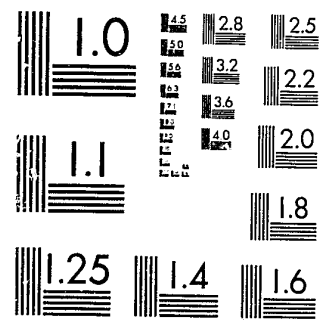


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Populations in the Dane County Jail:
Past and Future Trends

A Special Report
to the
Dane County Sheriff

by:

Thomas G. Eversen
Wisconsin Statistical Analysis Center

April 1982

ACQUISITIONS

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1. Introduction/Summary

On February 1, 1982 Sheriff Jerome D. Lacke requested a study of population trends at the Dane County Jail. While not a definitive study, this report delineates the major contributors to jail population, and offers some predictions on future jail populations through the year 2000.

The report is divided into three sections:

- (1) An historical description of the Dane County Jail population.
- (2) An analysis of factors which may contribute to population figures.
- (3) Predictions regarding future jail populations.

While the report organizes various materials on determinants of jail populations, further analysis of these and other data is imperative.

2. Past and Current Population at the Dane County Jail

Data in Table 1 enumerate the number of adult detentions in the Dane County Jail for selected years from 1961 to 1971.

Table 1

ADULT DETENTIONS IN THE DANE COUNTY JAIL, 1961-1971

<u>Year</u>	<u>Detentions</u>	<u>Percent Change</u>
1961*	4,145	---
1965	4,005	- 3.4
1969	4,703	+ 17.4
1971	5,532	+ 17.6
1961-71	+1,387	+ 33.5

* 1961 detentions include 2,292 at the City of Madison lock-up facility.

During the decade of the 1960's, the Dane County Jail population, as measured by annual adult detentions, increased about one-third or some three percent per year during the decade.

However, information presented in Table 2 reveals that two indices of jail population rose at a somewhat faster rate during the subsequent decade.

Table 2

DANE COUNTY JAIL - ANNUAL BOOKING AND
AVERAGE DAILY POPULATION, 1972-1981

<u>Year</u>	<u>Total Bookings</u>	<u>Average Daily Pop.</u>
1972	6,382	110.3
1973	5,616	112.4
1974	6,167	99.6
1975	6,937	115.0
1976	7,257	129.4
1977	7,645	124.0
1978	8,086	123.2
1979	8,109	131.9
1980	7,945	156.7
1981	8,669	188.0
1972-81 Change (#)	+2,287	+ 77.7
Change (%)	+ 35.8%	+ 70.4%

While total bookings increased by over one-third during the decade, the average daily population increased nearly twice as fast. This apparent anomaly is likely due to the fact that a greater proportion of inmates were incarcerated for increasingly longer periods of time.

Table 3 presents data on the detention rate for every 1,000 Dane County residents for the past decade. While the increase during these ten years has been relatively modest, it should be noted that the population of Dane County increased by approximately ten percent during the decade (approximately 295,000 to 325,000).

Table 3

DANE COUNTY JAIL - DETENTION RATE PER 1,000
COUNTY RESIDENTS, 1972-1981

<u>Year</u>	<u>Detention Rate Per 1,000</u>
1972	30.18
1973	27.57
1974	30.69
1975	33.00
1976	33.83
1977	35.19
1978	36.65
1979	34.50
1980	33.81
1981	36.85
1972-81 Change (#)	+ 6.67
Change (%)	+22.10%

Further, since information in Table 3 is derived from the number of detentions, the data do not reflect the sharp rise in the average daily population registered at the jail during these ten years.

While the preceding information illuminates the dramatic increase in jail population in recent decades, it is also instructive to study the composition of this population. That is, an analysis of the categories of inmates held at the jail may indicate areas for potential policy change to reduce the overall population. Table 4 enumerates various inmate categories for three recent months.

Table 4

CATEGORIES OF AVERAGE DAILY POPULATION AT THE DANE COUNTY JAIL
November 2, 1981 through February 1, 1982*

<u>Category</u>	<u>Number</u>	<u>Percent of Total</u>
Male		
Unsentenced (pre-arraignment and pre-sentence)	71.6	35.2
Sentenced (condition of probation and Huber)	96.4	47.4
(Huber only)	(38.7)	(19.0)
Probation/Parole Holds	19.3	9.5
Federal	1.6	.8
Juvenile	2.7	1.3
All Female	<u>11.7</u>	<u>5.8</u>
TOTAL	203.3	100.0

*Figures are drawn from week days only.

