

November 4, 2015

TO: Members of the MAG POPTAC Ad Hoc Subcommittee

FROM: Joshua Wright, Chair

SUBJECT: TRANSMITTAL OF MEETING NOTICE AND TENTATIVE AGENDA

Tuesday, November 10, 2015 – 9:00 a.m.  
MAG Office, Second Floor, Chaparral Room  
302 North 1<sup>st</sup> Avenue, Phoenix

A meeting of the MAG Population Technical Advisory Committee (POPTAC) Ad Hoc Subcommittee will be held at the time and place noted above.

Members of the subcommittee may attend either in person or by telephone conference call. If you are attending via audio conference please contact Merry Holmgren at (602) 254-6300 at least one day prior to the meeting.

If you drive to the meeting, please park in the garage under the building and bring your ticket to the meeting; parking will be validated. For those using transit, the Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Merry Holmgren at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

Please be advised that under procedures approved by the MAG Regional Council on June 26, 1996, all MAG committees need to have a quorum to conduct business. A quorum is a simple majority of the membership or 4 people for the MAG POPTAC Ad Hoc Subcommittee. If you are unable to attend the meeting, please make arrangements for a proxy from your jurisdiction to represent you. If you have any questions or need additional information, please contact Scott Wilken at (602) 254-6300.

TENTATIVE AGENDA  
MAG Population Technical Advisory Committee Ad Hoc Subcommittee  
November 10, 2015

1. Call to Order

2. Call to the Audience

An opportunity will be provided to members of the public to address the MAG POPTAC Ad Hoc Subcommittee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public will be requested to limit their comments to three minutes. A total of 15 minutes will be provided for this agenda item, unless the Chair of the POPTAC Ad Hoc Subcommittee provides for an exception to this limit. Those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.

3. Approval of Meeting Minutes of October 28, 2014.

4. Draft July 1, 2015 Municipality Resident Population Updates and Methodology

MAG staff has prepared draft July 1, 2015 Municipality Resident Population Updates for MAG Member Agencies. MAG staff worked with staff from Central Arizona Governments (CAG) to create sub-county updates for Pinal County communities. The Updates, which are used to prepare budgets and set expenditure limitations, were prepared using the 2010 Census as the base and updated with housing unit data supplied and verified by MAG member agencies. Because there may be changes to the State and county control totals by ADOA, the MAG POPTAC is requested to recommend approval of these updates to the MAG Management Committee provided the County control totals are within one percent of the final control total. The Pinal County control total and sub-county figures will be presented to

2. For information.

3. For information, discussion and approval of the minutes of October 28, 2014.

4. For information, discussion, and possible recommendation to the MAG Management Committee to approve the Draft July 1, 2015 Municipality Resident Population Updates for MAG Member Agencies provided that the Maricopa County and Pinal County control totals are within one percent of the final control total.

the CAG Regional Council. See **Attachment One**.

5. AZ-SMART and 2015 Socioeconomic Projections

The Arizona Department of Administration (ADOA) has prepared a set of draft resident population projections for Maricopa County and Pinal County. MAG has also developed draft employment projections which are consistent with the ADOA population projections utilizing an updated methodology. MAG staff worked with staff from Central Arizona Governments (CAG) to create figures for Pinal County. These projections will be used as control totals for the preparation of sub-regional socioeconomic projections by MAG. Because there may be changes to the State and county projections totals by ADOA, the MAG POPTAC is requested to recommend approval of the draft ADOA 2015 to 2050 population projections for Maricopa County and Pinal County; and the draft 2015 to 2050 employment projections for Maricopa County and Pinal County based on the methodology, provided the County control totals are within three percent of the final control totals. The Pinal County control total and sub-county figures will be presented to the CAG Regional Council. Please see **Attachments Two**.

5. For information, discussion and possible recommendation to the MAG Management Committee to approve the Draft ADOA 2015 to 2050 population projections for Maricopa County and Pinal County; and the draft 2015 to 2050 employment projections for Maricopa County and Pinal County based on the methodology, provided the County control totals are within three percent of the final control totals.

