

June 22, 2011

TO: Members of the MAG Population Technical Advisory Committee

FROM: Jim Bacon, Paradise Valley, Chair

SUBJECT: TRANSMITTAL OF MEETING NOTICE AND TENTATIVE AGENDA

Tuesday, June 28, 2011 - 10:00 a.m.  
**Maricopa County Flood Control District**  
Flood Control Administration Building  
Buckhorn Mesa Room  
**2801 West Durango Street, Phoenix**

**PLEASE NOTE THAT THE MEETING WILL BE HELD OFFSITE**

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

Members of the POPTAC may attend either in person or by telephone conference. If you are attending via audioconference please contact Steve Gross at (602) 254-6300 at least one day prior to the meeting.

Visitor parking is available in the surface parking lot adjacent to the building. Refer to the enclosed map.

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 Jami Garrison 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 14 people for the MAG POPTAC. If you are unable to attend the meeting, please make arrangements for a proxy from your jurisdiction with Jami Garrison at (602) 254-6300.

**TENTATIVE AGENDA**  
**MAG Population Technical Advisory Committee**  
**June 28, 2011**

1. Call to Order

2. Call to the Audience

An opportunity will be provided to members of the public to address the MAG POPTAC 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 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 May 24, 2011

4. Census Update

a. Count Question Resolution (CQR) Program

The Census Bureau established the 2010 Census Count Question Resolution (CQR) Program by which State, local and Tribal area elected officials may challenge their jurisdiction's 2010 Census counts. On June 1, 2011 the CQR Program began accepting 2010 Census challenge submissions. Challenges must be received no later than June 1, 2013. An update and overview of the CQR program will be provided.

2. For information.

3. For information, discussion and approval of the minutes of May 24, 2011.

4.

a. For information and discussion.

b. Census 2010 Data

In May 2011 the Census Bureau released the demographic profiles for states, counties and places. The Census Bureau continues to release data from the 2010 Census. The next data product scheduled to be released is the Summary File 1, which will be released on a flow basis by state. An update will be provided.

5. July 1, 2010 Population Estimates

Arizona State Demographer's Office (SDO) has prepared July 1, 2010 resident population updates based on the Census 2010 results for April 1. These updates were developed by utilizing 2010 County level birth and death data. 2010 Municipality level birth and death data for 2010 along with annexations by jurisdictions has been utilized by MAG staff to create Municipality Population updates for July 1, 2010.

The Draft July 1, 2010 Maricopa County and MAG municipality resident population updates are attached for your review. The POPTAC is requested to recommend approval of these updates to the MAG Management Committee. Please see Attachment One.

6. State Demographer's Office Update

The Council of Technical Solutions, created by Executive Order 2009-1 and staffed by the State Demographer's Office, meets every month to discuss technical issues as related to population data, methods and processes for the State of Arizona. An update on current activities will be provided.

b. For information and discussion.

5. For information, discussion and possible recommendation to the MAG Management Committee to approve the July 1, 2010 Maricopa County and MAG Municipality Resident Population Updates.

6. For information and discussion.

7. Data Collection and Review

Ongoing data collection efforts include land use information such as General Plan amendments and development projects. The land use data collected are used in preparing socioeconomic projections and conducting regional analysis. A schedule for the collection of data for the next six months is included in Attachment Two. Review materials for the general plan data will have been provided to the members of the POPTAC. Following the general plan review, a review of developments will be undertaken in July and a review of existing land use will be undertaken in August. More information will be provided to POPTAC members on the developments review at the next meeting. A status report will be provided.

8. MAG Online Mapping Site

MAG staff has created an enhanced online mapping site. Comments from POPTAC members were solicited based on a beta version of the site and those comments have either been incorporated into the site or will be considered for a future enhancement. Both the demographic viewer and the employer viewer will be live shortly. A brief overview of the sites and update on the project will be provided.

9. Light Rail Economic Impact Study (EIS)

In 2009 MAG contracted with Arizona State University (ASU) to perform an EIS to document the land use and property value impacts of the Light Rail program in the region. The study reviewed data from prior to the opening of the Light Rail up to a year after it began full operation. The final report from the study has been completed and an overview of the project along with the findings will be presented.

7. For information and discussion.

8. For information and discussion.

9. For information and discussion.

10. Regional Updates

MAG POPTAC members and MAG staff will have the opportunity to provide an update on development within their jurisdiction, amendments to general plans and any special projects.

11. Next Meeting of MAG POPTAC

The next meeting of the MAG POPTAC is scheduled for Tuesday, July 26, 2011 at 10:00 a.m.

10. For information and discussion.

11. For information and discussion.

MINUTES OF THE  
MARICOPA ASSOCIATION OF GOVERNMENTS  
POPULATION TECHNICAL ADVISORY COMMITTEE

May 24, 2011  
MAG Office, Saguaro Room  
302 North 1<sup>st</sup> Ave, Phoenix

MEMBERS IN ATTENDANCE

\*Jim Bacon, Paradise Valley, Chair  
A-Tracy Clark, ADOT  
Charlie McClendon, Avondale, Vice Chair  
\*Bryant Powell, Apache Junction  
A-Andrea Marquez, Buckeye  
DJ Stapley, Carefree  
A-Ian Cordwell for Usama Abujbarah, Cave Creek  
David de la Torre, Chandler  
A-Mark Smith, El Mirage  
\*Ken Valverde for Eugene Slechta, Fountain Hills  
Thomas Ritz, Glendale  
A-Katie Wilken, Goodyear  
\*Gino Turrubiarres, Guadalupe  
\*Rick Buss, Town of Gila Bend

A-Linda Edwards for Kyle Mieras, Gilbert  
Sonny Culbreth, Litchfield Park  
John Verdugo for Matt Holm, Maricopa County  
\*Wahid Alam, Mesa  
A-Ed Boik, Peoria  
Chris DePerro, Phoenix  
Dave Williams, Queen Creek  
\*Bryan Meyers, Salt River Pima-Maricopa Indian  
Community  
Eddie Lamperez, Scottsdale  
A-Lloyd Abrams, Surprise  
A-Arlene Palisoc for Lisa Collins, Tempe  
\*Anne McCracken, Valley Metro  
\*Lloyce Robinson, Youngtown

\* *Not in attendance*

*A - Participated via audioconference*

OTHERS IN ATTENDANCE

Eric Morgan, Avondale  
Ken Galica, Avondale  
Jason Howard, MAG  
Jami Garrison, MAG  
Anubhav Bagley, MAG

Don Thorstenson, MAG  
Peter Burnett, MAG  
Max Enterline, Phoenix  
Jesse Ayers, MAG  
Carolyn Oberholtzer, Phoenix  
International Raceway (PIR)

1. Call to Order

The meeting was called to order at 10:02am by Vice Chair Charlie McClendon.

2. Call to the Audience

There were no comments from the audience.

3. Approval of the Meeting Minutes of March 22, 2011

Dave Williams moved, Thomas Ritz seconded and it was unanimously recommended to approve the meeting minutes of March 22, 2011.

#### 4. Census Update

Jami Garrison provided an update on products released from the 2010 Census data. She said that on May 12, 2011 the Census Bureau released the *Profile of General Population and Housing Characteristics: 2010*, which is more commonly referred to as the *Demographic Profiles*. She said that a demographic profile summary report for Maricopa County is provided as a handout at today's meeting. MAG staff have also prepared a report for each MAG member agency and those are also available on the MAG website. Ms. Garrison said that the *Demographic Profiles* are available only to the "place" level of geography and higher, including Indian reservations.

Ms. Garrison said that the next data to be released from 2010 Census data will be the Summary File 1 data (or SF-1). The SF-1 data includes more detailed age, race, household characteristics and housing information down to the block level which is the lowest level of Census geography. She said that the data will be released on a flow basis by the State beginning in June and continuing through August 2011.

#### 5. 2015 Population Update Options

Anubhav Bagley distributed a handout entitled *Population Share of State Comparison*. He said that on an annual basis about one billion dollars is distributed based on the share of the State's population that is within each city and town. These include income tax, sales tax, gasoline tax, and vehicle license tax. Currently, by State law, these are distributed based on either the decennial census numbers or a mid-decade special census number. In 2005 MAG spearheaded the effort for a special census survey, and that was overseen through a subcommittee of the MAG Management Committee. At the same time there was a State law passed that allowed for use of either a special census or a census survey for the revenue sharing population number. MAG also spearheaded efforts for a full special census in both 1985 and 1995.

Mr. Bagley continued, saying that in 2005 the Special Census Survey cost the region about \$8 million. If a full Census had been conducted instead of a survey, the cost would have been about \$31 million. He said that at this stage MAG staff is soliciting input from committee members on how MAG should be thinking about options for 2015. He then referenced the handout showing the comparison of the population share of state for 2000, 2005 and 2010. Mr. Bagley pointed out that the county generally has maintained about 60% of the state's share of population since 2000. From 2000 to 2010 there were ten MAG member agencies that declined in their share of the state's population, the largest one being Phoenix which declined by about 3 percent. Some agencies also gained, like Gilbert which increased its share by just over 1 percent.

Mr. Bagley asked the committee members for input on what other types of analysis they would like to see conducted and what other options could be investigated. He said that this was discussed at the MAG Intergovernmental Representatives meeting and the major concern expressed was with regard to the large cost involved, especially given the current economic conditions. He said the big reason for conducting a mid-decade census or census survey would be if growth rates are higher than the rest of the state, which was the situation in the past (e.g. 1985, 1995, and 2005). One of the options would be for MAG to collect data from member agencies on projected housing, if this is a data item currently being kept based on any development planned for the next few years. Mr. Bagley said that in addition, vacancy rates across the region are abnormally high. Rates are about double what they were in 2000. He said that in 2000 the vacancy rate was around 5.64% after adjusting for seasonal housing. In 2010, the rate was 10.4%, with 227,000 vacant housing units. About 60,000 of those units may

be seasonal but it is still a sizeable number of vacancies. When the economy recovers one would expect these vacancy rates to come back down. Another interesting analysis could be to compare this to the other Arizona counties and the state as a whole.

Charlie McClendon asked what would happen if we don't do anything for 2015. Anubhav Bagley responded that for the state shared revenue portion, if nothing is done then we would continue using the population shares from the 2010 Census for distribution of State shared revenues. The State population estimates (also known as "DES estimates") will keep getting produced annually and would be used for distribution of lottery funds, but those funds have been swept by the legislature and are no longer distributed. The population estimates are primarily used now for setting expenditure limits. Cities that are using "home rule" are not tied to those estimates anyway. Mr. Bagley said that in the MAG region there are not very many cities tied to the state estimates for expenditure limitations.

Anubhav Bagley said that if the MAG region decides not to do anything in 2015 it would raise the question of what the other jurisdictions around the state will do. He said that he will be asking the Arizona League of Cities and Towns for input on what jurisdictions around the state are planning for mid-decade.

Katie Wilken asked if there is any way to do an analysis on what would be the break-even point. In other words, she clarified, what percentage of growth would we have to show in order to get back the amount of money spent on doing a Special Census or Census Survey? Mr. Bagley responded that even if we could estimate that number using data and information mentioned earlier, such as projected housing, it would also have to be done for the rest of the state because the basis is a percentage share of the state population. However, he said that is a good option and MAG staff will begin looking into ways to do this analysis.

Eddie Lamperez asked that if we did decide to do a Special Census or Census Survey in 2015, when would a decision need to be made and money allocated/paid to the Census Bureau? Anubhav responded that the last time, for the 2005 Special Census Survey the subcommittee was formed in 2002 and the money began being collected in late 2002, early 2003.

Mr. Lamperez said that while we are still in the economic downturn, paying for something like this may not seem reasonable or doable for the cities, but this time next year things could turn around and it may be a different story. Because of this, he said that he would be reluctant to say no right now when there are unknowns about the future conditions.

Mr. Bagley said that another option would be to look at the differences in the Census Bureau's estimate process. As a region, we could begin looking at improving our inputs to the Census Bureau's annual estimates and working with the Bureau on these estimates. It could be looked into using the Census Bureau's estimates in place of a Special Census or Census Survey. A similar option would be to look at improving the State Demographer's Office annual estimates.

Dave Williams asked if there is any estimate of a per-head dollar amount for the State Shared Revenue. He said that if Queen Creek shows a growth of 10% for the next five years then it could make a significant difference in their budget.

Mr. Bagley said he would evaluate what was done in 2005 with regards to this. He said that in 2005 the evaluations on cost and revenue sharing were done by the oversight subcommittee. POPTAC was tasked with looking at the technical aspects such as: what are the pros and cons of using different methodologies? However, he added that this was a good idea and MAG staff will evaluate this.

Charlie McClendon added that he served on the subcommittee in 2002 and 2003 in determining what to do for 2005. It was then a forgone conclusion that something would be done because the region was still in a period of high growth. He said that the debate then was whether to do a full census or a survey. This time the dynamic is a bit different and it is not a forgone conclusion. In fact, some cities may be better off staying with the 2010 numbers. There is a lot to be considered and certainly nothing needs to be decided right now. He continued saying that committee members need to talk about this within their own organization in order to determine what would make the most sense for their jurisdiction. He said you could determine the per-person revenue by taking the amount you get currently for state shared revenue and dividing that by the current population.

Anubhav Bagley asked if any members have ideas on other types of data that could be collected that would be helpful in the analysis to let him know. He also said that currently MAG requests that member agencies provide MAG a copy of the C-404 form that they turn in to the Census Bureau which reports housing permits. MAG compares this data and the final report that comes back from the Census Bureau with the MAG Residential Completions dataset. Generally the Census Bureau accepts input based on the completion data but there are often issues with demolitions and mobile home data. These areas, demolitions and mobile home data, could be improved on.

Katie Wilken asked if the amount paid for the 2005 Census Survey was recovered based on the updated data. Anubhav Bagley said that he believed that it did but he would go back and check the data. The percentages did go up for 2005 and it is only later that the shares started to go down, particularly for the larger cities.

Thomas Ritz said that the Census Bureau did not adjust their estimates based on the 2005 Census Survey. He asked if, had the region conducted one, the Census Bureau would have adjusted their numbers based on a full census count. Mr. Bagley replied that he would need to check with the Census Bureau on that question. He said the American Community Survey (ACS) is benched to the full Census counts, but he would check with the Census Bureau regarding a census survey.