Clearly, the majority of inmates (82.6%) fall into the first two categories. However, inmates incarcerated for either the federal government or for the State of Wisconsin probation/parole holds, constitute a significant portion of the average daily population (10.3%).

3. Factors Contributing to the Dane County Jail Population

While this section is not an exhaustive treatment of factors contributing to local jail populations, it does outline some of the factors identified as most salient in reference to incarceration patterns.

Clearly, the amount and type of criminal behavior in a given jurisdiction will indirectly affect jail populations. However, the commission of a crime, regardless of whether or not it is reported to a law enforcement agency, need not impact the local jail population. Rather, an analysis of those crimes which result in an arrest is more germane to the issue of jail populations. In addition, any study of the impact of arrests on jail populations should focus on those offenses most likely to result in a period of incarceration, whether for unsentenced detainees or for sentenced detainees or for sentenced offenders. Thus, data in Table 5 are derived from arrests in Dane County for the major Part I offenses in addition to operating a motor vehicle while intoxicated.

Table 5

SELECTED PART I AND TRAFFIC OFFENSE ARRESTS IN DANE COUNTY,
1975 - 1981*

Year	All Dane County Law Enforcement Agencies	Annual Change (%)
1975	2,209	---
1976	2,696	+ 22.0
1977	3,037	+ 12.7
1978	3,474	+ 14.4
1979	3,708	+ 6.7
1980	3,664	- 1.2
1981**	3,835	+ 4.7
1975-81	+1,626	+ 73.6

*Offenses include homicide, rape, robbery, aggravated assault, burglary, auto theft, and operating a motor vehicle while intoxicated.

**1981 figures are based on complete information from the Madison Police Department and the Dane County Sheriff's Department. The total Dane County figure for 1981 has been pro-rated to reflect the fact that 70% of 1980 county arrests were performed by these two agencies.

Table 5 reveals a dramatic rise in the quantity of serious arrests in Dane County since 1975. However, it is also clear that the rate of increase has been less during the latter part of this seven-year period.

Another important factor in forecasting either criminal offenses or resultant correctional populations is the nature of the population in the jurisdiction of interest. Specifically, criminal justice analysts have focused on the so-called "high risk" age categories. Various studies of this issue have consistently shown that approximately two-thirds of all Part I arrests are accounted for by suspects between the ages of 15 and 29. Hence, information presented in Table 6 includes data on the actual and predicted population of persons in these age groups. Further, since the vast majority of

both serious arrestees and jail inmates are male, only the age categories of males are detailed in Table 6. This table presents a breakdown of three relevant age categories for males in Dane County from 1970 to 2000.

Table 6

ACTUAL AND PREDICTED NUMBERS OF MALE RESIDENTS IN DANE COUNTY,
AGED 15 - 29, 1970 - 2000*

Year	15-19	20-24	25-29	Total
1970	15,397	18,389	12,593	46,379
1975	17,447	19,602	17,520	54,569
1980	17,077	22,070	18,800	57,947
1985	13,972	21,475	21,166	56,613
1990	10,720	17,687	20,593	49,000
1995	11,231	13,720	16,963	41,914
2000	12,836	14,373	13,158	40,367

1980-2000				
Change (#)	- 4,241	- 7,697	- 5,642	-17,580
Change (%)	+ 24.8%	- 34.9%	- 30.0%	- 30.3%

*Source: Wisconsin Department of Administration, Demographic Services Center

The declines in these "age-at-risk" categories are apparent in all three groups. However, it should be noted that the 15-19 age group does begin to increase after 1990 with successive increases for other categories in succeeding five-year periods. Also, these figures only include residents of Dane County, although the arrest and jail population figures noted earlier are not restricted to Dane County residents. In addition, it is problematic whether there exists a direct relationship between the size of these "at-risk" cohorts and arrests for serious crime.