MINUTES OF THE  
MARICOPA ASSOCIATION OF GOVERNMENTS  
POPULATION TECHNICAL ADVISORY COMMITTEE AD HOC SUBCOMMITTEE

October 28, 2014  
MAG Offices, Chaparral Room  
302 N. 1<sup>st</sup> Ave, Phoenix

MEMBERS IN ATTENDANCE

Josh Wright, Wickenburg, Chair  
David de la Torre, Chandler  
Thomas Ritz, Glendale  
\*Matt Holm, Maricopa County

Wahid Alam, Mesa  
Chris DePerro, Phoenix  
\*Adam Yaron, Scottsdale  
\*Sherri Lesser, Tempe

*\*Those members neither present nor represented by proxy.  
A - Participated via audioconference*

OTHERS IN ATTENDANCE

Merry Holmgren, MAG  
Anubhav Bagley, MAG  
Scott Bridwell, MAG

Jesse Ayers, MAG  
Anubhav Bagley, MAG

1. Call to Order

Chair Josh Wright called the meeting to order at 9:05 a.m.

2. Call to the Audience

There were no requests from the audience to address the MAG POPTAC Ad Hoc Subcommittee.

3. Approval of Minutes of October 29, 2013

Thomas Ritz made a motion to approve the minutes of October 29, 2013. Chris DePerro seconded the motion, and the motion passed unanimously.

4. a. Draft July 1, 2014 Maricopa County and Municipality Resident Population Updates and Methodology

Scott Bridwell presented the Draft July 1, 2014 Maricopa County and Municipality Resident Population Updates. He reviewed the process and methodology for producing the population estimates. Josh Wright asked what was included in group quarters. Scott Bridwell said that group quarters include facilities such as dormitories, prisons, and nursing homes. He said these facilities generally have shared kitchens. David de la Torre asked if the county control total is compared to other population estimates, such as the Census estimate. Scott Bridwell said that the control total is compared to the Census estimate afterward as a kind of postmortem review. David de la Torre asked if the county control totals have historically been in sync with the Census estimates. Thomas Ritz said that he has seen that the county control totals are a little lower than the Census estimates. David de la Torre said that he has seen Chandler's population about 5,000 lower than the Census estimates. Scott Bridwell said that he thinks the State Demographer looks at the differences periodically. He said the difficulty in comparing the two is that the date by which the state estimates have to be adopted is always before the Census Bureau releases their estimates. Anubhav Bagley said that the Census estimates are based primarily on building permits issued, rather than housing completions, as well as other datasets that the State Demographer and MAG do not have access to. Scott Bridwell continued with the presentation by discussing trends in age cohorts and the estimates as a whole.

Thomas Ritz asked if MAG had looked at housing unit completions by average household size in multifamily versus single-family. Scott Bridwell said that part of the difficulty with this is that the Census Bureau does not provide housing unit type. He said there is no tabulation that shows persons per housing unit type. He said there are some possible methods that could be used to create an estimate for this. Anubhav Bagley said that this is a much larger discussion regarding some other projects. Chris DePerro talked about methods he has used to find the differences in persons per dwelling unit for multifamily and single-family, including using American Community Survey data. David de la Torre said that Chandler does something similar to derive persons per dwelling unit. Thomas Ritz said that this question is significant because the multifamily component of residential completions is becoming a larger share of the total completions.

Chris DePerro made a motion to recommend approval of the draft July 1, 2014 Maricopa County and Municipality Resident Population Updates provided the Maricopa County control total is within one percent of the final control total. Wahid Alam seconded the motion and the motion passed unanimously.