Mr. Ritz then asked if there is any way to check if there is a specific cutoff in terms of growth or expected growth that a jurisdiction could use to determine if they will indeed conduct a mid-decade census or census survey. Anubhav Bagley responded that Maricopa County is the only region that has done a full mid-decade census. In 1995 Pima County did a Census Survey but no other county has done a full mid-decade census. Thomas Ritz then asked if a jurisdiction with high growth does a mid-decade Special Census but the rest of the jurisdictions do not, would the new higher percent share that comes about from the Special Census count affect the jurisdictions that do not do a Census by reducing their share. Mr. Bagley responded yes, the state shared revenue numbers would be realigned. He explained that is how the state law is right now but there could always be a new bill introduced in the future.

Chris DePerro commented that the City of Phoenix is not interested in participating in a 2015 Special Census. Charlie McClendon remarked that it would be interesting to learn the positions of the various agencies with regards to mid-decade census activities and he recommended that the committee continue to look into this.

Anubhav Bagley asked about working with member agencies with regards to getting input on how they see their jurisdiction growing as well as additional input on permit data sent to the

Census Bureau on C-404 forms. Charlie McClendon said that would be a good idea and that he will assume MAG staff will move forward in gathering and analyzing this data.

#### 6. State Demographer's Office update

Anubhav Bagley reported that the State Demographer's Office has been moved from the State Department of Commerce to the State Department of Administration. He said that originally, as the Department of Commerce transitioned to the Arizona Commerce Authority, the State Demographer's Office was to be moved to the Governor's Office of Strategic Planning and Budgeting. However, due to some legislative issues and potential conflicts, it needed to be part of a State Agency, so it is now part of the State Department of Administration.

Mr. Bagley reported that the State Demographer's Office staff are currently working on updating the July 1, 2010 population estimates. State staff prepared an initial draft using birth and death data for the counties, but the place-level data only just became available. They are now using the newly available place data to prepare updated place-level July 1, 2010 population estimates.

Mr. Bagley continued his update by noting that intercensal estimates are also being prepared by the State. The State looked at three methods for these estimates. One method is looking at just the 2000 and the 2010 Census numbers and using those to estimate the in-between years. The second method is to do the same thing except they would also include the population estimate that came from the 2005 Maricopa County Special Census Survey. The third method is to use the estimates that are produced by the Census Bureau under their methodology, which differs from the one the State uses. MAG staff recommendation is to use the first method and not add in the data from the 2005 Maricopa County Special Census Survey.

Anubhav Bagley then reported that the State Demographer's Office is also working on producing the next set of long range population projections. These projections are due by the end of December 2012, according to State law. The word is that they are targeting late summer for completion of these projections so MAG is hoping to see them in August or September of 2012. They are required by State law to go out every 25 years for transportation planning purposes, MAG staff is requesting that they produce numbers out to at least the year 2040 to match our planning horizon.

Mr. Bagley concluded his report discussing the July 1, 2011 population estimates effort. MAG continues to collect annexation and group quarter data from the member agencies. The State is evaluating different methodologies for the 2011 estimates and MAG staff will report back to the POPTAC membership and/or the POPTAC Ad Hoc committee as new information is received from the State.

#### 7. MAG 2010 Employer Database

Don Thorstenson reported that the 2010 MAG Employer database has been completed and is ready for distribution. He thanked the members for their assistance in providing and reviewing the data. He then gave an overview of the Employer database. He said that as a whole the database represents about 47,000 employers with 1.4 million employees. Mr. Thorstenson emphasized that the published data is only for businesses with 5 or more employees as the smaller employers are not tracked in this database. The data for the employer database comes from various data sources: the Maricopa County Trip Reduction Program, MAG member agencies for the public employment data, Dun & Brandstreet commercial database and various other sources where staff find information such as the Phoenix Business Journal. Mr. Thorstenson added that MAG is currently in the process of reviewing third-party data sources.

Every 5 years MAG performs a data source review to ensure that the third party data being used is the best available. He said that MAG has received sample data for Phoenix, Chandler and Avondale from the potential data providers. He said that representatives from those three member agencies are assisting MAG staff with review of the data.

Mr. Thorstenson presented a map of the concentration of employment throughout the region based on the 2010 Employer database. He then shared a chart showing the breakdown of total employment by industry. He noted that the largest sectors include trade, transportation and utilities as well as education and health services. Mr. Thorstenson provided a comparative analysis chart of employment by industry from 2006 to 2010. He noted that copies of his charts and presentation are available on the MAG website on the May 2011 meeting webpage.

## 8. Data Collection and Review

### 8A. Timeline

Jason Howard thanked the POPTAC members for their review of various data sets in March. He added that MAG has received several updates on General Plan Amendments and Development plans from members. He said that MAG staff have been inputting these data into the databases. Mr. Howard said that the next data set to be distributed for review will be the General Plan dataset. The review documents have already been sent out to several member agencies and will continue to be sent out as the data are prepared.

Jason Howard directed the members to Attachment One in their agenda packet, which is the data review timeline covering the period May through November 2011. He noted that following the General Plan review comes the Major Developments review. Jason indicated that this is going to be an important review because of the many changes in the region as a result of the economic downturn. He said that some of the important attribute fields on the Developments file that will need to be reviewed are the “status” and “start year” fields. The “start year” in particular is traditionally difficult to pin down due to stalls in construction. Likewise, he added, the “status” field goes with the start year and MAG staff will need to determine what phase these developments are in and when or if they will be completed or built.

Jason Howard then said that another Existing Land Use database review will be coming up later this summer. A consultant is working on the public lands portion of the database and in-house MAG staff are working on the land use codes at the parcel level.

The last data item Mr. Howard reported on was imagery. He said that we are finally going to be getting the 2010 imagery. There were some delays with getting the imagery from the County as a result of delays by the contractor. MAG provided a 3 terabyte hard drive to the County for transferring the images. Once MAG has the imagery an email will be sent out to all members alerting them that the imagery is available. Mr. Howard reminded the members that this imagery was flown in October 2010 and is 1 foot natural color.

### 8B. Apartment, Mobile Home/RV Park, and Major Group Quarters Review

Peter Burnett thanked the POPTAC members for helping with the review. MAG staff finished the update and review of these datasets. He said that POPTAC members provided important information during the update, such as apartment names as well as identifying several areas classified as town homes that are actually apartments. Mr. Burnett said that the review added 230 additional apartment buildings to the database and 1,777 apartment units. For mobile homes, with the help of member agency staff, several mobile home/rv parks that were in the

database were identified as having closed, but updates to the space counts for mobile home parks added 136 more spaces than previously had been in the database. For the major group quarters, Mr. Burnett said that there were many that had been removed based on feedback that indicated they had been closed or moved but there were also several new major group quarters identified and added to the database. Due to these updates overall the total count of group quarters did not change but capacity within these showed an increase of 544. Mr. Burnett once again thanked the members for their efforts in helping to review these datasets and asked that the members pass on his thanks to any of their staff who assisted in these reviews.

#### 9. MAG Online Mapping Site

Jason Howard reported that the map viewer that was demonstrated at the last POPTAC meeting is moving forward. He said that input from members on useability and suggestions for improvements were greatly appreciated. He indicated that some suggestions had been used to update the application while some suggestions that were beyond the scope of the first release have been added to a list for future enhancements. Mr. Howard said that MAG staff have been working diligently to get the site to a point where it will be ready to go live and expect that to happen within the next month. He added that along with the demographic viewer an employment data viewer is also being created that will have the geocoded MAG employer database as the base data. Separating these by subject area, a general demographic viewer and a separate employment/employer viewer, makes things less cluttered and simplifies the user experience.

Mr. Howard said that URLs for each of these online mapping viewers will be shared with the POPTAC members once they are final and are rolled-out live. He asked that members or agency staffs interested in a training session or workshop on how to use the viewers to contact him directly.

#### 10. Regional Updates

The City of Avondale gave a presentation on a Major General Plan Amendment that includes Phoenix International Raceway (PIR). Carolyn Oberholtzer, with Rose Law Group and representing PIR, presented the conceptual site plan proposed amendment. Ken Galica with the City of Avondale then provided an overview of the City of Avondale's Major Sports and Entertainment Zoning District. Copies of the presentations are available on the MAG website in the resource section for the May 2011 meeting.

Thomas Ritz asked if they were anticipating keeping the same amount of parking at PIR based on the new development plan. Ken Galica responded that the current parking is adequate, but as mixed use development begins to be built it may squeeze some of the parking and thus it would possibly require parking decks. He added that there are some undeveloped areas around the location now which could potentially be converted to surface parking or decks as well but that would not be known until some of the anticipated future development begins to actually occur.

#### 11. MAG POPTAC Alternate Meeting Location

Jami Garrison reported that the MAG building will be under renovation for the months of June, July and August and the entire second floor of the building will be unavailable for any meetings. She said that MAG has acquired meeting space at the Maricopa County offices at 28<sup>th</sup> Avenue and Durango. Directions and a map will be provided in future meeting announcements.

12. Next Meeting of the MAG POPTAC

Charlie McClendon said that the next meeting of the MAG POPTAC is scheduled for Tuesday, June 28, 2011 at 10:00 am at the Maricopa County Flood Control District Offices. The meeting adjourned at 11:02 am.

**MUNICIPALITY POPULATION UPDATE, JULY 1, 2010**  
**MARICOPA ASSOCIATION OF GOVERNMENTS**  
 -- DRAFT --

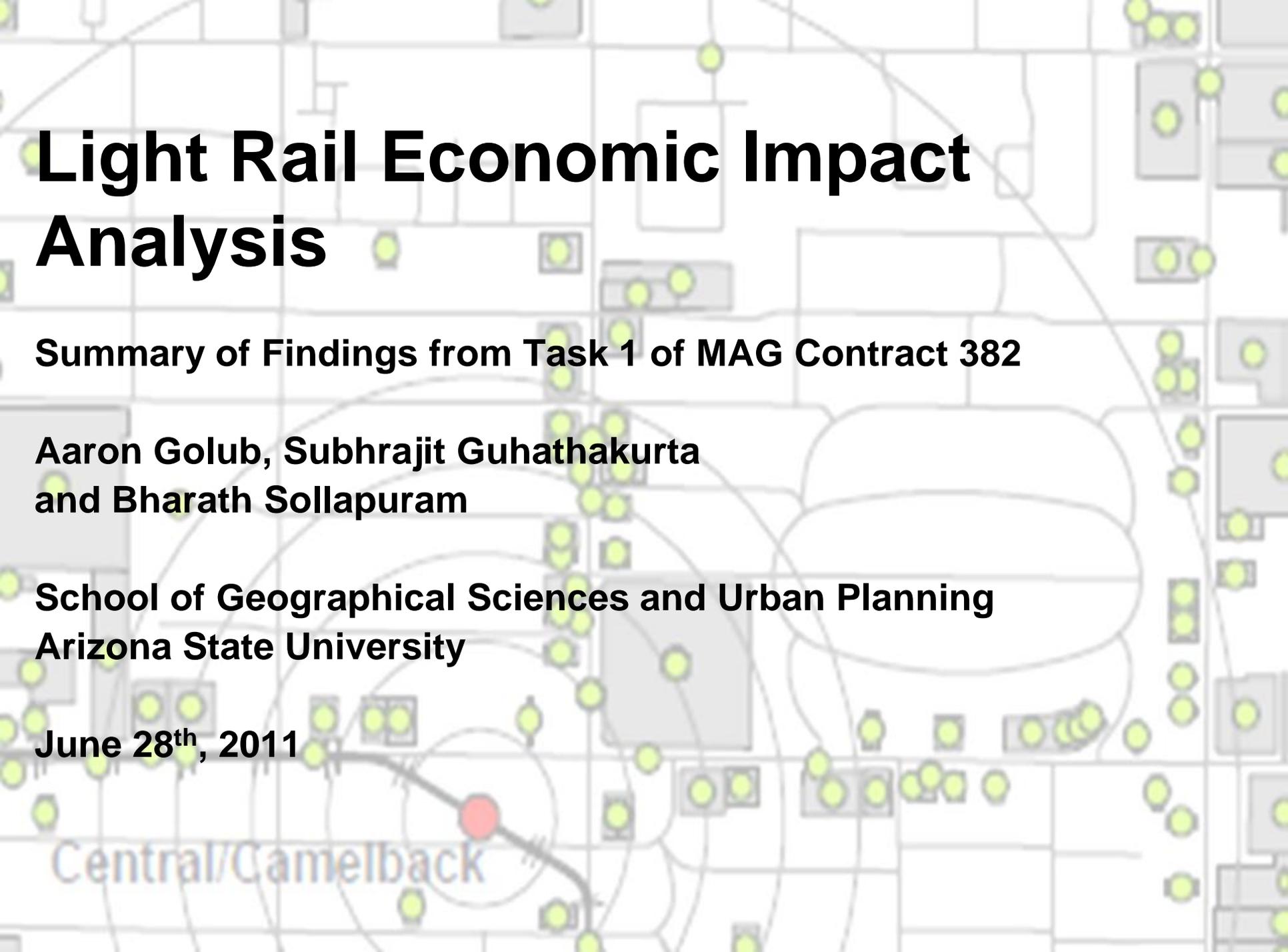
Jurisdiction	Total Population April 1, 2010 (Census)	Births (April 2010 thru June 2010)	Deaths (April 2010 thru June 2010)	Population change due to annexations (April 2010 thru June 2010)	Total Population July 1, 2010
Apache Junction *1	294	0	0	0	294
Avondale	76,238	294	64	0	76,468
Buckeye	50,876	187	46	2	51,019
Carefree	3,363	0	5	0	3,358
Cave Creek	5,015	2	12	0	5,005
Chandler	236,123	800	236	0	236,687
El Mirage	31,797	144	30	0	31,911
Fort McDowell	971	5	1	0	975
Fountain Hills	22,489	21	66	0	22,444
Gila Bend	1,922	12	2	0	1,932
Gila River *1	2,994	15	5	0	3,004
Gilbert	208,453	769	174	0	209,048
Glendale	226,721	833	337	0	227,217
Goodyear	65,275	193	64	0	65,404
Guadalupe	5,523	26	9	0	5,540
Litchfield Park	5,476	12	21	0	5,467
Mesa	439,041	1,662	774	0	439,929
Paradise Valley	12,820	12	22	0	12,810
Peoria *1	154,058	433	327	0	154,164
Phoenix	1,445,632	5,669	2,059	0	1,449,242
Queen Creek *1	25,912	100	14	0	25,998
Salt River	6,289	43	33	0	6,299
Scottsdale	217,385	401	421	0	217,365
Surprise	117,517	359	188	0	117,688
Tempe	161,719	455	200	0	161,974
Tolleson	6,545	34	6	0	6,573
Wickenburg *1	6,363	8	18	0	6,353
Youngtown	6,156	21	23	0	6,154
Balance of County	274,150	541	951	-2	273,738
<b>Total</b>	<b>3,817,117</b>	<b>13,051</b>	<b>6,110</b>	<b>0</b>	<b>3,824,058</b>

\*1 Maricopa County portion only.