For example, while the combined populations of the three age groups increased by 3,378 between 1975 and 1980 (approximately six percent), arrests in Table 5 increased by 1,455 (3,664 minus 2,209) during this same time period (approximately 65%). Thus, exclusive reliance upon population figures as a predictor of criminal behavior would appear to be an unreliable method.

Another factor often associated with crime patterns and correctional populations is the level of unemployment in the jurisdiction under study. While empirical studies of the relationship between crime and unemployment have failed to identify a significant correlation between these two phenomena, data in Table 7 are presented for the sake of completion.

Table 7

DANE COUNTY UNEMPLOYMENT RATE, 1977 - 1981*

<u>Year</u>	<u>Unemployment Rate</u>
1977	3.7%
1978	4.0%
1979	3.6%
1980	4.8%
1981	5.4%

*Source: Wisconsin Department of Industry, Labor, and Human Relations.

A more tangential indicator of serious criminal behavior in a jurisdiction is that jurisdiction's proportion of admissions to state correctional institutions. Data in Table 8 reveal that the proportion of inmates admitted to Wisconsin adult correctional facilities who were sentenced from Dane County has varied little during the past six years.

Table 8

ADMISSIONS TO WISCONSIN ADULT CORRECTIONAL FACILITIES
Statewide and Dane County, 1975 - 1980

<u>Year</u>	<u>Total Admissions</u>	<u>Sentenced From Dane County</u>	<u>Percentage Dane County</u>
1975	1,696	77	4.5
1976	1,677	77	4.6
1977	1,605	56	3.5
1978	1,541	59	3.9
1979	1,552	49	3.2
1980	1,912	87	4.6
1975-80 Change (%)	+12.7%	+13%	+2.2%

While the figures do show a substantial percentage increase from 1979 to 1980 for Dane County residents, the absolute number of admissions is minor contrasted to the annual population at the Dane County Jail. In summary, the increase in the county jail population is largely due to inmates who are not later transferred to a long period of incarceration in a state correctional institution.

There are a variety of other factors which may impinge upon local jail populations but are difficult to quantify in any meaningful sense. For example, it has been suggested that the public's increased concern for victims of serious crime may lead to both more frequent and longer periods of incarceration for convicted offenders. While this possible shift in attitude may be documented in public opinion polls or by analysis of various media content, empirical evidence linking this public attitude to the actual sentencing behavior of judges is absent.

In addition, various legislative actions may alter the likelihood or length of incarceration for specific categories of offenders. For example, recent changes in drunk-driving legislation in Wisconsin may increase the number of offenders incarcerated for this offense. However, forecasts of correctional facility populations based on the possibility of legislative changes should be made with utmost caution given the often transitory nature of such legal modifications and the discretion afforded actors in the criminal justice system.

Finally, it has been suggested that the positive socio-economic and cultural environment of Dane County serves as a "magnet" to attract disproportionate numbers of various categories of individuals who evince a higher-than-average incarceration rate. While such migratory patterns may indirectly impact local criminal justice resources, firm evidence linking these phenomena is not available.

To summarize, a wide variety of factors can be identified which may contribute to the increased population at the Dane County Jail. However, with the exception of arrest figures, all such factors at best only indirectly affect jail populations. In addition, the only factor which can be predicted with any degree of accuracy is the issue of population changes. Thus, the jail population forecasts in the final section of this report only represent "educated guesses" regarding the future. This caveat cannot be over-emphasized since a wide variety of other factors (e.g., arrest efficiency of law enforcement agencies, sentencing practices, bail procedures) are partially subject to the vagaries of public opinion. While an analysis of such opinion is outside the purview of this report, the importance of unpredictable events (e.g., escapes or the commission of particularly heinous offenses) or budgetary constraints on the formation of public opinion also should be noted.

4. Forecasts/Conclusions

The following tables present various scenarios of future jail populations and bookings. Predictions for both average daily population and annual bookings are presented since each represents a different demand on jail resources, whether personnel or financial. Also, both Table 9, annual jail bookings, and Table 10, average daily population for given years, are subdivided into four sets of forecasts. The estimates in the initial column are reached solely on "at risk" population changes detailed in Table 6. The second column of forecasts is based on average changes in either the average daily population or annual bookings at the Dane County Jail between 1975 and 1980. The third column of each table is derived from the arrest figures presented in Table 5 between the years 1976 and 1980 reflecting a 35.9% increase for the five-year period. The final column in Tables 9 and 10 represents an average of the forecasts in the first three columns. Given the variability of these figures and the difficulty in predicting future behavior from past data, multiple sets of forecasts are employed in subsequent graphs.