#### b. Maricopa County and Municipality Resident Population Updates Methodology Research

Scott Bridwell discussed the Maricopa County and municipality resident population updates methodology research. He talked about issues with some of the datasets that are used for the age cohorts, particularly the driver's license data, as well as issues with vacancy rate. He said that currently the total state population estimate is the sum of all the counties, but it might be helpful to have a separate state-level model to produce a state estimate. Chris DePerro asked if MAG gets anything more than the raw number of licenses, and if there was a way to determine the problems with increases in past vintages. Anubhav Bagley said that MAG and the State Demographer only get total numbers by year and county. He said that they are

trying to get the raw data, but have so far been unsuccessful. Chris DePerro suggested that maybe some of the change comes from people moving from one county to another within Arizona, and getting counted twice in the data. Scott Bridwell said that this can be an issue with people moving from one state to another, but he does not know if it could be an issue of moving from county to county. Josh Wright asked what level of conversation has been held with the Arizona Department of Transportation regarding fixing this problem. Anubhav Bagley said that currently it is being dealt with at the staff level, but that these datasets are not being built for the estimates process. Wahid Alam asked how the driver's license data affects the estimates and if it is affected by seasonal residents. Scott Bridwell said that the factor used to be calculated once, after the decennial census, but that now it has to be recalculated because the driver's license data changes each year. Anubhav Bagley added that the driver's license data drives the count for the estimates of people aged 18 to 64 years old, which is about 60-65% of the population. He said that the trends are consistent with Census Bureau estimates, but the methods still need enhancement. Chris DePerro asked if that dataset has non-driver identification cards. Scott Bridwell said that it includes both driver's license and non-driver identification cards. Wahid Alam asked if there is something that could be used in place of the driver's license data. Anubhav Bagley said that there is currently no other dataset that could be used in its place. Scott Bridwell said that this is a common issue in many states. Scott Bridwell continued the presentation with a discussion of issues with vacancy rate in the estimates. He said that the vacancy rate is left the same as it was from the decennial census, but that the effective vacancy rate is captured in the changes in the control total. He talked about possible additional sources of vacancy rate and seasonal population that could be used.

The meeting adjourned at 9:54 am.

**DRAFT**

**Population Update  
Census 2010 and July 1, 2015**

	<b>July 1, 2010</b>	<b>July 1, 2015</b>	<b>Change</b>
Maricopa County	3,817,117	4,078,062	260,945
Pinal County	375,770	405,363	29,593
In MAG MPA	238,159	260,174	22,015
MAG MPA total	4,055,276	4,338,236	282,960

Sources: U.S. Census Bureau,  
Arizona State Demographer's Office,  
Maricopa Association of Governments,  
Central Arizona Governments

DRAFT, last updated: November 3, 2015

Pinal County jurisdiction estimates were created in collaboration with CAG staff; Pinal County control total and sub-county estimates will be presented to CAG Regional Council

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Municipality Population and Housing Unit Update