Sources: U.S. Bureau of the Census 2010, Arizona State Demographer's Office, Arizona Department of Health Services, Maricopa Association of Governments

updated 6/24/2011 to include Indian Communities in Maricopa County.

<b>DRAFT</b> <b>MAG POPTAC Timeline</b> <b>From June 2011 to December 2011</b>		
<b>MAG Due Date</b>	<b>Member Agency Due Date</b>	<b>Activity</b>
	Submit when the latest Plan or update is complete.	Submit General Plans for 60 day review.
	Submit when Amendment is ready for review.	Submit Major General Plan Amendments for 60 day review.
Ongoing	Ongoing	Submit Minor General Plan Amendments, Area Plans and Development Master Plans/Community Master Plans and Amendments.
Ongoing	Ongoing	Submit Planned Area Developments/Planned Community Developments/Planned Residential Developments/Unit Planned Development/Final Plats and Reports.
Ongoing	Ongoing	Submit copy of C404 Form to MAG.
Ongoing	Ongoing	Submit Annexations to MAG as they occur.
May, 2011	June, 2011	Review 2010 General Plan and General Plan Amendments databases.
July, 2011	August, 2011	Review 2010 Major Developments database.
July, 2011	August, 2011	Review 2010 Existing Land Use database.
July, 2011		MAG begins collection of 2011 Employer data.
	July, 2011	Submit public employment data for MAG Employer Database 2011.
	July, 2011	Submit Q2 residential completions to MAG.
July, 2011	July, 2011	MAG sends jurisdictions draft annexations between April 1, 2011 to June 30, 2011 for July 1 Estimates. Jurisdictions verify and provide number of units.
August, 2011		MAG submits annexations that take place from April 1, 2011 thru June 30, 2011 to ADOC for July 1 Estimates.
	October, 2011	Submit Q3 residential completions to MAG.
October, 2011	November, 2011	Review of MAG 2011 Employer Database.
November/December, 2011		Review of County and Sub-county 2011 population updates dependent upon State Demographer's Office schedule.



# **Light Rail Economic Impact Analysis**

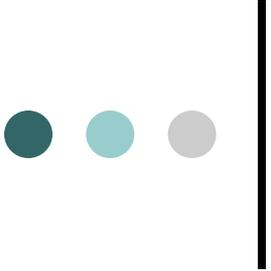
**Summary of Findings from Task 1 of MAG Contract 382**

**Aaron Golub, Subhrajit Guhathakurta  
and Bharath Sollapuram**

**School of Geographical Sciences and Urban Planning  
Arizona State University**

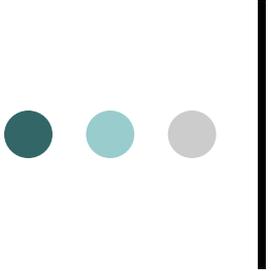
**June 28<sup>th</sup>, 2011**

Central/Camelback



# Project Overview

- Goals: to understand the impact of the LRT announcement, planning, construction, and operation on real-estate values of properties nearby
- Approach: Statistical analysis using actual real-estate transaction prices for nearby properties
- Findings: Significant price impacts for residential, multi-family residential, vacant land, and commercial properties
  - Impacts from proximity in space
  - Impacts from the time-phase of the project

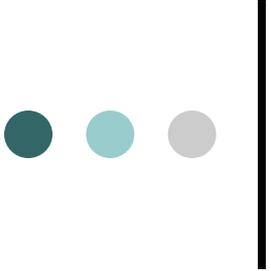


# Methodology

## ○ Hedonic Regression

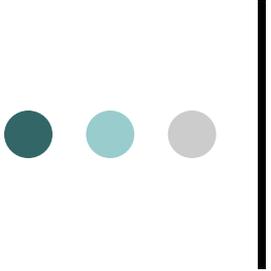
- $P_{i,t} = f(I, L, T, t)$

- $P_{i,t}$  = price of parcel/property (i) at time (t)
- $I$  = Structural characteristics of the parcel/property
- $L$  = location of the parcel
- $T$  = time period
- $t$  = time



# Data

1. Phoenix LRT station locations and track line
2. Phoenix LRT construction timeline information
3. Street network data
4. Downtown and airport location points
5. TOD parcels information
6. W.P. Carey Repeat Sales Index
7. 2010 GIS parcel information
8. W.P. Carey Repeat Sales Database
9. Assessors Premium Master Book 100 database



# Analysis

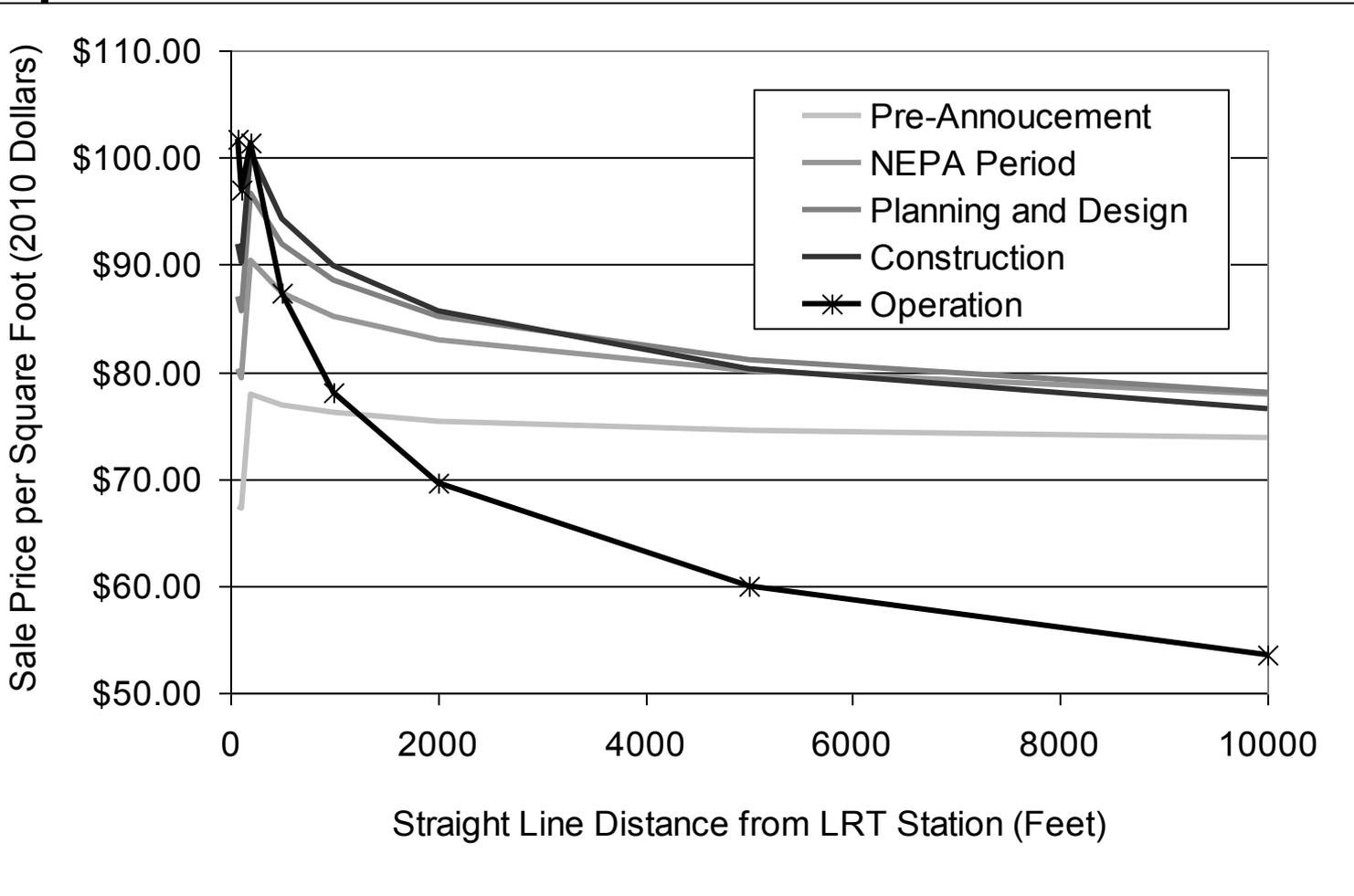
- Separate regression analysis for each type of property
  - Single-Family Homes
  - Condominiums
  - Commercial properties
  - Vacant parcels
- Regression design
  - Structural
  - Temporal
  - Locational
  - “Interaction” Terms



# Single-Family Homes – Double-Log Regression Results

Variable Name	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	S.E.	Beta		
<b>(Constant)</b>	<b>4.41743</b>	<b>0.056</b>		<b>78.819</b>	<b>0.000</b>
<b>Log_Livingsqft</b>	<b>0.76051</b>	<b>0.006</b>	<b>0.48287</b>	<b>133.175</b>	<b>0.000</b>
<b>Log_LotSqft</b>	<b>0.11243</b>	<b>0.002</b>	<b>0.16675</b>	<b>55.279</b>	<b>0.000</b>
<b>Age_Bldg</b>	<b>-0.00113</b>	<b>0.000</b>	<b>-0.03820</b>	<b>-12.346</b>	<b>0.000</b>
<b>Patios</b>	<b>0.01747</b>	<b>0.001</b>	<b>0.03122</b>	<b>12.652</b>	<b>0.000</b>
<b>Bath_Fixt</b>	<b>0.04006</b>	<b>0.001</b>	<b>0.15355</b>	<b>42.814</b>	<b>0.000</b>
<b>Floor</b>	<b>0.19129</b>	<b>0.010</b>	<b>0.04929</b>	<b>19.762</b>	<b>0.000</b>
<b>Dummy_Pool</b>	<b>0.13226</b>	<b>0.004</b>	<b>0.08085</b>	<b>33.033</b>	<b>0.000</b>
<b>Dummy_NEPA</b>	<b>0.27711</b>	<b>0.048</b>	<b>0.21928</b>	<b>5.768</b>	<b>0.000</b>
<b>Dummy_PD</b>	<b>0.42989</b>	<b>0.057</b>	<b>0.28072</b>	<b>7.486</b>	<b>0.000</b>
<b>Dummy_Const</b>	<b>0.55127</b>	<b>0.051</b>	<b>0.42326</b>	<b>10.915</b>	<b>0.000</b>
<b>Dummy_Operat</b>	<b>1.05609</b>	<b>0.071</b>	<b>0.55136</b>	<b>14.814</b>	<b>0.000</b>
Dummy_TOD	0.06558	0.035	0.00443	1.884	0.060
<b>Log_StdistST</b>	<b>-0.01390</b>	<b>0.003</b>	<b>-0.01549</b>	<b>-4.122</b>	<b>0.000</b>
<b>Dummy_Tr</b>	<b>-0.15746</b>	<b>0.068</b>	<b>-0.00982</b>	<b>-2.314</b>	<b>0.021</b>
<b>Log_StdistCBD</b>	<b>-0.11926</b>	<b>0.002</b>	<b>-0.12660</b>	<b>-48.214</b>	<b>0.000</b>
<b>Log_StdistAirport</b>	<b>0.09809</b>	<b>0.003</b>	<b>0.08085</b>	<b>30.294</b>	<b>0.000</b>
<b>Int_DSt_NEPA</b>	<b>-0.02406</b>	<b>0.006</b>	<b>-0.16415</b>	<b>-4.318</b>	<b>0.000</b>
<b>Int_DSt_PD</b>	<b>-0.04049</b>	<b>0.007</b>	<b>-0.22800</b>	<b>-6.080</b>	<b>0.000</b>
<b>Int_DSt_Const</b>	<b>-0.05583</b>	<b>0.006</b>	<b>-0.36990</b>	<b>-9.536</b>	<b>0.000</b>
<b>Int_DSt_Operat</b>	<b>-0.14944</b>	<b>0.008</b>	<b>-0.67361</b>	<b>-18.097</b>	<b>0.000</b>
Int_DTr_NEPA	-0.02342	0.099	-0.00075	-0.236	0.813 <sup>1</sup>
Int_DTr_PD	0.00616	0.127	0.00013	0.049	0.961 <sup>1</sup>
Int_DTr_Const	0.02885	0.103	0.00086	0.280	0.779 <sup>1</sup>
Int_DTr_Operat	-0.00646	0.142	-0.00012	-0.045	0.964 <sup>1</sup>

