

***Appendix A: Explaining Changes in the Number of Inmates in
the Santa Cruz County Jail System***

**How Changes in Bookings and Average Length of Inmate Stay
Combine to Determine the Average Daily Population
of the Santa Cruz County Jail System**

**Prepared for
The Santa Cruz County Jail Crowding Committee**

**By
Robert C. Cushman**

December 2004

Introduction

The number of people in a jail is the result of changes in the number of admissions (bookings) and / or changes in the length of inmate stays. This report is designed to illustrate and document how these two factors have determined the average annual population of the Santa Cruz County jail system since 1995 and, by month, over the period 1/1/02 through the first quarter of 2004.

Changes in the Santa Cruz County Jail System 1995-2004

Table 1 summarizes the changes since 1995.¹⁸ The average annual daily jail population increased from 490 inmates in 1995 to 596 inmates as of the first quarter, 2004. The increase represents a demand for 106 additional beds.

Table 1 also shows the relative impact of the change in the number of jail admissions and length of inmate stays during this 1995-2004 period. The number of jail beds required to house the change in jail admissions decreased by - 50.3 beds, while the number of jail beds required to absorb the change in the average length of inmate stays increased by 156.0 beds. The net change was 106 beds.

Another way of looking at this is to say that if the number of beds required by a change in admissions had remained unchanged, then the increase in the average length of inmate stays would have require 156 beds. The reason the actual increase was 106 beds is because a drop in admissions decreased bed demand.

This leads us to conclude that over this long period (1995-2004) increased jail system occupancy levels have been produced by longer inmate stays, not an increase in admissions.

¹⁸ This is a summary table. The method of calculation is presented later in this appendix.

Table 1: Bed Requirements of Changes in Number of Bookings and Length of Stay: Annual

Year and Month	Average Daily Jail Population	Change in Average Daily Jail Population	Number of Jail Beds Required by Change in Bookings	Number of Jail Beds Required by Change in ALS
95	490	n/a	n/a	n/a
96	539	49	-20.7	69.3
97	600	61	36.2	24.9
98	629	30	2.4	27.3
99	582	-47	-17.6	-29.6
0	592	10	-50.1	59.6
1	563	-29	-21.8	-7.2
2	577	14	34.3	-20.1
3	608	31	0.6	30.5
4	596	-12	-13.5	1.2
Total Change	106	106	-50.3	156.0

95 and '04 data for 3 months

95 and '04 annualized for change in bookings

Changes in Average Daily Jail System Population January 2002-2004

Table 2 summarizes the month-by-month change in the jail system average daily population for the period January 2002 through the first quarter of 2004.¹⁹

The jail population increased by 84 inmates. **But the source of this change is no longer totally accounted for by an increase in the average length of stay.** That factor only accounted for 45 beds (54%) of the total increase in bed demand. The other 39 beds were required to house the increase in admissions (bookings).

It looks like things have changed. In the past, a decrease in the bed space demand from admissions canceled out the increase in bed demand coming from the change in the average length of inmate stays. **The jail system population can increase rapidly when bookings and average lengths of stay both increase.**

Note that there is great month-to-month variation in the last two columns of the table. These swings in the bed requirements caused by changes in the monthly number of bookings and average length of stay are most likely the result of changes in justice system response to the workload, not changes in the behavior of the criminal population.

¹⁹ This, too, is a summary table. The method of calculation is presented later in this appendix. Note the data is carried through March 2004. The table can be brought up to date using the template and instructions that appear at the end of this appendix.

Table 2: How Change in the Number of Bookings and Length of Stay Combine to Determine the Ave. Daily Jail Pop.

