Future Felon Population
of the State of Tennessee
FY 2004-2005

2004-2016 Felon Population Projections

Tennessee Department of Correction

Presented before the Select Oversight Committee on Corrections

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**Compiled by TDOC's
Division of Policy, Planning, and Research**

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Executive Summary

This report presents the annual population projections of the Tennessee incarcerated felon population. The projection data is produced for the Tennessee Department of Correction (TDOC) by JFA Associates in Washington D.C. This report is then compiled and prepared by the Department of Correction's Policy, Planning, and Research unit.

Highlights and findings of this projection report:

Model Accuracy: An evaluation of the December 2002 felon population projection model revealed that the model performed remarkably well (0.4% average monthly deviation from December 2002-November 2004). Further, the average monthly deviation was only 0.4% between December 2003 and November 2004, which indicates excellent performance as the model was in its second year of use. It should be noted that for several months, the model projections showed virtually no deviation (0.0%-0.1%) from the actual felon population of Tennessee.

During a mid-year assessment in May 2003, it was determined that the projected population figures generated by the model deviated from the actual felon population in Tennessee by an average of only 0.5%. At this time it was decided that no mid-year recast was necessary as the model was performing well within the acceptable range of +/-2%.

The model continued to perform well during the first half of FY 04-05, never surpassing the +/-2% range that indicates a high level of accuracy. In fact, the projections never deviated more than 0.9% from the actual felon population during this time.

Incarcerated Felon Population Projections

Total Population: During the past fiscal year, the incarcerated felon population (including TDOC backup and locally sentenced felons) grew from 25,370 in July 2003 to 25,865 in June 2004, an increase of 2.0%.

Over the past 14 years (1991-2004) the total incarcerated population has increased 85.1% (from 13,975 to 25,865), with a mean annual percent change of 4.9%.

Over the *next* 12 fiscal years (through June 2016), Tennessee's incarcerated population is projected to increase a total of 19.2% (from 26,593 to 31,688) with a mean annual change of 1.7%.

Projections by Gender

Males: The overall growth rate for male felons for the 12-year projection period is projected to be 18.9% (increasing from 23,973 in June 2004 to 29,326 in June 2016).

Females: The anticipated growth rate for female felons is slightly higher, with a 22.3% increase expected during the 12-year projection period (from 1,892 in June 2004 to 2,362 in June 2016).

Unmet Bed Demand:

UNMET DEMAND = <u>Projected Felon Population</u> – <u>Planned Capacity</u>

Where

<u>Planned Capacity</u> = Number of TDOC beds available + (1,025 county jail beds for back-up felons + 4,000 local jail beds for locally sentenced felons)

Based on current growth *trends and TDOC's expansion plans[1],* the unmet demand (the number of incarcerated felons *exceeding* the number of bed*s)* is currently projected to be 3,032 by June 2007. If the planned Morgan County expansion of approximately 830 operational beds is completed by June 2008, and the Bledsoe County expansion of 1,279 operational beds is completed by June 2009, the unmet bed demand will still be 3,287 in June 2012 and 4,885 in June 2016.

<u>If the planned new construction is not completed, the unmet demand is projected to be 3,986 by June 2009 and will reach 6,994 by June 2016.</u>

Males: When broken down by gender, the unmet capacity *assuming TDOC's Morgan and Bledsoe expansions are online*, is projected to be 2,710 by June 2007. By June 2016, it is anticipated that unmet capacity for males will reach 4,201.

Females: There is currently no increase in bed capacity funded for female inmates. The unmet bed demand for females is projected to be 322 by June 2007 and 684 by 2016.

Admissions: Compared to FY 2002-2003<u>, total TDOC felon admissions for FY 2003-2004 increased by 1.6%</u>. This increase followed a 2.0% decrease in admissions that was seen during FY 2002-2003. New court commitments increased by 1.7% as opposed to the 2.9% decrease seen during FY 2002-2003. The number of probation violators returned increased slightly (1.3%) during this same time period.

Projected Admissions: Continued <u>growth in new court commitments is expected</u> over the next twelve years, at a low rate of average annual percent change of about 1.2% per year, with an overall increase of 14.6% between 2004 and 2016. <u>Growth in probation and parole violator returns is also expected</u> over the next twelve years, with an average annual percent change of 1.7% during the projection period, for a total increase of 23.4% between 2004 and 2016.

Releases: Releases <u>increased 3.5% from the previous fiscal year</u> (FY 2002-03), with releases to probation or community corrections remaining almost unchanged,

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releases for expiration of sentence and other increasing 5.0%, and releases to parole showing an increase of 8.9%.

Projected Releases: Over the next twelve years, it is anticipated <u>that all releases (probation & community corrections, expiration of sentence, other, and parole) will increase</u> by approximately 31.3%, with an average annual percent change of about 2.7% each year.

Probation and community corrections release rates are projected to increase about 33.7% between 2004 and 2016 while releases for expiration of sentence and other are expected to increase approximately 25.4% between 2004 and 2016. The growth rates projected for these two categories of release are significantly lower than their historic pattern of growth at 132.4% and 270.5% respectively.

Parole Grant Rate: During FY 2003-04, the average parole grant rate was 27.5%, up slightly over the prior year's grant rate of 26.2%.

Projected Grant Rate: Based on trends in parole grant rates over the past fiscal year, it is projected that the grant rate will remain relatively low, at approximately 29.2% over the next twelve years, with an average annual change in parole releases of 3.1%.

Inmate Age Projections

- For the first time this year we were able to generate projections that examined the probable aging trends of Tennessee's felon inmate population.
- The two <u>offense groups with the largest average forecasted age increases over the next twelve (12) years are lifers with a projected increase of 6.2 years and drug offenders with a projected increase of 6.4 years</u>.
- <u>Male inmates show a higher average age increase over the projected period (from 33.4 year to 37.5 years) than female inmates</u> (from 35.4 years to 37.3 years).

INTRODUCTION

The Tennessee Department of Correction (TDOC) produces its incarcerated felon population projections annually, with mid-year adjustments to these projections in July when deemed necessary.[2] These projections are the basis of the TDOC planning process and are used for the following key functions:

1) to monitor the growth of the incarcerated felon population and specific elements of that population;
2) to simulate the impact of various decisions and legislation for a variety of criminal justice agencies; and most importantly,
3) the projections become the foundation for policy and decisions concerning the Department of Correction's capital project and building plans.

The annual felon population projections and the mid-year assessment are guided by TDOC policy (114.01) and are consistent with the goals set forth in the American Correctional Association's *Standards for Administration of Correctional Agencies*, 2nd Edition (Standard 2-CO-1A-09).

In 2002-03, the December 2002 Incarcerated Felon Population Projection Model performed well. In May 2003, the December 2002 model was assessed for accuracy. It was determined that the projected population figures generated by the model deviated from the actual incarcerated population by an average of only 0.5% through mid-year, thereby meeting the established standards of model accuracy (+/-2%). The percentage difference between projected and actual for the first six (6) months combined (December 2002– May 2003) was even slightly lower at 0.4%. It should also be noted that in April 2003, the projected felon population differed from the actual population by 0.0%. Indeed, the numbers only differed by 6 inmates (25,192 projected and 25,198 actual).

During the next six (6) months (June 2003 – November 2003), the overall model still performed extremely well with an average difference between projected and actual inmate population of approximately 0.32%.

In 2004, the Tennessee Department of Correction continued to use the 2002 population projection model. In addition to unforeseen contract delays, it was determined that the 2002 model continued to perform well and that no adjustments were necessary to ensure the accurate projection of the future felon population in Tennessee.

Overall, the December 2002 projection model continued to perform well in 2004, showing only a 0.41% deviation between the number of projected felons and the actual felon population. January 2004 showed a slightly higher deviation of 1.4%, however it returned to only a 0.2% deviation in February. Except for January, the model never deviated more than 1.0% from December 2003-November 2004.

Although the 2002 projection model performed well overall in 2004, it was determined that the assumptions for the <u>female felon</u> population needed to be adjusted slightly to reflect the unanticipated rate of population increases that Tennessee has experienced over the past two model years. While the growth in female felons nationwide has

stabilized or reduced its rate of growth, Tennessee's female felon population has not performed similarly.

It is significant to mention that the while we recognize the need to adjust our assumptions regarding the female felon population, the model still only deviated an average of 0.6% between July 2003 and November 2004. In fact, in November 2004 the actual female felon population was **equal** to the projected female felon population. However, the model underestimated the female felon population for 10 months during this same time period.

METHODOLOGY

TDOC currently contracts with Mr. Jim Austin, Ph.D. and Ms. Wendy Naro-Ware at JFA Associates in Washington D.C. to run the Department of Correction's annual population forecasts.[3] JFA Associates assist in the determination of population assumptions, works with TDOC's Policy, Planning, and Research staff to extract the necessary data, and produces the raw projection data. JFA Associates also assist in reviewing the end results of the projections and placing them into context given the Department's annual felon population forecast report and capacity determination.

Projection Software

The felon population projections presented in this report were developed using JFA Associates' Wizard 2000 simulation software as the primary projection tool. Wizard 2000 is a second-generation enhancement of the Prophet software previously used to conduct the population forecasts in this state[4]. This software is used to forecast incarcerated population projections in at least 30 of the 50 United States and is considered to be an extremely reliable and valid state-of-the-art simulation model. Each projection model is specifically designed for the context in which it is used; therefore, the Tennessee projection model is based on Tennessee criminal statutes, movement patterns in and among institutions, parole and probation patterns, etc. The model simulates the future movements of inmates through the correctional system based on key correctional information regarding offenders admitted to and released from the department in FY 2004.

Source Data

The data in this report is taken from the Tennessee Offender Management Information System (TOMIS) database and the Tennessee Felon Population Updates. Data is extracted from tapes created monthly by the Office of Information Resources. The data provided for the projection models come from the November 2004 monthly extracts. Because it typically takes 4-6 months for the data in TOMIS to "settle" (i.e., for processing most of the information that is relevant to the previous fiscal year ending in June) there may be discrepancies in information between reports presented from year to year. Thus, information reported for prior years in this report may vary slightly from what has been previously reported for those same years. Additionally, data used in the projection model may vary from the current actual data due to the aforementioned settling issues.

The incarcerated felon population projections represented in this report include all felons sentenced to incarceration for one year or more. The projections include felons sentenced to the TDOC *as well as* those sentenced to serve their time in local facilities (e.g., all felons within TDOC's jurisdiction). More specifically, this report considers those felons housed in (1) TDOC facilities, (2) local jails through local sentencing, and (3) local jails awaiting transfer to a TDOC facility ("back-up").

Information for the 2005 model was extracted from TOMIS for the period July 1, 2003 through June 30, 2004 in order to provide the most current patterns and trends of the

offender population. The data reflect characteristics of the stock population and admission and release patterns are subsequently used to simulate offender movement through the projection period. Offender movement in the modeling process is based on a variety of variables such as: sentence length, time served, average wait time between parole hearings, and parole grant rates.

Projection Assumptions

All projection data are based on the assumptions one makes about the target population and the factors that affect said population. There are a number of assumptions which are especially key to the production of the annual felon population projections. These assumptions form the foundation of the future felon-forecasting model and are reviewed biannually for accuracy and consistency. <u>The most fundamental principle inherent to this or any projection model is that current sentencing and release practices will remain constant over the projection period.</u> The impact of unconfirmed future events such as the felon population implication resulting from Tennessee's adaptation to the recent Supreme Court ruling regarding sentence enhancements in jury trials were therefore not factored into this model.

The assumptions underlying the model are assessed in a multi-stage process. Trends in the data are examined utilizing a variety of methods. In addition, TDOC staff meets with members of several state agencies (Population Projection Assumptions Committee[5]) to discuss the assumptions and their viability in light of changing trends, legislation, and policy that might affect inmate populations. Finally, review and input from JFA consultants is a critical element in developing the underlying assumptions for the felon population projections.

The primary assumptions resulting from the aforementioned process are described below.

<u>Key Assumptions</u>

1. Significant **Legislation from the 2003 and the 2004 General Assembly**. A review of the legislation enacted during the 2003 and 2004 General Assembly sessions indicated that there were no Public Acts passed that would significantly influence either sentencing structure or felon populations. No future substantive changes were assumed in this model, however TDOC will closely monitor statue changes and/or additions regarding sex offenders and methamphetamine users. At present, these felony offense populations are not expected to have a significant effect on our felon population. However, due to the level of legislative interest in these populations, we will watch for any population effects and make necessary changes during the mid-year model assessment.

