinement, a fact confirmed by research undertaken by the Rand Corporation. Therefore, we feel that our results (case weights) were not greatly affected by our research methodology.

The 24 judges surveyed represent 8.4% of the 285 authorized Common Pleas judgeships in Pennsylvania. While there are no hard and fast rules determining how large a sample should be, the 8.4% total seems to be within acceptable statistical limits. Also, every attempt was made to select a representative sample of judges. For example, four judges were surveyed from Philadelphia for 16.6% of the sample group. This agrees well with the population mix, City of Philadelphia compared to the State of Pennsylvania, of 16.5%. Also, there seems to be a good spread

statewide. Of the 19 counties selected six (6) were in the small category (less than 100,000 population), eight (8) were in the medium category (population from 100,000 to 400,000) and five (5) in the large category (population of over 400,000).

Results of Phase I of the Delphi survey can be found in Appendix C of this report. Once returns were collected, analyzed and averages (means) determined including standard deviations for each category, Phase II of the study was initiated.

A second questionnaire was sent to the same 24 judges indicating the average weights and asking each judge to re-rank. While the results of the study are still being analyzed, we have included average case weights for Phase II in Appendix C for comparison purposes. (Because of what we felt were acceptable standard deviations -- see page two of Appendix C -- we have used the mean as a measure of central tendency rather than the median because the mean can be easily mathematically manipulated.)

Because we have complete results from Phase I of our study we will concentrate our analysis on this stage of our survey process. Of the 24 surveys involved in the study, 18 were fully completed and returned. This gives the study a response rate of 75%, a more than acceptable rate of return. In addition, two other surveys were returned partially completed. The information from these surveys has been included in the analysis of this study. They account for the use of three different divisions in the calculations of case weight averages.

In the criminal cases section, we found as expected that judges rated jury trials as the most time consuming category in the entire survey. It received a ranking of 9.25 in Phase I and 8.86 in Phase II. The drop in weights during Phase II is noticeable across all the case categories. This

would tend to suggest that judges in general may have overestimated time and effort expended on cases, a totally expected phenomenon. Phase II allowed them to correct for this overestimate, while still retaining the relative overall ranking of cases. Waiver trials ranked second and guilty pleas third with closely paralleled rankings, e.g., 5.05 to 4.52, and 4.95 to 4.29. The judges rated the remaining categories in this section as taking up very little of their time. A review of the standard deviations (page 2 of Appendix C) also indicates a greater consensus as indicated by the smaller standard deviations as the result of Phase II. The only exception to this is the jury trial area where the standard deviation actually increased -- 1.29 to 2.37 -- from Phase I to Phase II of the study. Perhaps this is indicative of the time variability of jury trials as illustrated by the high time variability ranking (8.1).

Most of the time involved with these case categories was spent in the courtroom. All the confidence ratings for this section were good. These ranged from a low of 6.3 to a high of 8.91. The time variability ranking also seems to be within acceptable limits except for the previously mentioned jury trial estimate (8.1).

There also appears to be a strong correlation between the average time spent on a case and the overall interest rating of that case. The study indicates that the most time consuming cases are also the most interesting cases. At the same time, the least time consuming cases are also the less interesting cases.

In the civil cases section, the category that the judges found the most time consuming and interesting was the jury verdict category. It had a ranking of 8.24 on Phase I and 8.00 on Phase II. Again, the same

process seems to be at work as with the criminal section, e.g., there is a stronger consensus as the result of Phase II with the exception of jury verdicts -- 2.32 to 2.47 in standard deviations. As expected, there was slightly less time spent in the courtroom and more time spent in chambers and research on civil cases as compared to criminal cases, which is indicative that most civil cases are settled out of court through conferences between the judges and individual attorneys.

Following jury verdict on the "A" scale, three categories were rated rather closely together. Non-jury had a rating of 5.38 (5.18); hearing-settled before verdict had a rating of 4.86 (4.77); and, the settlement category had a rating of 4.19 (3.96).

The final section of the survey dealt with "other cases" disposition. The responses for the "average time spent on case" ranged from a high of 5.95 (child custody cases) to a low of 2.4 (divorce cases). As with criminal cases, in all but two categories (divorce and orphan court audits) the judges spent a large majority of their time dealing with cases in the courtroom. Unlike the criminal and civil sections, however, there was less convergence of opinion on the second round of the survey (five out of the eleven categories had a larger standard deviation in the second round). This might be due to the fact that criminal and civil cases demand the most attention of courts throughout the Commonwealth so that an equivalent amount of time and effort is expended by each judicial district on dispositions in these areas. In turn, there is a great deal of difference in how juvenile, domestic relations, divorce and adoption cases are handled, particularly between smaller judicial districts and larger urban ones (e.g., Philadelphia and Allegheny counties).

Overall, the second round of the Delphi survey seems to have lead to a greater degree of convergence of opinion in keeping with the earlier research at the Rand Corporation. In addition, there seems to be fairly good agreement between the Delphi weights and the M & M and Philadelphia weights (converted to a ten point scale). The notable exceptions to this observation seems to lie with the following categories:

- . Philadelphia awarded a weight of only 2.67 to criminal cases, guilty plea convictions.

- . The Delphi weight assigned to "other dispositions", criminal and civil cases, is slightly higher than the M & M and Philadelphia weights.

- . Other judicial districts seem to expend more time and effort on juvenile, domestic relations and divorce dispositions than Philadelphia.

Recognizing the differences that surely exist between large urban areas and smaller rural areas, however, we feel that these minor differences in the weights are intuitively acceptable.

While these were obvious differences of opinion among the judges surveyed, the standard deviations do not appear to be exceptionally large. While there are no hard and fast rules as to what constitutes a "too large standard deviation", any deviation that is larger than one-half the mean (average) may be considered large as a rule of thumb. Such deviations occur in the following categories: CP Criminal-guilty pleas, disposition in lieu of trial and other dispositions; CP Civil - settlement, stricken, other dispositions; Divorce; Orphan's Court; and Adoptions.

However, none of these deviations is that large, so that the results of the survey seem to be acceptable according to normal statistical standards.