# Distance to LRT Impacts on Single-Family Homes

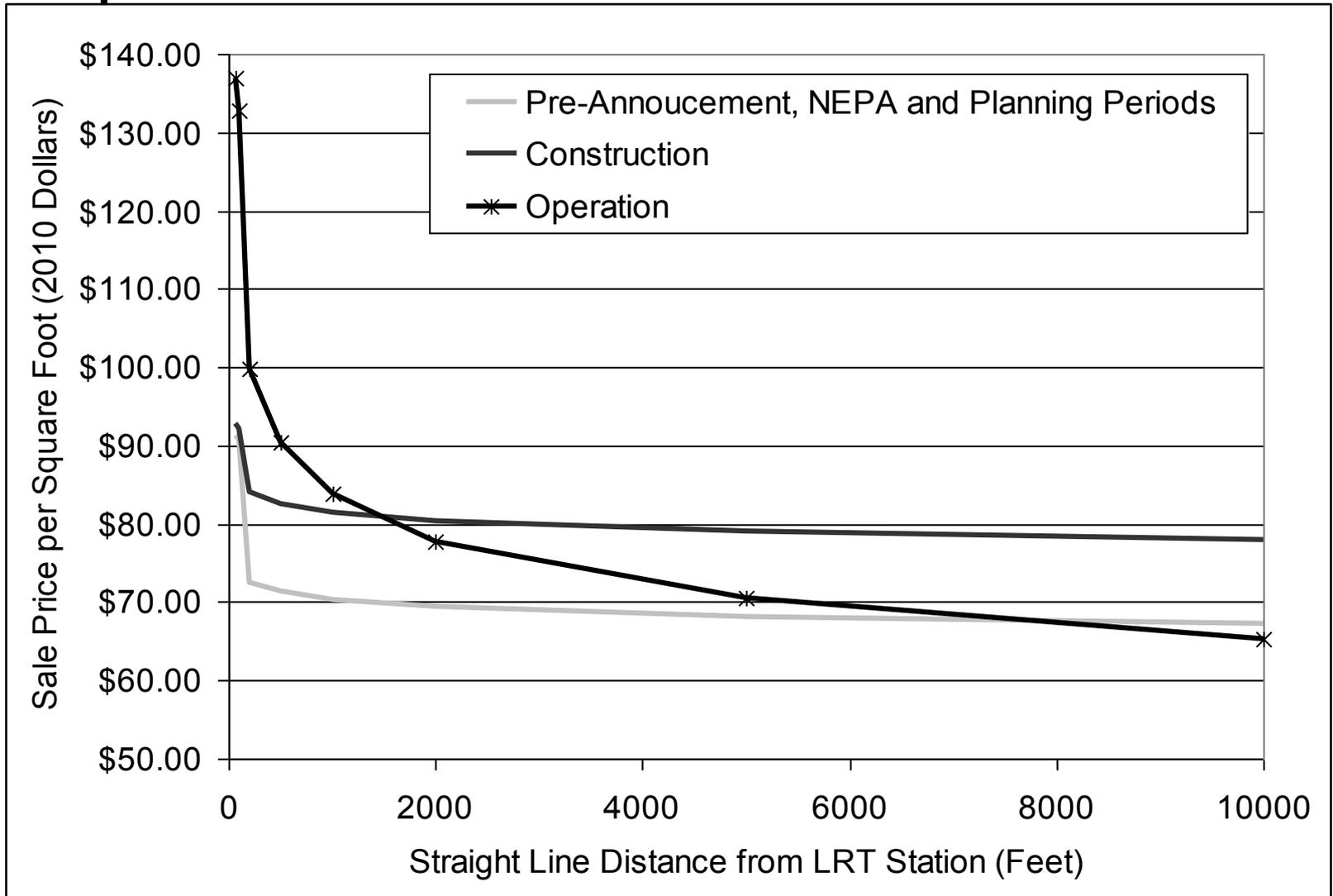




# Condominium— Double-Log Regression Results

Variable Name	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	S.E.	Beta		
<b>(Constant)</b>	<b>5.61166</b>	<b>0.115</b>		<b>48.948</b>	<b>0.000</b>
<b>Log_Livingsqft</b>	<b>0.92383</b>	<b>0.012</b>	<b>0.49961</b>	<b>77.911</b>	<b>0.000</b>
<b>Age_Bldg</b>	<b>-0.01525</b>	<b>0.000</b>	<b>-0.34160</b>	<b>-67.763</b>	<b>0.000</b>
<b>Patios</b>	<b>0.07288</b>	<b>0.004</b>	<b>0.07586</b>	<b>16.572</b>	<b>0.000</b>
<b>Bath_Fixt</b>	<b>0.01682</b>	<b>0.002</b>	<b>0.05909</b>	<b>9.018</b>	<b>0.000</b>
<b>Dummy_Pool</b>	<b>0.34004</b>	<b>0.044</b>	<b>0.03270</b>	<b>7.735</b>	<b>0.000</b>
Dummy_NEPA	0.02173	0.094	0.01528	0.231	0.817
Dummy_PD	0.13596	0.106	0.07940	1.278	0.201
<b>Dummy_Const</b>	<b>0.14780</b>	<b>0.076</b>	<b>0.13386</b>	<b>1.951</b>	<b>0.051</b>
<b>Dummy_Operat</b>	<b>0.78899</b>	<b>0.112</b>	<b>0.36923</b>	<b>7.026</b>	<b>0.000</b>
Dummy_TOD	-0.04717	0.033	-0.00610	-1.411	0.158
<b>Log_StdDistST</b>	<b>-0.01976</b>	<b>0.008</b>	<b>-0.02781</b>	<b>-2.615</b>	<b>0.009</b>
<b>Dummy_Tr</b>	<b>0.20937</b>	<b>0.062</b>	<b>0.05095</b>	<b>3.377</b>	<b>0.001</b>
<b>Log_StdDistCBD</b>	<b>-0.17294</b>	<b>0.004</b>	<b>-0.21256</b>	<b>-38.848</b>	<b>0.000</b>
<b>Log_StdDistAirport</b>	<b>0.06062</b>	<b>0.007</b>	<b>0.04061</b>	<b>8.325</b>	<b>0.000</b>
Int_DSt_NEPA	0.00567	0.011	0.03372	0.511	0.609
Int_DSt_PD	0.00240	0.013	0.01176	0.190	0.849
Int_DSt_Const	0.00692	0.009	0.05220	0.771	0.441
<b>Int_DSt_Operat</b>	<b>-0.08873</b>	<b>0.013</b>	<b>-0.34006</b>	<b>-6.581</b>	<b>0.000</b>
Int_DTr_NEPA	0.13190	0.087	0.00959	1.512	0.131
Int_DTr_PD	0.14566	0.120	0.00627	1.211	0.226
<b>Int_DTr_Const</b>	<b>-0.13124</b>	<b>0.067</b>	<b>-0.02558</b>	<b>-1.964</b>	<b>0.050</b>
Int_DTr_Operat	-0.01991	0.080	-0.00193	-0.249	0.804

# Distance to LRT Impacts on Condominiums

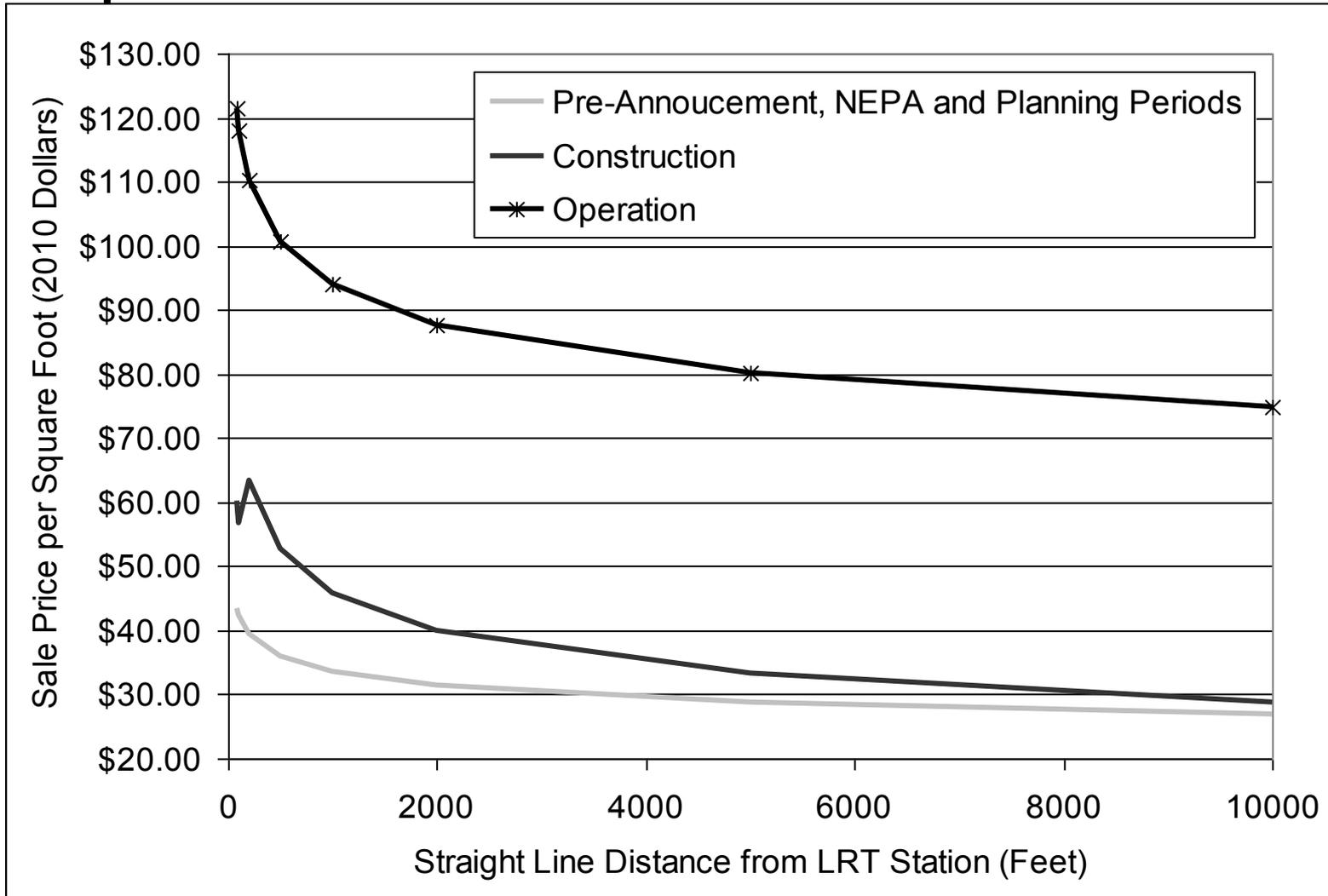




# Commercial Properties – Double-Log Regression Results

Variable Name	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	S.E.	Beta		
<b>(Constant)</b>	<b>5.05874</b>	<b>0.272</b>		<b>18.565</b>	<b>0.000</b>
<b>Log_Livingsqft</b>	<b>0.53491</b>	<b>0.010</b>	<b>0.56391</b>	<b>53.139</b>	<b>0.000</b>
<b>Log_Lotsqft</b>	<b>0.28698</b>	<b>0.011</b>	<b>0.27563</b>	<b>25.842</b>	<b>0.000</b>
<b>Age_Bldg</b>	<b>-0.01016</b>	<b>0.000</b>	<b>-0.16673</b>	<b>-21.428</b>	<b>0.000</b>
<b>Floor</b>	<b>0.36767</b>	<b>0.114</b>	<b>0.02309</b>	<b>3.230</b>	<b>0.001</b>
Dummy_NEPA	0.24689	0.259	0.08713	0.952	0.341
Dummy_PD	0.32572	0.286	0.09960	1.137	0.255
<b>Dummy_Const</b>	<b>1.01160</b>	<b>0.265</b>	<b>0.37346</b>	<b>3.820</b>	<b>0.000</b>
<b>Dummy_Operat</b>	<b>1.02621</b>	<b>0.478</b>	<b>0.18098</b>	<b>2.145</b>	<b>0.032</b>
Dummy_TOD	0.04672	0.059	0.00696	0.792	0.428
<b>Log_StdistST</b>	<b>-0.09910</b>	<b>0.017</b>	<b>-0.06747</b>	<b>-5.668</b>	<b>0.000</b>
Dummy_Tr	0.00015	0.086	0.00002	0.002	0.999
<b>Log_StdistCBD</b>	<b>-0.03744</b>	<b>0.014</b>	<b>-0.02011</b>	<b>-2.723</b>	<b>0.006</b>
<b>Log_StdistAirport</b>	<b>0.09594</b>	<b>0.016</b>	<b>0.04353</b>	<b>6.016</b>	<b>0.000</b>
Int_DSt_NEPA	-0.01848	0.031	-0.05512	-0.605	0.545
Int_DSt_PD	-0.02176	0.034	-0.05604	-0.644	0.520
<b>Int_DSt_Const</b>	<b>-0.10170</b>	<b>0.031</b>	<b>-0.31699</b>	<b>-3.277</b>	<b>0.001</b>
Int_DSt_Operat	-0.07609	0.056	-0.11318	-1.350	0.177
Int_DTr_NEPA	-0.20115	0.140	-0.01368	-1.435	0.151
Int_DTr_PD	0.05571	0.183	0.00256	0.304	0.761
Int_DTr_Const	-0.24943	0.132	-0.01890	-1.884	0.060
Int_DTr_Operat	-0.14562	0.238	-0.00489	-0.612	0.540