2. **Capacity for locally sentenced offenders**. Tennessee's local jails continue to hold significant numbers of locally sentenced felons and contribute significantly to Department of Correction capacity. TDOC utilized an average capacity assumption of 4,000 for the December 2002 model bed demand determination. There has been a great deal of growth in the size of this population over the past decade but the growth rate has stabilized over the past two years and as a result, the committee

agreed to continue to use 4,000 as the locally sentenced capacity for this model. Based on data from the past four (4) fiscal years, the locally sentenced felon population is estimated to be approximately 16.7% of the total Tennessee felon inmate population.

3. **Capacity for TDOC Sentenced Felons Housed in Local Jails:** Since FY 1998-99, TDOC capacity assumptions have included estimates of TDOC-sentenced offenders housed in local jails. The projections assume that, at any one time, there will be 350 offenders with valid judgement orders but who are within the 14-day legislated transfer requirement, and 675 offenders with no judgement orders for which capacity will be provided by the local jails. This number is included in all capacity assumptions and bed demand calculations. Over the past four (4) fiscal years, this population has made up an average of 8.4% of the total Tennessee felon population.

4. **Admissions.** Total admissions systemwide[6] remained high during FY 2003-04 at 13,438. After seeing a decrease of 2.0% between FY 2002 and FY 2003, admissions then increased, 1.6%, between FY 2003 and FY 2004. For a more detailed description of historic and projected admissions, please refer to Table 1.
    - **New Commitments[7]**. While the new commitments for FY 2003-04 increased slightly compared to the last fiscal year (2003), the number of new commitments sentenced to TDOC or as locally sentenced inmates over the past two fiscal years (2003 and 2004), is still lower than the number of new commitment admissions in fiscal years 2000, 2001, and 2002. The 2002 model was modified to anticipate a lower growth rate then previous models and this modification proved to be appropriate as the 2002 model performed well with respect to new commitments in FY 2003 and 2004 (with a difference of only 5.8% and 2.2% respectively) between projected and actual new commitment admissions. There were no adjustments to this key assumption in the January 2005 projection model.
    - **Parole and Probation Violators[8]**. This assumption was modified in the 2002 model by increasing the projected number of violator returns slightly so as to accommodate for the moderate disparity between actual and projected numbers of violators returning to TDOC in the previous fiscal year. During the last four (4) fiscal years, there has been a small, relatively consistent increase in violators returned. While this trend is expected to continue, the modification in the 2002 model adequately accounted for this increase. The average percent difference between actual and projected violators was a low 0.6% for FY 2003 and 3.2% in FY 2004. Given this, there were no changes in parole and probation violator assumptions for the 2005 model.
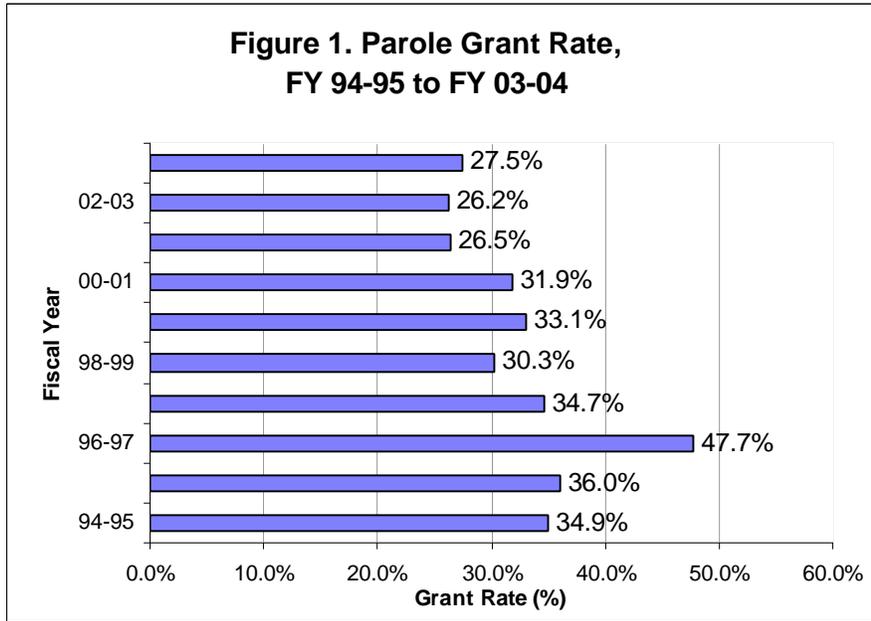
Table 1. Historical and Projected Admissions, 1991-2016

Fiscal year	New commitments	Violators returned	Total admissions
1990-91	6,438	2,471	8,909
1991-92	6,565	2,546	9,111
1992-93	6,842	3,209	10,051
1993-94	6,104	3,700	9,804
1994-95	6,358	3,907	10,265
1995-96	6,761	3,986	10,747
1996-97	7,642	4,762	12,404
1997-98	8,284	5,153	13,437
1998-99	8,107	4,954	13,061
1999-00	8,759	4,574	13,333
2000-01	8,363	4,902	13,265
2001-02	8,337	5,155	13,492
2002-03	8,098	5,131	13,229
2003-04	8,237	5,201	13,438
Numeric change 1991-2004	1,799	2,730	4,529
Percent change 1991-2004	27.9%	110.5%	50.8%
Average annual % change	2.1%	6.3%	3.3%
2004-05	8,319	5,178	13,497
2005-06	8,403	5,206	13,609
2006-07	8,487	5,308	13,795
2007-08	8,597	5,392	13,989
2008-09	8,709	5,482	14,191
2009-10	8,822	5,582	14,404
2010-11	8,937	5,702	14,639
2011-12	9,053	5,828	14,881
2012-13	9,170	5,998	15,168
2013-14	9,290	6,153	15,443
2014-15	9,410	6,281	15,691
2015-16	9,533	6,388	15,921
Numeric change 2005 - 2016	1,213	1,210	2,423
Percent change 2005-2016	14.6%	23.4%	18.0%
Average annual % change 2005-2016	1.2%	1.7%	1.4%

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5. **Releases**. Total releases increased by 3.5% between FY 02-03 and FY 03-04. The average difference between actual and projected total releases was low, 2.8% for FY 02-03, and only 1.6% for FY 03-04. For a more detailed description of historic and projected releases, please refer to Table 2.

    -   **Probation and Community Corrections and Expiration of Sentence**. Both of these release types increased between FY 02-03 and FY 03-04, with probation and community correction releases decreasing by 0.8% and expiration of sentence releases increasing by almost 5%. In FY 03-04, actual probation and community corrections releases differed from projected releases by 2.7% and only 0.1% for expiration of sentences and other. Because the projections regarding these two categories of releases in the 2002 model were in line with the actual number of releases during the past fiscal year, no assumptions were modified for the January 2005 model.

    -   **Release to Parole.** This release category increased 8.9% between FY 02-03 and FY 03-04, showing the first annual increase since FY 00-01. In FY 02-03, the average parole grant rate was 26.2%, down slightly from the prior year's grant rate of 26.5%. In FY 03-04, the average parole grant rate increased to 27.5% and exceeded the rates for the previous two (2) fiscal years (for a graphic illustration of historical parole grant rate, please see Figure 1). Actual parole releases were 14.6% less than projected in FY 02-03 and 10.9% less than projected in FY 03-04. While this difference may indicate an assumption modification, the committee agreed that due to a steady increase over the first six (6) months of FY 04-05, the assumptions for parole releases will remain at 29.2%. Like all aspects of the model, this rate will be closely monitored during the next year.

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Table 2. Historical and Projected Releases, 1991-2016

Fiscal year	Parole	Probation & Community Corrections	Expiration and Others	Total Releases
1990-91	4,604	2,241	1,330	8,175
1991-92	5,263	2,538	1,345	9,146
1992-93	4,907	2,778	1,600	9,285
1993-94	3,532	3,016	2,011	8,559
1994-95	3,301	3,421	2,576	9,298
1995-96	3,503	4,432	3,104	11,039
1996-97	4,581	4,989	3,300	12,870
1997-98	3,365	5,557	3,702	12,624
1998-99	3,312	5,286	4,233	12,831
1999-00	3,702	4,897	4,387	12,986
2000-01	3,763	4,953	4,231	12,947
2001-02	3,003	5,100	4,472	12,575
2002-03	2,951	5,247	4,695	12,893
2003-04	3,214	5,207	4,928	13,349
Numeric change 1991-2004	-1,390	2,966	3,598	5,174
Percent change 1991-2004	-30.2%	132.4%	270.5%	63.3%
Average annual % change 1991-2004	-1.6%	8.4%	13.0%	4.9%
2004-05	3,409	5,309	4,997	13,715
2005-06	3,533	5,486	5,077	14,096
2006-07	3,672	5,601	5,151	14,424
2007-08	3,795	5,763	5,336	14,894
2008-09	3,907	5,977	5,511	15,395
2009-10	4,030	6,191	5,718	15,939
2010-11	4,157	6,326	5,748	16,231
2011-12	4,283	6,508	5,963	16,754
2012-13	4,373	6,655	5,961	16,989
2013-14	4,490	6,786	6,138	14,987
2014-15	4,580	6,959	6,196	17,735
2015-16	4,642	7,096	6,264	18,002
Numeric change 2005-2016	1,233	1,787	1,267	4,287
Percent change 2005-2016	36.2%	33.7%	25.4%	31.3%
Average annual % change 2005-2016	3.1%	2.6%	2.0%	2.7%

Figure 1. Parole Grant Rate, FY 94-95 to FY 03-04

Fiscal Year	Grant Rate
	27.5%
02-03	26.2%
	26.5%
00-01	31.9%
	33.1%
98-99	30.3%
	34.7%
96-97	47.7%
	36.0%
94-95	34.9%

In table 3, parole grant rates for FY 2003-04 are broken down by offense group. While parole rates for all felon inmates in Tennessee were relatively low during the past fiscal year, parole grant rates were not equally distributed among offenses.

Table 3. Parole Grant Rates by Model Group, FY 2004

Model Group	Hearing Number					Overall	Mean Wait Time (months)
	1	**2**	**3**	**4**	**5**		
MALE							
Lifer	10.9%	34.1%	29.2%	33.3%	22.2%	20.8%	25.6
85% Person	0.0%	0.0%	0.0%	--	--	0.0%	--
85% Sex	0.0%	0.0%	0.0%	--	--	0.0%	--
85% Agg Robbery	0.0%	0.0%	--	--	--	0.0%	--
Person A,B	5.9%	16.4%	30.2%	29.5%	18.8%	17.2%	26.1
Person C	5.3%	27.6%	30.2%	29.4%	26.7%	14.8%	13.9
Person D,E	3.9%	28.2%	27.8%	--	--	13.9%	16.2
Sex A,B	1.4%	1.5%	2.7%	3.2%	3.8%	2.4%	41.8
Sex C,D,E	0.0%	9.1%	0.0%	--	--	0.7%	20.1
Agg Robbery A,B	5.5%	30.2%	39.9%	34.4%	26.4%	23.3%	17.6
Agg Robbery C,D,E	9.4%	40.0%	37.5%	66.7%	--	21.4%	16.4
Drug A,B	11.7%	51.8%	48.5%	39.5%	43.5%	32.1%	15.4
Drug C,D,E	21.5%	51.3%	46.4%	36.6%	34.6%	31.9%	11.9
Prop A,B	8.7%	40.0%	28.6%	22.2%	42.9%	24.6%	21.1
Prop C	12.5%	41.0%	33.3%	27.5%	35.9%	24.4%	13.0
Prop D,E	19.2%	43.8%	41.7%	27.5%	40.0%	29.1%	11.5
Other A,B	1.2%	25.4%	36.7%	18.2%	25.0%	16.3%	22.5
Other C	18.3%	40.0%	36.8%	0.0%	100.0%	26.5%	13.0
Other D,E	14.7%	39.8%	23.3%	27.3%	--	21.6%	13.7
Model Group	**Hearing Number**					**Overall**	**Mean Wait Time (months)**
	1	**2**	**3**	**4**	**5**		
FEMALE							
Lifer	100.0%	--	--	--	--	100.0%	25.0
85%	--	--	--	--	--	0.0%	0.0
Person A,B	6.7%	16.7%	27.3%	40.0%	50.0%	20.0%	19.5
Person C,D,E	7.5%	41.7%	44.4%	50.0%	50.0%	22.0%	11.8
Sex	0.0%	--	--	--	--	0.0%	--
Agg Robbery	5.4%	19.0%	66.7%	83.3%	50.0%	25.6%	14.7
Drug A,B	18.6%	68.9%	43.8%	33.3%	66.7%	41.9%	11.8
Drug C,D,E	28.9%	57.1%	66.7%	0.0%	0.0%	27.1%	10.0
Prop A,B	10.0%	50.0%	100.0%	--	--	23.1%	9.6
Prop C,D,E	23.7%	49.4%	46.2%	61.9%	20.0%	34.7%	11.1
Other A,B	4.8%	50.0%	33.3%	--	--	24.3%	17.8
Other C,D,E	23.5%	54.2%	25.0%	100.0%	--	32.0%	10.9
Missing	14.5%	44.7%	25.0%	42.9%	0.0%	25.8%	20.1
Total	**12.6%**	**36.7%**	**35.8%**	**30.8%**	**25.3%**	**23.4%**	**16.8**