Once weights were established for each case categories they were applied to 1976 case disposition data with the results as noted in Appendix D. In addition to the weighted caseload ranking, a weighted inventory ranking was devised following the methodology as explained in Appendix D. Within the limitations noted throughout this report, therefore, Pennsylvania now has some means to determine the need for judicial manpower that relies on more than mere population or raw case filings/dispositions, and that is not subject to the mere caprice of the political process. Requests for additional judges from individual judicial districts can now be measured against the ranking established as a result of the Delphi survey. Since the weights have already been converted into standard deviations, a standard range can be developed to use as a measure to determine the need for more judges. For example, one possible model would be to say that judicial districts that fall above two standard deviations of the overall mean weight would seem to be in need of additional judges, while districts that fall below two standard deviations of the mean might be overstaffed, especially if they also have a low weighted case inventory ranking.

VI. CONCLUSION

We believe we have shown that the Delphi method can be used to establish reliable case weights for specific classes of dispositions. The significance of judge participation in the study increases the validity and reliability of the weights. The low standard deviation and the close agreement of the Delphi weights with the M & M and Philadelphia weights seems to reinforce this level of validity. While only an actual time study would fully confirm the accuracy of the weights, we have no reason to doubt that the weights developed closely reflect actual judicial time and effort expended on cases. This assumption is confirmed by past research conducted by the Rand Corporation and by comparing the 1977 Federal Court Appellate Weights Study with the 1969-1970 Federal District Court Weights Study. The survey technique also seems to engender the needed sense of participation and cooperation among the judges surveyed. Judges showed a strong interest in developing case weights to accurately reflect judicial workload as reflected by their comments on the Delphi survey.

While the Delphi results reflect only a small view of a limited number of judges, there is no reason to believe that if the survey were enlarged that the results would have been greatly different. It is recommended that follow-up surveys be conducted in the future to confirm this hypothesis and to increase the validity and acceptance of case weights.

Given the different methods to establish case weights we believe the Delphi methodology presents an attractive, inexpensive alternative to time studies. This is particularly true in states that do not have a developed statistical basis or do not have the necessary resources to conduct time studies. In fact the Delphi method might be superior to such time studies

in that it allows respondents to include personal, qualitative factors in their estimates. Weights also can be easily adjusted through subsequent questionnaires if there is a statewide change in judicial procedures, a situation which does not exist when one is forced to have recourse to time consuming time and motion study techniques. From every indication it appears that the Delphi technique can be applied and used to determine how much output can be anticipated from a judicial district and how well districts are keeping up with case volume (see Appendix D). In this sense Pennsylvania now has a method for measuring the need for additional trial court judges within the state where previously no reliable method existed. We would recommend that other states should initiate such efforts within their own jurisdiction.

A review of Appendix D indicates that Philadelphia ranks 22nd (with only Common Pleas data) or 19th (with Municipal Court data included) in the overall weighted caseload ranking.¹⁵ Perhaps there is a lesson to be learned from these results for any large urban court which might reflect on their willingness to participate in any statewide case weighting effort (e.g., in California, Los Angeles has developed its own set of case weights). While there is fairly good agreement between the Philadelphia and Delphi weights, there is some differences in the weights which might lead to a general lowering of Philadelphia in the overall rating. For example, while we show a weight of only 2.67 for guilty pleas, criminal cases, the Delphi survey came up with a weight of 4.5. This means that judicial districts with high guilty plea rates will receive a disproportionate higher credit for judicial manpower expended per guilty plea disposition than

we would attribute to Philadelphia judges using the Philadelphia weights. Such differences also exist in the following categories: criminal cases - nol pros, A.R.D., other; civil cases - stricken, other dispositions; Juvenile; Domestic Relations; Divorce; Orphan's Court, and Miscellaneous categories. However, manipulation of the weights resulted in no dramatic change in the Philadelphia ranking. Our past experiences with manipulating the M & M and Philadelphia weights indicate that slight modifications in the weights will not significantly change the comparative ranking of judicial districts.

David P. Doane details a study he conducted on case weights in the Justice System Journal, 270 (Spring 1977), Vol. 2/3, in which he tested the hypothesis that "smaller, low-workload circuits appear more productive...(while)...larger, high-workload circuits generally remain unchanged or have slight reductions in perceived case dispositions." Using data appearing in the Michigan State Court Administrator's Annual Report, Doane operates on a two a priori assumptions, namely:

- 1) Small circuits handle different kinds of cases than large, urban districts,
- 2) Small circuits dispose of cases in different ways than larger, urbanized districts (for example, assuming urban courts would have more guilty pleas, less trials, a situation which is not true in Pennsylvania).

Not wanting to detail the whole study, Doane seems to demonstrate statistically that small circuits do rise in productivity - around 22%-- while large districts drop in productivity, though smaller than expected-- only around 1.3%. However, it is hard to see what the report really says.

Doane does not indicate why this change occurs except to suggest that it is due somehow to his a priori assumptions. Yet, he does not indicate in the article if in fact there is a difference in case processing in Michigan, a fact one would think he could demonstrate from data in the Michigan Annual Report. Also, it is not clear we can apply the study to Pennsylvania, since there may not be the same differences in case processing between Philadelphia and small, rural judicial districts that seem to exist in Michigan. In fact, the opposite situation seems to exist in Pennsylvania, namely, that Philadelphia has more trials, while smaller rural districts have more guilty pleas, etc.

It may be true that Philadelphia handles more complex cases than do other judicial districts, so that while we are disposing of fewer weighted cases per judge than other districts, our judges are working just as hard. However, there is no real way to prove this assumption except to note that Philadelphia has a high percentage of trial dispositions when compared to other judicial districts.

Also, we receive no credit for arbitration dispositions. The arbitration limit in Philadelphia and Allegheny Counties is \$10,000 and \$5,000 in almost all other counties in Pennsylvania. This means most counties are receiving case weight credit for civil dispositions between \$5,000 and \$10,000, while Philadelphia is receiving none. There is no way to know what effect this has on Philadelphia's ranking except that it probably causes us to drop slightly.