# Distance to LRT Impacts on Commercial Properties

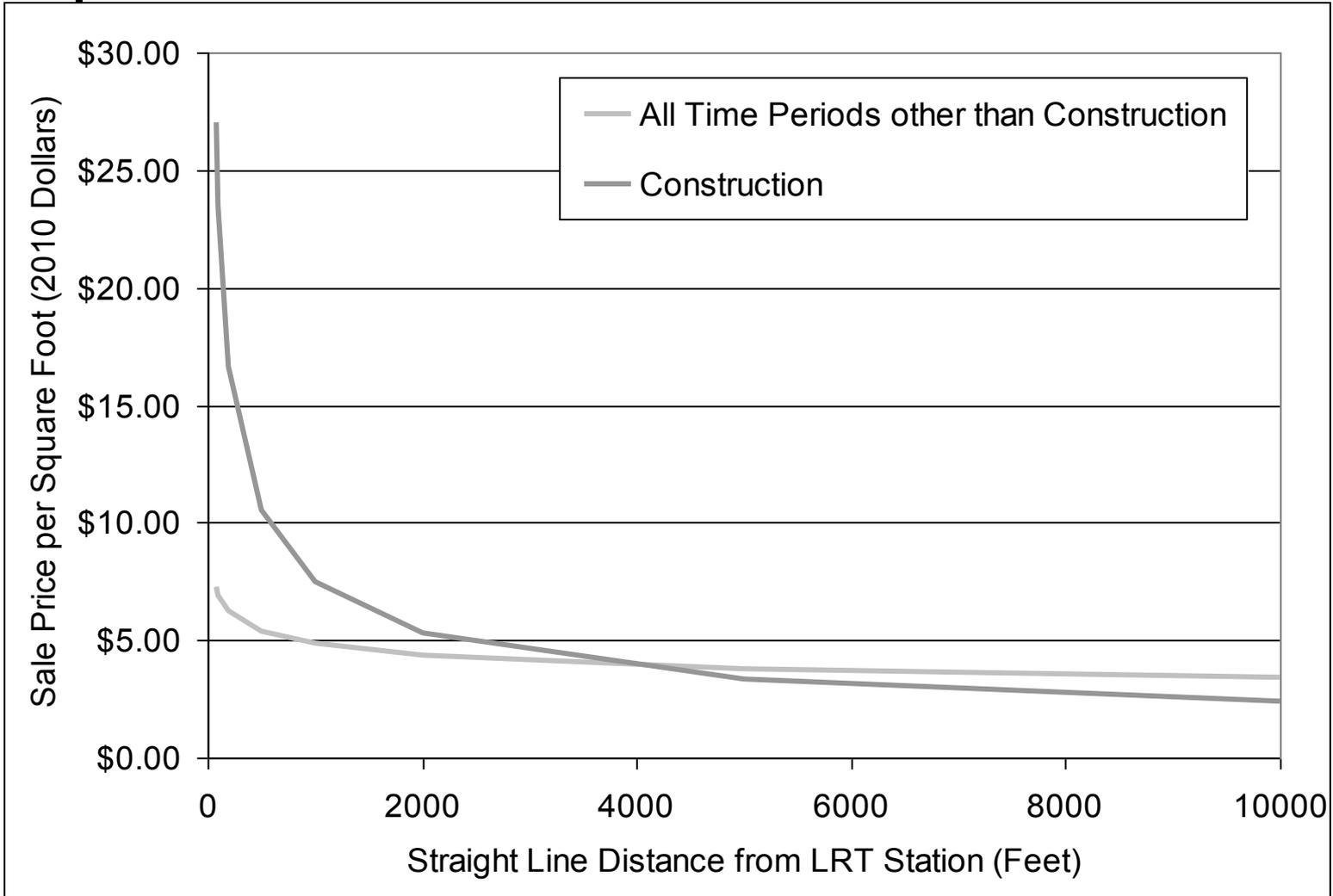


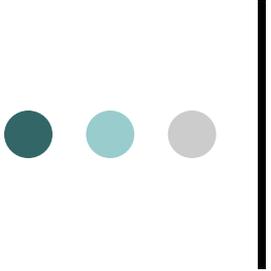


# Vacant Parcels – Double-Log Regression Results

Variable Name	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	S.E.	Beta		
<b>(Constant)</b>	<b>1.99935</b>	<b>0.652</b>		<b>3.067</b>	<b>0.002</b>
<b>Log_Lotsqft</b>	<b>0.96132</b>	<b>0.024</b>	<b>0.70792</b>	<b>40.473</b>	<b>0.000</b>
Dummy_NEPA	-0.72823	0.777	-0.20684	-0.938	0.348
Dummy_PD	1.00665	0.904	0.25680	1.114	0.266
<b>Dummy_Const</b>	<b>2.78781</b>	<b>0.722</b>	<b>0.87202</b>	<b>3.859</b>	<b>0.000</b>
Dummy_Operat	-3.30863	1.759	-0.35338	-1.881	0.060
<b>Dummy_TOD</b>	<b>0.44330</b>	<b>0.177</b>	<b>0.04846</b>	<b>2.507</b>	<b>0.012</b>
<b>Log_StdDistST</b>	<b>-0.15508</b>	<b>0.053</b>	<b>-0.08103</b>	<b>-2.902</b>	<b>0.004</b>
Dummy_Tr	0.28482	0.208	0.03509	1.371	0.171
Log_StdDistCBD	-0.06773	0.040	-0.03131	-1.691	0.091
<b>Log_StdDistAirport</b>	<b>0.18070</b>	<b>0.047</b>	<b>0.06524</b>	<b>3.815</b>	<b>0.000</b>
Int_DSt_NEPA	0.07120	0.092	0.17121	0.774	0.439
Int_DSt_PD	-0.14510	0.107	-0.31043	-1.352	0.176
<b>Int_DSt_Const</b>	<b>-0.34077</b>	<b>0.086</b>	<b>-0.88627</b>	<b>-3.954</b>	<b>0.000</b>
Int_DSt_Operat	0.38929	0.210	0.34626	1.857	0.064
Int_DTr_NEPA	0.30705	0.430	0.01368	0.714	0.475
Int_DTr_PD	-0.42938	0.421	-0.02045	-1.019	0.308
Int_DTr_Const	-0.39976	0.345	-0.02514	-1.158	0.247
Int_DTr_Operat	0.35730	1.070	0.00603	0.334	0.738

# Distance to LRT Impacts on Vacant Parcels





# Impact of TOD designation

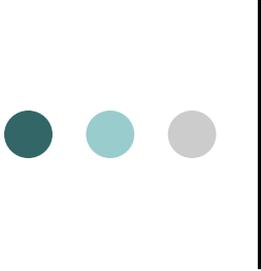
- Only Vacant Parcels showed a significant (at 95% C.I.) relationship between TOD and prices
  - 56% impact
- Single-Family sales were almost significant (94.xx % C.I.)
  - 6.8% impact



Questions....

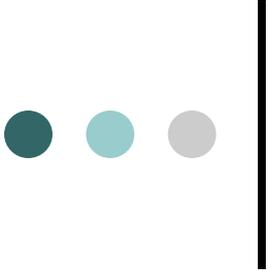


# Appendix Slides



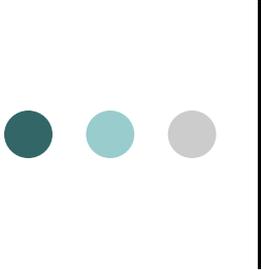
# Final combined database

- Sale date
- Price (adjusted by W.P.C. housing price index)
- Maricopa Co. parcel identity
- Parcel address
- Lot, interior size
- Age
- Pool, patios, baths, etc.
- Distances to CBD, Sky Harbor, LRT (tracks and stations)
- Time period of sale
- TOD designation



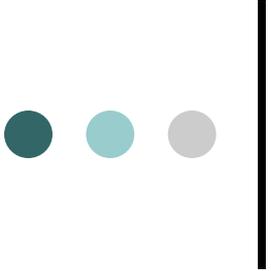
# Structural Variables

- Living square footage (Living\_Sqft)
- Lot footage (Lot\_Sqft)
- Age of the property (Age\_Bldg)
- Patios (Patios)
- Bath Fixtures (Bath\_Fixt)
- Number of Floors (Floor)
- Pool (Dummy\_Pool)



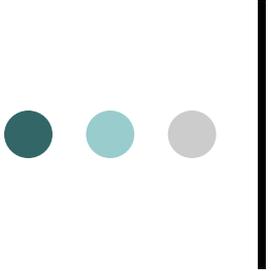
# Temporal Variables

<b>Pre-NEPA phase</b> (Dummy_PreNEPA)	Sales before NEPA process was initiated (before 3/1/1999)
<b>NEPA review phase</b> (Dummy_NEPA)	Sales during MIS/NEPA process (between 3/1/1999 and 1/24/2003)
<b>Project planning and design phase</b> (Dummy_PD)	Sales during project planning, design and engineering process (between 1/25/2003 and 2/15/2005)
<b>Construction phase</b> (Dummy_Const)	Sales during construction process (between 2/15/2005 and 12/26/2008)
<b>Operation phase</b> (Dummy_Operat)	Sales after LRT operation began (after 12/27/2008)



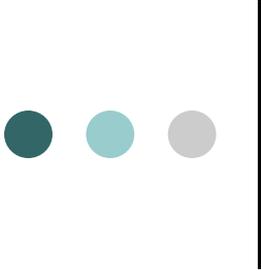
# Locational Variables

- TOD Zoning (Dummy\_TOD)
  - Value = 1 if parcel has TOD designation and sold after 11/19/2003 in Phoenix and 11/17/2005 in Tempe
- Distance to nearest station (Stdist\_St)
- Distance to track (Stdist\_Tr)
- Close to track dummy (Dummy\_Tr)
  - Value = 1 if within 200 feet of track
- Distance to nearest CBD (Stdist\_CBD)
- Distance to Airport (Stdist\_Airport)



# Interaction Terms

- Distance to nearest station *times* NEPA review phase dummy (Int\_DSt\_NEPA)
- Distance to nearest station *times* Project planning and design phase dummy (Int\_DSt\_PD)
- Distance to nearest station *times* Construction phase dummy (Int\_DSt\_Const)
- Distance to nearest station *times* Operation phase dummy (Int\_DSt\_Operat)
  
- Close to track dummy *times* NEPA review phase dummy (Int\_DTr\_NEPA)
- Close to track dummy *times* Project planning and design phase dummy (Int\_DTr\_PD)
- Close to track dummy *times* Construction phase dummy (Int\_DTr\_Const)
- Close to track dummy *times* Operation phase dummy (Int\_DTr\_Operat)



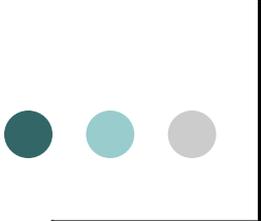
# Exclusion of Outliers

Property type	Initial Sales Sample size	Criteria used to exclude outliers	Final sample size (N)
<b>Single-family homes</b>	90,580	Living_Sqft>300 & Living_Sqft<10,000 Lot_Sqft>=100 & Lot_Sqft<100,000 Bath_Fixt>=3 & Bath_Fixt<=20 Age_Bldg<=100 Floor<=3 Adjsaleprice_Livingsqft <sup>a</sup> >10 & Adjsaleprice_Livingsqft <sup>a</sup> <2,000	88,308
<b>Condominiums</b>	25,860	Living_Sqft>300 & Living_Sqft<6,000 Age_Bldg<=75 Adjsaleprice_Livingsqft <sup>a</sup> >10 & Adjsaleprice_Livingsqft <sup>a</sup> <2,000	25,652
<b>Commercial parcels</b>	6,013	Living_Sqft>300 & Living_Sqft<500,000 Lot_Sqft>200 & Lot_Sqft<500,000 Age_Bldg<=100 Adjsaleprice_Livingsqft <sup>a</sup> >10 & Adjsaleprice_Livingsqft <sup>a</sup> <2,000	5,521
<b>Vacant parcels</b>	2,022	Lot_Sqft>=50 & Lot_Sqft<500,000 Adjsaleprice_Lotsqft <sup>b</sup> >1 & Adjsaleprice_Lotsqft <sup>b</sup> <2,000	1,788



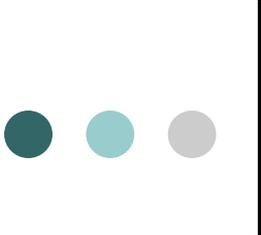
# Single-Family Homes - Descriptives

Variable Name	N	Minimum	Maximum	Mean	Std. Deviation
Adj_Saleprice	88,308	4,043	1,790,146	71,025	46,168
Living_Sqft	88,308	322	8,514	1,421	521
Lot_Sqft	88,308	100	96,647	7,566	4,377
Age_Bldg	88,308	0	100	42	17
Patios	88,308	0.00	7.00	1.1868	0.92
Bath_Fixt	88,308	3.00	20.00	5.3606	1.97
Floor	88,308	1.00	3.00	1.0139	0.13
Dummy_Pool	88,308	0.00	1.00	0.1113	0.31
Dummy_PreNEPA	88,308	0.00	1.00	0.3888	0.49
Dummy_NEPA	88,308	0.00	1.00	0.2098	0.41
Dummy_PD	88,308	0.00	1.00	0.1297	0.34
Dummy_Const	88,308	0.00	1.00	0.1935	0.40
Dummy_Operat	88,308	0.00	1.00	0.0783	0.27
Dummy_TOD	88,308	0.00	1.00	0.0012	0.03
Stdist_St	88,308	96	12,104	6237	2724
Stdist_Tr	88,308	36	10,556	5939	2750
Dummy_Tr	88,308	0	1	0.0010	0.03
Stdist_CBD	88,308	576	38,757	18,315	8645
Stdist_Airport	88,308	4095	54,971	32,737	11,712



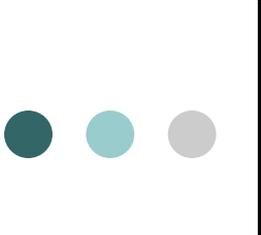
# Condominiums - Descriptives

Variable Name	N	Minimum	Maximum	Mean	Std. Deviation
Adj_Saleprice	25,652	4,590	2,551,718	58,559	53,274
Living_Sqft	25,652	322	3,575	1,118	353
Age_Bldg	25,652	0.00	75	19.58	12.15
Patios	25,652	0.00	8.00	0.4608	0.56
Bath_Fixt	25,652	3.00	14.00	5.5353	1.91
Dummy_Pool	25,652	0.00	1.00	0.0027	0.05
Dummy_PreNEPA	25,652	0.00	1.00	0.2337	0.42
Dummy_NEPA	25,652	0.00	1.00	0.1769	0.38
Dummy_PD	25,652	0.00	1.00	0.1132	0.32
Dummy_Const	25,652	0.00	1.00	0.4071	0.49
Dummy_Operat	25,652	0.00	1.00	0.0692	0.25
Dummy_TOD	25,652	0.00	1.00	0.0050	0.07
Stdist_St	25,652	79	11,493	5,150	2,767
Stdist_Tr	25,652	32	10,553	4,731	2,855
Dummy_Tr	25,652	-	1.0000	0.0177	0.1300
Stdist_CBD	25,652	890	38,565	17,384	8,392
Stdist_Airport	25,652	6,829	54,904	33,830	10,647



# Commercial Properties - Descriptives

Variable Name	N	Minimum	Maximum	Mean	Std. Deviation
Adj_Saleprice	5,521	8,897	28,050,665	610,672	1,414,906
Living_Sqft	5,521	321	484,556	14,959	31,440
Lot_Sqft	5,521	224	496,279	37,265	54,993
Age_Bldg	5,521	0	100	31.1311	18.59
Floor	5,521	1	4	1.0033	0.07
Dummy_PreNEPA	5,521	0	1	0.393	0.49
Dummy_NEPA	5,521	0	1	0.1998	0.4
Dummy_PD	5,521	0	1	0.1395	0.35
Dummy_Const	5,521	0	1	0.226	0.42
Dummy_Operat	5,521	0	1	0.0417	0.2
Dummy_TOD	5,521	0	1	0.0293	0.17
Stdist_St	5,521	88	11,493	5,636	3,098
Stdist_Tr	5,521	39	10,548	5,237	3,125
Dummy_Tr	5,521	-	1.0000	0.0272	0.1600
Stdist_CBD	5,521	372	38,055	14,378	7,383
Stdist_Airport	5,521	4,219	54,955	28,155	12,291



# Vacant Parcels - Descriptives

<b>Variable Name</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Adj_Saleprice	1,788	1,247	11,870,933	173,220	537,626
Lot_Sqft	1,788	302	486,071	24,198	49,998
Dummy_PreNEPA	1,788	0.00	1.00	0.3697	0.48
Dummy_NEPA	1,788	0.00	1.00	0.1974	0.40
Dummy_PD	1,788	0.00	1.00	0.1504	0.36
Dummy_Const	1,788	0.00	1.00	0.2595	0.44
Dummy_Operat	1,788	0.00	1.00	0.0229	0.15
Dummy_TOD	1,788	0.00	1.00	0.0240	0.15
Stdist_St	1,788	104	11,420	5,134	2,923
Stdist_Tr	1,788	89	10,544	4,665	3,059
Dummy_Tr	1,788	-	1.0000	0.0308	0.1700
Stdist_CBD	1,788	521	38,641	11,217	7,207
Stdist_Airport	1,788	3,714	54,961	24,540	12,008