April 1, 2010 and July 1, 2015  
Maricopa Association of Governments

Jurisdiction	Census 2010 (April 1 2010)							April 1 2010 - June 30 2014					July 1, 2014 Update		July 1, 2015 Update			Jurisdiction	
	Population			Housing Units		Occupancy Rate	Persons per Occupied Units	Residential Completions	Residential Demolitions	Annexed Housing Units	Annexed Household Population	Change in Group Quarters	Housing Units	Total Population	Total Housing Units	Population			
	Total	Household	Group Quarter	Total	Occupied											Household	Group Quarter		Total
Apache Junction	35,840	35,557	283	22,564	15,574	69.02%	2.28	896	47	8	16	28	23,304	37,639	23,421	38,140	311	38,451	Apache Junction
Maricopa County Portion	294	294	0	293	210	71.67%	1.40	0	0	0	0	0	293	300	293	303	0	303	Maricopa County Portion
Pinal County Portion	35,546	35,263	283	22,271	15,364	68.99%	2.30	896	47	8	16	28	23,011	37,339	23,128	37,837	311	38,148	Pinal County Portion
Avondale	76,238	76,078	160	27,001	23,386	86.61%	3.25	164	18	0	0	-20	27,100	78,090	27,147	78,779	140	78,919	Avondale
Buckeye	50,876	45,782	5,094	18,207	14,424	79.22%	3.17	3,116	0	8	16	524	20,625	58,795	21,331	55,579	5,618	61,197	Buckeye
Carefree	3,363	3,316	47	2,251	1,654	73.48%	2.00	43	0	0	0	0	2,265	3,453	2,294	3,479	47	3,526	Carefree
Cave Creek	5,015	5,015	0	2,579	2,150	83.37%	2.33	132	3	1	0	0	2,694	5,354	2,709	5,431	0	5,431	Cave Creek
Chandler	236,326	235,780	546	94,472	86,992	92.08%	2.71	4,561	60	11	34	15	97,587	249,423	98,984	254,621	561	255,182	Chandler
El Mirage	31,797	31,784	13	11,326	9,416	83.14%	3.38	214	3	0	0	0	11,465	32,857	11,537	33,338	13	33,351	El Mirage
Florence	25,536	7,836	17,700	5,224	3,330	63.74%	2.35	754	2	0	0	-546	5,839	26,828	5,976	9,262	17,154	26,416	Florence
Fort McDowell	971	971	0	308	283	91.88%	3.43	0	0	0	0	0	308	991	308	1,000	0	1,000	Fort McDowell
Fountain Hills	22,489	22,307	182	13,167	10,339	78.52%	2.16	112	0	0	0	0	13,242	23,090	13,279	23,174	182	23,356	Fountain Hills
Gila Bend	1,922	1,922	0	943	664	70.41%	2.89	0	0	0	0	0	943	1,960	943	1,977	0	1,977	Gila Bend
Gila River	11,712	11,473	239	3,238	2,982	92.09%	3.85	-	-	-	-	-	-	11,857	-	11,661	239	11,900	Gila River
Maricopa County Portion	2,994	2,984	10	835	748	89.58%	3.99	1	0	0	0	0	836	3,059	836	3,076	10	3,086	Maricopa County Portion
Pinal County Portion*	8,718	8,489	229	2,403	2,234	92.97%	3.80	-	-	-	-	-	-	8,798	-	8,585	229	8,814	Pinal County Portion*
Gilbert	208,352	208,048	304	74,870	69,335	92.61%	3.00	9,529	18	3	5	0	82,463	235,493	84,384	242,657	304	242,961	Gilbert
