MID-OHIO REGIONAL
MORPC
PLANNING COMMISSION

111 Liberty St., Suite 111
Columbus, Ohio 43215
www.morpc.org

NOTICE OF A MEETING
SUSTAINING SCIOTO BOARD
MID-OHIO REGIONAL PLANNING COMMISSION

REMOTE MEETING

June 26, 2024, 2:30 pm – 4:00 pm

AGENDA

2:30pm	**Welcome – *Glenn Marzluf, Chair***
2:35 – 2:40pm	**Member Introductions**
2:40 – 2:55pm	**Scioto Watershed Action Group Presentation & Discussion – *Henry Stahl, FSWCD***
2:55 – 3:05pm	**Legislative Updates – *Kyle Probert, MORPC***
3:05 – 3:35pm	**Looking to 2050: An Overview of MORPC's Forecast Products and Methods – *Adam Porr, MORPC***
3:35 – 4:00pm	**Member Updates**
4:00	**Adjourn**

Please notify Lynn Kaufman at 614-233-4189 or lkaufman@morpc.org to confirm your attendance at this meeting or if you require special assistance.

The next Sustaining Scioto Board Meeting will be on August 28, 2024, at 2:30 pm.

SUSTAINING SCIOTO BOARD MEETING

June 26, 2024

MID-OHIO REGIONAL
MORPC
PLANNING COMMISSION

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Scioto Watershed Action Group Presentation & Discussion

by Henry Stahl

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Looking to 2050: An Overview of MORPC's Forecast Products and Methods

by

Adam Porr, MORPC

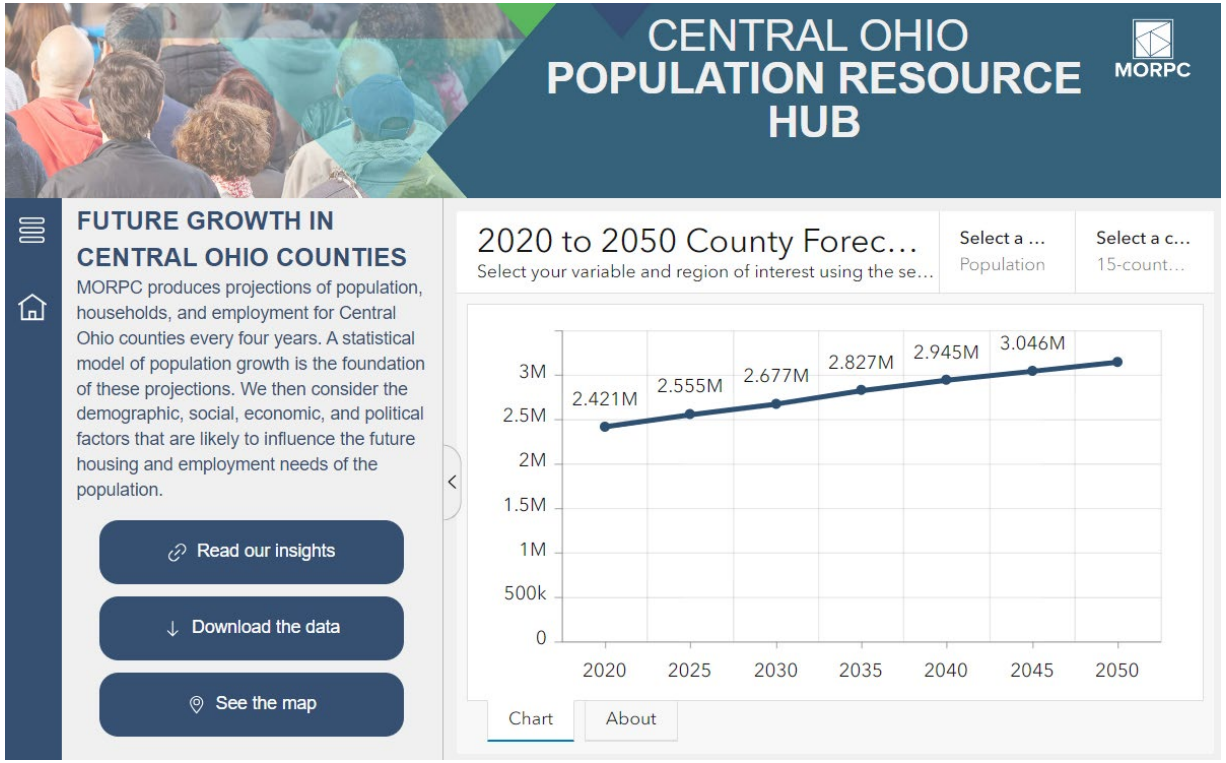
Looking to 2050: An Overview of MORPC's Forecast Products and Methods

Adam Porr, Research & Data Officer

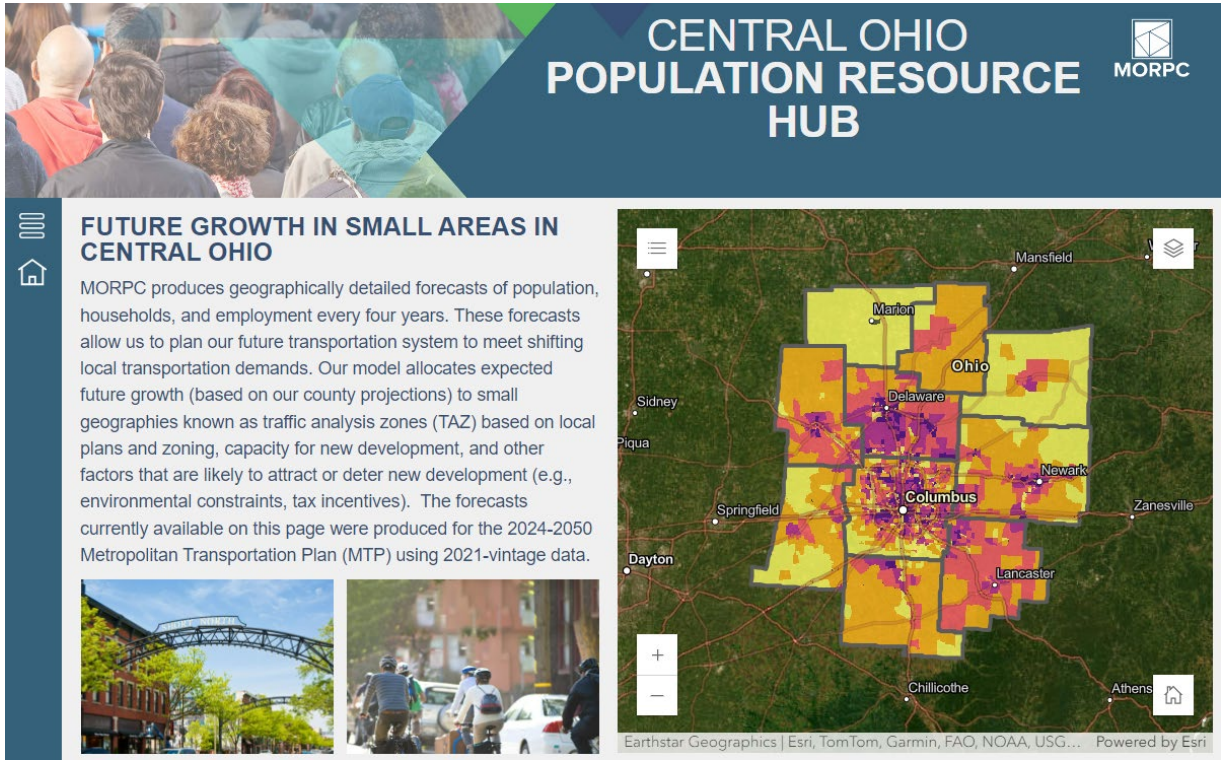
June 26, 2024

MID-OHIO REGIONAL PLANNING COMMISSION
MORPC

Every 4 years MORPC produces two sets of forecasts



County-level
(available for 15 counties)



Traffic Analysis Zone (TAZ) level
(available for 10 counties)

Latest forecasts cover 2025 to 2050 in 5-year intervals, with 2021 baseline estimates

Find the data at https://www.morpc.org/popdata

Comparison of forecast products

County Forecasts

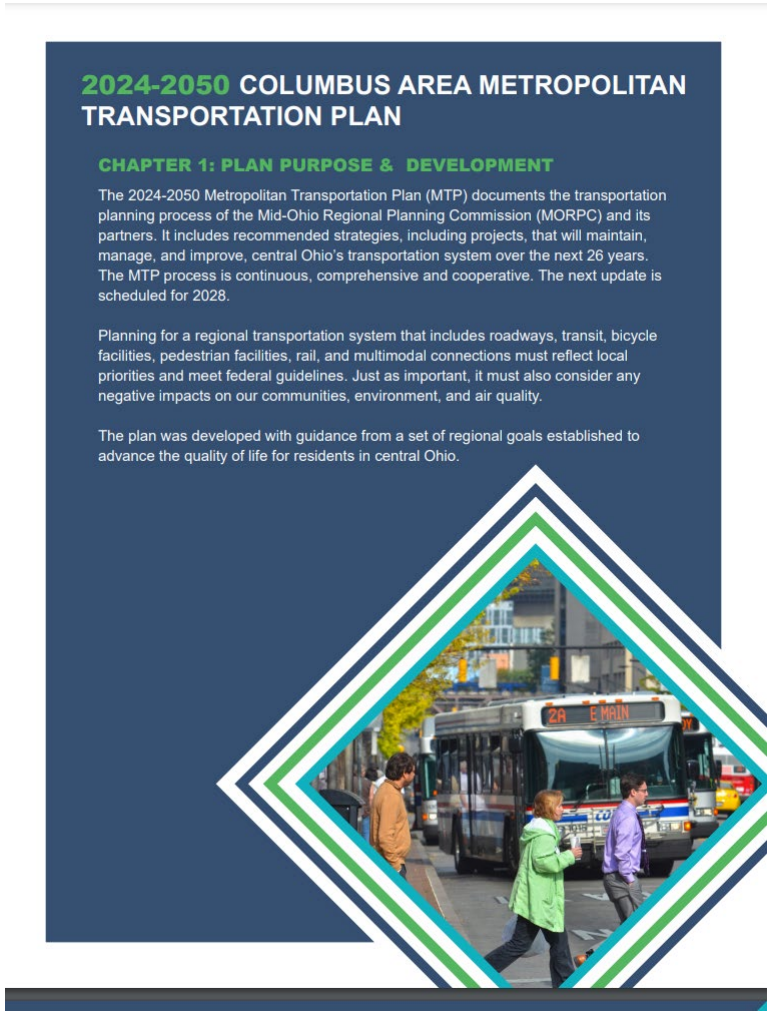
- Standard format: Excel (multiple sheets)
- Geographic coverage: 15 counties
- Variables included:
  - Total population
  - Total population confidence intervals
  - Population by age (17 and under, 18-64, 65 and over)
  - Household population
  - Household population by age
  - Group quarters population
  - Households
  - Housing units
  - Labor force
  - Workers
  - Total jobs
  - Jobs by category (office, industrial, retail services, retail goods, other)

TAZ Forecasts

- Standard formats:
  - Geospatial (Shapefile, geodatabase, etc.)
  - Tabular (CSV, Excel)
- Geographic coverage: 10 counties
- Variables included:
  - Most variables included in county forecasts
  - School enrollment (K-8, high school, university)
  - Household income
  - Population growth 2021 to 2050
  - Job growth 2021 to 2050

The forecasts support long-range planning for transportation investments in Central Ohio.