It is interesting to note that a majority of judicial districts (15 out of 21) that are ranked above Philadelphia in the 1976 case weight analysis have only one or two authorized judgeships. It is not clear

what this indicates except to suggest that judges in such small districts are under the gun to produce so that one way or another they pump out cases, while judges in any large system (Philadelphia, Allegheny) tend to fall behind in production. Call it a feature of individual or group psychology and/or a standard feature of large bureaucracies but we cannot expect (nor will we receive) the same output from people operating in a huge system as we can from individuals in a small system. We are just too large to be productive. Overall, the case weight study tends to indicate that Philadelphia is slightly above average in output (similar to Allegheny County), a conclusion the present author can readily accept given his inside knowledge of the workings of the Philadelphia system. This is just another way of saying that the Delphi survey weights are accurate reflections of judicial time and effort expended on cases even for Philadelphia. Our experiences should also serve to allay the fears of apprehension of individual judicial districts to participate in a statewide survey given the inborn suspicions and differences that supposedly exist between urban and rural courts. What our survey and analysis seems to indicate is that, while these differences do exist, they are not significant enough to discount the results of the Delphi weights or to make application of statewide average weights an impossibility.

Finally, by way of example an attempt was made to use the case weight concept to measure the performance of the Philadelphia courts for the years 1973, 1974 and 1976. The original Philadelphia weights were slightly adjusted using the fifteen point scale (see Appendix F).

For the three years surveyed we have the following results:

Year	Raw Dispositions	Weighted Workload Average Per Judge
1973	148,389	4387 (98)*
1974	154,992 (4%)**	4472 (99) (2%)
1976	168,959 (9%)	4806 (99) (7%)

* Indicates judgeship totals used as divisor.

**Indicates percentage increase over previous year.

While the results obtained are less than spectacular due to the meagerness of court statistics -- the court has reliable data for only 1971 forward -- they do give an indication of how case weights can be used by local jurisdictions (see Gillespie's study, Judicial Productivity and Court Delay, previously referenced). The analysis indicates that for Philadelphia an increase in raw dispositions (which means nothing in-itself) was marked by an increase in the weighted workload average per judge, though the percentage increase in this area for each year is less than the increase in raw dispositions. By building up statistics for a period of at least ten years, courts should be able to develop a range of weighted averages -- high and low -- so that subsequent performance could be measured. In addition, such weighted averages could be broken down by court jurisdiction areas and method of disposition, so that courts can better meet anticipated needs in any one area through reallocation of resources. While not a panacea in-itself, weighted caseload statistics present another tool to court managers and administrators to enable them to be in a better position to evaluate past endeavors and plan for future contingencies.

FOOTNOTES

1. Judeship Criteria Standards for Evaluating the Need for Additional Judgeships, Christopher A. Manning, An American Judicature Society Research Study, 1973, page 8.
2. Ibid., page 9.
3. Ibid., page 10.
4. Ibid., page 10.
5. Weighted Caseloads and the Need for Judges, Ralph N. Kleps, California Judicial Council AOC Newsletter, July-August, 1975.
6. District Court Studies Project: Interim Report, Steven Flanders, Federal Judicial Center, June, 1976.
7. An interesting critique of the 1969-70 study is to be found in an article entitled, Measuring the Demand for Court Services: A Critique of the Federal District Courts Case Weight, by Robert W. Gillespie which appeared in the Journal of the American Statistical Association, March 1974, Volume 69, Number 345. In the article arguments are presented to show that the weights developed lead to serious underestimation of judicial time and effort per case due to the fact that the study was conducted over a ninety-day period.
8. The 1969-70 Federal District Court Time Study, Federal Judicial Center, FJC Research Series No. 71-1, June 1971.
9. This is not to suggest that no work has been done in this area. See particularly Robert W. Gillespie's study, Judicial Productivity and Court Delay: An Exploratory Analysis of the Federal Districts Courts, Visiting Fellowship Program Report, National Institute of Law Enforcement and Criminal Justice, April 1977. While this study uses the case weights developed in the 1969-70 effort for the most part it extends the analysis in that it attempts to formulate a measure of court output, using multiple regression analysis, to study the causes of differential performance among the courts, (i.e., court delay). The study is very suggestive in that it shows how case weights can be used in other ways than merely determining judicial manpower needs.

See also FJC Staff Paper, Appellate Court Caseweight Project, Federal Judicial Center, June 1977. This project attempted to develop an accurate and objective measure of caseloads in the United States Courts of Appeal. The utility of such a measure is that it would serve as a basis for equitable allocation of judicial resources to courts or of cases to individual judges.

An interesting feature of this study is that unlike the 1969-70 analysis which involved considerable timekeeping on the part of judges, the Center used a more direct method, it simply asked judges for their estimates of the relative workload, or burden, associated with each of the 23 case types. As such, it resembles the approach taken in the Pennsylvania study.

10. An Economic Investigation of State and Local Judiciary Services, Rodney H. Mabry, National Institute of Law Enforcement and Criminal Justice, Project Grant Number 75-NI-0037, November 1977.
11. For an example of such individual judicial district justification for judicial manpower see, Requirements of Additional Judges for the Court of Common Pleas of Philadelphia, John J. McDevitt, Lewis J. Goffman, Arlen Specter, Pennsylvania Bar Association Quarterly, June 1971, pages 420-427.
12. Convergence of Expert Consensus Through Feedback, Olaf Helmer, Rand Corporation Publication P-2973, September 1964.
13. For a detailed discussion of the methods used to elicit more accurate estimates see The Delphi Method III: Use of Self-Ratings to Improve Group Estimates, N. Dalkey, B. Brown and S. Cochran, Rand Corporation Publication RM-6115-PR, November 1969.
14. For a comparison of case weights attained through time studies and the Delphi method see page 19 of the FJC Staff Paper, Appellate Court Caseweight Project, June 1977, previously referenced in this report.
15. Philadelphia Common Pleas Court has jurisdiction in all criminal cases where the maximum criminal sentence exceeds five years. Municipal Court has jurisdiction in all criminal matters where the maximum sentence is five years or less. Any defendant convicted at the Municipal Court level has an absolute right to a trial de novo at the Common Pleas level.