Table 9

PREDICTED ANNUAL BOOKINGS IN THE DANE COUNTY JAIL, 1985-2000

<u>Year</u>	<u>Population Trend</u>	<u>Booking Trend</u>	<u>Arrest Trend</u>	<u>Combination Estimate</u>
1985	7,786	9,097	10,797	9,227
1990	6,813	10,416	14,673	10,634
1995	5,839	11,926	19,941	12,569
2000	5,623	13,655	27,100	15,459

Table 10

PREDICTED AVERAGE DAILY POPULATION (ADP) IN THE DANE COUNTY JAIL
1985-2000

<u>Year</u>	<u>Population Trend</u>	<u>ADP Trend</u>	<u>Arrest Trend</u>	<u>Combination Estimate</u>
1985	154	214	213	194
1990	135	291	290	239
1995	115	397	394	302
2000	112	540	536	396

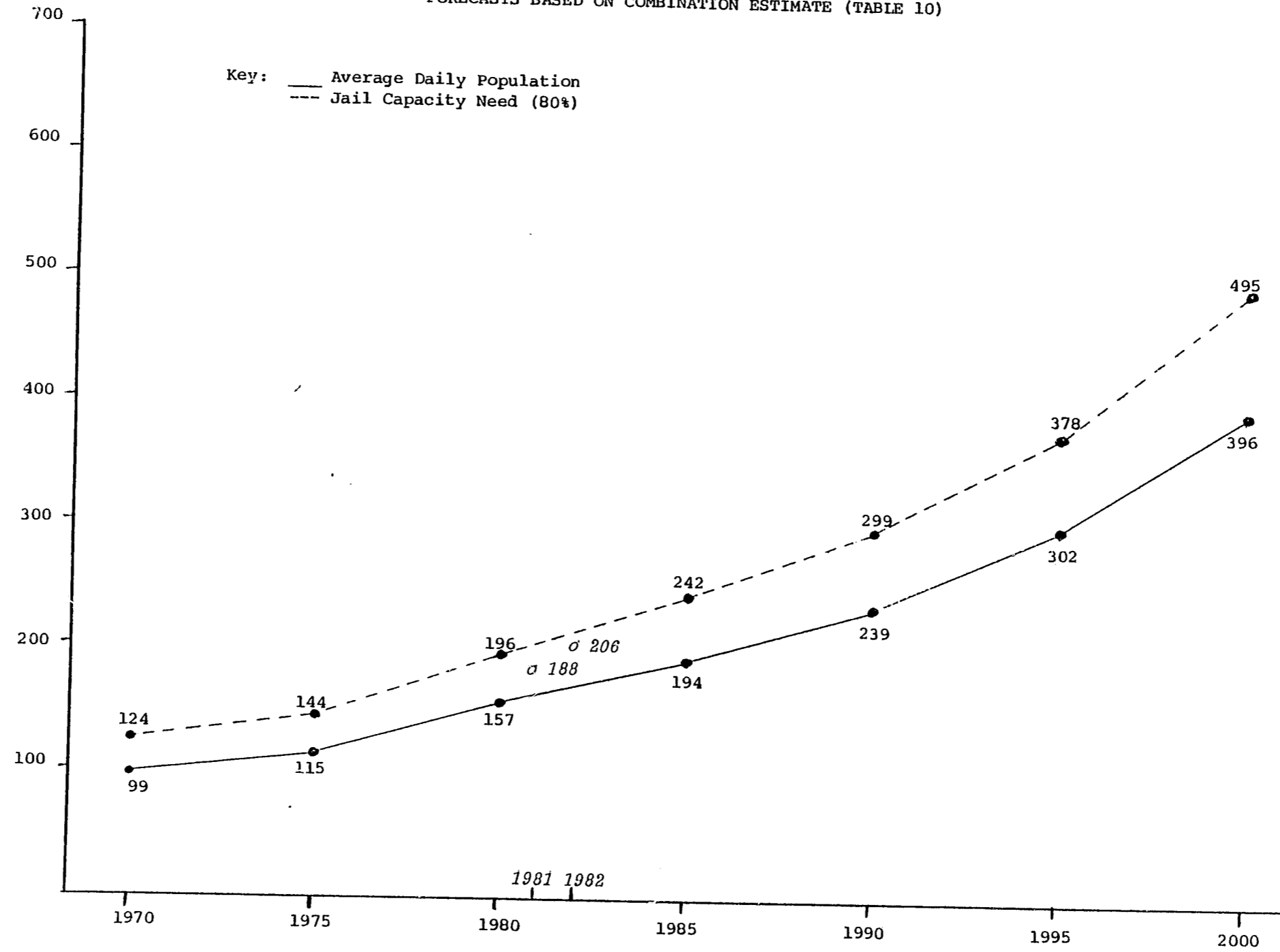
It should be reiterated that these estimates are based only on trends established from 1975 through 1980. If various indices such as serious arrests or jail admissions deviate from the trends of the past five years, then the resultant forecasts will necessarily vary. Also, the further into the future one predicts, the greater the likelihood of significant error. Specifically, forecasts of jail populations beyond 1990 should be viewed as inherently unreliable. In summary, the estimates in Tables 9 and 10 should serve as guides to further analysis. For example, 1982 bookings and average daily populations may be studied to determine which set of forecasts most clearly parallels reality. At that point, the predictive models can be modified and enhanced using the additional information on which to base future trends.