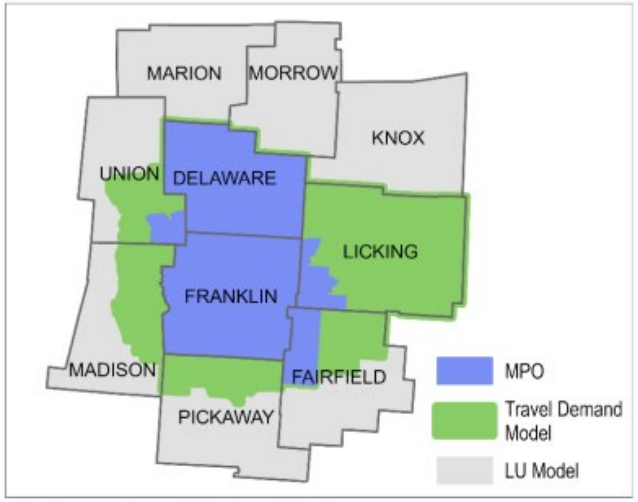
- Metropolitan Transportation Plan (MTP)
  - Documents transportation planning process
  - Identifies strategies and projects
- Mandated by federal law
- Led by MORPC
- Adopted by a committee of representatives from regional governments and organizations operating as the region's Metropolitan Planning Organization (MPO)
- Influences how federal funding is allocated to projects in the region
- **Forecasts help to evaluate the need for and benefits of candidate projects**



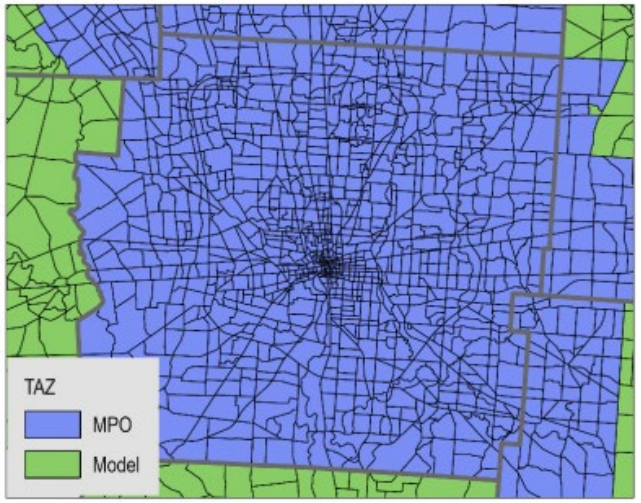
Find the plan at www.morpc.org/2024-2050-metropolitan-transportation-plan/

Our overall strategy is to start broad and general, then add specificity.

- Rationale: Forecasts for large populations likely to be more accurate than forecasts for small populations.
- County forecasts serve as “control totals” for TAZ forecasts
- General groups serve as control totals for more specific sub-groups
- TAZ forecasts often “built up” from smaller geographies

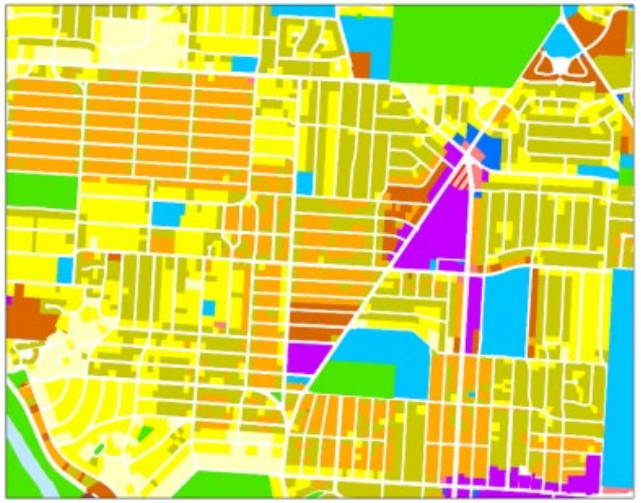


10 County Area / MORPC MPO

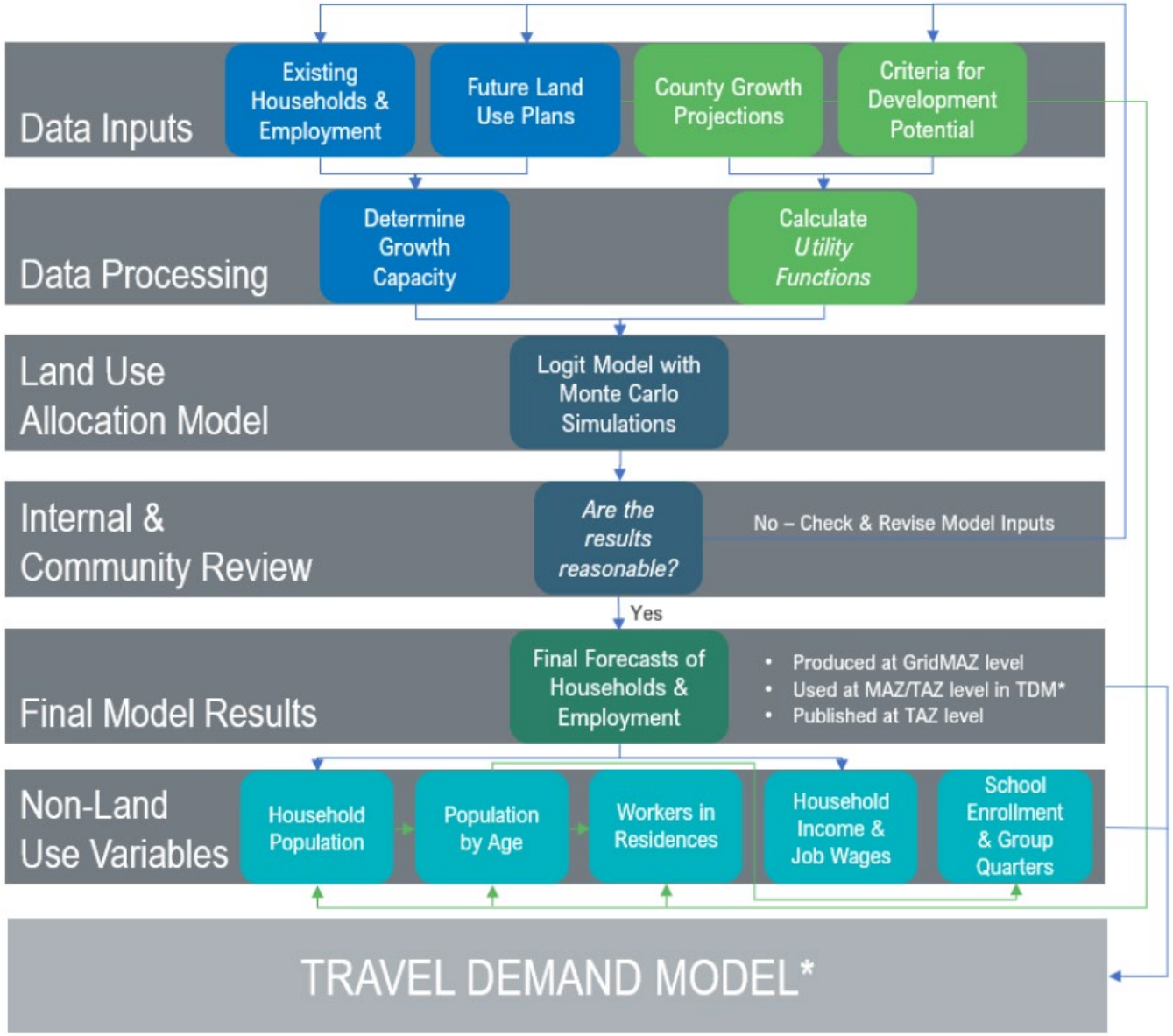


Traffic Analysis Zones (TAZ)

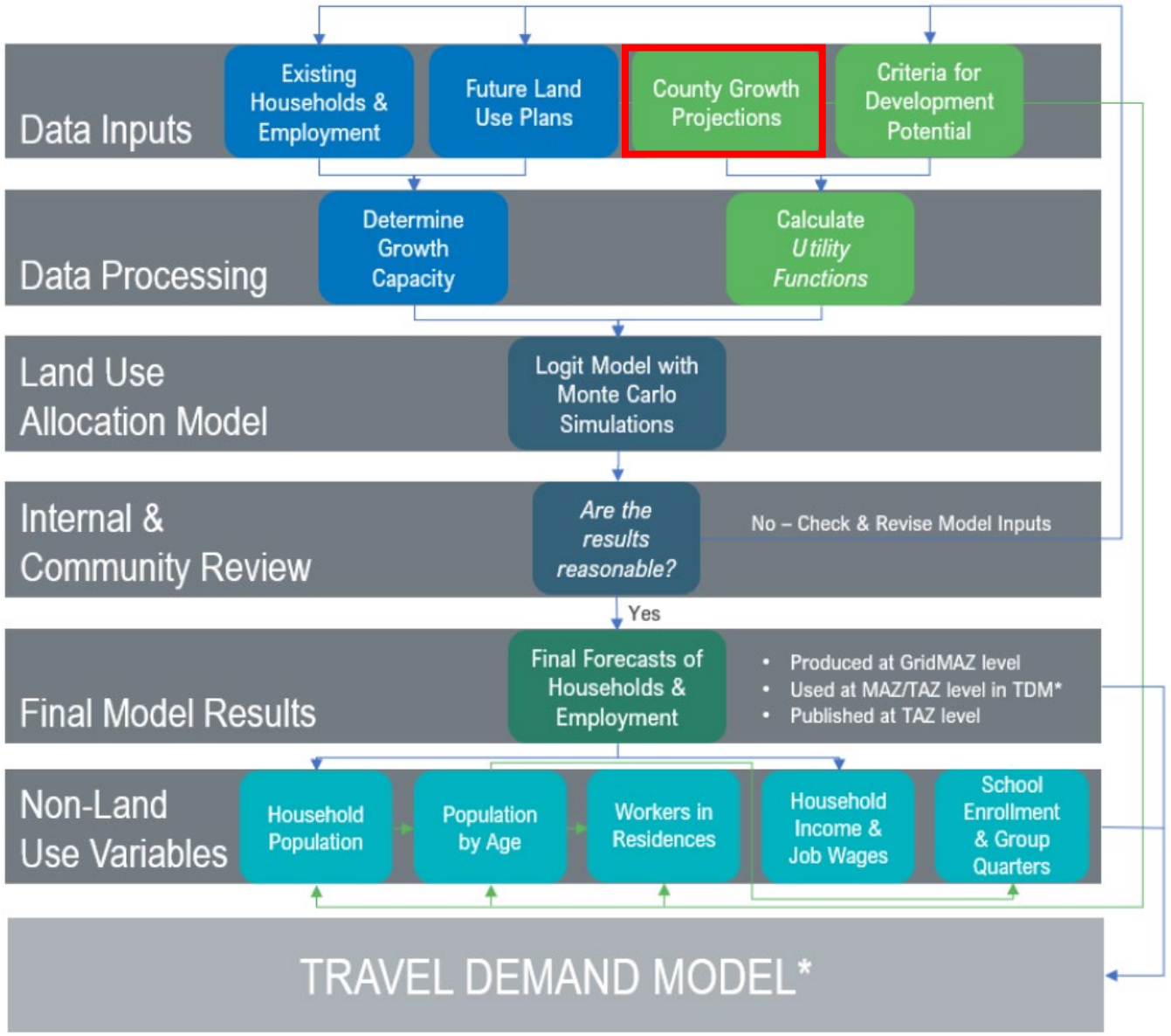
TAZ - MAZ - GridMAZ


Parcels (by land use type)