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APPENDIX A

COMPARISON OF CASE WEIGHTS
M/M FORMULA - PHILADELPHIA WEIGHTS - DELPHI METHOD

CATEGORY	M/M SCALE NUMBER	PHILADELPHIA SCALE NUMBER		DELPHI METHOD	
		15 pts.	10 pts.	ORIGINAL WEIGHTS	REVISED WEIGHTS
1. <u>Population</u> (Per 10,000)	10	-0-	-0-	-0-	-0-
<u>Criminal Cases</u>					
2. a. Defendant Records Received	3	2	1.3	-0-	-0-
b. Defendant Records Disposed:					
3. (1) By Guilty Pleas	4	4	2.67	4.5	4.29
4. (2) Tried by Jury	10	15	10.0	9.25	8.86
5. (3) Jury Waived	6	6	4.0	5.05	4.95
6. (4) Nol Pros	1	1	.73	1.3	1.29
7. (5) A.R.D.	4	2	1.3	2.67	2.43
8. (6) Disposition in Lieu of Trial	1	3	2.0	1.95	1.62
9. (7) Other "disposition"	1	1	.73	2.35	1.91
<u>Civil Cases</u>					
10. a. New Cases Praeciped for Trial	3	3	2.0	-0-	-0-
<u>Disposition:</u>					
11. (1) Non-Jury	6	6	4.0	5.38	5.18
12. (2) Jury Verdict	10	12	8.0	8.24	8.00
13. (3) Settlement	5	5	3.33	4.12	3.96
14. (4) Hearing-Settled Before Verdict	7	6	4.0	4.89	4.77
15. (5) Stricken	1	1	.73	1.52	1.36
16. (6) Other "disposition"	1	1	.73	2.62	2.27

17. ARBITRATION "dispositions"	1	1	.73	-0-	-0-
18. JUVENILE "dispositions"	4	4	2.67	5.7	5.0
19. <u>DOMESTIC RELATIONS</u> "dispositions"	3	3	2.0	4.75	4.33
20. DIVORCE "dispositions"	1	1	.73	2.40	2.29
21. ORPHANS' COURT "Audits Concluded"	4	4	2.67	3.22	2.71
22. MISCELLANEOUS "dispositions"	4	4	2.67	2.9	3.4
23. TRIAL DAYS CONSUMED (per day in each district)	10	-0-	-0-	-0-	-0-

APPENDIX B

The Honorable _____

Dear Judge (President Judge):

You are one of 24 fellow law judges designated by this office to participate in a statewide project to test the application of a scientific modeling technique, known as the Delphi Method, in determining judicial case weights. I hope that you will agree to serve and take time from your busy schedule to assist me in the development of the project, since it is only through your participation with the others that any meaningful results will be achieved.

Your selection and the others were based upon the following criteria: geographic distribution; areas of judicial specialty (ies); workload; size of court; and interest in judicial administration.

I have chosen the Delphi Method because it encompasses significant features for assessing the amount of judge's time involved in different types of judicial activity. Judges are the best source for measuring judicial time. The Delphi Method considers time required for a case of any nature by measuring bench time, chamber time, and time spent in legal research and opinion writing. It also considers the variances in time for cases of any given type. This project is not designed to mechanize or compartmentalize judicial effort, nor is it felt that judicial workload can be totally quantified. It does aim to solicit fair and thoughtful opinions from the participants.

The goals of this sampling are multifold and include possibly development of a case weighting system, future inclusion of the Delphi method in the Pennsylvania Judicial Information System, determining the needs for additional judges, evaluating the reliability of the Mihalich/Martin and Philadelphia case weighting proposals, and determining whether any project of any kind should even be considered.

For your information, I have enclosed an explanation of the Delphi Method and instructions for completing the questionnaire.

I would appreciate it if you would study and complete the questionnaire form and return it to me by _____.

If you should have any questions concerning this project, please do not hesitate to contact us.

Thank you for your cooperation.

Very truly yours,

Alexander F. Barbieri
Court Administrator of Pennsylvania

Enclosures

EXPLANATION OF DELPHI METHOD

The Delphi Method is used to analyze complex issues which cannot be studied easily in a quantitative, statistical way. The method will utilize, for the purpose of this project, questioning to be completed by judges. Their internalized experience becomes the primary data source. A questionnaire seeks judgments of the judge upon an issue.

Responses will be compiled showing each expert the distribution of opinions obtained from other experts, not identified by name, and shows where on this spectrum the given expert's view lies. The compilation attempts to analyze if there is really a consensus ("true opinion") if expert opinions are really strongly divided, or if the project should be continued. Responses will also be compared with the Mihalich/Martin Study and Philadelphia Case Weighting Program.

This method was developed at the RAND Corporation in connection with technological forecasting, and is currently being applied, with different goals, to the Michigan Circuit Courts. It is viewed as an alternative to the present trend toward time-and-motion studies of judicial processes, including such experiments as the California one, in which judges had to keep "time sheets" for an extended period of time. That sort of approach is wasteful of valuable time, and treats the courts like an industrial process. The Delphi Method, in contrast, is much more sophisticated and is more likely to yield useful information about how court problems are viewed by those who are in the middle of them. The Delphi Method appears to have more strengths

over other methods of estimating; ability to handle subjective information; ability to identify and reconcile differences of opinion; ability to emphasize human perceptions as well as internal organizational feedback; and ability to generate institutional "input." This approach will strengthen the future role of the court information system.

INSTRUCTIONS
FOR
COMPLETING ATTACHED QUESTIONNAIRE

As you know, this research project is a scholarly undertaking, aimed at studying the views of expert, experienced observers of the courts. No use will be made of your name in any documents or research reports. The attached questionnaire seeks your opinion on a number of subjects relating to the difficulty of cases frequently heard before the court. An anonymous tabulation of opinions from the selected judges across the state will be prepared from this data, and you will be shown how your own opinions compare with your colleagues who have agreed to participate. You will then be asked to comment upon your own position relative to the others. This process should be educational for all concerned, and should shed light on the extent of agreement among individuals with similar backgrounds.

The attached questionnaire lists representative court functions/activities frequently encountered by judges throughout the Pennsylvania judicial system. For the most part, we have followed the outline as presented in the Annual Report on Judicial Case Volume as compiled by the Administrative Office of Pennsylvania Courts. In trying to estimate the time spent on each one of these dispositional methods, you should consider all activities associated with each case category in-

cluding all pre-trial and post-trial activity. To insure a representative sampling and to produce significant results it is essential that you answer all questions, even in those areas in which you have little or no experience. The essence of the Delphi Method lies in soliciting opinions and/or educated evaluations, so do not hesitate to respond to each question.

In Column A, we want you to give an estimate of the average time spent in each court related activity on a scale of one (1) to ten (10). Assign a 10 to what you consider to be generally the most time consuming of all the listed activities, assign a 1 to what you consider to be the least time consuming. Rate all other case categories accordingly. If activities on an average are equally time consuming, they should be assigned the same number. Again, consider all pre-trial and post-trial activity such as sentencing and motions in arriving at your estimate.