# MAG map viewers

# Objectives

- Develop a framework for creating web map viewers
  - Integrate dynamic maps with reporting and data visualization
  - Simple, easy to use
  - Consistent look-and-feel
- Implement framework for two pilot sites
  - *Demographic viewer*: data from Census 2010 and American Community Survey (2005 – 2009)
  - *Employment viewer*: data from MAG employer database



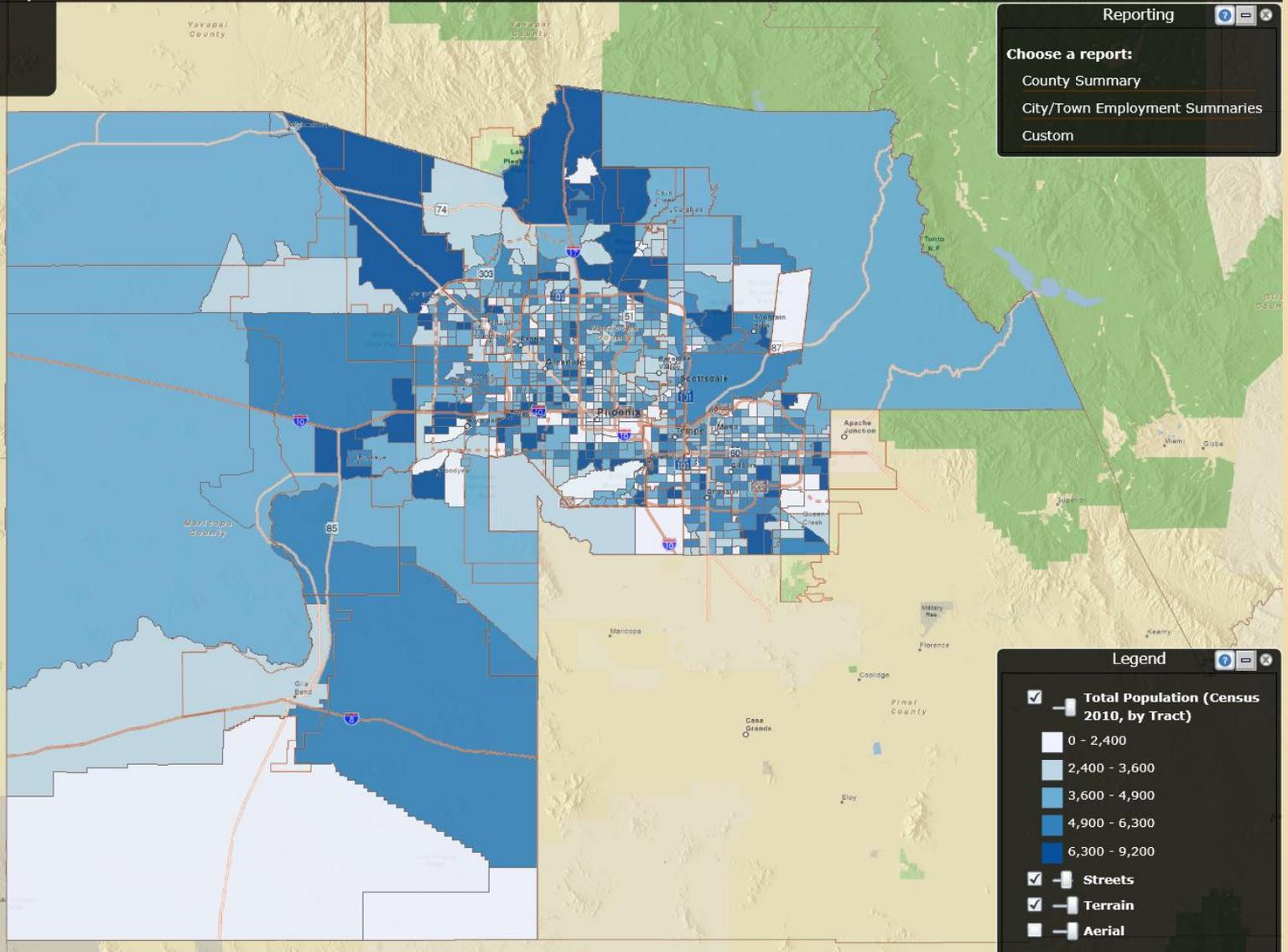
Choose a map:

- Population
- Housing

Reporting

Choose a report:

- County Summary
- City/Town Employment Summaries
- Custom



Legend

- Total Population (Census 2010, by Tract)
  - 0 - 2,400
  - 2,400 - 3,600
  - 3,600 - 4,900
  - 4,900 - 6,300
  - 6,300 - 9,200
- Streets
- Terrain
- Aerial

12 Miles



# Demographic Maps

Choose a map:

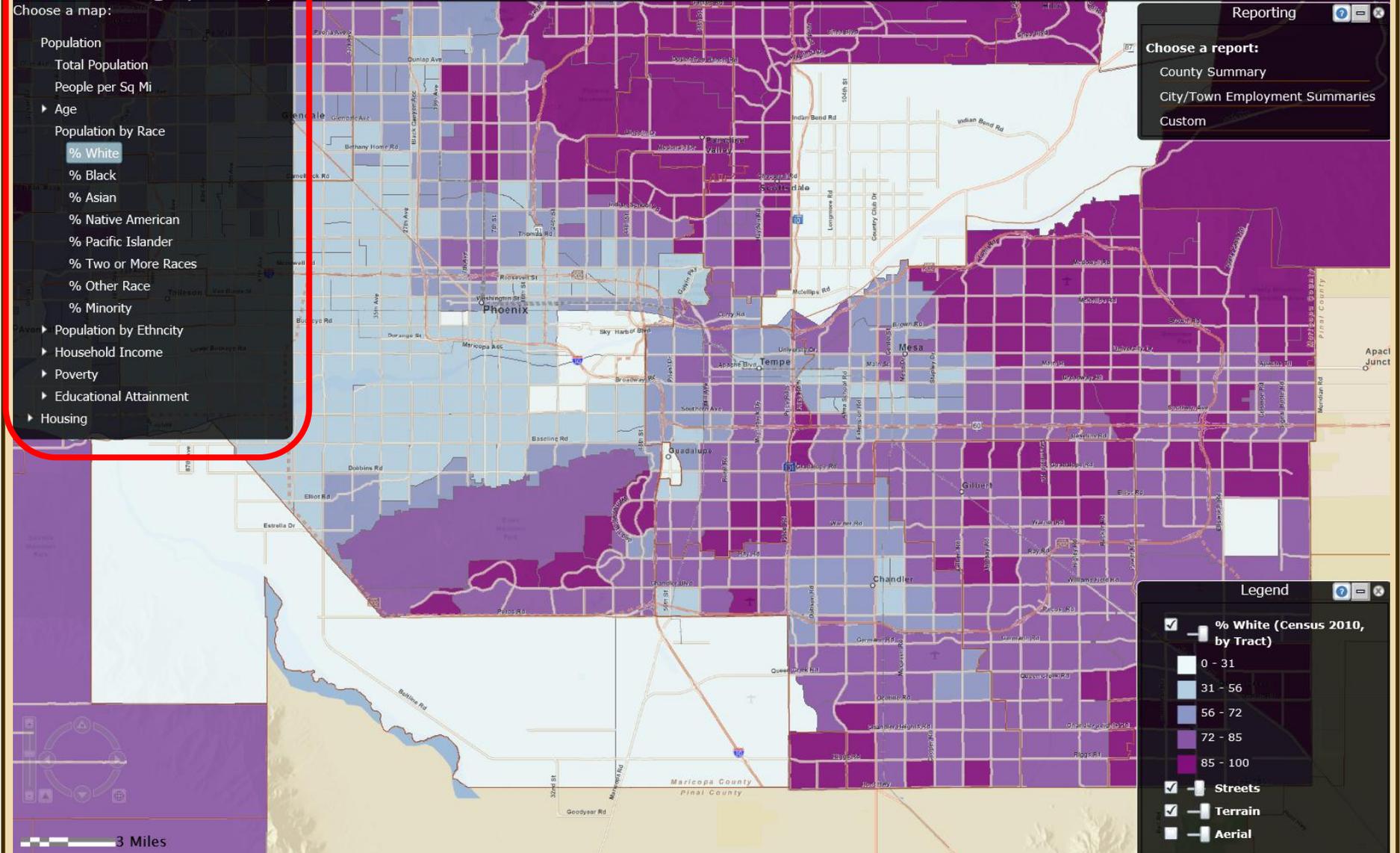
- Population
  - Total Population
  - People per Sq Mi
- Age
- Population by Race
  - % White**
  - % Black
  - % Asian
  - % Native American
  - % Pacific Islander
  - % Two or More Races
  - % Other Race
  - % Minority
- Population by Ethnicity
- Household Income
- Poverty
- Educational Attainment
- Housing

Current map: Percent White

Legend Reports Map PDF Help

Reporting

- Choose a report:
- County Summary
  - City/Town Employment Summaries
  - Custom



## Legend

- % White (Census 2010, by Tract)
  - 0 - 31
  - 31 - 56
  - 56 - 72
  - 72 - 85
  - 85 - 100
- Streets
- Terrain
- Aerial

3 Miles



# Demographic Maps

Choose a map:

## Current map: Percent of Households with Income 50K to 100K

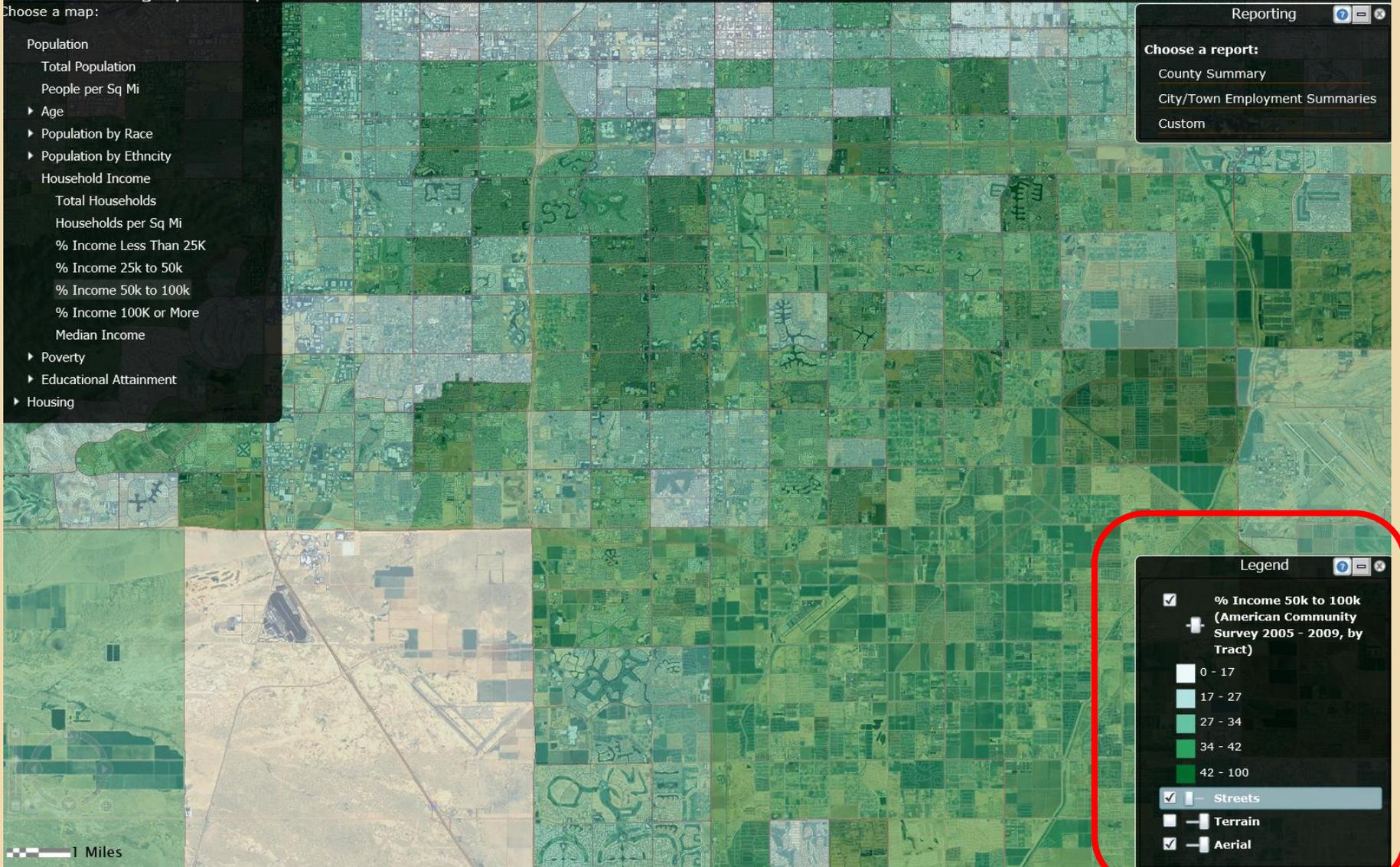
Legend Reports Map PDF Help

Reporting

### Choose a report:

- County Summary
- City/Town Employment Summaries
- Custom

- Population
  - Total Population
  - People per Sq Mi
- ▶ Age
- ▶ Population by Race
- ▶ Population by Ethnicity
- Household Income
  - Total Households
  - Households per Sq Mi
  - % Income Less Than 25K
  - % Income 25k to 50k
  - % Income 50k to 100k
  - % Income 100K or More
  - Median Income
- ▶ Poverty
- ▶ Educational Attainment
- ▶ Housing



Legend

- % Income 50k to 100k (American Community Survey 2005 - 2009, by Tract)
  - 0 - 17
  - 17 - 27
  - 27 - 34
  - 34 - 42
  - 42 - 100
- Streets
- Terrain
- Aerial



# Demographic Maps

Choose a map:

- Population
  - Total Population
  - People per Sq Mi
  - Age
  - Population by Race
  - Population by Ethnicity
  - Household Income
- Poverty
  - Total Families
  - Families per Sq Mi
  - % Families Below Poverty Level**
- Educational Attainment
- Housing

## Current map: Percent Families Below Poverty Level

Legend Reports Map PDF Help

Reporting

### Choose a report:

- County Summary
- City/Town Employment Summaries
- Custom

### Results for Maricopa County

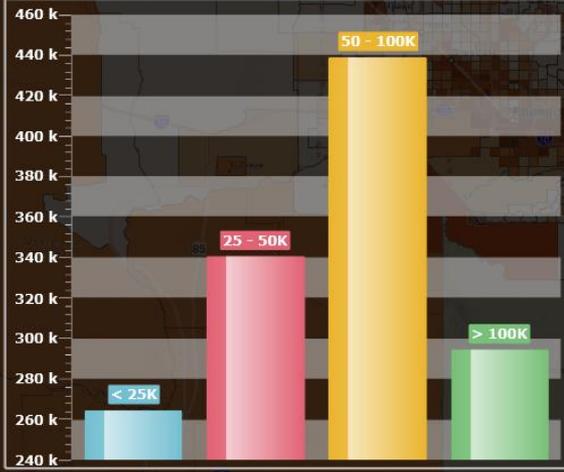
Summary Report

Charts

Display Chart Legend

Print Summary Report:

#### Household Income^



Source: \*Census 2010; ^American Community Survey 2005 - 2009

- Population by Race\*
- Population by Ethnicity\*
- Housing Unit Occupancy\*
- Population by Age\*
- Educational Attainment\*

### Legend

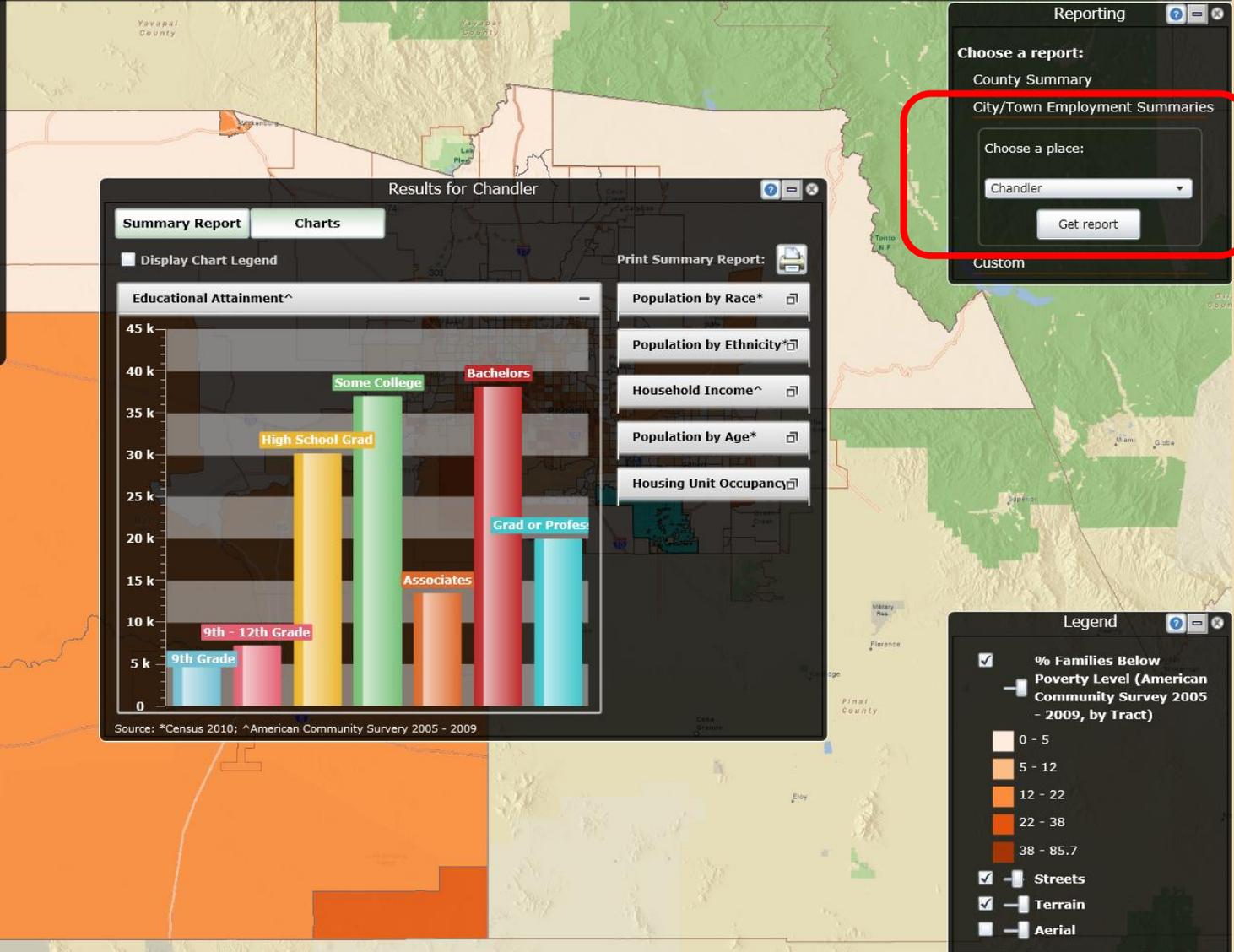
- % Families Below Poverty Level (American Community Survey 2005 - 2009, by Tract)
  - 0 - 5
  - 5 - 12
  - 12 - 22
  - 22 - 38
  - 38 - 85.7
- Streets
- Terrain
- Aerial

12 Miles



Choose a map:

- Population
  - Total Population
  - People per Sq Mi
- ▶ Age
- ▶ Population by Race
- ▶ Population by Ethnicity
- ▶ Household Income
- Poverty
  - Total Families
  - Families per Sq Mi
  - % Families Below Poverty Level
- ▶ Educational Attainment
- ▶ Housing



Reporting

**Choose a report:**

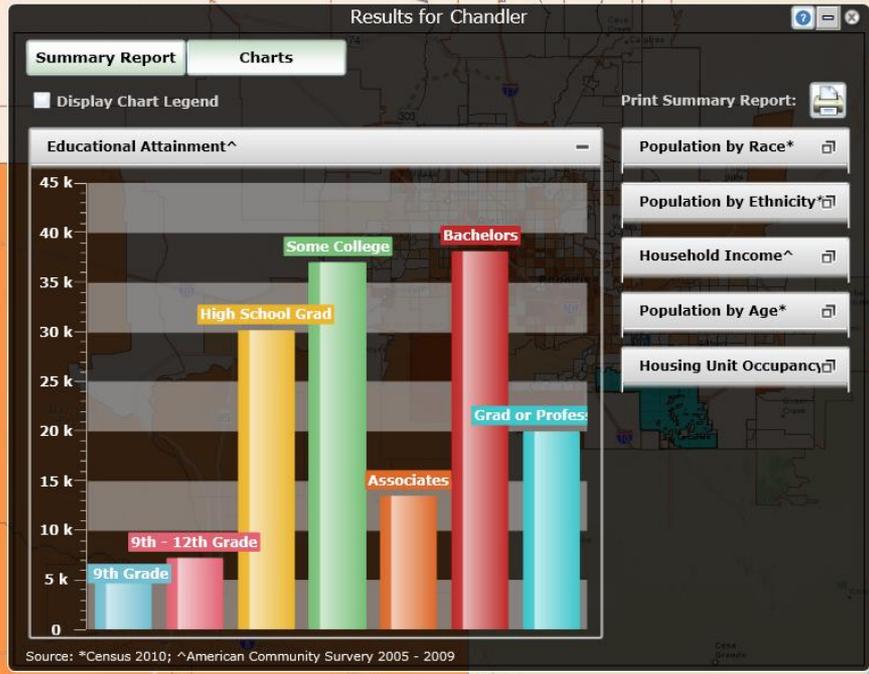
- County Summary
- City/Town Employment Summaries

Choose a place:

Chandler

Get report

Custom



Legend

- % Families Below Poverty Level (American Community Survey 2005 - 2009, by Tract)
  - 0 - 5
  - 5 - 12
  - 12 - 22
  - 22 - 38
  - 38 - 85.7
- Streets
- Terrain
- Aerial

12 Miles



Choose a map:

- Population
  - Total Population
  - People per Sq Mi
- Age
  - Median Age
  - % Under Age 18
  - % Age 18 and Over**
  - % Age 65 and Over
- Population by Race
- Population by Ethnicity
- Household Income
- Poverty
- Educational Attainment
- Housing

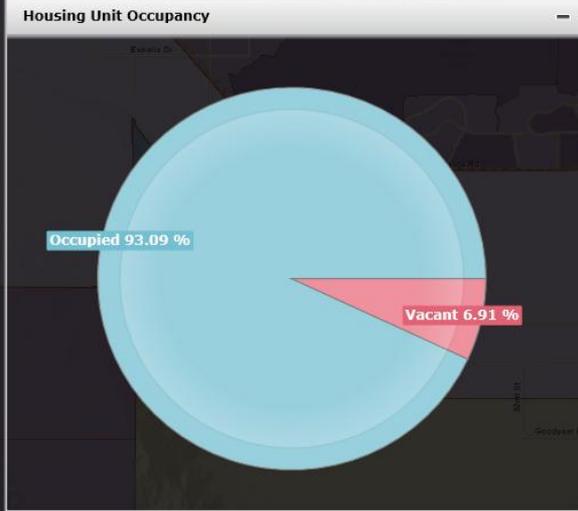
### Results for Selected Tracts

- Selected Features
- Summary Report
- Charts

Display Chart Legend

Print Summary Report:

- Population by Race
- Population by Ethnicity
- Population by Age



Source: Census 2010

### Reporting

Choose a report:

- County Summary
- City/Town Employment Summaries
- Custom

Identify a:

- Point of Interest
- Area of Interest
- Region of Interest
- Corridor of Interest

Stop selecting

Clear selection

### Legend

% Age 18 and Over (Census 2010, by Tract)

- 0 - 65
- 65 - 73
- 73 - 80
- 80 - 90
- 90 - 100

Streets

Terrain

Aerial

3 Miles



## Demographic Summary for Gilbert



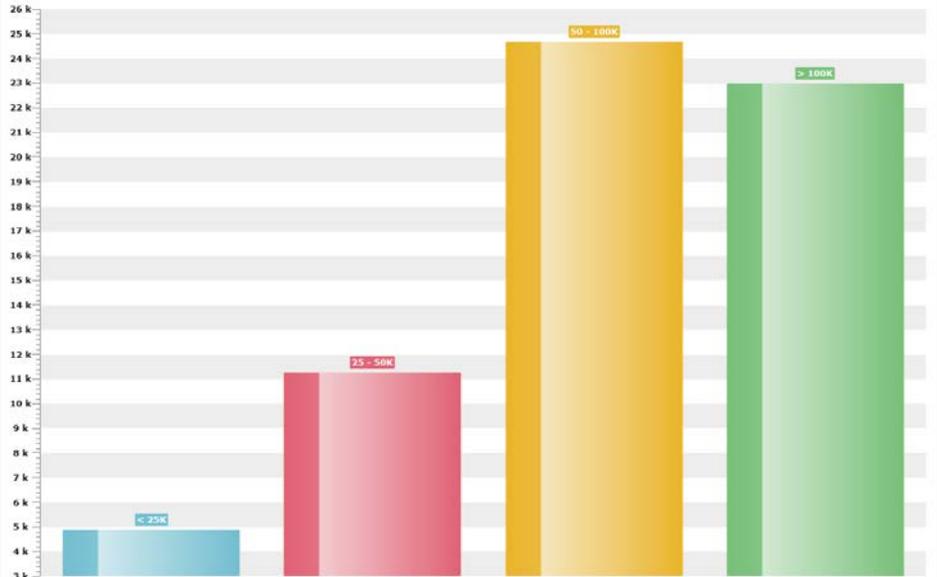
Category	Name	Gilbert
	Percent:	4.5
	Per square mile:	136.6
Population by Ethnicity	Hispanic*	31,074
	Percent:	14.9
	Per square mile:	456.6
	Non-Hispanic*	177,379
	Percent:	85.1
	Per square mile:	2,606.4
Educational Attainment	Population 25 and older*	119,716
	Less than 9th Grade*	2,581
	Percent:	2.2
	Per square mile:	37.9
	9th to 12th Grade*	3,416
	Percent:	2.9
	Per square mile:	50.2
	High School Graduate*	21,724
	Percent:	18.1
	Per square mile:	319.2
	Some College*	33,739
	Percent:	28.2
	Per square mile:	495.8
	Associates Degree*	13,024
	Percent:	10.9
Per square mile:	191.4	
Bachelors Degree*	30,604	
Percent:	25.6	
Per square mile:	449.7	
Graduate or Professional Degree*	14,628	
Percent:	12.2	
Per square mile:	214.9	
Poverty	Families*	50,160
	Families in Poverty	1,889
	Percent:	3.8
	Per square mile:	27.8
Household Income	Households*	63,814
	Median Household Income*	79,921
	Less Than \$25,000*	4,882
	Percent:	7.7
	Per square mile:	71.7
	\$25,000 to \$50,000*	11,266
	Percent:	17.7
	Per square mile:	165.5
\$50,000 to \$100,000*	24,679	
Percent:	38.7	

Source: \*Census 2010; \*American Community Survey 2005 - 2009

## Demographic Summary for Gilbert



### Household Income\*



Source: \*Census 2010; \*American Community Survey 2005 - 2009



Export map to PDF

**Map Title:** Percent of Population Age 18 and Ov

**Map Notes:** These are some comments about the map.

**Printing Options:**

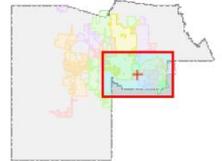
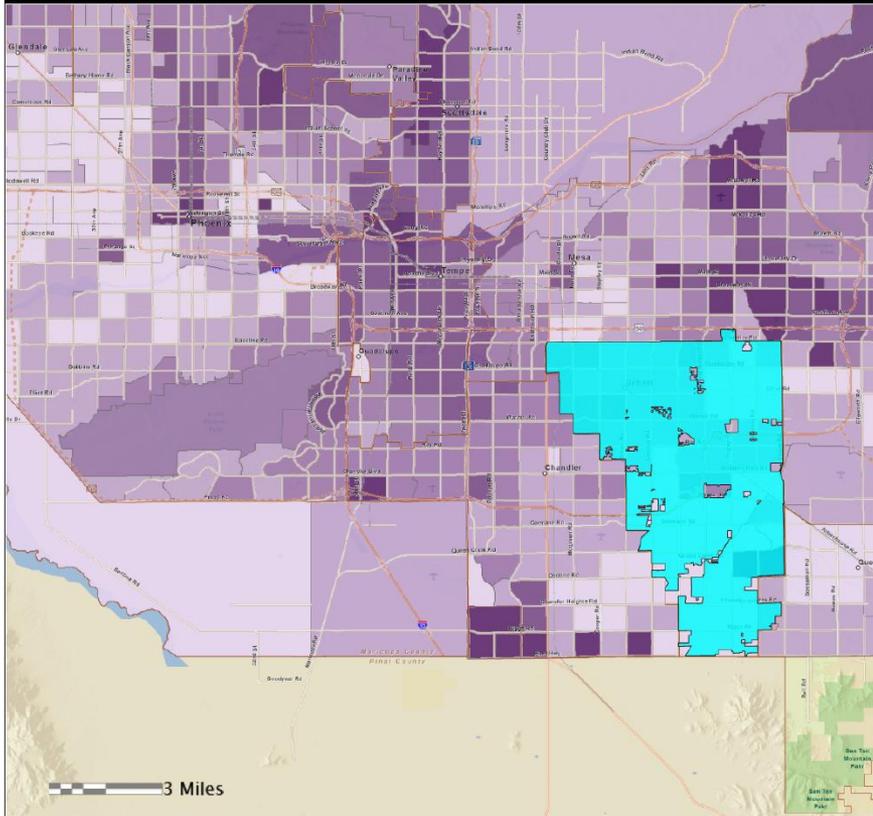
8.5 x 11 in

Landscape  
 Portrait

North Arrow  
 Scalebar  
 Overview Map  
 Legend

**Print**

### Percent of Population Age 18 and Over



% Age 18 and Over (Census 2010, by Tract)

- 0 - 65
- 65 - 73
- 73 - 80
- 80 - 90
- 90 - 100



**Notes:**  
These are some comments about the map.

While every effort has been made to ensure the accuracy of this information, the Maricopa Association of Governments makes no warranty, expressed or implied, as to its accuracy and expressly disclaims liability for the accuracy thereof. This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

**THIS MAP IS NOT TO BE USED FOR NAVIGATION.**



## MAG Demographic Viewer Help

About the viewer   How to make a map   How to make a report

### How to make a map

#### 1) Choose a demographic map:

A hierarchical menu of available demographic maps is provided in the upper left corner of the viewer under the label **Choose a map**. The maps are organized by topics (e.g. population, housing) and sub-categories (e.g. Age, Population by Race). Note that changing a map will change the text in the viewer's header and also contents of the **Legend** window

#### 2) Navigate to an area of interest:

To navigate to an area of interest you can either interact with the map directly using your mouse or you can use the navigation tools located in the lower left corner of the viewer.

