DELINEATION OF TRAFFIC ANALYSIS ZONES-
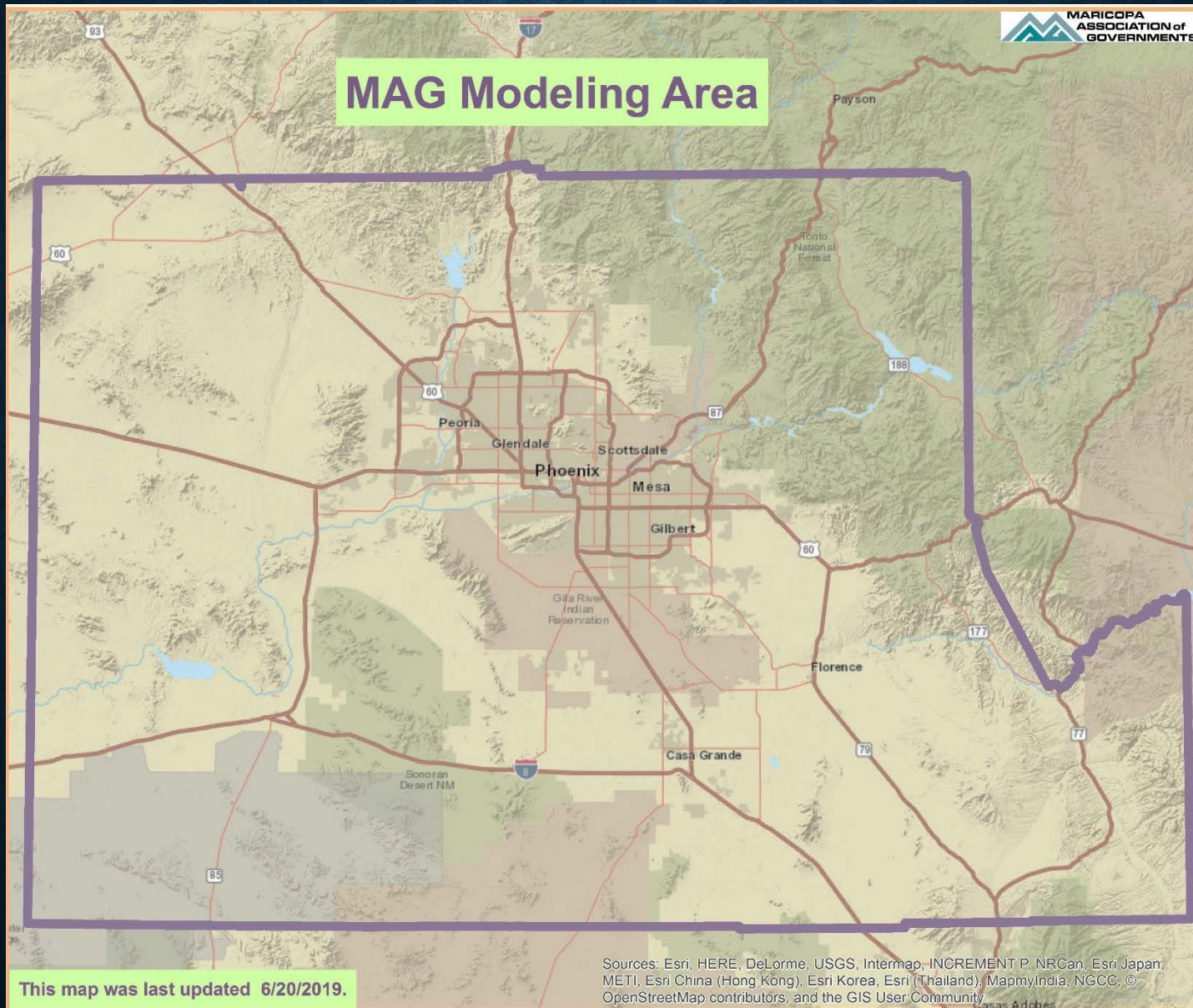
GIS HELPS REGIONAL TRANSPORTATION PLANNING