Please assign a number to each listed activity, even if you must estimate because of your lack of actual experience in the area.

In Column B, we want you to estimate how variable time and effort spent on each activity is by again using a scale of 1 to 10. Assign a 10 to those case categories that are extremely variable in terms of time and effort, assign a 1 to those case categories where there is little variability in time and effort. Rate the other cases accordingly.

In Column C, we want you to give a personal evaluation as to how secure/confident you are in estimating the average time and effort spent on each activity re: Column A. Assign a 10 to those case categories for which you feel that the estimate you gave in Column A is correct and accurate, assign a 1 to those cases where you feel your estimate is most likely incorrect and/or inaccurate. Assign numbers

to the other case categories accordingly. For example, a 5 should be assigned to a case where you are neither confident nor unsure of your estimate in Column A.

In Column D, we want to measure your personal interest in each case category in the following areas: Legal Complexity, Intellectual Interest, Research Complexity and Emotional Interest. Again, assign a 10 in each of these areas for each enumerated case category where your legal, intellectual, research and/or emotional interest is highest. Assign a 1 where such interests are at their lowest. Assign numbers in each of the four areas for all the other case categories accordingly. It is quite conceivable that a case might rank high in terms of intellectual interest (in which case you may want to assign it a value of 9 or 10), but rank low in terms of research complexity/interest (in which case you may want to assign it a value of only 2 or 3).

Finally, in Column E, we want you to estimate in terms of percentages how you actually spend your time per each case category. There is a breakdown of time indicated in Column D as follows: In Court Time, Time in Chambers and Research Time. Show the percent of total time you would spend, on the average, in each of the categories, so that they add to 100 percent. Please note that unlike Columns A through D we are not asking you to rank categories, but simply to indicate percentages of time spent in each of the three areas.

Please feel free to make any comments you wish which might help in interpreting the results of this study, or which might help identify questions of particular interest.

The Honorable John G. Brosky
Court of Common Pleas
Pittsburg, Pennsylvania 15219

The Honorable W. Hensel Brown
President Judge
Lancaster County Court House
Lancaster, Pennsylvania 17602

The Honorable R. Paul Campbell
President Judge
Centre County Court House
Belleville, Pennsylvania 16823

The Honorable Francis J. Catania
President Judge
Delaware County Court House
Media, Pennsylvania 19063

The Honorable John A. Cherry
Clearfield County Court House
Clearfield, Pennsylvania 16830

The Honorable Richard P. Conaboy
Lackawanna County Court House
Scranton, Pennsylvania 18503

The Honorable George C. Eppinger
President Judge
Franklin-Fulton Counties
Franklin County Court House
Chambersburg, Pennsylvania 17201

The Honorable W. Richard Eshelman
President Judge
Berks County Court House
Reading, Pennsylvania 19601

The Honorable Stanley M. Greenberg
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Williamsport, Pennsylvania 17701

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The Honorable John P. Hester
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The Honorable Robert M. Kemp
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Tioqa County Court House
Wellsboro, Pennsylvania 16901

The Honorable George P. Kiester
President Judge
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Butler, Pennsylvania 16001

The Honorable Richard S. Lowe
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Beaver, Pennsylvania 15009

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Mercer County Court House
Mercer, Pennsylvania 16137

The Honorable Samuel Strauss
Court of Common Pleas
Pittsburg, Pennsylvania 15219

The Honorable Morris M. Terrizzi
President Judge
Huntingdon County Court House
Huntingdon, Pennsylvania 16652

The Honorable P. Richard Thomas
President Judge
Crawford County Court House
Meadville, Pennsylvania 16335

AVERAGE - MEAN CASE CATEGORIES	A AVE. TIME Spent on Case	B Time Variable	C Confidence Rating	D - INTEREST				E - % TIME			
				Legal Complexity	Intellect- Interest	Research Complexity	Emotional Interest	In Court Time	Time in Chambers	Time Research	
Phase II CRIMINAL CASES-DISPOSITIONS											
GUILTY PLEAS	4.29	4.52	3.76	8.57	3.62	4.71	2.29	5.71	72.5	14.0	9.0
JURY TRIALS	8.86	9.25	8.1	8.55	8.3	7.9	7.25	8.45	46.8	10.0	18.8
JURY WAIVED-NOT GUILTY PLEA	4.95	5.05	5.67	6.95	6.14	6.67	5.57	7.14	72.5	8.3	14.9
NOL PROS (APPLICATIONS)	1.29	1.29	1.48	8.71	1.67	2.14	1.62	1.95	76.7	17.3	1.7
ARD (HEARINGS ON MOTIONS)	2.43	2.67	3.0	8.91	2.81	4.48	2.0	4.81	78.9	7.3	5.0
DISPOSITION IN LIEU OF TRIAL	1.62	1.95	3.29	7.71	2.76	3.52	2.2	4.19	70.2	15.9	4.9
OTHER DISPOSITIONS	1.91	2.35	3.65	6.3	2.65	3.2	2.6	2.75	59.5	25.1	5.8
CIVIL CASES-DISPOSITIONS											
NON-JURY	5.18	5.38	7.38	7.95	7.1	7.57	7.14	6.52	67.4	11.2	17.0
JURY VERDICT	8.00	8.24	7.62	8.62	8.86	8.57	8.67	7.48	64.9	12.4	18.4
SETTLEMENT	3.96	4.19	4.67	7.19	4.05	5.76	3.43	5.62	30.1	60.9	7.6
HEARING-SETTLED BEFORE VERDICT	4.77 4.86	4.86	5.29	6.48	5.33	5.95	5.0	5.52	57.5	26.2	12.0
STRICKEN	1.36	1.52	2.38	7.52	3.33	2.81	3.1	2.71	42.6	38.6	9.7
OTHER DISPOSITIONS	2.27	2.62	4.1	6.24	3.48	3.1	3.24	3.43	54.0	28.3	7.5
OTHER CASES-DISPOSITIONS											
JUVENILE CASES	5.0	5.7	6.9	7.15	4.8	6.55	4.3	8.6	70.5	17.0	8.1
DOMESTIC RELATIONS (NON-SUPPORT) CASES	4.33	4.75	5.5	7.35	3.1	3.15	2.9	5.35	77.4	13.0	5.2
DIVORCE	2.29	2.4	2.75	7.7	2.7	2.0	2.55	2.9	35.1	51.8	8.7
ORPHANS' COURT-AUDITS CONDUCTED	2.71 3.05	3.05	3.47	6.26	4.68	3.26	4.05	2.81	35.9	43.3	11.3
ADOPTIONS	2.86	3.21	3.42	7.21	3.42	3.95	3.37	6.58	72.4	10.6	6.5
POST CONVICTION HEARING PRO- CEEDINGS	3.57	4.3	6.25	7.9	7.25	6.05	7.05	4.75	58.2	10.1	27.2
CHILD CUSTODY CASES	5.48	5.95	7.8	6.85	4.4	5.8	4.9	7.9	65.7	18.0	12.9
SUMMARY CRIMINAL APPEALS	2.71	2.9	4.0	7.05	4.0	3.6	4.1	3.45	79.1	5.9	10.6
MENTAL-HEALTH CASES	2.14	2.9	4.47	8.05	4.0	3.79	3.26	6.21	70.8	18.2	6.3
CONDEMNATION CASES	4.05	4.8	5.70	6.85	5.5	4.25	5.25	3.9	68.3	12.4	14.8
STATUTORY APPEALS	3.00	3.42	4.68	6.47	5.11	4.53	4.84	3.74	67.6	10.4	17.8

