Oregon Youth Authority Demand Forecast

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Background

The Office of Economic Analysis produces the semi-annual Juvenile Corrections Population Forecast which provides projections for close custody bed space managed by the Oregon Youth Authority (OYA). Executive Orders 98-06, 04-02, and 08-15 direct the Department of Administrative Services and the Juvenile Corrections Population Forecasting Advisory Committee to produce the forecast. The forecast is mandated to estimate monthly populations over a ten year period and is due April 15 and October 15 of each year. OYA uses the forecast for planning and budgeting.

The forecast is for close custody beds (incarcerated youths). The close custody population is composed of three groups: the Public Safety Reserve (PSR), Department of Corrections (DOC) offenders who are supervised by OYA, and the discretionary close custody (DCC) population. The PSR and DOC offenders represent the portion of OYA's close custody population for which incarceration is mandatory. The remaining bed space is for DCC and is occupied by youths judged to need close custody incarceration above others, but it is not mandatory incarceration.

Each of the three population groups is forecasted separately. The DOC and PSR forecasts provide direct estimates of the number of beds that will be needed to house those populations. The DCC population forecast is an estimate of the demand for beds regardless of whether the demand is met.

The forecast advisory committee is comprised of individuals with knowledge of the juvenile justice system. It meets prior to each forecast to discuss issues and trends related to the system and how they could affect the forecast. The committee also defines the demand measure used for the discretionary population.

Juvenile Corrections Population Forecasting Advisory Committee

John Mark Eddy	Oregon Social Learning Center
Honorable Thomas Hart	Marion County Circuit Court
Donna Keddy	Department of Human Services
Torri Lynn	Linn County Juvenile Department
Jeff Milligan	Central/Eastern Oregon Juvenile Justice Consortium
Colette Peters	Oregon Youth Authority

Juvenile Crime Information

Information Sources

There are a number of sources for information concerning juvenile crime. Statistical details such as number of offenders and type of offense are primarily based on data from the Juvenile Justice Information System (JJIS). This captures information on referrals of youth to Oregon county juvenile departments and youths supervised by OYA. This provides the most complete and timely source of data for Oregon.

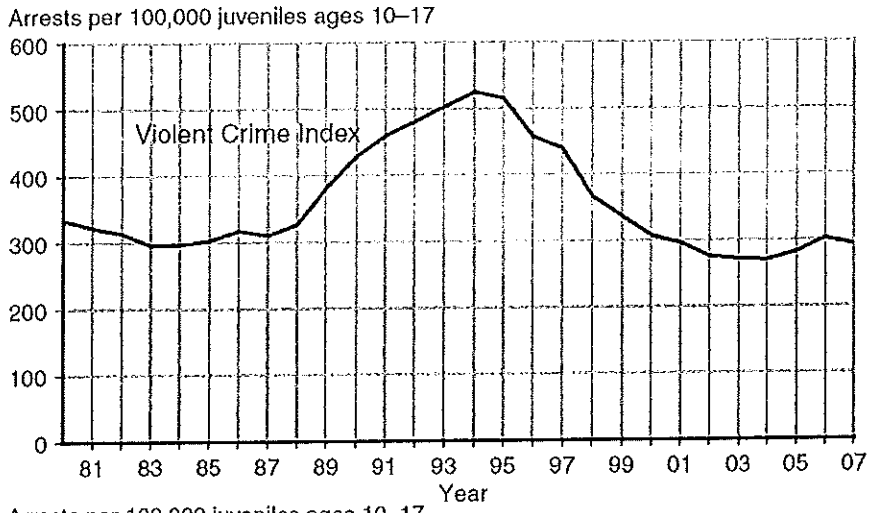
The advisory committee meets before each forecast and provides information related to factors driving trends, changes in judicial system processes, and identification of things which may impact the forecast but do not yet show up in statistical data.

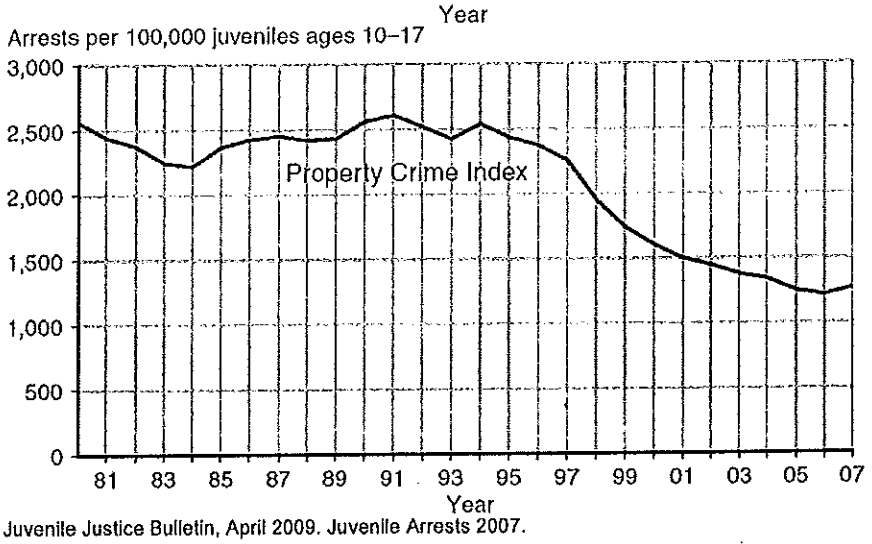
Additionally, national data and research in juvenile crime are surveyed prior to each forecast. Although national level research and statistics are based on data that is typically several years old, it is valuable in understanding trends seen in Oregon in comparison to national trends.