6. **Capital Projects and Renovations**. Projects and renovations that are currently funded and scheduled for completion through the projection period (June 2016) will produce a net operating gain of 2,109 new beds (2,130 increase in total institutional capacity) in Tennessee. TDOC's operating capacity as of December 2004 was approximately 19,670. This figure includes the newly occupied beds in the Whiteville Correctional Facility. With the full capacity of 1,505 at Whiteville, as well as future projects that are currently funded (see table 4), TDOC's total operating capacity could increase to 21,778 during the projection period.[9]

Table 4. Funded TDOC Expansions

Facility	Operating Capacity Increase* (raw # of additional beds)	Planned Completion Date
Morgan County Expansion/New	830 (838)	late 2007
Bledsoe Expansion	1279 (1292)	early 2008
TOTAL	**2,109 (2,130)**	

* Operating capacity is currently set at 99% of total beds available.

7. **Female Population Considerations**. The female population is growing at a higher rate than projected in the last model. Modifications were made in the 2005 projection model to reflect the continued growth in the female felon population. The female felon population has grown 207.1% since FY 1999 with a mean annual percent change of 9.6%. In fact, the female felon population has grown 26.3% in just the past three years. The 2002 model projected an annual growth of 3.8% between FY 2003 and FY 2004; the actual annual growth was 5.3%. The steady increase in the female felon population was first thought to be a short-term trend that would level out as it has many states in the U.S., making changes to the December 2002 model assumptions unnecessary. While the increase in the female felon population has stabilized across most of the U.S., Tennessee has not seen this expected decrease in female felon population growth. The 2005 projection model has been modified to account for the model disparities in FY 2003-04 and also assumes a continued steady increase in the female felon population on a slightly higher trajectory than was presented in the December 2002 model.

Model Groups

The offense model groups, used for the forecasting model, are based on the FBI's National Incident Based Reporting System (NIBRS) method of offense classification.[10] These NIBRS-based model groups are the same as those used in the prior projection models.

The model groups used in this projection model are presented below. Offenders are categorized based on their primary or most serious offense:

Sentencing Model Groups

- Lifers: Offenders who receive Life, Life (Minimum 25 years), Life Without Parole (includes Repeat Violent Offenders), Death, and/or Habitual Offender sentences.

- 85%: Offenders who are sentenced under the state's 100% sentencing statute and must serve 85% of their sentence at a minimum. It is also important to note that some offenders with life sentences also fall into the 85% offender group.

- 1-2 Years: This group includes those offenders who receive a 1 to 2 year sentence and who are generally sentenced to serve their time in a local facility. 1-2 Year offenders most commonly fall into drug, property, and "other" offense categories.

Offense Model Groups

- Drugs: This group is comprised of offenders whose primary charge is drug-related. The majority of these offenders receive sentences for cocaine-related offenses.

- Aggravated Robbery: This group includes those offenders receiving a primary charge of Aggravated Robbery.

- Sex Offenders: This group is comprised of offenders receiving a sex-related charge as their primary offense. The bulk of these offenders are sentenced for Rape and Aggravated Rape.

- Property Offenders: This group includes offenders whose primary charge is related to a property offense. This includes the property crimes of Arson, Bad Checks, Bribery, Burglary, Embezzlement, Extortion, Forgery/Fraud, Larceny/Theft, Motor Vehicle Theft, Robbery, and Vandalism; Aggravated Robbery is categorized separately.

- Person Offenders: This group includes offenders whose primary charge is related to personal offenses. This includes Homicides, Kidnapping and Assault Offenses; Sex Offenses are categorized separately.

- Other: This group includes offenders whose primary charge is for an offense not covered in the above categories. Under the NIBRS offense classification system, this will most often include non-substantive offenses that involve Facilitation, Solicitation, Conspiracy, etc (e.g., Conspiracy To Commit Rape).

- Juveniles: The number of offenders under the age of 18 admitted to the Department peaked in FY 1996-97.   Since that point, both the admissions and total population of juvenile offenders have declined substantially. In prior years, a forecast of the juvenile population was conducted; however, because the projection model does not "age out" offenders, the projections of these offenders has been one of the most seriously overestimated in past reports. Until such time as a reliable projection for these offenders is available, the report will only track the total population of these offenders over time.

These model groups are further delineated by gender. This allows the Department to gain better information on the number and type of women coming into its jurisdiction. Female felons are an increasingly important population issue facing the Department as their growth rate is substantially higher than that of incarcerated males and projecting this particular population will assist in capacity and program planning efforts.

To provide a clearer picture of these model groups, Tables 5 and 6 demonstrate the distribution and sentencing profiles of total admissions and releases by gender system-wide (for both TDOC and locally sentenced felons) across the model groups for the period July 2003 through June 2004. One of the basic assumptions of the projection process is that future admissions will be similar to these population characteristics.

Table 5. Tennessee Population Projections ADMISSION Statistics by Gender, FY 2004

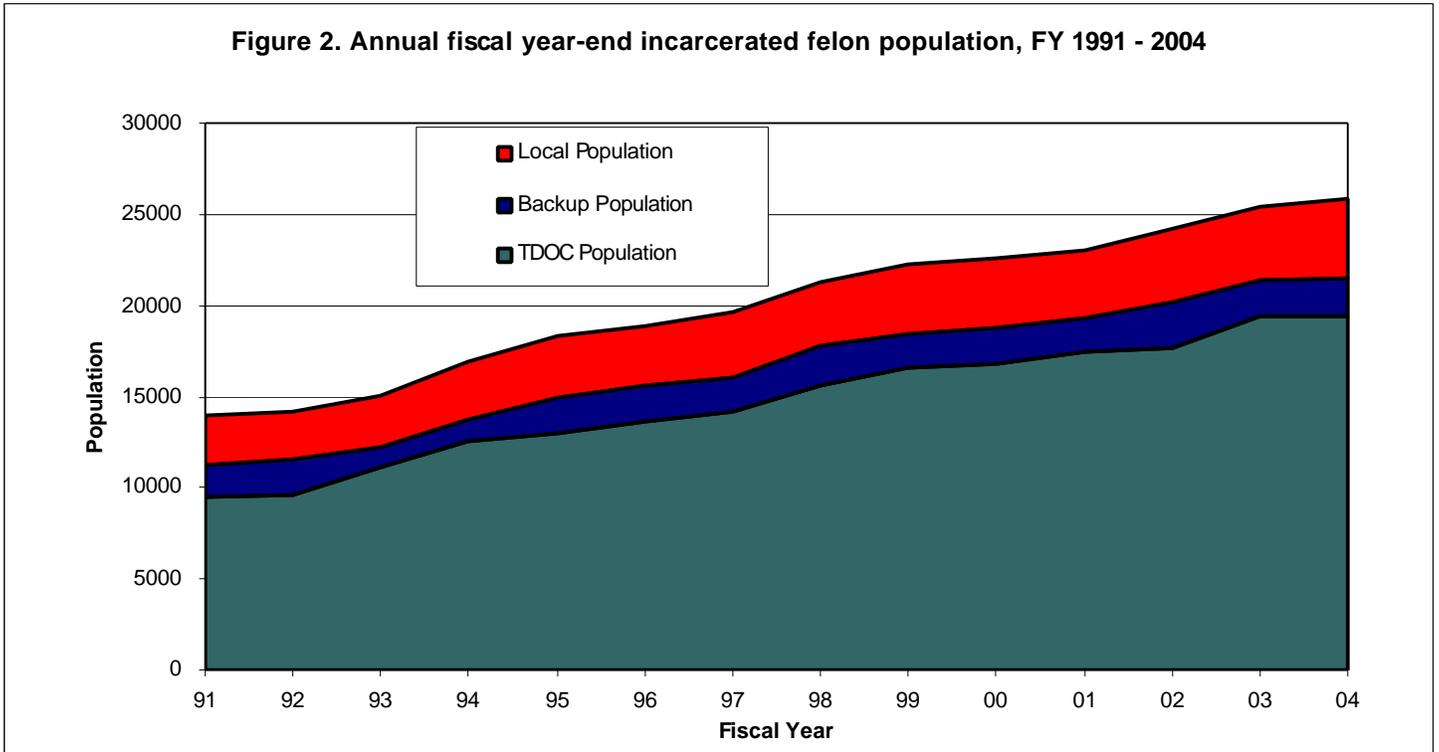| ID Group	Frequency	Percent	Mean Sentence	Mean Jail Days	% to PED
MALE					
Lifer	95	0.7%	540.0	494.0	100%
85% Person	139	1.0%	298.6	791.5	100%
85% Sex	217	1.6%	217.4	315.7	83%
85% Agg Robbery	25	0.2%	245.0	837.8	97%
1-2 yr Person	270	2.0%	21.6	132.1	30%
1-2 yr Sex	137	1.0%	19.2	87.6	30%
1-2 yr Agg Robbery	6	0.0%	15.0	464.5	30%
1-2 yr Drug	444	3.3%	20.6	77.6	30%
1-2 yr Prop	1,368	10.1%	2.3	104.8	30%
1-2 yr Other	744	5.5%	19.0	85.3	30%
Person A,B	232	1.7%	235.6	359.9	30%
Person C	856	6.3%	69.0	235.2	33%
Person D,E	117	0.9%	54.0	184.7	31%
Sex A,B	43	0.3%	147.7	479.7	10%
Sex C,D,E	146	1.1%	68.5	158.6	32%
Agg Robbery A,B	710	5.3%	163.2	336.0	30%
Agg Robbery C,D,E	74	0.5%	65.6	218.5	31%
Drug A,B	901	6.7%	127.5	172.3	30%
Drug C,D,E	1,601	11.9%	60.9	123.2	30%
Prop A,B	24	0.2%	176.5	219.2	30%
Prop C	1,814	13.4%	74.2	182.8	31%
Prop D,E	1,110	8.2%	57.4	138.0	32%
Other A,B	94	0.7%	178.4	370.7	30%
Other C	179	1.3%	61.4	224.9	31%
Other D,E	370	2.7%	52.4	118.6	33%
FEMALE					
Lifer	6	0.0%	540.0	355.8	100%
85%	16	0.1%	270.8	352.2	87%
1-2 yr Person	45	0.3%	21.4	56.6	30%
1-2 yr Sex	4	0.0%	18.0	55.0	30%
1-2 yr Drug	70	0.5%	21.5	53.9	30%
1-2 yr Prop	410	3.0%	20.6	64.0	30%
1-2 yr Other	111	0.8%	19.5	76.4	30%
Person A,B	17	0.1%	146.1	276.1	31%
Person C,D,E	109	0.8%	54.9	126.7	34%
Sex	1	0.0%	96.0	0.0	35%
Agg Robbery	36	0.3%	107.1	206.8	30%
Drug A,B	86	0.6%	109.7	114.9	30%
Drug C,D,E	278	2.1%	52.6	97.7	30%
Prop A,B	11	0.1%	133.1	120.1	30%
Prop C,D,E	451	3.3%	61.0	106.4	31%
Other A,B	21	0.2%	151.5	259.7	30%
Other C,D,E	108	0.8%	51.6	99.4	31%
Missing	3	0.0%	162.0	358.7	100%
TOTAL	13,499	100.0%	75.3	169.3	33%