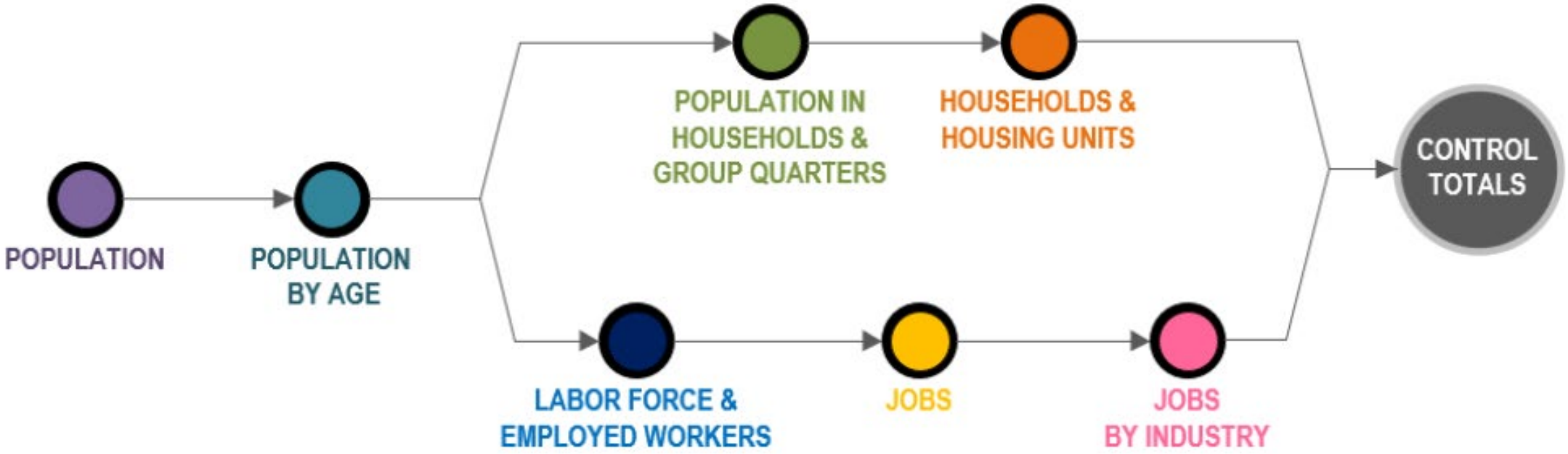
The Big Picture



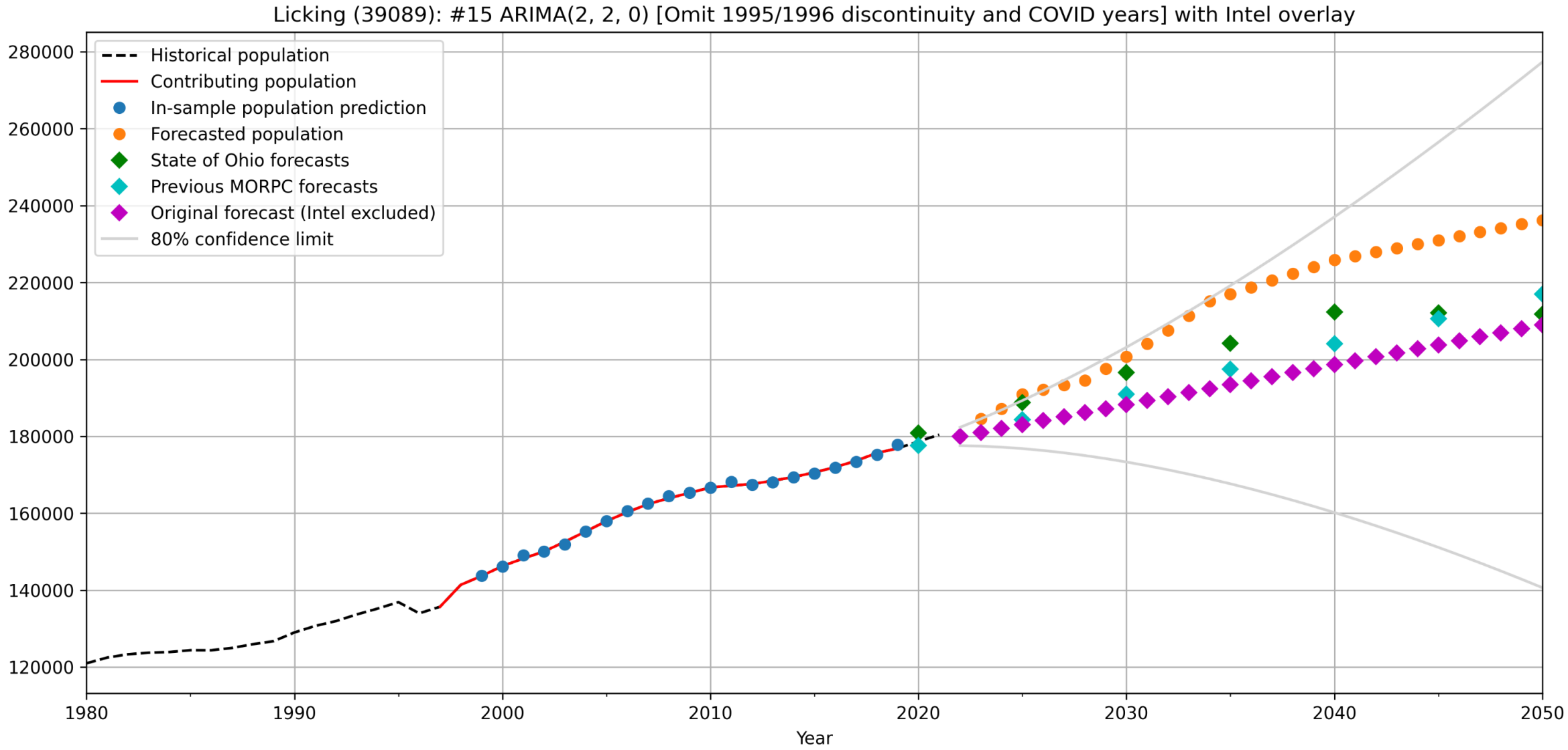
First, county forecasts (aka “county control totals”)



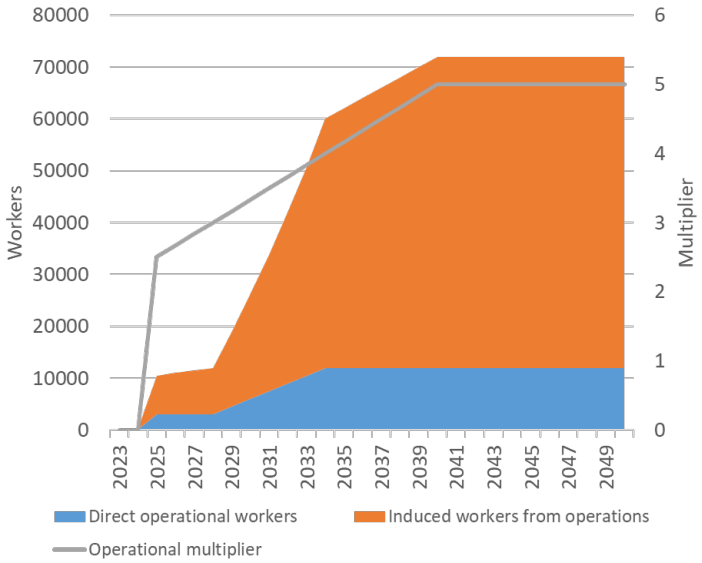
County forecasts are produced for overall population first, then broken down into subgroups.