STANDARD DEVIATIONS
CASE CATEGORIES

Phase II

	A AVE. Time Spent on Case	B Time Variable	C Confidence Rating	D - INTEREST				E - % TIME			
				Legal Complexity	Intellect. Interest	Research Complexity	Emotional Interest	In Court Time	Time in Chambers	Time Research	
CRIMINAL CASES-DISPOSITIONS											
GUILTY PLEAS	1.49	2.34	2.43	1.75	1.88	2.90	1.52	3.42	21.1	10.5	8.8
JURY TRIALS	2.37	1.29	2.71	1.57	1.63	1.94	2.27	1.57	19.5	5.4	12.3
JURY WAIVED-NOT GUILTY PLEA	1.53	1.96	1.83	2.29	1.77	2.46	1.99	2.33	21.4	7.9	11.2
NOL PROS (APPLICATIONS)	0.56	0.56	0.75	2.76	1.02	2.24	1.16	1.96	34.6	31.1	3.3
ARD (HEARINGS ON MOTIONS)	1.08	1.24	2.43	1.95	2.58	2.99	1.30	2.99	26.9	7.9	9.3
DISPOSITION IN LIEU OF TRIAL	0.74	1.32	2.37	2.69	2.0	2.46	1.60	2.71	33.4	22.7	5.3
OTHER DISPOSITIONS	1.04	2.11	2.39	3.05	1.90	2.76	2.19	2.40	36.1	30.3	6.1
CIVIL CASES-DISPOSITIONS											
NON-JURY	2.20	2.40	1.83	2.20	2.17	2.42	2.18	2.70	22.5	10.5	13.7
JURY VERDICT	2.47	2.32	2.89	1.86	1.71	1.54	1.68	2.71	21.7	8.8	12.3
SETTLEMENT	1.94	2.27	2.75	2.70	1.91	3.03	2.16	3.19	35.5	34.2	6.7
HEARING-SETTLED BEFORE VERDICT	2.02	2.10	2.19	2.91	2.03	2.52	2.45	2.98	28.3	22.3	12.3
STRICKEN	1.05	1.08	2.18	2.94	3.26	2.79	3.11	2.87	40.0	39.0	13.0
OTHER DISPOSITIONS	2.00	2.18	3.32	3.56	2.70	2.45	2.32	2.93	34.3	30.3	7.4
OTHER CASES-DISPOSITIONS											
JUVENILE CASES	2.86	2.68	2.31	2.85	2.12	2.48	1.98	2.04	20.4	12.1	7.5
DOMESTIC RELATIONS (NON-SUPPORT) CASES	2.20	2.15	2.63	2.60	1.52	2.18	1.55	3.23	21.6	14.1	6.0
DIVORCE	1.55	1.54	2.02	2.66	1.56	1.30	1.36	2.02	37.4	36.9	11.6
ORPHANS' COURT-AUDITS CONDUCTED	2.39	2.39	2.59	3.43	3.00	2.80	2.97	2.69	30.7	35.3	11.2
ADOPTIONS	1.98	1.90	2.74	3.52	2.19	2.76	2.24	3.17	30.8	17.0	6.7
POST CONVICTION HEARING PROCEEDINGS	2.04	2.87	2.47	2.67	1.92	2.46	1.93	2.49	21.8	8.2	18.0
CHILD CUSTODY CASES	2.46	2.56	1.94	2.52	1.96	2.38	2.08	2.49	23.1	13.7	18.5
SUMMARY CRIMINAL APPEALS	1.49	1.71	2.0	2.69	1.32	1.64	1.41	1.67	21.1	7.1	9.2
MENTAL-HEALTH CASES	1.35	1.91	2.34	2.25	1.47	1.90	1.49	2.66	31.0	23.6	6.6
CONDEMNATION CASES	2.99	3.44	2.85	3.10	1.88	2.53	1.68	2.51	21.4	9.5	10.6
STATUTORY APPEALS	1.70	1.58	2.83	2.86	2.13	2.37	2.19	2.13	23.2	8.8	15.6

EXPLANATION OF DELPHI WEIGHTS

In order to provide a method of assessing the amount and relative success of judicial activity within the Commonwealth, it was necessary to transcend the subjective estimates of the past and establish a ranking procedure, based on a combination of expert judgment and objective data. The long-range forecasting technique, known as Delphi, along with monthly statistical reports filed by each of the judicial districts, provided the vehicle for such a ranking procedure. Using the weights assigned to various categories of dispositions by the judges, and the actual disposition volume, an indicator number could be calculated for each district. In each county, the volume of dispositions for each category such as guilty pleas is multiplied by its individual case weight; the products of each disposition volume and case weight are then summed to obtain the total "valuation points" for the district. Dividing these valuation points by the number of judges within a district yields the final indicator number for district caseload. On the basis of these indicator numbers, the districts are then ranked from one to fifty-nine. A mean indicator number and a standard deviation are then calculated to determine each district's relative position in the distribution. A county with a large negative standard deviation would indicate a small caseload relative to the mean; likewise, a large positive deviation indicates a large caseload relative to the mean. A small standard deviation (positive or negative) indicates a near average caseload. Note that with the exclusive use of the caseload

indicator number, all conclusions as to overworked (or underworked) judges are tentative at best and must be made on a relative basis only.