Table 6. Tennessee Population Projections RELEASE Statistics by Gender, FY 2004

Model Group	Frequency	Percent	Mean Time Served (months)	Mean Time Served by Release Type (months)				
				Expire	Other	Parole	Probation	Community Correction
MALE								
Lifer	57	0.4%	272.4	83.7	235.6	285.4	--	--
85% Person	7	0.1%	76.8	77.9	--	75.4	--	--
85% Sex	60	0.5%	79.9	85.8	6.3	81.6	--	--
85% Agg Robbery	0	0.0%	--	--	--	--	--	--
1-2 yr Person	213	1.6%	8.7	13.9	--	--	7.9	3.7
1-2 yr Sex	93	0.7%	7.4	10.8	4.7	--	6.7	2.5
1-2 yr Agg Robbery	21	0.2%	10.1	12.1	--	--	9.5	5.0
1-2 yr Drug	325	2.5%	8.1	18.3	4.1	7.9	6.4	5.1
1-2 yr Prop	1,038	7.9%	8.1	12.8	5.8	9.6	6.8	3.7
1-2 yr Other	678	5.2%	7.9	12.9	13.6	--	2.5	6.8
Person A,B	266	2.0%	146.8	146.7	32.2	152.6	89.8	103.7
Person C	760	5.8%	44.9	47.4	8.4	57.7	21.7	23.2
Person D,E	183	1.4%	26.6	31.0	12.7	28.8	11.0	19.5
Sex A,B	169	1.3%	141.7	141.4	65.3	179.0	94.4	--
Sex C,D,E	140	1.1%	36.9	42.1	--	36.3	20.1	18.1
Agg Robbery A,B	744	5.7%	97.1	108.1	71.7	92.1	60.0	84.9
Agg Robbery C,D,E	453	3.4%	43.0	47.3	5.4	49.7	17.9	19.9
Drug A,B	912	6.9%	56.3	90.1	41.4	60.5	22.9	24.1
Drug C,D,E	1,541	11.7%	28.7	38.6	6.7	31.9	17.1	15.9
Prop A,B	23	0.2%	85.6	85.8	56.2	57.5	--	--
Prop C	1,381	10.5%	43.6	50.6	15.8	51.7	21.3	17.0
Prop D,E	1,512	11.5%	29.6	32.6	14.9	36.8	17.2	14.8
Other A,B	72	0.5%	69.7	71.7	--	75.6	33.5	27.6
Other C	148	1.1%	42.3	51.2	21.4	42.9	28.7	22.8
Other D,E	518	3.9%	24.1	27.7	11.4	26.2	15.5	17.6
Model Group	**Frequency**	**Percent**	**Mean Time Served (months)**	**Mean Time Served by Release Type (months)**				
				Expire	Other	Parole	Probation	Community Correction
FEMALE								
Lifer	1	0.0%	255.7	11.7	--	255.7	--	--
85%	3	0.0%	45.5	45.5	--	--	--	--
1-2 yr Person	34	0.3%	6.9	12.9	--	--	6.5	2.3
1-2 yr Sex	4	0.0%	6.8	--	--	--	6.8	--
1-2 yr Drug	44	0.3%	6.9	11.0	--	8.5	5.7	8.3
1-2 yr Prop	302	2.3%	7.9	12.8	1.6	10.6	7.0	7.6
1-2 yr Other	80	0.6%	7.7	12.1	--	3.2	7.3	3.6
Person A,B	18	0.1%	106.8	106.8	70.2	110.8	--	
Person C,D,E	109	0.8%	26.3	31.6	--	26.1	21.2	9.5
Sex	2	0.0%	93.0	93.0	--	--	--	--
Agg Robbery	80	0.6%	54.1	71.0	40.5	48.4	9.9	12.8
Drug A,B	93	0.7%	51.4	81.0	40.1	51.4	66.3	21.7
Drug C,D,E	277	2.1%	22.5	36.6	13.0	36.1	11.7	10.2
Prop A,B	5	0.0%	66.2	159.8	--	42.8	--	--
Prop C,D,E	545	4.1%	29.8	35.1	35.4	33.3	21.2	16.9
Other A,B	20	0.2%	47.9	69.0	36.1	55.9	33.2	13.8
Other C,D,E	134	1.0%	25.3	33.6	61.0	23.7	18.3	8.0
Missing	73	0.6%	36.3	47.1	40.3	73.0	6.7	--
TOTAL	**13,135**	**100.0%**	**39.6**	**50.6**	**25.6**	**60.4**	**11.5**	**16.6**

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RESULTS

Historical Felon Population

Figure 2 demonstrates the growth of the incarcerated felon population in Tennessee from FY 1990-1991 to FY 2003-2004. During that period, the total incarcerated felon population (at fiscal year end) grew from 13,975 in FY 1990-1991 to 25,865 in FY 2003-2004, an increase of 85.1%. The population growth during the last year was 1.6%, and was significantly less than the average annual change of 4.9% over the last 14 years. The TDOC incarcerated population grew from 9,454 in FY 1990-1991 to 19,408 in FY 2003-2004, an increase of 105.3%. TDOC backup, although fluctuating over the last fourteen years, was 15.6% higher in FY 2003-2004 than in FY 1990-1991, increasing from 1,826 to 2,110 by June 2004. Locally sentenced felons have increased 61.3% from 2,695 at the end of FY 1990-1991 to 4,347 at the end of FY 2003-2004.

Figure 2. Annual fiscal year-end incarcerated felon population, FY 1991 - 2004

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December 2002 Projection Model

The 2002 model performed remarkably well through FY 2003-2004. Few modifications were needed to ensure the continued accuracy of the Tennessee population projection model. The average error rate for the December 2002 model (from July 2002 through November 2004) was 0.7%. Overall, the model performed well, showing a 0.5 – 0.0% difference between projected felon population and actual felon population for twenty (20) of the twenty-nine (29) months that were monitored using the December 2002 model. Although the overall average was within the +/- 2.0% margin of error for an accurate model, you can see from Figure 3 below, that the margin of error exceeds the accuracy goal of +/-2.0% in August 2002. However, the model then returned to a much lower margin of 0.3% and 0.7 % in September and October 2002 respectively. The dotted line in the figure (values reflected on the right hand axis) shows the margin of error between the actual and projected population for the December 2002 projection model.

Figure 3. Accuracy assessment of the 2002 population projection model
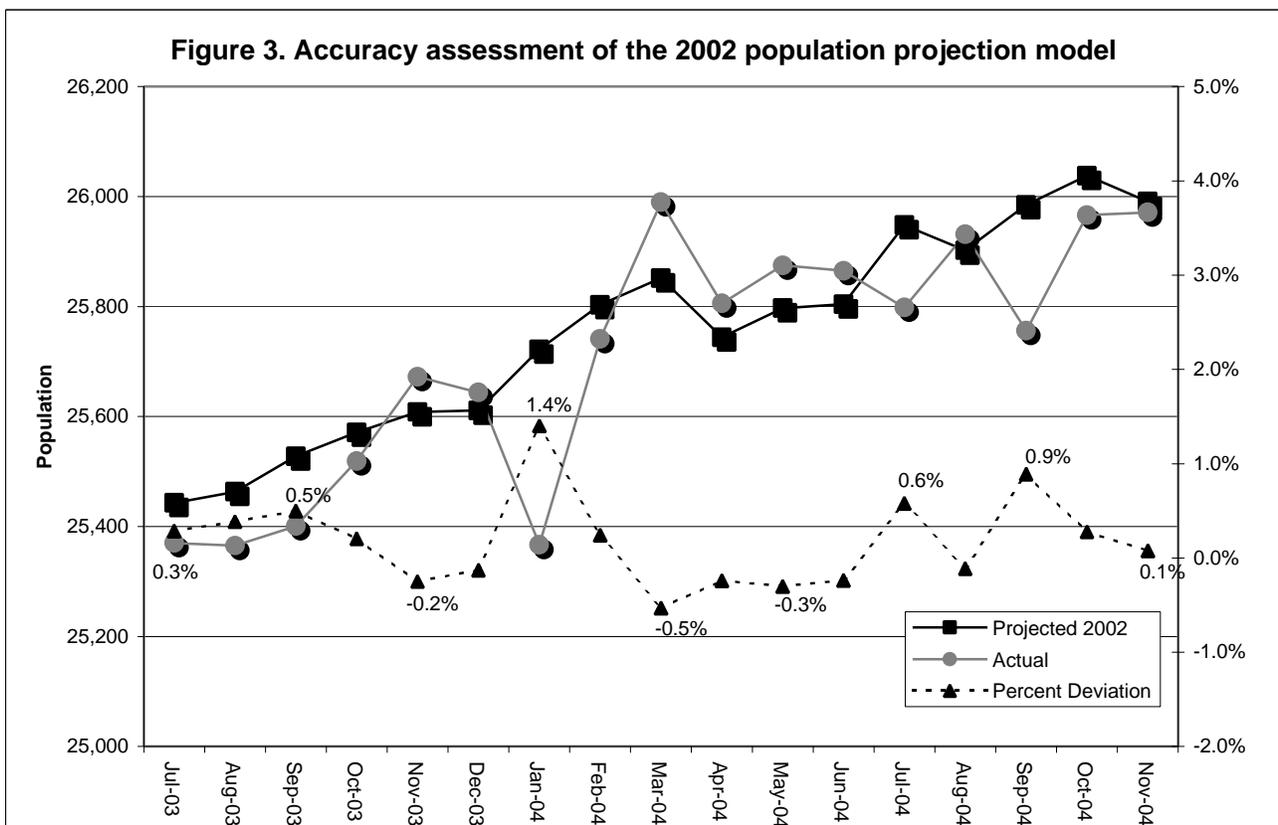
The January 2005 Projection Model

In contrast to the December 2002 model, Figure 4 presents an accuracy assessment of the new January 2005 felon population projection model when "backcast" against the prior year's population trends. The "backcast" uses the current model to retrospectively project data from the last fiscal year. These projections are compared to the actual population figures during this same time period. This process acts as an accuracy check on the current model. The overall fit of the current model to the prior year data provides an average margin of error of 0.3%.

Figure 4. Backcast accuracy assessment of the 2005 projection model
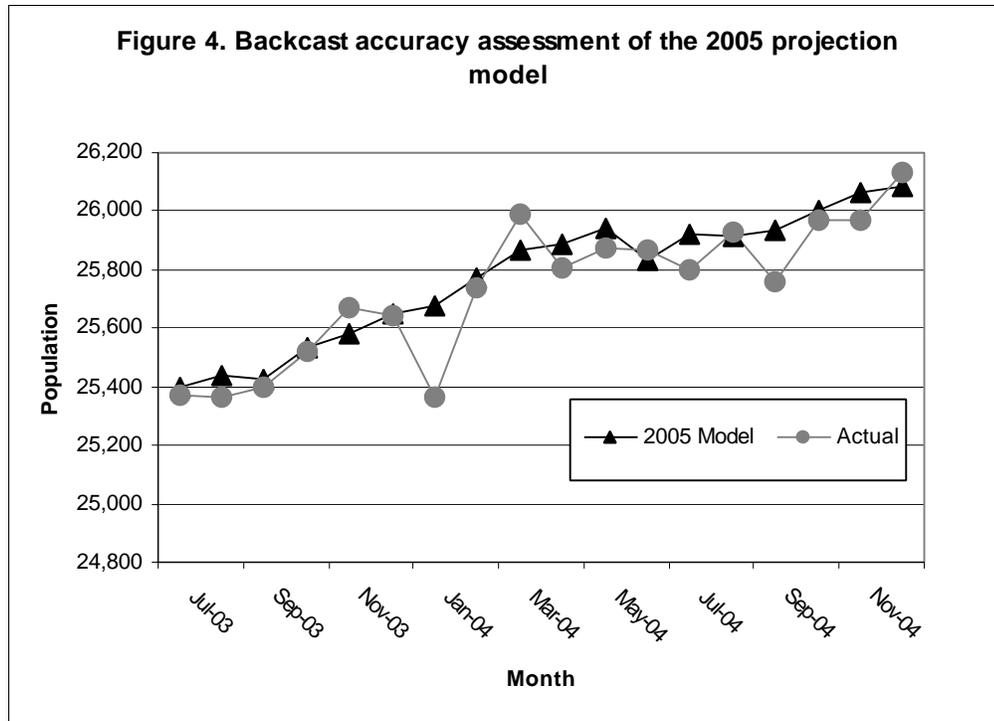
As was mentioned in the discussion of model assumptions, the female felon inmate population is growing at a higher rate than projected in the last model. Modifications were made in the 2005 projection model to reflect the continued growth in the female felon population and this can be seen in the backcast (see Figure 5). Similar to the backcast of the total population model, the overall fit of the January 2005 model to the prior fiscal year data has an average margin of error of 0.3%.