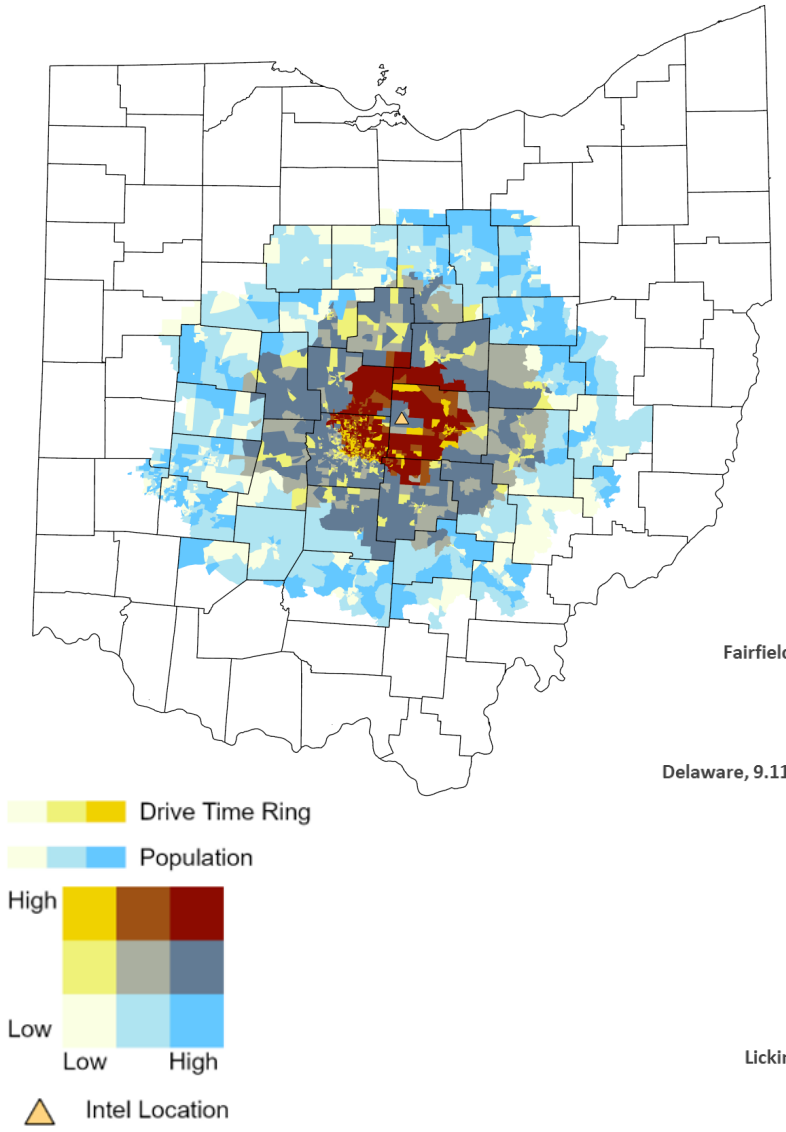


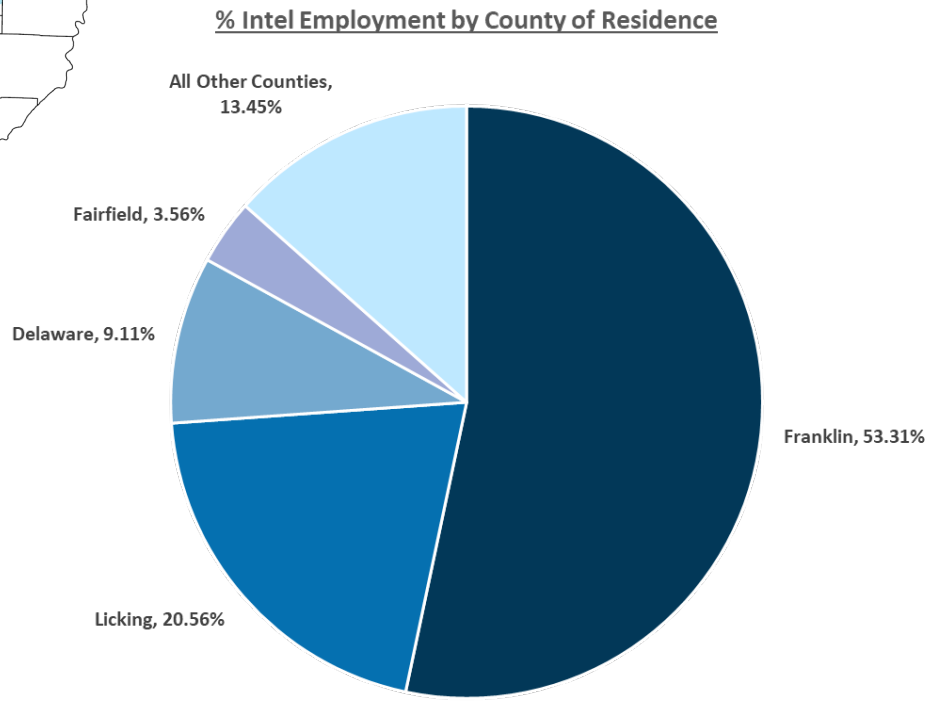
Overall population forecast example (Licking County)



For the first time, we attempted to account for anticipated economic development (Intel)