Petya Maneva

Maricopa Association of Governments
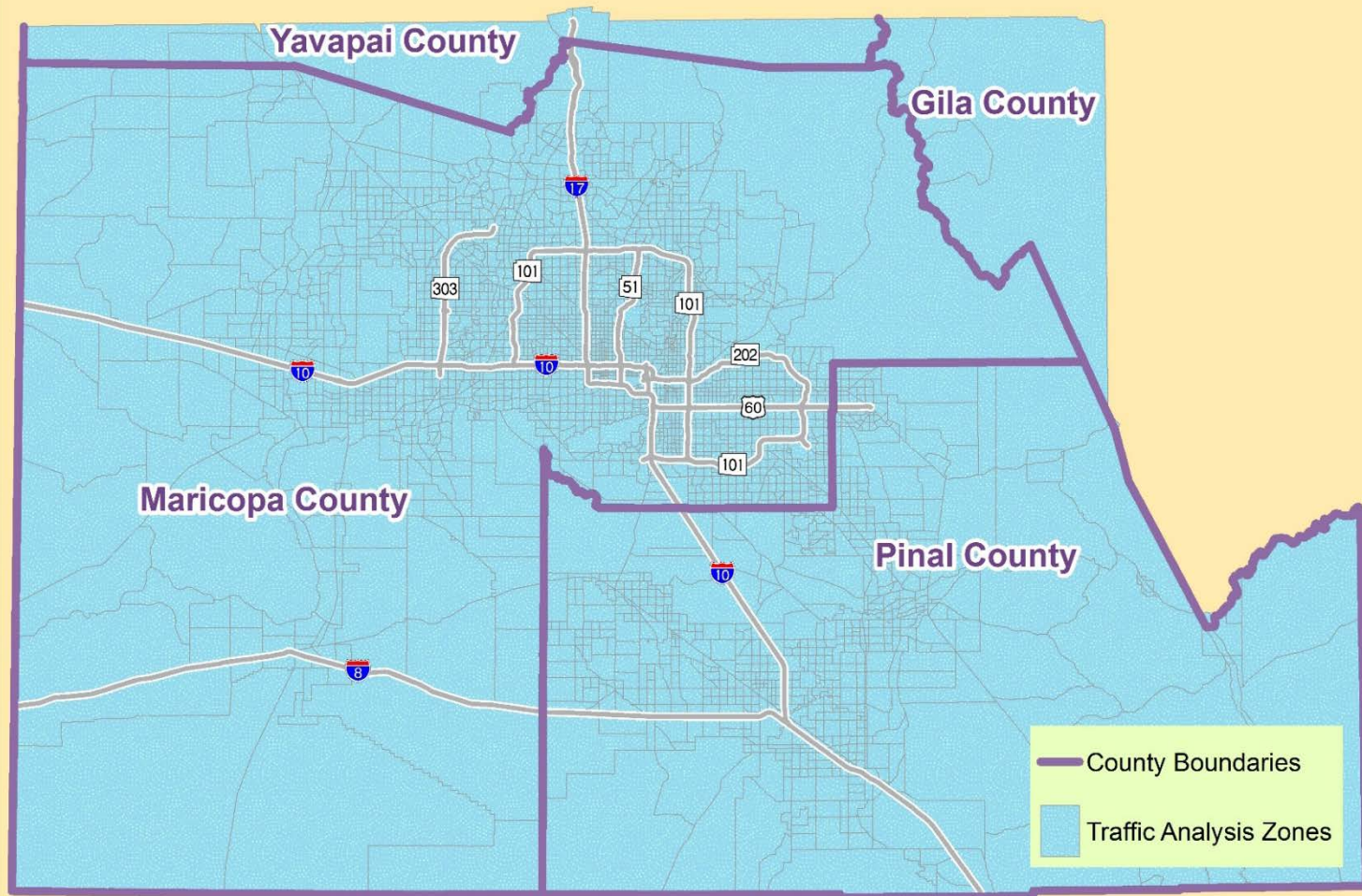
MARICOPA ASSOCIATION of GOVERNMENTS