In order to draw any meaningful conclusions, the caseload rank should be used in conjunction with a district's relative status of inventory. Inventory indicator numbers are calculated somewhat differently than caseload indicator numbers. Unlike the breakdown of criminal and civil dispositions, such as guilty pleas, jury verdicts, nol prosses and settlements, which provides an individual weight for each different disposition, the inventory figure for criminal cases is only one number; likewise for civil cases. How can the weights assigned to disposition categories be applied to the single inventory figure? Ideally, the solution would be to project the manner in which the cases in the inventory would ultimately be disposed and this methodology was subsequently used. Using 1975 and 1976 figures, the relative frequencies of each type of criminal and civil dispositions were calculated. An overall weight was then calculated for both criminal and civil inventories; in a sense, it is a "weighted weight." For example, the weight assigned to criminal jury trials is 9.25; if, in the past two years, 10 percent of all criminal cases were disposed by jury trials, the revised weight becomes .925. This same revision is done for each criminal and civil disposition depending upon the percentage of cases disposed through each category. The revised weights are then multiplied by each category's year end inventory. The products are summed up and then divided by the number of judges in the district to yield an inventory

indicator number. As per the caseload indicator number, a mean and standard deviation are calculated to determine each district's relative position in the distribution.

The two different indicator numbers lead to several conclusions when the district's rankings in both caseload and inventory are combined. A high caseload ranking, coupled with a low inventory ranking imply a great deal of work being accomplished within the district. Centre County has a high weighted caseload ranking of 2 and a low weighted inventory ranking of 24. At the opposite extreme, a district may have a low caseload ranking and a high inventory ranking implying that possibly there is a failure of expedition within the district in terms of judicial activity. For example, McKean County has a weighted caseload ranking of 44, and a high weighted inventory ranking of 2. Other more probable causes exist also, the most frequent of which is the non-reporting of disposed cases either through a lack of communication in transferring disposition information, a misinterpretation of reporting guidelines, or just a general lack of efficient administrative personnel. Whatever the reason, the rankings lend insight into the activities within a district and allow pursuit of potential problem areas. When calculated yearly, a change in administration, local rules or reporting procedures can be analyzed to determine its effect, if any, on judicial efficiency by noting any significant changes in the rankings. This is perhaps a token measure at best, but it does give reason for further inquiry.

ADMINISTRATIVE OFFICE OF PENNSYLVANIA COURTS

WEIGHTED CASELOADS

1976

<u>COUNTY:</u>	<u>WEIGHTED CASELOAD/RANK *</u>			<u>WEIGHTED INVENTORY/RANK *</u>		
Adams	3826.35	21	.262	881.936	34	-.292
Allegheny	3697.76	24	.15	1450.977	8	.945
Armstrong	4374.48	16	.742	1378.215	12	.787
Beaver	2524.73	46	-.877	448.627	55	-1.234
Bedford	2481.28	48	-.915	1242.512	17	.492
Berks	3549.59	27	.02	685.47	42	-.719
Blair	4956.32	8	1.252	1587.759	6	1.242
Bradford	4529.26	12	.878	1187.233	21	.372
Bucks	3615.58	26	.078	1447.319	9	.937
Butler	4904.15	9	1.206	1194.33	20	.387
Cambria	2910.81	42	-.539	1623.57	5	1.32
Cameron/Elk	3206.99	36	-.28	553.962	50	-1.005
Carbon	5319.25	5	1.569	611.709	49	-.879
Centre	5864.12	2	2.046	1109.83	24	.203
Chester	3236.27	35	-.254	990.194	29	-.057
Clarion	2094.52	52	-1.254	781.24	37	-.511
Clearfield	5483.47	3	1.713	907.523	33	-.236
Clinton	3345.62	31	-.159	400.413	59	-1.338
Columbia/Montour	5391.89	4	1.633	1412.93	11	.862
Crawford	3340.98	32	-.163	708.787	40	-.668
Cumberland	5088.1	7	1.367	1166.906	23	.328
Dauphin	4005.36	20	.419	536.352	51	-1.043
Delaware	3421.82	30	-.092	1195.626	19	.39
Erie	4112.24	18	.513	463.571	54	-1.201
Fayette	3068.32	41	-1.401	733.793	39	-.614
Forest/Warren	3433.57	29	-.082	1198.3	18	.396
Franklin/Fulton	4389.46	14	.755	1007.045	28	-.02
Greene	3678.53	25	.133	641.129	45	-.815
Huntingdon	3178.55	38	-.305	501.04	53	-1.12
Indiana	1766.09	56	-1.542	612.289	48	-.878
Jefferson	2305.46	50	-1.069	1012.756	26	-.008
Juniata/Perry	3460.93	28	-.058	2082.224	3	2.317
Lackawanna	1757.51	57	1.549	697.61	41	-.693
Lancaster	6416.33	1	2.53	1482.902	7	1.014
Lawrence	3152.92	39	-.327	413.013	56	-1.311
Lebanon	3710.75	23	.161	1730.76	4	1.553
Lehigh	3330.14	33	-.172	922.002	31	-.205
Luzerne	2095.94	51	-1.253	876.007	35	-.305
Lycoming	5160.93	6	1.431	2570.646	1	3.379
McKean	2774.14	44	-.659	2201.127	2	2.575
Mercer	4826.96	10	1.138	1428.298	10	.896
Mifflin	4679.21	11	1.009	650.512	44	-.795
Monroe/Pike	2896.36	43	-.552	818.107	36	-.431
Montgomery	4479.42	13	.834	1320.337	14	.661
Northampton	4012.2	19	.425	633.256	46	-.832
Northumberland	2654.21	45	-.764	1072.98	25	.123
Philadelphia **	3811.3	22	.249	1010.892	27	-.012
Potter	1311.28	59	-1.94	407.895	58	-1.322