National Data and Trends

In general, national juvenile justice trends are reflected in Oregon specific data. National juvenile justice trends generally show an increase in juvenile crime through the 1980's to mid-1990's. This was followed by a steady decrease in most crime categories through 2002. From 2002 to 2006, crime was relatively stable. The Juvenile Offenders and Victims: 2006 National Report [1] provides an overview of national trends in juvenile criminality since the 1980's.

For information on general national trends in juvenile crime, a general survey of current research is performed in preparation of each forecast. Underlying much national criminal justice research and juvenile criminality is data from the Federal Bureau of Investigation's Uniform Crime Reporting (UCR) program and





Juvenile Justice Bulletin, April 2009. Juvenile Arrests 2007.

[1] http://www.ojjdp.ncjrs.gov/ojstatbb/nr2006/index.html.

U.S. Census Bureau's censuses and surveys of criminal justice agencies. Below is a listing of agencies which maintain references to data at the national level.

- Bureau of Justice Statistics
- Office of Juvenile Justice and Delinquency Prevention
- National Juvenile Court Data Archive
- National Criminal Justice Reference Service
- National Archive of Criminal Justice Data
- U.S. Census Bureau, Criminal Justice Statistics Branch

JJIS Referrals

Referrals to Oregon county juvenile departments are the primary source for measuring juvenile criminality for the forecast. Youths are referred by law enforcement or other entities such as schools, parents, or a community agency. In general, a referral is analogous to an arrest for a crime in the adult criminal justice system. Individual referral data going back through 1996 is used for the forecast. For each referral, a variety of characteristics are identified, including date of offense, age, gender, race, and offense information such as the statute violated, OYA's 19 point severity classification for the offense, and crime class such as "A Felony" or "B Misdemeanor".

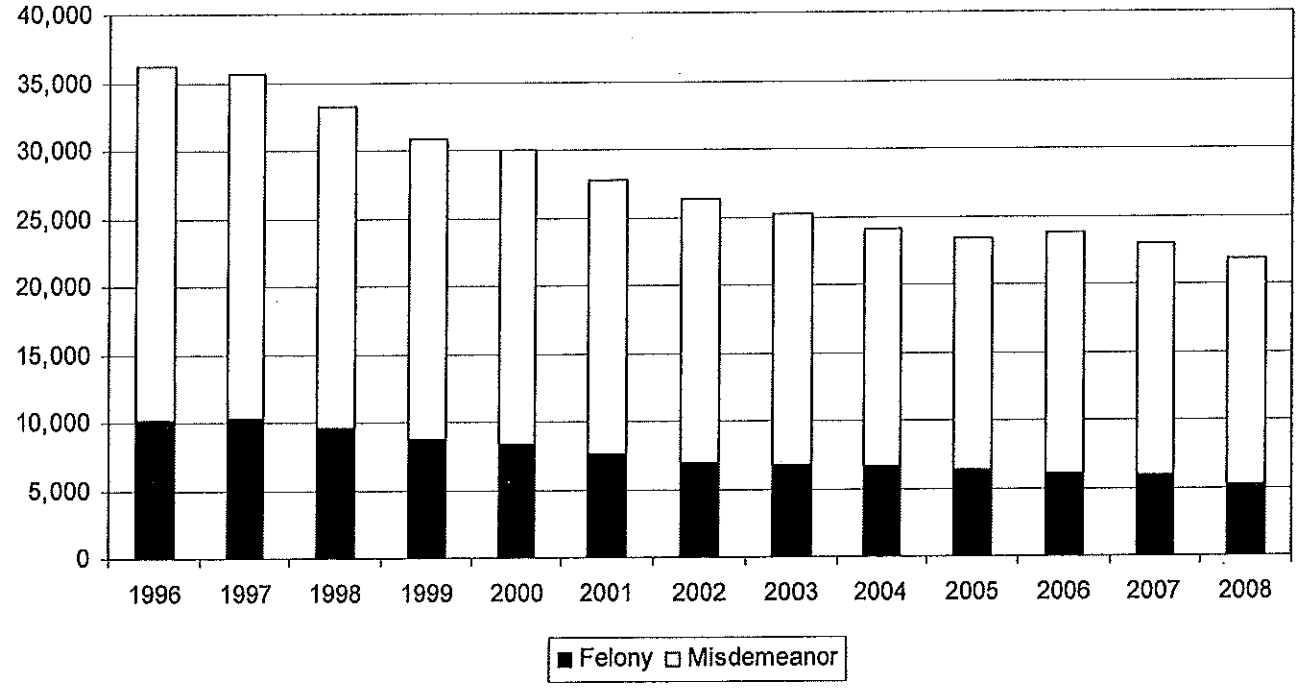
Crime Trends from JJIS Referral Data

The overall picture of juvenile crime is Oregon is one of significant decline – roughly 40 percent since the mid-1990's. The reduction was most rapid through 2003, then gradual from 2003 to 2009. The reduction in felony crime has been more significant than the reduction in misdemeanor crime, but the reduction is across the board. The number of referrals for class A and B felonies for 2005-2008 was about 40 percent less than observed from 1996-1999.

The general reduction in crime rates is not specific to Oregon or to the juvenile population. Declines in crime rates are observed nationwide. Although the reduction in juvenile crime is a national phenomenon and much research has been devoted to analyzing the reasons, there is no single widely accepted explanation. Various sources discuss theories related to race, gender, curfew enforcement, weapon laws, drug use, gang activity, economic factors, social factors, etc. Most reports provide analyses that demonstrate significant declines across various categories, but fail to make conclusions as to the underlying causes. This suggests the reduction is a general societal change. Additional factors influencing the trend may include successful youth programs as evidenced by a reduction in recidivism,[2] reductions in law enforcement or juveniles effectively avoiding enforcement, and a shift away from the most serious person crimes to less serious property crimes.