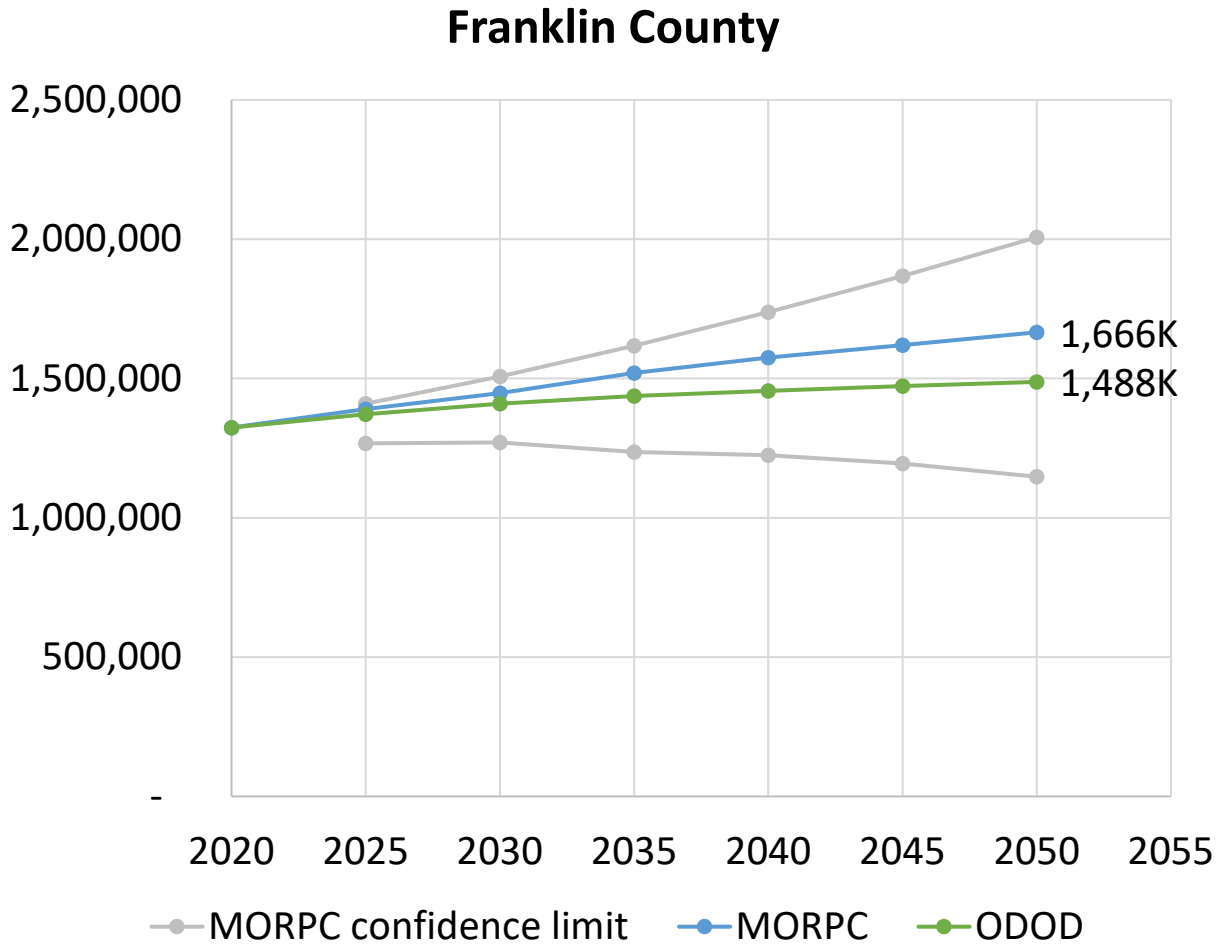


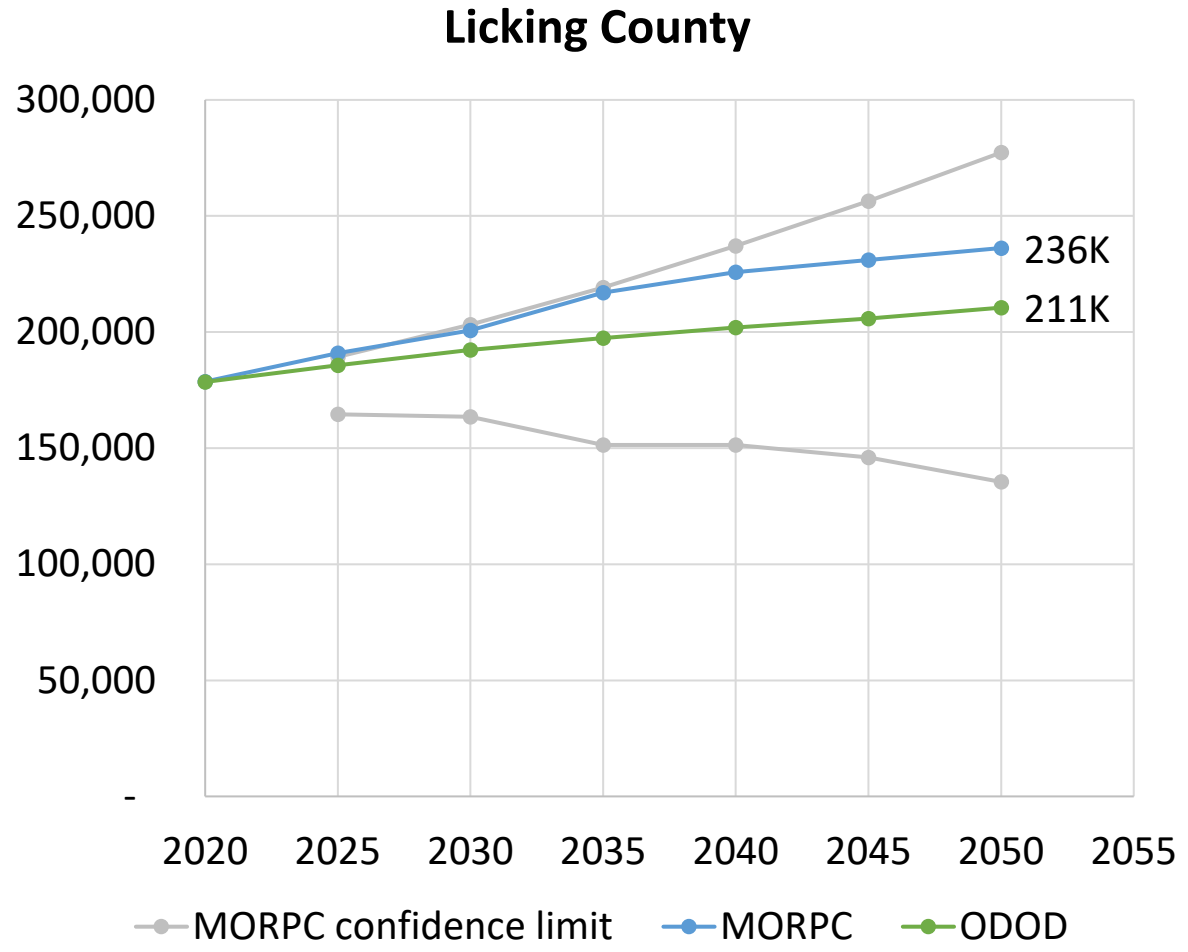


Our method deviates from the more typical method used by the State of Ohio

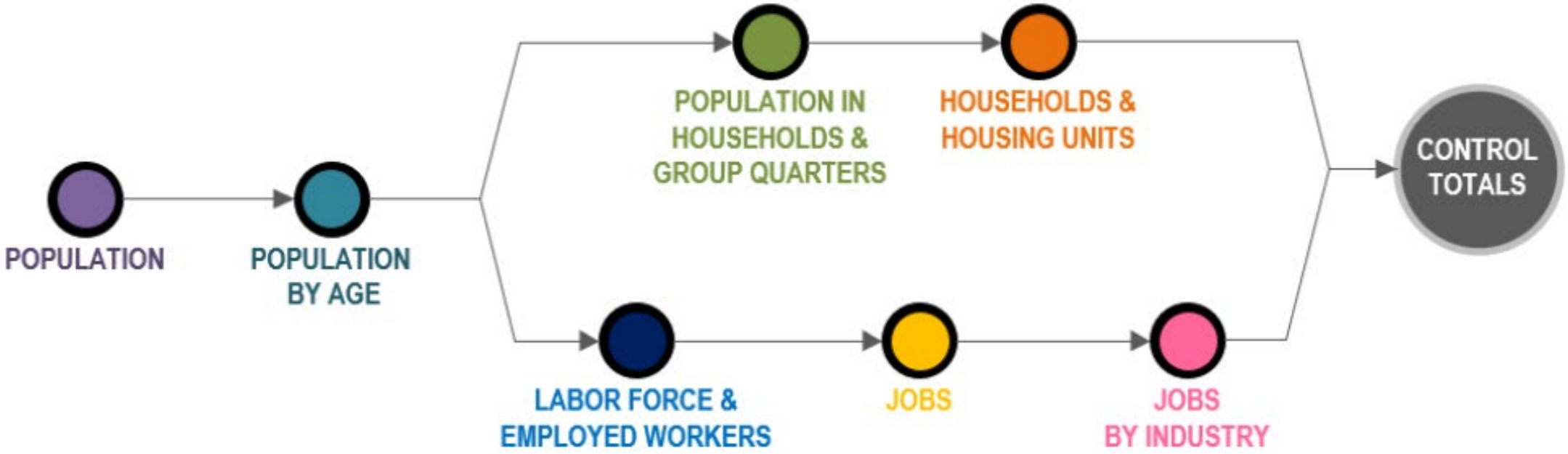
Ohio Department of Development	MORPC
Cohort component model	Modified ARIMA statistical model
Total population **built up** from projections of sex-age cohorts	Total population **forecasted directly**
Assumes **constant birth, death, and migration rates.**	Assumes **overall historic trends will continue.** (Migration expected to compensate for changes in natural increase.)
Birth/death/migration rates determined from recent history	**Trend parameters** determined from recent history
Produces **nominal total population, population by age, population by sex**	Produces **nominal total population and confidence interval**
Accounts for generational population patterns (existing generations only)	**Ignores** generational population patterns
Intentionally excludes non-historic factors	**Attempts to include** certain non-historic factors (Intel factory)

Our method tends to produce more optimistic estimates than the cohort-component method

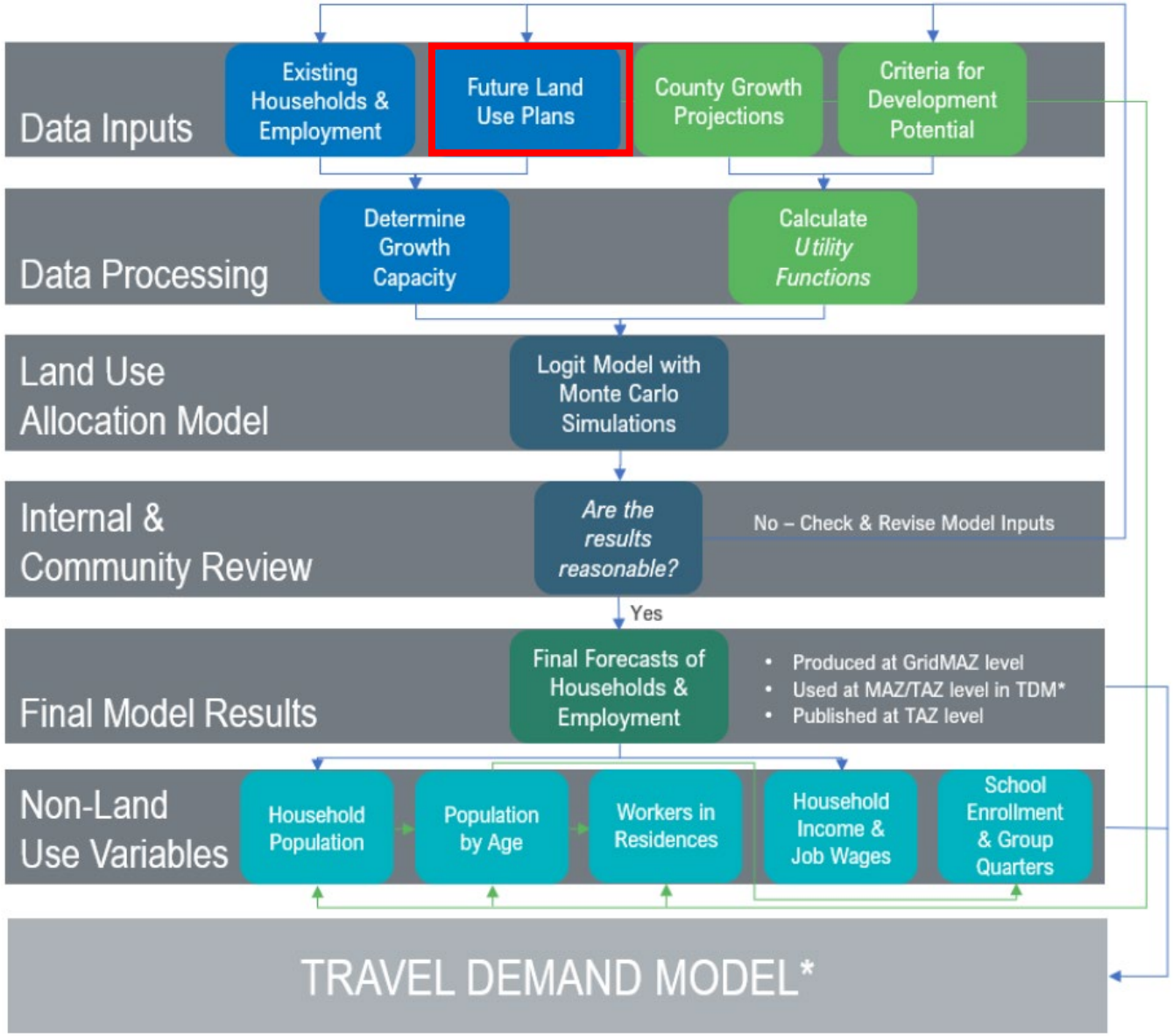




Once we have overall population, we can forecast subgroups based on certain assumptions.



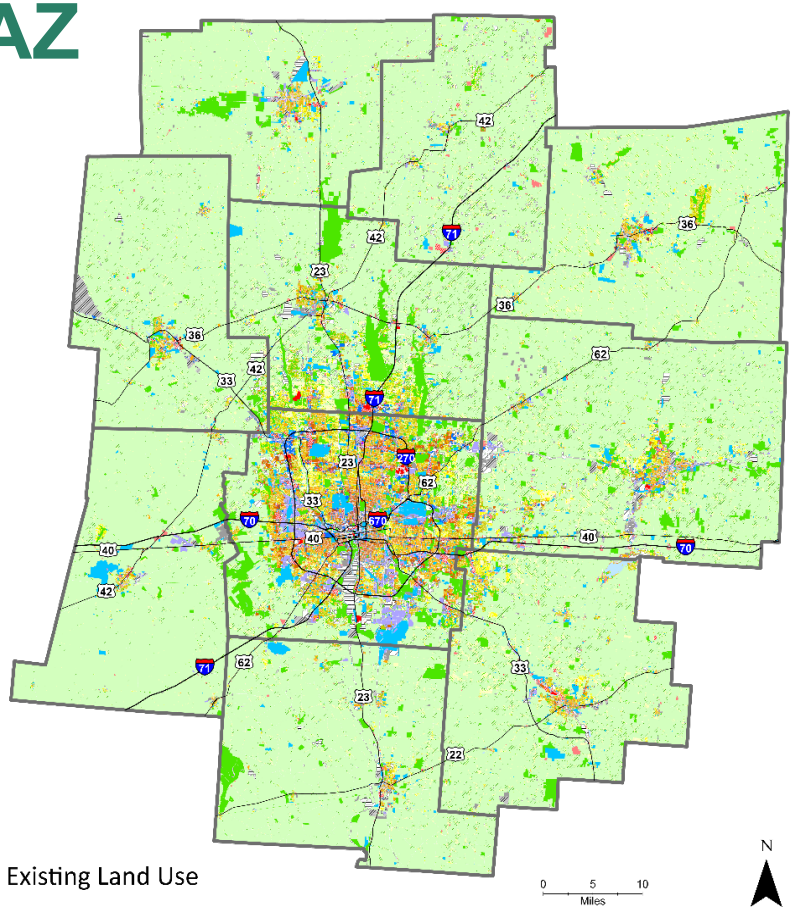
Next up, land use



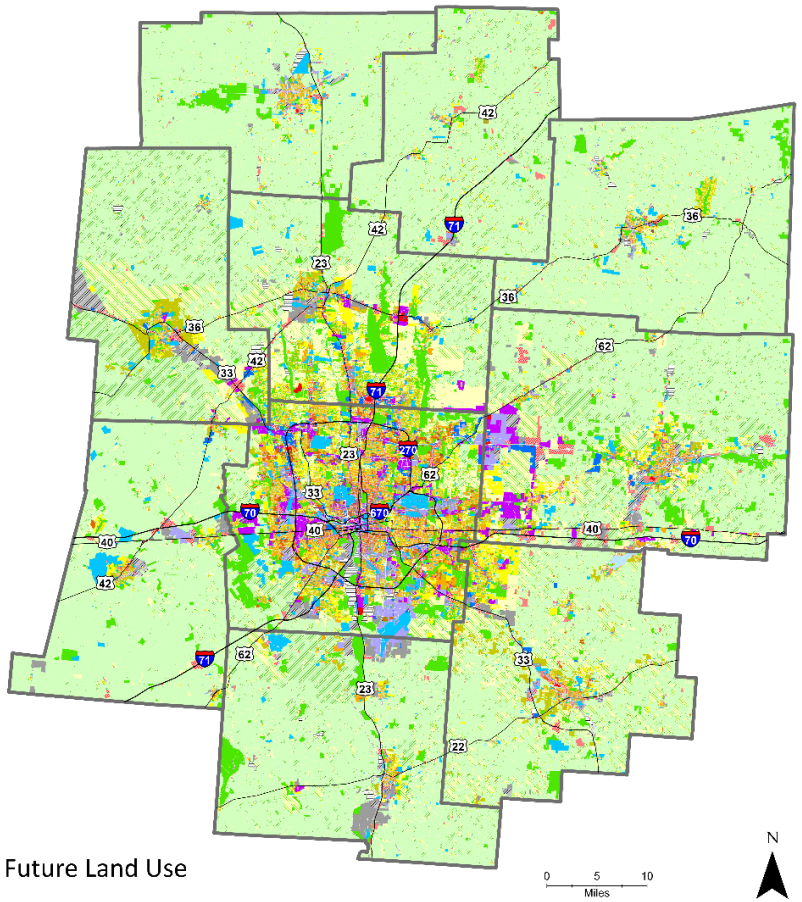
Land use is assigned to parcels based on auditors' data and community plans then summarized by GridMAZ

- Existing LU based on parcel data for 10 counties
- Future LU based on land use plans for 10 counties
- Uses are converted to MORPC standard land use classification system
- Determine mix of LU type by GridMAZ for existing and future

