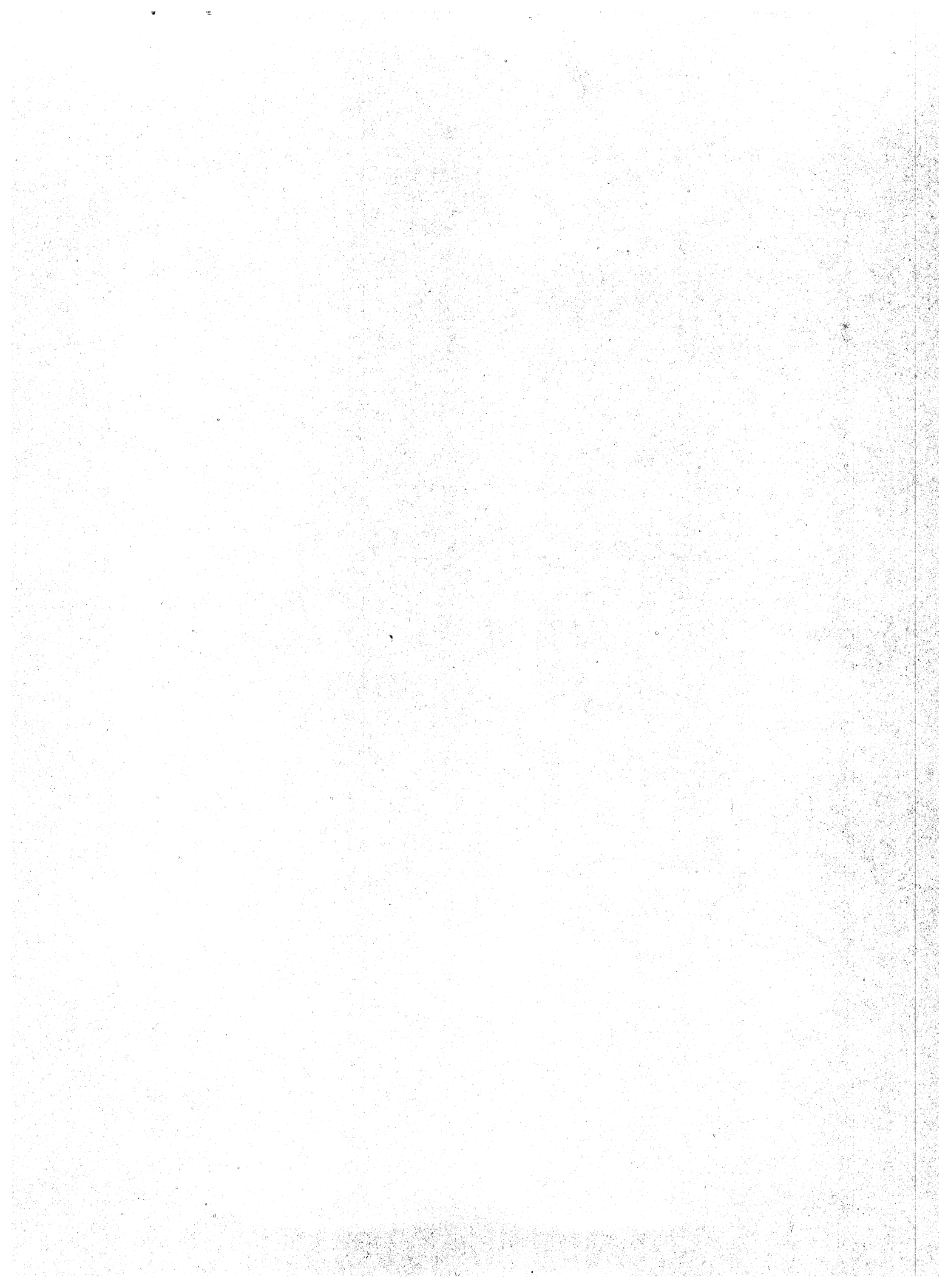

A COST-ANALYSIS HANDBOOK

for
CWA SOCIAL SERVICES

By JOHN R. LONG, Supervisor
CWA Budget Operations
Division of Youth & Family Services

New Jersey State Library

MAY, 1982



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Family Services

May, 1982

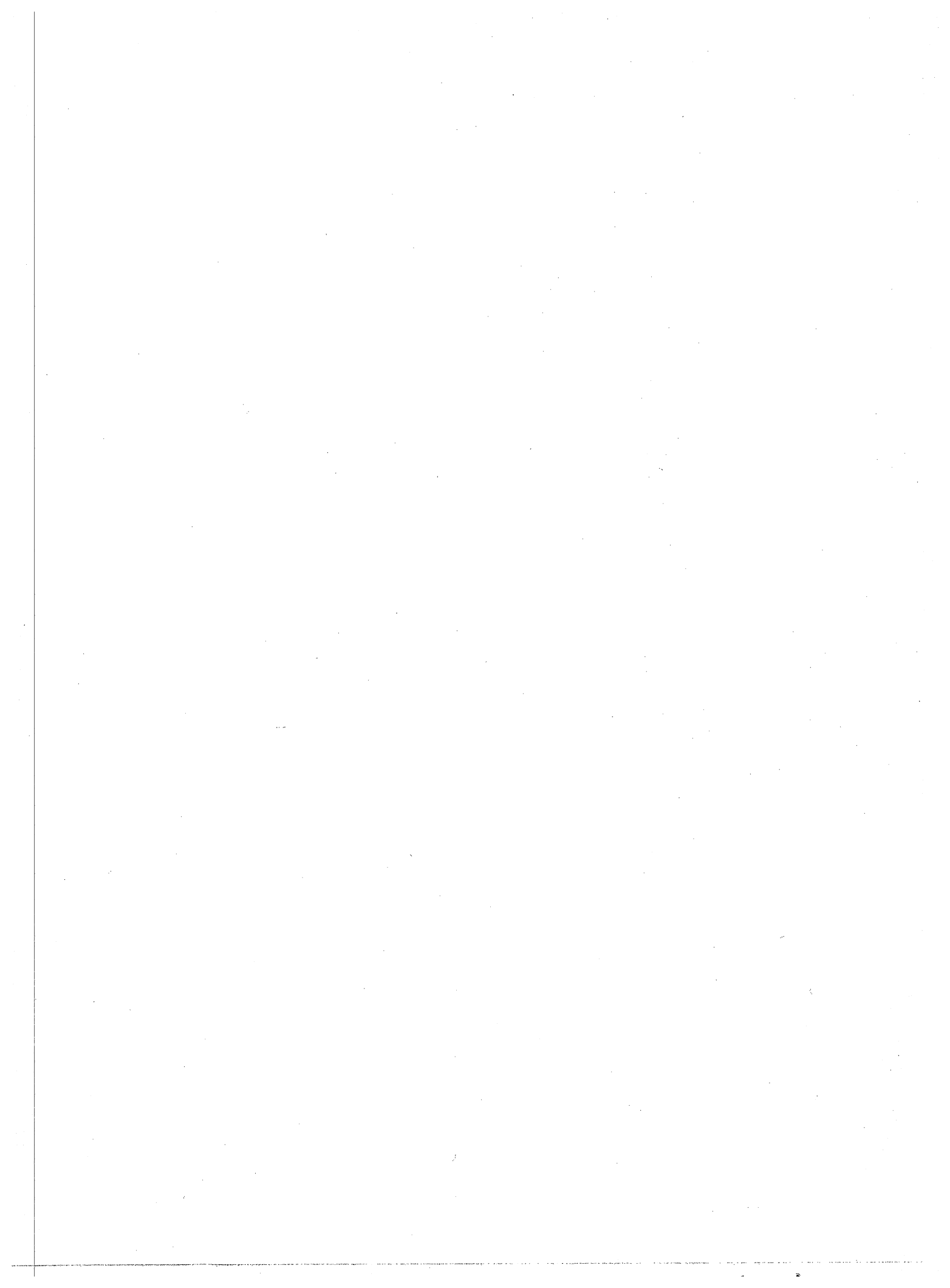


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INTRODUCTION

In our current economic environment, resources are continuing to diminish--both in absolute magnitude and as a result of inflationary pressures. Both of these combined with increasing client need, cause Social Service Program managers to become increasingly pressured to demonstrate innovation and program relevance in planning and delivering social services to their clients.

In addition, County-based reduction negotiations have generated increased competition in many counties for the limited funds, along with questions about management of funds, relative costs and efficiency, dilution of funds by excessive administrative or indirect cost burdens and similar issues.

The aim of this publication is to provide a framework and some suggested approaches for analysis and decision-making in Social Services operations, by incorporating techniques used in private industry and in the Federal government. We relied heavily on such publications as the Economic Analysis Handbooks of (Department of the Navy, 1980 and DOD Analysis for Managers of People and Things, 1975), and on other publications as well (see Bibliography). It begins with a comparative analysis from a financial perspective, of CWA Cy'81 Budgeted and Actual Social Service Operations.

It is generally believed that most Social Service programs operate in a relatively uncertain, unclear environment as to successful/unsuccessful interventions or service outcomes.

The recommended quantitative, (cost) analytic approach, combining Financial and Program accounting is intended to help the Program Manager reduce the uncertainty in the decision-making, program planning and controlling environment.

Throughout this publication we attempt to continually focus on the need to relate program costs to program output. How much money and time are expended for what kinds of staff activities in relation to program objectives. This information is also needed for the program budgets as well as for establishing service priorities and as a function of cost.

These cost-analytic approaches are difficult to apply when the program objectives are unclear or when the unit cost categories are mixed and ambiguous. Relating costs to outputs is not a very easy task. However, most CWA's can relate costs to service outputs, with fairly high reliability for their own operations. The difficulty is often in attempting Statewide (or even County-wide) comparisons using service costs and outputs of mixed and often unclear elements.

We mention cost-benefit analysis as a technique for evaluating the relative cost effectiveness of alternative services or programs, strategies and so on. Its primary purpose is to relate required costs to the attainment of

the benefits.

This type analysis will answer such questions as which of a number of service methods will result in optimal benefits under any given resource level.

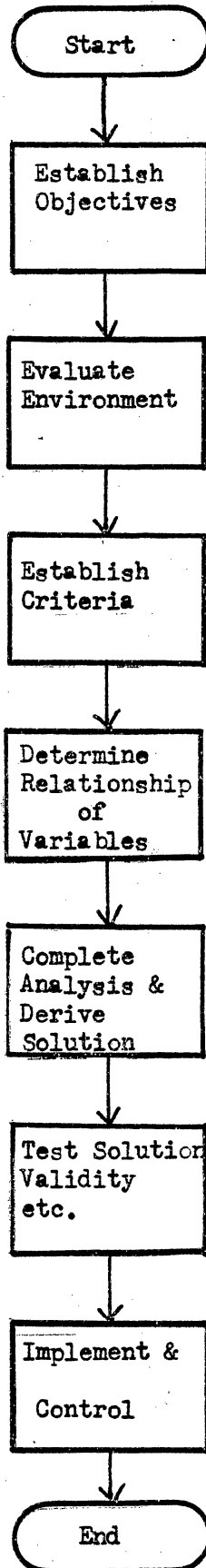
The primary elements of a Cost-Benefit Analysis are: Costs (staff or other resources), Benefits, and the specifications of objectives, goals and values (a value is a statement of what is or is not desirable--Individual values may be different from Societal values).

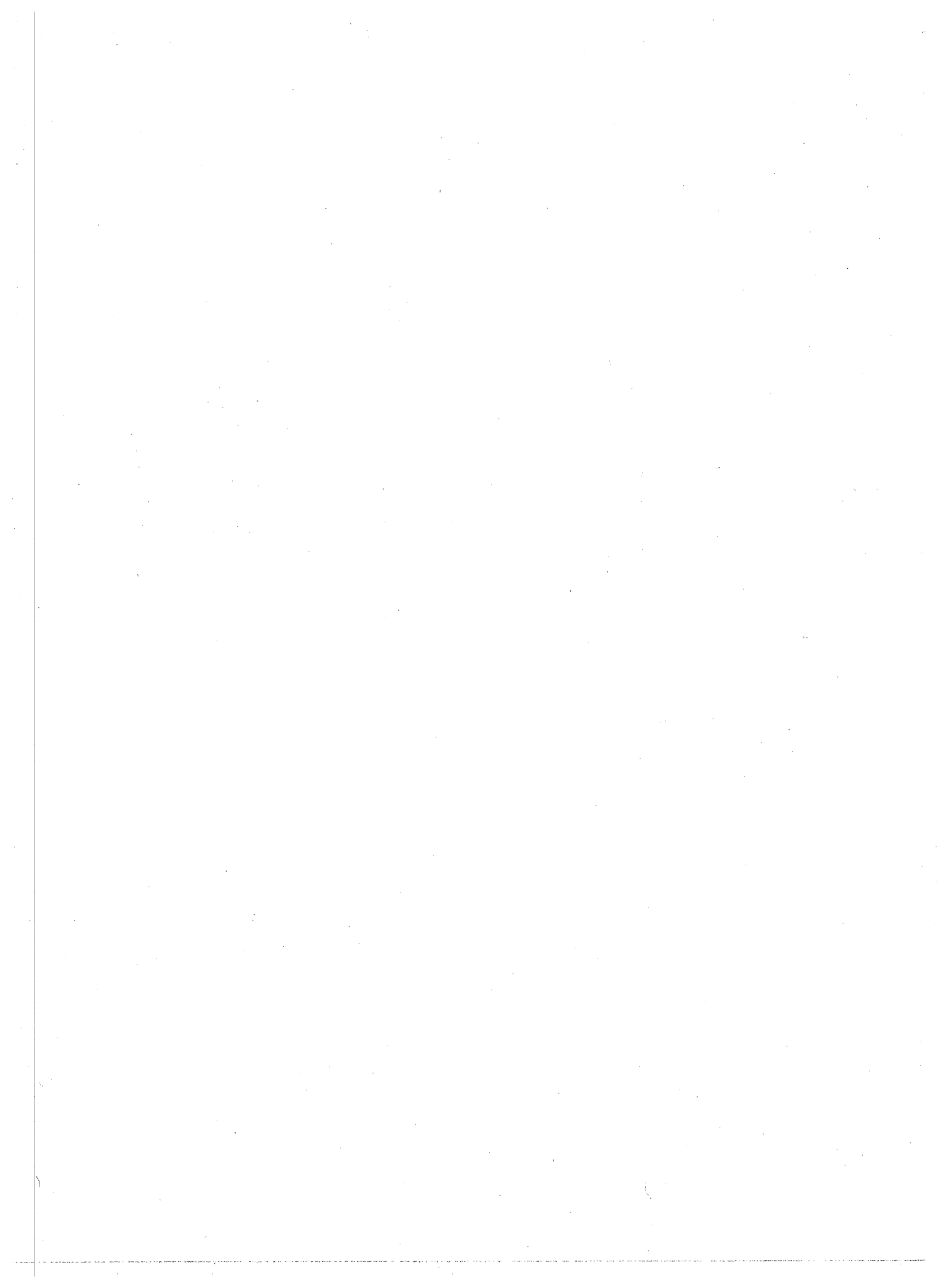
The process involves relating inputs to outputs, non-monetary data and criteria are translated into monetary units. If two programs are identical in every respect except costs and benefits, the program having the greatest benefit/cost ratio would be considered the more effective.

It is often easier said than done--to convert social indicators of program objectives into monetary units. Not all benefits can be translated into monetary units--even if they all could be identified. Often there are "spill over" effects--also called externalities. Providing Day Care to the children of a family who is dysfunctional not only benefits the children, but possibly the parents in their functioning problem also.

Social Service program managers, especially CWA Directors, are constantly faced with assessing alternative ways of conducting and coordinating program activities within their agency and county. This involves deployment of staff and other social services resources, choosing among alternative programs and methods of provision, competing client needs and priorities, all within the framework of limited and diminishing program resources. They need to become expert in organizational analysis, finance, industrial engineering, to name a few, in addition to their primary management and program skills.

It is hoped that this publication will provide some assistance and guidance to these CWA Directors and their staff.





CWA CY'81 SOCIAL SERVICES OPERATIONS

A COMPARATIVE ANALYSIS



Because of the close similarity to other graphs, not all key indicators contained in the actual and planned tables were graphed. This is not intended to indicate any measure of relative importance or unimportance.

The following is a comprehensive analytical comparison of CWA Social Service operations from a financial perspective. It is also intended to describe and recommend techniques for analyzing Social Service operations. It is presented in tabular and graphic format and is intended to provide County and State Managers with a set of benchmarks which measure actual financial performance with the financial plan, the budget. Its primary purpose is to enhance decision-making, and to improve the efficiency, effectiveness and economy of CWA Social Service operations. Toward this end, we have also prepared and are incorporating for information purposes some additional tables and charts, and also a section on other analytic techniques. The approach we have employed encompasses the selection and analysis (ratio and variance) of certain variables as "key indicators". The selection of these key indicators was based on our assessment as to their appropriateness, utility and the ready availability of the data.

The key indicators are:

- (1) County-Federal Social Service Funding Matching Ratio; Graph
- (2) Social Service Staff as a Percent of Total CWA Staff; Graph
- (3) Social Service Salaries as a Percent of Total CWA Salaries;
- (4) Social Service Salaries as a Percent of Total CWA Social Service Costs;
- (5) Administrative Salaries as a Percent of Total CWA Salaries; Graph Graph
- (6) Number of Administrative Staff as a Percent of Total Number of Staff;
- (7) Administrative Costs as a Percent of the Total (CWA) Program Costs;
- (8) Administrative Costs Chargeable to Social Services as a Percent of Social Service Salaries; Graph; and
- (9) CWA Purchase of Service (69 Account) Costs as a Percent of Social Service Costs; Graph.

Ideally, our approach should also have included an attempt to obtain an unduplicated count of clients served, units of service by type of service, direct and purchase methods and a measure of the outcome of the service episode--did the client improve after receiving the service? This should also include assessing client satisfaction with the services received. It would also be more valuable to be able to measure the availability and cost of alternative methods of service provision and the availability and application of other Social Service-oriented resources not DHS controlled, such as Title III, Aging funds, for example.

Substantive changes and refinements are needed to be made to the current Social Service Information System in order to collect this client outcome type of information. Thus, these surrogate performance indicators focus

totally on inputs and process (organizational structure, staffing and resource application). The absence of any accurate or reliable client service performance information and the inherent nature of the key indicators themselves prohibit the drawing of any judgmental inferences as to whether it is a "good" or "bad" situation. Rather, this approach is intended to compare and to measure an individual CWA against all 21 CWA's and to detect what could be called "favorable" or "unfavorable" variances from the norm or average. This approach is not without its inherent limitations. For example, it does not begin with the development of a true standard and then measure all CWA's against that standard for each key indicator; it presumes that the statewide average is acceptable--it may or may not be.

Nonetheless, the approach does produce some interesting and useful results. It permits County and State Managers to focus on those indicators showing unfavorable variances from the statewide average. Analysis of unfavorable e.g., inefficiency-caused variances may indicate additional organizational weaknesses that require correction. Conversely, analysis of favorable variances may reveal unrecognized agency strengths. In some instances, this may suggest that changes in organization and structure, staffing, and/or resource applications be made. In other cases, Managers will become more cognizant of their organizations' comparative situation, but upon examination may conclude that the quantity and especially the quality of their services readily justify any unfavorable variance from the Statewide norm.

It is our recommendation that this comparative key indicator approach be applied to the other channels of Social Service provision, namely the Purchase of Service (P.O.S.) and the DYFS District Office (D.O.) Operations.

On a County-by-County basis, this analytical approach will augment county-based planning resource allocation and overall decision-making, if it is combined with an ongoing system of measuring unmet need, by Service, Client, Intensity of Need, etc., and an ongoing system of identifying, tracking and coordinating all Social Service-oriented funds flowing into a County, particularly those that are non-DHS controlled.

It is widely recognized that Planning and Control are the "Siamese Twins" of Management. In this approach we are endeavoring to focus on these siamese twins to help close the Planning-Controlling "loop"--by measuring performance against the financial plan, the budget, to enable the results to be incorporated into current and future plans. The results should help reduce uncertainty as much as possible and assist in moving Social Services decision-making to become a more precise, refined, State-of-the-Art system.

It is expected that with time and experience, this comparative key indi-

cator process, too, will be refined to maximize its operational, decision-making utility.

ANALYSIS OF STANDARD CWA BUDGETS
CY'81

3/82
F. Kelly

CWA	TXX: County Matching Ratio	SS Staff as % of Total Staff	SS Salaries as % of Total Salaries	SS Salaries as % of Total SS Budget Request	ADM Salaries as % of Total Salaries	ADM Staff as % of Total Staff	ADM Costs as % of Tot. Prog. Costs	ADM Costs Chargeable to SS as % SS Salaries	69 A/C as % of Total SS Budget
ATLANTIC	75:25	14.22	14.67	42	10.19	9	15	23	37
BERGEN	63:37	10.75	13.48	54	9.06	8	13	15	25
BURLINGTON	75:25	9.62	9.39	57	23.48	21	30	46	2
CAMDEN	62:38	18.08	16.76	63	10.20	10	14	21	4
CAPE MAY	74:26	23.09	17.80	23	29.46	24	26	70	51
CUMBERLAND	75:25	10.03	11.58	63	15.55	14	19	25	3
ESSEX	59:41	23.83	23.59	45	20.70	22	20	32	28
GLOUCESTER	75:25	8.04	8.32	68	17.96	14	21	27	0
HUDSON	75:25	15.37	18.98	58	9.53	8	13	15	20
HUNTERDON	56:44	25.33	20.17	59	34.84	30	35	53	10
MERCEN	75:25	9.97	10.55	63	9.68	10	14	18	9
MIDDLESEX	75:25	16.44	16.55	58	10.91	7	15	21	14
MONMOUTH	60:40	38.32	36.15	49	13.48	14	17	29	20
MORRIS	56:44	21.57	20.36	63	11.11	8	15	22	11
OCEAN	75:25	9.05	10.15	47	12.41	19	14	20	28
PASSAIC	75:25	14.71	14.38	56	8.15	8	13	17	32
SALEM	75:25	10.18	11.67	54	11.57	11	16	20	24
SOMERSET	51:49	25.68	26.26	46	13.90	13	18	33	25
SUSSEX	75:25	29.28	24.58	54	20.53	22	25	43	12
UNION	75:25	11.95	12.62	54	13.74	10	18	25	19
WARREN	75:25	13.44	13.07	53	19.88	16	22	33	14
\bar{x}	69:33	17.09	16.72	53.76	15.54	14.19	18.71	28.95	18.48

3/82
F. Kelly

DPW/DYFS ACTUAL EXPENDITURE ANALYSIS
CY'81

CWA	TXX: County Matching Ratio	SS Staff as % of Total Staff	SS Salaries as % of Total Salaries	SS Salaries as % of Total SS Costs	ADM Salaries as % of Total Salaries	ADM Staff as % of Total Staff	ADM Costs as % of Tot. Prog. Costs	ADM Costs Chargeable to SS as % SS Salaries	69 A/C as % of Total SS Costs
ATLANTIC	75:25	12.32	13.06	36	10.58	10	16	24	44
BERGEN	69:31	9.79	12.05	48	9.68	8	15	18	27
BURLINGTON	74:26	9.84	9.71	59	21.11	21	27	39	2
CAMDEN	75:25	13.69	12.86	61	10.30	10	14	21	5
CAPE MAY	75:25	19.98	18.27	24	23.46	22	22	48	44
CUMBERLAND	75:25	10.07	11.84	60	15.10	16	20	18	4
ESSEX	57:43	22.32	24.62	43	17.39	23	16	24	27
GLOUCESTER	75:25	10.56	8.50	63	14.52	15	19	27	0
HUDSON	75:25	16.64	21.09	59	8.88	8	13	14	18
HUNTERDON	47:53	28.80	23.90	49	30.21	29	25	47	7
MERCER	75:25	11.05	11.36	65	10.56	12	16	21	5
MIDDLESEX	75:25	15.71	16.49	63	9.15	7	13	17	10
MONMOUTH	75:25	36.41	34.42	48	13.77	15	16	28	17
MORRIS	59:41	27.83	25.74	65	12.63	9	18	26	12
OCEAN	75:25	10.82	10.12	45	11.43	13	15	20	30
PASSAIC	70:30	11.28	13.78	47	8.33	8	12	14	30
SALEM	75:25	8.46	9.35	42	11.44	9	14	23	33
SOMERSET	54:46	27.08	25.25	39	14.46	13	16	34	19
SUSSEX	75:25	24.68	22.08	51	19.92	21	25	41	16
UNION	75:25	10.40	11.21	58	10.02	9	13	17	13
WARREN	75:25	13.77	12.74	52	18.97	18	22	34	15
\bar{X} =	70:30	16.74	16.59	51.29	14.38	14.10	17.48	29.86	18

00

Federal-County Social Services Funding Matching Ratio

While the required matching ratio is 75:25, many Counties have, in the past, found it necessary or desirable to channel 100% (Non-Federally matched) County funds into their Social Service effort because of increasing costs and client demand, combined with a diminishing federal allocation level. Not all Counties were so disposed--and some who would have been so inclined, were unable to do so because of local funding non-availability.

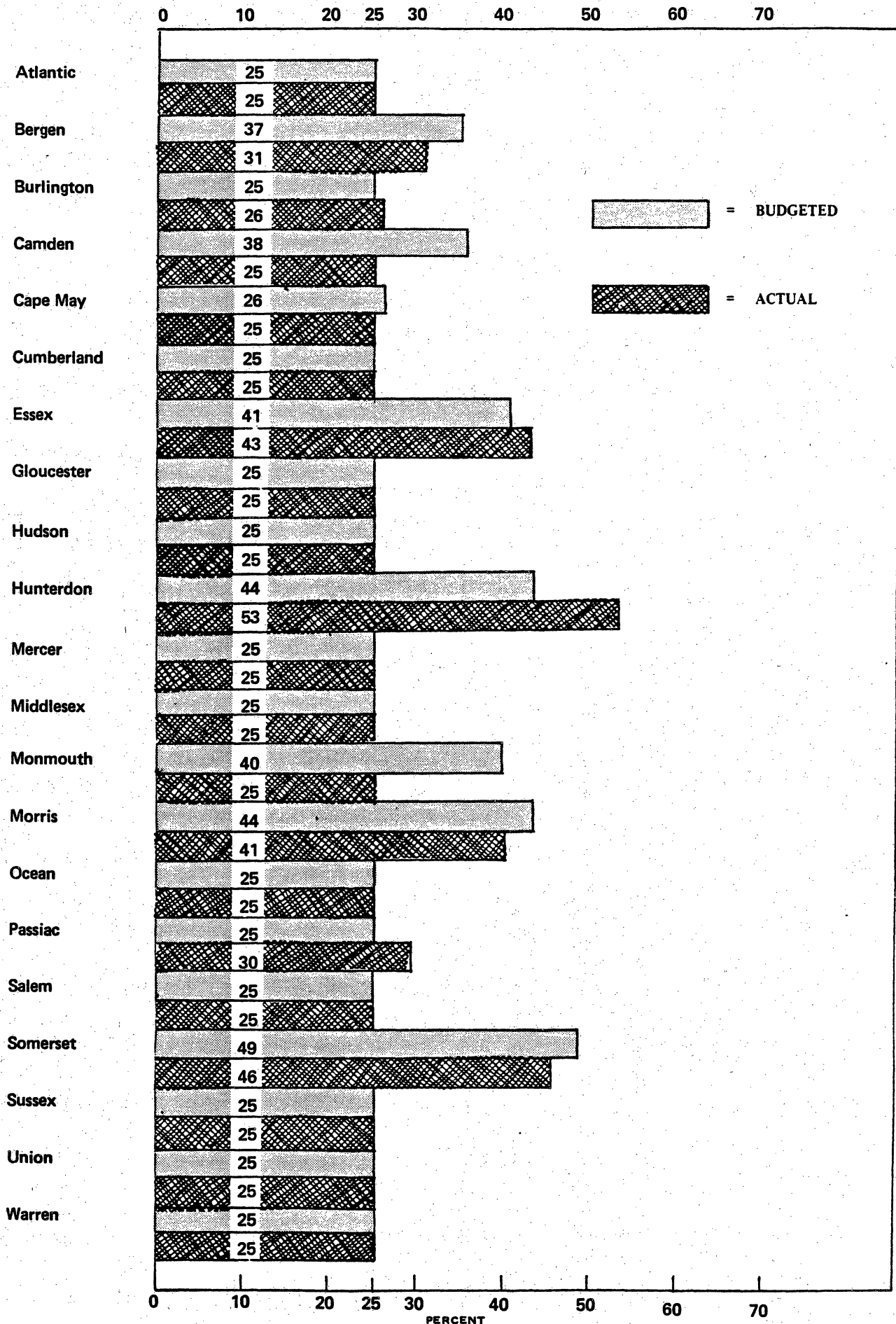
This matching-overmatching situation has been viewed from two opposing perspectives. One group has believed that it indicates which Counties are more service-oriented and therefore more deserving of additional federal funding. This group would have this matching-overmatching incorporated into a yet-to-be designed and implemented "Equity Formula", to more favorably treat these overmatching counties.

The other group argues, equally articulately, that those counties who are willing and able to subsidize the limited Federal Funds are, in fact, more financially well-off and therefore less deserving of increased federal funding. Adding that those CWA's who maintain the required 75:25 ratio are better managers--that they deploy their limited resources more efficiently.

In any event, as a statistic, this ratio does identify those CWA's who have found it necessary to subsidize their federal social services allocation and were willing and able to do so.

In 1981, many CWA's began to retrench in their normal expenditures and service activities in direct response to the anticipated and ultimately implemented CWA Social Services funding reductions. That the reduction process was constructed and applied without a comprehensive assessment of service and funding need and performance only served to evoke an even more conservative posture by the CWA's. Thus, the CY'81 Actual local matching ratio deviated from the 25% level in only 6 counties, all consistent with the budgeted matching ratio. In 2 counties, the planned (budgeted) ratio exceeded 25%, whereas the actual ratio was 25%. In 2 counties, the actual ratio exceeded the budgeted ratio.

The Statewide Average (\bar{X}) = 69.33% (Actual)



CY'81 PERCENT LOCAL MATCHING FUNDS FOR TITLE XX SOCIAL SERVICES

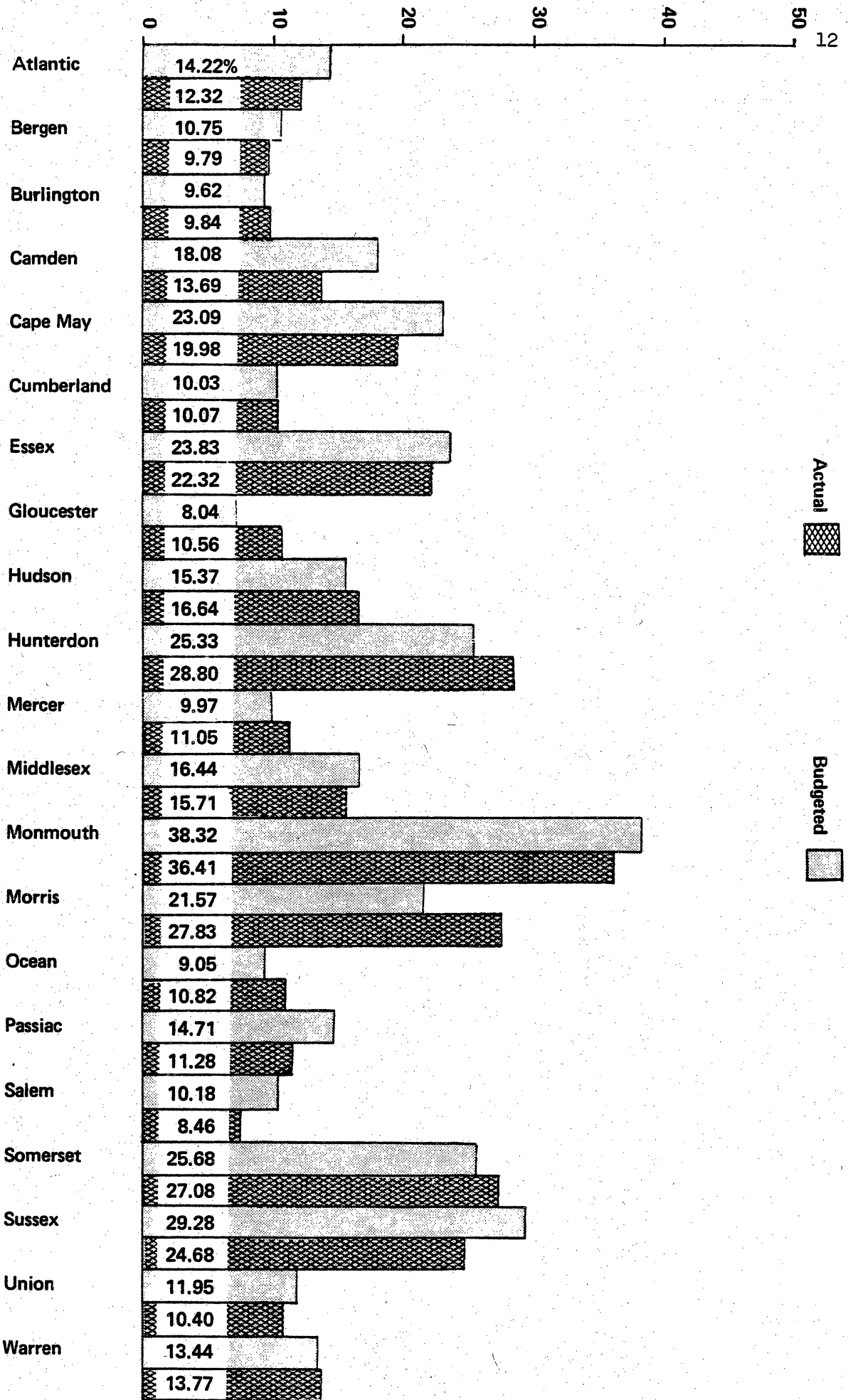
Social Service Staff as a Percent of Total CWA Staff

In this and in the other indicators, we have converted the absolute numbers into percent relationships--to remove any potential distractions and influences of absolute differences in CWA size and/or funding magnitude.

This particular ratio suggests that in some CWA's, there may be either less need for Social Service staff and/or greater need for other CWA staff such as Staff for Income Maintenance, Food Stamps, etc.--or, it may merely reflect a staffing pattern that evolved due to other circumstances.

This ratio does provide a benchmark as to how a CWA compares in Social Service staffing with the Statewide Average (\bar{X}) of 17.09%. (Actual)

SOCIAL SERVICE STAFF AS A PERCENT OF TOTAL STAFF



Social Service Salaries as a Percent of Total Salaries

This should correlate well with the preceding Social Service Staffing ratio. Differences between these 2 Social Service Staff and Salary percentages are primarily attributable to differing composition of type, grade level and salary of social service staff. Some CWA's may have a larger-than-average social service staff which is either higher paid because of seniority or lower paid because there are a larger number of entry level employees. While this indicator is subordinate in importance to the Social Service Staffing ratio, it is a useful measure. As a key indicator, its prime value is that it supports and amplifies the preceding Social Service Staffing ratio. Any significant variances between these two percentages should be more closely examined as to the contributory factors.

The statewide average (\bar{X}) = 16.72%. (Actual)

NOTE:

No graph was prepared of this key indicator because of its close similarity to the preceding graph.

Social Service Salaries as a Percent of the Total Social Service Costs

This is a very useful indicator, both by itself, and in conjunction with the POS (69 Account) statistic. By itself, it indicates what percent of the total Social Service costs are Social Service (Staff) salaries. When compared with the POS (69 Account) as a percent of total Social Service Costs it demonstrates which CWA's are direct service-oriented and which are purchase-oriented.

Because of the relatively "fixed" or static nature of direct staff costs, there is significantly less deviation from the Statewide average than is the case with the POS cost ratios. The nature of POS is more akin to a variable cost situation, that is, the cost increases as the amount of service delivered increases. Thus, it is a dynamic statistic and there is significant deviation from the Statewide average.

As resources continue to diminish and creative alternatives are more actively pursued, CWA's will eventually be faced with taking a hard look at the positives and negatives associated with the Direct vs. Purchase approach.

Such a Cost/Benefit analysis must be done properly. For example, it should only consider as relevant those costs which will not be incurred when choosing one alternative over the other. Although POS may appear to offer a less expensive per unit cost than Direct Services, unless the Direct Social Service Staff is terminated, their direct and allocated costs will not be saved and cannot be counted as a savings in the analysis.