Use of average daily population figures assumes that the correctional facility has sufficient capacity to house its population. Recognized correctional standards (both national and state) use an 80% criterion for purposes of effective jail management. That is, the average daily population of an institution should constitute no more than 80% of that institution's capacity. For example, according to this formula, an average daily population of 100 would necessitate a jail capacity of 125 to enable the jail administration to adequately manage the facility.

Table 11 and Graph 1 portray the average daily population forecasts and related jail capacity needs (using the 80% standard) for five-year intervals between 1970 and 2000. The forecasts for 1985 through 2000 are based on the combination estimates listed in Table 10.

GRAPH 1

DANE COUNTY JAIL: AVERAGE DAILY POPULATION AND RESULTANT
JAIL CAPACITY NEEDS (80% Criterion), 1970-2000
FORECASTS BASED ON COMBINATION ESTIMATE (TABLE 10)



GRAPH 2

DANE COUNTY JAIL: AVERAGE DAILY POPULATION AND RESULTANT
JAIL CAPACITY NEEDS (80% Criterion), 1970-2000
FORECASTS BASED ON 1975-1980 CHANGES IN AVERAGE DAILY POPULATION

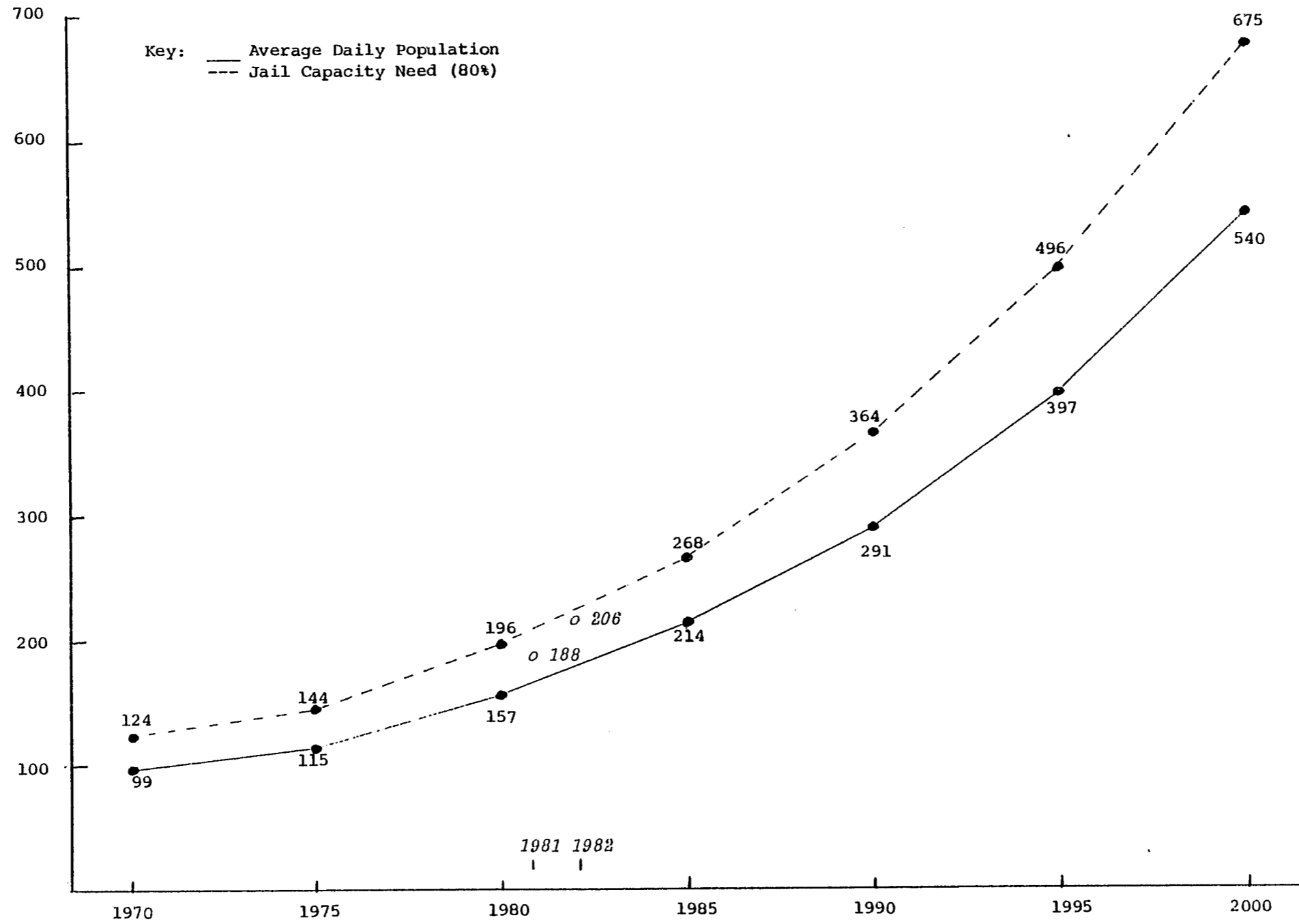


Table 11

DANE COUNTY JAIL: AVERAGE DAILY POPULATION AND
RESULTANT CAPACITY NEEDS, 1970-2000

<u>Year</u>	<u>Average Daily Population</u>	<u>Jail Capacity Need</u>
1970	99.1	123.8
1975	115.0	143.8
1980	156.7	195.9
1985	194.0	242.5
1990	239.0	298.8
1995	302.0	377.5
2000	396.0	495.0