- Regional Commercial
- Community Commercial
- Neighborhood Commercial
- Mixed-Use
- Office
- Industrial
- Light Industrial
- Park/Open Space
- Res High Urban (20+ units per acre)
- Res Low Urban (8-20 units per acre)
- Res High Suburban (5-8 units per acre)
- Res Mod Suburban (3-5 units per acre)
- Res Suburban (1.5-3 units per acre)
- Res Low (0.5-1.5 units per acre)
- Res Rural (2-5 acre lots)
- Res Rural Estate (5-20 acre lots)
- Agriculture
- Public Service
- Parking
- Quarry
- Warehouse
- Vacant
- Right of Way
- Water

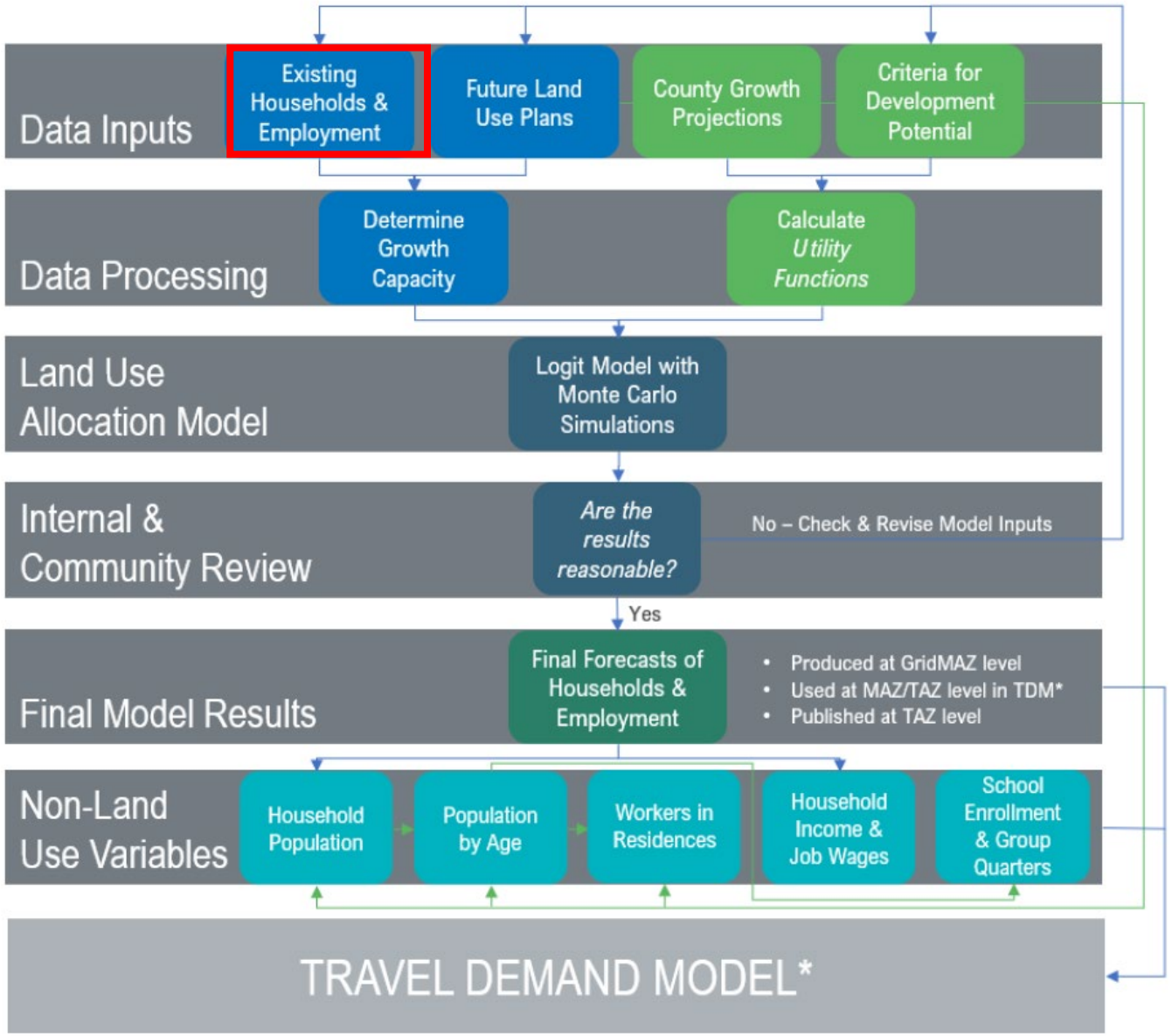


Existing Land Use

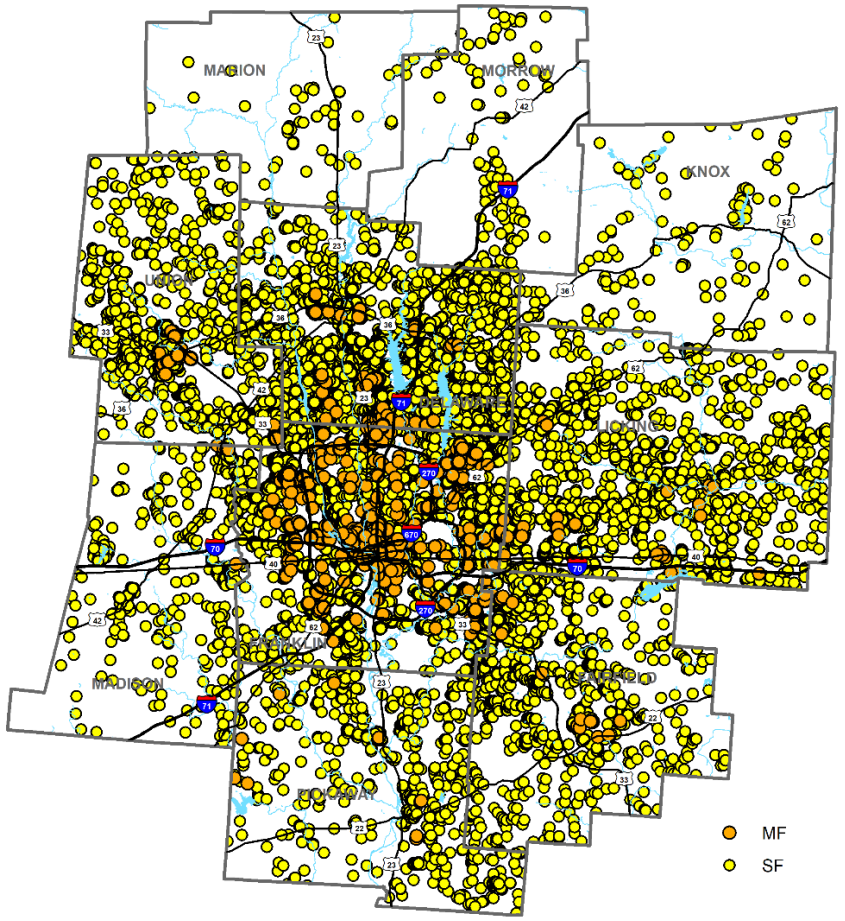


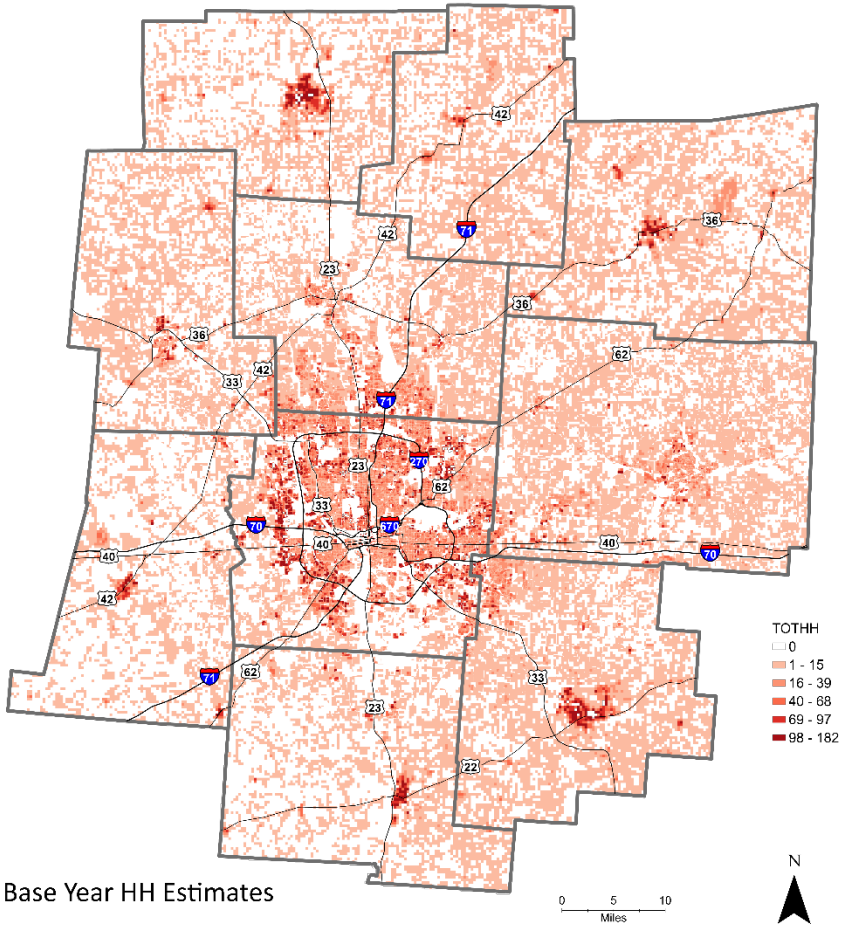
Future Land Use

Next: Existing conditions for households and employment



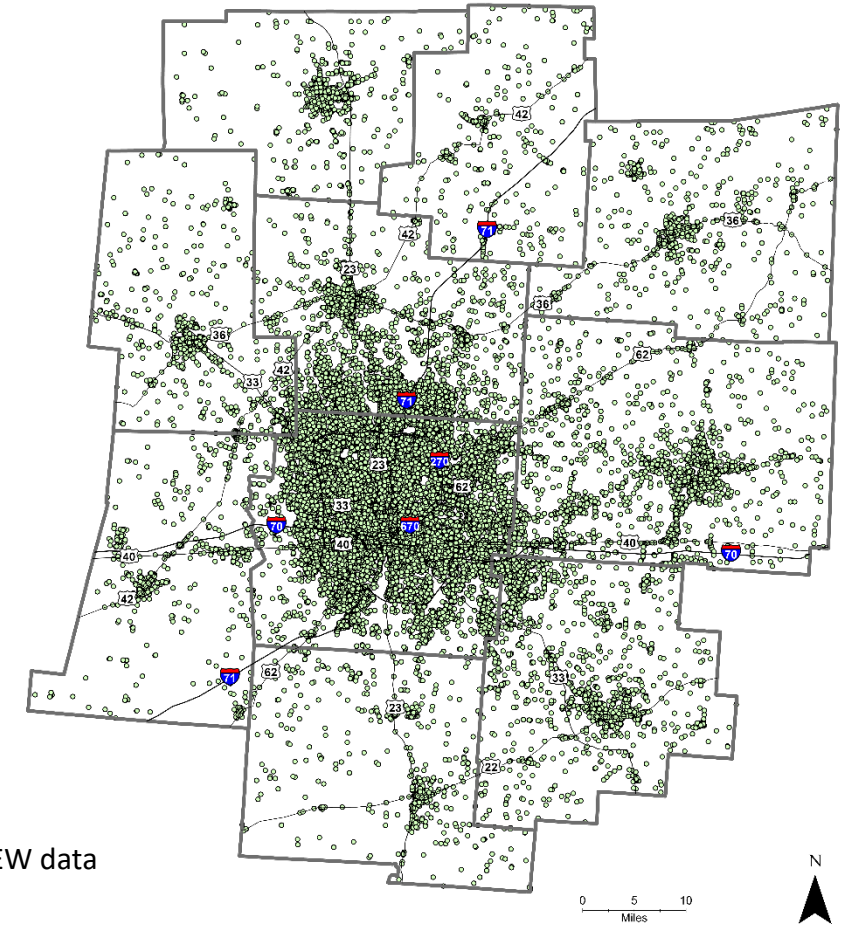
Existing households are estimated from Census data and building permits from local jurisdictions