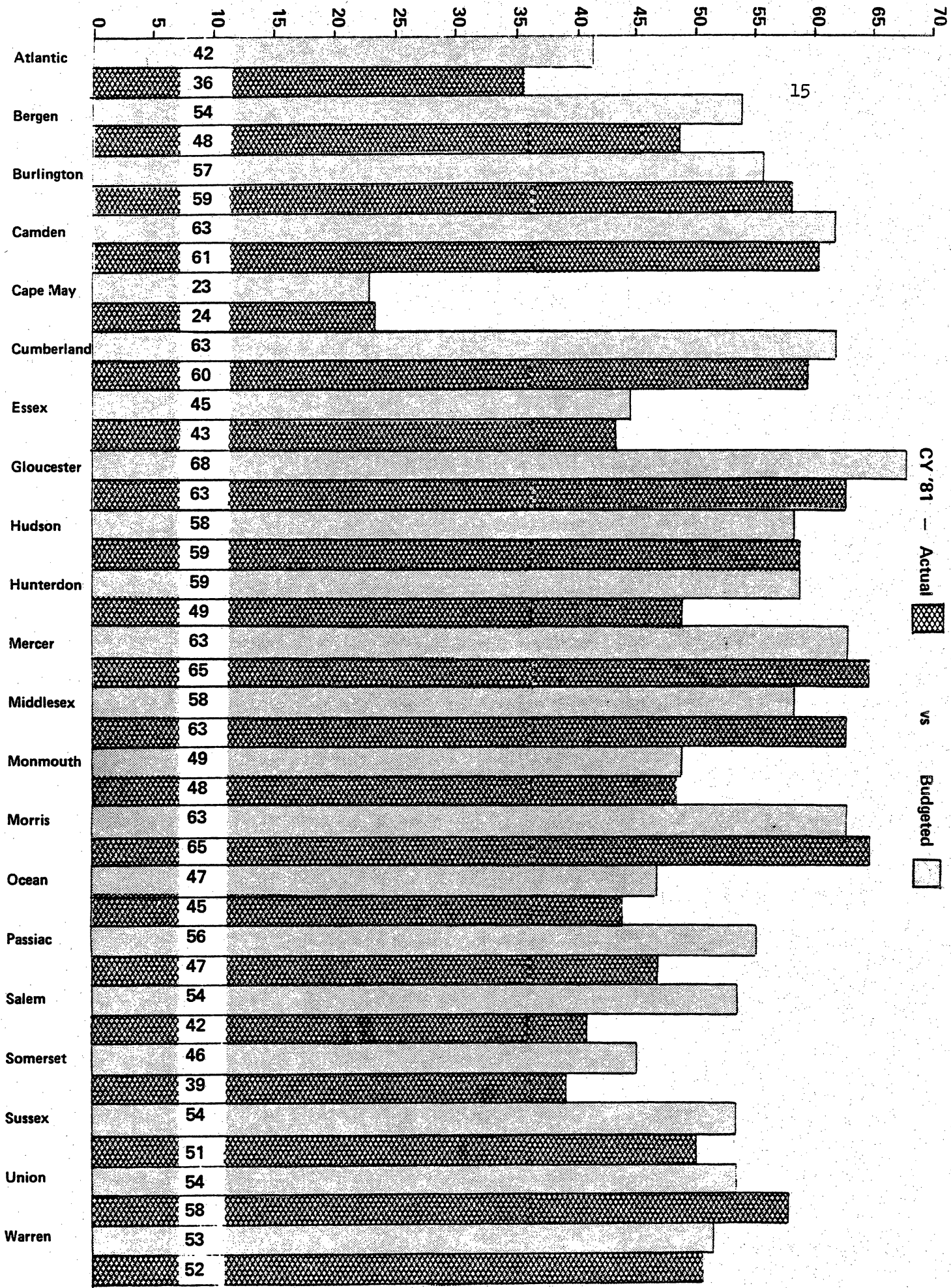
There have been consultants purporting to have developed such a Direct vs. Purchase analytical model. All have been defective, having failed, among other things, to recognize the difference between relevant and irrelevant costs.

They have also failed to consider that in this Direct vs. Purchase performance (output) levels by direct staff are relatively elastic--within bounds--with no accompanying increase in total program costs. For example, if a caseworkers' caseload would be doubled--there would be no actual increase in total program costs and, in fact, the unit cost would decrease by one-half. Conversely, if POS were doubled, the total costs would at least double.

Cost analysis can be as misleading as it is valuable and informative, depending on whether it is done properly or improperly.

The statewide average (\bar{X}) = 53.76.

SOCIAL SERVICE SALARIES AS A PERCENT OF TOTAL SOCIAL SERVICES PROGRAM



15

CY '81 - Actual
vs
Budgeted

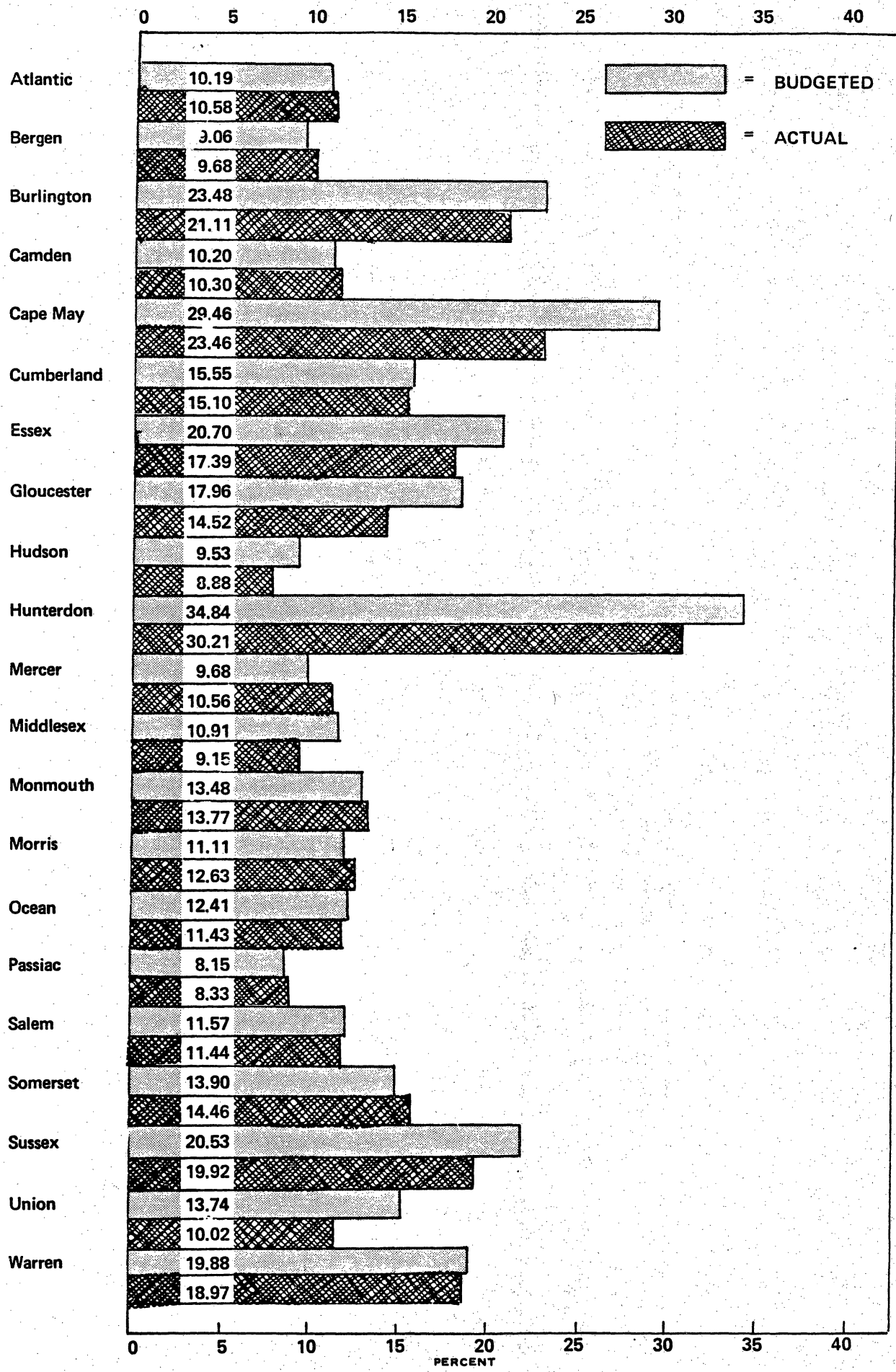
Administrative Salaries as a Percent of Total Salaries and Administrative Costs
as a Percent of Total Staff

These two indicators focus on the Employee Work Unit embracing the administrators of the agency, (as contrasted with the Social Service, Income Maintenance, and the other "program" Employee Work Units as defined in the DFW Cost Allocation Plan for CWA's).

These two indicators can be evaluated individually and comparatively. As with the Social Service Staff and Salary indicators, there should be a high level of correlation between these two key indicators on Administration Staffing and Salary costs.

What is the proper percent of Administrative Staffing and salary levels? The correct answer depends on a number of factors, such as the organizational structure of the CWA, its mission, its operational approach, and so on. However, comparing each CWA's level with the Statewide average will permit identification of unfavorable variances from the average which should be more closely scrutinized, both by the County and by the State.

The statewide average (\bar{X}) = 15.54 and 14.19 respectively.



CY'81 CWA ADMINISTRATIVE SALARIES AS A PERCENT OF TOTAL SALARIES

Administrative Costs as a Percent of Total Program Costs

This measures the relationship of the costs associated with the Administrative Work Unit in conjunction with the total (CWA) program costs (all CWA programs--I.M., FPS, EPSDT, etc.). As such, it was expected that there would be a high level of commonality, i.e., a tight clustering of values around the Statewide average. Any unusual deviations would bear closer review to determine whether any organizational/structural problems exist.

The statewide average (\bar{X}) = 18.71.

NOTE:

No graph was prepared of this key indicator because of its close similarity to the preceding graph.

Administrative Costs Charged to Social Services as a Percent of Social Service Salaries

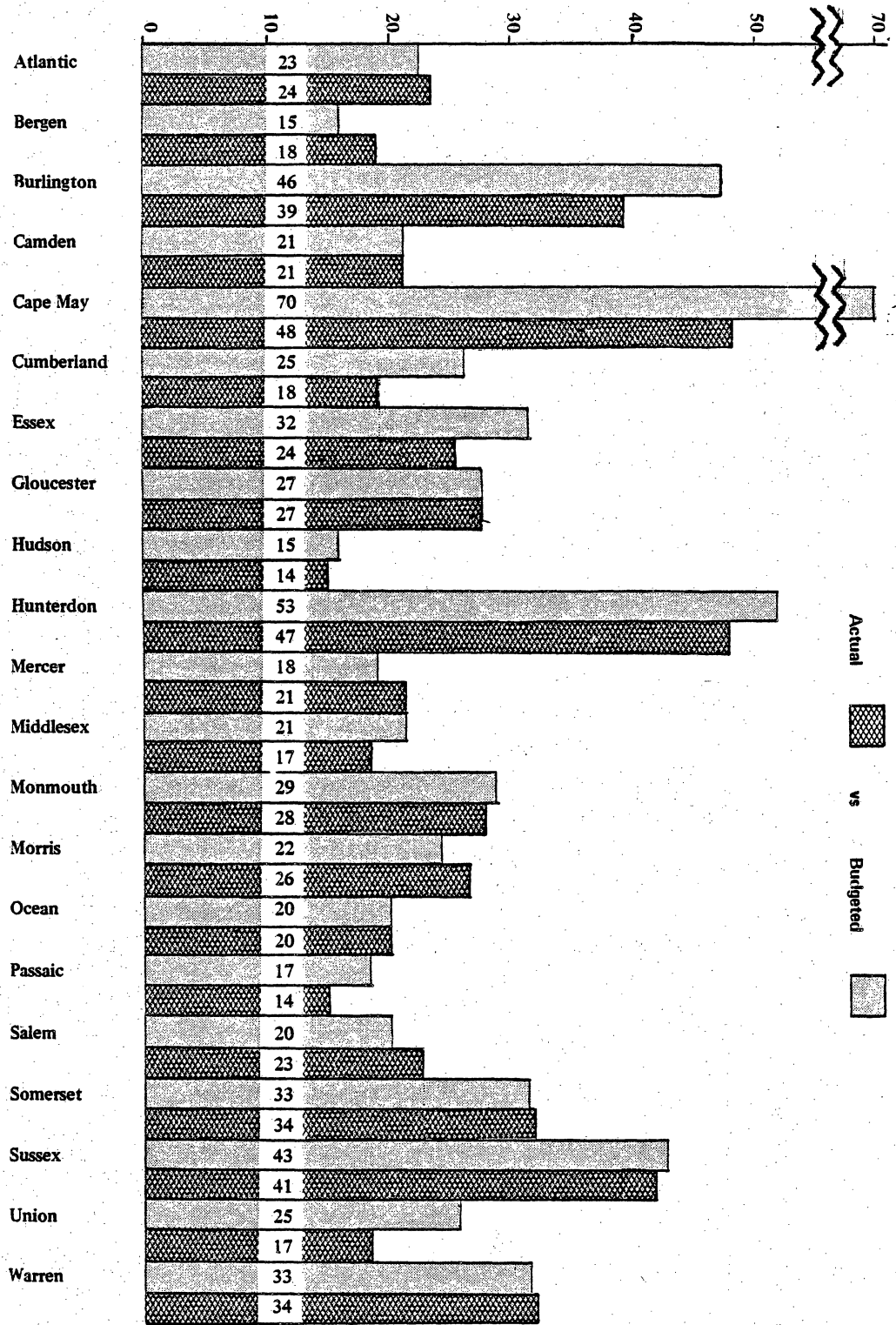
Using the Social Service salaries as the denominator, administrative costs (of the Administrative Work Unit) charged to Social Services are compared.

The primary value of this statistic is in comparing each CWA's level with the Statewide average. The individual percent value for any CWA--when not used in a comparative analysis--has no intrinsic value. However, by comparing all CWA's in this manner, we are provided with a relative measure of the impact of Administrative costs on Social Service funds.

As with the other key indicators--significant or unusually large differences from the Statewide Average (\bar{X}) should be more thoroughly examined.

In analyzing administrative costs--it must be remembered that they are allocated via the cost allocation plan and, as such, they may at least partially, fall into the "uncontrollable" cost category.

The statewide average (\bar{X}) = 28.95.



CWA ADMINISTRATIVE COSTS CHARGED TO SOCIAL SERVICES AS A PERCENT OF SOCIAL SERVICES SALARIES - CY '81

Actual vs Budgeted

8

Purchase of Service (69 Account) as a Percent of Total Social Services

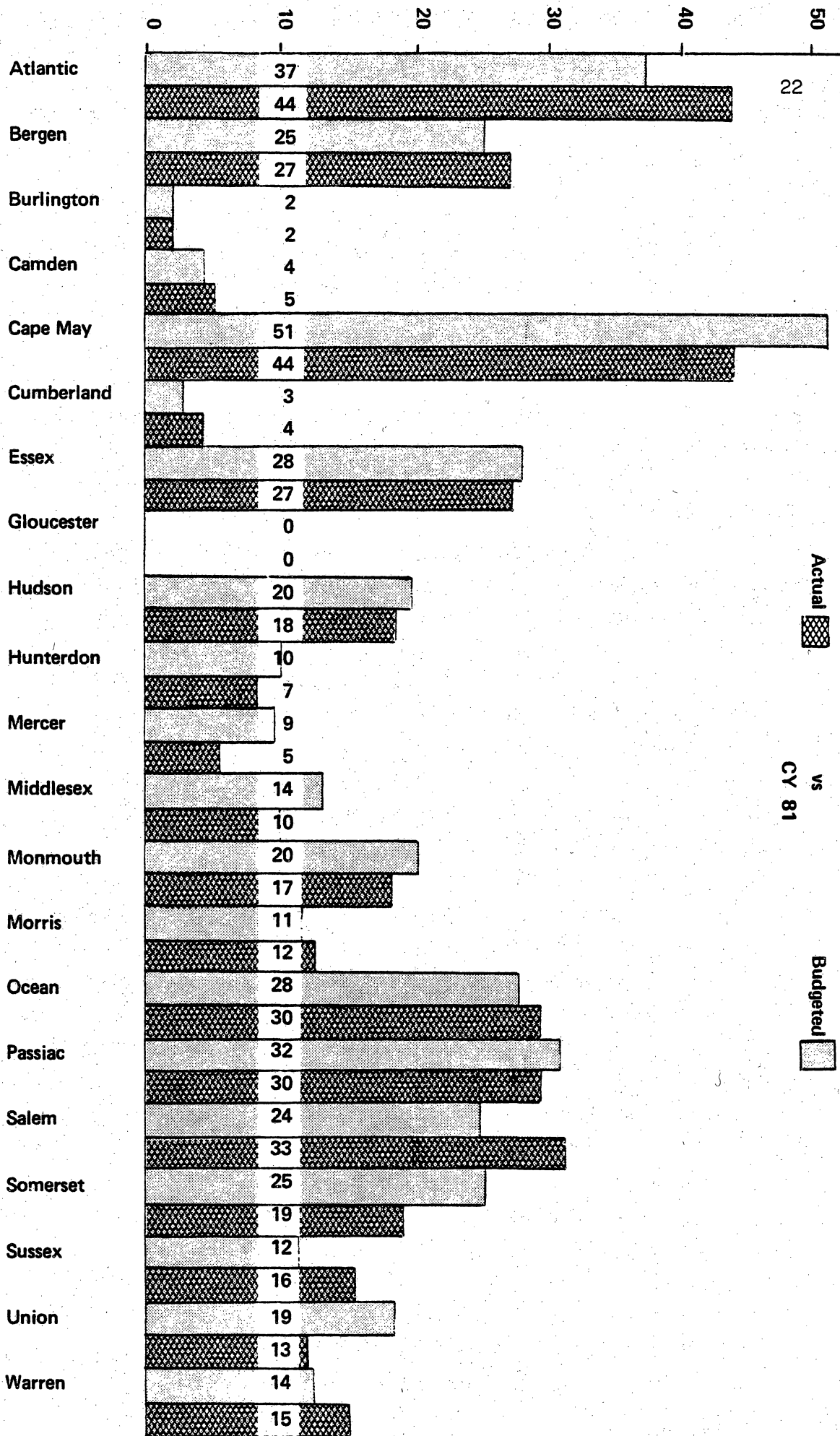
This graph clearly indicates the Purchase vs. Direct resource allocation situation in each county.

As is the case with the other graphs, this is not intended to indicate a "good vs. bad" situation, but merely to provide a statewide comparative assessment.

As discussed later, whether a service should be provided by Direct staff or by purchasing--must be analyzed and decided on its specific merits.

The statewide average (\bar{X}) = 18.48.

CWA P.O.S. ('69 ACCOUNT) AS A PERCENT OF TOTAL SOCIAL SERVICES



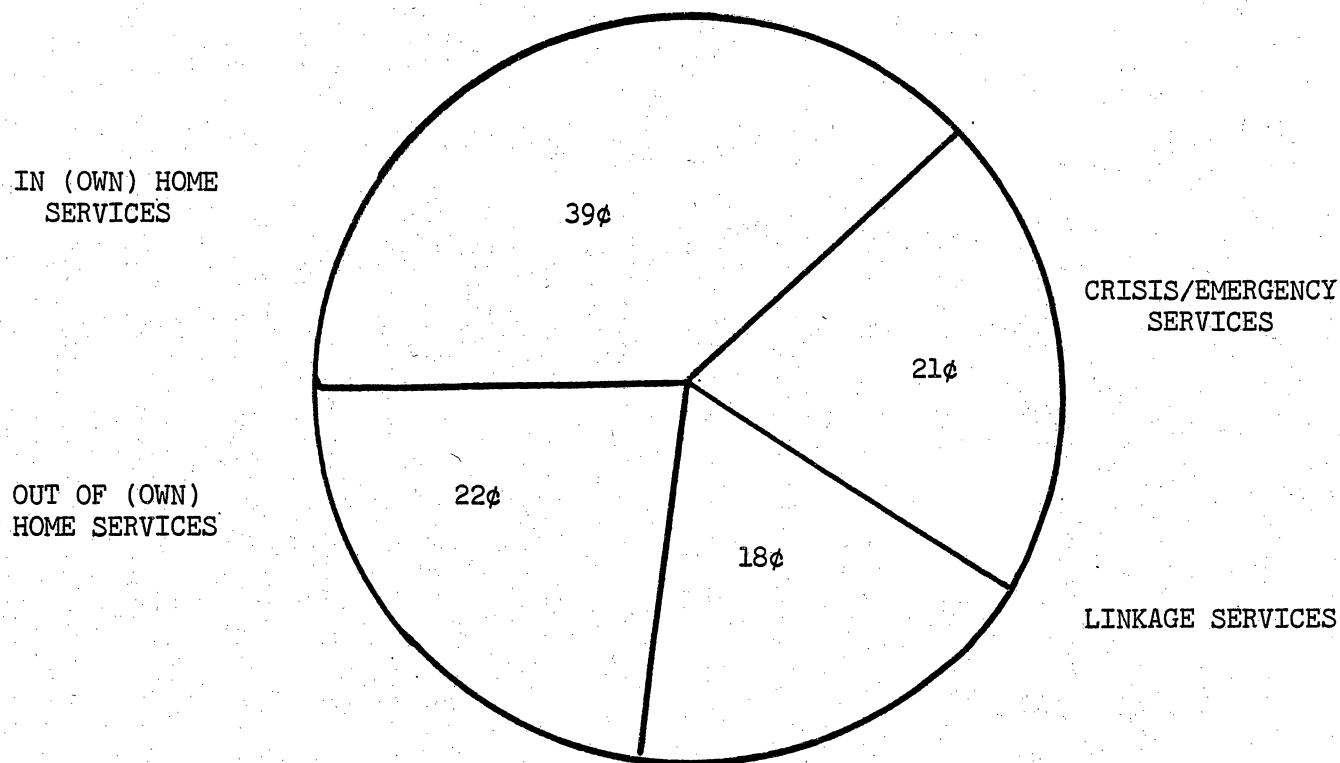
Actual vs Budgeted
CY 81

Distribution of CY'81 CWA Social Service Dollars

The graph was constructed using the actual expenditures for all County Welfare Agencies for Calendar Year 1981, extracted from the PA 618's, the PA 41's, and the Random Moment Sampling (RMS) report. The total actual CWA Social Service Costs for CY'81 were divided into four groups: In (own) Home, Out of (own) Home, Crisis/Emergency and Linkage Service. These four groups were selected because they appeared to provide the most rational and practical method to aggregate and illustrate the distribution of the CWA Social Service dollar. These are arbitrary groups and it is expected that they may not be universally accepted as the "best".

In preparing this grouping of costs, Case Management Service costs were distributed among the specific services, proportionately consistent with each services' relative share of the total costs. This distribution is in recognition of the fact that Case Management does not exist in a vacuum, that it is (or should be) part and parcel of every service. While it can be argued that Case Management is indeed a separate service, in this analysis, we did not consider it as such.

DISTRIBUTION OF CWA SOCIAL SERVICES DOLLAR
CY'81 STATEWIDE ACTUAL



IN (OWN) HOME SERVICES	CRISIS/EMERGENCY SERVICES	LINKAGES SERVICES	OUT OF (OWN) HOME SERVICES
------------------------	---------------------------	-------------------	----------------------------

Chore
Homemaker/Homehealth
Companionship
Home Delivered Meals

Protective Services (Adult & Child)
Emergency Assistance
Housing Related

I & R
Transportation

Employment Relat
Recreational
Legal Services
Education & Training
Counseling
Parole Supervisi
Family Planning
Youth Services
Health Related
Day Care -
Adult & Child
Placement
Foster Care
Group Home
Residential
Services to
Alcohol Abuse

ADDITIONAL COMPARATIVE ANALYSES AND OTHER
TABLES & GRAPHS

Comparison of CWA Social Services Funding
and Allocations (Graph)

CWA Allocation in Current Dollars (Graph)

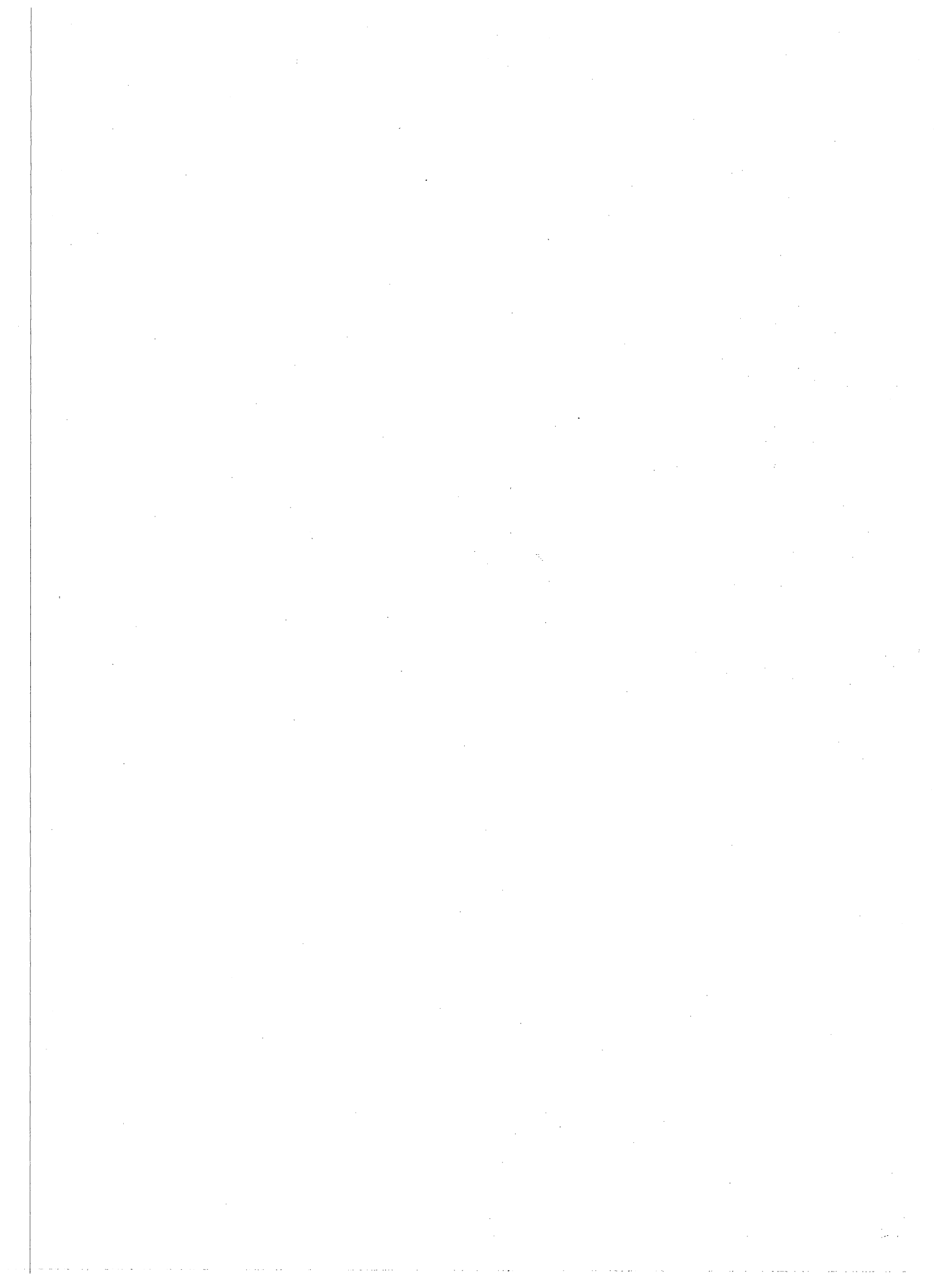
CWA CY'81 Social Service Expenditures by
Service & Eligibility Category

CY'81 CWA Purchased Services (69 Account)

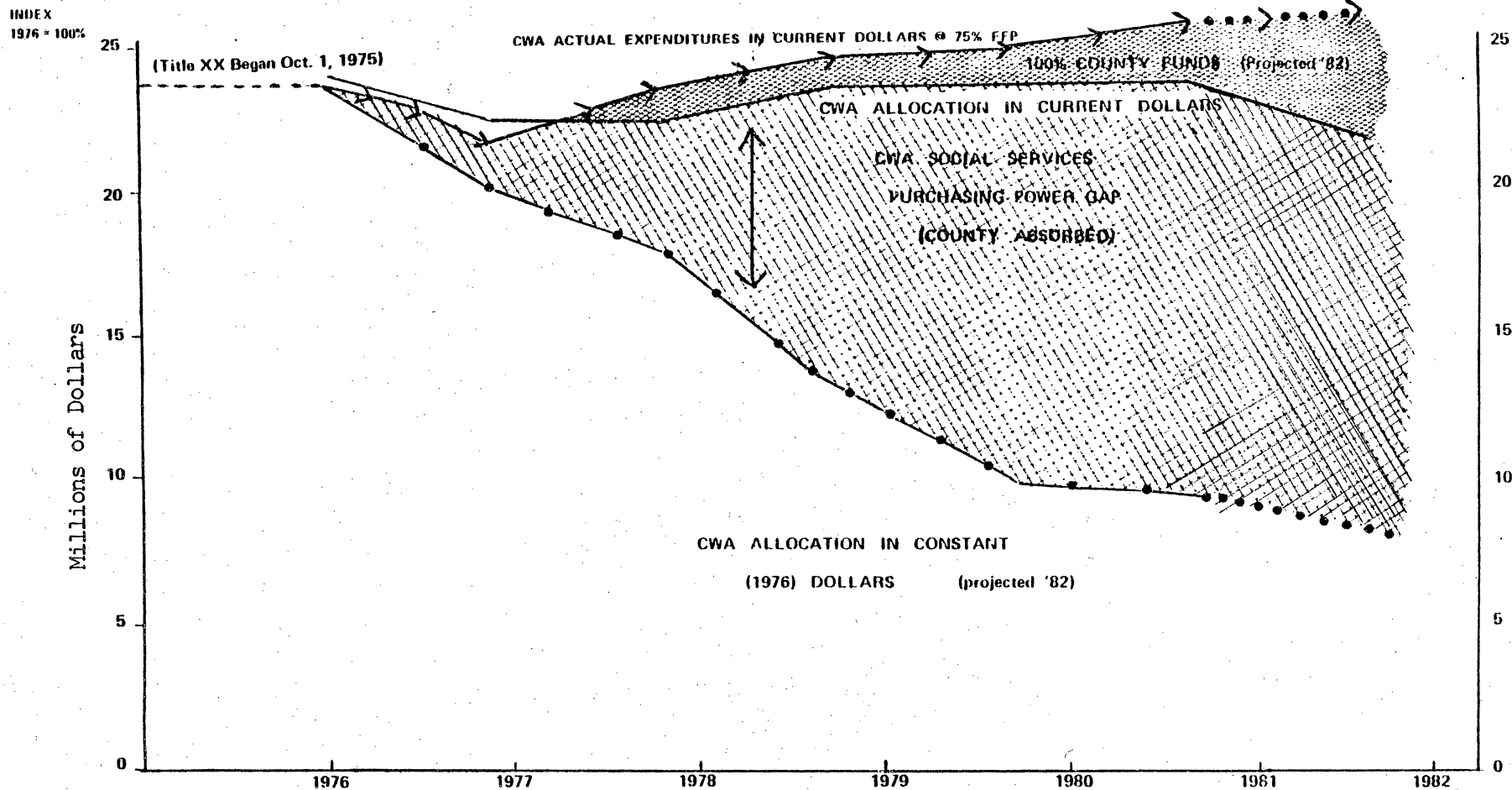
CY'82 CWA Total Social Service Budgeted by
County & Service

CY'82 Analysis of Standard CWA Budgets

Five Year Analysis Purchased Services by County



COMPARISON OF CWA SOCIAL SERVICES FUNDING EXPENDITURES
 ACTUAL - CY'76-'81 & '82 PROJECTED SOCIAL SERVICES
 ALLOCATIONS - CY'76-'82 & '83 PROJECTED IN CURRENT &
 CONSTANT (1976)* DOLLARS



STATEWIDE CWA SOCIAL SERVICES (Title XX) ALLOCATION IN CURRENT AND CONSTANT* \$

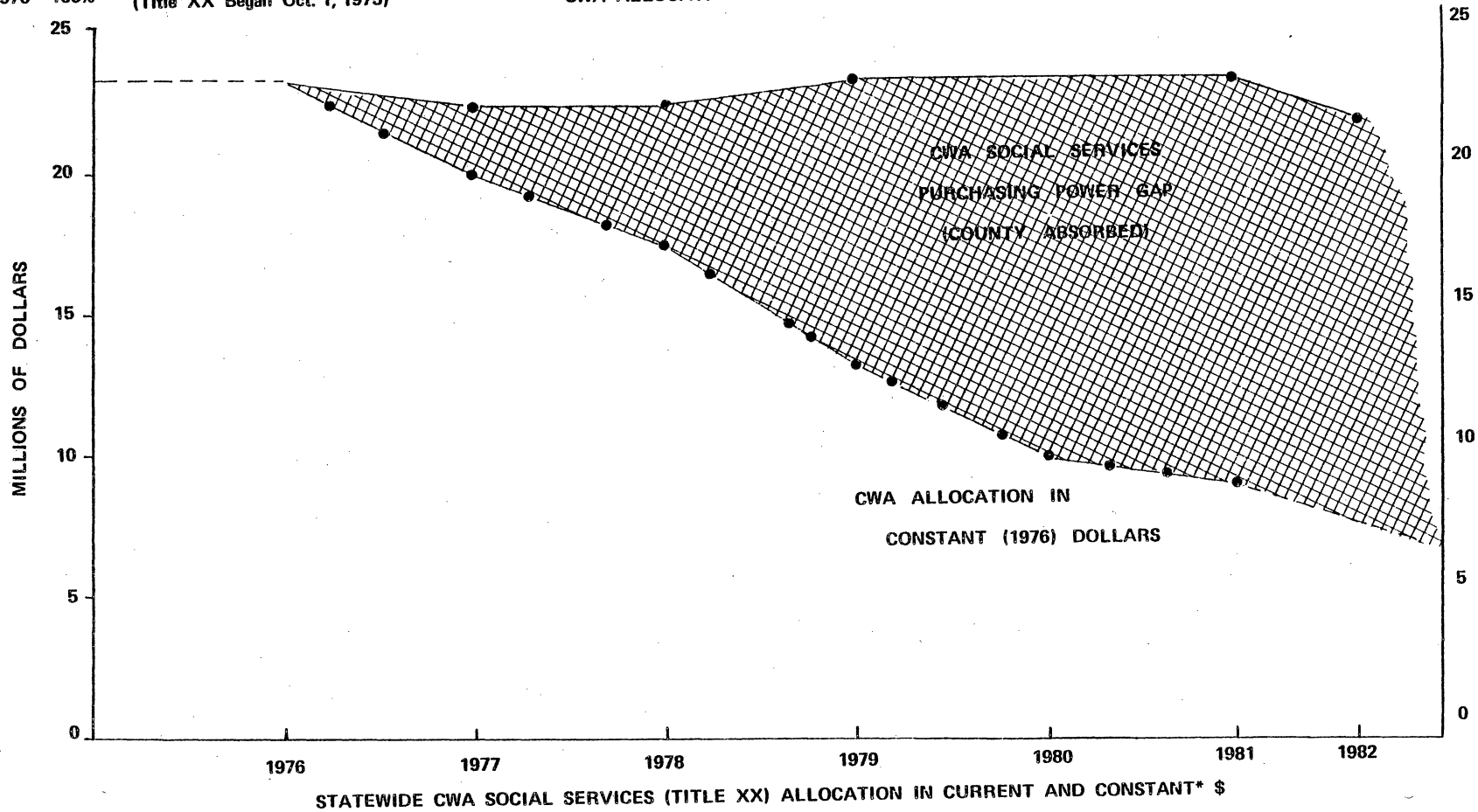
*CPI -

FOR URBAN WAGE EARNERS AND CLERICAL WORKERS, COMBINED ANNUAL AVERAGES - NEW YORK SCA AND PHILADELPHIA SMSA

Index
1976 = 100%

(Title XX Began Oct. 1, 1975)

CWA ALLOCATION IN CURRENT DOLLARS



*CPI -
FOR URBAN WAGE EARNERS AND CLERICAL WORKERS, COMBINED ANNUAL AVERAGES - NEW YORK SCA AND PHILADELPHIA SMSA

COMPARISON OF CWA SOCIAL SERVICES ALLOCATIONS
CY '76-'82 & '83 PROJECTED IN CURRENT & CONSTANT
(1976)* DOLLARS

The first of the two preceding graphs compares the Statewide CWA Social Services (Title XX) allocation with the CWA actual expenditures for the period from the beginning of Title XX (October '75) up to the end of Calendar Year 1981. For comparative purposes, the annual allocations are graphed in current and in constant (1976) dollars. The figure reveals (a) the increasing amount of County funds which have been subsidizing Title XX and (b) the "gap" in purchasing power of the allocation when deflated by the Consumer Price Index (CPI) for Urban and Clerical Workers (combined averages for New York SCA and Philadelphia SMSA). The second graph focusses on the allocations only.

The Gross National Product (GNP) Implicit Price Deflator could have been used in place of the CPI. The GNP Deflator reflects the behavior of several indexes (Producer Price Index, Consumer Price Index), thus its values depend on other indexes. Many prefer using the Implicit GNP Deflator, suggesting that it more accurately measures the change in buying power of governmental activities. The GNP Deflator is in essence a Paasche-type index, that is, a weighted aggregate index that uses current period quantities as weights. Each successive year the current period is compared with the base year. The Consumer Price Index (CPI), on the other hand, is a Laspeyres index. It is a fixed-weight, fixed-base type. It is the ratio of two expenditures. The numerator represents the items purchased in the base period at current prices and the denominator is the actual base period expenditure. Both the Laspeyres and the Paasche indexes are superior to any of the simple indexes. They reduce the likelihood that the indexes will be biased because of either large relative changes in prices of items or large absolute changes. The Laspeyres formula (CPI), has a tendency to overstate prices, while the Paasche (GNP) formula tends to understate prices. We chose the CPI index in these graphs because, unlike the GNP which is a national index, the CPI is sensitive to regional variation. In addition, the CPI undoubtedly has more effect on day-to-day business decisions throughout the country than does any other economic statistic.