This report relies heavily on data from youth referred to Oregon county juvenile departments. The number of criminal referrals (felonies and misdemeanors) has dropped significantly and steadily since the mid-1990's. Compared to 1996, the number of felonies is down by half; for criminal referrals overall, the reduction is about 40 percent. The downward trend flattened from 2004 to 2006, then resumed gradual decline over the past several years.

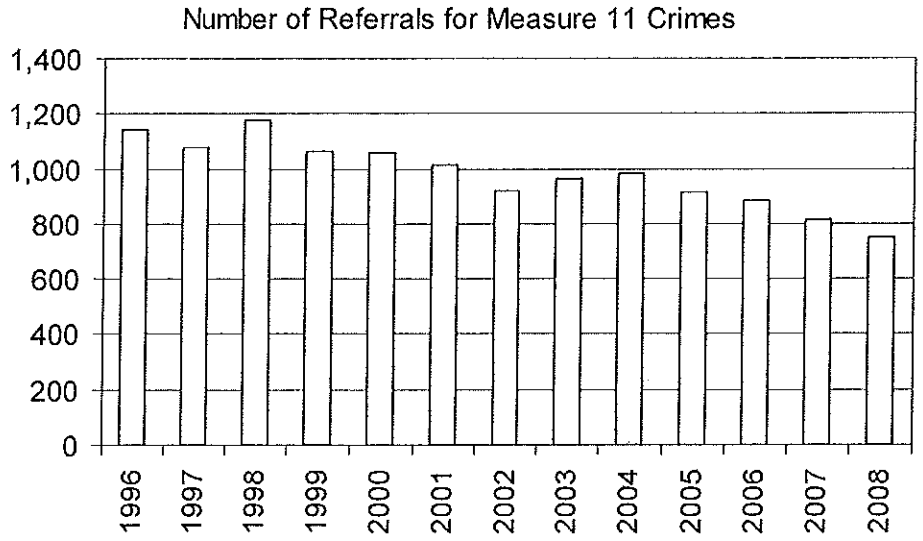
Annual Number of Criminal Referrals (Felony and Misdemeanor):



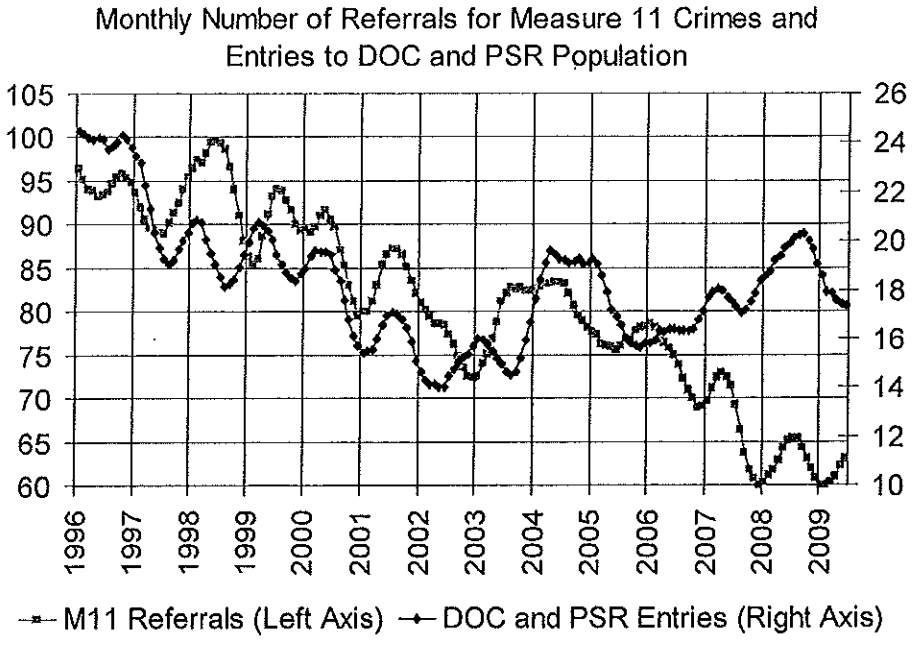
[2] OYA Biennial Report 2005-07

Measure 11 Crime

The DOC and PSR populations at OYA are comprised primarily of Measure 11 offenders – those who commit the most serious person crimes. Referrals for these crimes comprise only about 3.5 percent of the total number of criminal referrals, but account for a substantial and increasing portion of OYA's total close custody population. As with criminal referrals in general, referrals for Measure 11 crimes have dropped significantly since the late 1990's from roughly 1,100 per year to 750 per year in 2008, a 30 percent reduction. Overall, the percentage reduction in Measure 11 referrals since the late 1990's is not as large as for criminal referrals overall, but the percentage reduction since 2004 is greater for the Measure 11 referrals. Since 2004, Measure 11 referrals have dropped by 25 percent while all criminal referrals dropped only 10 percent.



Many referrals for Measure 11 crimes do not result in an entry to the DOC or PSR populations due to downward pleas or failures to prosecute and convict. The entries to the DOC and PSR populations number about 20 percent of the number of referrals for Measure 11 crimes overall, but this relationship has changed in recent years where the number of entries increased to roughly 30 percent of referrals. In other words, starting in 2006, there are increasingly more entries to the PSR or DOC population for each Measure 11 referral. One reason for this could be changes in arrest reporting and prosecution practices as the impact of Measure 11 continues to evolve. The impact can be observed in an increase to the DOC population starting in 2007.



Since the connection between the number of Measure 11 crimes and the number of entries to the DOC and PSR populations has changed, the number of crimes is less valuable as a predictor of the DOC and PSR population sizes than it was in the past.