WEIGHTED CASELOADS1976

<u>COUNTY:</u>	<u>WEIGHTED CASELOAD/RANK *</u>			<u>WEIGHTED INVENTORY/RANK *</u>		
Schuykill	1825.25	54	-1.49	401.301	57	-1.317
Snyder/Union	3102.64	40	- .371	1286.324	16	.587
Somerset	1678.74	58	-1.618	766.609	38	- .543
Sullivan/Wyoming	1949.69	53	-1.381	615.84	47	- .87
Susquehanna	1818.73	55	-1.496	675.906	43	.74
Tioga	4375.64	15	.743	1312.86	15	.645
Venango	3264.68	34	- .23	1322.11	13	.665
Washington	2458.81	49	- .935	535.955	52	-1.044
Wayne	2502.26	47	- .897	939.983	30	- .166
Westmoreland	3205.84	37	- .281	918.097	32	- .213
York	4268.51	17	.649	1181.292	22	.359
Philadelphia Common Pleas and Municipal Court	4040.565	19	.45	937.656	31	- .171

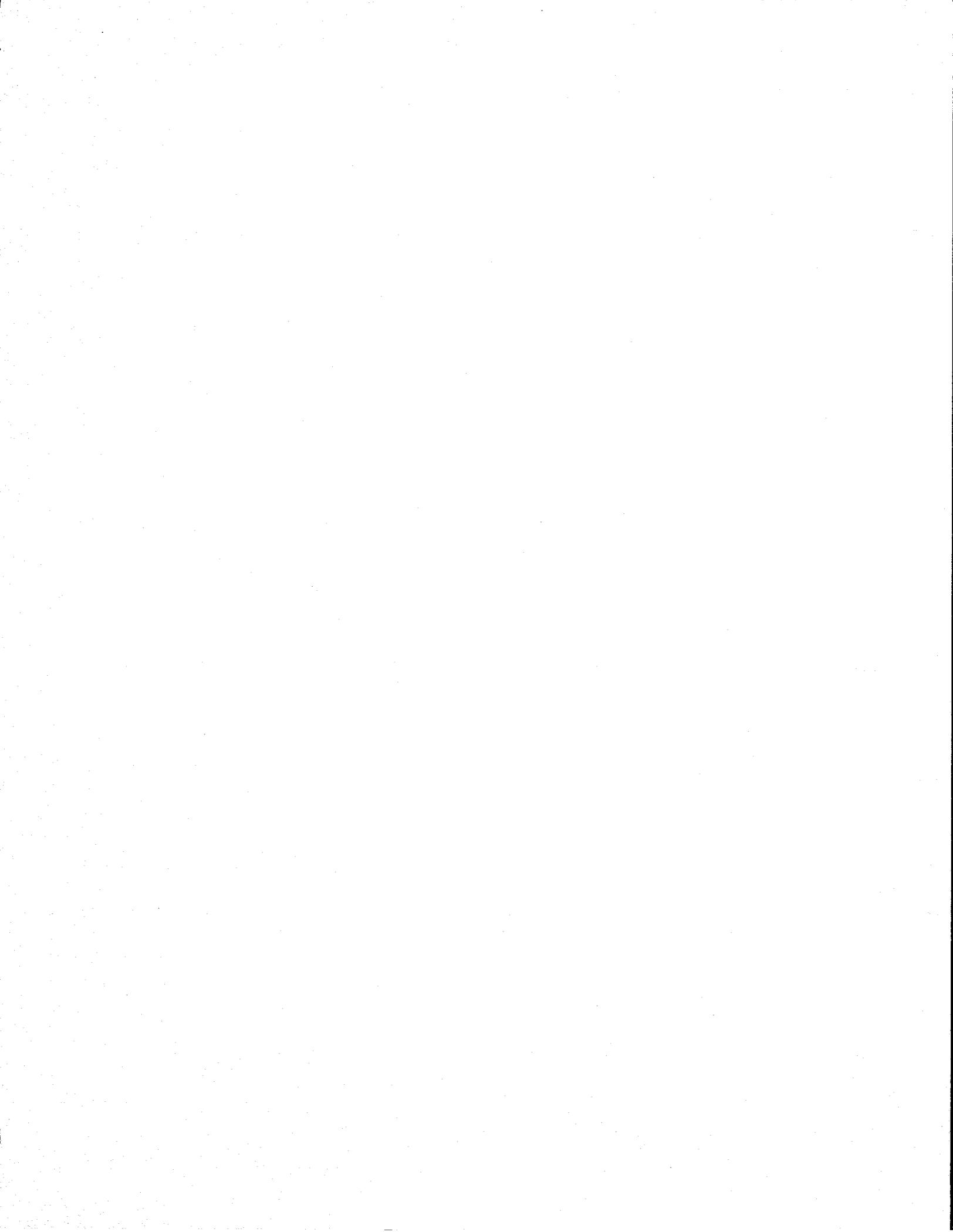
* Caseload and inventory ranking is indicated in descending orders on a scale of 1 to 59. The judicial district with a weighted caseload or inventory ranking of 1 would have the highest work load or inventory, whereas a judicial district with a ranking of 59 would have the lowest work load or inventory.

** Does not include Philadelphia Municipal Court case volume. It is listed separately at the end of this report.

PHILADELPHIA MUNICIPAL AND COMMON PLEAS COURTS
CASE WEIGHT STUDY

CASE WEIGHTS	CASE DISPOSITIONS	WEIGHTED CASE DISPOSITIONS
CRIMINAL CASES-DISPOSITIONS		
GUILTY PLEAS - MC & CP	4	
TRIAL BY JURY	15	
JURY WAIVED - CP	6	
MC TRIAL	4	
NOL PROS	1	
ARD - MC & CP	1	
DISPOSITION IN LIEU OF TRIAL MC & CP	3	
MC PRELIMINARY HEARINGS	2	
CIVIL CASES-DISPOSITIONS		
NON-JURY	6	
JURY VERDICT	12	
SETTLEMENT	5	
HEARING-SETTLED BEFORE VERDICT	6	
STRICKEN	1	
MC CIVIL *	2	
FAMILY AND ORPHAN COURTS		
JUVENILE CASES	5	
DOMESTIC RELATIONS	3	
ADOPTIONS	2	
ORPHAN COURT	4	
UNMARRIED MOTHERS	2	
TOTALS		
# OF JUDGES		
WORKLOAD AVERAGE		

* Includes Code Enforcement, Landlord and Tenant Actions and Small Claims.



END