CWA CY'81
 Social Service Expenditures¹ (100% Federal and County)⁵
 By Service and Eligibility Category

April, 1982
 RMS, PA-41 & 618
 F. Kelly

	TOTAL	AFDC	SSI	MAO ²	IE ³	WRI ⁴
CASE MANAGEMENT	\$6,144,741	\$3,195,265	\$921,712	\$184,342	\$1,044,606	\$798,816
CHORE	394,404	177,482	78,881	11,832	86,769	39,440
COMPANIONSHIP	70,931	34,047	9,221	2,128	12,058	13,477
COUNSELING	1,876,508	957,019	262,711	56,295	356,537	243,946
DAY CARE	1,501,478	465,458	135,133	30,030	630,621	240,236
EDUCATION & TRAINING	356,141	188,755	53,421	10,684	60,544	42,737
EMERGENCY ASSISTANCE	1,335,530	707,831	200,330	40,066	227,040	160,263
EMPLOYMENT RELATED	193,208	104,332	27,049	5,796	32,846	23,185
HEALTH RELATED	1,714,560	908,717	257,184	51,437	291,475	205,747
HOME-DELIVERED MEALS	8,094	4,290	1,214	243	1,376	971
HOME-HEALTH/HOMEMAKER	10,554,128	2,110,825	2,532,991	211,083	5,171,523	527,706
HOUSING RELATED	2,993,990	1,586,815	449,099	89,820	508,977	359,279
LEGAL	152,800	67,232	18,336	4,584	21,392	41,256
PAROLE SUPERVISION	5,396	2,860	809	162	917	648
PLACEMENT - FOSTER C.	194,259	102,957	29,139	5,828	33,024	23,311
" - GROUP HOME	43,169	22,880	6,475	1,295	7,339	5,180
" - RESIDENTIAL	142,996	75,788	21,449	4,290	24,309	17,160
PRS - ADULT & CHILD	1,459,408	510,793	145,941	29,188	175,129	598,357
RECREATION	101,154	30,346	44,508	1,517	7,587	17,196
ALCOHOL ABUSE	8,094	4,290	1,214	243	1,376	971
TRANSPORTATION	1,293,732	245,809	103,499	12,937	724,490	206,997
INFORMATION & REF.	3,682,343	1,914,818	552,352	110,470	607,587	497,116
FAMILY PLANNING	106	56	16	3	18	13
YOUTH SERVICES	149,158	-0-	-0-	-0-	-0-	149,158
TOTALS	<u>34,376,328</u>	<u>13,418,665</u>	<u>5,852,684</u>	<u>864,273</u>	<u>10,027,540</u>	<u>4,213,166</u>
% OF TOTAL		39.03	17.03	2.51	29.17	12.26

Footnotes

- 1) a) Includes Direct and Purchased Costs
 b) Direct and Administrative Costs Distributed Using RMS %
- 2) MAO = Medicaid Only
- 3) I.E. = Income Eligible
- 4) W.R.I. = Without Regard to Income
- 5) Total Federal Funding = \$23,520,100 (23,233,000 CWA Allocation + 287,100 Cappy May Compact Additional)

CY'81 CWA PURCHASED SERVICES (69 A/C)

CWA	Youth Services	Casework Management	Chore Services	Counseling Services	Employment Related Services	Family Planning	Homemaker Home/Health Services	Housing Related	Legal Services	Transportation
ATLANTIC	\$ 148,096	\$	\$ 2,046	\$ 82,312	\$	\$	\$ 92,742	\$ 15,340	\$ 30,503	\$ 30,000
BERGEN							248,182			26,371
BURLINGTON							8,695			55
CAMDEN			29,589				-0-			64,825
CAPE MAY		31,875	7,125				41,566			116,726
CUMBERLAND							-0-	14		14,670
ESSEX							2,780,922			243,508
GLOUCESTER							-0-			
HUDSON							400,891			
HUNTERDON			776				18,499			4,582
MERCER							36,460			14,452
MIDDLESEX			35			106	173,436			21,212
MONMOUTH							532,063		885	
MORRIS			801				65,337			
OCEAN							175,485			24,411
PASSAIC			4,581				484,772			43,348
SALEM	1,062		268				39,542			21,334
SOMERSET					1,586		214,675			
SUSSEX			5,114		61		42,449			1,613
UNION			1,360				102,210			11,001
WARREN			58				26,585			
TOTALS	\$ 149,158	\$ 31,875	\$ 51,753	\$ 82,312	\$ 1,647	\$ 106	\$ 5,484,511	\$ 15,354	\$ 31,388	\$ 638,108
% of TOTAL	1.74	.37	.60	.96	.02	0	63.87	.18	.37	7.43

100% Federal & County

CY'81 CWA PURCHASED SERVICES (69 A/C)

CWA	Information & Referral	Day Care	Medical Transportation	Protective Services	Recrea- tional	Education & Training	Community Planning	Health Related	Companion- ship	TOTAL
ATLANTIC	\$ 50,779		\$ 7,474							\$ 459,292
BERGEN			13,051							287,604
BURLINGTON			5,410	1,451						15,611
CAMDEN			90,312	1,741	5,331					191,798
CAPE MAY		81,759	24,632			8,096	4,504			316,283
CUMBERLAND			7,582					92		22,358
ESSEX			265,297							3,289,727
GLOUCESTER			12,995							12,995
HUDSON			3,891							404,782
HUNTERDON		1,118	24,858	489						50,322
MERCER			7,408							58,320
MIDDLESEX			119,619							314,408
MONMOUTH		315,477	189,965	379,046	12,063					1,429,499
MORRIS			5,888	14,542						86,568
OCEAN			269,811	2,952						472,659
PASSAIC		4,397	11,989	130						549,217
SALEM			5,802					829		68,837
SOMERSET			9,048	3,468	121			11,176		240,074
SUSSEX		8,719	837	649					782	60,224
UNION			112,858	7						227,436
WARREN			2,545							29,188
TOTALS	\$ 50,779	\$ 411,470	\$1,191,272	\$ 404,475	\$ 17,515	\$ 8,096	\$ 4,504	\$12,097	\$ 782	\$ 8,587,202
% of Total	.59	4.79	13.87	4.71	.20	.09	.05	.14	.01	

100% Federal & County

CY'82 CWA TOTAL SOCIAL SERVICES BUDGETED BY COUNTY & SERVICE

DIRECT & PURCHASED
(100% Funds - Federal & County)

F. Kelly
Revised June 1982

Page 1 of 2

CWA	Case Management	Chore	Companionship	Counseling	Day Care	Education & Training	Emergency Assistance	Employment Related	Health Related	Home Del. Meals	Homemaker Home-Health	Housing Related
ATLANTIC	\$ 84,058	\$22,264	\$	\$ 129,492	\$ 59,836	\$	\$	\$	\$	\$	\$ 200,104	\$ 152,613
BERGEN	116,445			66,252	42,775	24,511		24,511	29,618		310,446	97,026
BURLINGTON	142,027		14,259	65,020	10,150	11,745					110,256	34,561
CAMDEN	332,729	32,000		214,474	63,993						995,265	139,426
CAPE MAY*	104,534			21,341	109,477*	15,944		18,671			96,427	10,583
CUMBERLAND	103,996			16,892	19,627	16,892	8,085		8,295			19,311
ESSEX	1,254,949		103,822	317,757	222,683	394,234		710,706	414,403		4,287,590	328,053
GLOUCESTER	11,762			77,760				3,789	23,329			62,210
HUDSON	392,506	10,407		88,976	53,325	26,235	26,235		109,926		451,365	73,283
HUNTERDON				25,003								
MERCER	158,241	9,535		13,314	70,106	14,712		2,890	89,779		344,297	124,357
MIDDLESEX	145,547				106,734				66,736		504,942	500,455
MONMOUTH	562,472		67,192	667,530	512,128	20,019		242,444	197,313	45,441	563,907	337,862
MORRIS	50,884	25,669		51,645	13,827	12,246	20,147		41,478		58,414	46,021
OCEAN	59,167								39,845		249,647	10,248
PASSAIC	143,920	14,436		233,199	93,696	52,721	14,217	27,952	224,495		523,394	91,831
SALEM	31,124			10,033					22,068	11,232	38,258	
SOMERSET	40,803								45,579		124,771	37,153
SUSSEX	75,235	12,848	5,556	24,516	25,525	4,014			18,159		58,966	13,144
UNION	223,464			152,691	56,618				61,545		163,359	153,118
WARREN	75,633	2,521				8,320			33,366		26,921	
TOTALS	<u>4,109,496</u>	<u>129,680</u>	<u>190,829</u>	<u>2,175,895</u>	<u>1,460,500</u>	<u>601,593</u>	<u>68,684</u>	<u>1,036,239</u>	<u>1,425,934</u>	<u>56,673</u>	<u>9,130,502</u>	<u>2,231,255</u>
% of Total	12.61	.40	.59	6.68	4.48	1.85	.21	3.18	4.38	.17	28.02	6.85

* Includes Cape May Compact Dollars

Summary from CY'82 CWA Social Services Budget Request - including "additional programs," i.e., beyond allocation

(Rounded to nearest dollar amount)

CY'82 CWA TOTAL SOCIAL SERVICE BUDGETED BY COUNTY & SERVICE

DIRECT & PURCHASED

(100% Funds - Federal & County)

CWA	Legal Services	Placement (Foster Care, G.H., Resid.)	PRS Adult, Child	Recreation	Alcohol Abuse	Transportation	Information & Referral	Family Planning	Youth Services	Community Planning	Boarding Homes	Totals
ATLANTIC	\$ 20,000		\$ 147,558				\$ 103,072		\$ 117,578			\$1,036,575
BERGEN			68,604			77,450	33,612				48,225	939,475
BURLINGTON		10,155	69,334				43,913					511,420
CAMDEN			279,468	8,000		81,923	42,964					2,190,242
CAPE MAY*			54,819			152,455*	198,466*			16,800*		799,517
CUMBERLAND			67,721			29,657	67,377				13,087	370,940
ESSEX		103,822	1,337,523		103,822	432,502						10,011,866
GLOUCESTER			132,197				77,760					388,807
HUDSON		15,682	10,552			15,682	607,227					1,886,668
HUNTERDON			62,886								27,628	299,317
MERCER			157,250			62,050	91,492					1,138,023
MIDDLESEX			140,002			31,731	402,178				41,585	1,939,910
MONMOUTH		311,880	1,312,192	68,179		18,684	433,012	8,748	28,416		123,397	5,520,815
MORRIS			157,550			8,900	14,023					500,804
OCEAN		30,737	170,117			21,443	81,534				70,560	733,298
PASSAIC		117,516	127,282		27,749	84,343	161,446					1,938,197
SALEM			13,506			32,841	26,151					185,213
SOMERSET			30,006			33,966	24,035	11,893			20,601	368,807
SUSSEX		24,289	69,106			8,816	80,511					420,685
UNION			61,500			73,924	293,381					1,239,600
WARREN			5,049				16,476					168,286
TOTALS	20,000	614,081	4,474,222	76,179	131,571	1,166,367	2,798,630	20,641	145,994	16,800	345,083	32,588,465
% of Total	.06	1.88	13.73	.24	.40	3.58	8.59	.06	.45	.05	1.06	

* includes Capt May Compact Dollars.

Summary from CY '82 CWA Social Services Budget Request - including "additional programs," i.e., beyond allocation.
(Rounded to nearest dollar amount)

ANALYSIS OF STANDARD CWA BUDGETS

3/82
F. Kelly

CY'82

CWA	TXX: County Matching Ratio	SS Staff as % of Total Staff	SS Salaries as % of Total Salaries	SS Salaries as % of Total SS Budget Request	ADM Salaries as % of Total Salaries	ADM Staff as % of Total Staff	ADM Costs as % of Tot. Prog. Costs	ADM Costs Chargeable to SS as % SS Salaries	69 A/C as % of Total SS Budget
ATLANTIC	75:25	12.34	12.13	41	10.28	10	16	25	40
BERGEN	74:26	7.47	9.30	50	12.79	8	17	20	25
BURLINGTON	75:25	6.45	6.90	60	16.21	16	23	33	2
CAMDEN	75:25	12.99	11.77	62	10.10	10	14	22	5
CAPE MAY	61:39	20.56	16.92	24	28.63	23	26	62	52
CUMBERLAND	75:25	8.45	9.20	63	14.46	14	19	26	3
ESSEX	61:39	20.65	20.21	41	25.38	27	25	40	30
GLOUCESTER	71:29	7.86	7.79	65	18.38	15	22	31	0
HUDSON	75:25	12.19	15.50	56	8.97	8	13	15	22
HUNTERDON	50:50	25.14	19.95	58	29.21	22	27	47	8
MERCER	75:25	7.70	7.45	58	10.65	13	15	22	13
MIDDLESEX	75:25	13.54	13.19	60	13.33	5	17	24	9
MONMOUTH	53:47	34.28	34.15	50	13.85	15	16	27	20
MORRIS	66:34	16.09	14.30	60	7.78	4	13	20	15
OCEAN	75:25	8.64	9.38	50	42.43	14	14	22	21
PASSAIC	75:25	7.33	9.19	53	9.06	8	13	13	38
SALEM	75:25	7.42	8.17	45	11.03	8	16	21	36
SOMERSET	51:49	25.55	22.68	44	13.12	13	18	34	26
SUSSEX	66:34	28.13	22.92	52	20.15	20	24	44	12
UNION	75:25	9.71	13.25	57	12.38	11	16	17	19
WARREN	69:31	11.72	9.70	47	26.35	16	28	48	15
\bar{X} =	68.90	14.49	14.00	52.19	16.88	13.33	18.67	29.19	19.57

April, 1982
(PA-41)

F. Kelly

5-YEAR ANALYSIS BY COUNTY
TOTAL TXX CWA
PURCHASED SERVICES - (69 A/C)
(100% Federal & County)

34

CWA	1977	1978	1979	1980	1981	TOTAL
ATLANTIC	\$ 27,483	\$ 125,057	\$ 111,162	\$ 290,944	\$ 459,292	\$ 1,013,938
BERGEN	42,208	84,063	224,899	239,092	287,604	877,866
BURLINGTON	12,170	13,971	35,258	37,004	15,611	114,014
CAMDEN	100,885	46,260	59,571	106,679	191,798	505,193
CAPE MAY	30,455	21,134	153,214	343,010	316,283	864,096
CUMBERLAND	10,974	104,177	17,973	15,944	22,358	171,426
ESSEX	1,282,369	1,122,983	1,502,520	2,273,878	3,289,727	9,471,477
GLOUCESTER	6,313	--	--	2,686	12,995	21,994
HUDSON	426,265	707,018	431,873	442,723	404,782	2,412,661
HUNTERDON	16,416	30,287	36,988	50,960	50,322	184,973
MERCER	73,116	124,564	89,101	127,168	58,320	472,269
MIDDLESEX	334,869	495,725	375,812	465,537	314,408	1,986,351
MONMOUTH	1,515,421	1,020,633	1,366,845	1,432,041	1,429,499	6,764,439
MORRIS	7,956	21,142	30,926	66,084	86,568	212,676
OCEAN	176,794	257,378	649,461	1,070,272	472,659	2,626,564
PASSAIC	133,016	169,088	383,371	460,719	549,217	1,695,411
SALEM	8,878	8,095	36,194	64,542	68,837	186,546
SOMERSET	71,195	92,589	177,821	272,014	240,074	853,693
SUSSEX	37,018	47,808	33,113	56,530	60,224	234,693
UNION	32,009	63,951	129,417	415,627	227,436	868,440
WARREN	104	21,257	984	19,356	29,188	70,889
TOTALS	<u>\$ 4,345,914</u>	<u>\$ 4,577,180</u>	<u>\$ 5,846,503</u>	<u>\$ 8,252,810</u>	<u>\$ 8,587,202</u>	<u>\$ 31,609,609</u>

TRANSFORMING DATA
INTO
MANAGEMENT INFORMATION

Note: Many of the tables, discussion and graphical techniques in this and the following sections were directly excerpted or modified to meet our needs from the DOD Publication Analysis for Managers of People and Things.

TRANSFORMING DATA INTO MANAGEMENT INFORMATION

As we have seen, cost and output data are very useful to the Social Service administrator because they permit meaningful comparisons to be made. The basic unit of comparison is the individual cost/output observation. Each observation connects a specific service unit provided to the specific resources used in providing it.

With this type of approach, the Social Service Administrator can compare and anticipate costs at different levels of output--or for different qualities of output. He or she can compare the effects of a service delivery "mix" or combination of alternative service approaches comparing actual with the planned LOS.

A word of caution--as a general rule, data are not normally adequate for analysis unless the outputs can be specifically related to the costs experienced in producing the outputs. In addition, analysis of actual data (cost and output) rarely, if ever, produce information as perfect or precise as that which can be derived from hypothetical examples. This does not mean that comparisons cannot be made using "imperfect" data. It does mean that certain rules for dealing with imperfect data must be observed. This involves interpretation of the data and possibly the application of statistical techniques. Data can also be defective, therefore, conclusions drawn from defective data would be invalid. Thus, it can be said that the complete absence of data is better than defective or invalid data!

For a CWA to be able to complete cost/output analyses, their reports and records systems must lend themselves to this by accurately reflecting the resources used (costs) and the specific output (service units) produced.

In actual practice, judgment and experience play a key role in helping assure comparability of the cost and output data. Often common sense provides the best solution. For example, abnormal cost/output observations may be excluded as could observations which appear of suspect accuracy. Personal familiarity is often helpful in "cleaning" the data.

Social Service Clients are not particularly homogeneous. This combined with the different modes of CWA service operations throughout the State, results in a situation when output reports and records will rarely be completely uniform. The same number of service units can represent differing accomplishments involving differing amounts of casework. Although two outputs would appear the same in a report, the costs involved in achieving them would almost certainly vary significantly.

The problem of data/analysis for the CWA's begins with what specific data to collect and choosing an output measure. One alternative would be to segregate the various categories of services and maintain separate records on each. Record-keeping costs would easily become prohibitive.

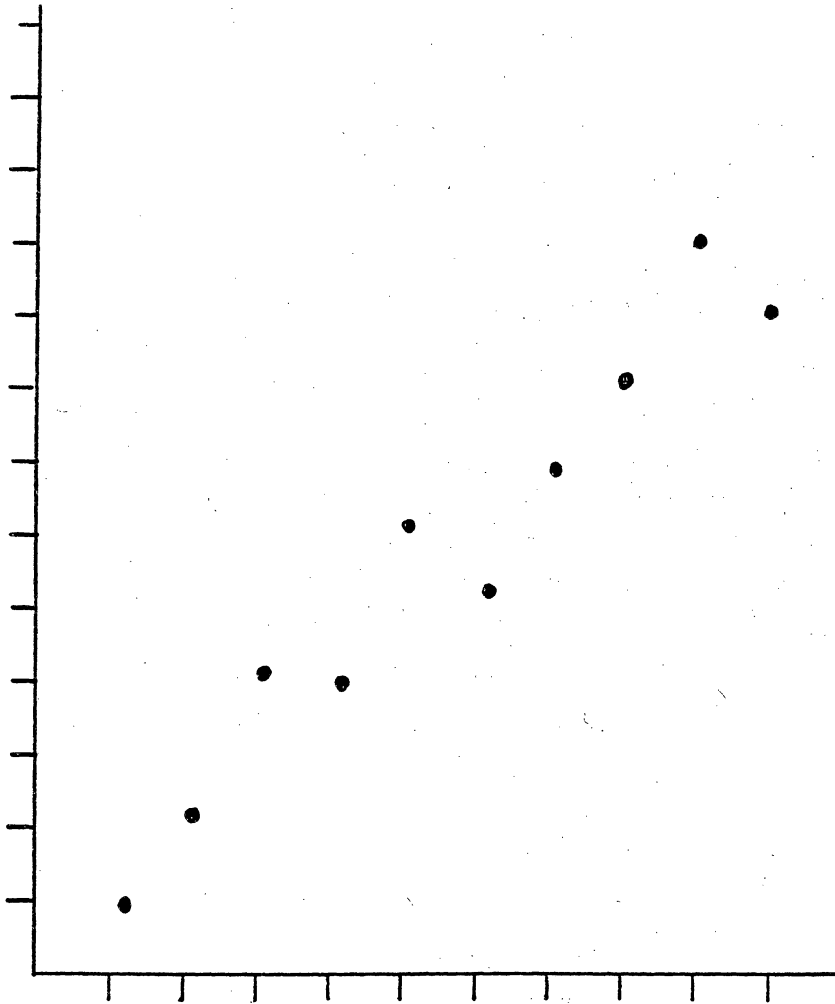
Another approach would involve the development of an abstract unit to measure output--a common denominator. These would then have to be "weighted" based on complexity or difficulty, etc. Such a sophisticated unit would be difficult to define, and costly to collect.

The CWA's report monthly financial data (actual expenditures, etc.); we can assume that a month is usually of sufficient length to reduce any disparity in cost/output observations. The daily or weekly service unit captured over a month's time would most likely encompass a typical or representative selection (the longer the time period chosen, the greater the probability that most cost/output observations would represent a similar combination).

While the cost/output combination or "mix" would never be identical; most periods would vary from the average--some, a great deal. As long as these did not represent a major and lasting change, the validity of comparing the cost/output observations would not be affected.

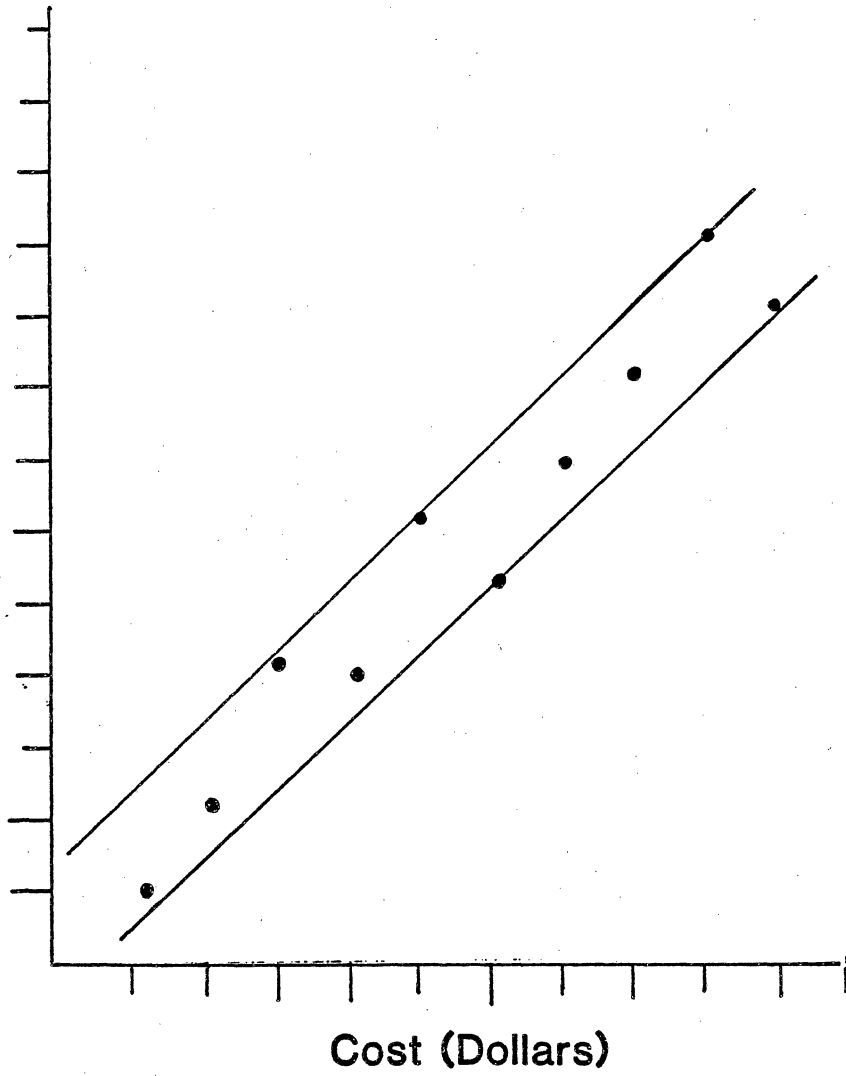
Because costs could differ relative to the nature of the services, the CWA would want to discover what differences in cost were a specific function of changes in output. One approach they could use is the construction of a "Scattergram" such as the following:

Units of Service
(LOS)

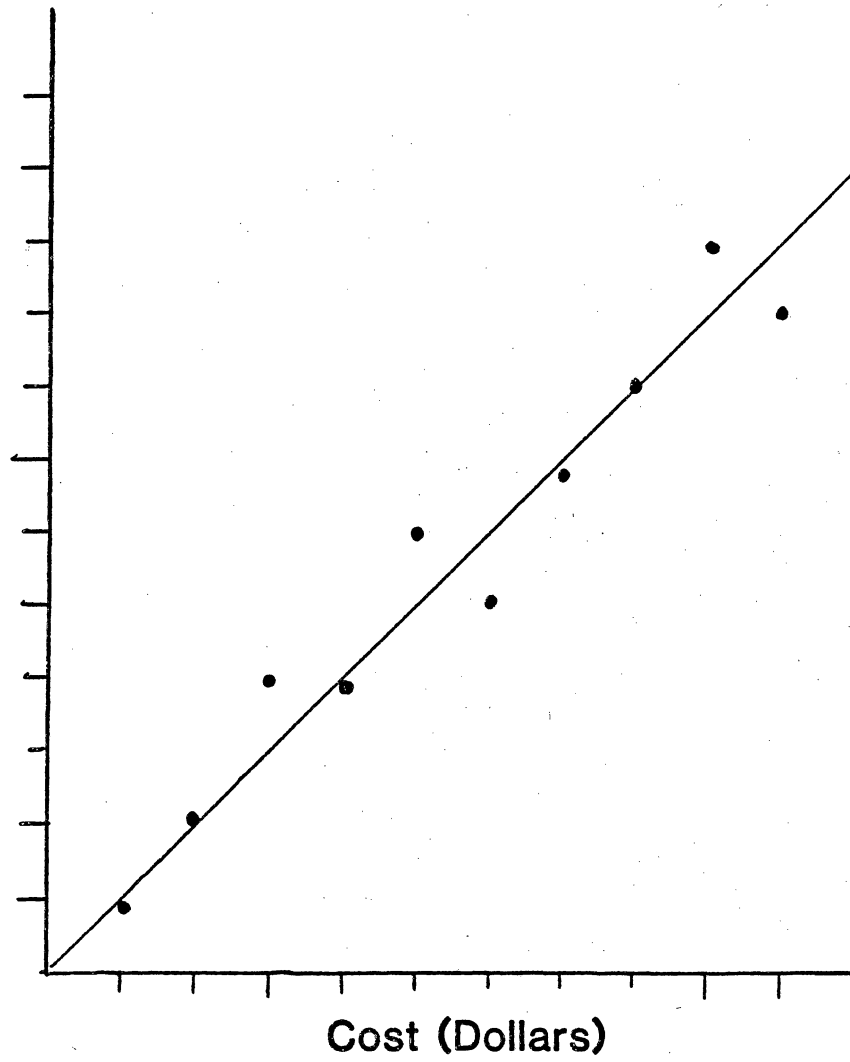


Cost (Dollars)

Units of Service
(LOS)



Units of Service
(LOS)



Here, a positive relationship between cost and output could be obtained by means of inspection. However, the information is not particularly useful for decision-making. To improve its usefulness, one approach would be to enclose the data with two parallel lines, to establish the probable range of costs to be expected at each output level. As with the control chart with the upper and lower limits, any observations falling outside these parallel lines should be investigated.

The preferred approach is to "fit" a single line (or curve) to permit direct reading of the aggregate cost expected at any selected level of output. By applying appropriate statistical techniques, such a line--called a "Regression Line" could be precisely fitted to permit variable cost/output data to yield management information.

This linear regression line is based on an equation derived from the entire range of cost/output observations and is intended to minimize the extent to which costs actually reported in the individual observations deviate from those shown by the regression line for appropriate output levels.

This estimating equation can also be used to identify the operating level at which unit costs would probably be lowest and to compute the marginal costs involved in moving from one output level to another. The computations are not difficult--the techniques are readily found in elementary statistics textbooks.

(Simple regression analysis: The general formula for a straight line is used: $Y=a+bx$, where Y is the variable to be predicted; i.e., the dependent variable, X is the independent controllable, or decision variable; a is the constant value of y when x is zero; b is the slope of the line, i.e., the regression coefficient.)

This approach measures the average amount of change in one variable that is associated with unit increases in another variable. The process is intended to aid prediction and therefore help in planning, decision-making and controlling.

In progressing from very low operating levels to somewhat higher ones, costs seem to increase modestly compared with the units of services provided. At greater workloads, the costs of providing additional units of service climbs more rapidly.

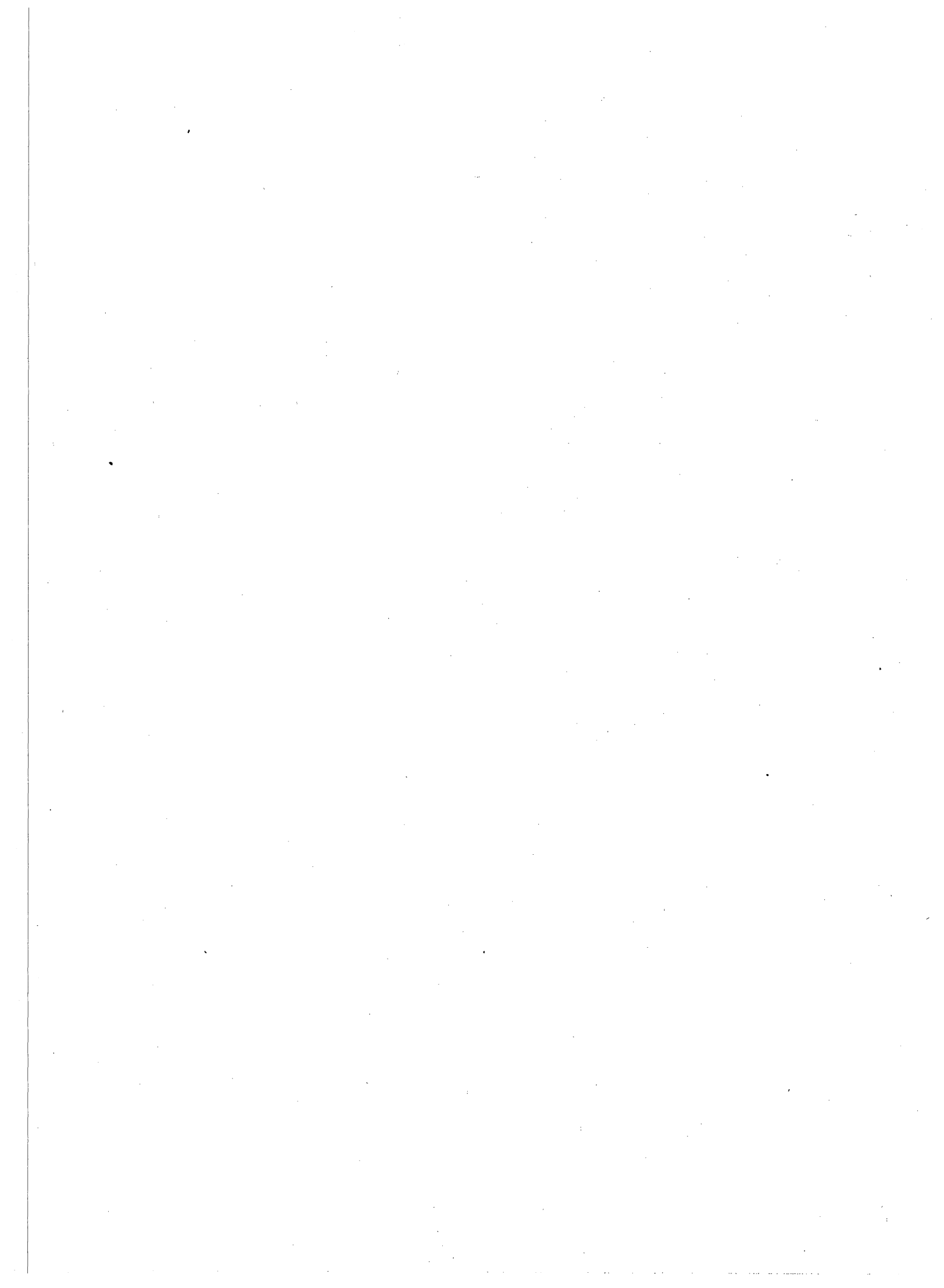
It may develop that a curve rather than a straight line may provide the best description of the data.

This type of curve called a "parabola segment" can also be fitted mathematically. The equation to fit the curve is more complex than that used in linear regression.

With either line or curve, regression analysis provides the administrator

with the ability to see underlying, measurable cost/output relationships-- even in a situation where variations in cost and output occur. The ongoing challenge to the Social Service Administrator is in identifying and correcting specific problems which caused unexpectedly high cost and/or performance variations. Using these techniques, the manager will better be able to meet that challenge.

MAXIMIZING
THE
LIMITED RESOURCES



MAXIMIZING THE LIMITED RESOURCES

Management decision-making is directed toward the short and long term future. Cost and output data and other historical data provide a basis for assessing the variance between the plan and the actual. Subjecting this data to various analyses permits comparing one agency with other agencies, or one service method with another. They also permit the development of plans incorporating this past experience. Unfortunately, this approach does not produce measures which tell whether the program results were the best that could have been accomplished with the same or lower costs.

One of the principal responsibilities facing management is to assure that the agency is getting the "most" for its money. The Program Manager should therefore know (or estimate) how costs would be affected using alternative combinations of service approaches, for example, Direct and Purchased services. The manager should also be able to approximate how costs would be affected by changes in clients (numbers and type), type of need, level of service (LOS), in units and quality provided.

Ideally, the Social Service Administrator will be able to identify the existing alternative approaches which can be used to provide the desired LOS and also which will satisfy the quality standards and he will then be able to choose the "best" of these. The "best" alternative is not necessarily the least costly one. However, in times of scarce funds, the lowest cost approach may well be the only feasible one.

Even after identifying the least cost alternative, a different approach may still be explored and possibly selected. For example, assume that the cost/output analysis indicates that a specified quantity and quality of Day Care could be provided most economically at a large center. The administrator may decide, nevertheless, that the existing state-operated center would be more convenient to the families (or the children), there would be less transportation involved, or, more important, there would be no difficulty in assuring that the "problem children" would be served.

Identifying the least costly approach of providing a service does not automatically eliminate other approaches.

However, by costing them out, the Program administrator will be made aware of the cost of choosing each alternative.

In the following, we will discuss an analytical approach for comparing alternative service approaches (Direct vs. Purchased).

When this approach is employed, the data which is used in this type analysis should be obtained from actual cost and LOS (output) records, combined with

estimates (based on past experience) for any changes--in LOS, prices of relevant cost items and/or in specifications (standards for care, etc.).

Assembling and analyzing all the data will help identify the least costly way of combining the Direct vs. Purchased approaches. This can be termed an "economy solution". Starting from a specific budgeted amount for the service, the same techniques will help identify the maximum output (LOS) achievable within the budgeted amount.

There are no general rules--no magic formulas, that can be summoned for a quick solution of the problem of Direct vs. Purchased Services.

It is not possible to say whether any particular services should be purchased statewide or county wide. Each instance requires individual analysis and should be decided on its own merits.

The analytical framework and the correct procedure are both clear and applicable to all situations. The first step involves careful calculation of measurable costs of the Direct and Purchased alternative and a determination of net savings of one method over the other. The second step entails painstaking analysis of the unmeasurable relative costs of the alternatives. The third step is a comparison of the results of the first two steps and a decision selected which is in the best interest of the agency and the client(s).

Does a dependable (high or equal quality, full access) alternative to Direct method exist for a specific service? If "no", assume Direct is best unless unforeseen obstacles arise.

When a dependable alternative (Purchased) service source exists, use it unless a strong case can be made for not doing so. Reasons which could support a purchase over a direct approach:

- Simplify total management burden
- Focus attention where major cost reduction opportunities lie, reduce where possible.
- Gain economies through reduced overhead if direct staff levels frozen and vacancies not allowed to be replaced.

Possible reasons for not purchasing but rather providing services Direct:

- Coordination/control of POS providers too difficult.
- Costs prohibitive - no savings
- Inferior quality
- Large volume of clients, more cost effectively served by Direct staff (economies of scale).
- Provider unwilling/unable to meet special service/clients needs.

Should the situation involve a combination of Direct and Purchase approaches, the same scientific approach outlined above should be followed.

Please Note: The important costs in a Direct vs. Purchase problem are Marginal Costs and should be calculated in terms of added expense of each alternative. The analysis must encompass a review of relative costs and net costs or net savings.

Many social service administrators think of choices among alternatives as "either-or" propositions and they well can be. In Social Services, we have the Direct vs. Purchase choice, in private industry they have the "make vs. buy" choice. It also is possible that the "best" solution is some combination of both. This is especially so because the clients for a specific service are not ordinarily homogeneous.

One service method may be more suitable than another method for some clients. Merely looking at the cost or the "physical capacity" of a program is not enough. Because one center may have double the capacity of another center, does not necessarily mean that the program manager could expect that, assuming constant unit costs, the one large center would provide a better administrative choice over two smaller centers. Nor even with differential costs, could he (or she) assume that the least costly will necessarily be the "best" if they do not serve all clients.

In the "real world", we are never in possession of "perfect information". Estimates are often less than accurate. Actual performance may vary significantly from that expected. The question may be one of an economy solution, or it may be one needing an efficiency solution. That is, whether the agency should meet the planned LOS at the lowest cost and redeploy any surplus, or should it focus on the largest output possible with all funds available. The question really turns on costs vs. benefits, which will be discussed later. The Social Service administrator must always keep in mind that they will be working with imperfect, incomplete information. Therefore, their judgment and experience must be employed in combination with the results of any quantitative analysis.

One of the most troubling questions posed to Social Service Administrators deals with "what is the agency getting for the funds? What is being accomplished? Traditionally, CWA's have relied heavily on expenditure reports to indicate what they did with the federal (and local funds) received.

The funds were really allocated to accomplish specific objectives, i.e., chore services, homemaker, etc. They were not allocated to hire people, buy supplies, etc. By the CWA showing that they have spent the funds, does not demonstrate that they have accomplished their program objectives. While purchased services lend themselves more readily to a unit of service approach, our initial efforts to create a unit of measurement for direct services involved substituting worker "hours" or percent of total "time"--which are really "intermediate indicators of output. Both are really a combination of Input and Process.

With the unit of service approach we have attempted to shift our focus to identifiable "end products"--clients counselled, cases terminated, and so on.

One of the most frequently given reasons for not collecting and using output data in Social Services is that it is very difficult (if at all possible) to collect and/or quantify--or, the task performed is too qualitative to be translated into or expressed in numbers. In Social Services, however, these quality variations are important and thus cannot be ignored. Even if collectable, numerous units of output are not really an adequate measure of performance. This is one of the biggest deficiencies of output measurement systems in Social Services. The above cost/output analytic approach is perfectly functional as long as the assumption is implicitly or explicitly made that quality of service remains uniform and constant.

However, when comparing different Social Service agencies using cost data only, this is a risky assumption to make, because the costs of operation depend not only on the amount of units and/or clients served, but also on how well they are expected to be or have been served.

