



AZ-SMART DATA – FACTORS AND METHODS – PART 1

Arizona’s Socioeconomic Modeling, Analysis, & Reporting Toolbox

MAG POPULATION AND TECHNICAL ADVISORY COMMITTEE
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AZ-SMART DATA – FACTORS AND METHODS PART 1

- ❑ AZ-SMART – New simulation model system
- ❑ Many familiar concepts and datasets
- ❑ Data, data sources, assumptions, methods used for base year database and the build-out analysis
- ❑ Part 2 (later): assumptions and methods involved in simulation

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AZ-SMART DATA – FACTORS AND METHODS PART 1

#	Method/Dataset/Assumption	Information and Discussion or Approval
1	Official Geographies (TAZ, RAZ, MPA)	Information and Discussion
2	July 1, 2010 Base Population and Housing	Approval
3	July 1, 2010 Base Employment	Approval
4	Population and Employment Control Totals	Approval
5	Base and Build-out Classifications	Information and Discussion
6	Land-Use Datasets (EXLU, GPLU, Developments)	Information and Discussion
7	Population and Housing Projection Factors	Approval
8	Employment and Built-Space Projection Factors	Approval
9	Build-Out Analysis Methodology	Approval

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1. SOCIOECONOMIC PROJECTION GEOGRAPHIES

Purpose: AZ-SMART can aggregate projections to any geography, however, there are 3 geographies at which projections are approved.

- Socioeconomic projections released at various geographies:
 - TAZ 2012
 - RAZ 2012
 - 29 MPAs

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2. JULY 1, 2010 BASE POPULATION AND HOUSING - ASSEMBLE DATA AND GEOGRAPHY

Purpose: Create detailed tables containing individual households, persons, and housing units at a micro-level geography that match official totals at larger geographies

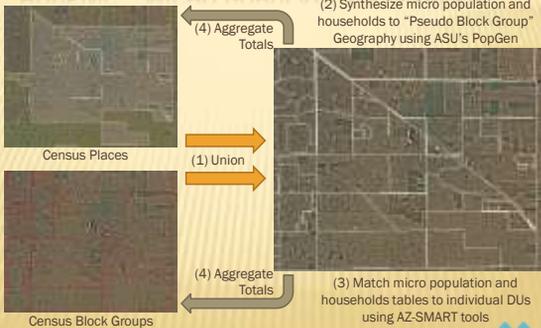
1. Micro-persons and households tables
2. PopGen requires Census totals at small geographies
3. Micro-persons and households must sum up to **Census Place**

Problem: Block Groups do not nest into Census Places, we created a new geography for PopGen

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2. JULY 1, 2010 BASE POPULATION AND HOUSING - MICRO POPULATION SYNTHESIS



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3. JULY 1, 2010 BASE EMPLOYMENT AND BUILT-SPACE

Purpose: detailed tables containing individual jobs by NAICS categories and non-residential space at a micro-level geography that match official totals at larger geographies

1. County level employment control totals
2. Adjust MAG Employer DB to match County controls
3. Match MAG employer points to non-residential built-space
4. Adjust built-space as necessary
5. Aggregate totals

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4. POPULATION AND EMPLOYMENT CONTROL TOTALS

Purpose: AZ-SMART simulation requires annual control totals for the forecast horizon (2011-2040) of population and employment at the county-level for allocation to smaller geographies

1. Population Control Totals – AZ State Demographer
 - Annual “cohort-component” model
2. Employment Control Totals – Moody’s Economy.com
 - Annual employment by NAICS and population
 - Adjust employment using population to employment factor

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5. AZ-SMART CLASSIFICATION TABLES

Purpose: AZ-SMART requires many different systems of classification. Share with POPTAC the classification systems used in the base data development and build-out analysis.

1. Built-Space Types (a.k.a. “building types”)
2. Employment Sectors – primarily 2 digit NAICS
 - Aggregations: Manufacturing 31-33, Retail Trade 44-45, Transportation and Warehousing 48-49
 - Dis-aggregations: Accommodation and Food Services (72) split in 2 (721 and 722), Public (92) split into Federal/State and Local

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6. LAND USE DATASETS

Purpose: AZ-SMART makes use of all of the standard MAG Land Use datasets: Existing, Developments, and General Plan Land Use.

1. Existing Land Use (EXLU)
2. General Plan Land Use (GPLU)
3. Developments (Devs)

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7. METHODS AND FACTORS: POPULATION AND HOUSING PROJECTIONS

Purpose: To produce projections of population and housing, AZ-SMART requires a variety of assumptions and factors concerning densities, persons per household, vacancy rates, etc.

1. Density Factors
2. Persons Per Household (PPHH)
3. Vacancy Rates
4. County-Wide Single-Family vs. Multi-Family Proportions
5. Age Restricted Communities

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8. METHODS AND FACTORS: EMPLOYMENT AND NON-RESIDENTIAL BUILT-SPACE PROJECTIONS

Purpose: To produce projections of employment and non-residential space, AZ-SMART requires a variety of assumptions and factors concerning employment densities, floor to area ratios, vacancy rates, etc.

1. Employment Density
2. Non-Residential Vacancy Rates
 - Data preparation, build-out, and simulation
 - COSTAR historical data

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9. BUILD-OUT ANALYSIS METHODOLOGY

Purpose: MAG Staff conducted a build-out analysis to examine the implications of each of the datasets that feed the simulation model.

- **Population and Housing Build-Out:**
 1. MAG 2010 built space DB to TAZ and to allocate as base.
 2. General Plan for undeveloped, unplanned land
 3. Planned developments: use the unit count if available.
 4. Assume 100% occupancy then use PPHH table for population

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9. BUILD-OUT ANALYSIS METHODOLOGY

- **Employment Build-out Analysis**
 1. MAG 2010 employer database to TAZ as base.
 2. Developable acres from the General Plan and Developments:
 3. Build-out employment: developable acres * FAR * sqft per employee
 4. Aggregate employment by land use to TAZ.

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QUESTIONS?

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