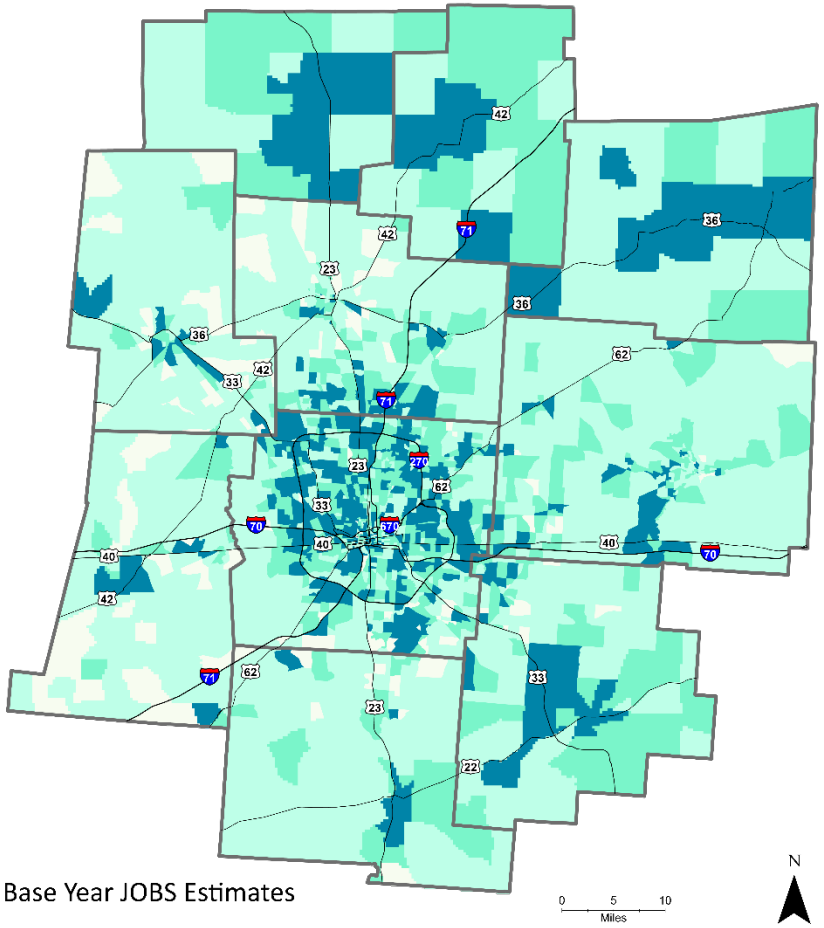


Base Year HH Estimates

Existing jobs are estimated from QCEW point-level employer data

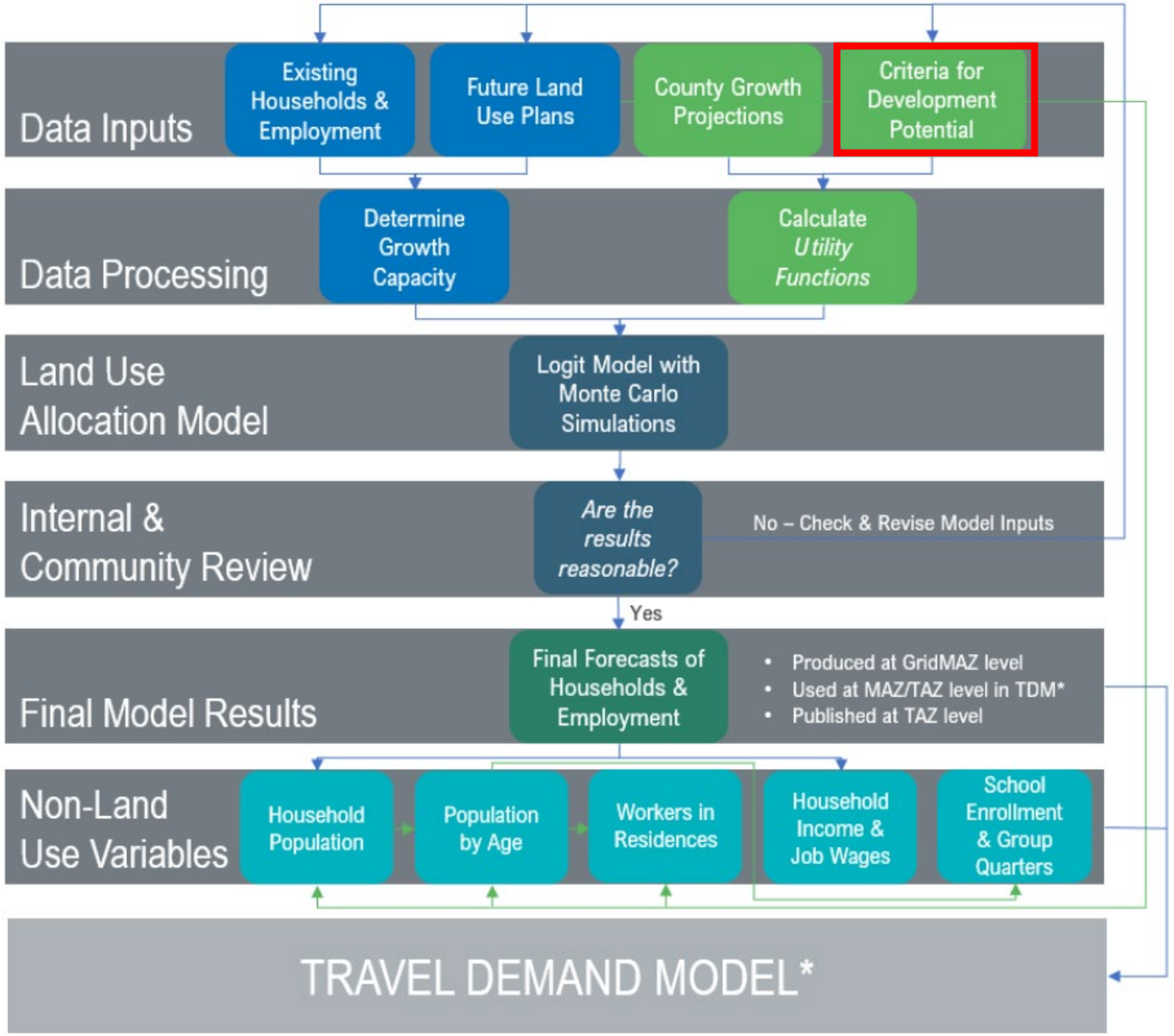


QCEW data



Base Year JOBS Estimates

Next: Criteria for development potential



Each GridMAZ is given a utility score based on a weighted combination of criteria

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- **Economic Development**
  - Tax Increment Financing
  - Community Reinvestment Areas
  - Cooperative Economic Development Agreement
  - Joint Economic Development District
  - Known Development (Hotspot)
  - Enterprise Zone
- **Environmental**
  - Streams & Rivers
  - 100-Year Floodplain
  - Wetlands
  - Environmental Conservation Areas
  - Upstream Water In-Take
  - High Slope
  - Wellhead Zone
  - Up ground Reservoirs
- **Infrastructure**
  - Bike Facilities
  - Intermodal Yard
  - Transit Corridors
  - Sanitary Sewer
  - Accessibility
  - Adjacent to Developed Area
  - Park
  - City, Village
- **Land Use Nuisances**
  - Electrical Substation & High Tension Lines
  - Quarries
  - Airport Noise
  - Landfills
  - Wastewater Treatment Plant

Some criteria have an attraction effect, some have a deterrent effect. Effect varies by land use.