Year and Month	Average Daily Jail Population	Change in Average Daily Jail Population	Number of Jail Beds Required by Change in Bookings	Number of Jail Beds Required by Change in ALS
2002-1	522	n/a	n/a	n/a
2	579	57	(77.85)	134.8
3	550	-29	67.5	(96.5)
4	564	14	63.0	(49.0)
5	560	-4	1.7	(5.7)
6	561	1	(3.6)	4.6
7	573	12	1.3	10.7
8	600	27	24.8	2.2
9	598	-2	(42.5)	40.5
10	593	-5	47.8	(52.8)
11	617	24	(55.9)	79.9
12	605	-12	(63.3)	51.3
2003-1	566	-39	97.4	(136.4)
2	601	35	(70.5)	105.5
3	608	7	71.7	(64.7)
4	609	1	(8.9)	9.9
5	618	9	30.2	(21.2)
6	636	18	(24.3)	42.3
7	625	-11	31.2	(42.2)
8	619	-6	(22.6)	16.6
9	620	1	(67.5)	68.5
10	619	-1	38.3	(39.3)
11	598	-21	(46.2)	25.2
12	577	-21	(32.8)	11.8
2004-1	580	3	118.5	(115.5)
2	601	21	(64.2)	85.2
3	606	5	25.4	(20.4)
Total Change:	84	84	39	45

Note: ALS = Average Length of Stay
 Data obtained from State Board of Corrections. It was originally submitted to the BOC by Santa Cruz County.

Additional Analyses Needed

This same table can be constructed for any subpopulation of inmates in the jail. All that will be needed to do these additional analyses is the number of bookings and the average daily jail population of any subgroup in the jail. It would be useful, for example, to repeat this analysis separately for:

- men and for women;
- felony admissions vs. misdemeanor admissions;
- fresh arrests vs. arrests for failing to comply (FTA, Failure to pay, etc.)

These analyses would help isolate the characteristics of the group(s) that are most responsible for changes in the average daily jail population.

It is unlikely these changes occur evenly across all inmate subtypes. Usually, most of the change can be attributed to a few inmate subgroups. Managing the size of these subgroups is the key to jail population management.

Summary of Findings and Implications

1. From 1995 through the first quarter of 2004, growth in the jail system inmate population (106 inmates) was driven by an increase in the average length of inmate stay, not an increase in admissions to the jail system. The average length of stay increased from 11.5 days in 1995 to 14.9 days during the first quarter of 2004.²⁰
2. This long-term trend seems to be changing. During the period January 2002 through the first quarter of 2004, increased jail bed space was required to accommodate increases driven by changes in both admissions and average lengths of stay.
3. Santa Cruz County justice system officials need to work together to determine and manage the size and character of the justice system workload, and diminish the extent to which the workload itself manages the system.
4. The number of bookings and their lengths of stay determine the number of people in jail. This dynamic also determines changes in the size of all of the subgroups of the inmate population.

²⁰ The annual high during this period was 15.2 days (2003).

5. Managing jail system occupancy levels can only be accomplished in three ways:
 - a) Increase bed space capacity; b) decrease admissions; and c) decrease average lengths of inmate stays. While one or more of these three strategies may be easier, technically or politically, employing all three strategies will make it easier to manage the future size of the jail system population.
6. There is significant month-to-month and quarter-to-quarter variation in the number of bookings and average length of stay. These fluctuations appear to stem from changes in decision-making about cases and people as they make their passage through the justice system, not erratic swings in the behavior of the criminal population.
7. Managing the size of the jail system population will depend upon achieving agreements about changes in justice system policies. This is because changes in the size of the jail population are primarily the result of changes in the response of the justice system.
8. A jail population analysis system that provides continuous information about changes in bookings and lengths of stay of inmate population subgroups will permit policy makers to better understand and manage the size and character of the jail population.
9. Santa Cruz County should establish a basic jail population analysis system.²¹ No new data is required. The data needed by such a system is already collected and in the County information system. It simply needs to be put into a proper form, analyzed and routinely reported out.
10. The jail population analysis system should be used to continuously determine if programs that have been/ are being initiated to reduce crowding and/or change the composition of the jail population are meeting their intended objectives.

Example: A new program is developed with the objective of reducing the number of bed days of a specific type of inmate population. A jail

²¹ A very basic jail population analysis system is described in a short 12-page publication available free from the National Institute of Corrections. See: *Preventing Jail Crowding: A Practical Guide*, NIC publication number 016720, available from the National Institute of Corrections Information Center, 800-877-1461 or send an e-mail request for the publication to asknicic@nicic.org. The publication is free. An electronic download PDF version of the publication is also available at <http://www.nicic.org/pubs/2001/016720.pdf>

population analysis should be undertaken to determine a baseline of the number of jail bookings and the number of bed days absorbed by this group prior to this change. The same data should be collected, analyzed and periodically reported out in the months following the initiation of the program.