*To interact with the map directly:* zoom in by either using the mouse wheel or double clicking on a location in the map you wish to. To pan, hold the left mouse button down, drag to the location you wish to release.

*To use the navigation tools:* hover the mouse over the item

## Results for Selected Tracts

About   Selected Features   Summary Report   Charts

### Help -- Summary Report

The **Summary report** presents an aggregate view of the selected tracts: there is one record for each summary metric. The results in this table integrate data from both the Census 2010 and American Community Survey (ACS) 5 year estimates for 2005 - 2009. Records ending with an 'M' have Census 2010 as the datasource while records ending in '^' have the ACS estimates as their source.

The summary results for the given selection can be compared against results from other geographies. Results from the Jurisdiction and Custom reports can be against the totals for Maricopa County and the State of Arizona. Results from the County Summary report may be compared against the State of Arizona and other counties within Arizona. To perform a comparison:

- 1) Check the **Use Comparison** box in the upper left corner. This will enable and populate the drop-down box to the immediate right.
- 2) From the drop-down box, choose an area you would like to compare against. This will add a new column to the table for the desired comparison area.

The current summary report, as well as the current comparison, may be exported to your desktop for further use. To export the table:

- 1) Choose the desired export format (Word, Excel, CSV) from the drop down box in the upper right corner of the window
- 2) Click the button containing the print icon in the upper right corner
- 3) In the **Save As** choose a location to save the file



# Employment Maps

## Current map: Total Employment\*

Legend Reports Map PDF Help

### Choose a map:

Total Employment, 2010:

Total Employment

Natural Resources and Mining

Trade, Transportation and Utilities

Construction

Manufacturing

Information

Financial Activities

Professional and Business Services

Education and Health Services

Leisure and Hospitality

Government

Other Services

▶ Employment Density, 2010:

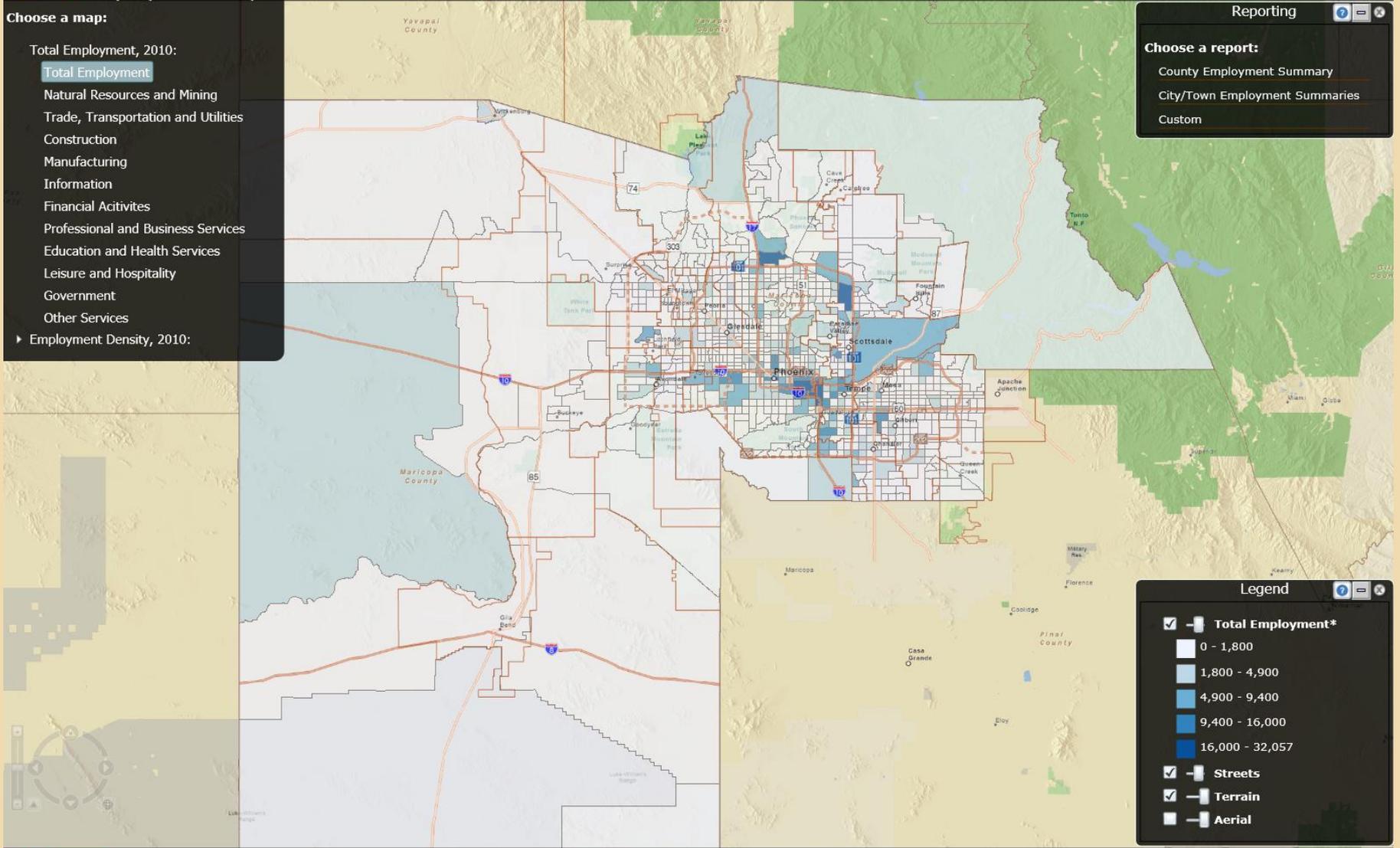
### Reporting

#### Choose a report:

County Employment Summary

City/Town Employment Summaries

Custom



### Legend

Total Employment\*

0 - 1,800

1,800 - 4,900

4,900 - 9,400

9,400 - 16,000

16,000 - 32,057

Streets

Terrain

Aerial

12 Miles

\*Source: 2010 MAG Employer Database (limited to employers with 5 or more employees)



## Employment Summary for Maricopa County\*

Total number of businesses: 46,892

Total number of employees: 1,436,175

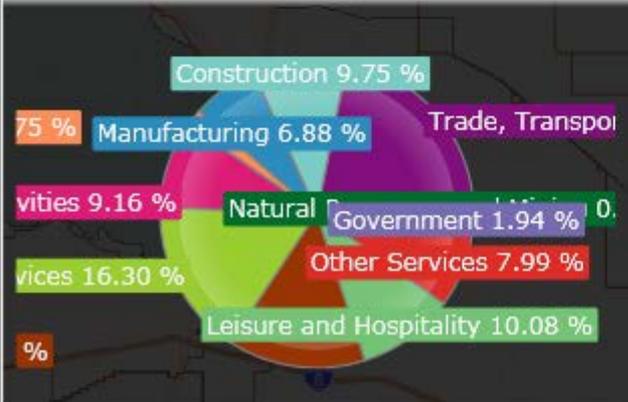
### Largest Employers

Rank	Business name	Number of emp
1	State Of Arizona	23,564
2	Banner Health	18,119
3	City Of Phoenix	15,770
4	Walmart	14,325
5	Honeywell	13,488
6	County Of Maricopa	12,532

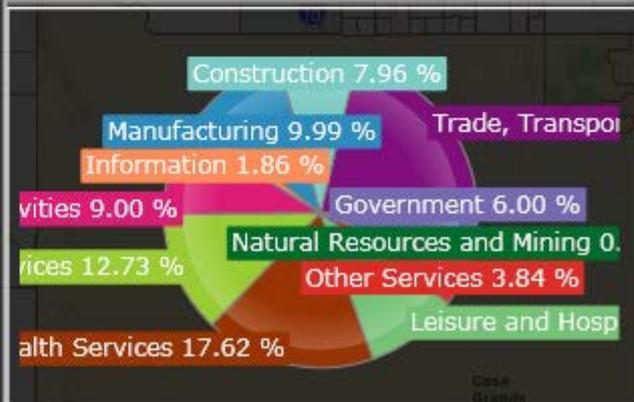
### Sector Summary

Sector	Number of busi	Number of emp
Natural Resources and Mining	302	8,300
Trade, Transportation and Information	9,932	297,598
Construction	4,555	114,223
Manufacturing	3,215	143,299
Information	819	26,695
Financial Activities	4,281	129,104

### Businesses by Sector



### Employees by Sector



### Employment Summary for Maricopa County\*

Total number of businesses: 46,892  
Total number of employees: 1,436,175

Sector Summary | Businesses by Sector | Employees by Sector

#### Largest Employers

Rank	Business name	Number of employees
1	State Of Arizona	23,564
2	Banner Health	18,119
3	City Of Phoenix	15,770
4	Walmart	14,325
5	Honeywell	13,488
6	County Of Maricopa	12,532
7	Smith Food Drug Stores Fry's Food	12,166
8	Arizona State University	11,758
9	Wells Fargo Bank National Association	9,507
10	Bank Of America National Association	9,479

Table export:  
Choose an output format:

### Employment Summary for Maricopa County\*

Total number of businesses: 46,892  
Total number of employees: 1,436,175

Businesses by Sector | Employees by Sector | Largest Employers

#### Sector Summary

Sector	Number of businesses	Number of employees
Natural Resources and Mining	302	8,300
Trade, Transportation and Utilities	9,932	297,598
Construction	4,555	114,223
Manufacturing	3,215	143,299
Information	819	26,695
Financial Activities	4,281	129,104
Professional and Business Services	7,615	182,675
Education and Health Services	6,661	252,843
Leisure and Hospitality	4,711	138,872
Other Services	3,733	55,070
Government	907	86,030

Table export:  
Choose an output format:

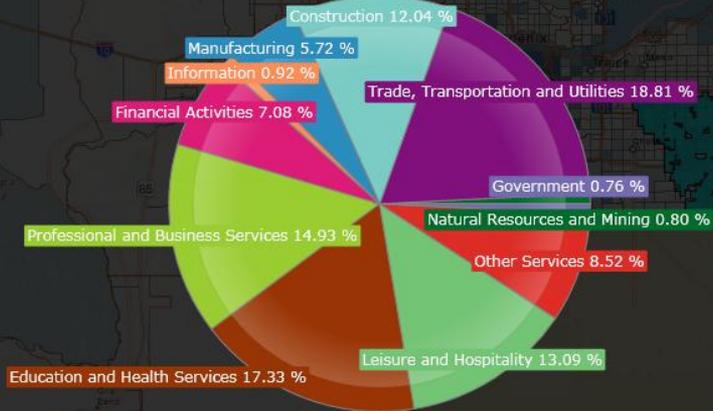


### Employment Summary for Gilbert \*

Total number of businesses: 2,550  
Total number of employees: 58,503

Employees by Sector | Largest Employers | Sector Summary

#### Businesses by Sector

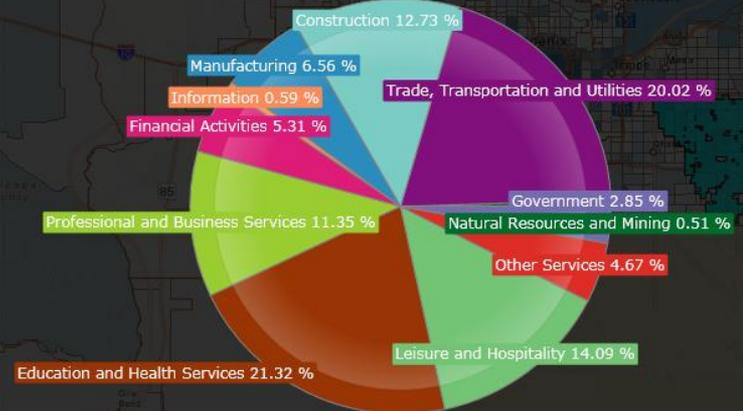


### Employment Summary for Gilbert \*

Total number of businesses: 2,550  
Total number of employees: 58,503

Businesses by Sector | Largest Employers | Sector Summary

#### Employees by Sector



## **Demographic viewer:**

<http://geo.azmag.gov/maps/demographic/>

## **Employment viewer:**

<http://geo.azmag.gov/maps/employment/>

## **Contacts:**

Jason Howard: [jhoward@azmag.gov](mailto:jhoward@azmag.gov)

Scott Bridwell: [sbridwell@azmag.gov](mailto:sbridwell@azmag.gov)





# Flood Control District Location and Surrounding County Facilities

- 3 Flood Control Administration
- 4 Flood Control Operations
- 5 Transportation Administration
- 6 Transportation Operations
- 7 Transportation Traffic Operations
- 8 Distribution Center