In New Jersey, and particularly in the D.O.'s and CWA's, it appears that, within limits, we have pretty much taken the quality level for granted, at least there is no real effort to incorporate it with any decision-making. An approach employing, among other things, program evaluation and long-range planning cannot treat quality in this manner.

We need to establish a measure to record the desired and the attained quality level, in addition to the output and cost levels. There are no established or explicit quality standards for Social Services nor is there any current mechanism for incorporating any if they did exist into administrative control. The first step is then to develop a standard or set of standards. They may be precisely quantitative or broadly descriptive.

One approach would be to establish a basic level of client functioning or readiness for each service goal--a client whose service goal is to attain a higher than standard level of self sufficiency would appear to represent a different and more costly end product than a client whose service goal is to attain the standard level of self-sufficiency.

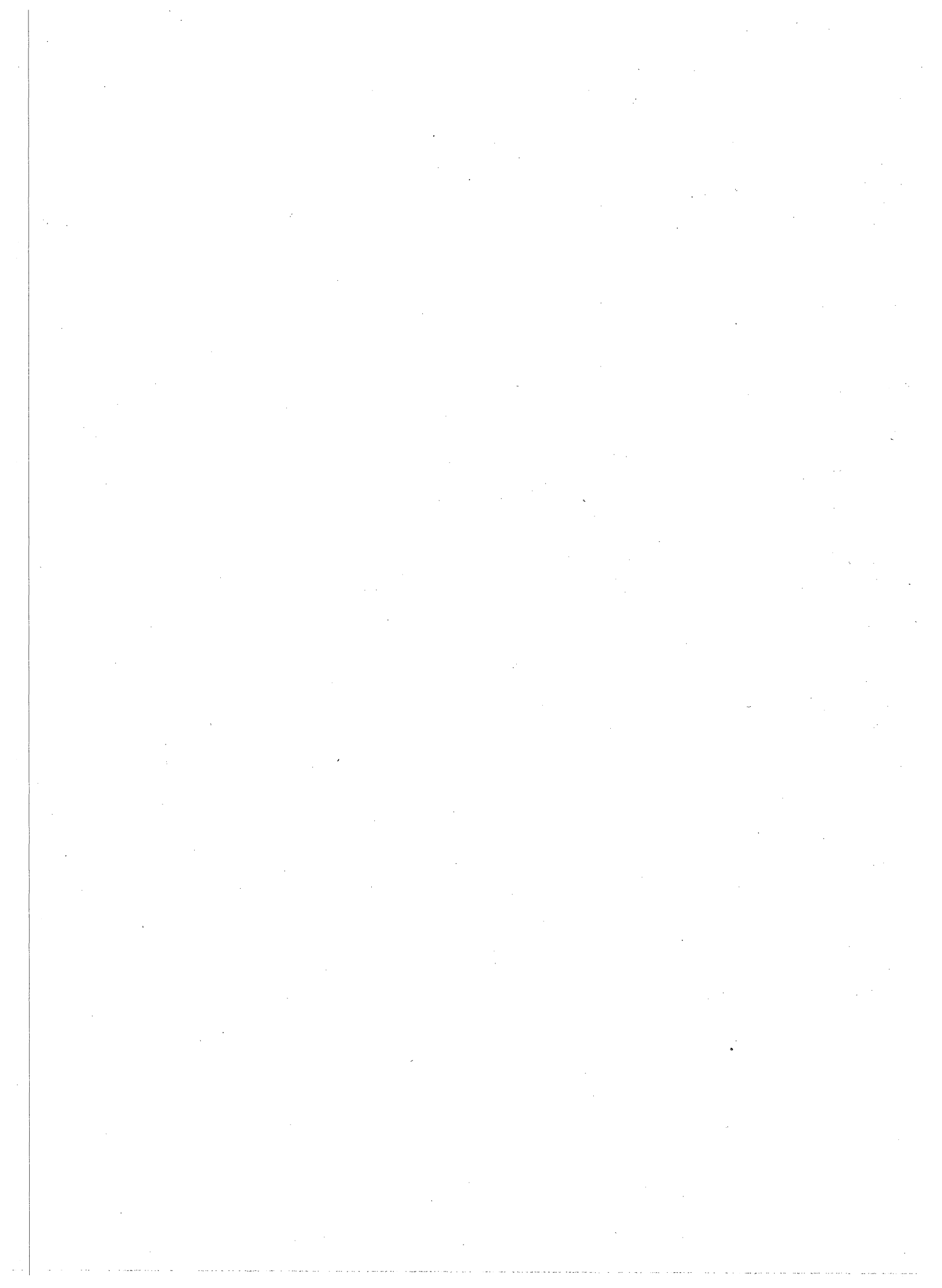
A common approach is to establish a two-part requirement for output statistics, as follows:

- 1) They must be relateable to significant organizational missions and functions;
- 2) They must be relateable to resources allocated and consumed.

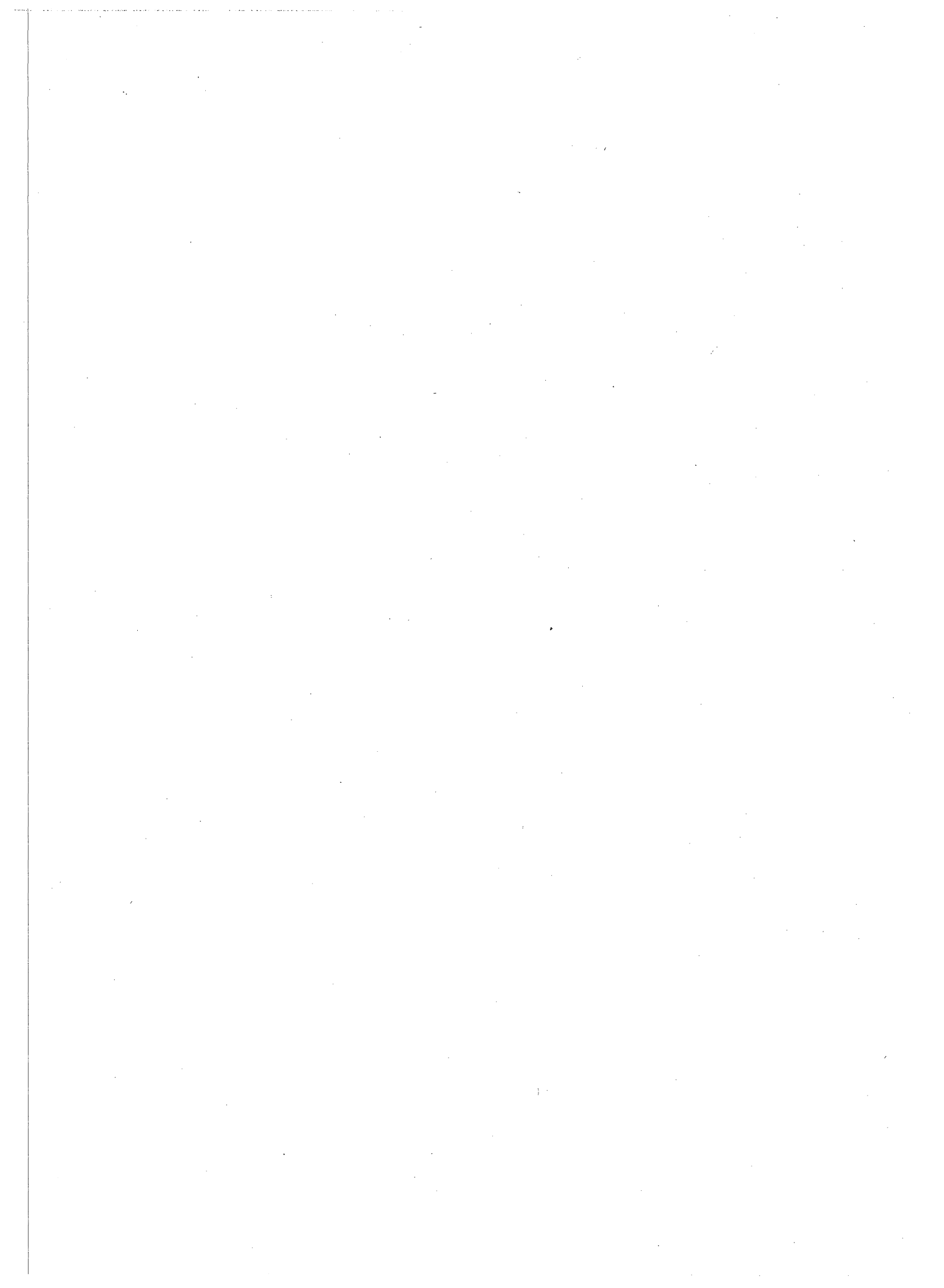
They use a two dimensional output approach, measuring the "product" on the basis of both volume (units, hours, etc.) and the other specifications (Standards--Quality).

The preceding pages demonstrated how to relate output to comparable cost data and how to use the resulting statistics.

Of course, not all situations would permit trade-offs between quantity and quality or quality and price. It may come down to a decision based solely on judgment and experience as to which best fulfills the CWA's mission.



MEASURING
CASEWORK PERFORMANCE



MEASURING CWA CASEWORKER PERFORMANCE

At present, the only concrete data available on CWA Caseworker Staff is the number of workers in each CWA, by Employee Work Unit and Work Group and the Random Moment Sampling System (RMS) percentages--which focus on services--not on workers (or clients).

The need and desirability of establishing and using standards or norms by the Program Manager should be patently clear. These standards may be designated norms of desirable activity, they may be derived from similar programs or operations, or be developed internally using an Industrial Engineering Approach. Such standards enable a program manager to properly estimate the number of personnel needed to provide effective service--or the standards could be used to complete a comparative analysis of different program methods or strategies with regard for economy, effectiveness or efficiency.

Frederich Winslow Taylor is regarded as the Father of Scientific Management. He is identified with the American production "Miracle". He is also identified with "Time and Motion" studies to raise productivity--the Industrial Engineering approach which eventually disenchanted unions and workers because of the fear of lay-offs. Taylor's methods increased the workers' productivity (and their pay, also). The Unions and Workers feared that by working harder or faster, they would exhaust the work available and bring about lay-offs. To this day, "Time and Motion" (efficiency experts) studies are very threatening to employees. The RMS (Random Moment Sampling Study) was regarded by many workers, at least initially, as a control device and they resisted its implementation.

It is indeed unfortunate that time and motion studies are so intensely disliked and feared. They provide an excellent mechanism for tracking staff time by activity, and therefore, they are useful as an indicator of program efficiency with respect to time.

In the Social Services environment, rather than employing a stopwatch for measuring employee effort, self-reports by staff should certainly be an acceptable substitute. These self-reports over selected representative periods of time could provide the primary data needed to measure performance and they also could be used as the basis for developing standards. In some instances, depending on the size and attendant complexity of operations, a staff sampling approach can be employed wherein at selected frequencies, staff can complete questionnaires as to how their time is spent on an hourly basis.

Given the operational expertise of the CWA management, it is expected that all CWA's could obtain reasonably reliable staff-time information within a short period of time at minimal costs.

While standards themselves can be both confining and threatening, they should be an important element in each CWA's management control process.

Without established standards or "pars", a CWA may overreact to minor deviations or fail to react when deviations are significant. They may also fail to develop a clear idea of the results they desire.

To be meaningful, standards must be appropriate for the specific circumstances. For example, receiving 200 client complaints in a month when the agency is in the process of relocating is probably not as significant as receiving 50 complaints in a month when everything should be functioning smoothly.

Standards also must be flexible to adapt to changing conditions. For instance, a caseworker who is an above-average performer should have his or her caseload adjusted accordingly. Normally, the process involves three main activities as follows:

1) Establishing Standards

Must be in meaningful terms and then must be accepted by the individuals involved. The methods of measurement should also be accepted and accurate.

2) Measuring Performance

This is an ongoing, repetitive process, with the actual frequency dependent on the activity being measured.

3) Does Performance Conform to Standard?

If yes, then the manager may assume "everything is under control" (It is then, of course, necessary to continue measuring and monitoring performance). If no, either the operations or the standard needs some corrective action taken.

There have been attempts to establish caseworker: client staffing ratios (explicit standards). Knowing how many Social Service clients an agency is serving does not indicate how much work the Social Service Staff is doing.

Because there is no rigid uniformity of workload distribution throughout the CWA's, a common denominator is needed to measure the output. A composite "work unit" measure may appear to be too abstract to be useful.

In addition, because it can be subjectively "weighted", its accuracy is open to question and therefore diligence in its development must be exercised.

However, agreement on a composite work unit is definitely possible, and it is recommended that effort be initiated to establish such a unit of measurement.

In this example, we assume that such an agreement has been reached among the CWA's and there is now a uniform "work unit" for direct services.

The first step would be to convert the outputs of each CWA into uniform work units and match them with the caseworker staff at each CWA and enter the data in a table such as the following:

CWA	WORK UNITS (OUTPUT)	NO. OF (SSS) CASEWORKERS	UNITS PER WORKER
1	13	8	1.63
2	46	21	2.19
3	43	17	2.53
4	66	38	1.74
5	14	6	2.33
6	26	11	2.36
7	599	169	3.54
8	15	9	1.67
9	250	78	3.31
10	19	10	1.90
11	75	23	3.26
12	178	50	3.56
13	374	116	3.22
14	24	13	1.85
15	55	15	3.67
16	171	44	3.89
17	16	7	2.29
18	46	18	2.56
19	36	11	3.27
20	162	41	3.95
21	10	5	2.00
TOTAL	2,246	710	--
\bar{X}	106.95	33.81	3.16

Using the data in the above table, a control chart similar to the one on page 61 could be constructed using the Ratio of the Actual Units Per Worker for each CWA to the Statewide average (3.16) in this example, or a Regression Line could also be drawn--using the data in the table to produce a scatter diagram and fitting the regression line to note the deviations from the average.

While either approach produces useful and interesting data, it does not in itself conclusively indicate either overstaffing or "under-production". It does, however, identify situations where these conditions appear to exist and warrant investigation.

If, over time, we continued to gather this type work unit data, it is expected that there would be a general "drifting" toward the Statewide average and, with time and effort, this could easily become an operational standard--accepted by both the employees (and unions) and Management.

Often, attempts to introduce standards in social services are greeted with the objection that there is little or no homogeneity among cases and clients, that each is different. While this may be true, this should not suggest that there is so much heterogeneity that standards cannot be set, nor that a wide array of standards would be necessary, if they were introduced.

As indicated earlier, whenever an attempt is made to introduce standards, it is usually accompanied by explicitly or implicitly made assumptions that the worker activities or tasks are identical or contain sufficient main aspects of identity. This then assumes that there are relatively few unique or distinct classes of client and activities problems. All common caseworker activities are considered to take approximately the same time. For example, intake and screening, etc., activities should take the same length of time irrespective of what the client's problem is. (This does not mean that once the services begin, each client will require the same amount). It merely means that there is a fairly constant period of time required for certain common activities, irrespective of the client's presenting problem. The index for this activity could be the worker's time per client or the client-contact time.

The other assumption that is made is that there is no homogeneity in the services provided to the clients. That is, the amount of resources consumed by the client is a function of their own unique need, by type, intensity, urgency, etc. Because of this, using client-contact time is not a meaningful index for use as a standard of output. One approach which offers the potential of facilitating the development of standards in this aspect of worker activity is the design and application of a weighted comparable output unit. Those familiar with manufacturing or production management will recall that these industries had to face a similar problem and developed equivalent units when they were attempting to measure the production of non-homogeneous items.

As with private industry, in social services, we would have to begin with the production--i.e., the clients and the services. Beginning with the assumption that there is a relatively large amount of commonality in the client problems, i.e., even recognizing the different variations that may exist, within the main, the CWA's offer only a specified range of social services. From this it is no mean feat to infer that the CWA deals with a relatively small number of identifiable and addressable problems. Although there may be minor variations, there is an array of common problems and common services, consisting of some standard procedures. Thus, although the activities of a caseworker may be diverse, they are known to the agency. The agency must begin with a listing of the various common activities; then construct a standard unit of measure for one common activity and then develop a listing of all activities expressed as a relative measure of this common activity. In addition to the service activities, the clients should also be weighted, in recognition of the fact that the time spent on a service episode is a function of both the service activity and the client or case type. For example, if there were 4 types of clients, A, B, C, and D, with C taking twice as long as D, and B twice as long as C and A twice as long as B, we could construct an equation expressing the equivalent workload on a worker and compare it with another worker as follows: Assume one worker with 12 cases, 3 each of A, B, C, and D. Beginning with D, which we would assign a value of 3 (1 for each case), for C it would be 6 (2 X 3), for B it would be 12 (2 X 2 X 3) for A it would be 24 (2 X 2 X 2 X 3). Total equals 3 + 6 + 12 + 24 = 45 points for the first worker. The second worker would have 12 cases as follows: 1A, 1B, 2C and 8D. This yields 8 for D, 4 for C, 4 for B and 8 for A; (8 X 1), (2 X 2), (2 X 2 X 2) = 24 points for the second worker.

Thus, using this Comparable Weighted Output Unit we can see that the first worker is carrying a workload which is the equivalent to 1.88 times what the second worker is carrying.

Mathematically, the equation (or formula) can be expressed as follows:

$$\text{Caseload} = \sum \text{Case types X Relative Weights}$$

$$C1 = \sum Ct X R_w$$

Once the standards have been set, it is relatively easy to complete comparative evaluations against the standard. Of course, it is not that easy to develop the standard in the first place. The above concept, although undoubtedly very time-consuming and difficult to implement, is nonetheless intuitively appealing. It has many potential benefits associated with it. For example, it could facilitate the more equitable distribution of workload and the assignment of new cases. In addition, it could also be used to identify and reward the more productive workers. It would also facilitate planning and allocation of worker time and

other agency resources. By using standards set in participation with the workers, there should be little or no difficulty in having the workers accept the standard as fair and objective. One more thing, the use of standards will also provide feedback to the workers who, like all employees, want to know how they are performing, in the absolute and in the comparative sense. Without this feedback, they will be unaware of how they are really doing.

The following is an example of a form which could be used as a source document in reporting and monitoring worker activity by client, purpose and results. We have included this table as a suggested approach for use in casework activity measurement.

Daily Time Log

Date: _____
 Worker: _____

START	END	TOTAL TIME (Min.)	ACTIVITY	WITH WHOM	PURPOSE	ACTIONS/NOTES

Enter the beginning and ending time for each separate activity

Next enter the total time in minutes involved in each activity

Using the codes in the next column, indicate the type of activity.

ACTIVITY CODES

- I = Individual Counselling
- C = Client Conference
- TP = Telephone Conference
- IR = Information & Referral
- W = Writing correspondence, reports, etc.
- R = Researching, etc.
- S = Direct Service Provision
- O = Office Contact
- F = Field Contact

WITH WHOM

Enter client name, case No. (if applicable) and/or type of client.

PURPOSE

Indicate the purpose of your activity.

ACTIONS/NOTES

Briefly indicate the actions taken and the results or accomplishments.

OTHER ANALYTICAL TECHNIQUES

OTHER ANALYTICAL TECHNIQUES

In many instances, analysis of Government activities is more difficult than analyzing activities in the private business sector. In private business they can normally associate costs with outputs. Using the accrual accounting method, business managers can measure the resources used during a specified period of time and compare them with their output--normally sales or production--during the same time period.

In the Private Sector, managers have become more proficient at distinguishing relevant from irrelevant costs.

The absence of the sales or marketing environment, along with the absence of the incentive, complicates cost analysis in governmental operations.

Rather than having a market to provide the government manager with direct dollar comparisons, the reporting/record-keeping systems substitute for sales or production records. The effective use of tax money (Federal, State or Local) to meet a public need is often difficult to establish, especially in social services, since there is no system for the clients or the consumers to record their satisfaction or dissatisfaction. Thus, the budget process serves as the vehicle for assessing the relative value of one program or service activity compared with another. This relative/comparative evaluation process creates an environment that fluctuates between uncertainty and risk. If a program manager, (CWA Director, etc.) cannot demonstrate quantitatively what has been or will be accomplished with the requested future resources, he or she is at risk of losing already seriously limited funds. Some techniques of analysis which could be used in CWA operations are:

Comparing the planned and the actual output--measuring the difference and the percent accomplished (actual \div planned).

For example--if a CWA begins with its total service plan for Homemaker hours. (Assuming the hours have been planned on a monthly basis and the actuals are recorded monthly, rather than merely measuring how much output has increased (or decreased) although this is of value.)

TABLE 1

Homemaker	Jan.	Feb.	Mar.
Hours (Actual)	90	95	100

By combining this actual with the planned output--the information increases. Assuming that a constant Homemaker Hourly level of 100 hours per month were planned, the CWA could construct a table such as Table 2.

TABLE 2

	Jan.	Feb.	Mar.	Apr.
Planned Homemaker Hrs.	100	100	100	100
Actual	90	95	100	
Difference	- 10	- 5	0	
% Actual of Planned	90	95	100	

Now we see that not only have the actual hours increased each month, but also that the actual output, which was initially below the plan, finally reached the planned level.

If, on the other hand, the planned and actual figures were as follows, we would not conclude increased or improved performances.

TABLE 3

	Jan.	Feb.	Mar.	Apr.
Planned Homemaker Hrs.	100	110	120	130
Actual Homemaker Hrs.	90	95	100	
Difference	-10	-15	-20	
% Actual of Planned	90	86	83	

Thus, although the monthly increase in actual homemaker hours delivered, rather than improving, this agency was really falling further and further behind the planned output.

One of the more attractive features of this analytical approach is that it can be done without using any statistical techniques. While it appears to be somewhat elementary, it is a very effective and valuable analytical tool.

Combining actual costs and actual hours for this Homemaker activity provides even more revealing information.

TABLE 4.1

COST (Dollars)				
	Jan.	Feb.	Mar.	Apr.
Planned (Cumulative)	\$ 1,000 (1,000)	\$1,000 (2,000)	\$1,000 (3,000)	
Actual (Cumulative)	1,000 (1,000)	1,000 (2,000)	1,000 (3,000)	
Difference	0	0	0	
% Actual of Planned	100	100	100	

If the manager merely examined the actual vs. planned costs, they would conclude that operations were proceeding according to plan. However, the actual hours delivered show an unfavorable variance from the planned output.

TABLE 4.2

OUTPUT (Hours Homemaker Provided)				
	Jan.	Feb.	Mar.	Apr.
Planned (Cumulative)	100 (100)	100 (200)	100 (300)	
Actual (Cumulative)	100 (100)	95 (195)	90 (285)	
Difference	0	- 5	-10	
% Actual of Planned	100	95	90	

In this example, actual hours fell below the planned output level, yet, the costs did not also diminish consistent with the reduction in actual hours provided.

This is the type of management information which should be promptly brought to the attention of the Program Administrator or Director. Unplanned, unfavorable deviations should be investigated promptly.

As indicated earlier, in the comparative analysis of CY'81 operations, because we did not have actual output data, we used Budgeted and Actual cost data in a "Key Indicator" approach. While such an approach can be useful, it pales in comparison with an approach that combines program output and cost. Much of an administrator's focus consists of understanding when and why disproportionate variances occur and determining whether action is indicated and, if so, what that action should be.

For too long CWA operations--in fact, in most Social Services operations--the emphasis continues to be on relying on cost records as a surrogate indicator of program performance.

Since Social Services does not really produce a recognizable "end product", output statistics are not always readily collected nor available in most CWA's. If it were available, the approach employed in Tables 1 - 4, which demonstrates an analytical technique for monitoring performance (output) over time, could be used. By tracking and measuring the costs and the outputs independently, the two trends can be compared to see whether they parallel each other or diverge.

Some administrators prefer a graphic approach over a tabular one. They find that a graph provides, at a glance, the necessary information. For example, Tables 4.1 and 4.2 could be graphed as follows:

Cost (Dollars)

FIGURE 4.1

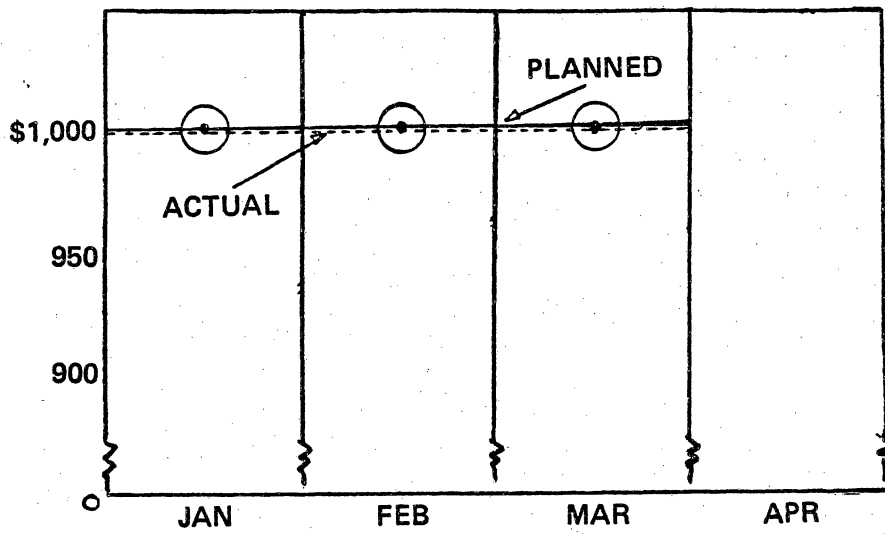
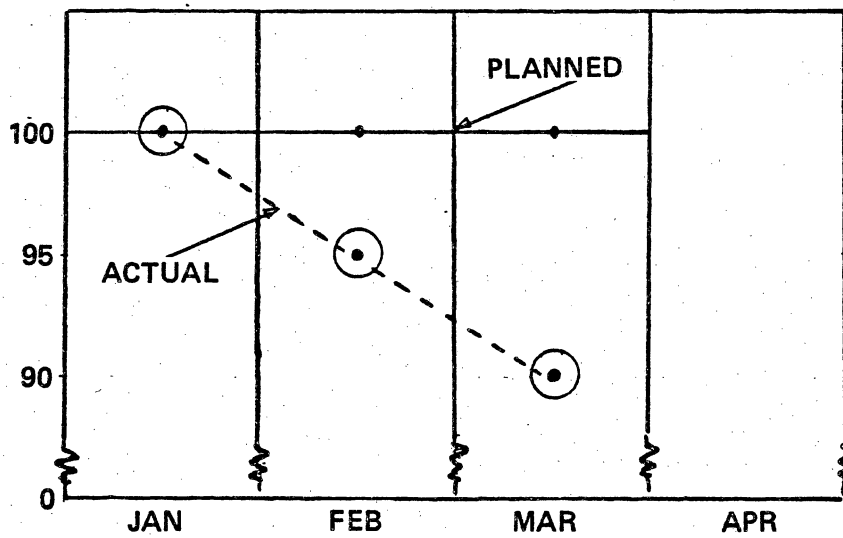


FIGURE 4.2

Hours Provided (Output)



Other graphic approaches include: Percent of Actual of Planned, cumulative cost and output totals, and one other more frequently used approach is the Ratio of Actual/Plan--for both Costs and Hours Provided. This approach can be done arithmetically, i.e., by establishing an approximate range--for example 10%--above or below the planned level--within which the monthly results are expected to fluctuate.

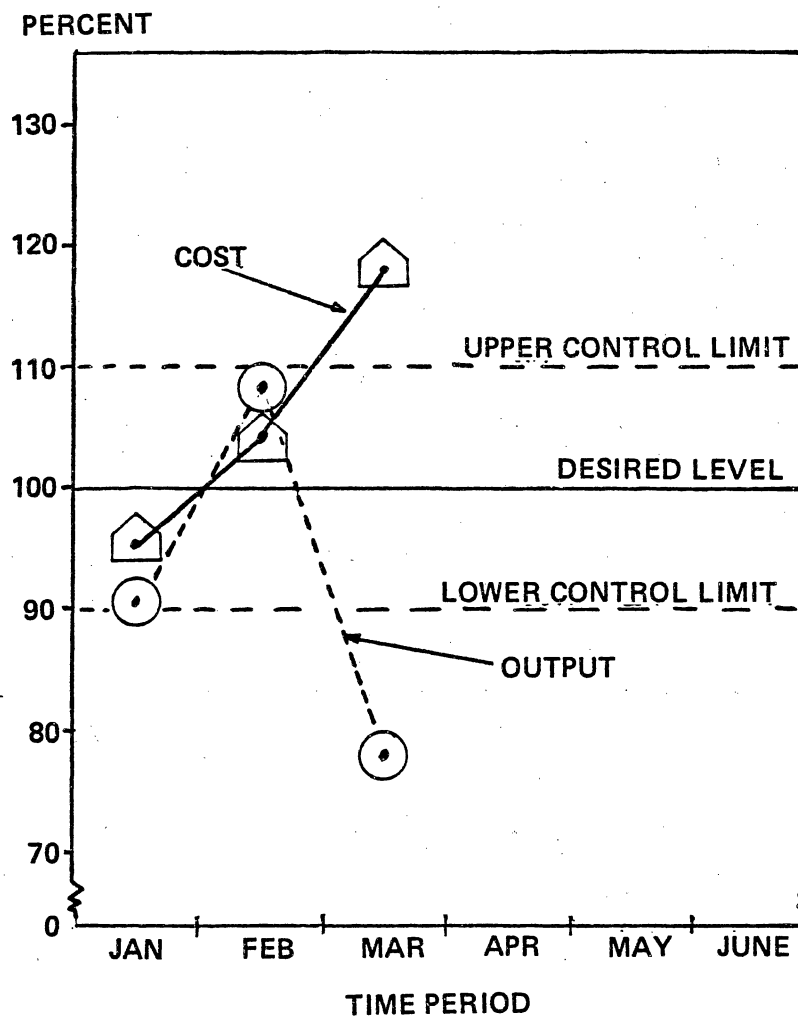
This approach can also be done statistically, by using +2 or +3 standard deviations from the mean to represent the upper and lower limits (the range). The choice of the specific percentage limits in this type of approach is a function of experience and judgment.

The following is an example of such an approach:

TABLE 5

		Jan.	Feb.	Mar.
COST	Planned	1,000	1,200	1,100
	Actual	950	1,250	1,300
	Ratio-Actual/Planned	95	104	118
OUTPUT	Planned	100	120	110
	Actual	90	130	85
	Ratio-Actual/Planned	90	108	78

FIGURE 5



Program Costs and Outputs
Actual/Planned Ratio

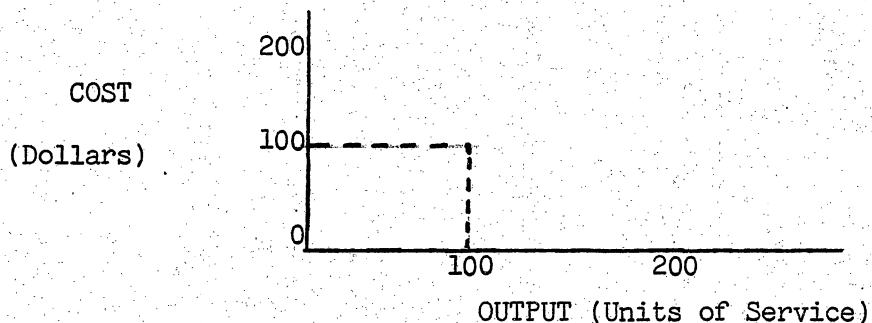
The area between the two limit lines form an area of allowable variations. Whenever a monthly ratio falls outside this area, the administrator is alerted to the "exception." This is why this technique is sometimes known as "Management by Exception." The Management by Exception principle suggests that the Manager should be informed about an operations' progress only if there is a significant deviation from the plan or standard. The manager can then concentrate fully on the problem situation. If matters are proceeding as planned (or with only minor deviations), there is no need for the Manager to be informed.

The analytical techniques described earlier can be supplemented by other techniques for analyzing the relationship of costs to outputs over a range of outputs. These techniques help draw conclusions essential to a wide range of management decisions.

If an administrator can match cost and output data for a particular time period, these two numbers can be related graphically.

The graph will show output--units of service--along the Horizontal axis. Costs in dollars are shown on the Vertical axis.

For example, if a CWA purchased 100 units of service (output) and used \$100 worth of resources in doing that, both the cost and the output would be graphed as follows:

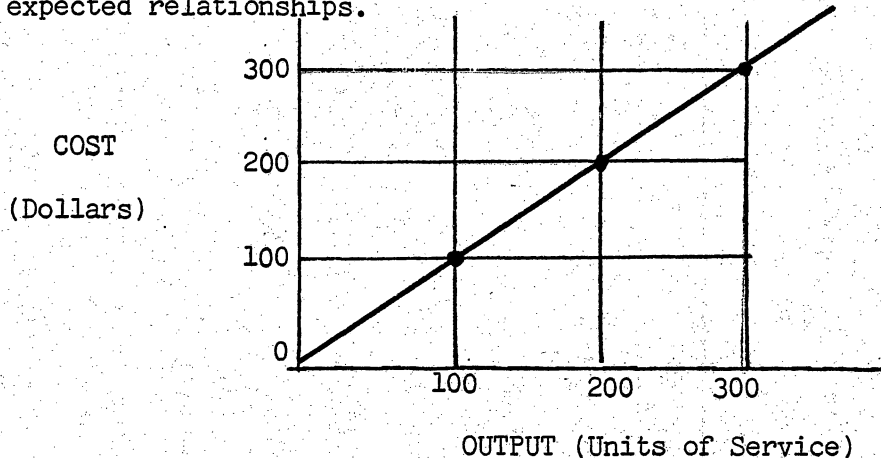


With no changes in circumstances, this first point gives us a "fix" on what it costs to provide 100 units of a service.

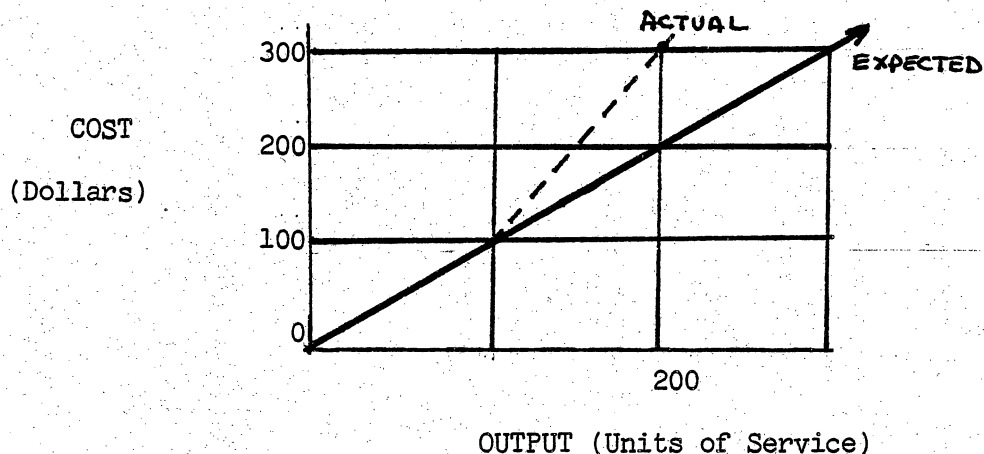
Note: This is the only information it supplies--it does not supply what total costs would be if the agency's caseload (output) changed dramatically. It does enable the administrator to visualize the agency's expectations.

If client caseload (and units of services purchased) increased, the expectation would be that the change in costs would be proportional to the change in units purchased (output).

This could be graphed as follows with the solid line through the origin showing the expected relationships.



If there occurred an unusual surge in demand for this service, for, say some unexpected "problem clients", then the cost/output point associated with this unusual load may not fall on the expected cost/output line. If there is any type premium cost involved, the actual cost/output point would fall above the line. If the output increased from 100 to 200 units, and the costs rose to \$300, the graph would look as follows:



This divergence of actual from planned or expected costs could possibly be interpreted as suggesting an operating problem. Or, it could merely indicate that the expectations were unrealistic.

In order for a CWA to predict how much impact a new or expanded service will have on costs, cost/output observations must be available for each of several different levels of output.

These may be drawn from the CWA's own records over time. Records kept over a relatively short span of time may provide the CWA with data showing the actual costs for Purchased Services or Direct Service [(including allocated costs)] associated with a variety of different outputs as follows:

TABLE C

	Jan.	Feb.	Mar.	Apr.
OUTPUT (Units)	4,000	5,000	2,000	3,000
COST (Dollars)	36,000	46,000	19,000	27,000

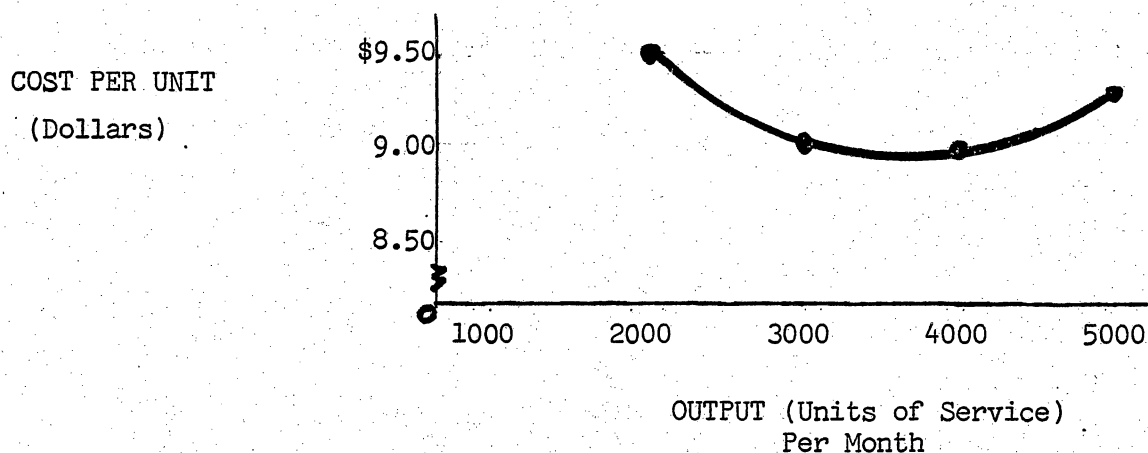
Armed with this type of data, the administrator could determine with some degree of confidence how the cost of the units of service was related to the levels within the 2,000-5,000 unit/month range. Determining cost/output relationships over the relevant range involves only simple arithmetic.