Figure 5. Backcast accuracy assessment of the 2005 projection model - FEMALE felons
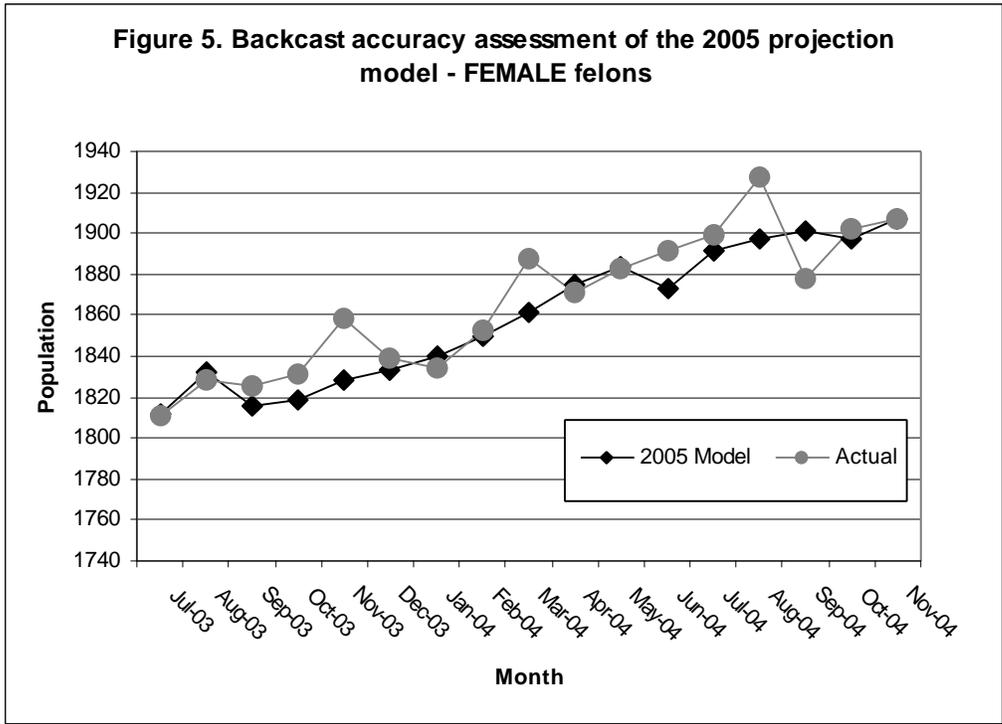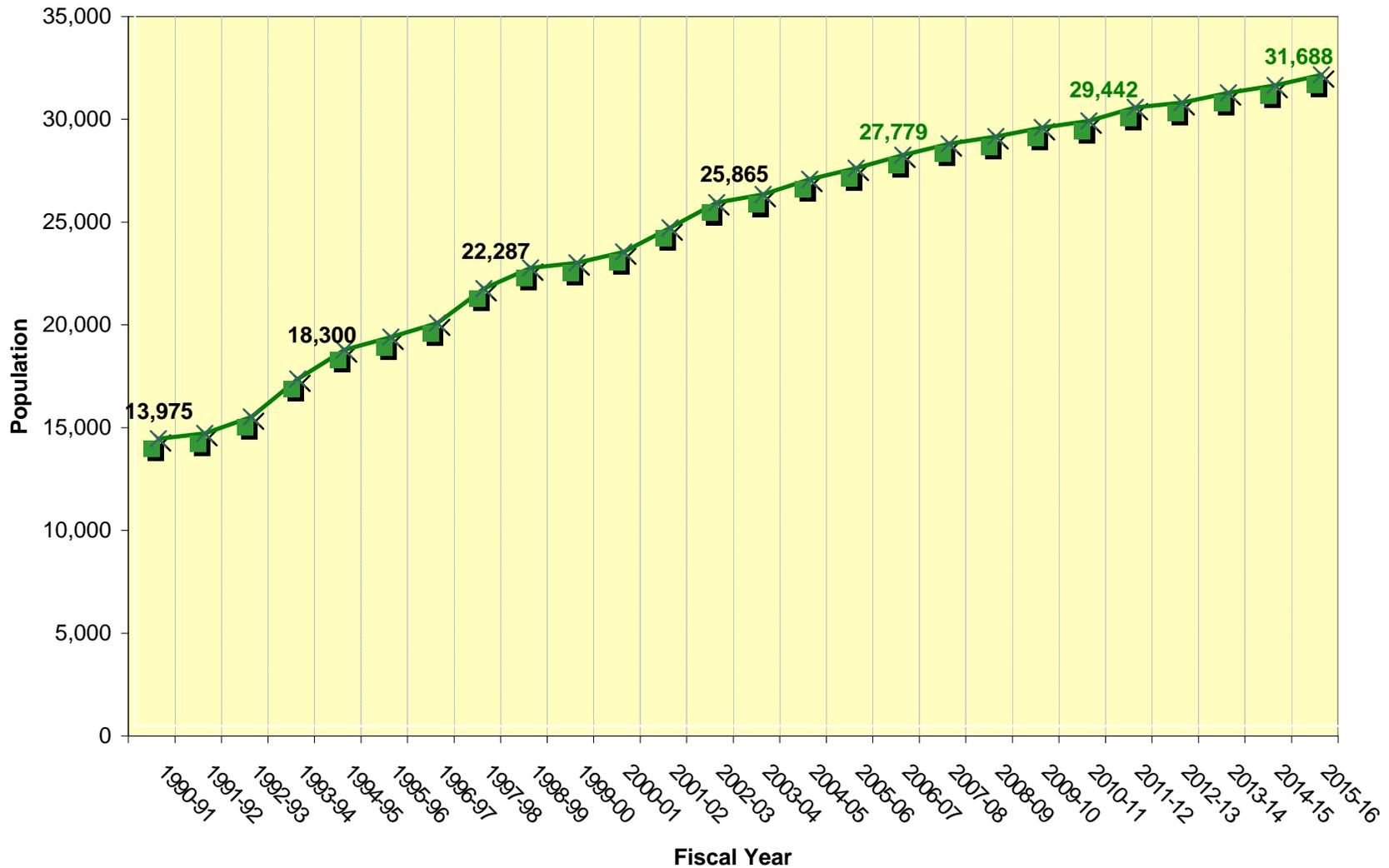
Population Trends

Table 7 and the corresponding graphic representation, Figure 6, detail the historical and the 12-year projected growth in the Tennessee felon population using the new January 2005 projection model. The overall growth rate for the entire incarcerated population from June 2005 through June 2016 is projected to be 19.2% increasing from 26,593 in FY 04-05 to 31,688 in FY 15-16. The <u>average annual percent change of 1.7% over the projection period</u> is substantially lower than the 4.9% annual percent change seen over the past 14 years.

Tennessee, like many other states across the nation, is clearly showing a lower growth rate than in past years. However, the reader is cautioned to note that while there is a projected decrease in felon population growth, this population <u>is still expected to grow or increase by 5,095 persons over the next 12 years.</u>

Table 7. Historical and Projected Population Trends, FY 1991-2016

Fiscal Year	Population and % change at fiscal year-end					
	Total Population	% Change	Male Population	% Change	Female Population	% Change
1990-91	13,975		13,359		616	
1991-92	14,234	1.9%	13,565	1.5%	669	8.6%
1992-93	15,038	5.6%	14,240	5.0%	798	19.3%
1993-94	16,884	12.3%	16,187	13.7%	697	-12.7%
1994-95	18,300	8.4%	17,460	7.9%	840	20.5%
1995-96	18,922	3.4%	18,107	3.7%	815	-3.0%
1996-97	19,606	3.6%	18,506	2.2%	1,100	35.0%
1997-98	21,286	8.6%	20,050	8.3%	1,236	12.4%
1998-99	22,287	4.7%	20,978	4.6%	1,309	5.9%
1999-00	22,539	1.1%	21,042	0.3%	1,497	14.4%
2000-01	23,062	2.3%	21,591	2.6%	1,471	-1.7%
2001-02	24,235	5.1%	22,637	4.8%	1,598	8.6%
2002-03	25,469	5.1%	23,673	4.6%	1,796	12.4%
2003-04	25,865	1.6%	23,973	1.3%	1,892	5.3%
Numeric change FY 1991 -2004	11,890		10,614		1,276	
% change FY 1991 - 2004		85.1%		79.5%		207.1%
MEAN annual % change		4.9%		4.7%		9.6%
2004-05	26,593	2.8%	24,661	2.9%	1,932	2.1%
2005-06	27,135	2.0%	25,175	2.1%	1,960	1.4%
2006-07	27,779	2.4%	25,779	2.4%	2,000	2.0%
2007-08	28,323	2.0%	26,291	2.0%	2,032	1.6%
2008-09	28,680	1.3%	26,592	1.1%	2,088	2.8%
2009-10	29,118	1.5%	26,981	1.5%	2,137	2.3%
2010-11	29,442	1.1%	27,293	1.2%	2,149	0.6%
2011-12	30,090	2.2%	27,889	2.2%	2,201	2.4%
2012-13	30,331	0.8%	28,101	0.8%	2,230	1.3%
2013-14	30,800	1.5%	28,532	1.5%	2,268	1.7%
2014-15	31,169	1.2%	28,898	1.3%	2,271	0.1%
2015-16	31,688	1.7%	29,326	1.5%	2,362	4.0%
Numeric change FY 2005 - 2016	5,095		4,665		430	
% change FY 2005 - 2016		19.2%		18.9%		22.3%
MEAN annual % change		1.7%		1.7%		1.9%

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Figure 6. Total Felon Population (Historical and Projected), 1991 - 2016

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Male Felons
According to the 2005 projection model, the male felon population is expected to increase 18.9% from 24,661 in FY 04-05 to 29,326 in FY 15-16. The average annual projected change of 1.7% is considerably lower than the male felon growth rate in the past decade.

Female Felons
This projection model forecasts a higher overall growth rate for female inmates as compared to the former forecasting model. The 2002 model projected a female felon population of 2,046 in 2012. The current model projects a population of 2,201 in 2012, a 7.6% increase from the previous model's projection.   During the next 12 years, this population is expected to increase by 22.3% from 1,932 in FY 04-05 to 2,362 in FY 15-16. As we have seen in previous forecasting models, <u>the female felon population is projected to grow at a slightly higher rate than the male population</u>, with a projected average annual change of 1.9%. This projected annual percent change is significantly smaller than the average annual percent change between FY 1990-91 and 2003-04.

The female population has historically shown a considerably greater growth rate than the male population (see Table 7). The number of incarcerated female felons in Tennessee has increased 207.1% over the 13-year period since FY 1990-91, with an average annual growth that is more than double that of male felons (9.6% vs. 4.7%, respectively). According to the January 2005 projection model however, this disparity in growth rates between the genders appears to be greatly reduced.

December 2002 vs. January 2005

Figure 7 presents a comparison of the fiscal year-end average of the total incarcerated population presented in the December 2002 projection model and the new January 2005 population projection model. The dotted line graphically represents the difference between the models.

The models have very similar trajectories as they share most of the same assumptions about population growth. Both models project a continued increase in inmate population for males and females through 2012, however, the 2005 model projects a higher overall growth than did the 2002 model (for a more detailed comparison please refer to table 8).