WHAT ARE TRAFFIC ANALYSIS ZONES (TAZ) AND WHY DO WE NEED THEM

- **The planning region is divided into geographic areas – TAZs.**

- **TAZ polygons contain employment, population, school enrollment and other data.**

- **The origins and destinations of trips are mapped to TAZs.**

- **Travel forecasting models trips between each pair of zones by purpose, mode and time of day.**

MARICOPA ASSOCIATION of GOVERNMENTS

MAG Traffic Analysis Zones 2019

MICROANALYSIS ZONES ADD HIGHER SPATIAL RESOLUTION TO TRAVEL DEMAND MODELING

- **Advances in technology allow higher level of spatial resolution in modeling.**

- **Socioeconomic data is collected and projected at neighborhood level.**

- **MAZs leverage block level census data – the smallest level of spatial aggregation.**

MARICOPA
ASSOCIATION of
GOVERNMENTS

Micro Analysis Zones Nest in Traffic Analysis Zones

Traffic Analysis Zones

Micro Analysis Zones

This map was last updated 6/20/2019.

QUICK 2018 STATISTICS FOR MAG REGION

Traffic Analysis Zones - TAZs

Micro Analysis Zones - MAZs

o **Total Number:** **3,348**

o **Average Population:** **1,534**

o **Average Employment:** **654**

o **Total Number:** **26,266**

o **Average Population:** **195**

o **Average Employment:** **83**

Note: The data is in currently being reviewed and the final calculations might be different.