The first step in this comparison is to convert these costs into average cost/unit for each month as follows:

	Jan.	Feb.	Mar.	Apr.
OUTPUT (Units)	4,000	5,000	2,000	3,000
COSTS (Dollars)	36,000	46,000	19,000	27,000
COST/UNIT	9.00	9.20	9.50	9.00

Since Costs/Unit were lower in some months than others and since the assumption is that the change in volume (units) is the only significant change that occurred from month to month and that no addition was made to the agency's service capacity, it is clear that the agency provided services more efficiently at some levels than at others. The precise relationship is hard to visualize from this monthly format.

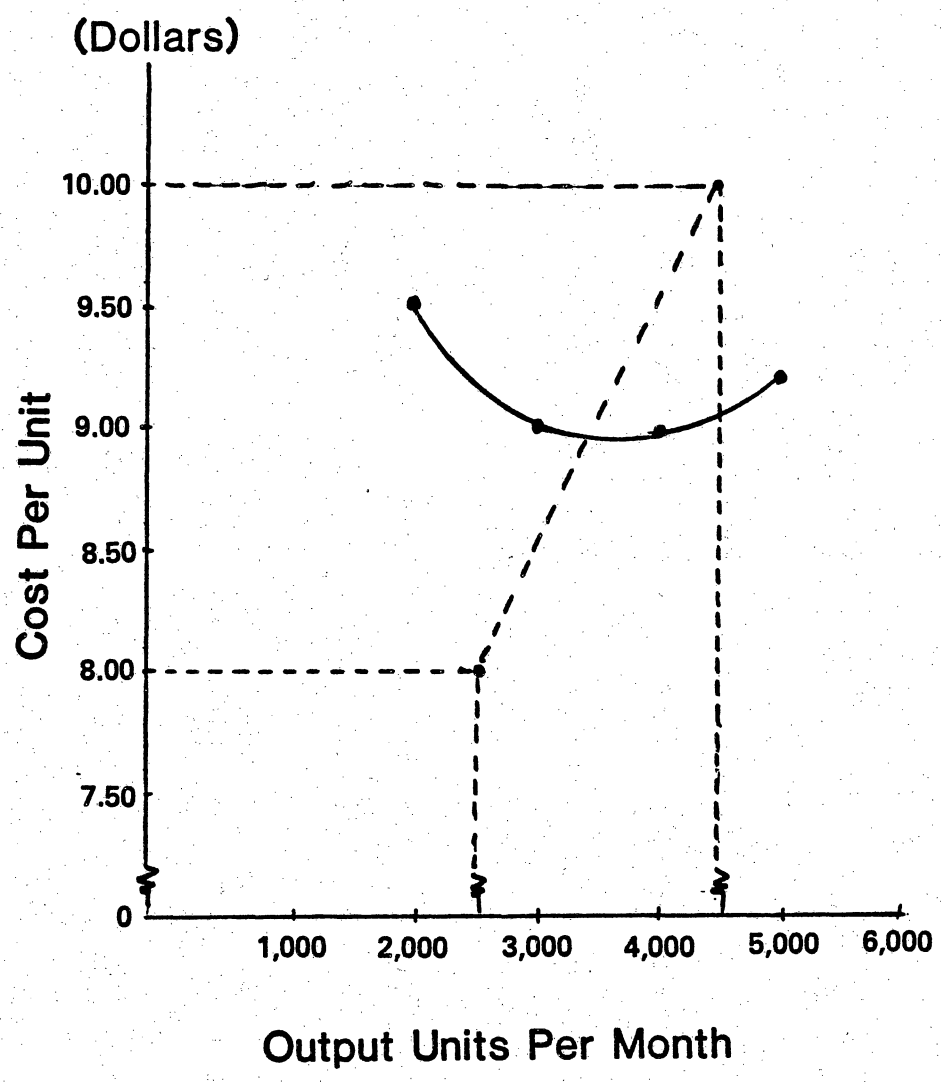
Once again, a graph would permit a quick assessment of the relationship, as follows:



It is clear that the lowest unit costs were associated with output ranging from 3,000 - 4,000 units per month. Workloads either larger or smaller caused the unit price to increase. Whenever an average unit cost curve takes a "U" shape, it indicates that the agency in question has a "best" or low-cost rate of operation for its present capacity and operating at any other level--either higher or lower--will cause each unit to be more expensive.

The data could possibly have produced a different sort of a curve, a "V" shaped one, or a level one, or one sloped up or down the entire range of observations.

Most operations when plotted, would produce a "U" curve, indicating that they operate more efficiently around their designed workload level.



Note: The point indicating an average cost for the 1,000 additional units is plotted at 4,500 halfway between the 4,000 and the 5,000 unit levels.

Some agencies can adjust their activities (and costs) to higher or lower workload levels more easily than others. When an agency has a given capacity which permits but one efficient level of operation, the curve may be "V" shaped, so that costs at any other level quickly become prohibitive.

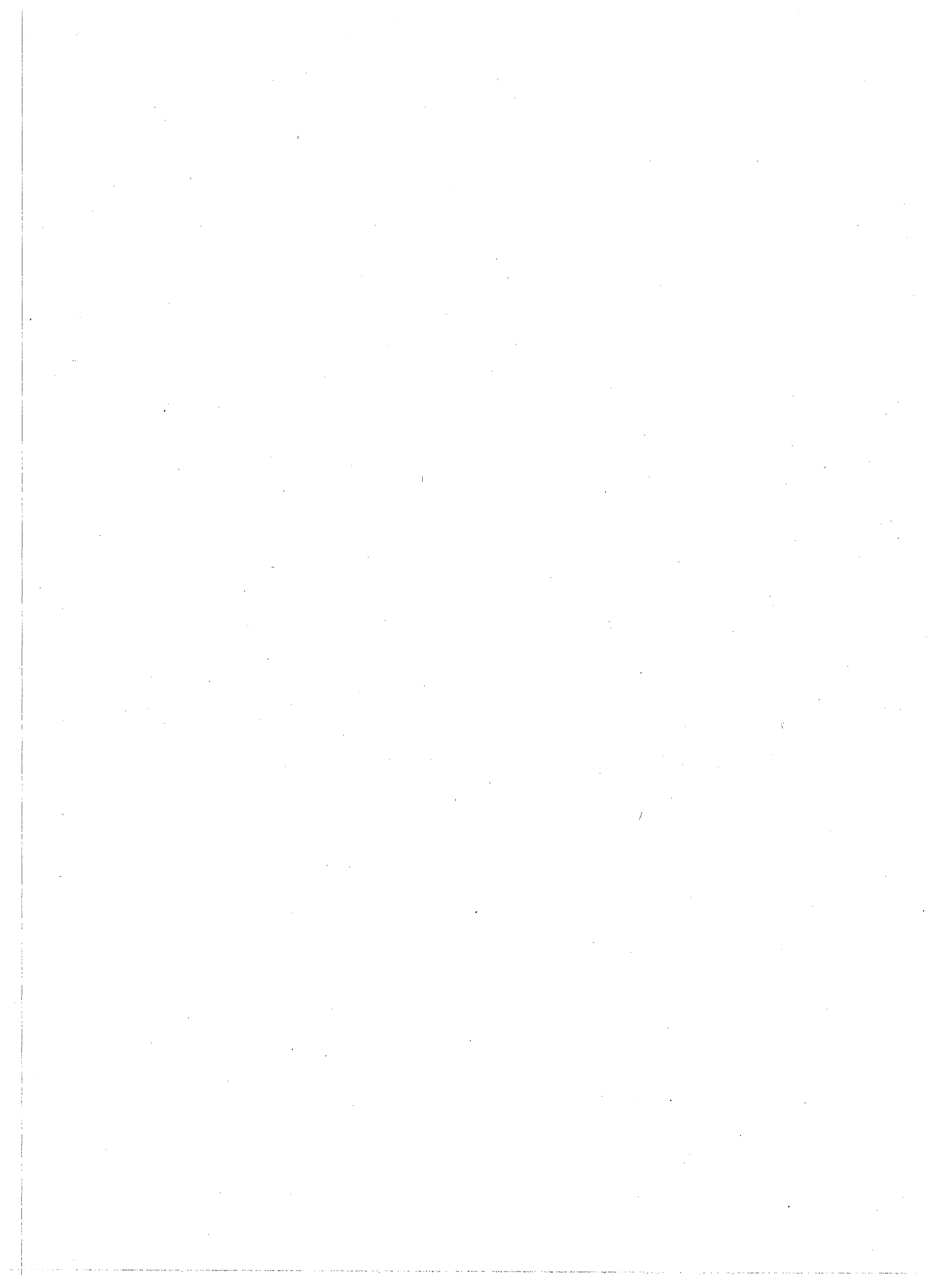
Each agency (including providers) management should analyze the data for their agency over the relevant range of outputs so that they could identify expected cost impact of proposed or newly-enacted programs.

Most management decisions involve changes from some existing level--the analysis which focusses on the changes is sometimes called Incremental Analysis because it is concerned with the "increments"--the addition to--or subtractions from the current or existing level.

Another term for it is Marginal Analysis--indicating that these decisions are made--at least in principle--"at the margin"--plus or minus--one unit. (In actual practice, any changes in an ongoing operation are rarely considered one unit at a time).

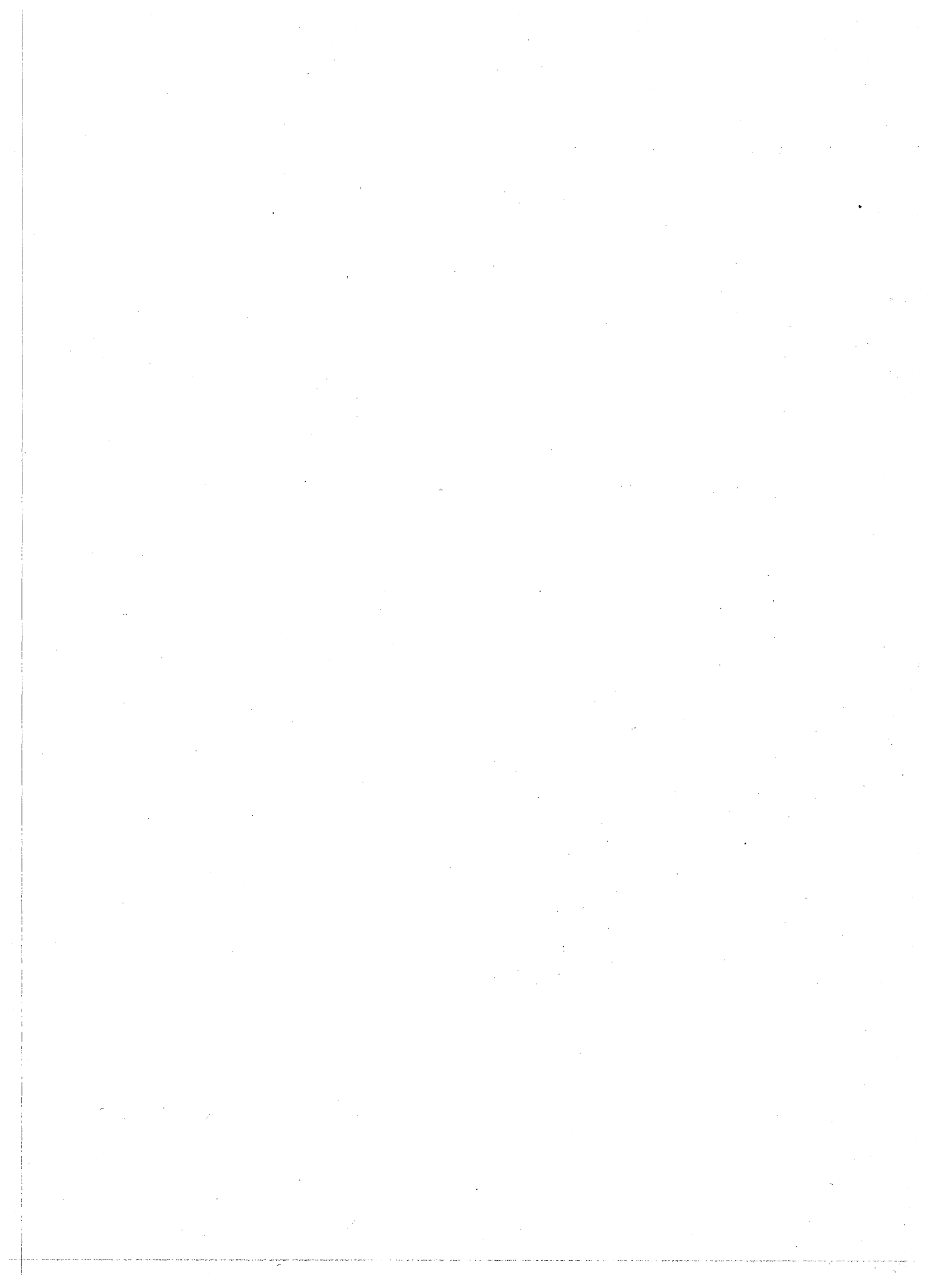
The average unit cost approach (Table C) enables a manager to predict the cost impact of an increase in the client caseload for this service. The agency had a service level of 4,000 units (of a specific service) in January. If this increased by 1,000 units to a new monthly output of 5,000 units in February, the average cost curve shows that the average cost would increase from \$9.00 to \$9.20--but the total costs increased \$10,000. Thus, each additional unit costs \$10.00.

Is the 1,000 additional units of service worth the cost? That is a question that must be addressed in the context of other program priorities and the flexibility to select an alternative approach.



BUDGETARY AND NON-BUDGETARY

METHODS OF CONTROL



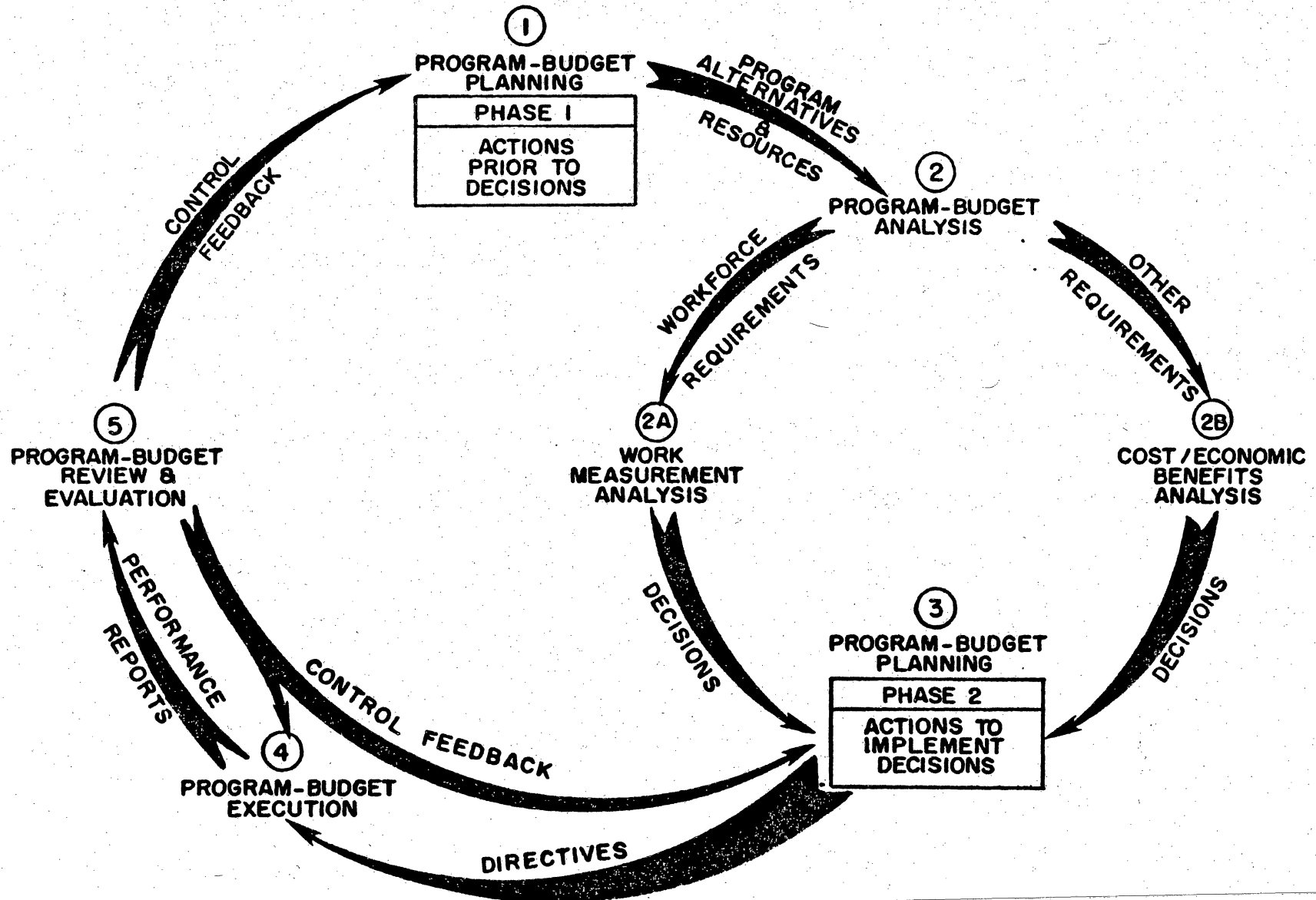
BUDGETARY AND NON-BUDGETARY METHODS OF CONTROL

There are a number of basic concepts and methods that are widely used in management decision-making for planning and control. Budgets are the formal statements of the financial resources needed for completing the specific activities of the agency in a given period of time; in the case of the CWA's, the period is the calendar year. Budgets are the most widely used means for planning and controlling activities at every level of the agency. The budget indicates the expected expenditures, and the expected funding levels for the entire calendar year. Because they convert the entire agency's activities into dollar terms, the budget can be used as a common denominator for a wide variety of activities, for planning staff expansions or contractions, training equipment, purchasing, etc. They are also used as an integral part of the CWA accounting process, covering all the CWA's activities in a particularly comprehensive, convenient and flexible controlling format.

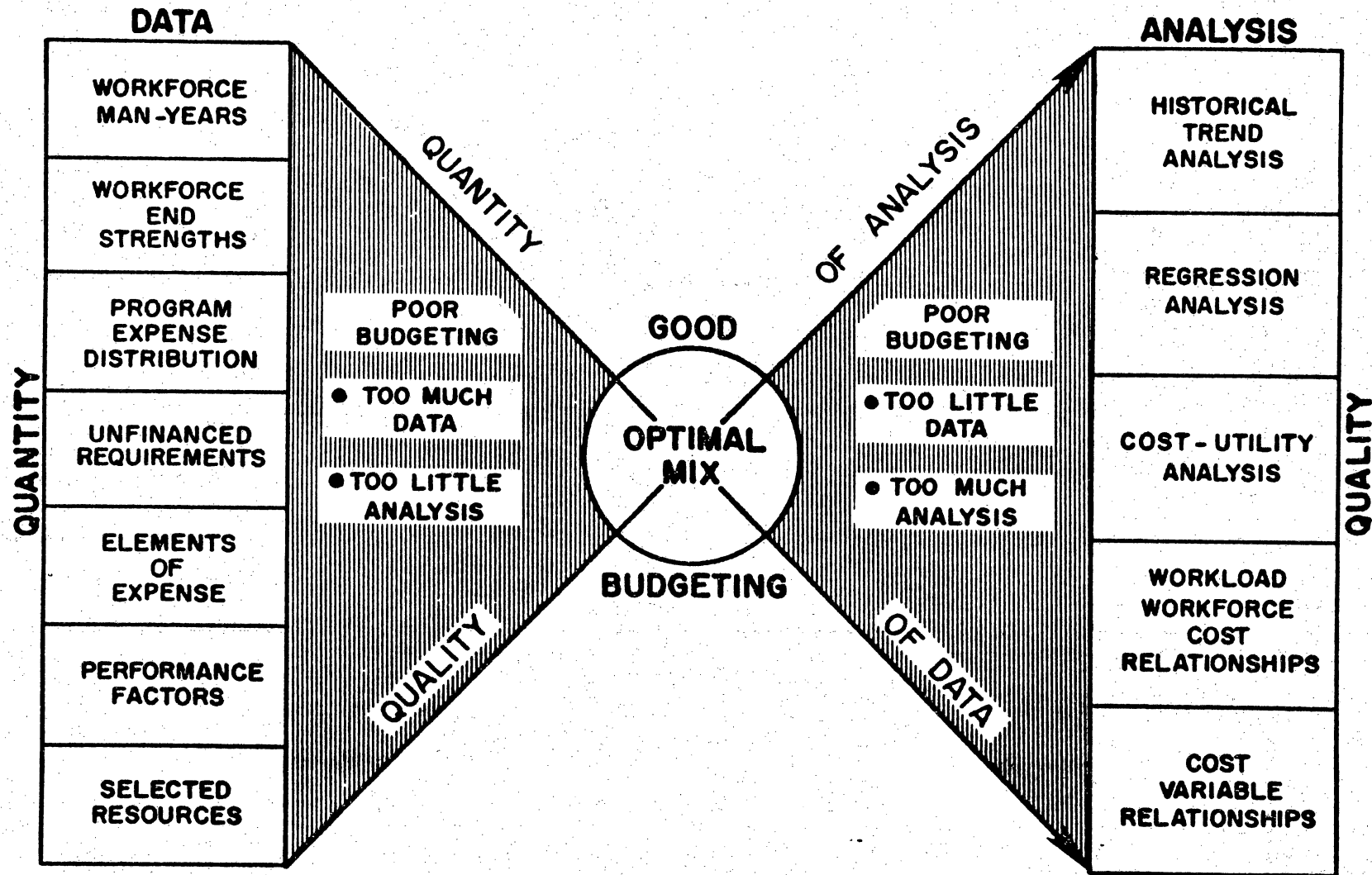
The first step in their development begins with a question as to what is expected for the coming year. Next, the expected inflows (funding) and outflows (expenses) are determined and evaluated to ascertain if they are in balance. Before this equilibrium question can be answered, the agency must complete a detailed analysis regarding its planned activities for the coming year, the associated costs of these activities and match them to the various resources which can realistically be expected for the coming year. (See the following illustrations: Program-Budget/Management Phases and Intra-Relationships, Matrix for Good/Poor Budgeting and Zero-Base Budgeting--Instructor's Material for Management 205, Brookdale Community College, Lincroft, N.J., Author Unknown). (In the case of a single source funding an agency, the problem is less difficult. However, with the advent of resource limitations, many if not all agencies are expanding their horizons to increase the funding available to the agency. One such method which has apparently increased in popularity is the use of client fees. It is the only method which promises a potential double benefit: it benefits the agency because of its monetary contribution. It also benefits the client--at least it has the potential of doing so based on the premise of presumed therapeutic value to the client of paying at least part of the costs of the service).

In private (for profit) industry, there is an approach called the Cost-Volume-Profit analysis. It employs a fairly well-known approach called a "Break-even Analysis". This is a useful approach which can be employed to study the relationships among activity volume, variable costs, fixed costs and profit. In government, in the absence of the profit factor, we would need to slightly revise this analytical model for our purposes. What is needed is a "Cost-Volume-Funding-Analysis". We could employ this approach in pretty much the same manner as is done in private industry. The first step is to differentiate the agency's

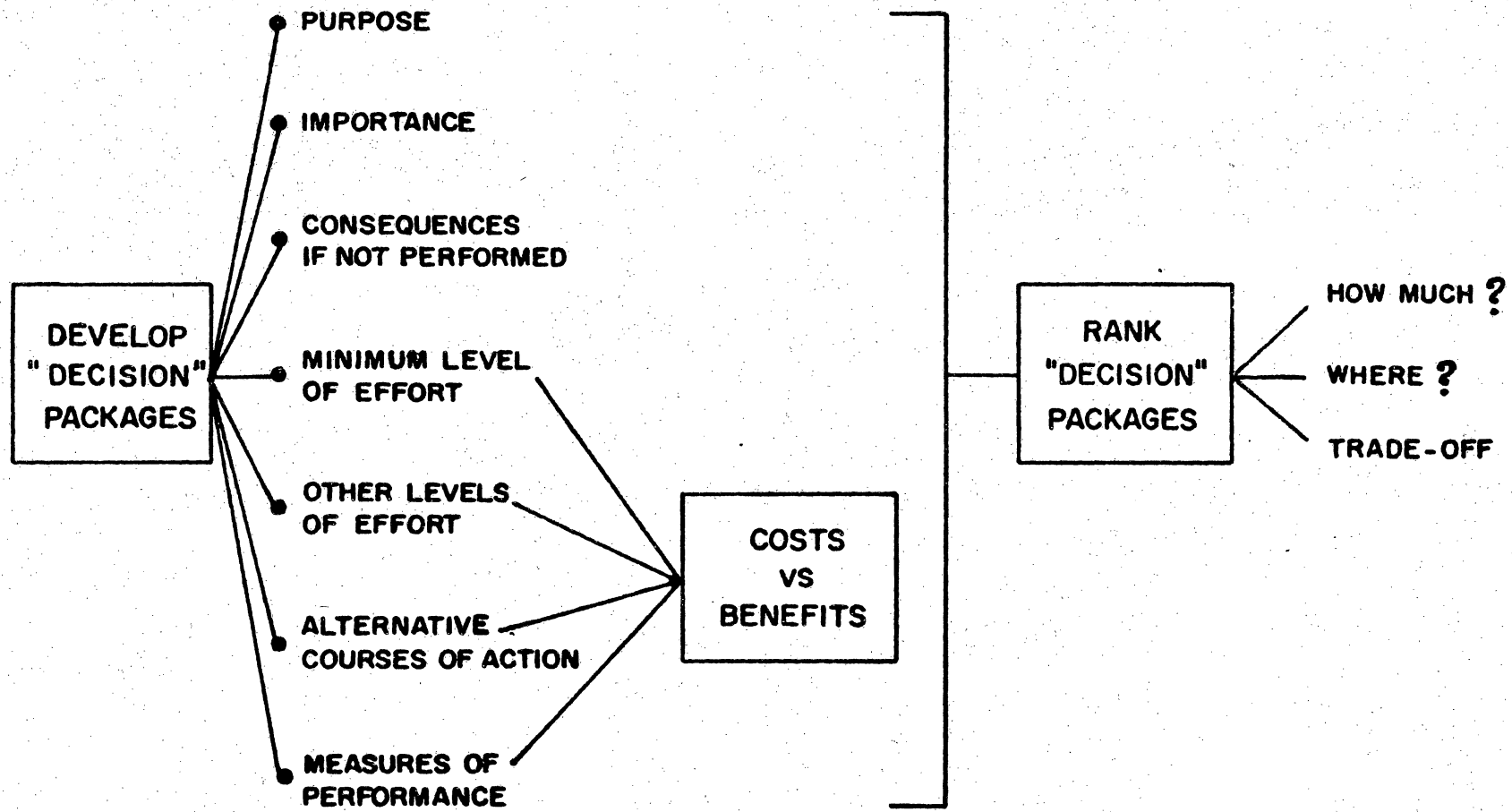
PROGRAM-BUDGET MANAGEMENT PHASES AND INTRA-RELATIONSHIPS



MATRIX FOR GOOD / POOR BUDGETING



ZERO-BASE BUDGETING

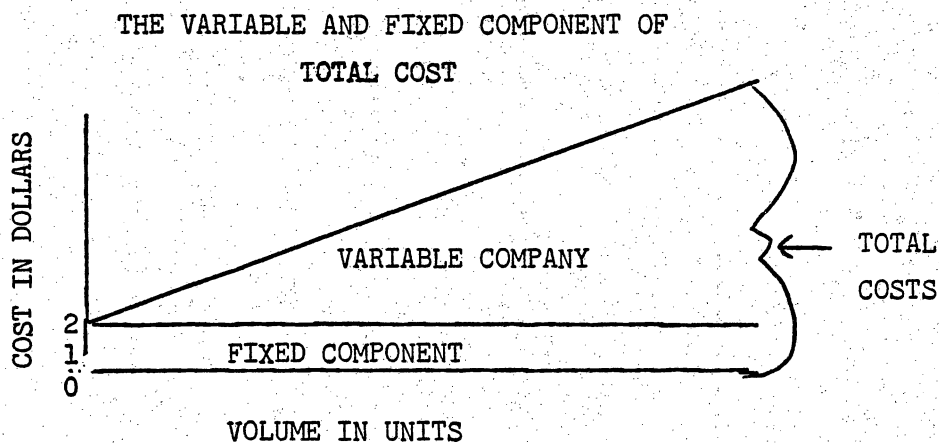


● THE REEVALUATING OF ALL PROGRAMS & EXPENDITURES

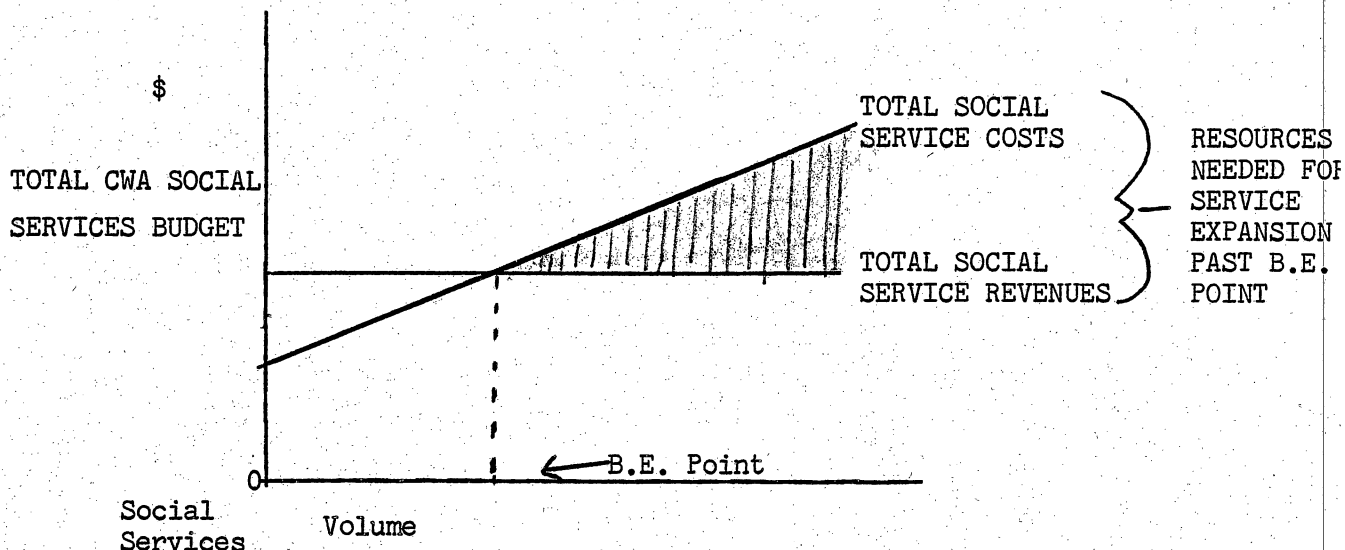
- ALTERNATIVE COST-BENEFITS
- COMPARATIVE EFFICIENCY

various cost categories into fixed and variable costs. The combination of these two produces the total costs of the agency, at any given level. (We say "at any given level" because the variable cost element does just that, it varies with the volume).

The next step is to analyze the income, i.e., the funding, the revenue from fees and any other source. For many years, the funding side of the equation has received the most attention because it is often the result of controllable or partially controllable elements. More recently, with the limitation of funding, the Program Managers have had to begin more closely examining their service activities (and volume). This is especially true when we recognize that expansion (or even service continuation in times of increasing costs) of service can incur more costs without necessarily resulting in increased inflows of revenue (funding). Thus, the CWA in their budget preparation must exercise great skill in anticipating both inflows and outflows. Borrowing from the breakeven analysis, we could construct a breakeven graph for an agency by graphing the total services budget on the vertical axis and the service volume on the horizontal axis. Where the costs and revenues intersect is the breakeven point for the agency, as follows:

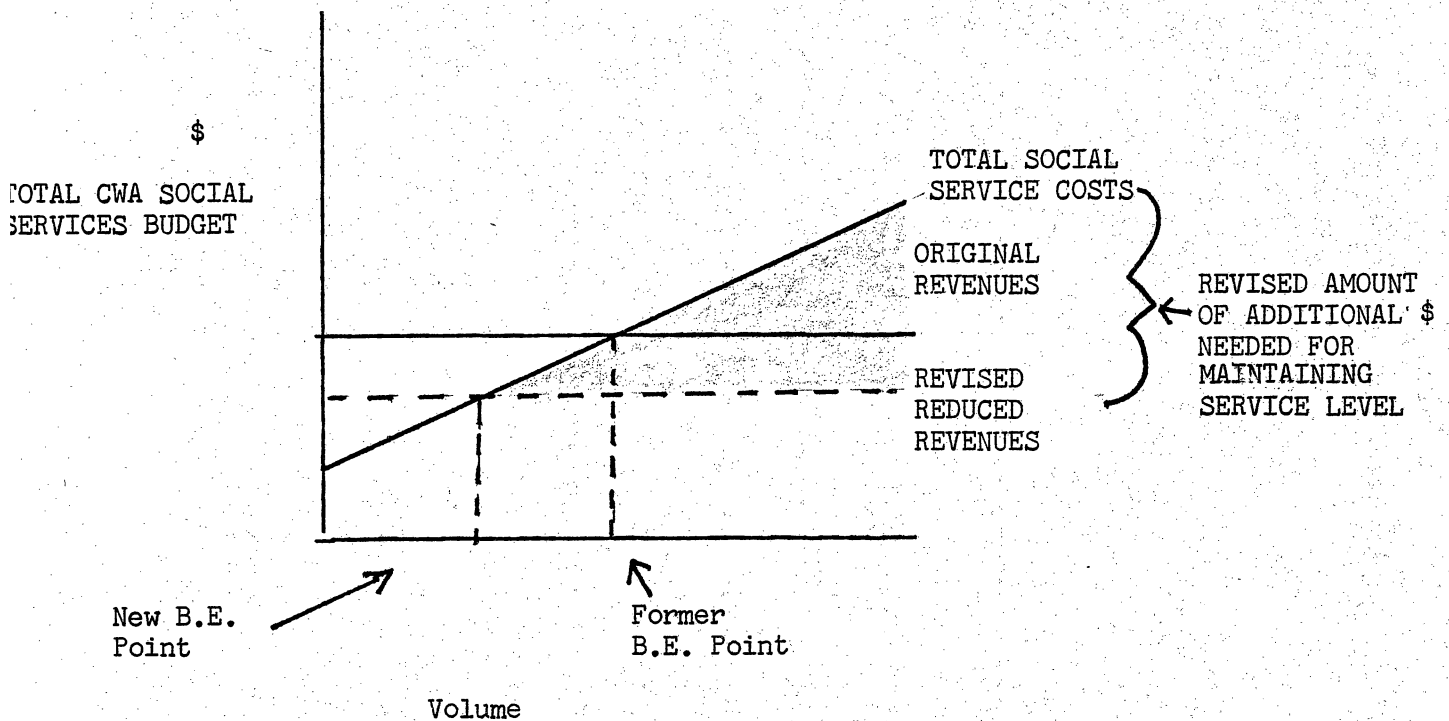


COST - VOLUME - FUNDING GRAPH
(Breakeven Analysis)

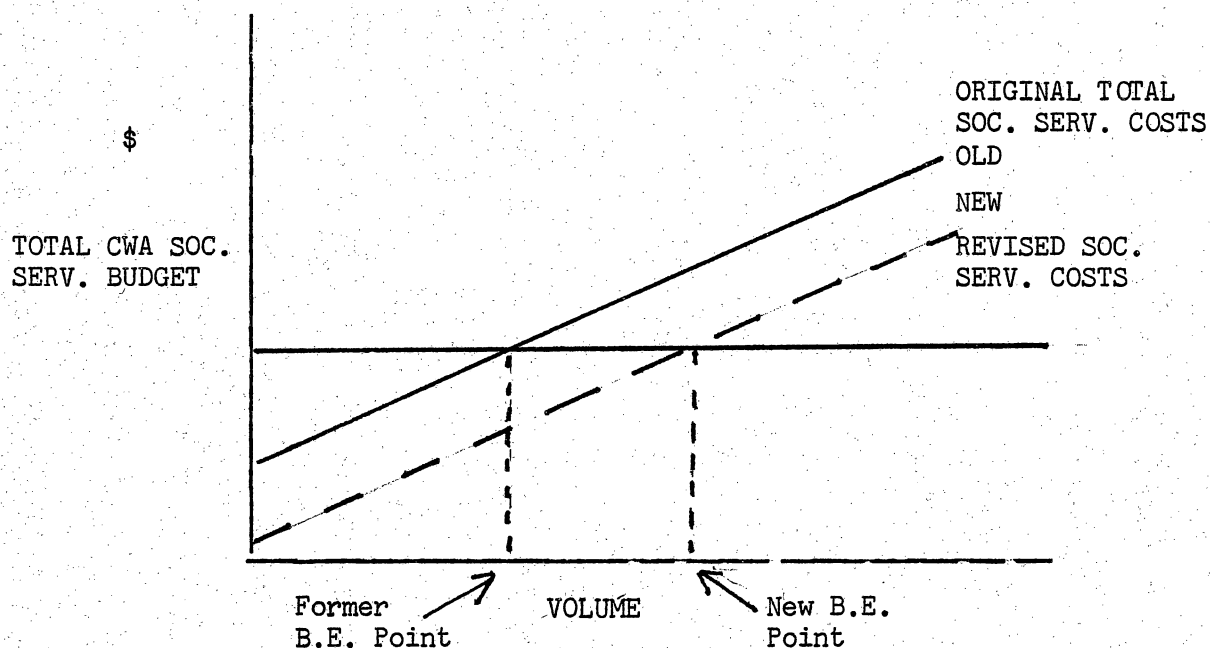


In the above graph we assumed that the sole source of funding was the Social Services allocation as budgeted. We also assumed that there were no other revenue other than the required 25% county match. Thus, the revenues appear as a horizontal line indicating that they are fixed for the entire period. Note how the cost line does not begin at zero. This indicates that the agency is starting the year already committed to certain expenditures (staff salaries, rent, outstanding POS bills, etc.). Normally, these expected costs are set at the level commensurate with that of the fixed costs. The other (variable) costs are incurred consistent with the service volume. Observe the shaded area. Any activity beyond the Breakeven (B.E.) point would result in non-reimbursable expenses (i.e., a deficit situation). This area also indicates the additional revenues needed to meet that level of service activity using that service strategy and mix of services. The dotted line indicates the breakeven point. At this level of service volume, the revenues exactly cover the total costs.