Glendale	226,721	223,464	3,257	90,505	79,114	87.41%	2.82	694	41	0	0	-197	91,144	232,680	91,158	231,804	3,060	234,864	Glendale
Goodyear	65,275	61,447	3,828	25,027	21,491	85.87%	2.86	3,864	3	0	0	483	28,004	74,743	28,888	73,496	4,311	77,807	Goodyear
Guadalupe	5,523	5,508	15	1,376	1,292	93.90%	4.26	85	0	0	0	0	1,461	6,084	1,461	6,123	15	6,138	Guadalupe
Litchfield Park	5,476	5,439	37	2,716	2,263	83.32%	2.40	187	5	0	0	0	2,860	5,893	2,898	5,985	37	6,022	Litchfield Park
Maricopa	43,482	43,482	0	17,240	14,359	83.29%	3.03	1,237	0	0	0	12	18,223	46,708	18,477	48,150	12	48,162	Maricopa
Mesa	439,041	435,503	3,538	201,173	165,374	82.20%	2.63	3,567	55	373	497	436	204,340	455,567	205,058	457,171	3,974	461,145	Mesa
Paradise Valley	12,820	12,789	31	5,643	4,860	86.12%	2.63	190	0	0	0	0	5,788	13,457	5,833	13,648	31	13,679	Paradise Valley
Peoria**	154,058	152,831	1,227	64,814	57,454	88.64%	2.66	3,572	4	5	14	0	67,405	163,832	68,387	166,384	1,227	167,611	Peoria**
Phoenix	1,447,128	1,425,390	21,738	590,612	515,208	87.23%	2.77	13,390	748	5	18	6,162	600,589	1,506,439	603,259	1,500,249	27,900	1,528,149	Phoenix
Queen Creek	26,361	26,345	16	8,557	7,720	90.22%	3.41	2,104	0	2	4	0	10,042	31,767	10,663	33,966	16	33,982	Queen Creek
Maricopa County Portion	25,912	25,896	16	8,394	7,569	90.17%	3.42	2,100	0	2	4	0	9,878	31,308	10,496	33,491	16	33,507	Maricopa County Portion
Pinal County Portion	449	449	0	163	151	92.64%	2.97	4	0	0	0	0	164	459	167	475	0	475	Pinal County Portion
Salt River	6,289	6,284	5	2,607	2,198	84.31%	2.86	63	0	0	0	0	2,658	6,557	2,670	6,639	5	6,644	Salt River
Scottsdale	217,385	216,226	1,159	124,001	101,273	81.67%	2.14	4,279	88	0	0	-22	126,139	225,698	128,192	230,165	1,137	231,302	Scottsdale
Surprise	117,517	117,243	274	52,586	43,272	82.29%	2.71	2,006	37	0	0	0	54,207	123,797	54,555	125,401	274	125,675	Surprise
Tempe	161,719	151,531	10,188	73,462	66,000	89.84%	2.30	2,202	31	0	0	1,038	75,176	169,529	75,633	160,774	11,226	172,000	Tempe
Tolleson	6,545	6,545	0	2,169	1,959	90.32%	3.34	35	1	0	0	0	2,202	6,777	2,203	6,840	0	6,840	Tolleson
Wickenburg**	6,363	6,174	189	3,617	2,909	80.43%	2.12	20	0	32	60	0	3,666	6,584	3,669	6,457	189	6,646	Wickenburg**
Youngtown	6,156	5,953	203	2,831	2,470	87.25%	2.41	65	0	0	0	0	2,896	6,415	2,896	6,267	203	6,470	Youngtown
Unincorporated Maricopa County	272,552	271,436	1,116	141,494	117,276	82.88%	2.31	1,614	3	-440	-648	0	142,470	280,426	142,665	282,158	1,116	283,274	Unincorporated Maricopa County
Unincorporated Pinal County***	178,799	178,347	452	78,056	63,224	81.00%	2.82	4,683	132	-15	-31	290	84,073	190,417	84,995	195,341	742	196,083	Unincorporated Pinal County***