MARICOPA ASSOCIATION of GOVERNMENTS

WHAT TO CONSIDER WHEN DRAWING BOUNDARIES

- **Jurisdiction boundaries**

- **Transportation network, transit network**

- **Topographic features**

- **Census geographies**

- **Population density**

- **Employment density**

WHAT TO CONSIDER WHEN DRAWING BOUNDARIES – PART II

- Land use

- Major airports

- University campuses

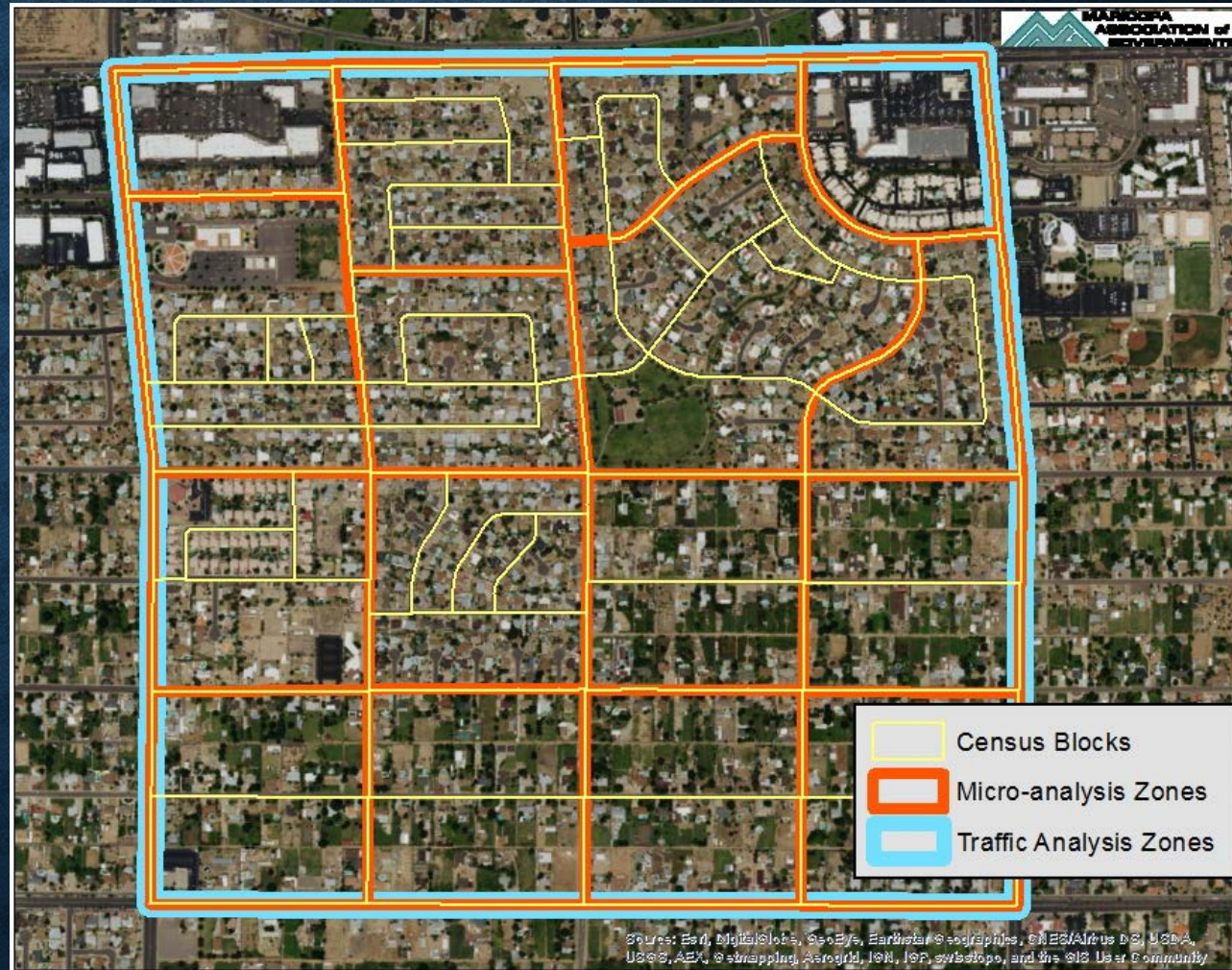- Special event venues

- Clusters of truck stops