**Figure 7. Comparison of Projection Models, Total Population (using June 30th projected population)**
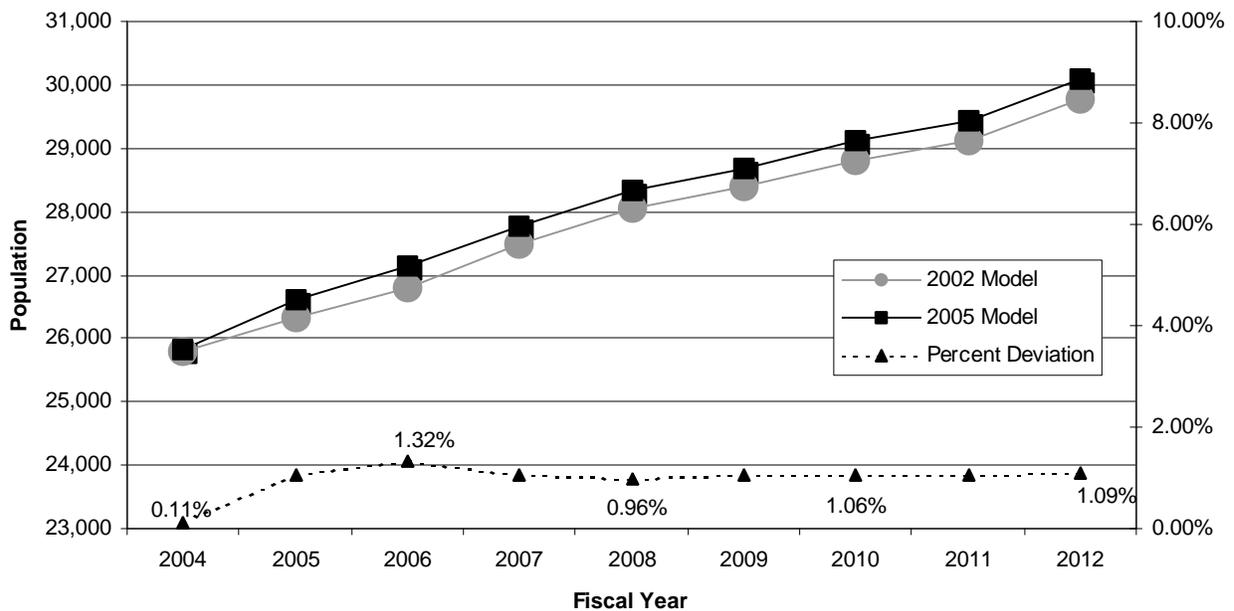
Table 8. Population Projection 2002 and 2005 Model using Fiscal Year-end Totals

	Males				Females			
Fiscal Yr	2002	2005	Difference	% diff	2002	2005	Difference	% diff
2004	24,017	23,960	-57	-0.24%	1,787	1,873	86	4.81%
2005	24,508	24,661	153	0.62%	1,803	1,932	129	7.15%
2006	24,982	25,175	193	0.77%	1,800	1,960	160	8.89%
2007	25,679	25,779	100	0.39%	1,811	2,000	189	10.44%
2008	26,167	26,291	124	0.47%	1,886	2,032	146	7.74%
2009	26,460	26,592	132	0.50%	1,924	2,088	164	8.52%
2010	26,806	26,981	175	0.65%	2,006	2,137	131	6.53%
2011	27,111	27,293	182	0.67%	2,022	2,149	127	6.28%
2012	27,721	27,889	168	0.61%	2,046	2,201	155	7.58%

Total				
Fiscal Yr	2002	2005	Difference	% diff
2004	25,804	25,833	29	0.11%
2005	26,311	26,593	282	1.07%
2006	26,782	27,135	353	1.32%
2007	27,490	27,779	289	1.05%
2008	28,053	28,323	270	0.96%
2009	28,384	28,680	296	1.04%
2010	28,812	29,118	306	1.06%
2011	29,133	29,442	309	1.06%
2012	29,767	30,090	323	1.09%

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Table 8 shows that for the male population, the new projection population totals are consistently higher in the 2004 model, with the exception of 2004, in which the new model backcasted a lower population to match actual population growth trends. The 2005 model averages a difference, or increase of 130 felons when compared to the 2002 model.

New projection estimates for the female felon population are consistently higher in than what was projected in the 2002 model (please see Figure 8). The 2005 model averages a difference, or increase, of 143 female felons as compared to the 2002 model.

Figure 8. Comparison of Projection Models, FEMALES (using June 30th projected population)
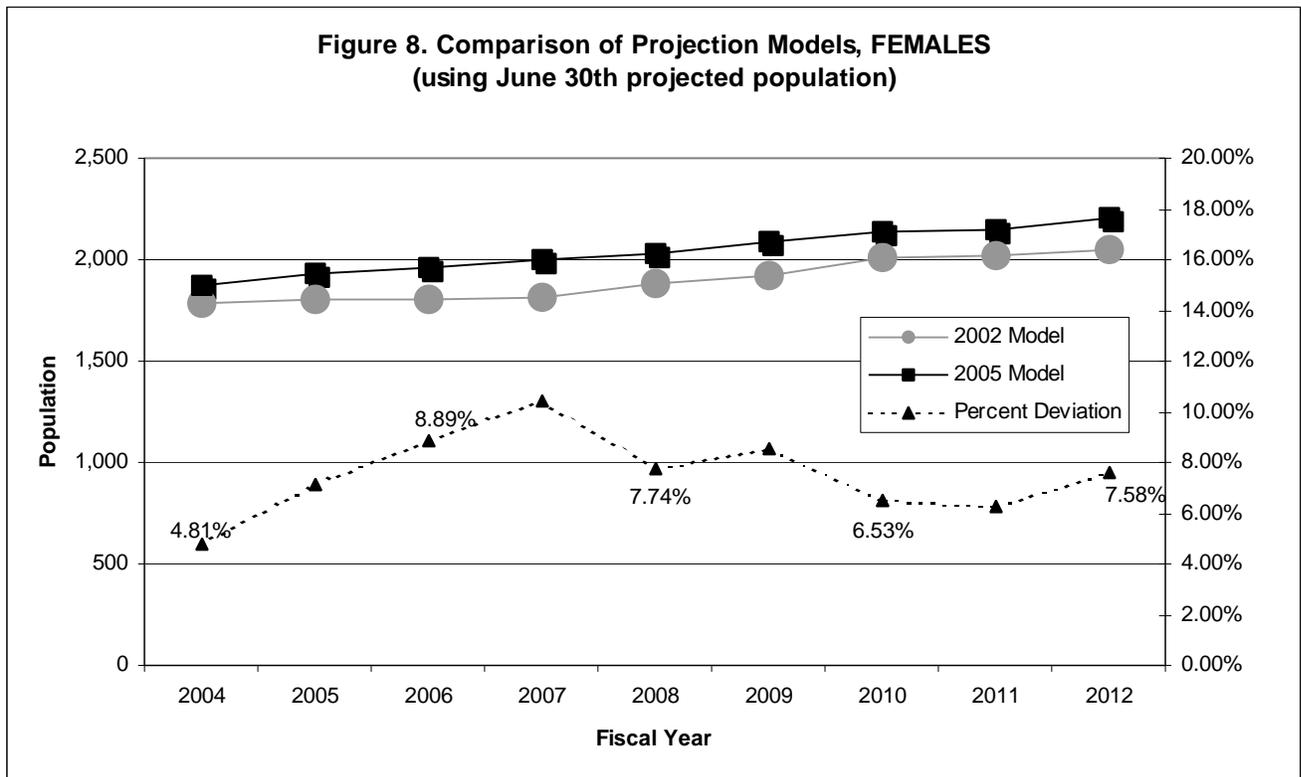
CAPACITY

The following assumptions must also be kept in mind when considering capacity and bed demand:

1. TDOC felons backed up in local jails with valid judgment orders and meeting the 14-day requirement are accounted for in capacity needs.
2. A capacity of 4,000 beds in jails throughout Tennessee for locally sentenced felons has also been added to the department's anticipated capacity.
3. All planned and *funded* TDOC building projects in the next 10 years are included in capacity assumptions unless stated otherwise.

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Based on these assumptions (see Table 9), the data show that the <u>unmet demand (or more persons than available beds) will reach 2,440 by June 2006</u> (2,158 males and 282 females). <u>*Even if* 2,108 operational beds in the Morgan and Bledsoe county expansions are added as planned, unmet demand will still be significant, at 1,877</u> (1,467 males and 410 females) by the end of FY 2009.

<u>By June 2012, this unmet demand figure will increase to 3,287 (2,764 male and 523 female) even if the Morgan and Bledsoe expansions are completed as planned. This figure increases to 4,885 (4,201 males and 684 females) by June 2016.</u>

Figures 9-11 graphically represent the relationship among felon population, the Department of Correction's operating capacity (including estimated local jail capacity) with funded expansions (see Table 4) for the next decade (through June 2016). The unmet demand, or the difference between the projected population and the department's operational capacity, is graphically represented at the bottom of the charts.

Due to population growth expectations, the Department of Correction in cooperation with the Board of Probation and Parole is tasked with planning for the housing, programming, medical and psychological treatment, and community reentry of an increasing number of felon inmates. Given the population figures and the projected potential unmet bed demand, TDOC is, once again, challenged with a significant disparity. The department is committed to exploring innovative, best-practice options that have resulted in positive outcomes in other states to supplement and even replace additional prison bed construction.

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Figure 9. TOTAL projected incarcerated felon population, capacity assumptions and unmet bed demand, June 2004 to June 2016
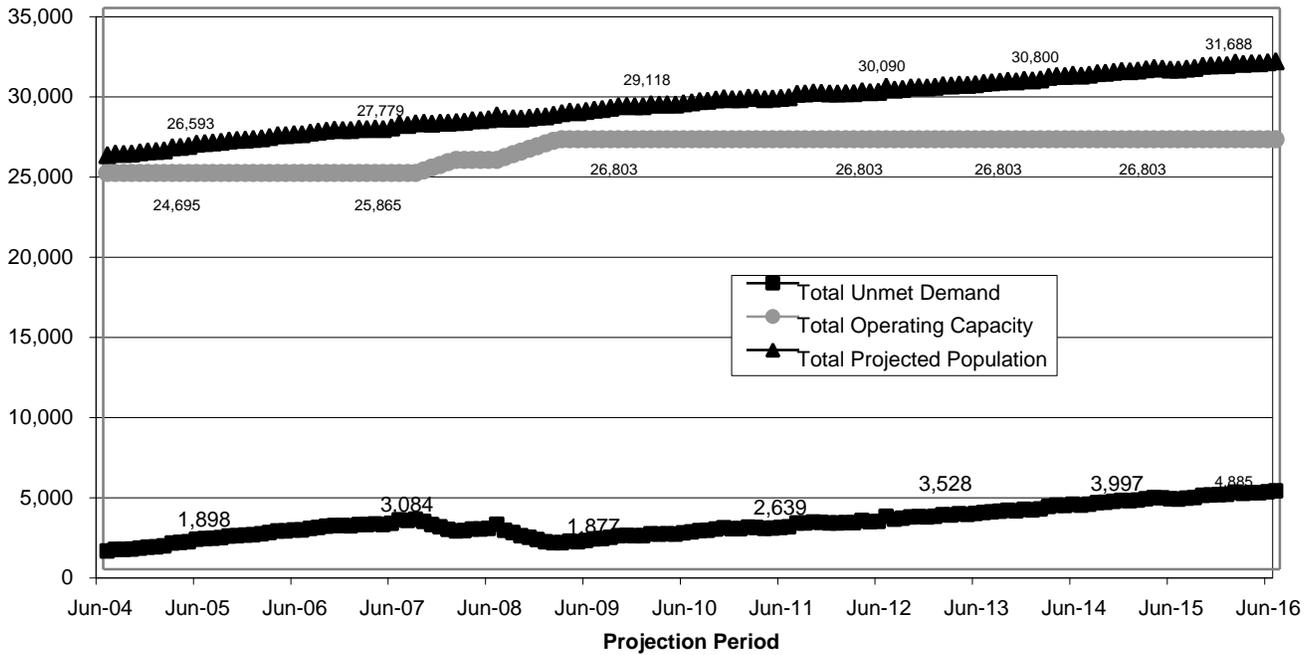
Figure 10. Projected incarcerated MALE population, capacity assumptions and unmet bed demand, June 2004 - June 2016