Note: Totals may not add due to rounding

DRAFT, last updated: November 3, 2015

\* Residential Completions for Pinal County portion of Gila River Indian Community are included in Unincorporated Pinal County

\*\* Maricopa County portion only

\*\*\* Unincorporated Pinal County includes portions outside the MAG Planning Area

Sources: U.S. Census Bureau, Arizona State Demographer's Office, Maricopa Association of Governments (MAG), Central Arizona Governments (CAG)

Pinal County jurisdiction estimates were created in collaboration with CAG staff; Pinal County control total and sub-county estimates will be presented to CAG Regional Council

**DRAFT**  
**Jurisdiction Population Update**  
**Census 2010 and July 1, 2015**

Jurisdiction	Total Population			Percent Change	
	April 1, 2010 (Census 2010)	July 1, 2015	Change	Overall	Annual
Apache Junction	35,840	38,451	2,611	7.29%	1.35%
Maricopa County portion	294	303	9	3.06%	0.58%
Pinal County portion	35,546	38,148	2,602	7.32%	1.35%
Avondale	76,238	78,919	2,681	3.52%	0.66%
Buckeye	50,876	61,197	10,321	20.29%	3.58%
Carefree	3,363	3,526	163	4.85%	0.91%
Cave Creek	5,015	5,431	416	8.30%	1.53%
Chandler^	236,326	255,182	18,856	7.98%	1.47%
El Mirage	31,797	33,351	1,554	4.89%	0.91%
Florence	25,536	26,416	880	3.45%	0.65%
Fort McDowell	971	1,000	29	2.99%	0.56%
Fountain Hills	22,489	23,356	867	3.86%	0.72%
Gila Bend	1,922	1,977	55	2.86%	0.54%
Gila River	11,712	11,900	188	1.61%	0.30%
Maricopa County portion	2,994	3,086	92	3.07%	0.58%
Pinal County portion	8,718	8,814	96	1.10%	0.21%
Gilbert^	208,352	242,961	34,609	16.61%	2.97%
Glendale	226,721	234,864	8,143	3.59%	0.67%
Goodyear	65,275	77,807	12,532	19.20%	3.40%
Guadalupe	5,523	6,138	615	11.14%	2.03%
Litchfield Park	5,476	6,022	546	9.97%	1.83%
Maricopa	43,482	48,162	4,680	10.76%	1.97%
Mesa	439,041	461,145	22,104	5.03%	0.94%
Paradise Valley	12,820	13,679	859	6.70%	1.24%
Peoria*	154,058	167,611	13,553	8.80%	1.62%
Phoenix^	1,447,128	1,528,149	81,021	5.60%	1.04%
Queen Creek	26,361	33,982	7,621	28.91%	4.96%
Maricopa County portion	25,912	33,507	7,595	29.31%	5.02%
Pinal County portion	449	475	26	5.79%	1.08%
Salt River	6,289	6,644	355	5.64%	1.05%
Scottsdale	217,385	231,302	13,917	6.40%	1.19%
Surprise	117,517	125,675	8,158	6.94%	1.29%
Tempe	161,719	172,000	10,281	6.36%	1.18%
Tolleson	6,545	6,840	295	4.51%	0.84%
Wickenburg*	6,363	6,646	283	4.45%	0.83%
Youngtown	6,156	6,470	314	5.10%	0.95%
Unincorporated Maricopa County	272,552	283,274	10,722	3.93%	0.74%
Unincorporated Pinal County**	178,799	196,083	17,284	9.67%	1.77%
Portions in MAG MPA	124,428	138,159	13,731	11.04%	2.01%

DRAFT, last updated: November 3, 2015

**Note: Totals may not add due to rounding**

\* Maricopa County portion only

\*\* Excludes Gila River portion

^ Census 2010 counts adjusted to reflect Census Count Question Resolutions

Sources: U.S. Census Bureau, Arizona State Demographer's Office, Maricopa Association of Governments (MAG), Central Arizona Governments (CAG)

Pinal County jurisdiction estimates were created in collaboration with CAG staff; Pinal County control total and sub-county estimates will be presented to CAG Regional Council

See attached document for methodology

## **Methodology for Preparing July 1, 2015 Municipality Population Updates**

### **1. Prepare Census Data**

Using the Census 2010 as the Base, determine the April 1, 2010 household population, group quarter population, total housing units, occupied housing units, occupancy rates and population per occupied unit for total units for each jurisdiction. Adjust the original census counts to reflect results of the Census Count Question Resolution (CQR) Program.

### **2. Collect New Data**

Obtain the residential housing unit completions and demolitions for the time period from July 1, 2014 through June 30, 2015 from member agencies.

Obtain annexed and de-annexed housing unit data from member agencies. Determine population change from annexations/de-annexations using persons per household and occupancy rates from the Census 2010 blocks intersecting each annexed/de-annexed area.

Obtain July 1, 2015 group quarters population from survey of member agencies. Subtract the April 1, 2010 group quarter count from the July 1, 2015 to obtain the change in group quarter population.

Data for municipalities in Maricopa County were collected by MAG. Data for municipalities in Pinal County were collected by Central Arizona Governments (CAG).

### **3. Calculate July 1, 2015 Housing Units**

Calculate the July 1, 2015 total housing stock by municipality by adding the net housing units (completions minus demolitions) and the net housing units annexed from step 2 above to the Census base.

### **4. Calculate July 1, 2015 Resident Population**

Calculate the updated household population using the Housing Unit Method (HUM). For Maricopa County, calculate change in the household population by multiplying the annual change in the housing stock of non-annexed units by the respective occupancy rates and persons per occupied unit by municipality. Then add the estimated household population change to the annexed population for each municipality and estimated household population for the previous year. For Pinal County, estimate the household population by multiplying the total non-annexed housing stock by the respective occupancy rates and persons per occupied unit by municipality and adding to annexed population estimates. Occupancy rates and persons per occupied unit by municipality were taken from Census 2010 for both counties.