At any volume level above the B.E. (Equilibrium) point would require additional resources. At any volume less than the Breakeven Point would indicate slack or idle resources.



The above graph illustrates the impact on the breakeven point of a reduction of the volume to agree with the new equilibrium point. A situation such as this, or a situation with fixed revenues and an increasing client demand condition requires that the Program Manager consider some other alternatives. The breakeven point tells the Program Manager just how many clients can be served under the existing (planned) approach. The Program Manager has three alternatives open: (1) to try to raise revenues, (2) to try to reduce fixed costs, and (3) to try to reduce variable costs--or some combination thereof. Perhaps more services can be purchased and some staff vacancies frozen or fewer staff employed. If the fixed costs could be reduced, then a larger portion of the revenues could be dedicated to meeting the variable costs of serving additional clients via POS. While a Program Manager may initially consider staff reductions, there is a point at which this is no longer reasonable, that is, there are definite limits to this particular strategy. The three options outlined above have definite limitations.



This graph illustrates the possible impact of revising the service mix to maximize the service volume. The dotted line indicates the new cost function. Note how the volume increased to the new equilibrium point.

Like a Balance sheet in the private sector, these cost-volume-funding graphs provide a "snapshot" of an agency's activities. Once the Director has decided on a course of action, the budget will begin to be developed. Keep in mind, that one of the cornerstones of the budget document is the detailed analysis of costs, funding and volume. This CVF/BE method provides a thorough, but almost instant broad picture of the adequacy of revenues vis-a-vis expected service volume.

The CWA completes two budgets, one a line-item budget and the other a program budget. While the line-item format is easier and more functional for accountants, it has little or no meaning or value to the Program Manager who is interested in seeing these cost categories expressed in program format. How many services of what type to whom? The optimal approach would involve beginning the process with a program budget which would then be converted into a line item format for the accountants to use. This would also be the most logical approach to take, sort of a "building block" method. Starting with the line item budget and then constructing the program budget suggests that the approach is set and only the service strategy and mix can vary. The other

way, beginning with the program budget suggests that the agency is indeed service-oriented and is beginning with its estimate of the client need and the best way (lowest cost, maximum amount of services) which are expected to be provided, and will structure the approach to meet the client need.

Budgets provide a highly effective means for controlling the allocation and use of an agency's resources. There are, however, some activities that are not ideally suited for control via budgets. Budgets are not effectively used in controlling new service mixes and strategies. While they can establish measureable standards for specific parts of the agency, they are not always as useful in the monitoring the financial performance of an agency, at least that is the situation in private industry. Most experts agree that no single, unified method of control has yet been developed for all organizational activities. There are simply too many types of activities in an agency, each requiring a different form of control, for any one system to be effective. The common practice has been for managers to design their own controls. Basically, budgets and financial statements are prepared for accountants by accountants. There are, however, other tools available to the non-accounting manager for measuring and controlling agency performance. Using the technique of ratio analysis, the manager can extract information about the agency's performance which will allow a meaningful program evaluation. We employed a similar approach in the beginning of this publication when we introduced the use of "key indicators" and proceeded to analyze them in a comparative format. Another non-budgetary method of control is the audit, specifically, the compliance and the operations audit, or management audit. Whenever the term audit (or auditor) is used it conjures up scenes of grim-faced accountants painfully studying accounting (and tax) records, normally in a threatening environment. Auditing has, of course, other uses. The other uses range from providing an opinion on the honesty and fairness of financial statements to helping management in its decision-making activities. The audit of most concern to us in this section is the operations or management audit. Its intent is to provide a broad, detailed evaluation of the agency, much broader and more detailed than either external or internal audits. Its prime purpose is to appraise the agency, specifically the performance of management and that of the organization. Because this is a very time-consuming activity, done properly, it usually is not done more frequently than every 3 - 5 years. Among the advantages of the management audit is that it requires (and entails) a systematic reconsideration of the goals, objectives and direction of the

agency. The more effective ones are definitely future-oriented, just as management must be future-oriented.

The last non-budgetary method of control involves Project and Program Control Techniques involving Network and Charting analysis. The best known of these is the Gantt Chart (developed by Henry L. Gantt, an associate of F.W. Taylor). The Gantt Chart is a graphic control method for a project with a specified completion date such as a program budget completion and submission process. The process or project is broken down into separate tasks or assignments, and estimates are then developed about the amount of time needed to complete each task. The chart also indicates an estimated completion date for each task in order to meet the final completion date. Following is a copy of a Gantt Chart for an aircraft manufacturer. The approach is the same irrespective of the specific agency or organization under consideration and/or the product or service involved.

While Gantt charts are appropriate for use in a series of unrelated activities of a single process or project, Network analysis provides the necessary approach for dealing with the interrelationships among activities or events. This is particularly important in those instances when the successful completion of one activity is dependent on the successful completion of another activity. There are two main forms of network analysis, PERT and CPM. They were both developed around the same time (around '57-'58), although independently of each other. PERT, which stands for Program Evaluation and Review Technique, was developed for the U.S. Navy in connection with the Polaris weapon system and is credited with reducing the completion time of the program by two years. CPM, which stands for Critical Path Method, was developed by DuPont in order to facilitate its control of large, complex projects. Both systems are very similar in most essential respects. The primary difference is in the handling of time estimates. PERT uses probability estimates (since it was primarily designed to be used in research projects). CPM uses accurate or relatively accurate times since it is usually concerned with projects that have been operating before and the agency has some experience with the project.

An example of the phases of the PERT approach used in the manufacture of an aircraft and the CPM approach used in building a car are included for informational purposes only.

We are also including some other examples of control techniques, such as the Line of Balance Chart, Task and Bonus Graph and related material. Since both F.W. Taylor and H. Gantt were early pioneers and made considerable contributions to piece-work and bonus compensation systems for piece-work, these are being added for informational purposes only.

In many manufacturing settings today, a piece-rate or differential rate system exists. Basically, an employee receiving an hourly wage is paid strictly for the number of hours worked and/or the actual output. The hourly rate often reflects what is expected from the worker in terms of output or responsibility. With this in mind, a company may offer an incentive wage in order to motivate its workers. The incentive wage is calculated by means of a piece-rate plan--so much money per unit produced. Thus, an employee's pay will depend on that person's initiative. The purpose of the incentive plan is to reward the better worker and encourage the poor worker to become a better one. However, so as not to penalize the slower worker, a minimum wage is usually guaranteed. There are a variety of incentive plans used in business today.

The following graphs depict the incentive systems designed by F.W. Taylor and Henry L. Gantt. Taylor developed his differential rate system at Midvale Steel Co. This system tied a worker's earnings to scientifically set performance standards for the job. If the worker met the standard, he would earn the base rate. If the worker exceeded the standard, their pay would increase. The increased pay rate was carefully calculated so that companies would be making greater profits from the increased production, at the same time they would be paying more in wages. Thus, workers were motivated to exceed former performance standards and make more pay. They did not have to worry about being laid-off, because the company's profits increased with the increased productivity. Although Gantt worked with Taylor at Midvale Steel and also at Bethlehem Steel Company, he developed a different incentive plan. He didn't believe that Taylor's approach would really generate much motivation and thus not be so successful. Gantt's approach was as follows: Every worker who finished a day's assignment would win a \$.50 bonus for that day. In addition, the foreman would earn a bonus for each worker who met the daily standard, plus an extra bonus to the foreman if all the workers made the daily standard. Gantt felt that this would be more successful than Taylor's approach since his (Gantt's) would motivate the foremen to train their workers to perform at a higher level.

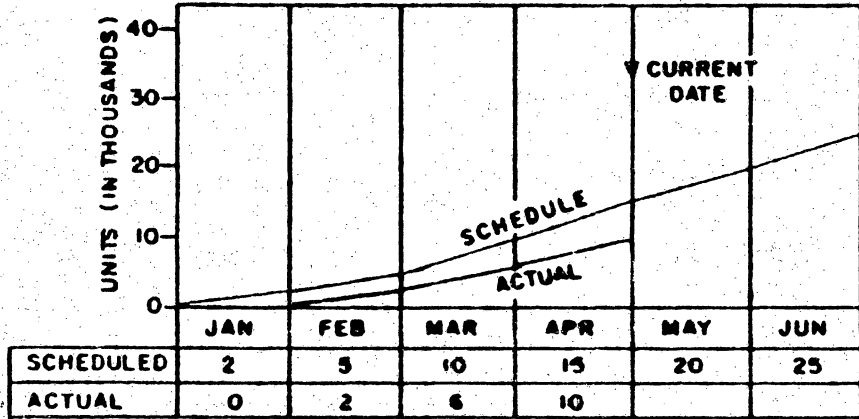
All of these methods assist in both planning and control, however, none of them is intended to substitute for "hands-on" managerial planning and control; they cannot replace effective management.

Line of Balance (LOB)

The Line of Balance technique is oriented toward the control of production activities. Although it can be used in such developmental projects as those involving the production of prototypes (pilot, test models), it emphasizes the extent to which the planned production of a quantity of items is actually being realized. Thus, its utility in project management is limited. It has basically the same weaknesses as the other project planning and control techniques in that it requires the estimation of "percent completion" of component parts and is more difficult to understand than other charts, such as the Gantt Chart (discussed earlier).

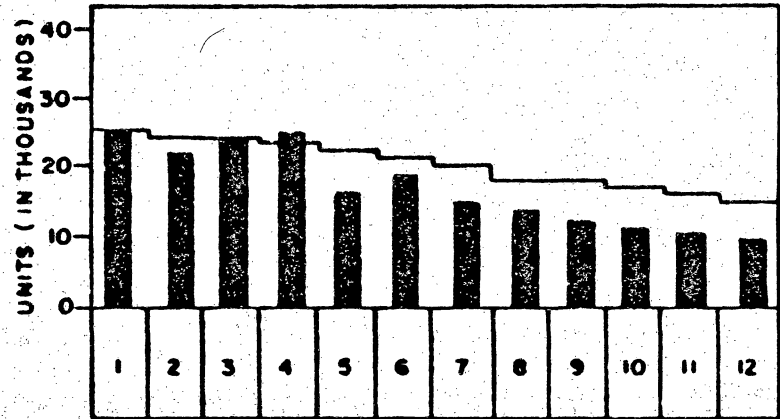
LINE OF BALANCE CHART

OBJECTIVE CHART



CUMULATIVE DELIVERIES

PROGRESS CHART

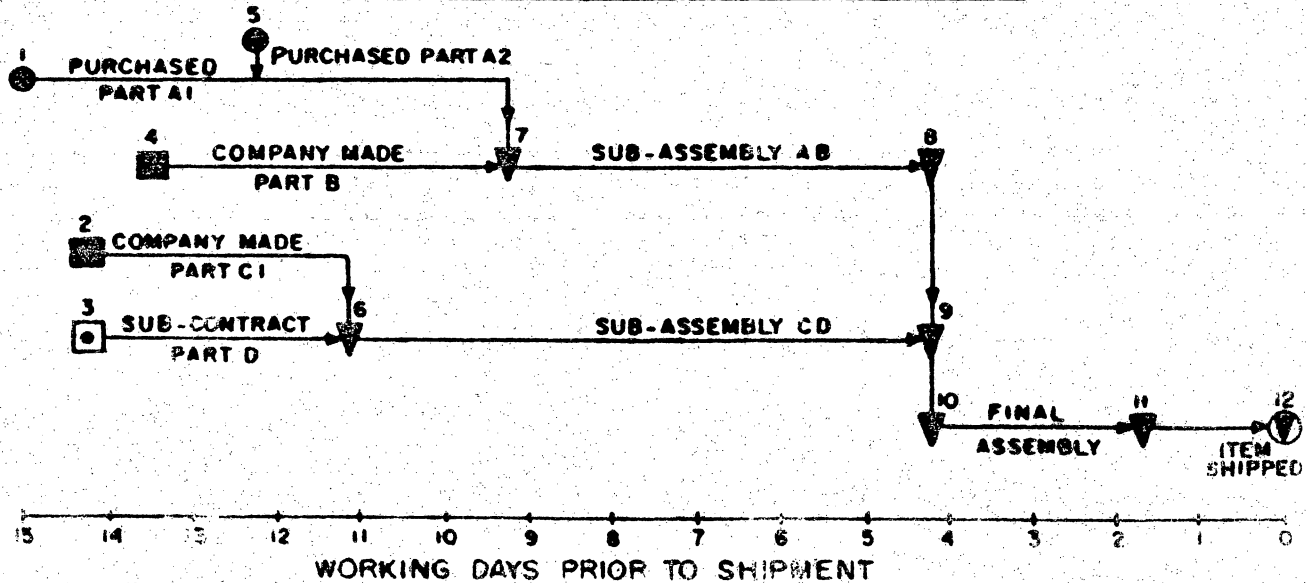


CONTROL POINTS

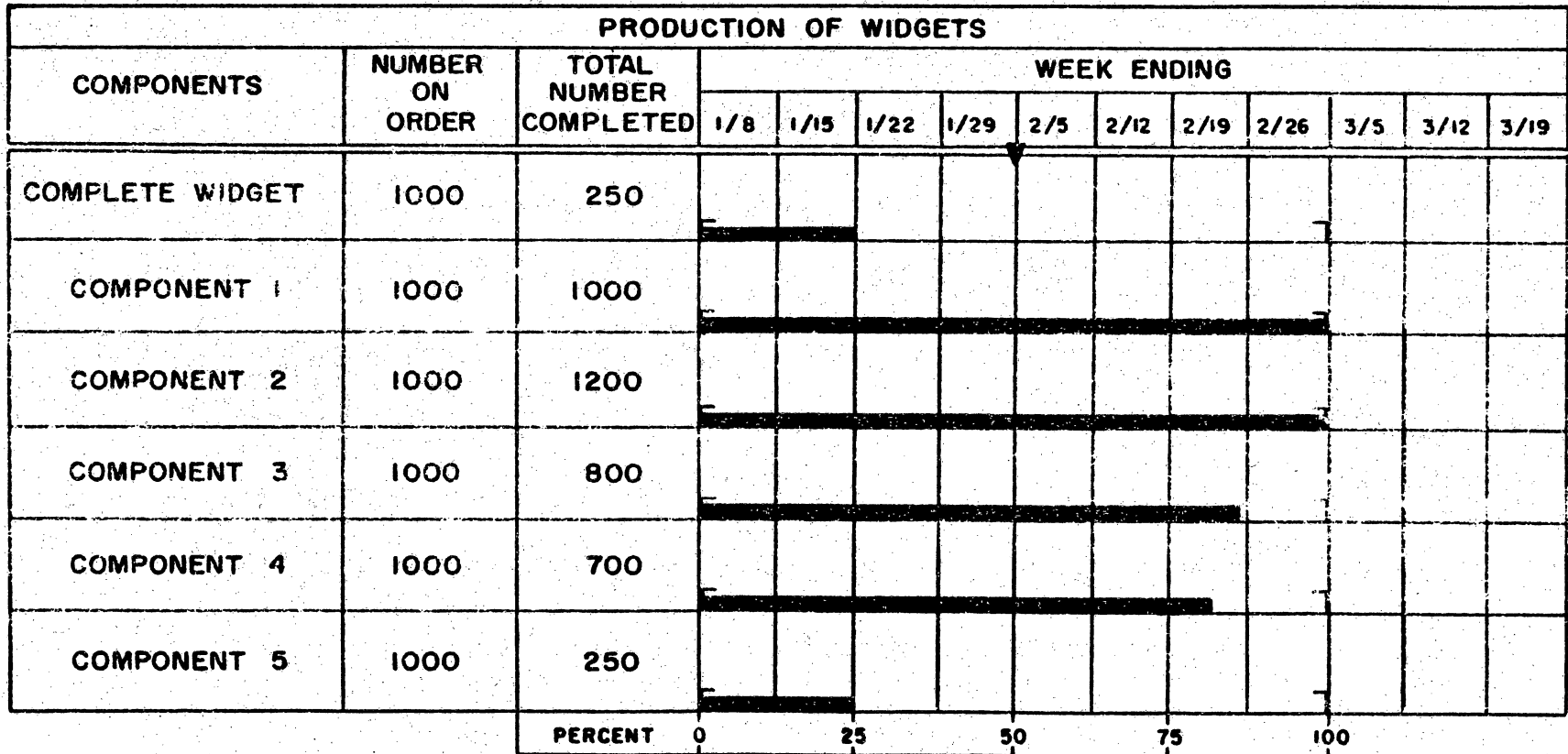
PRODUCTION PLAN CONTROL POINTS

LEGEND:

- PURCHASED PART
- COMPANY MADE PART
- ◻ SUB-CONTRACT PART
- ▼ ASSEMBLY
- ⊖ SHIPMENT



EXAMPLE OF A GANTT PROGRESS CHART



LEGEND: START DATE
 SCHEDULED COMPLETION DATE
 CURRENT DATE
 UNITS COMPLETED

EXAMPLE OF A GANTT TIME AND EVENT CHART

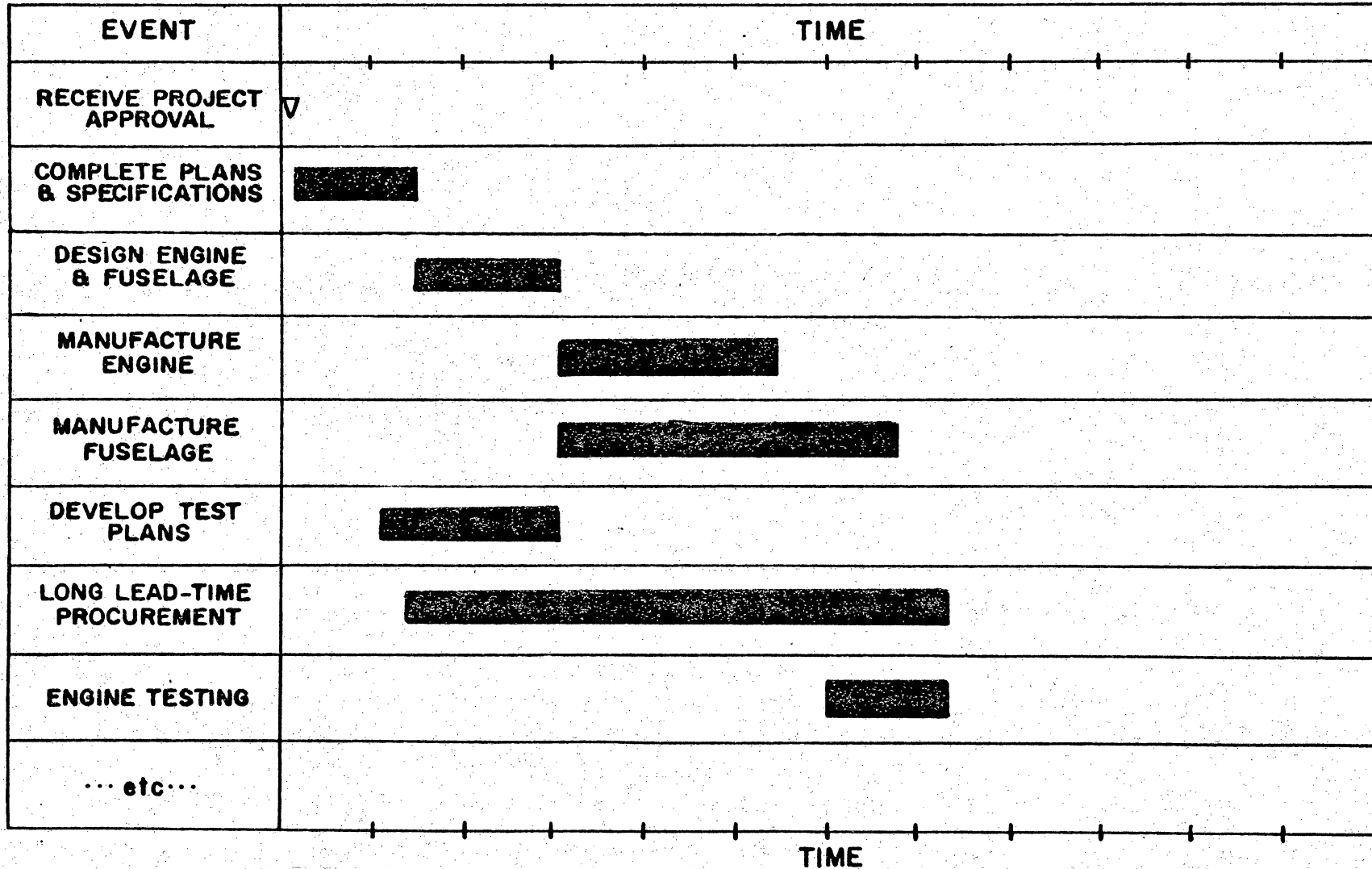
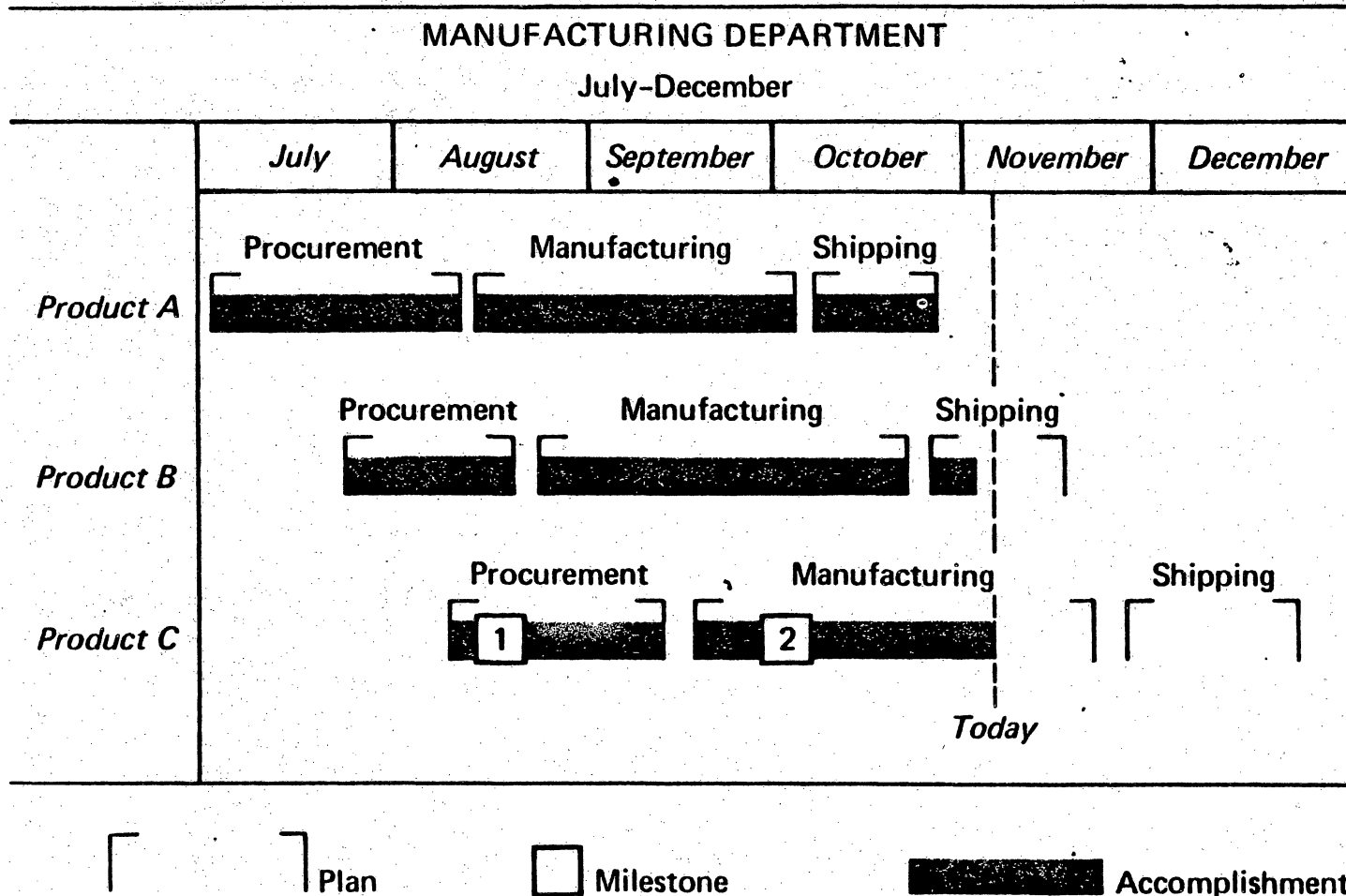


FIGURE 7-2 Gantt Chart for Manufacturing Department



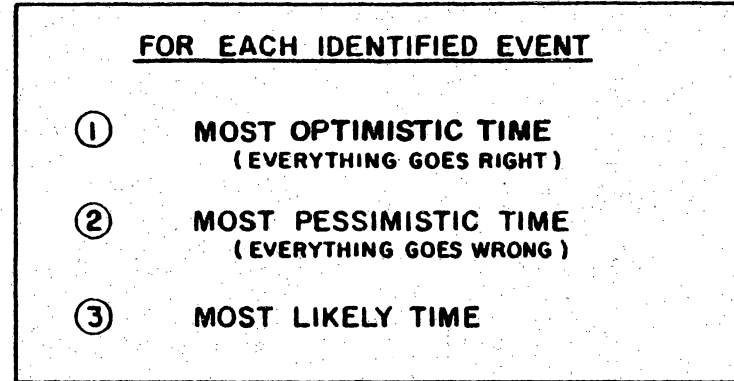
PROGRAM EVALUATION REVIEW TECHNIQUE (PERT)

PERT - PHASE 1



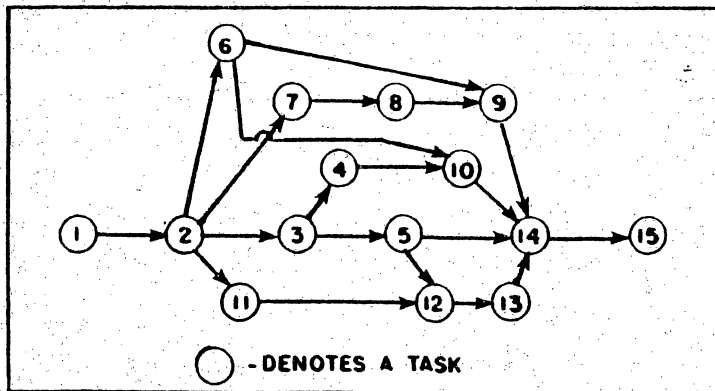
IDENTIFY KEY EVENTS

PERT - PHASE 2



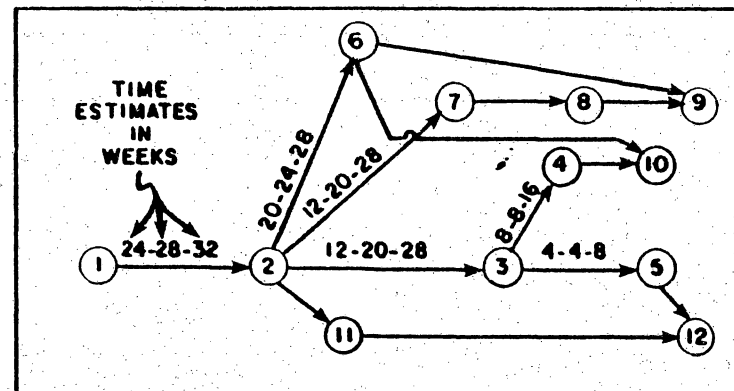
ESTABLISH EVENT TIMES

PERT - PHASE 3



ESTABLISH A TASK NETWORK

PERT - PHASE 4

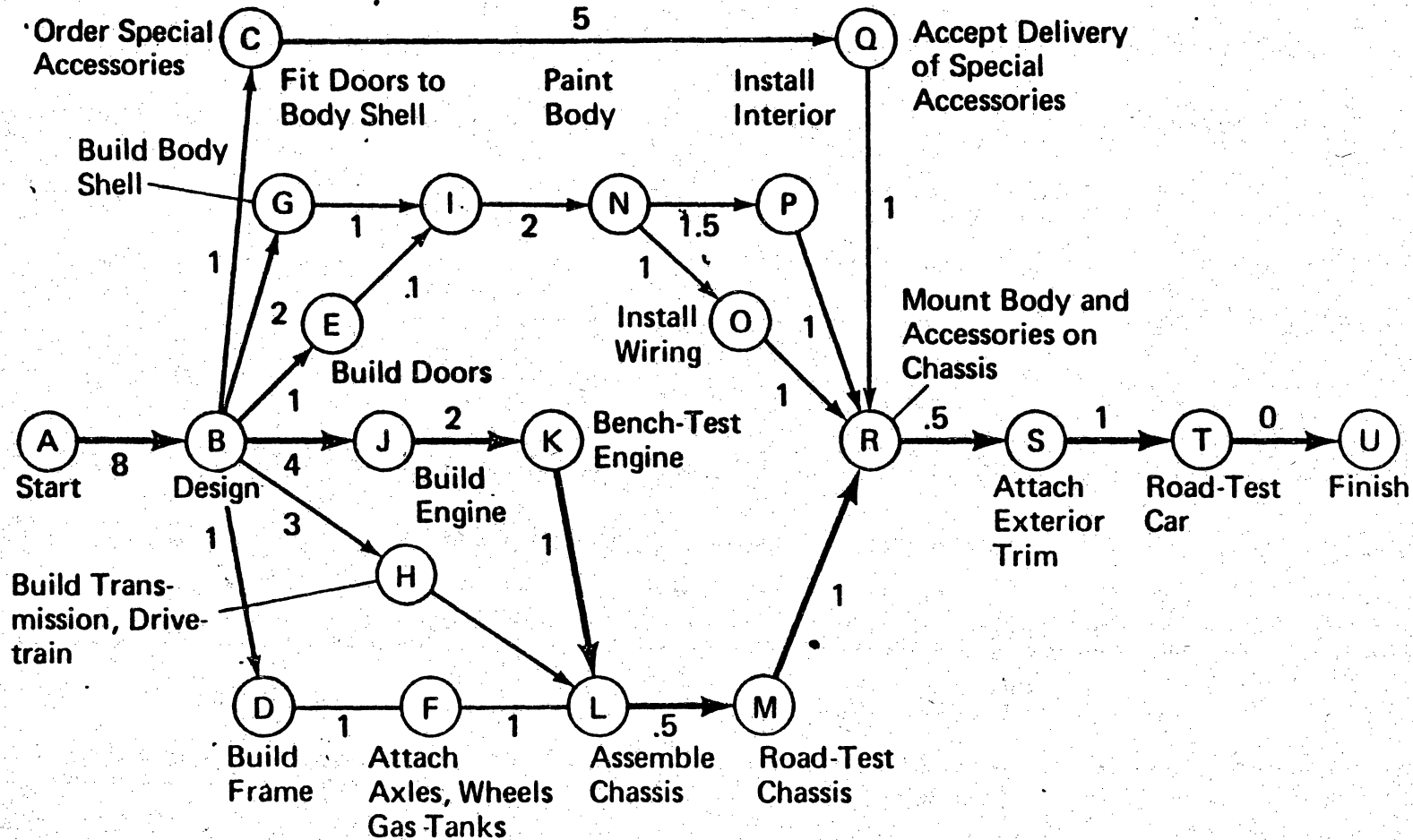


ESTABLISH A TIME NETWORK

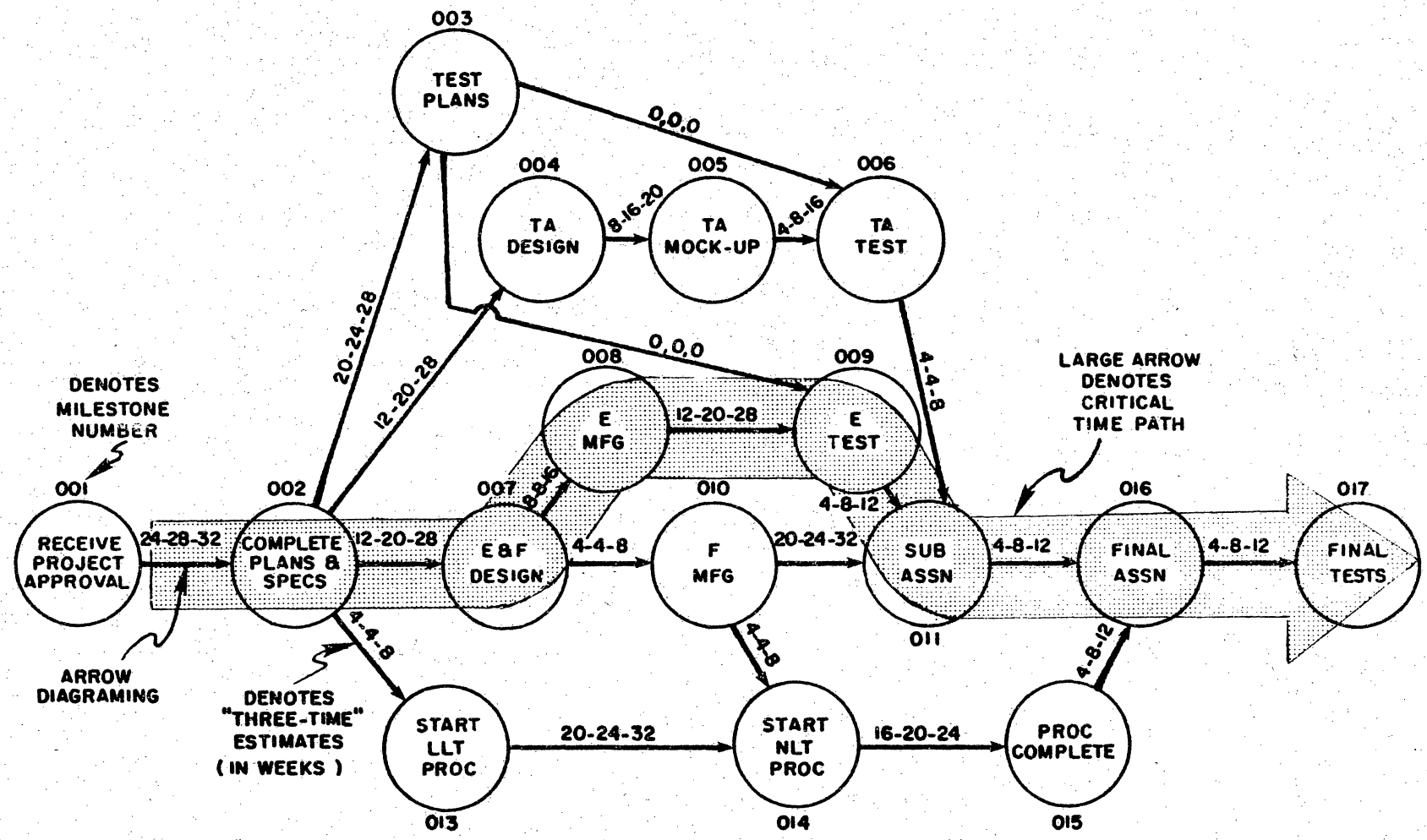
TABLE 7-2 Sequence, Predecessors, and Time Requirements of Car-Building Tasks

Job Letter	Description	Immediate Predecessors	Normal Time (Days)
A	Start		0
B	Design	A	8
C	Order Special Accessories	B	0.1
D	Build Frame	B	1
E	Build Doors	B	1
F	Attach Axles, Wheels, Gas Tank	D	1
G	Build Body Shell	B	2
H	Build Transmission and Drivetrain	B	3
I	Fit Doors to Body Shell	G, E	1
J	Build Engine	B	4
K	Bench-Test Engine	J	2
L	Assemble Chassis	F, H, K	1
M	Road-Test Chassis	L	0.5
N	Paint Body	I	2
O	Install Wiring	N	1
P	Install Interior	N	1.5
Q	Accept Delivery of Special Accessories	C	5
R	Mount Body and Accessories on Chassis	M, O, P, Q	1
S	Road-Test Car	R	0.5
T	Attach Exterior Trim	S	1
U	Finish	T	0