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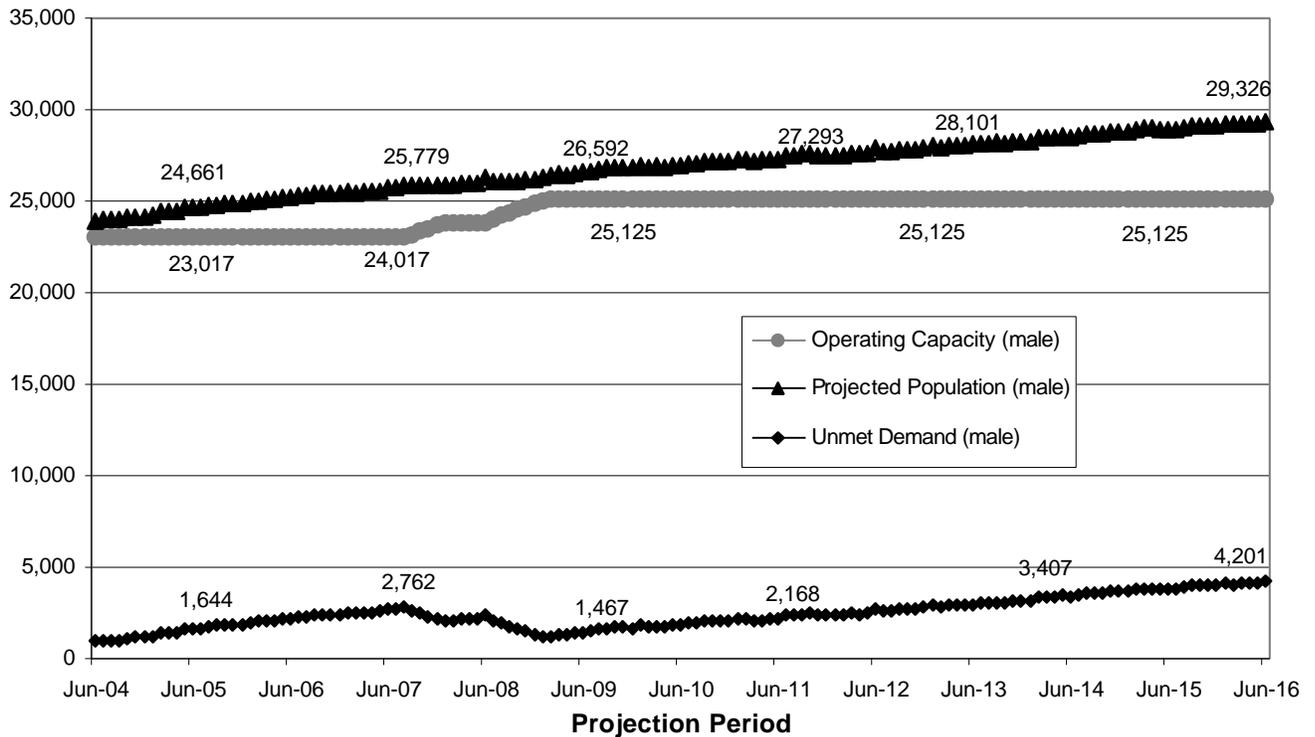
Figure 11. Projected incarcerated FEMALE population, capacity assumptions and unmet bed demand, June 2004 - June 2016

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Tennessee Department of Correction
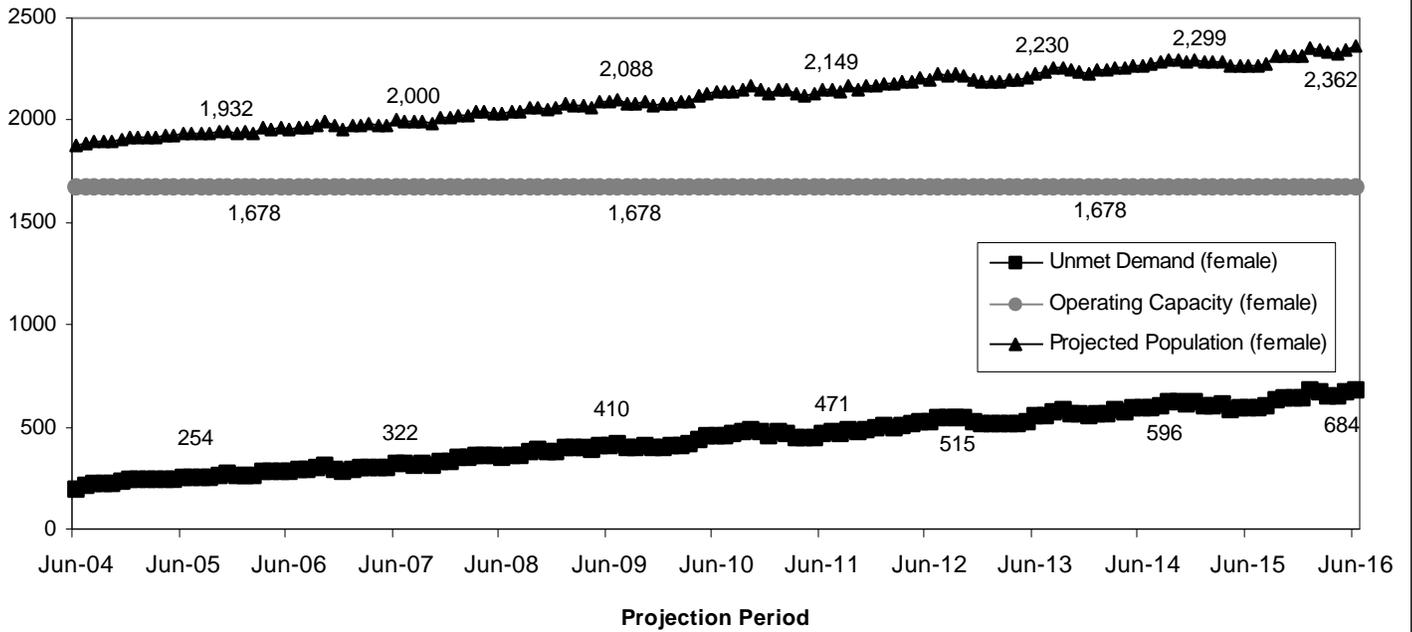
Table 9. Unmet Demand and Projected Incarcerated Felon Population, Total – Male & Female, 2002-2016

Date	Funded Projects	# MALE beds added*	# FEMALE beds added*	TOTAL beds added*	Male Projections	Female Projections	Total Projections	Male OpCap**	Female OpCap**	Total OpCap**	Unmet Male	Unmet Female	Unmet Total
Jun-04					23,960	1,873	25,833	23,017	1,678	24,695	943	195	1,138
Jun-05					24,661	1,932	26,593	23,017	1,678	24,695	1,671	254	1,925
Jun-06					25,175	1,960	27,135	23,017	1,678	24,695	2,258	282	2,540
Jun-07					25,779	2,000	27,779	23,017	1,678	24,695	2,710	322	3,032
Jun-08	Morgan Expansion	830		830	26,291	2,032	28,323	23,847	1,678	25,524	2,067	354	2,421
Jun-09	Bledsoe Expansion	1279		1279	26,592	2,088	28,680	25,125	1,678	26,803	1,467	410	1,877
Jun-10					26,981	2,137	29,118	25,125	1,678	26,803	1,856	459	2,315
Jun-11					27,293	2,149	29,442	25,125	1,678	26,803	2,168	471	2,639
Jun-12					27,889	2,201	30,090	25,125	1,678	26,803	2,764	523	3,287
Jun-13					28,101	2,230	30,331	25,125	1,678	26,803	2,976	552	3,528
Jun-14					28,532	2,268	30,800	25,125	1,678	26,803	3,407	590	3,997
Jun-15					28,898	2,271	31,169	25,125	1,678	26,803	3,773	593	4,366
Jun-16					29,326	2,362	31,688	25,125	1,678	26,803	4,201	684	4,885
TOTAL		2,109	0	2,109									

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AGE PROJECTIONS

Due to the general character of the criminal lifestyle and the behaviors associated with such a high-risk life-course, the life spans of felon inmates are significantly lower than the general population. As a result of the truncated life of felon inmates, inmates aged fifty (50) years and over are considered to be elderly in corrections and prison literature.
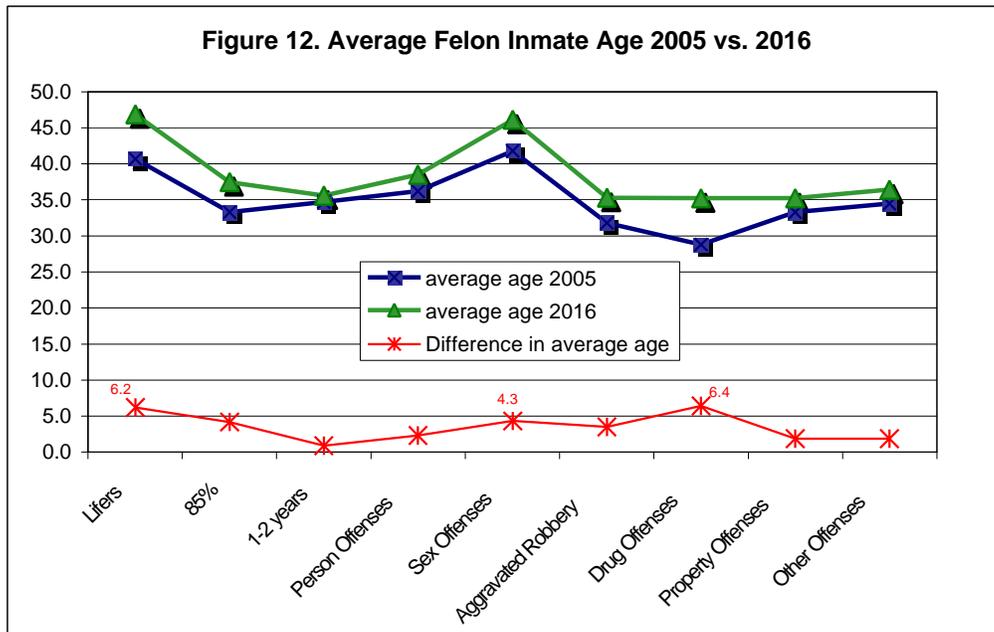
Figure 12. Average Felon Inmate Age 2005 vs. 2016

The two offense groups with the largest average forecasted age increases over the next twelve (12) years are lifers with a projected increase of 6.2 years and drug offenders with a projected increase of 6.4 years (see Figure 12). In 2005, sex offenders appear to have the highest average age but in 2016, this offense group falls second in average age to lifers (46.1 years and 46.9 years respectively). Turning to gender differences, male inmates show a higher average age increase over the projected period (from 33.4 year to 37.5 years) than female inmates (from 35.4 years to 37.3 years).

In terms of the actual increase in the number of persons 50 or older, it is anticipated that TDOC will have approximately 447 *additional* elderly offenders by 2016. The majority of these older offenders will me male (427 additional males over 50 years of age and only 20 additional females over 50 years of age). While the inmate population 50 years and over is not increasing at an alarming rate (Table 10), any anticipated growth in this population, whether the increase is sharp or moderate, requires appropriate planning as the needs of this inmate population are numerous and the resources required to meet these needs (additional medical staff, pharmaceuticals, medical equipment and treatment, etc.) can be tremendously expensive.

Table 10. Number of Forecasted Offenders Aged 50+

Offense Group	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
MALE	2,434	2,480	2,528	2,589	2,632	2,684	2,723	2,759	2,790	2,826	2,851	2,879	2,907
FEMALE	157	160	162	164	167	168	169	170	172	173	175	178	180
Total	2,591	2,640	2,690	2,753	2,799	2,852	2,892	2,929	2,962	2,999	3,026	3,057	3,087

[1]TDOC expansion plans include the addition of 2,109 operational beds (830 beds at the Morgan County expansion Correctional Facility to be completed in late 2007; 1,279 beds in the Bledsoe County expansion to be completed in early 2008).

[2] The Mid-Year assessments that occur in July are dependent upon an average margin of error of the projections of $\pm$2% from the actual population figures. If the average deviation over the period is greater than $\pm$2%, the projection assumptions are reviewed and the models are recast.

[3] The National Council on Crime and Delinquency (NCCD) prepared inmate population forecasts for the Tennessee Department of Correction (TDOC) from 1986 through 2000. Between the spring of 2000and 2004, the Institute on Crime, Justice and Corrections (ICJC) at George Washington University held the contract to conduct the forecasts. In 2004 the primary members of the ICJC created JFA Associates and this agency held the accepted bid for TDOC's felon population projection services contract.

[4] The Wizard 2000 Simulation model is a stochastic entity simulation model. The model simulates the movement of individual cases entering and exiting the Tennessee prison system. The Monte Carlo statistical technique is used to incorporate randomness into the projection model in the form of offender group composition and lengths of stay. The individual cases are simulated through the system based on probability matrices developed by the consultant(s) and TDOC's Policy, Planning, and Research Unit. Essentially, the model mimics the flow of offenders through the Tennessee Criminal Justice System (JFA Associates, Technical Proposal for Population Projection Services, 2004).