MARICOPA
ASSOCIATION of
GOVERNMENTS

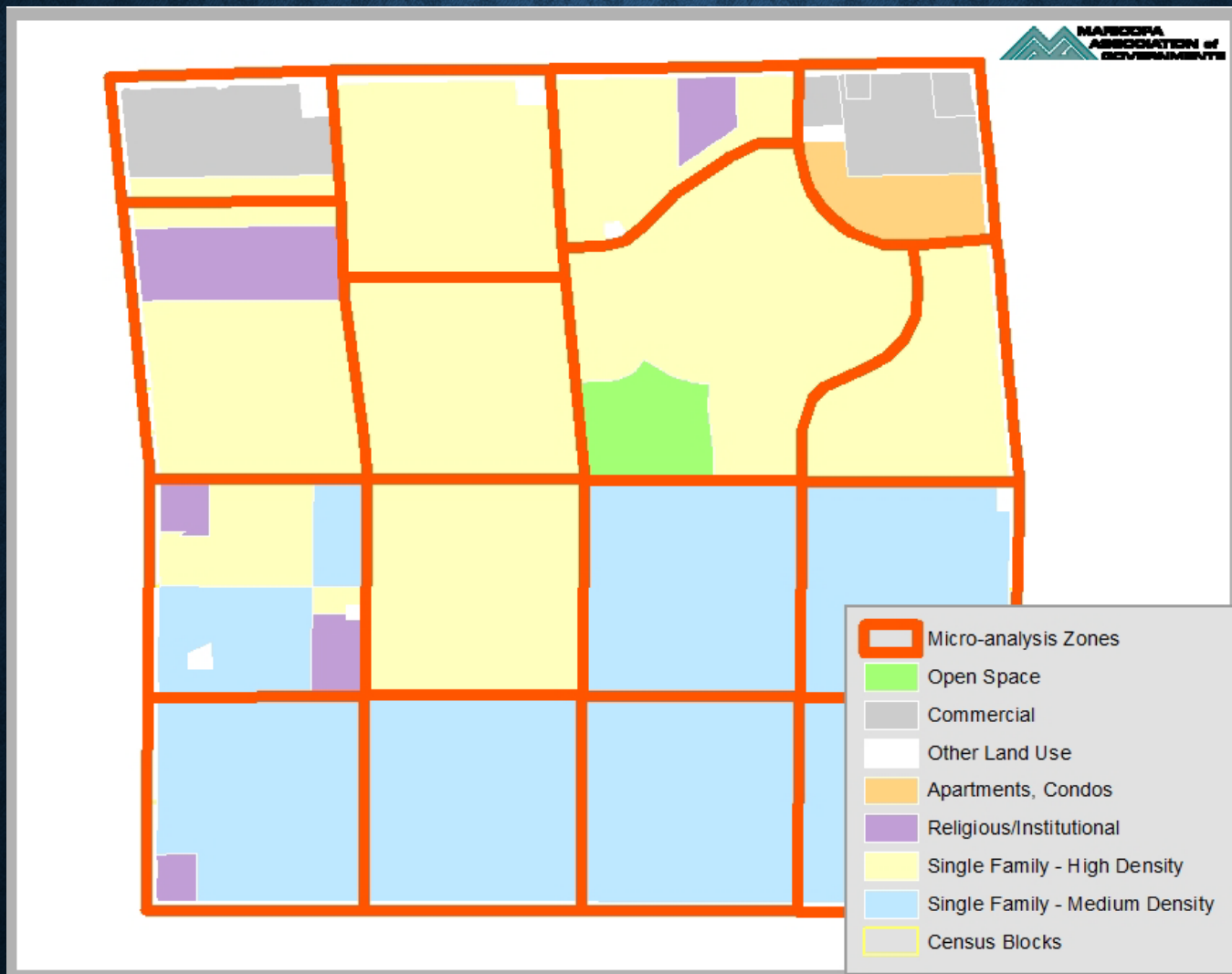MAZs and TAZs Nest in Jurisdiction Boundaries
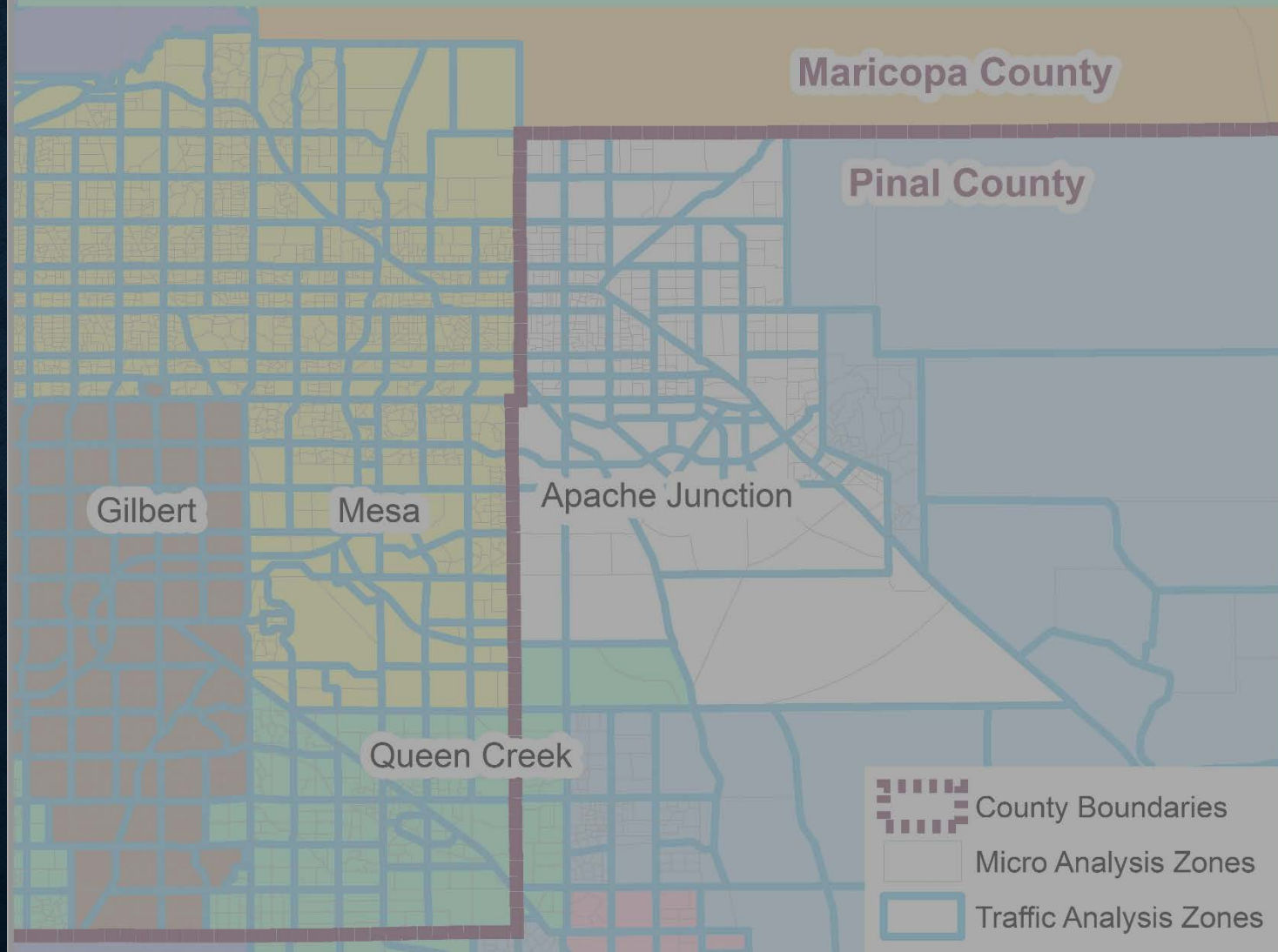
CENSUS BLOCKS
– THE BUILDING BLOCKS FOR MAZS