Explanation of How the Analysis is Done

The remainder of this report contains more technical information. Table 3 (See page 32) provides the columns of data used to calculate the figures that appear in Table 2. Page 33 will serve as a template to both explain how the analysis is done, and to guide development of future analyses like this one.²²

800-877-1461, or send an e-mail request for the publication to asknicic@nicic.org. The publication is free. An electronic download PDF version of the publication is also available at: <http://www.nicic.org/pubs/2001/016720.pdf>

Table 3: Amount of Change Due to Increase in Bookings vs. Increase in Average Length of Jail Stay

C	D	E	F	G	H	I	J	K	L	M
Year and Month	Average Daily Jail Pop.	Change in Ave. Daily Jail Pop.	Number of Days in Period	Total Person Days in Jail	Number of Jail Bookings	Change in Number of Jail Bookings	Estimated Average Length of Stay (ALS)	Number of Bed Days Consumed by Change in Bookings	Number of Jail Beds Required by Change in Bookings	Number of Jail Beds Required by Change in ALS
2002-1	522	n/a	31	16,182	1173	n/a	13.8	n/a	n/a	n/a
2	579	57	28	16,212	1015	-158	16.0	(2,179.7)	(77.8)	134.8
3	550	-29	31	17,050	1146	131	14.9	2,092.4	67.5	(96.5)
4	564	14	30	16,920	1273	127	13.3	1,889.5	63.0	(49.0)
5	560	-4	31	17,360	1277	4	13.6	53.2	1.7	(5.7)
6	561	1	30	16,830	1269	-8	13.3	(108.8)	(3.6)	4.6
7	573	12	31	17,763	1272	3	14.0	39.8	1.3	10.7
8	600	27	31	18,600	1327	55	14.0	768.1	24.8	2.2
9	598	-2	30	17,940	1236	-91	14.5	(1,275.5)	(42.5)	40.5
10	593	-5	31	18,383	1338	102	13.7	1,480.5	47.8	(52.8)
11	617	24	30	18,510	1216	-122	15.2	(1,676.2)	(55.9)	79.9
12	605	-12	31	18,755	1087	-129	17.3	(1,963.6)	(63.3)	51.3
2003-1	566	-39	31	17,546	1262	175	13.9	3,019.4	97.4	(136.4)
2	601	35	28	16,828	1120	-142	15.0	(1,974.3)	(70.5)	105.5
3	608	7	31	18,848	1268	148	14.9	2,223.7	71.7	(64.7)
4	609	1	30	18,270	1250	-18	14.6	(267.6)	(8.9)	9.9
5	618	9	31	19,158	1314	64	14.6	935.4	30.2	(21.2)
6	636	18	30	19,080	1264	-50	15.1	(729.0)	(24.3)	42.3
7	625	-11	31	19,375	1328	64	14.6	966.1	31.2	(42.2)
8	619	-6	31	19,189	1280	-48	15.0	(700.3)	(22.6)	16.6
9	620	1	30	18,600	1145	-135	16.2	(2,023.8)	(67.5)	68.5
10	619	-1	31	19,189	1218	73	15.8	1,185.9	38.3	(39.3)
11	598	-21	30	17,940	1130	-88	15.9	(1,386.4)	(46.2)	25.2
12	577	-21	31	17,887	1066	-64	16.8	(1,016.1)	(32.8)	11.8
2004-1	580	3	31	17,980	1285	219	14.0	3,674.7	118.5	(115.5)
2	601	21	29	17,429	1152	-133	15.1	(1,861.0)	(64.2)	85.2
3	606	5	31	18,786	1204	52	15.6	786.7	25.4	(20.4)
Total Change:	84	84							39	45

Instructions for constructing table #3 in a spreadsheet:

1. Input numbers in columns C, D, F and H.
2. $E = \text{current D} - \text{previous D}$
3. $G = D \text{ times } F$
4. $I = \text{current H} - \text{previous H}$
5. $J = G \text{ divided by } H$
6. $K = \text{Current I} \text{ times previous J}$
7. $L = K \text{ divided by } F$
8. $M = E - L$
9. Total D = last D minus first D
10. To Get Totals, sum all Es, Ls and Ms.
11. $E = L + M$ for each row and for total.