[5] The Assumptions Committee is made up of representatives from the Office of Criminal Justice Programs, Board of Probation and Parole, Governor's Office, Office of the Attorney General, Tennessee Bureau of Statistics, Administrative Office of the Courts, and relevant TDOC leadership.

[6]Systemwide refers to felons incarcerated in TDOC facilities, those sentenced to TDOC facilities and temporarily housed in local facilities, and those sentenced to and incarcerated in local facilities.

[7] New admissions (or new court commitments) are felons sentenced to incarceration based on a new conviction. New admissions may include felons who have expired their sentence or supervision conditions (i.e., they are not under community supervision, e.g., parole).

[8] Violators returned are felons who have been under community supervision but have been re-incarcerated because of new offenses or technical violations of the terms of their supervision.

[9]TDOC Operating Capacity is based on the number of total beds available and the designated use of certain beds. The operating capacity indicates the population that should be assigned to the institution on a regular basis. The underlying logic is to exclude from capacity beds for special purposes, e.g., medical or mental health reasons, disciplinary segregation, or protective custody. The Department's operating capacity is currently set at 98% of total beds available.

[10] The TBI and the FBI have worked together to categorize Tennessee's legal code according to the NIBRS system of offense classification. Further detail can be obtained through either the TDOC or TBI web-sites.

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Appendix

Table A. Projection tables for the incarcerated felon population, July 2004 - June 2016

Total Population (Including Bootcamp)

Fiscal Year	July	August	September	October	November	December	January	February	March	April	May	June
2004	25,398	25,436	25,428	25,537	25,579	25,648	25,676	25,774	25,864	25,884	25,942	25,833
2005	25,924	25,915	25,937	26,006	26,067	26,086	26,136	26,320	26,358	26,405	26,556	26,593
2006	26,619	26,666	26,750	26,785	26,811	26,839	26,892	26,971	27,082	27,075	27,141	27,135
2007	27,240	27,298	27,364	27,420	27,406	27,395	27,480	27,464	27,507	27,468	27,555	27,779
2008	27,722	27,813	27,848	27,807	27,853	27,857	27,897	27,921	28,016	28,020	28,067	28,323
2009	28,124	28,144	28,119	28,183	28,227	28,252	28,358	28,445	28,544	28,505	28,588	28,680
2010	28,712	28,790	28,887	28,902	28,890	28,880	29,007	28,988	29,004	28,982	29,071	29,118
2011	29,202	29,232	29,299	29,378	29,320	29,321	29,416	29,412	29,335	29,361	29,407	29,442
2012	29,670	29,689	29,735	29,726	29,687	29,689	29,709	29,694	29,830	29,755	29,782	30,090
2013	29,925	29,968	30,051	30,071	30,054	30,096	30,197	30,171	30,248	30,212	30,267	30,331
2014	30,381	30,415	30,479	30,442	30,541	30,501	30,553	30,715	30,783	30,776	30,850	30,800
2015	30,854	30,946	30,966	31,038	31,086	31,067	31,114	31,196	31,271	31,239	31,178	31,169
2016	31,235	31,276	31,413	31,434	31,454	31,457	31,606	31,534	31,569	31,573	31,619	31,688

Total MALE Felon Population

Fiscal Year	July	August	September	October	November	December	January	February	March	April	May	June
2004	23,586	23,604	23,612	23,718	23,751	23,815	23,836	23,924	24,003	24,009	24,058	23,960
2005	24,033	24,018	24,036	24,109	24,160	24,168	24,220	24,404	24,440	24,483	24,632	24,661
2006	24,688	24,732	24,815	24,841	24,861	24,899	24,950	25,033	25,120	25,116	25,178	25,175
2007	25,275	25,333	25,388	25,430	25,435	25,440	25,507	25,485	25,527	25,491	25,577	25,779
2008	25,727	25,820	25,850	25,818	25,841	25,845	25,872	25,894	25,976	25,981	26,030	26,291
2009	26,084	26,105	26,060	26,121	26,172	26,192	26,278	26,373	26,470	26,441	26,500	26,592
2010	26,614	26,711	26,807	26,813	26,814	26,800	26,924	26,899	26,911	26,864	26,940	26,981
2011	27,064	27,091	27,146	27,210	27,169	27,189	27,266	27,263	27,208	27,236	27,279	27,293
2012	27,517	27,548	27,568	27,574	27,520	27,516	27,530	27,516	27,645	27,562	27,578	27,889
2013	27,700	27,747	27,825	27,851	27,854	27,903	28,008	27,981	28,051	28,017	28,063	28,101
2014	28,148	28,163	28,220	28,198	28,299	28,269	28,310	28,470	28,526	28,523	28,583	28,532
2015	28,580	28,662	28,667	28,741	28,796	28,770	28,831	28,914	28,984	28,976	28,909	28,898
2016	28,967	28,998	29,101	29,118	29,134	29,139	29,251	29,188	29,237	29,246	29,275	29,326

Total FEMALE Felon Population

| Fiscal Year | July | August | September | October | November | December | January | February | March | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 | 1,812 | 1,832 | 1,816 | 1,819 | 1,828 | 1,833 | 1,840 | 1,850 | 1,861 | 1,875 | 1,884 | 1,873 |
| 2005 | 1,891 | 1,897 | 1,901 | 1,897 | 1,907 | 1,918 | 1,916 | 1,916 | 1,918 | 1,922 | 1,924 | 1,932 |
| 2006 | 1,931 | 1,934 | 1,935 | 1,944 | 1,950 | 1,940 | 1,942 | 1,938 | 1,962 | 1,959 | 1,963 | 1,960 |
| 2007 | 1,965 | 1,965 | 1,976 | 1,990 | 1,971 | 1,955 | 1,973 | 1,979 | 1,980 | 1,977 | 1,978 | 2,000 |
| 2008 | 1,995 | 1,993 | 1,998 | 1,989 | 2,012 | 2,012 | 2,025 | 2,027 | 2,040 | 2,039 | 2,037 | 2,032 |
| 2009 | 2,040 | 2,039 | 2,059 | 2,062 | 2,055 | 2,060 | 2,080 | 2,072 | 2,074 | 2,064 | 2,088 | 2,088 |
| 2010 | 2,098 | 2,079 | 2,080 | 2,089 | 2,076 | 2,080 | 2,083 | 2,089 | 2,093 | 2,118 | 2,131 | 2,137 |
| 2011 | 2,138 | 2,141 | 2,153 | 2,168 | 2,151 | 2,132 | 2,150 | 2,149 | 2,127 | 2,125 | 2,128 | 2,149 |
| 2012 | 2,153 | 2,141 | 2,167 | 2,152 | 2,167 | 2,173 | 2,179 | 2,178 | 2,185 | 2,193 | 2,204 | 2,201 |
| 2013 | 2,225 | 2,221 | 2,226 | 2,220 | 2,200 | 2,193 | 2,189 | 2,190 | 2,197 | 2,195 | 2,204 | 2,230 |
| 2014 | 2,233 | 2,252 | 2,259 | 2,244 | 2,242 | 2,232 | 2,243 | 2,245 | 2,257 | 2,253 | 2,267 | 2,268 |
| 2015 | 2,274 | 2,284 | 2,299 | 2,297 | 2,290 | 2,297 | 2,283 | 2,282 | 2,287 | 2,263 | 2,269 | 2,271 |
| 2016 | 2,268 | 2,278 | 2,312 | 2,316 | 2,320 | 2,318 | 2,355 | 2,346 | 2,332 | 2,327 | 2,344 | 2,362 |

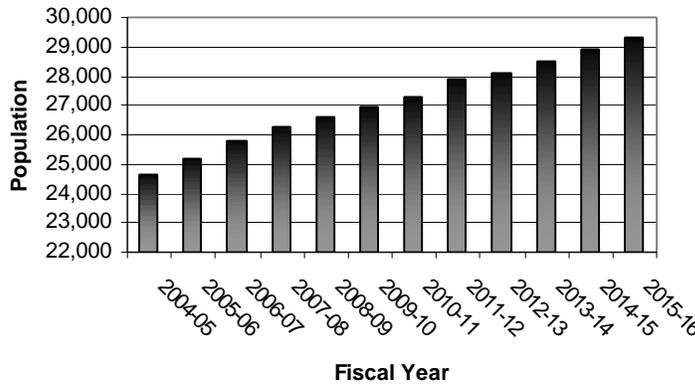# Figure A. Total incarcerated felon population at fiscal year-end, 1991 - 2004
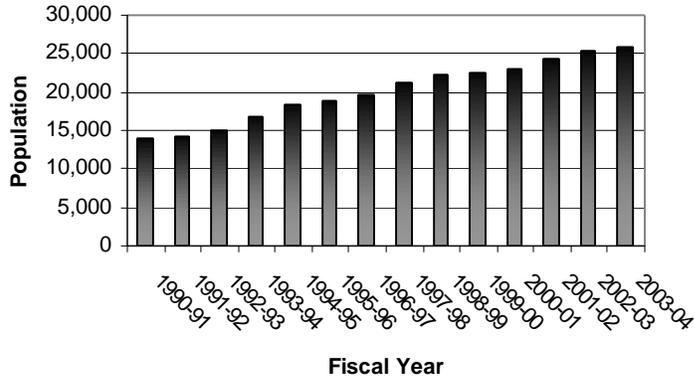
Figure B. Projections for incarcerated felon population at fiscal year-end, 2005 - 2016
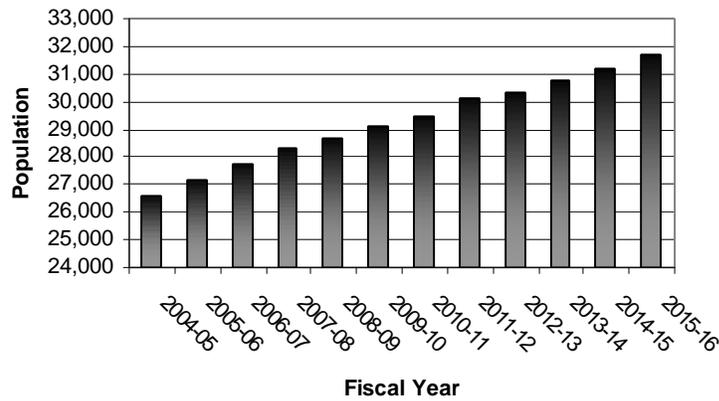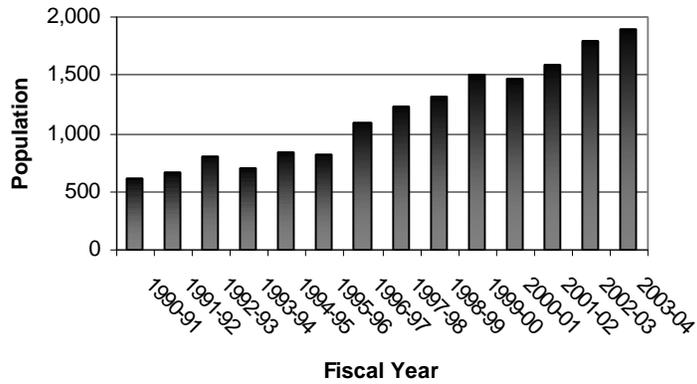
Figure C. Incarcerated MALE felon population at fiscal year-end, 1991 - 2004
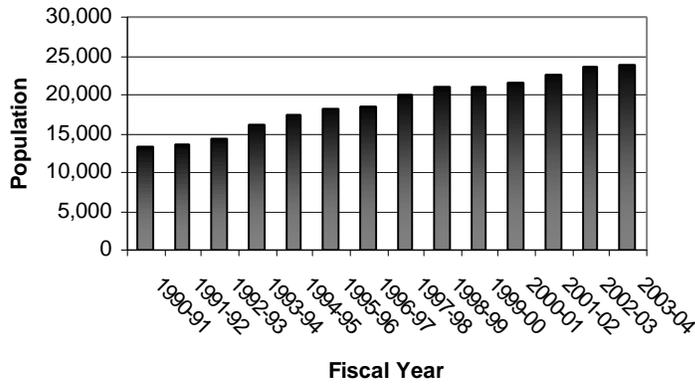
Figure D. Projections for incarcerated MALE felon population at fiscal year-end, 2005 - 2016

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Figure E. Incarcerated FEMALE felon population at fiscal year-end, 1991 - 2004.

Figure F. <u>Projections</u> for incarcerated FEMALE felon population at fiscal year-end, 2005 - 2016