Crime Connected to Discretionary Close Custody

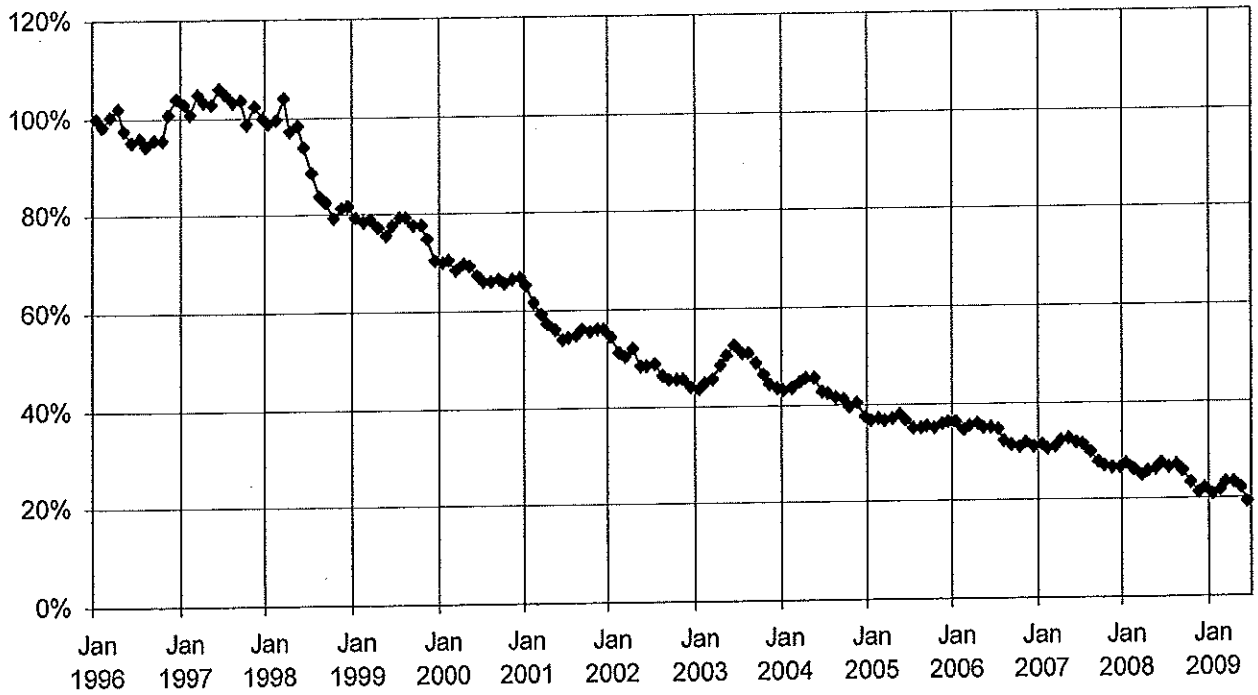
For the discretionary close custody (DCC) population, there is not a specific class of crime that leads to incarceration as there is with the PSR and DOC populations. Rather, entry is discretionary based on a variety of factors relating to a youth's criminal history and background, as well as availability of space. Because of this, the forecast relies on a statistical model to measure criminality as it relates to the DCC population. The model gives an index for criminality rather than counting a specific type of referral. The Forecast Methodology section provides more detail on the index.

The index is targeted specifically to DCC entry characteristics. It is used to quantify the demand for DCC beds based on referrals and the criminal history of youths being referred. It differs from a simple count of referrals in two ways. First, it uses a weighting of various referral and youth characteristics; second, it uses information from each youth's entire history of referrals as opposed to counting isolated crimes.

The index shows a significant decrease since the late 1990's. In particular, the index declines more rapidly than simple counts of referrals per month which ignore youths' histories (e.g., number of felony referrals or number of criminal referrals per month). Since the index looks at both youth history and the referrals for the given month, the youth history component of the index has declined even more than referrals per month. In other words, youths who get referred today have much less criminal history than youths who were referred in the past. The index decreases due to both fewer and less serious referrals, and the less criminal history of youth who do get referred.

Of note in the DCC index is the temporary bump up in mid 2003. At that time, there was no significant increase in the number of criminal referrals. The index value increased due to youths with more criminal background being referred. This is almost certainly due to the large number of youth who were released from close custody early in 2003 in response to budget cuts. Those youth contributed disproportionately to the index when they recidivated.

Discretionary Close Custody Demand Index (1996 = 100%)