Bench the residential population in households to the county control totals for population in households from Arizona State Demographer's Office (SDO) to obtain July 1, 2015 population in households. Benching is necessary when the MAG derived total population does not match the control total obtained from SDO. The household population difference

is distributed proportional to the pre-beneched household population results for July 1, 2015.

Calculate the total resident population for July 1, 2015 by adding the July 1, 2015 group quarter population from step 2 to the July 1, 2015 household population.

5. **Estimating Unincorporated Pinal County population within MAG MPA**

Housing completion, annexation and group quarters data are provided by CAG for the entire unincorporated area. Therefore populations are first estimated for the entire unincorporated area and then distributed to (a) portions within the Gila River Indian Community and (b) unincorporated portions within the MAG planning area. The Gila River population is estimated by applying a historic annual growth rate. The unincorporated population within the MAG planning area is distributed by applying the share of housing completions observed from April 1, 2010 to June 30, 2014, to the total unincorporated population and then subtracting the estimated Gila River population.

## DRAFT Population and Employment Projections for July 1 of each year

### Maricopa County

Year	Total Resident Population	Total Employment
2015	4,081,000	1,923,000
2020	4,506,000	2,165,000
2025	4,912,000	2,324,000
2030	5,307,000	2,490,000
2035	5,693,000	2,670,000
2040	6,059,000	2,863,000
2045	6,401,000	3,061,000
2050	6,728,000	3,267,000

### Pinal County

Year	Total Resident Population	Total Employment
2015	407,000	68,000
2020	480,000	80,000
2025	560,000	95,000
2030	654,000	121,000
2035	765,000	153,000
2040	889,000	191,000
2045	1,021,000	235,000
2050	1,164,000	286,000

**Notes:**

Population projections are from the Arizona Department of Administration Draft Projections, November 2015. Employment projections are based on the attached methodology.

Population and employment projections above have been rounded to the nearest thousand.

## Draft Population Projections Control Totals for Maricopa and Pinal Counties

### A. Population

- The Arizona State Demographer employs a cohort-component population projection model to be consistent with the results of the 2010 Census, recent American Community Survey (ACS) results, and recent population estimates. The cohort-component model was created with input from the Council for Technical Solutions (CTS).
- CTS consists of members from all of Arizona's Councils of Government (COGs) and Metropolitan Planning Organizations (MPOs), representatives from the major universities, and State level representatives from the Arizona Department of Transportation (ADOT), the Arizona Department of Health Services, and the Arizona State Demographer.
- At CTS, members discuss the model assumptions, input data, and results from the cohort-component model. These include school enrollment data, driver's license data, Medicare data, migration rates, survival rates, birth rates, race/ethnic groupings, etc. The model projects resident population by age, sex, and race/ethnicity for each county in Arizona. These results are used to control the sub-county population projections.
- In the 2012/13 projections from the State Demographer, it was assumed that as the economy recovered the state would see a temporary rise in birth rates across all race/ethnic groups as people became more confident along with the economy. Although the economy has recovered somewhat, the Vital Statistics data obtained since then have not reflected that assumed rise in birth rates, so for this set of projections that assumption has been removed.
- MAG develops sub-county resident population projections for Maricopa County municipalities to be consistent with population control totals produced for Maricopa County as described above. MAG also works in collaboration with staff at Central Arizona Governments (CAG) to develop sub-county resident population projections in Pinal County. The CAG Regional Council will also approve the control totals for their member agencies.