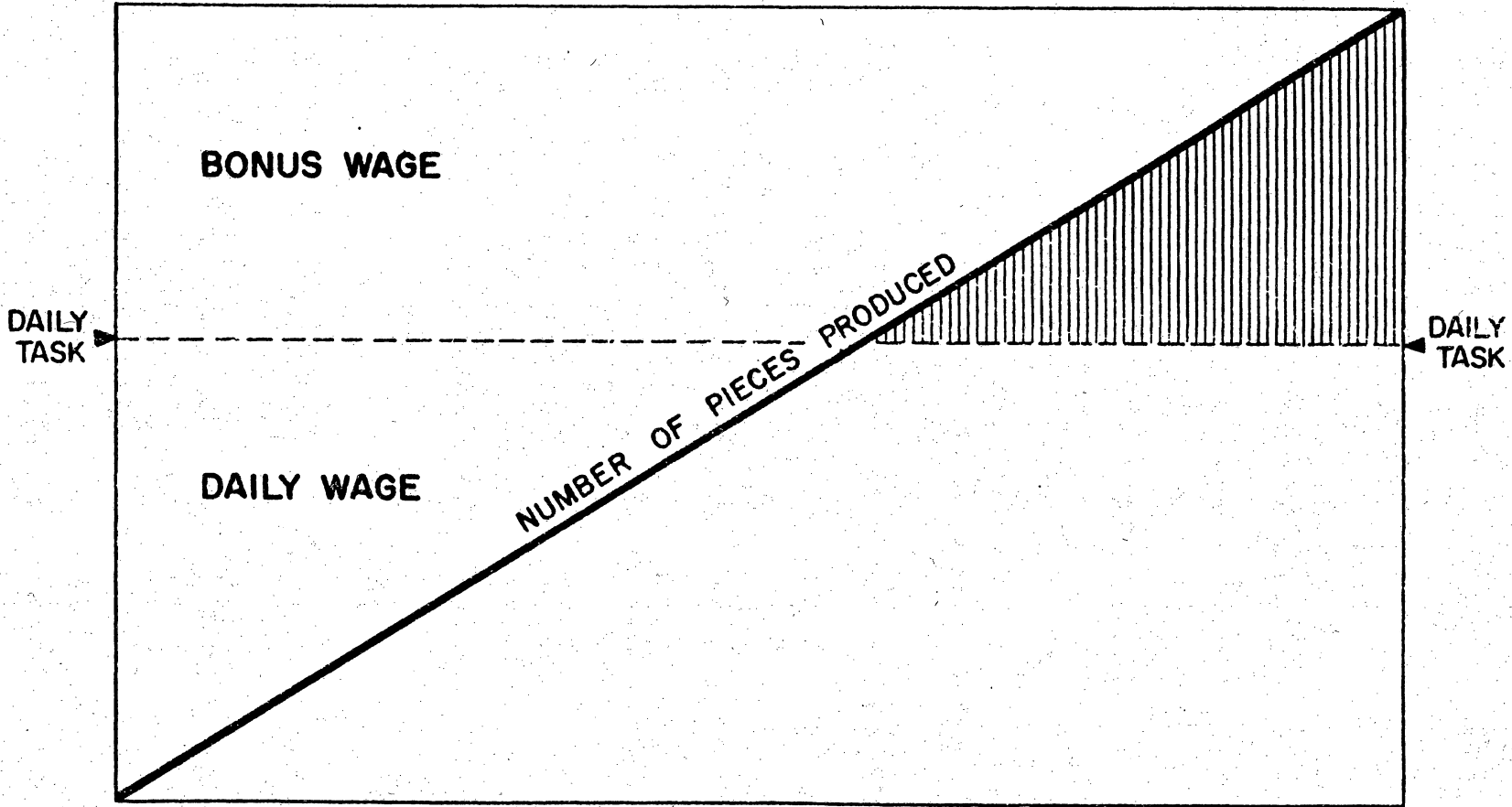
FIGURE 7-3 CPM Chart for Building a Custom-Designed Automobile



CRITICAL PATH SCHEDULING AN ASPECT OF PERT



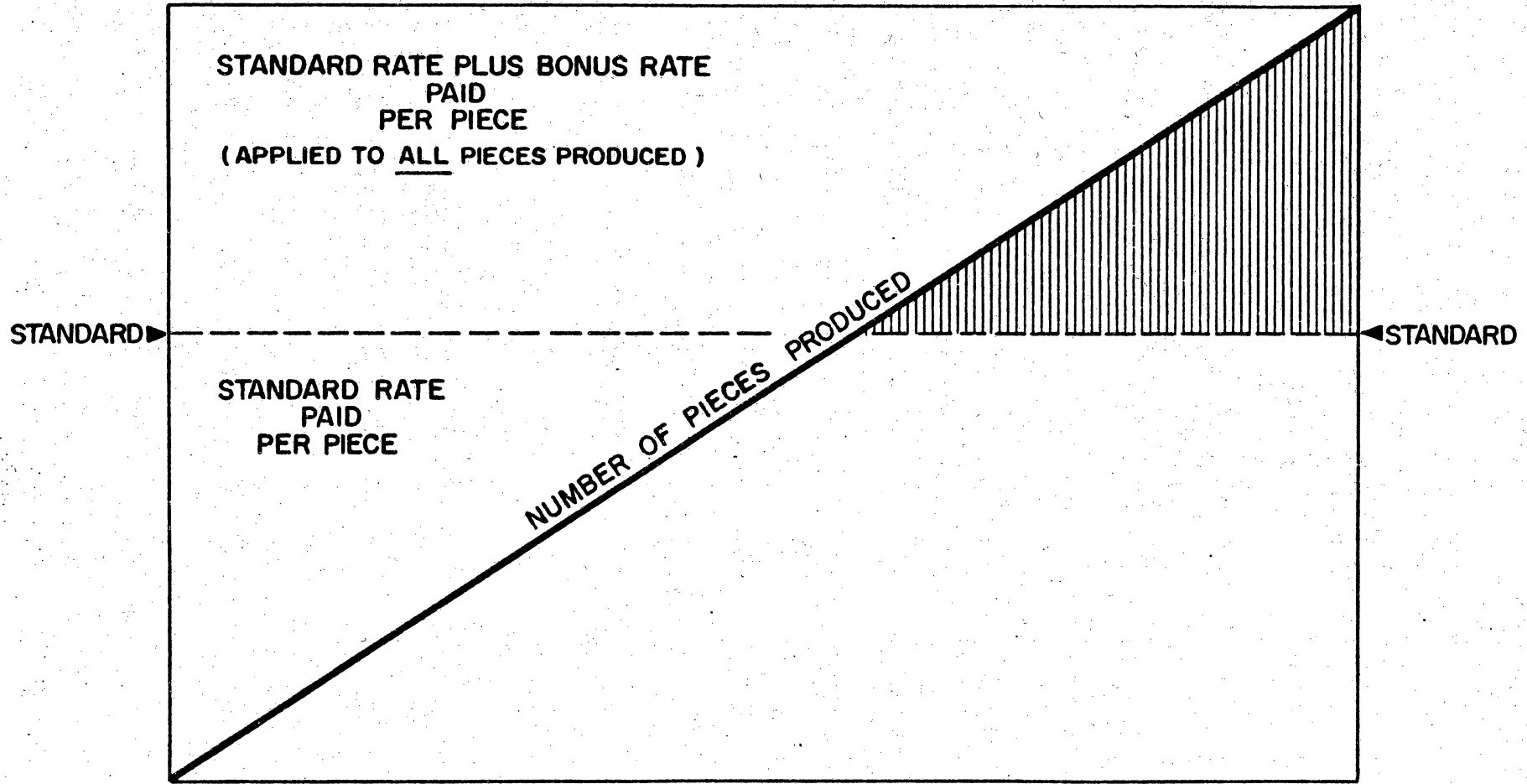
GANTT "TASK AND BONUS" PLAN



A FINANCIAL INCENTIVE PLAN

Instructor's Material for Management 205, Brookdale Community College, Lincroft, N.J., Author Unknown

TAYLOR "DIFFERENTIAL PIECEWORK" PLAN



A FINANCIAL INCENTIVE PLAN

THE PROCESS OF FINANCIAL ACCOUNTING

①

JOURNAL	
INCREASES	_____
DECREASES	_____
_____	_____
_____	_____
_____	_____
_____	_____

BOOK OF ORIGINAL ENTRY

A DETAILED RECORD OF TRANSACTIONS OF THINGS RECEIVED (DEBITS) AND THINGS PARTED WITH (CREDITS)

A FINANCIAL DIARY

②

LEDGER ACCOUNT		
LEDGER ACCOUNT		
DEBIT	CREDIT	BALANCE
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

BOOKS OF FINAL ENTRY

A POSTING OF EACH JOURNAL TRANSACTION IN ITS OWN ACCOUNT OF DEBITS AND CREDITS

FINANCIAL STATEMENTS

③

BALANCE SHEET	
ASSETS	
_____	_____
_____	_____
LIABILITIES	
_____	_____
_____	_____
NET WORTH	
_____	_____

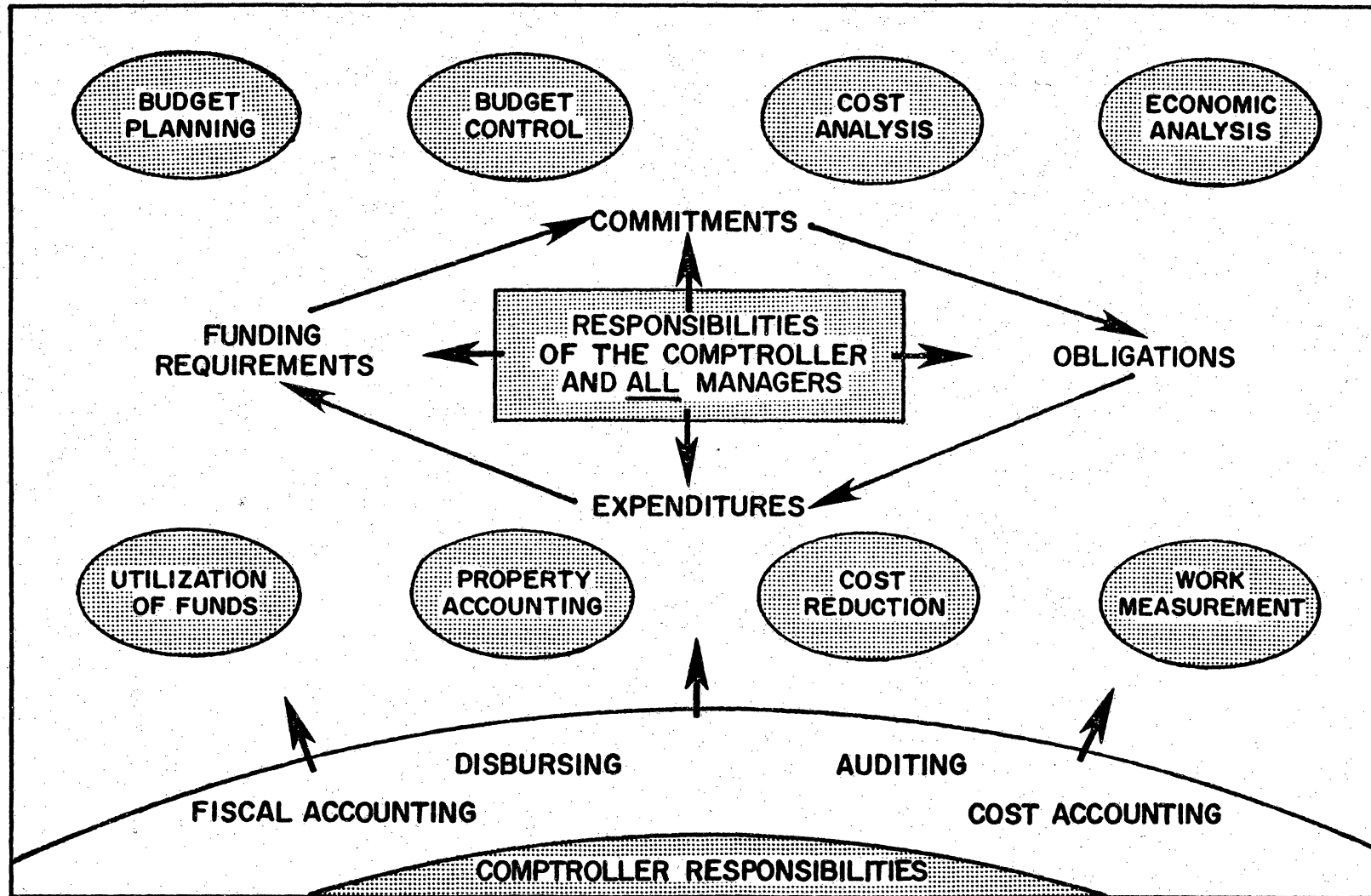
INCOME STATEMENT	
INCOME	
_____	_____
_____	_____
EXPENSES	
_____	_____
_____	_____
NET PROFIT	
_____	_____

BALANCE SHEET — A LIST OF ASSETS (PROPERTY OWNED), LIABILITIES (DEBTS), AND NET WORTH (OWNER'S EQUITY) AS OF A SPECIFIC DATE




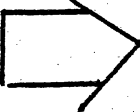





INCOME STATEMENT — A SUMMARY OF REVENUES AND EXPENSES AND THE RESULTING PROFIT OR LOSS




THE KEY IS ANALYSIS

THE SCOPE OF FINANCIAL MANAGEMENT



Types of Symbols and Definitions for Process Charts*

Process Chart Symbols		Activities Represented on Process Charts	
ASME Symbols	Others	Activities	Definitions of Activities
		Operation	An <u>operation</u> occurs when an object is <u>intentionally</u> changed in any of its physical or chemical characteristics, is assembled or disassembled from another object or is arranged or prepared for another operation, transportation, inspection, or storage. An operation also occurs when information is given or received (I & R) or when planning or calculation--taking applications, etc.
		Labor Operation	Expenditure of Labor or cost on product at one workplace which does not add value to the product.
		Modification Operation	Modification (changing) shape or size, machining, permanent assembly or disassembly, etc.) of product at one workplace. (Modification may be accomplished by machines and/or labor expenditure).
		Transportation	A <u>transportation</u> occurs when an object is moved from one place to another, except when such movements are part of the operation or are caused by the operator at the work station during an operation or an inspection.
		Move	Change in location or product from one workplace to another.
		Inspection	An <u>inspection</u> occurs when an object is <u>examined</u> for identification or is verified for quality or quantity in any of its characteristics.
		Verification	Comparison of product with a standard or quantity or quality at one workplace.
		Delay	A <u>delay</u> occurs to an object when conditions except those which intentionally change the physical or chemical characteristics of the object do not permit or require immediate performance of the next planned step.
		Temporary Storage**	Delay, waiting, or banking of product when no special order or requisition is required to perform the next activity.

<u>ASME Symbols</u>	<u>Others</u>	<u>Activities</u>	<u>Definitions of Activities</u>
		Storage	A <u>storage</u> occurs when an object is kept and protected against unauthorized removal, shown by inverted triangle.
		**Controlled Storage	Delay, waiting, or banking of product when a special order or requisition is required to perform the next activity.
		Combined Activity	When it is desired to show activities performed concurrently or by the same operator at the same work station, the symbols for those activities are combined, as shown by the circle placed within the square to represent a combined operation and inspection.

* The Production Function in Business, Timms & Pohlen, p. 314.

** In much motion and time study literature, the temporary storage symbol is a double triangle and the controlled or permanent storage symbol is a single triangle. Because the temporary storage symbol is used overwhelmingly more than the controlled storage symbol, the principles of methods design indicate that it is better to use the symbols as indicated here, that is, single triangle for temporary storage, and double triangle for controlled storage.

PROCESS CHART

NAME OF ITEM: Requisition for Office Equipment DATE: May 28, 1982

PAGE: 1 of 1

ORDER NO.: P 3542 OFFICE-WORK UNIT: Social Services

CHARTED BY: FMK LOCATION: Main Office

TRAVEL IN FT.	TIME IN MIN.	SYMBOL	OPERATIONS	REMARKS
---------------	--------------	--------	------------	---------

		①	Written in longhand by supervisor	
		①	On Supervisor's desk (for mail pick-up)	
350		①	By Courier to Secretary	
		②	On Secretary's desk (for typing)	
		②	Typed	
40		②	By Courier to Administrator	
		③	On Administrator's desk (for approval)	
		①	Reviewed and approved	
300		③	To Purchasing Department	
		④	On Buyer's desk (for approval)	
		②	Reviewed and approved	
		⑤	On Buyer's desk (for mail pick-up)	
25		④	To typist (for typing)	

Summary

Number of Operations.....3
 Number of delays.....5
 Number of inspections.....2
 Number of transportations.4
 Total travel in feet....715

There are various types of process charts used in different settings. On the following page is a Flow Process Chart which shows the sequence of operations composing a process. Such a process chart is a useful device in planning complex process. Although such a chart has no inherent analytical power, per se, it is useful as a recording tool to evaluate alternative processes. Thus, they do provide the analyst with a tool with which to complete analyses of complex operations. Most of the process charts have been developed for the manufacturing and assembly type operations. Thus it is not surprising that the symbols which they use are standard symbols, by the American Society of Mechanical Engineers (ASME). Sometimes the symbols for office-type production are different from those used in manufacturing, such as on the following page. This is a Flow Process Chart--Office Work--dealing with a requisition for office equipment. This and the other process charts are intended to be used to establish the transport costs using the following equation:

$$C_k = \sum_{i=1}^n (T_{ik} + W_{ik}) + M_k + T_f^*$$

Where

C_k = Total cost per unit of output for process k.

T_{ik} = Cost of transport to work station W_i under process k.

W_{ik} = Cost of the operation done at work station W_i (including rejects) in process k.

M_k = Cost of raw material required for process k.

T_f = Cost of transport from final work station W_n to finished stores in process k.

n = The number of work stations in process k.

The above equation is the mathematical expression for the total cost per unit of output of a process.

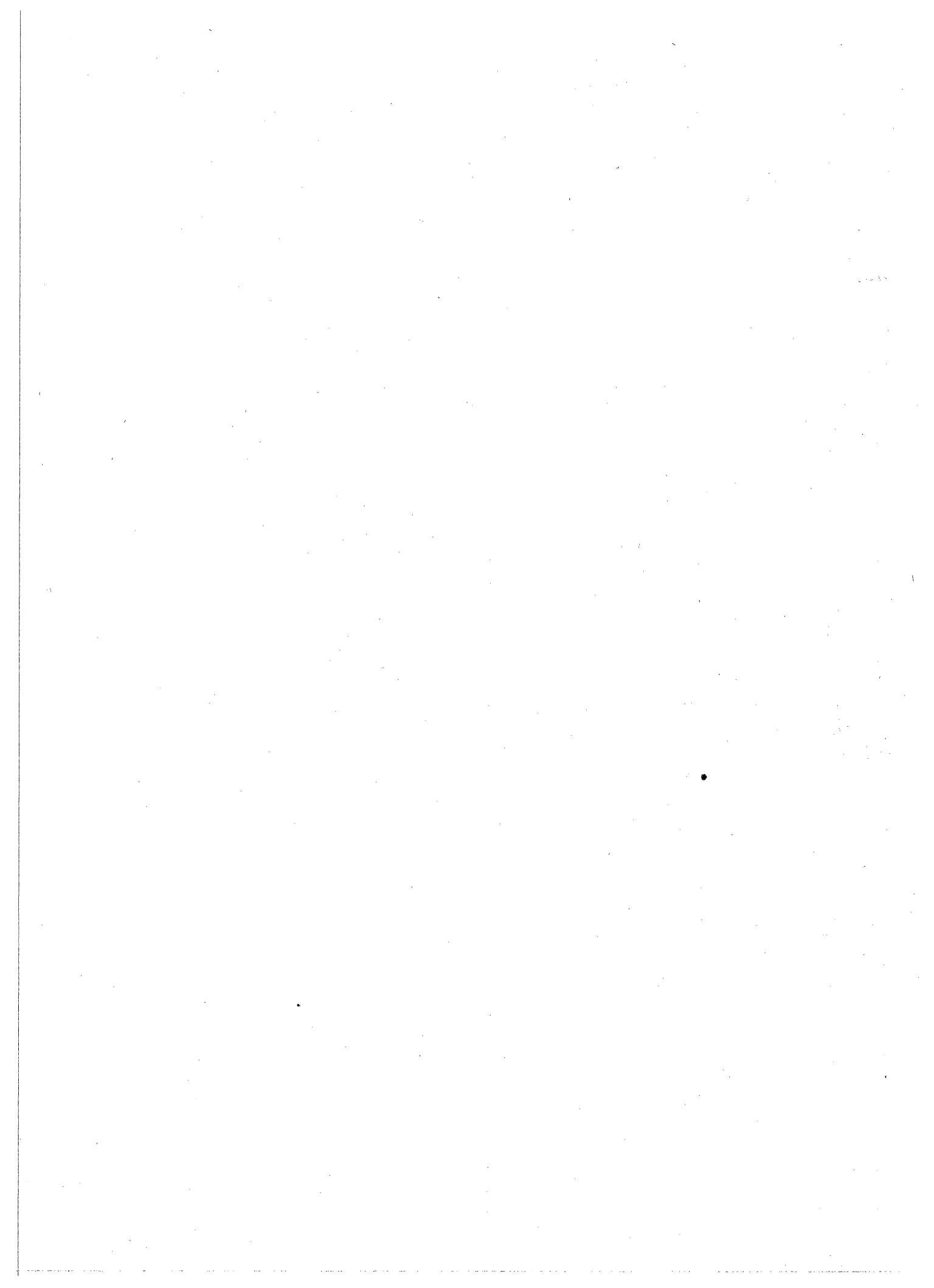
The process charts also indicate the storage events which should be minimized since they increase process time and incur higher in process inventory carrying (ownership) costs. This is of particular concern in a manufacturing environment.

Another similar type of chart which is normally also completed (but not shown here) is a Flow Diagram of the Office Procedure under study. Ideally this is done before the office is laid out. The flow diagram is superimposed over the floor plan to analyze the proposed layout.

* The Production Function in Business, Timms & Pohlen, P310.

FLOW PROCESS CHART

FLOW PROCESS CHART				PROCESS No.		PAGE No.		
PROCESS REFINISH HOUSING	ACTIONS	PRESENT		PROPOSED		DIFFERENCE		
		No.	TIME	No.	TIME	No.	TIME	
ORGANIZATION LIGHT EQUIPMENT	○ OPERATIONS	6		4		2		
	⇨ TRANSPORTS	15		8		7		
	□ INSPECTIONS	3		2		1		
CHARTED BY JONES	D DELAYS	5	160	4	50	1	110	
	▽ STORAGES	1		0		1		
DATE 9/30/77	DISTANCE TRAVEL	186		60		126		
DETAILS OF <input type="checkbox"/> PRESENT <input checked="" type="checkbox"/> PROPOSED METHOD		○	⇨	□	D	▽	DIST. TIME QUAN	NOTES
1. TRANSPORT FROM DISMANTLING		○	⇨	□	D	▽	10	
2. STORE ON SOLVENT TANK RACK		○	⇨	□	D	▽	15	
3. MOVE TO SOLVENT CLEANER		○	⇨	□	D	▽	5	
4. PRESSURE CLEAN w/SOLVENT		○	⇨	□	D	▽		
5. CHECK FOR CORROSION		○	⇨	□	D	▽		
6. TRANSPORT TO DRY RACK		○	⇨	□	D	▽	5	



THE MEASUREMENT AND
NATURE OF COSTS



THE MEASUREMENT AND NATURE OF COSTS *

In any cost measurement effort there is a proper analytical framework which must be followed to avoid the common problem areas.

Because costs depend on a number of factors in addition to output, the problem resolves itself into eliminating these other cost determinants to arrive at a cost function that reasonably expresses the cost-output relation. Generally speaking, the following problem areas are among the important preliminary ones that must be addressed in preparing the analysis.

1. Time Period - The choice of an appropriate time period on which to base the analysis involves three important considerations: normality, variety, and length of observation.

- (a) Normality--is attained by selecting a time period which is a normal or typical one. Although a completely static period would probably be impossible to find, a period of relatively minor changes would be acceptable, provided the data could be adjusted to compensate for the difference.
- (b) Variety-- the time period selected should have sufficiently wide variations in output so there would be enough observations to fit a regression line. In addition, if the results of the analysis are to be used for planning, the period should be recent enough to include data that will be basically relevant for the future.
- (c) Length of Observation-- The period chosen should be one in which the observational unit (month, quarter, year) will be a minimum to the extent that completeness of the data will permit. A small observation unit will allow measurement of slight output variations more readily discernible with small rather than large observational units. A month is the most frequently chosen time period.

2. Technical Homogeneity - This means, on the input side, the different approaches (Direct, Vendor, Purchase - Public or Private) should be grouped within similar units and, on the output side, the number of different service outputs should be limited to facilitate measurement. In addition, there should be no significant changes in costs or outputs during the analysis period.

3. Cost Adjustment - This involves decisions as to the proper choice of data and the types of adjustments needed to correct the figures so they can be used in a meaningful cost function. The problem breaks down into three sub-categories: cost inclusion, deflation, and cost-output timing.

- (a) Cost Inclusion--Since the object is to arrive at a cost-output relation, the problem is to select only those elements of cost

that vary with (are functionally related to) output. Thus, various kinds of allocated and indirect expenses that do not bear any relation to service units delivered, should be excluded.

Sometimes a preliminary effort is needed to determine which costs should be included in the final analysis. The preferred approach is to use total costs rather than unit (average) costs in conducting most cost analyses for two important reasons: (1) The results are likely to be more reliable because average cost is a ratio of two variables and thus more susceptible to error. (2) The marginal and average cost functions can be calculated mathematically from the total Cost data.

- (b) Deflation--The purpose of this is to adjust the data for any significant inflationary changes in input prices during the analysis period. The customary approach is to employ the "Present Value" method. This procedure can be employed using an algebraic formula or a standard Present Value Table similar to that on the following page. Both are based on continuous compounding for different annual discount rates, for different number of years, assuming uniform cash flows throughout the years.

Due to inflation, a dollar today is worth more than a dollar next year or in five years, and worth less than a dollar last year or five years ago. The Present Value approach enables the analyst to make the correct "deflation" adjustment.

If a Present Value table is not readily available, the formula is:

$$P = \frac{S}{(1 + r)^n}$$

Where P = Present Value

S = The amount, the future worth

r = Rate of return (interest or inflation rate)

n = Number of periods

1 = The constant number 1

Thus, in our example, S = \$1.00 (we want to know how much a future dollar is worth today): r = 12%; n = 5 years.

Thus,

$$P = \frac{S}{(1 + r)^n}$$

$$P = \frac{\$1.00}{(1 + .12)^5} = \frac{\$1.00}{(1.12)^5} = \frac{\$1.00}{1.76234} = .5674274 = \$.57$$

$P = \$.57$

Using this formula requires the availability of a calculator that has exponential factoring capability--(it can be done manually, however, it is a very tedious effort). It is considerably easier and faster to merely refer to a Present Value Table, such as is on the following page. First look for the number of periods, in this case 5 (on the vertical axis) and then read across this row to the column headed 12% and read 0.567. (Please note that the Present Value Table is really a type of Compound Interest Table. Thus, the term "period" is used rather than years, since compounding can occur at frequencies greater than 1 per year. However, when the compounding frequency is one per year, then the terms are synonymous). We then round \$.567 to \$.57. Thus, in five years at an annual inflation rate of 12%, \$1.00 will be worth \$.567 - almost 57 cents today.

- (c) Cost-Output Timing-- The third area involves obtaining the correct correspondence of cost and output. Costs are not normally recorded in such a manner that enables them to be linked to the output variations that created them. Certain costs that are usually charged as a function of time must be adjusted or recalculated as a function of the output rate before they can be included in the overall cost function.

COST CONCEPTS

There are two general classes of costs--absolute costs and opportunity costs.

Absolute Costs involve an outlay of funds (reduction in assets). Opportunity Costs involve a comparison between the policy that was chosen and the policy that was rejected. If a CWA can "buy" a service from Vendor A for \$10 but prefers to buy it from Vendor B for \$12, this represents an absolute cost of \$12 and an opportunity cost of \$2 (\$12-\$10). There is also a subdivision of opportunity costs called Imputed Opportunity Costs. They never show up in any accounting records but are important for certain types of decisions.

There are also Direct and Indirect costs. Direct Costs are readily identified and traceable to a particular service unit operation or process. Overhead may also be direct (fringe benefits, etc.) depending on the system if it is identified and traceable to a particular unit. Indirect Costs are not readily identified nor linkable to specific employee work units. These are sometimes called "common costs" or "allocable costs" since they are costs incurred for the general operation of the agency.

PRESENT VALUE OF \$1.00

$$P = \frac{S}{(1 + r)^n}$$

PERIODS	4%	6%	8%	10%	12%	14%	16%	18%	20%	22%	24%	26%	28%	30%	40%
1	0.962	0.943	0.926	0.909	0.893	0.877	0.862	0.847	0.833	0.820	0.806	0.794	0.781	0.769	0.714
2	0.925	0.890	0.857	0.826	0.797	0.769	0.743	0.718	0.694	0.672	0.650	0.630	0.610	0.592	0.510
3	0.889	0.840	0.794	0.751	0.712	0.675	0.641	0.609	0.579	0.551	0.524	0.500	0.477	0.455	0.364
4	0.855	0.792	0.735	0.683	0.636	0.592	0.552	0.516	0.482	0.451	0.423	0.397	0.373	0.350	0.260
5	0.822	0.747	0.681	0.621	0.567	0.519	0.476	0.437	0.402	0.370	0.341	0.315	0.291	0.269	0.186
6	0.790	0.705	0.630	0.564	0.507	0.456	0.410	0.370	0.335	0.303	0.275	0.250	0.227	0.207	0.133
7	0.760	0.665	0.583	0.513	0.452	0.400	0.354	0.314	0.279	0.249	0.222	0.198	0.178	0.159	0.095
8	0.731	0.627	0.540	0.467	0.404	0.351	0.305	0.266	0.233	0.204	0.179	0.157	0.139	0.123	0.068
9	0.703	0.592	0.500	0.424	0.361	0.308	0.263	0.225	0.194	0.167	0.144	0.125	0.108	0.094	0.048
10	0.676	0.558	0.463	0.386	0.322	0.270	0.227	0.191	0.162	0.137	0.116	0.099	0.085	0.073	0.035
11	0.650	0.527	0.429	0.350	0.287	0.237	0.195	0.162	0.135	0.112	0.094	0.079	0.066	0.056	0.025
12	0.625	0.497	0.397	0.319	0.257	0.208	0.168	0.137	0.112	0.092	0.076	0.062	0.052	0.043	0.018
13	0.601	0.469	0.368	0.290	0.229	0.182	0.145	0.116	0.093	0.075	0.061	0.050	0.040	0.033	0.013
14	0.577	0.442	0.340	0.263	0.205	0.160	0.125	0.099	0.078	0.062	0.049	0.039	0.032	0.025	0.009
15	0.555	0.417	0.315	0.239	0.183	0.140	0.108	0.084	0.065	0.051	0.040	0.031	0.025	0.020	0.006
16	0.534	0.394	0.292	0.218	0.163	0.123	0.093	0.071	0.054	0.042	0.032	0.025	0.019	0.015	0.005
17	0.513	0.371	0.270	0.198	0.146	0.108	0.080	0.060	0.045	0.034	0.026	0.020	0.015	0.012	0.003
18	0.494	0.350	0.250	0.180	0.130	0.095	0.069	0.051	0.038	0.028	0.021	0.016	0.012	0.009	0.002
19	0.475	0.331	0.232	0.164	0.116	0.083	0.060	0.043	0.031	0.023	0.017	0.012	0.009	0.007	0.002
20	0.456	0.312	0.215	0.149	0.104	0.073	0.051	0.037	0.026	0.019	0.014	0.010	0.007	0.005	0.001
21	0.439	0.294	0.199	0.135	0.093	0.064	0.044	0.031	0.022	0.015	0.011	0.008	0.006	0.004	0.001
22	0.422	0.278	0.184	0.123	0.083	0.056	0.038	0.026	0.018	0.013	0.009	0.006	0.004	0.003	0.001
23	0.406	0.262	0.170	0.112	0.074	0.049	0.033	0.022	0.015	0.010	0.007	0.005	0.003	0.002	
24	0.390	0.247	0.158	0.102	0.066	0.043	0.028	0.019	0.013	0.008	0.006	0.004	0.003	0.002	
25	0.375	0.233	0.146	0.092	0.059	0.038	0.024	0.016	0.010	0.007	0.005	0.003	0.002	0.001	
26	0.361	0.220	0.135	0.084	0.053	0.033	0.021	0.014	0.009	0.006	0.004	0.002	0.002	0.001	
27	0.347	0.207	0.125	0.076	0.047	0.029	0.018	0.011	0.007	0.005	0.003	0.002	0.001	0.001	
28	0.333	0.196	0.116	0.069	0.042	0.026	0.016	0.010	0.006	0.004	0.002	0.002	0.001	0.001	
29	0.321	0.185	0.107	0.063	0.037	0.022	0.014	0.008	0.005	0.003	0.002	0.001	0.001	0.001	
30	0.308	0.174	0.099	0.057	0.033	0.020	0.012	0.007	0.004	0.003	0.002	0.001	0.001		
40	0.208	0.097	0.046	0.022	0.011	0.005	0.003	0.001	0.001						

Another subdivision of costs is the Fixed vs. Variable Cost breakout. Fixed Costs are sometimes called constant costs and do not vary with output. (for example, rent, depreciation). The term "fixed" refers to those costs that are fixed in total with respect to volume, i.e., they are fixed for the relevant range of consideration, for they may still be a function of capacity and may vary with agency size from causes independent of volume.

Since fixed costs are constant in total, they will vary when calculated on a unit basis, i.e., fixed cost divided by the number of units delivered will decrease as the output increases.

Variable Costs are those costs that are a function of service volume, such as Purchase of Service costs which vary as the Level of Service varies.

Short-run and Long-run Costs - The discriminant factor here is the degree of utilization of the fixed factors.

Incremental Costs (sometimes treated as marginal costs) - Incremental costs are those that occur as a difference between two policies, where one replaced the other. This change in cost is the incremental or differential cost. It represents the change in costs resulting from a change in service activity, i.e., new strategies, new services to a new group of clients, etc. All costs incurred are included.

Sunk Costs - Some costs will not be altered as a result of a decision that will change service activity. One such type is "sunk costs." These are costs that are not assignable by the differential method and are thus irrelevant as far as future effects of the decision are concerned.

Urgent and Postponable Costs - A cost that may not only be postponed but may be avoided entirely as a result of constriction of service activity is called an escapable cost. It is conceived as a net figure: the decrease in cost resulting from curtailing or terminating service activity less any added cost incurred by other operating units as a result thereof.

Inescapable Costs or Unavoidable Costs - Cost that must be continued in spite of an operation's retraction. CWA's incur utility costs regardless of the demand for services and/or number of clients.

Controllable and Uncontrollable Costs - The focus on this distinction is in fixing responsibility and measuring efficiency.

For many practical decision problems, the terms MARGINAL COST, INCREMENTAL COST and DIFFERENTIAL COST may be used synonymously. That is, the underlying concept common to all three terms is the notion of a CHANGE IN THE LEVEL OF TOTAL COSTS RESULTING FROM THE IMPLEMENTATION OF A DECISION. The decision may frequently involve a change in service level (LOS) but just as

frequently, it may not. Thus it may be a decision involving the closing down of a certain contracted service to be replaced by another method, the installation of a new management information system (SIS), the launching of a new effort (the recruitment of volunteers) or any other type of activity which is not directly reflected by a change in LOS or service level or volume but for which there is nevertheless a change in the level of total costs. This increase (or decrease) in cost which results from the change in activity and which would have been avoided if the decision had not been made, is the incremental cost of the activity. Thus, from the above it is clear that the prospective differences between alternatives are the relevant factors to be considered in making a choice. In any activity, past revenues and expenses as well as many future ones will be unaffected by a particular choice. Likewise, average or unit costs are frequently irrelevant and should not enter into many types of decisions. Managers who fail to understand these concepts and thus fail to apply them correctly will always make incorrect financially-based decisions.

The foregoing discussion of different classifications of cost shows the various distinctions from the accountant's and also the economist's standpoints. Thus, there cannot be found any single meaning for "cost of social services" that would be universally applicable in all situations. At best, the analyst can only translate the many usages into consistent language in order to be certain that the given concept is being properly used.

COST-BENEFIT ANALYSIS

We endeavored to introduce a form of Cost Benefit Analysis in the CWA (modified) ZBB process. We developed a process designed to have the alternative approaches evaluated and compared on the basis of monetary cost and client benefit. Perhaps the single, most limiting deficiency which prevents development of a functional cost-benefit approach is our inability to identify, standardize, and transform outcome measures into a quantitative format. How much is it worth to the client to become self-sufficient? How much is it worth to the State? The absence of uniform cost-outcome measurements also poses a problem.

Only one of two things can be accomplished with any form of analysis. One may take as given the full use of the available resources and attempt to fulfill the program (LOS) objectives most effectively. Or, one may specify a desired LOS and attempt to identify the alternative approach that will provide the specified LOS with the least cost. It must be recognized that one cannot both maximize the objective (LOS) and minimize the use of resources.

Cost-Benefit analysis has, in the recent past, become a relatively popular approach. Normally, it is a very extensive analytical tool. It begins with a general question: Do the benefits to the target population exceed the costs required? Being more specific, Cost-Benefit analysis consists of a set of techniques that can be employed for comparing alternative programs or projects that are expected to provide returns over a period of time, normally, over a period of years.

In the public sector, Cost-Benefit analysis is intended to be a planning/decision-making model and guide, with the similar effects private industry enjoys in investment decisions from such forces as market prices and competition. The basic criterion is that the Present Value of the Benefits be greater than the costs. In the absence of competition, Cost-Benefit analysis can be used to simulate its effect in decision-making in the public sector for such actions as to support a particular project and thereby justify the (proposed) expenditures; or to determine the most efficient method of achieving the objective; or to find the best LOS.

There are four main steps in completing a Cost-Benefit analysis, as follows:

- 1) Identification of real benefits and the real costs--this includes the direct as well as the indirect elements of both. (Often the term "externality" or "spill-over" is used in this regard). Spill-over costs or externalities are costs or benefits that accrue to not directly targeted third parties as a result of the decision. Estimating and measuring the costs and benefits is difficult. Care must be taken to identify those benefits/costs that can be both--depending on the group impacted. In addition, caution is called to ensure that neither the costs nor the benefits are double-counted.

Placing a monetary value on the costs and the benefits also poses a very difficult problem. In some instances it may be possible to actually apply given market prices or "given" values. In other cases it will be necessary to estimate the benefits by subjective

assessment or by using some form of surrogate indicator, such as prices paid for close substitutes or estimations of reductions of cost which will be made possible. Benefits constructed in this fashion are very susceptible to challenge because of their inherent subjectivity. Some benefits may defy quantification, in monetary terms (See Cost-Effectiveness Analysis).

2) Present Value Analysis

Select the appropriate range of discount rate (deflation) and complete the present value calculation of all future benefits and costs in terms of today's dollar (See Cost Concepts). The appropriate range is the estimated rate of return on an alternative approach which must be foregone in order to carry out the approach under evaluation. (See Opportunity Cost--also see pages 96 thru 98).

3) Calculation and comparison of Cost/Benefit ratios for alternative approaches.

Actually, the mathematical construct is to complete a Benefit/Cost calculation. That is, the total present value of the benefits is divided by the total present value of the costs, (including Sunk costs, start-up costs and operating costs).

4) Select the alternative that yields the maximum net benefits until the budget constraint is reached.