Population Size and Forecast Tracking

Population Size

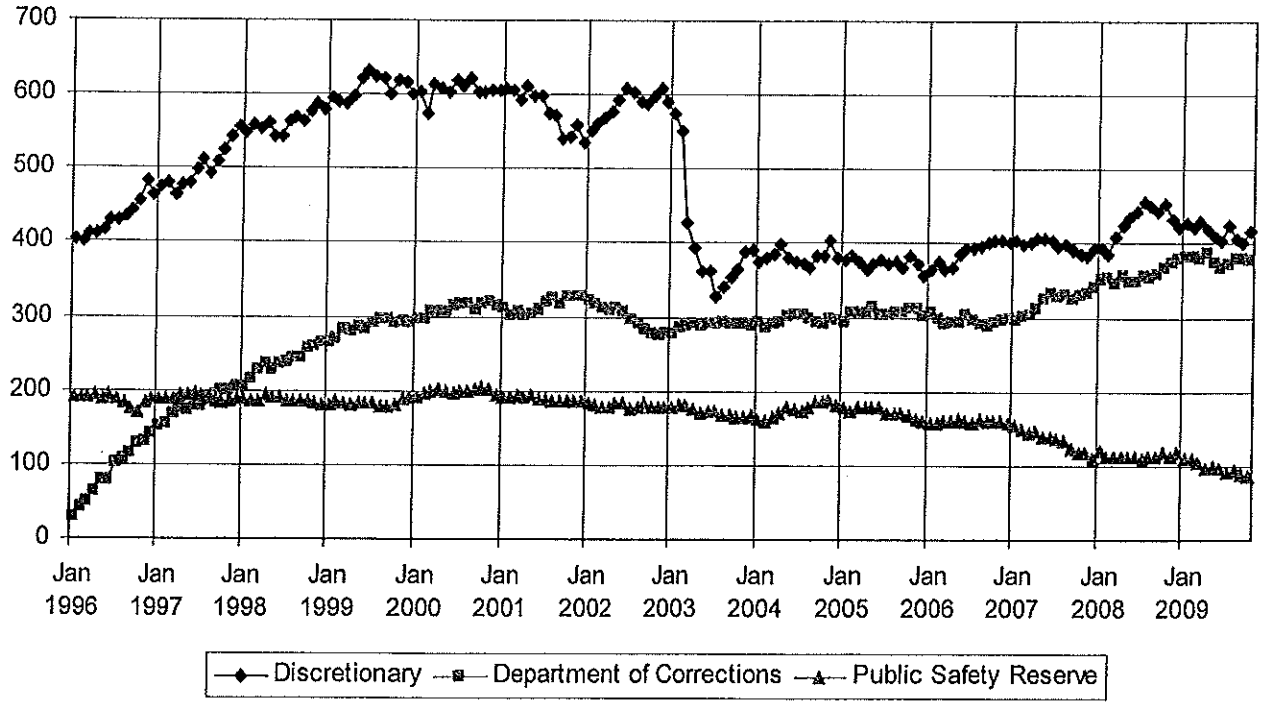
The PSR population stayed relatively constant at about 200 from 1996 to 2002. From 2002 on it has decreased and by April 2009 it dropped below 100 and has continued to decline to the current level of 86. The general decline in the population is attributable simply to fewer entries over time, reflective of fewer Measure 11 crimes being committed by young teens. Over the past 10 months the population declined at a faster rate due to both more releases and fewer intakes than what is historically typical.

The DOC population increased rapidly from 1996 through 1999 to roughly 300. It remained near 300 through 2006, then gradually increased through late 2008 peaking at 453 in October 2008. Over the past year, it has declined slightly to about 420.

The initial buildup through 1999 is directly due to the long mandatory sentences of Measure 11 – youths steadily trickled into the population, but few were released due to the sentence lengths. By 2000, the population had reached a steady state with a constant churn of entries and exits. This lasted until 2007 when entries increased, outpacing exits. By late 2008, the net inflow stopped as entries returned to long term averages and exits picked up.

The DCC population size is primarily driven by budgeting. Budget levels set the number of discretionary beds available, and whatever is available is generally used. The marked drop in early 2003 displays the impact of budget cuts which reduced the number of beds.

Monthly Population Size: DCC, PSR, and DOC



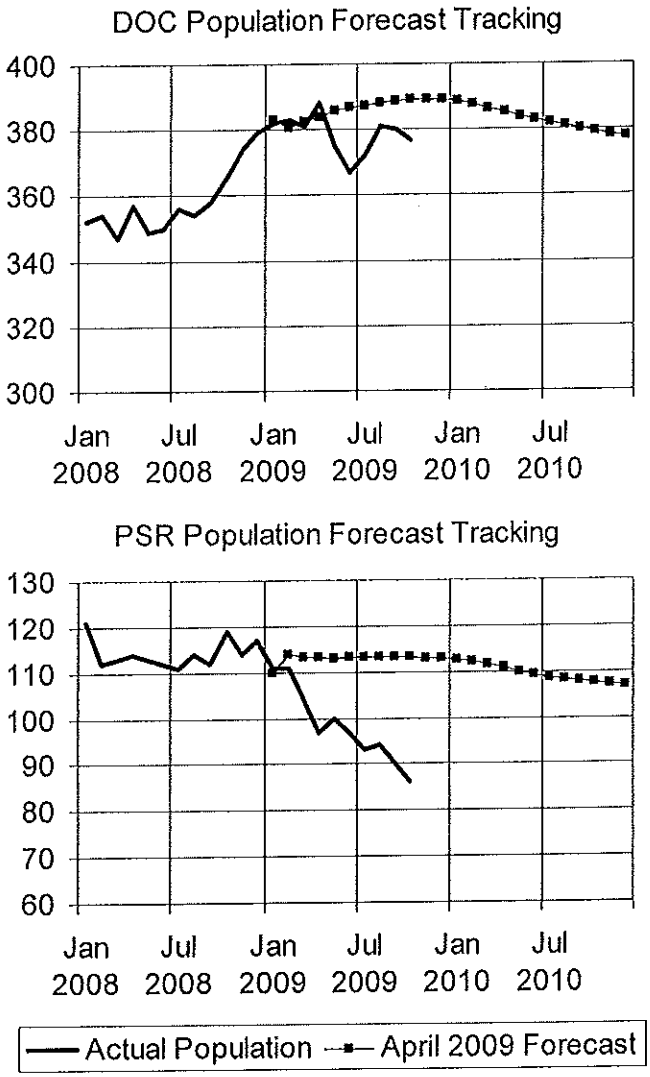
Prior Forecast Tracking

The previous forecast, released April 2009, tracked above actual population levels over the past ten months since new data on the actual populations has been available.

The DOC population was generally slightly lower than forecast. The greatest monthly difference was +20 in June 2009; the actual population was 367 and the forecast predicted it would be 387 that month.

The PSR population was also lower than forecast with the greatest monthly difference +27 in October 2009 (86 actual versus 113 forecast). Although the percentage error was large (about 30%), this error represents only a few youth per month. The recent drop in the PSR population below forecast was due primarily to a few more releases and a few less intakes per month that anticipated.

For the DCC group, the forecast predicts demand for beds as opposed to actual beds occupied. Since January 2009 demand remained flat, matching predictions made in April. The demand remains higher than the actual population size by approximately 125 beds.