### B. Employment

- The Arizona Department of Administration's (ADOA) State Demographer's Office does not produce county level long-term employment forecasts; therefore it is necessary to obtain employment projections from another source.
- MAG develops county-level and industry-specific long-term employment projections for Maricopa County and will be developing 2015 long-range employment projections for Pinal County in collaboration with staff at Central Arizona Governments (CAG).
- To develop the 2015 county-level long-range regional employment projections for the Maricopa County and Pinal County, and to maintain consistency, MAG staff purchased the updated 2015 population and employment projections from Moody's Analytics, Inc. and Woods & Poole Economics, Inc. In addition, MAG subscribes to quarterly employment forecasts for the Phoenix metropolitan statistical area (Maricopa and Pinal) produced by the Economic and Business Research Center at the University of Arizona. The University of Arizona forecasts augment Moody's Analytics, Inc. socio-economic projections by providing a benchmark to Moody's Analytics Inc. short-term projections. The county-level

socio-economic projections from Woods & Poole Economics, Inc. are also used to inform the process and ensure quality control of the data at the County-level.

- The employment projection figures were calculated using the following steps:
  - Derived employment growth rates for Maricopa and Pinal from the Moody's Analytics Inc. employment projections and for the Phoenix metropolitan statistical area from the University of Arizona's employment projections. Conducted a comparative analysis of the employment growth rates and employment to population ratios. The comparative analysis included a review of the series against the employment forecasts for 2015 and 2016 released by the Arizona Department of Administration's Office of Employment and Population Statistics and against national economic forecasts by the National Association of Business Economists (NABE) and the International Monetary Fund. In addition, short-term projections were assessed against historical and current trends to determine how well the purchased projections representation current economic conditions and near-term expectations. Overall, Moody's Analytics, Inc., Woods and Pools Economics, Inc. and The University of Arizona's employment growth rates were found to be similar for the long-end of the projections but differ in their short-term growth expectations (2015 to 2020). The University of Arizona's projections seem more in line with the current local business environment and near term economic expectations and forecasts by the Arizona Department of Administration's Office of Employment and Population Statistics. Woods and Pools Economic, Inc. applies a flat line projection and therefore does not have a business cycle in their short-term projections.
  - Pooled employment-weighted annual average growth rates for Moody's Analytics, Inc. and Woods and Pool Economics, Inc. employment projections provide a series that represents current short-term economic expectations and aligns with short-term (2015-2020) employment projections developed by the University of Arizona and 2015 and 2016 employment projections by the Arizona Department of Administration's Office of Employment and Population Statistics.
  - Compiled and processed the Maricopa and Pinal 2014 base employment data to include covered employment, military, and uncovered employment. Developed pooled, employment weighted, annual average growth rates from 2015 to 2050 from both Moody's Analytics Inc. and Woods and Pools Economics employment projections. Applied growth rates derived by county to the base employment data for Maricopa and Pinal Counties. Developed employment-to-population ratios utilizing the ADOA draft population projections. Employment-to-population ratios derived were found to be growing for both Maricopa and Pinal Counties and, consequently, for the Phoenix metropolitan statistical area, as well.
  - Applied structural adjustments to commuter flows between Maricopa and Pinal counties to reflect a decrease in the number of workers living in Pinal County and working in Maricopa County and an increase in the number of workers living in Maricopa County and working in (commuting to) Pinal County. It is assumed and expected that as Pinal County's population increases its economy will develop key anchor industry sectors in support of, and to meet the employment and consumption needs of, its residents. These industry sectors will attract workers from neighboring counties, including Maricopa County. Current commuter flows data provided by the Census Transportation Planning Products 2006-2010 data indicate that more than 48 percent of Pinal County workers commute to Maricopa County and 0.3 percent of

Maricopa County's residents work in Pinal County. These trends are expected to change in the long-term, resulting in a larger proportion Pinal County's residents working in Pinal County. Assumptions on these reverse commuter jobs are applied and adjusted for in the county-level employment projections.

- o Derived county level employment by business sector by year from a combination of the two series (Moody's Analytics, Inc. and Woods and Pools Economics, Inc.) The University of Arizona's employment projections for the Phoenix metropolitan statistical area are used as a benchmark and to ensure quality control of the developed Maricopa and Pinal Counties' employment projections.