The two additional data points in Graph 1 are the average daily populations for all of 1981 and the first two months of 1982. Since these recent population figures greatly exceed the forecast line, another predictive model is used in Table 12 and Graph 2. Here the projections are based on the 36.3% increase in average daily population from 1975-1980, delineated in Tables 2 and 10. Again, additional population data from 1981 and early 1982 are included in Graph 2.

Table 12

DANE COUNTY JAIL: AVERAGE DAILY POPULATION
AND RESULTANT CAPACITY NEEDS, 1970-2000

<u>Year</u>	<u>Average Daily Population</u>	<u>Jail Capacity Need</u>
1970	99.1	123.8
1975	115.0	143.8
1980	156.7	195.9
1985	213.6	267.0
1990	291.1	363.9
1995	396.8	496.0
2000	540.4	676.0

While the 1981-1982 population figures again exceed the forecast line, they are somewhat less than the 1985 projections made in Graph 2. However, it is clear that the average daily population at the Dane County Jail has grown at a faster-than-predicted rate during the past year. Whether this recent rate of increase represents a seasonal or long-term phenomenon can be determined only by closely monitoring the average daily population during the remainder of 1982.

Again, several data-related caveats should be noted when analyzing the preceding information. Forecasts are based on a small number of variables, a limited time period (i.e., 1975-1980) on which to base trends is employed, and more distant forecasts become increasingly unreliable.

END