Forecast Methodology

General Discussion

The DOC and PSR population forecasts are for the number of youth who will require OYA close custody bed space. The DOC population is comprised primarily of Measure 11 offenders. The PSR population is comprised of youth who commit similar crimes but are too young to be prosecuted under Measure 11 (under age 16). The forecast for those populations is a direct count. Together these populations comprise the non-discretionary population.

The DCC forecast is conceptually different since the population size is based on budgeting. The available beds for DCC equals the total number of budgeted beds less the number taken by the DOC and PSR populations. The DCC beds are generally used to capacity. The number of beds available is viewed as insufficient to meet the demand for such beds. Since a forecast of the number of beds occupied would be a direct function of total budgeted capacity and the DOC and PSR forecast levels, it would not serve to quantify the demand for DCC bed space. To address this, the DCC forecast quantifies the demand for beds as opposed to directly forecasting the number of beds which will be occupied.

The demand for DCC beds can be viewed in the context of the overall pressure on the juvenile corrections system. More criminal youths and higher criminal severity leads to higher the pressure on the system. Some of that pressure is absorbed by county correctional programs, by social programs or OYA community placements for less criminal youths, and by the DOC and PSR populations for the most severe criminality. The DCC population is comprised of the remaining youths who warrant close custody supervision (subject to bed availability).

DOC and PSR Populations

The DOC and PSR forecasts derive from forecasted entries and exits to the populations and the current starting base (number currently in the population). Entries are based on historical trends, the number of juveniles in Oregon, and trends in juvenile criminality which drive entries. Exits are driven by the characteristics of the current population using a survival analysis approach to estimate the outflow of the current base.

The model tracks how many beds are occupied broken out by estimated length of stay. The monthly number of beds is the previous month's number, minus youths who had less than 1 month length of stay, plus the number of projected entries.

The entry forecast relies on youth criminality trends and assumptions about how those trends might change in the future. It also relies on the stability of crime definitions, sentencing and plea practices, and policy decisions concerning how long OYA supervises a youth before transfer to DOC.

In the near term, criminality trends are expected to remain stable. The significant declines in juvenile criminality from the late 1990's have leveled off and are not expected to continue in the long term.

DCC Population

Demand for DCC beds is subjective. There is no objective way to determine whether a youth, in general, constitutes demand, and no absolute measure to look back on to say that demand was a certain number at some time in the past. On the other hand, the youths who do actually go to DCC are assumed to constitute demand simply by way of being there – they went because they were judged to constitute demand, and space was available. Difficulties arise in determining how many youth should have gone to DCC, but did not due to space limitations. Another way to view this is to ask "how many youth would go to DCC if there were no space limitations?"

Whether or not a youth constitutes demand is only known for the specific youth who actually went to DCC. The demand model uses the characteristics of all youth with a criminal background and measures how similar they are to the youth who actually went to DCC. If a youth has characteristics similar to youths who went to DCC, that youth is assumed to be more likely to constitute demand. But since the characteristics of youths who did go to DCC vary widely, this measure can only be applied in a broad statistical sense and may not be useful in making a solid determination for any specific youth.

Since demand is not an absolute measure, it is quantified using an index approach. An index for juvenile criminality is calculated monthly. The demand at any time is measured by the change in the index from the reference value. The reference value for the index is subjective, and is determined based on consultation with the advisory committee.

Forecast

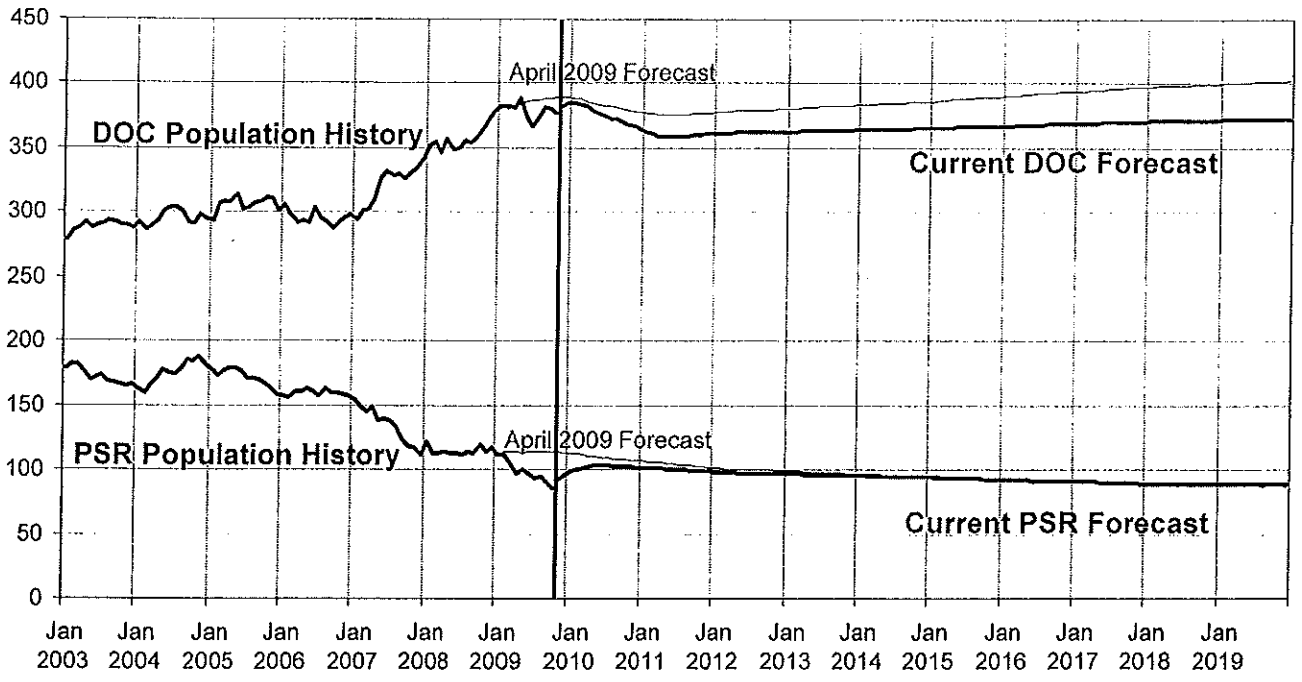
The total demand for Oregon Youth Authority close custody beds is approximately 1,040 in the near term, increasing to 1,110 in the outer years of the forecast (2019). Compared to the prior forecast, the current forecast is roughly 20 beds lower in the near term and close to 30 beds lower in the outer years. The slight reduction is due primarily to the DOC bed projections.