Theoretically, the optimal size or magnitude occurs at the point where Marginal Benefit equals Marginal Cost.

Cost-Benefit Analysis has a number of "positives and Negatives" associated with it, among them are the following:

Negatives:

Often the estimates of the costs and the benefits are made without discriminating comparison and contrasting of the relative benefits with the relative need of the target population.

The results are easily distorted or "shaped" depending on bias of funding authority. The analysis is very sensitive to assumptions and judgments and artificially inflated estimates or expectations can produce positive benefits, possibly without violating any accepted practices of analysis.

(It is rarely, if ever, applied to decisions involving the proper LOS, except in Zero-Base Budgeting and PPBS).

Positives:

It is firmly based in economic theory, and is a systematic method of employing common assumptions of benefits and costs and comparing them.

By focussing attention on the net outcomes, Cost-Benefit Analysis offers a logical, scientific, and rational approach of limiting the influence of any preconceived ideas and pure rhetoric in the decision process.

COST-EFFECTIVENESS ANALYSIS

Because of a lack of the measurements outlined above, support has been growing for a non-monetary approach of measuring effort-outcome.

To complete a cost-benefit analysis of alternatives involves valuing the outcomes (benefits) by their market prices. In Social Services there is no market price, per se. What is possible is to relate the cost of the effort to the outcome--not to the outcome's monetary value.

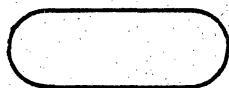
Thus, when the effectiveness of a service or program in accomplishing a certain goal (level of functioning--not the monetary value) is compared to the costs, we have a cost-effectiveness analysis.

Since this cost-effectiveness approach focusses on outcomes, we can compare one program or method with another by comparing their costs with their expected effectiveness. We cannot ascertain whether a program is worth the money it costs because the benefits are expressed in non-monetary terms. If it were possible to assign monetary values to the benefits, we would then have a cost-benefit analysis.

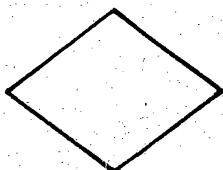
Flow Charting--A Brief Overview

Flow charts offer an approach of using symbols to analyze and/or to explain in simple, i.e., pictorial terms very complex operations, including sub-steps. By using only a very few symbols and operations, a flow chart draws a picture in place of a detailed narrative explanation. It depicts events and actions, in their order of occurrence, in a very simple and efficient way. It is a very powerful method of approaching and analyzing a process, a proposed set of regulations, etc., in a very logical, yet penetrating way. The flow chart can be as exhaustive as one cares to make it. If a general overview is desired, then the flow chart can focus on the main steps only. If, however, more detail is desired, then more of the sub-steps can be reflected, depending on the process being charted, several pages or more could result. However, for most purposes it is adequate to capture the general statements of processes.

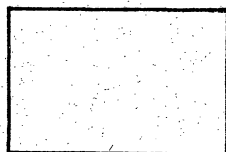
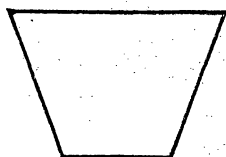
The symbols most commonly used are:



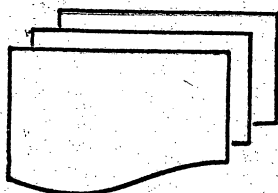
This is the symbol depicting the beginning or "start" and also the "end" of the process. It is normally labelled "terminal" on a flow chart template.



The diamond is the decision symbol. The answer to the question it asks can only be answered "yes" or "no", usually abbreviated as "y" or "n", since space is usually a matter of concern when flow charting.



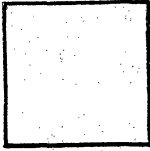
The trapezoid is often used to indicate "input" or "output". A rectangle is also used for this and to indicate action or result of a process step.



This is the symbol for "document". It is used to indicate when the step produces a form, letter, i.e., document, or set of documents. When it is more than one, the symbol is overlaid in a staggered fashion, with a separate symbol for each of the documents in the set.

Thus, if 3 forms were produced, there would be

3 document symbols, depicted in a step-ladder-like fashion as indicated.



The small square is used to indicate an auxilliary operation



This is the symbol that is used to show a communications or communications link.



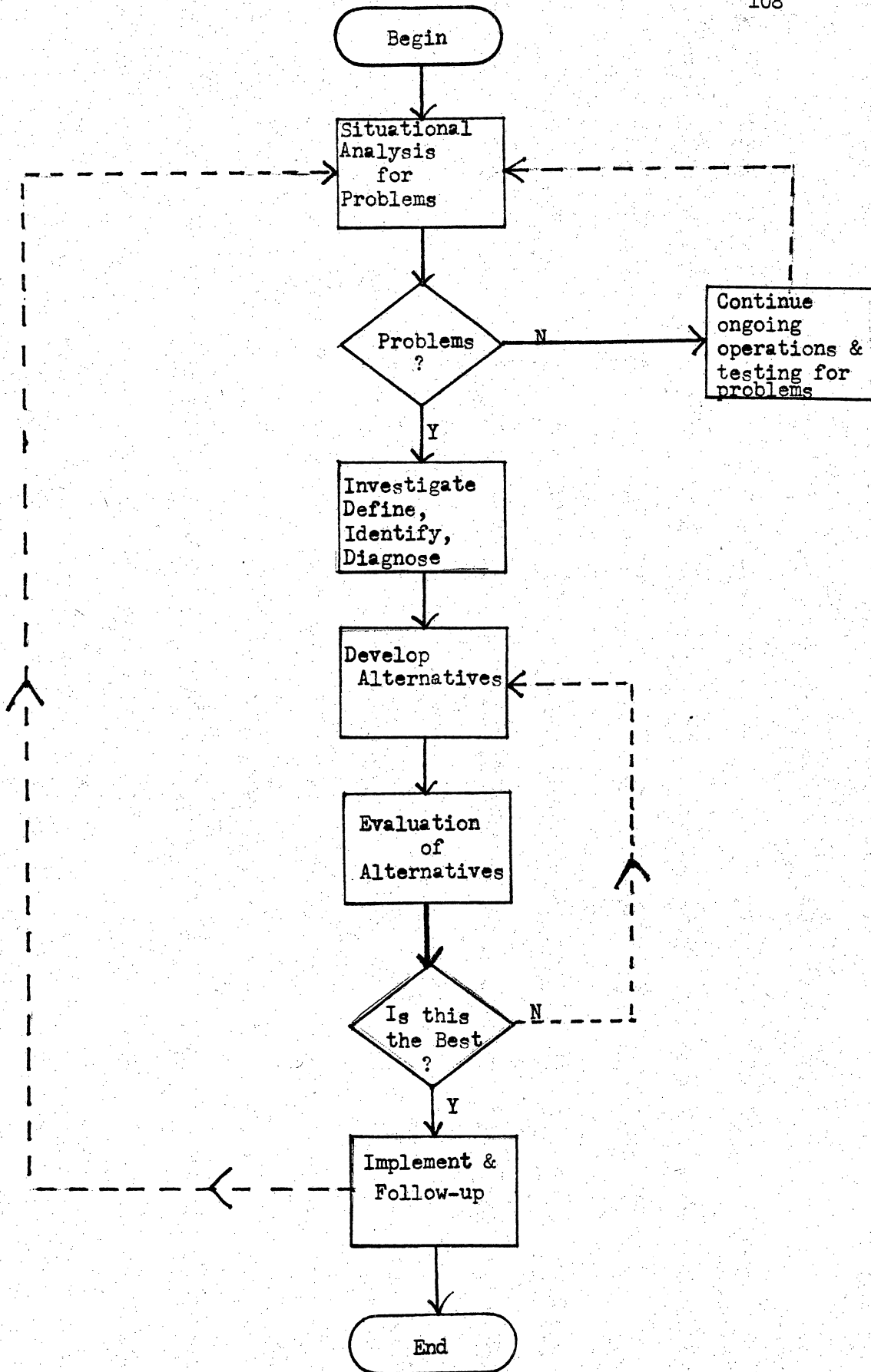
These two symbols are connector symbols. The one that resembles an inverted house is basically a directional indicator.

To provide you with an example of actual flow charts, attached are two which were drawn in the completion for a fiscal note for two separate bills.

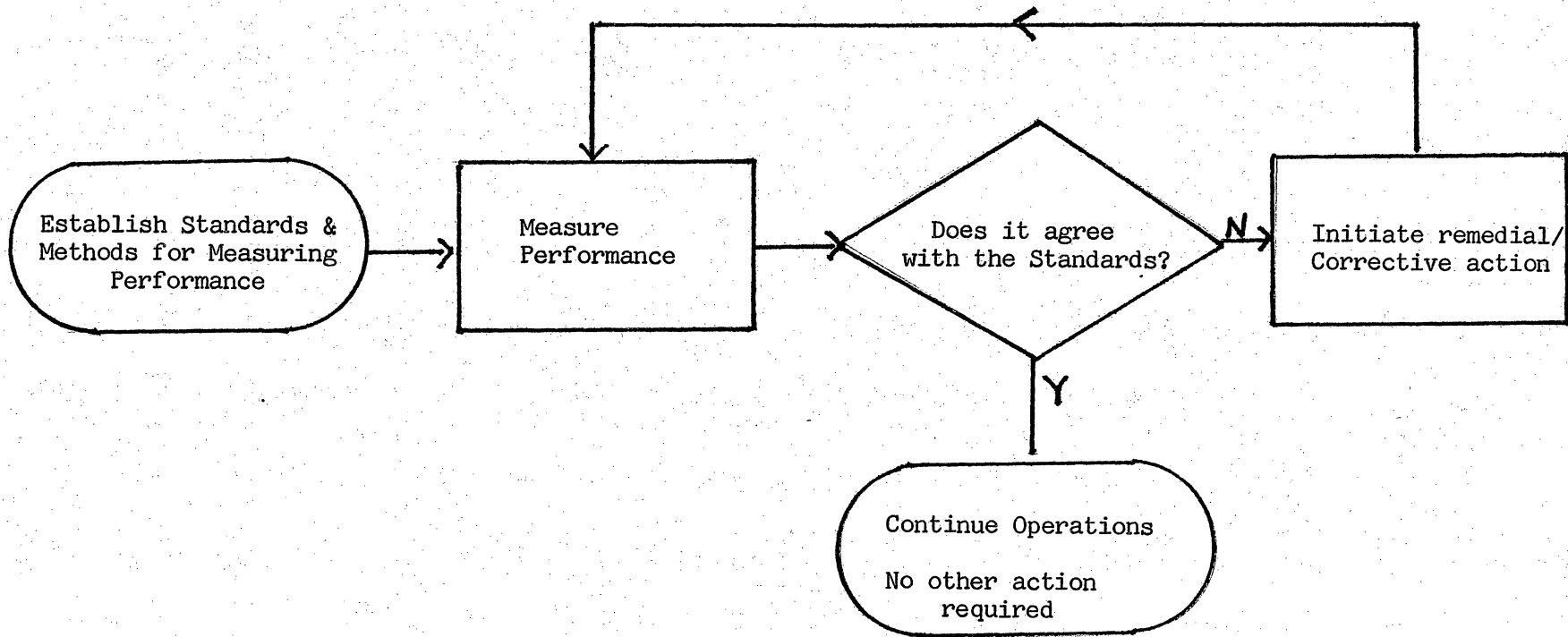
In addition, we have also developed two additional flow charts for illustration purposes. They are, (a) a flow chart of the Rational Problem Solving Process and (b) a flow chart of the Basic Steps of Setting Standards and Controlling.

The arrows indicate direction of flow and the order of occurrence. Note the "Y's" and "N's" from each diamond decision item. Also note the question mark in the diamond as a reminder that a question is being asked at this step.

We have found flow charts to be a very effective and enlightening manner for us to analyze proposed regulations and to be able to fully understand and evaluate the crucial elements of the legislation. The method is very powerful because it requires a complete review of the entire process. This makes it especially beneficial because it reveals deficiencies, improper sequences and even some problems which would otherwise probably not be readily detected in the review of the regulations. Lastly, they are a very effective way to explain the logic of the process without requiring complete conversancy with the regulation in question.



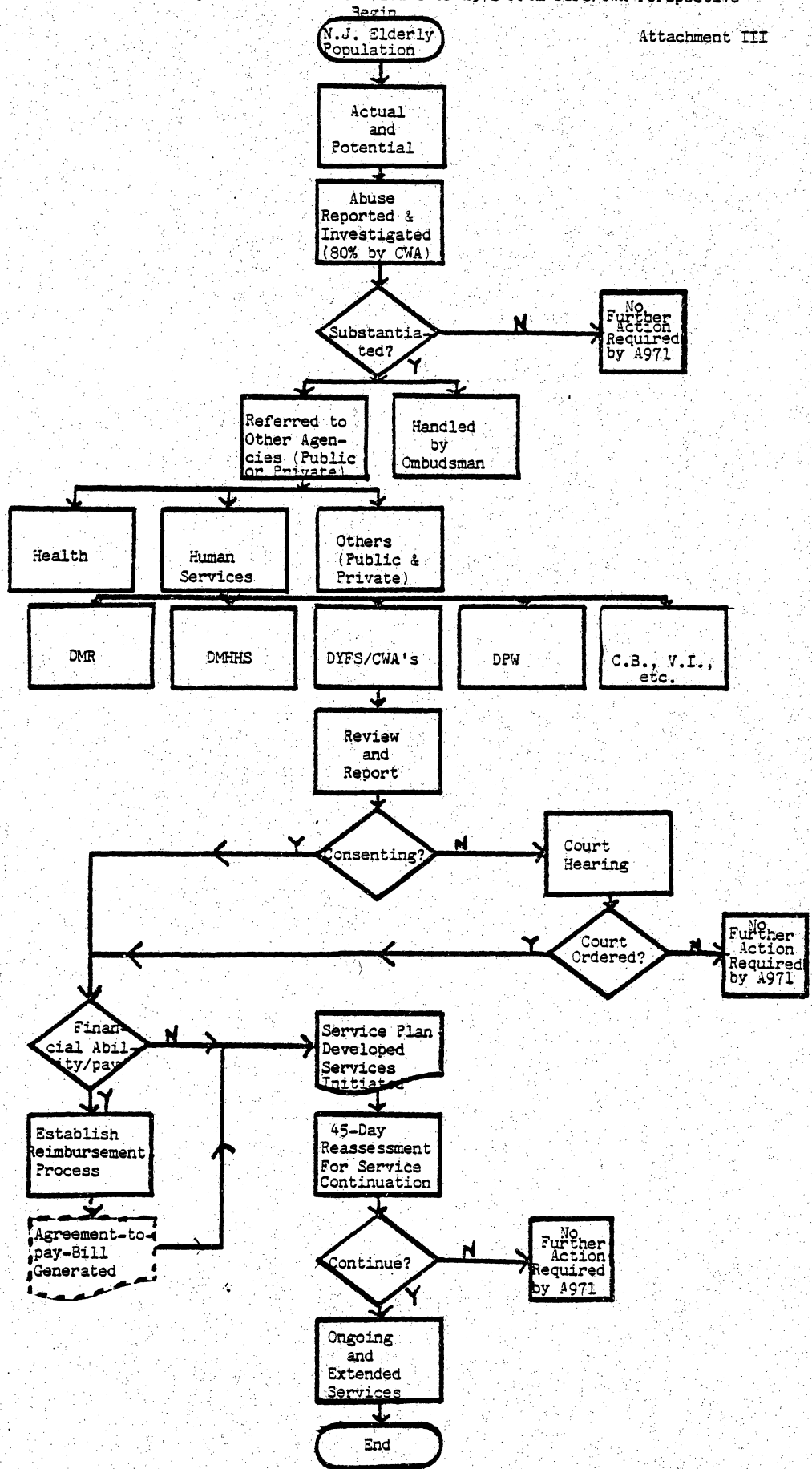
Flow Chart of the Basic Steps in
Standard Setting & Controlling

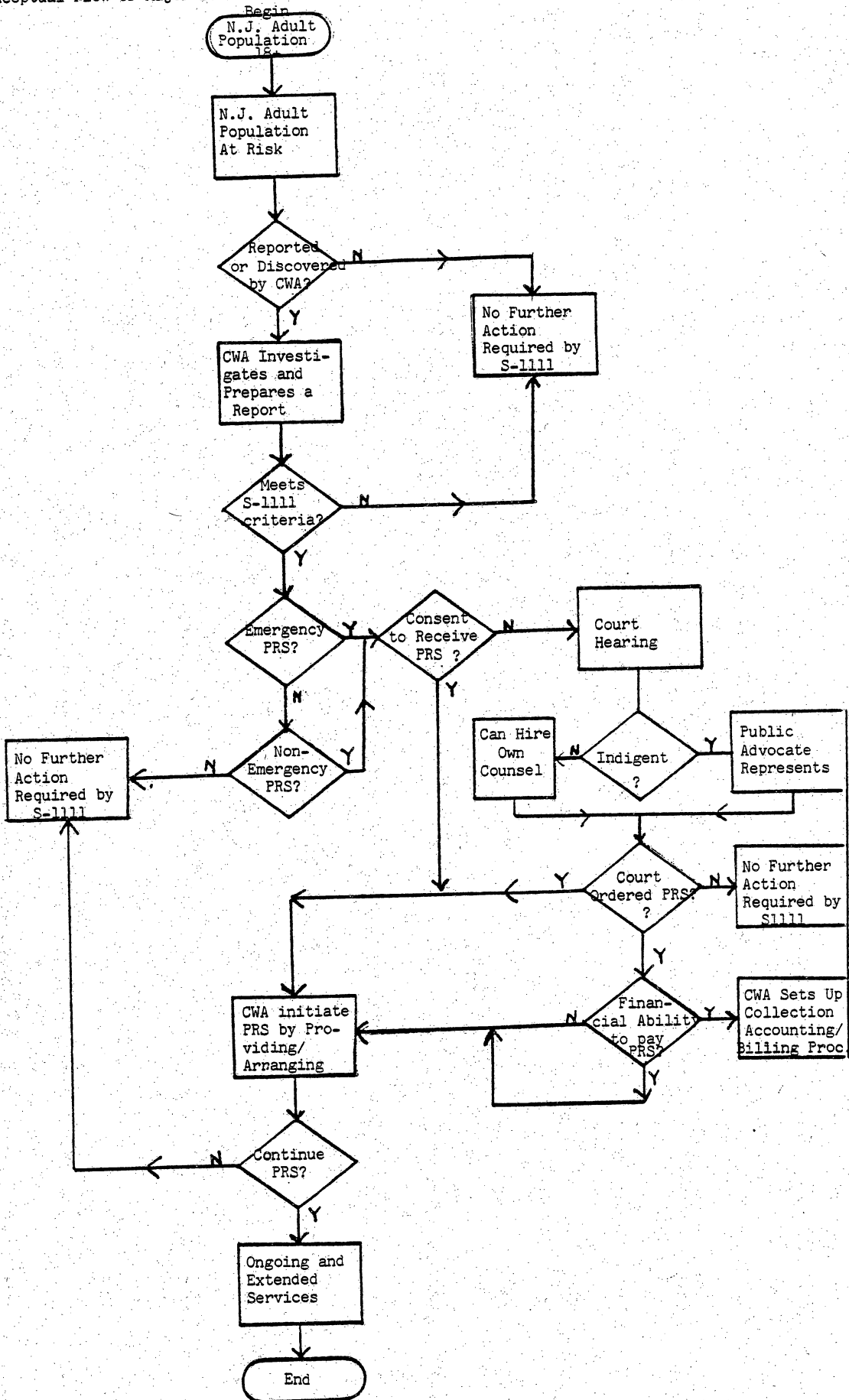


Adapted from
Management, 2nd edition/STONER

Conceptual Flow of Major Events and Activities of A971 From DYFS/CWA Perspective

Attachment III





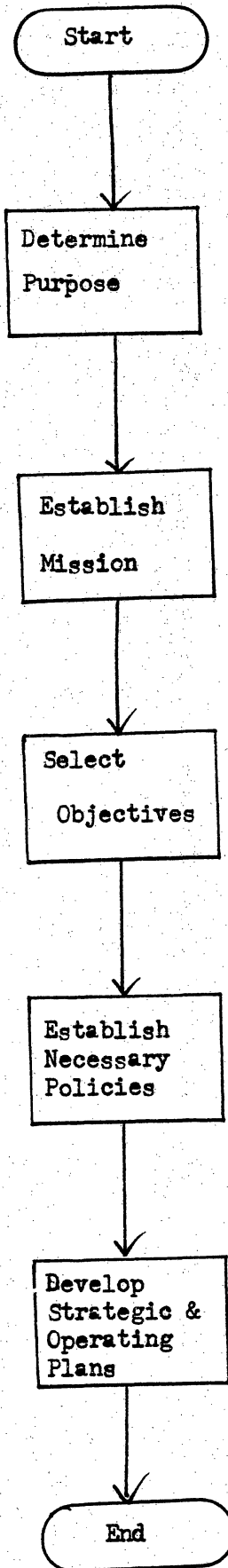


EXHIBIT 5-1 Why People Don't, Won't, or Can't Plan Survey

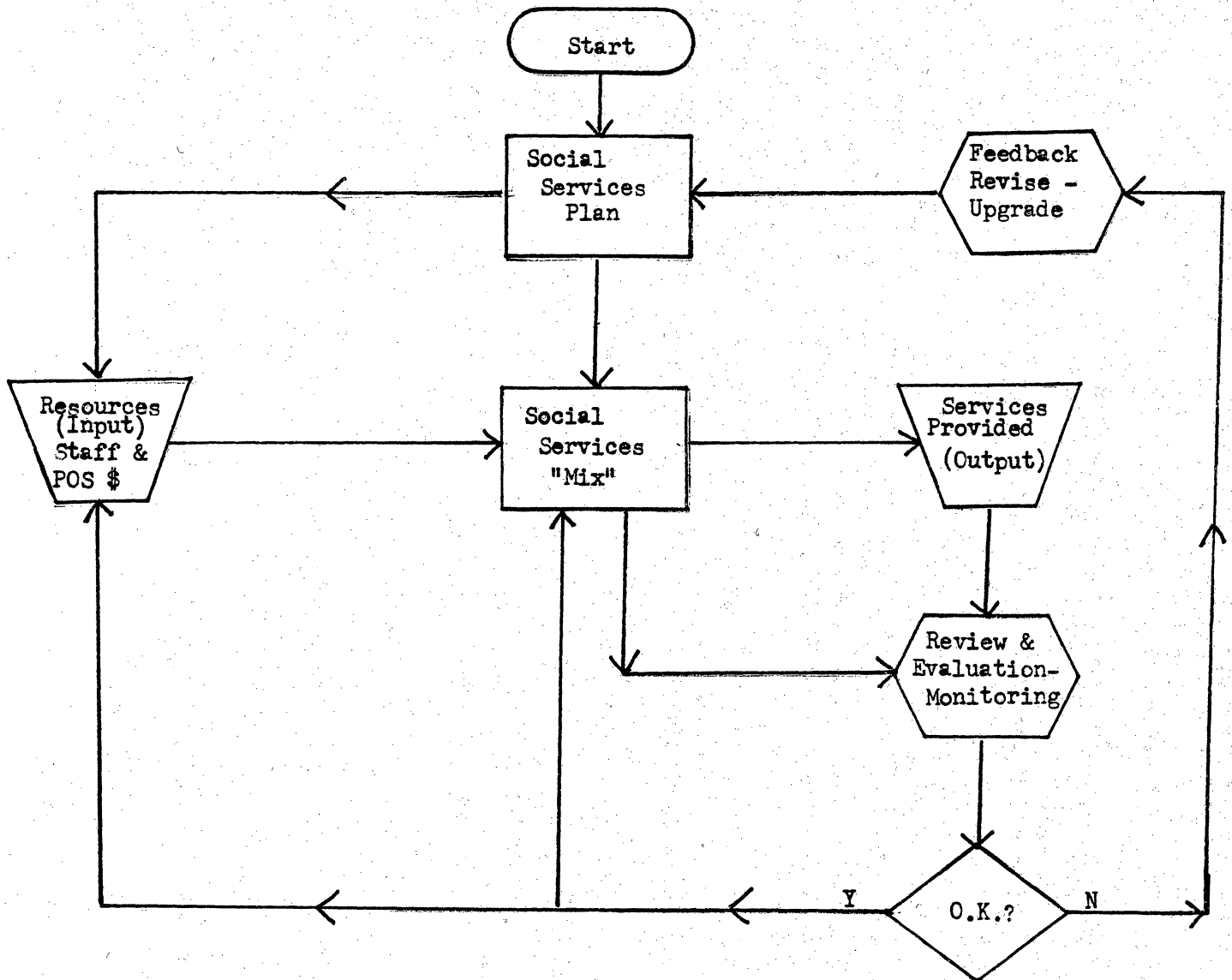
Rank Order by First Choices:

1. Too time consuming	19.15%
2. Knowledge deficiency	12.66
3. The future is too uncertain	10.71
4. Attitude deficiency	9.74
5. Skill deficiency	7.46
6. Live for today	6.81
7. Too much work involved	6.49
8. Don't like or understand process	5.19
9. Fear of failure	3.89
10. Man lives by intuition	3.57
	<u>85.71%</u>
All others (9)	<u>14.29</u>
	<u>100.00%</u>

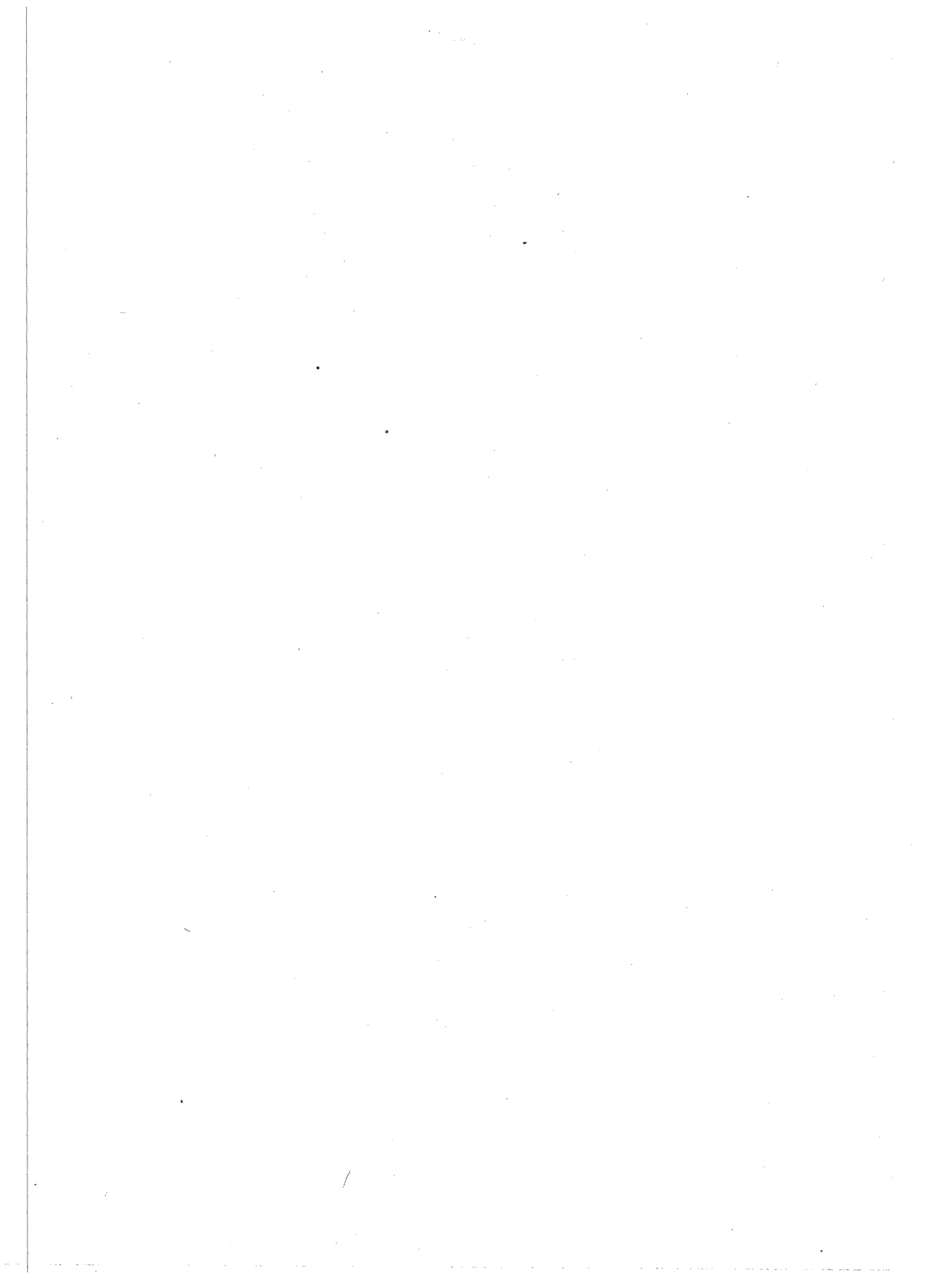
Rank Order by Combining First and Second Choices:

1. Too time consuming	14.61%
2. Too much work involved	12.01
3. Knowledge deficiency	11.52
4. The future is too uncertain	9.25
5. Skill deficiency	8.60
6. Attitude deficiency	8.44
7. Don't like or understand process	5.68
8. Too difficult	4.87
9. Live for today	4.87
10. Fear of failure	4.22
	<u>84.07%</u>
All others	<u>15.93</u>
	<u>100.00%</u>

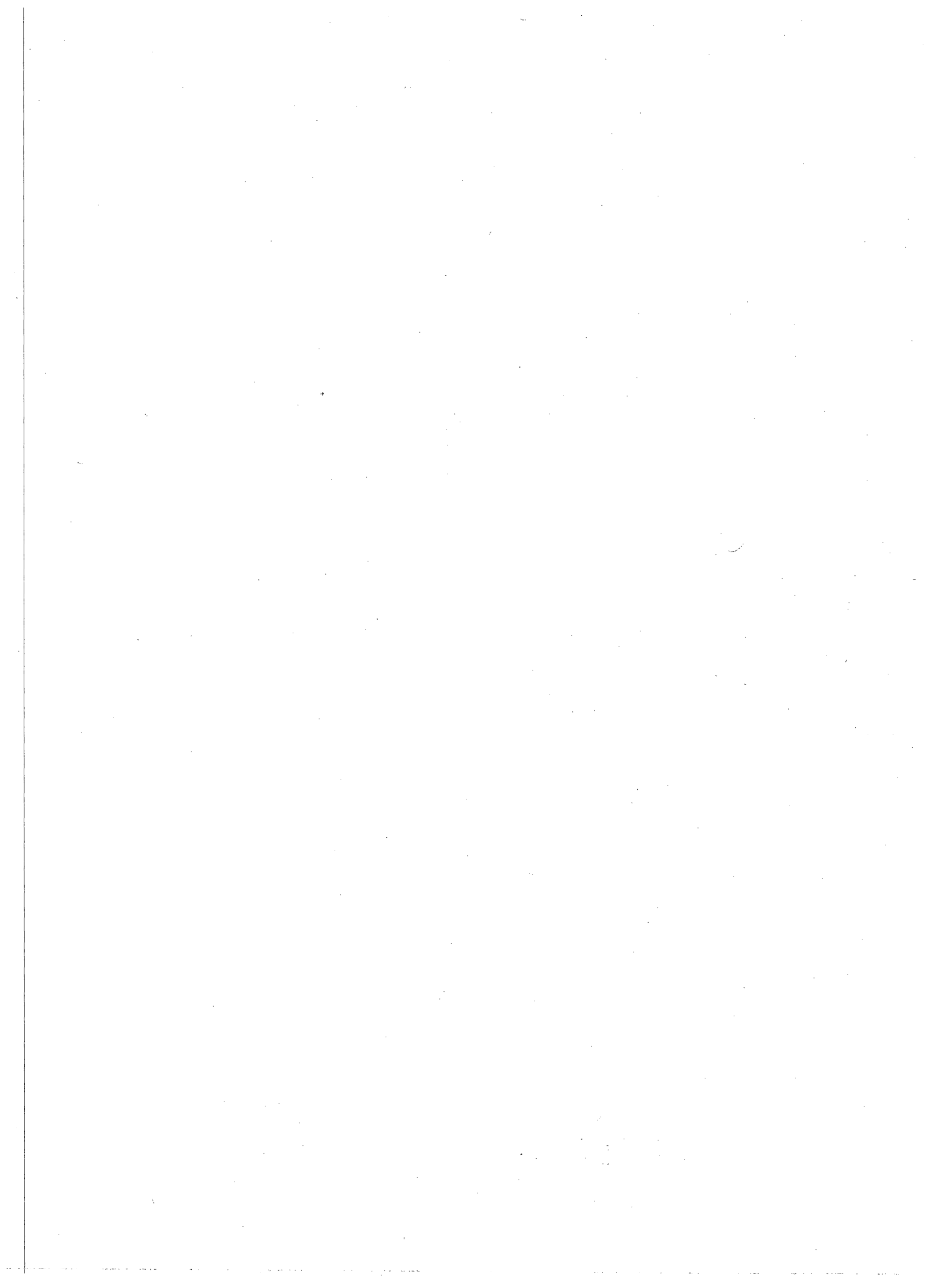
BASIC SOCIAL SERVICES PLANNING AND CONTROL LOOP



JRL 5/82



SUMMARY



WHERE DO WE GO FROM HERE?

Social, economic and political pressures are expected to continue at an increasing rate. Funding reductions will intensify competition between service activities and client groups for the limited funds available. Taxpayers will become ever more resentful of the burgeoning cost of government--especially when it results in an even larger tax burden. Existing socio-economic pressures are also rapidly eroding the support base Social Services had begun to develop among the tax-paying citizens. Concurrent with the adverse reaction to an increased (or continuing) tax burden will be an increased concern about the quality of management of government--at all levels. When government is mismanaged, everyone is affected. Unfortunately, it appears to the public at large that mismanagement is either not detected or is tolerated because the task of managing a government agency is regarded as hopeless, that the bureaucracy cannot be run as a business. This is not necessarily so! The pursuit and attainment of high performance should be no different in government than it is in private industry. One important observation should be made here, however, and that is that government's most beneficial role is twofold: (1) operating those necessary (desirable) programs that private industry cannot or will not and (2) overseeing and regulating. As a result, government, in general, is considered as one of the most inefficient of all activities. Again, this need not be. Government needs to borrow and where necessary adapt the managerial, analytical and decision-making techniques and tools which have been so effectively employed in private industry. In Social Services, the management/control activities will present some special problems. For example, Social Services are not tangible, manufactured products. They cannot be produced, stockpiled and distributed to meet demand. Nor can they be inventoried. There are only two ways of connecting the client with the service: (1) the Social Service must be brought to the client (i.e., Homemaker, chore, etc.) or (2) the client must be brought to the service (Center Day Care). Social Services are simultaneously produced and consumed. Thus the focus must be on the management of their productive capacity. While the Program Manager must try to exercise control over both supply and demand, from a micro-economic perspective, the Manager will have more success exerting influence on the "supply side" rather than on the "demand side".

In addition to this, there are some other, more specific actions that should be considered, at both the County and State levels. For example, there should be

an inventory of all existing resources and services available, preferably by County. This should include a careful cataloguing and reviewing of the services provided, the types of clients being served and the source (and constraints) of funding for those services. The focus of this effort could be at least two-fold: (1) to ultimately produce a centralized I & R point in each county and (2) the maximization of limited resources. These two goals are naturally complementary. This approach would also provide the best vehicle for identifying the range of services available in each county, and any potential instances of duplication of effort, as well as assessing the unmet need. As such, it would provide the foundation for a long-needed, well-designed and executed needs assessment.

In conjunction with this, some difficult and possibly painful decisions must be made about establishing specific program priorities, with an eye toward eliminating low priority programs.

Other, equally innovative steps will need to be taken such as increasing the use of (unpaid) volunteers and part-time employees. Detailed analyses must be undertaken to discover ways to increase the output of the service delivery systems, and/or explore alternative methods. Scheduling techniques common in industry as well as other sophisticated quantitative approaches can be employed. The staffing and skill levels need to be assessed. Are certain skills lacking or inefficiently used? Cross-training of staff which has the potential of expanding services without increasing staff size, should be explored.

The present limited effort toward encouraging client participation in service delivery could be expanded to include other non-public assistance recipients as well as public assistance recipients. This would offer the potential of a double benefit, i.e., it would enable clients to help themselves while helping others. If more of the existing workload could be performed by clients, the lower the staffing and/or POS requirements would be. Another existing concept which could be more aggressively followed and encouraged is the "sharing of capacities" approach. While the system may not yet be ready for a fully integrated or merged (County-State) operation, co-location offers many of the benefits without the accompanying drawbacks. While this already exists in certain counties, it should be actively pursued in those where it does not now exist. The Statewide Social Service delivery system remains severely fragmented. Because there is no common point of control for all State and non-State Social Service activities (and funding), there really is no coordinated effort which would facilitate maximization of resources. Housing all county-based social service agencies in one building or complex, be they governmental or non-governmental promises to yield a high degree of synergy and full client benefit

Again, certain counties have made considerable progress in this direction, however, much more needs to be done. Concurrent with this, the State support and approval systems need to be reshaped and refocussed so that they encourage rather than discourage this type of innovative effort.

Along with this is needed a serious attempt at reshaping services, including their level and intensity. The client may be willing (and able) to accept a little less than what they wanted--as opposed to receiving no services at all.

What is needed in social services is a new strategy for these new times. These new challenges will be demanding but they will also present opportunities to pursue new approaches. An integral part of this effort must be the application of modern business techniques, including State-of-the-Art analytical approaches.

This publication is intended to be a guide and an aid in helping to meet these new challenges. While the techniques contained herein are powerful analytical tools, this is not intended to be a State-of-the-Art, sophisticated handbook. Such a handbook could certainly be developed, however, in view of the considerable time and effort which would be involved, there would have to be sufficient interest to warrant the investment. In the meantime, it is our hope and expectation that application of the techniques in this publication will provide program managers with an easy-to-implement set of analytical methods that will produce meaningful and effective results.

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