Census Blocks Are
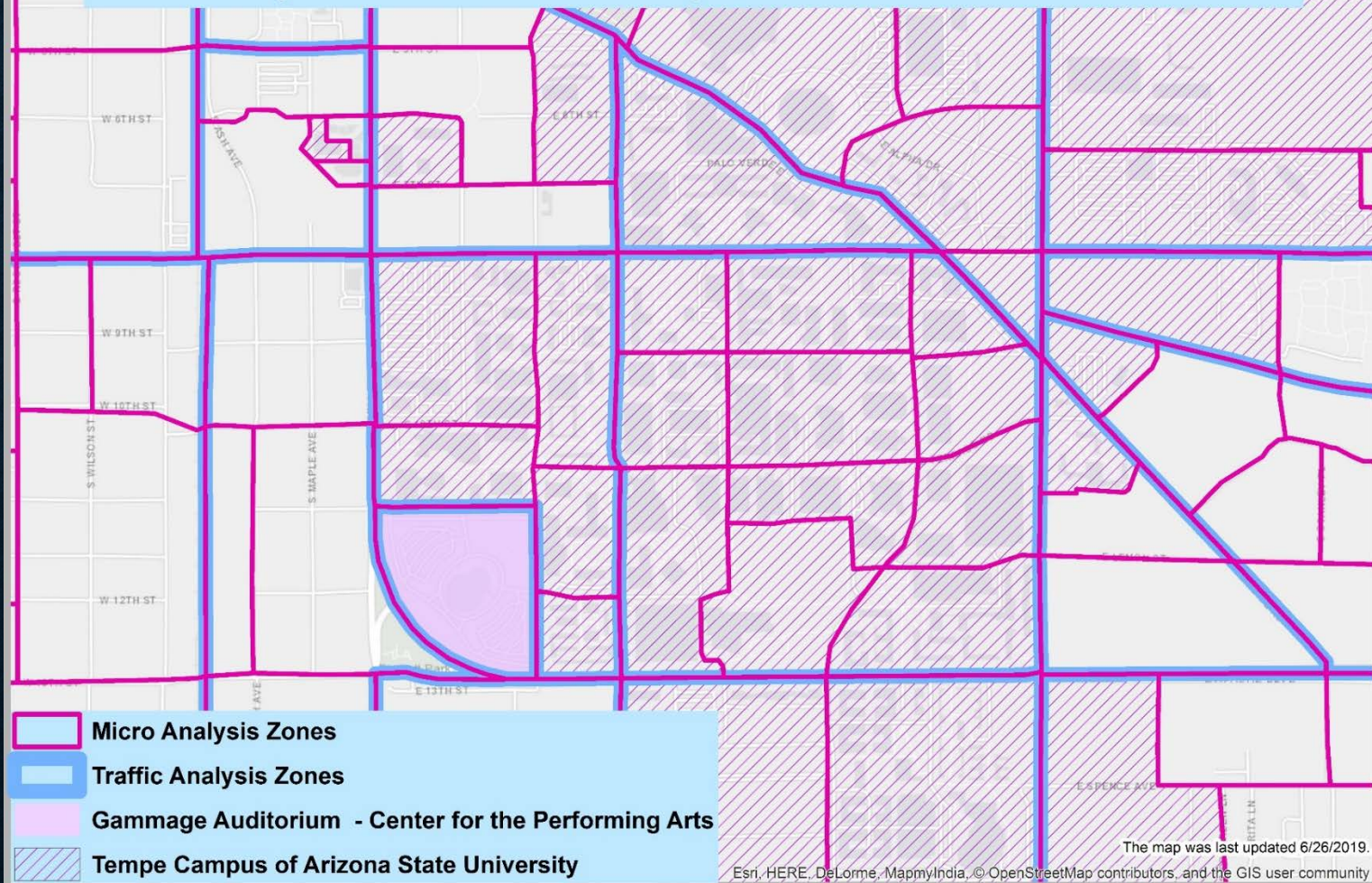
Grouped in MAZs Based

on their Population.

Aerial Photography and

Online Mapping

Services Inform

Boundary Delineations.

Legend:
- Census Blocks
- Micro-analysis Zones
- Traffic Analysis Zones

LAND USE – AN IMPORTANT FACTOR FOR MAZ BOUNDARIES

Modeling Walk Trips to Transit Requires Smaller Zone alongside Transit Corridors

The Tools We Use

- **Topology rules**

- Buffering

- **Summary statistics**

- Joins and "join fields"

- **Split polygons by the**
shape of overlapping features

- Spatial overlays

- **Aggregation, dissolution**

How We Share Data

- Map Packages

- ArcGIS Online

MARICOPA
ASSOCIATION of
GOVERNMENTS

ADDITIONAL GIS FUNCTIONALITY WE NEED - A WISH LIST

- **Split polygons by line features in another dataset**

- **"Elastic polygons" – polygons sharing boundaries, no need to cleanup gaps and overlaps**

- **Faster performance, storing intermediate results in RAM**

QUESTIONS

Contact Information:

Petya Maneva : pmaneva@azmag.gov

Arup Dutta: adutta@azmag.gov