The DOC population projections fell slightly due to two factors. First, the population tracked below prior forecast levels leading to a small downward correction in the near term. Second, the increasing population seen over 2007 and 2008 has not carried into 2009. The updated data for 2009 suggest that what initially appeared to be a shift in long term trend was in fact transitory. Therefore, the long term growth rate was reduced slightly compared to prior forecast.

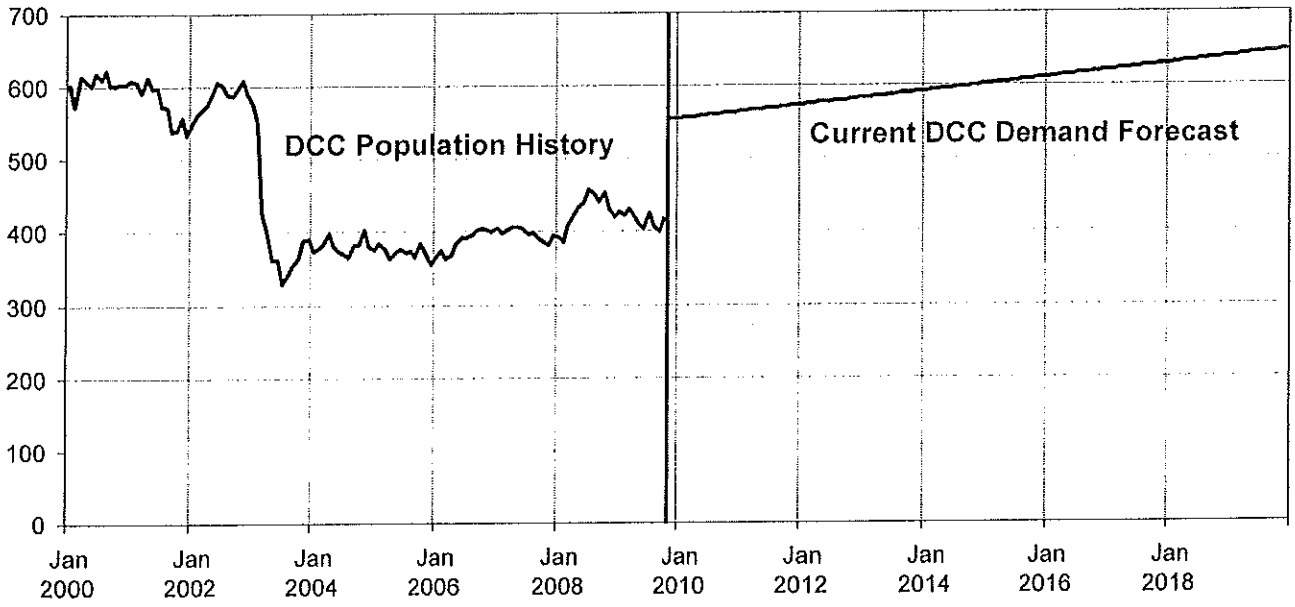
The PSR population forecast was reduced in the near term to correct for lower actual population levels than the previous forecast projected. The population declined in the recent past due to high exit rates relative to the size and age of the population, and decreased entries. Those trends are expected to stabilize, leading to less marked population declines.

In the long term, the PSR population is expected to decrease at a very gradual rate, leveling out at roughly 90 in the outer years. This is a departure from the historical trend of relatively fast declines. Despite the long term reduction in entries to the PSR population and overall reduction in the population size, the forecast assumes that the downward trend will level out since it is unreasonable to believe that serious person crime among young teens will cease entirely despite intervention programs, societal changes, education, affluence, etc.

DOC and PSR Population Forecast – History, Prior Forecast, and Current Forecast:



The DCC population demand index has tracked with the expectations of the prior forecast, and in consultation with the advisory committee, the forecast assumptions have not changed. The advisory committee also indicated that the reference demand level used in previous forecast is appropriate to apply for the current forecast. Therefore, recent information suggests that no changes to the prior forecast are necessary.



All forecast values are adjusted to reflect projected changes in the total Oregon juvenile population, although the adjustment is very slight since the number of juveniles in Oregon will change very little over the next 10 years.

Monthly forecast detail broken out by category (PSR, DOC, and DCC demand) is available in spreadsheet format as an appendix to this document. See http://oregon.gov/DAS/OEA/oya.shtml.

Forecast Risks

The forecast assumes that current laws and current criminal justice practices continue as they have in the past. It also assumes trends in juvenile criminal activity continue and that demographics follow expected trends. If those and other assumptions fail, the forecast is at risk.

An additional general risk is associated with the prevalence and success of the juvenile justice system in deterring juvenile crime. The forecast does not assume changes in those programs or practices.

Additional specific risks include the following:

General Economic Conditions. While the impact of the economy on crime is not clear, it stands to reason that those with the least job skills will be impacted disproportionately when the economy is weak. Many juveniles fall into this category. As a result, depending on the degree to which juveniles will face limited job opportunities and turn to criminal activities, the forecast could understate demand.

Budgetary restrictions. Over the next several years budget levels for law enforcement, criminal justice courts, education, and juvenile programs will decrease from past service levels. These cuts could impact the juvenile crime rate, juvenile crime prosecutions, and the number and length of placements in close custody in ways that are difficult to predict.

Criminal Trends. Juvenile crime rates have dropped significantly since the late 1990's. The forecast assumes that the lower rates will continue. If the juvenile crime rates rebound to levels of the mid-1990's, the need for juvenile corrections could increase dramatically.

Data Sources. The discretionary demand is measured based on recorded referrals to county juvenile departments. If the information recorded for juvenile referrals changes over time, criminal characteristics would not be scored for criminality in the same manner as during the reference period This could potentially misstate discretionary demand.

Perception of Demand. Demand for discretionary beds is a subjective measure. In consultation with the advisory committee, this forecast uses a definition based on a bed capacity of 550 in April 2009 being sufficient to satisfy demand. As views change regarding the level of criminality which constitutes demand, the reference to April 2009 with a demand level of 550 could change leading to significant changes in demand going forward.

Interaction with County Resourcs. The forecast does not examine the interaction between county funding levels and demand for OYA services, but recognizes that an interaction may exist. In some sense, OYA serves as a backstop when there is a lack of county diversionary resources, and if county resources change there could be an impact in the need for OYA services.

Appendix – Forecast Values Monthly

Date	Department of Corrections Population	Public Safety Reserve Population	Demand for Discretionary Beds
11/1/2009	383	92	555
12/1/2009	385	96	555
1/1/2010	385	99	556
2/1/2010	384	101	557
3/1/2010	382	102	558
4/1/2010	380	103	559
5/1/2010	377	103	559
6/1/2010	374	103	560
7/1/2010	372	103	561
8/1/2010	372	103	562
9/1/2010	370	103	562
10/1/2010	368	102	563
11/1/2010	366	102	564
12/1/2010	365	102	565
1/1/2011	363	102	565
2/1/2011	361	101	566
3/1/2011	359	101	567
4/1/2011	359	101	568
5/1/2011	359	101	568
6/1/2011	359	100	569
7/1/2011	359	100	570
8/1/2011	359	100	571
9/1/2011	360	99	572
10/1/2011	360	99	572
11/1/2011	361	99	573
12/1/2011	361	98	574
1/1/2012	361	98	575
2/1/2012	361	98	575
3/1/2012	362	98	576
4/1/2012	362	97	577
5/1/2012	362	97	578
6/1/2012	362	97	578
7/1/2012	362	97	579
8/1/2012	362	97	580
9/1/2012	362	97	581
10/1/2012	362	97	582
11/1/2012	362	97	582
12/1/2012	362	97	583

Continued.

Date	Department of Corrections Population	Public Safety Reserve Population	Demand for Discretionary Beds
1/1/2013	362	97	584
2/1/2013	363	97	585
3/1/2013	363	96	585
4/1/2013	363	96	586
5/1/2013	363	96	587
6/1/2013	363	96	588
7/1/2013	363	96	588
8/1/2013	364	96	589
9/1/2013	364	96	590
10/1/2013	364	95	591
11/1/2013	364	95	591
12/1/2013	364	95	592
1/1/2014	364	95	593
2/1/2014	364	95	594
3/1/2014	364	95	595
4/1/2014	365	95	595
5/1/2014	365	95	596
6/1/2014	365	95	597
7/1/2014	365	94	598
8/1/2014	365	94	598
9/1/2014	365	94	599
10/1/2014	365	94	600
11/1/2014	365	94	601
12/1/2014	365	94	601
1/1/2015	365	94	602
2/1/2015	366	94	603
3/1/2015	366	94	604
4/1/2015	366	93	605
5/1/2015	366	93	605
6/1/2015	366	93	606
7/1/2015	367	93	607
8/1/2015	367	93	608
9/1/2015	367	93	608
10/1/2015	367	93	609
11/1/2015	367	93	610
12/1/2015	367	93	611

Continued.

Date	Department of Corrections Population	Public Safety Reserve Population	Demand for Discretionary Beds
1/1/2016	367	93	611
2/1/2016	367	93	612
3/1/2016	367	92	613
4/1/2016	368	92	614
5/1/2016	368	92	614
6/1/2016	368	92	615
7/1/2016	368	91	616
8/1/2016	369	91	617
9/1/2016	369	91	618
10/1/2016	369	91	618
11/1/2016	369	91	619
12/1/2016	369	91	620
1/1/2017	369	91	621
2/1/2017	369	91	621
3/1/2017	369	91	622
4/1/2017	369	91	623
5/1/2017	370	90	624
6/1/2017	370	90	624
7/1/2017	370	90	625
8/1/2017	370	90	626
9/1/2017	370	90	627
10/1/2017	370	90	627
11/1/2017	371	90	628
12/1/2017	371	89	629
1/1/2018	371	89	630
2/1/2018	371	89	631
3/1/2018	371	89	631
4/1/2018	371	89	632
5/1/2018	371	89	633
6/1/2018	371	89	634
7/1/2018	371	89	634
8/1/2018	371	89	635
9/1/2018	371	89	636
10/1/2018	372	89	637
11/1/2018	372	89	637
12/1/2018	372	89	638

Continued.

Date	Department of Corrections Population	Public Safety Reserve Population	Demand for Discretionary Beds
1/1/2019	372	89	639
2/1/2019	372	89	640
3/1/2019	372	89	641
4/1/2019	372	89	641
5/1/2019	372	89	642
6/1/2019	372	89	643
7/1/2019	372	89	644
8/1/2019	373	89	644
9/1/2019	373	89	645
10/1/2019	373	89	646
11/1/2019	373	89	647
12/1/2019	373	89	647