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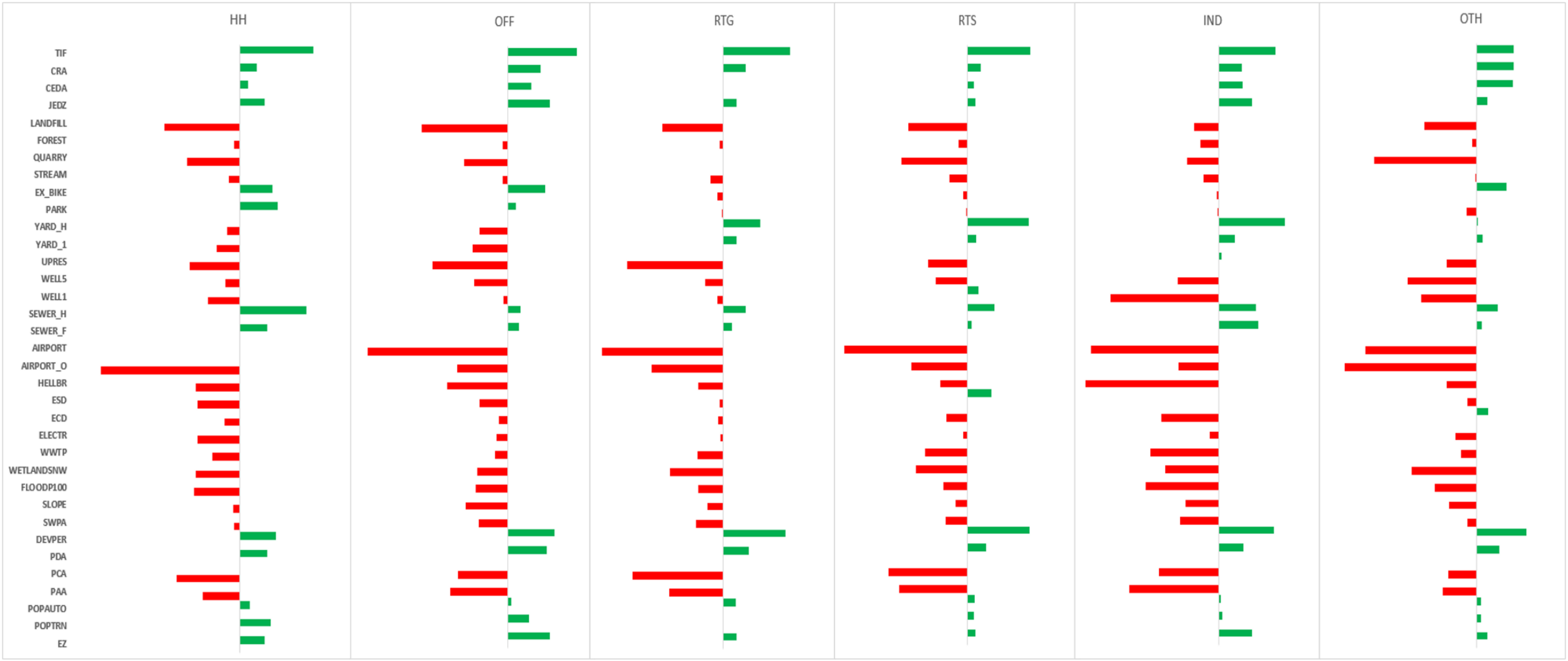
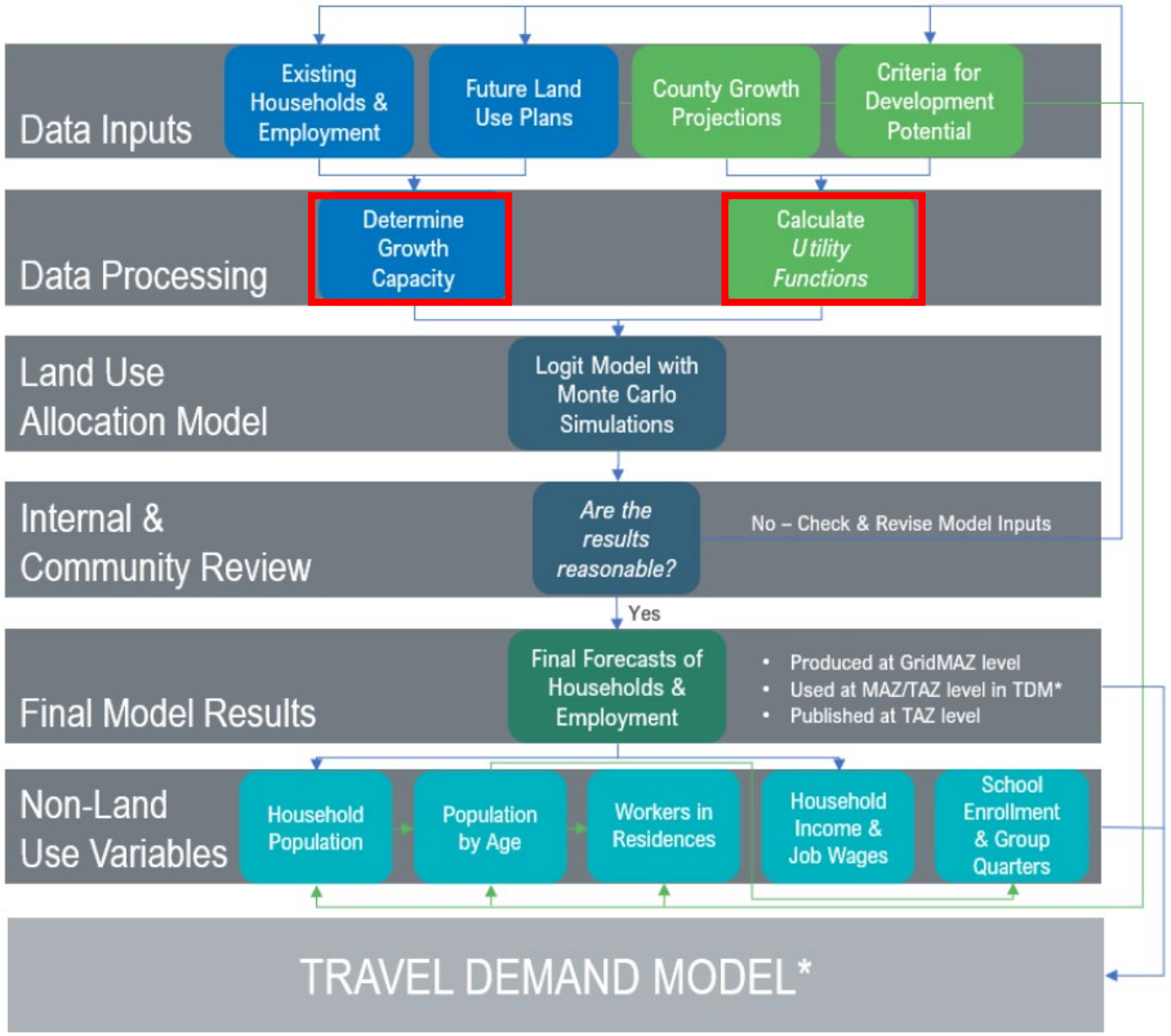
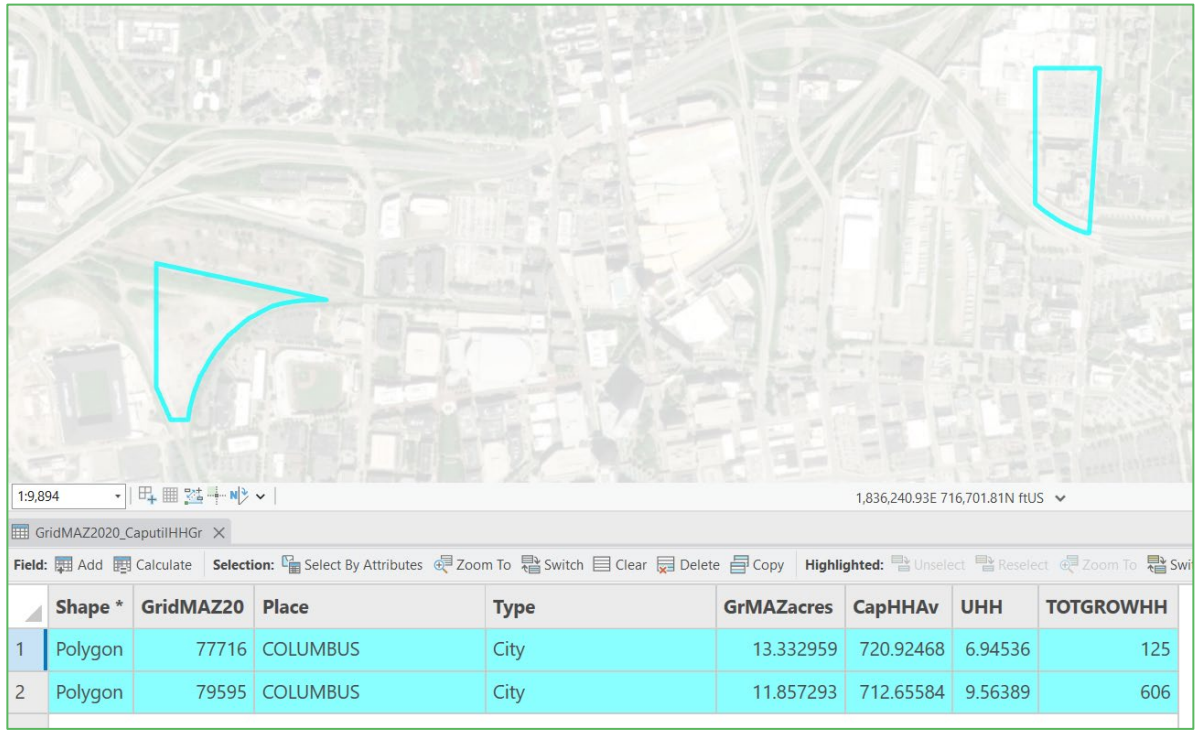


Next: Capacity vs utility

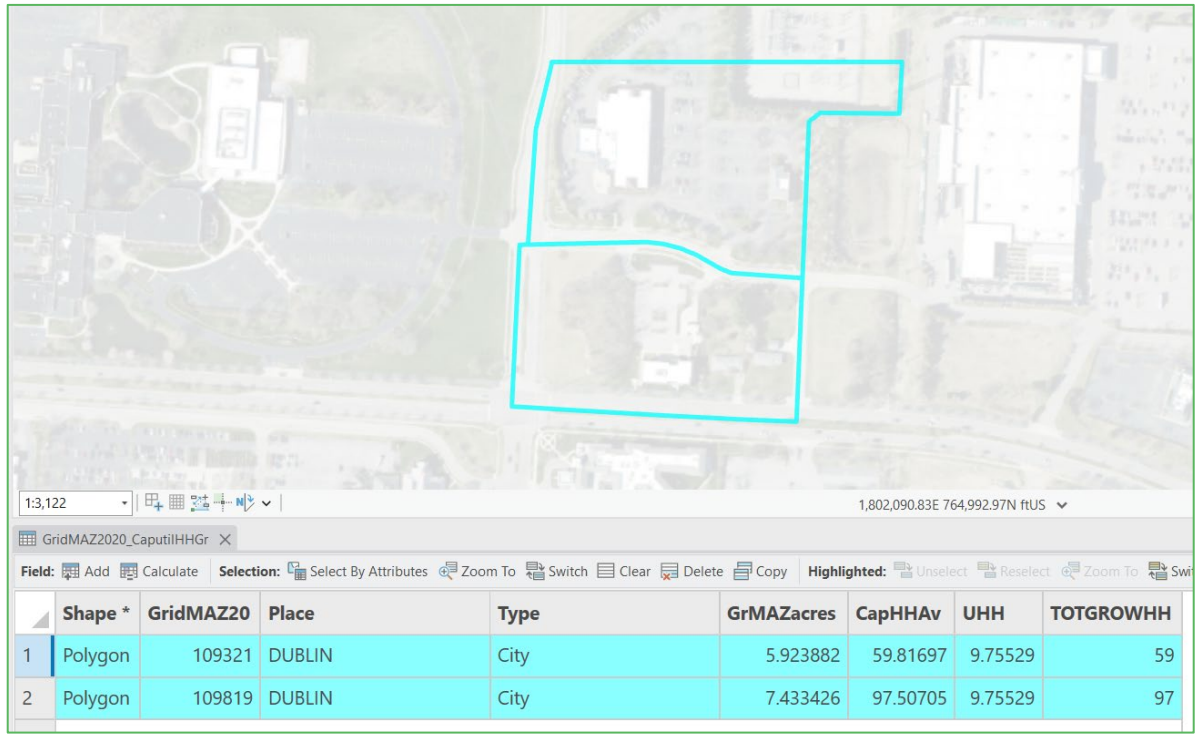


The amount of growth allocated to a GridMAZ is proportional to its utility and constrained by its capacity



	Shape *	GridMAZ20	Place	Type	GrMAZacres	CapHHAv	UHH	TOTGROWHH
1	Polygon	77716	COLUMBUS	City	13.332959	720.92468	6.94536	125
2	Polygon	79595	COLUMBUS	City	11.857293	712.65584	9.56389	606

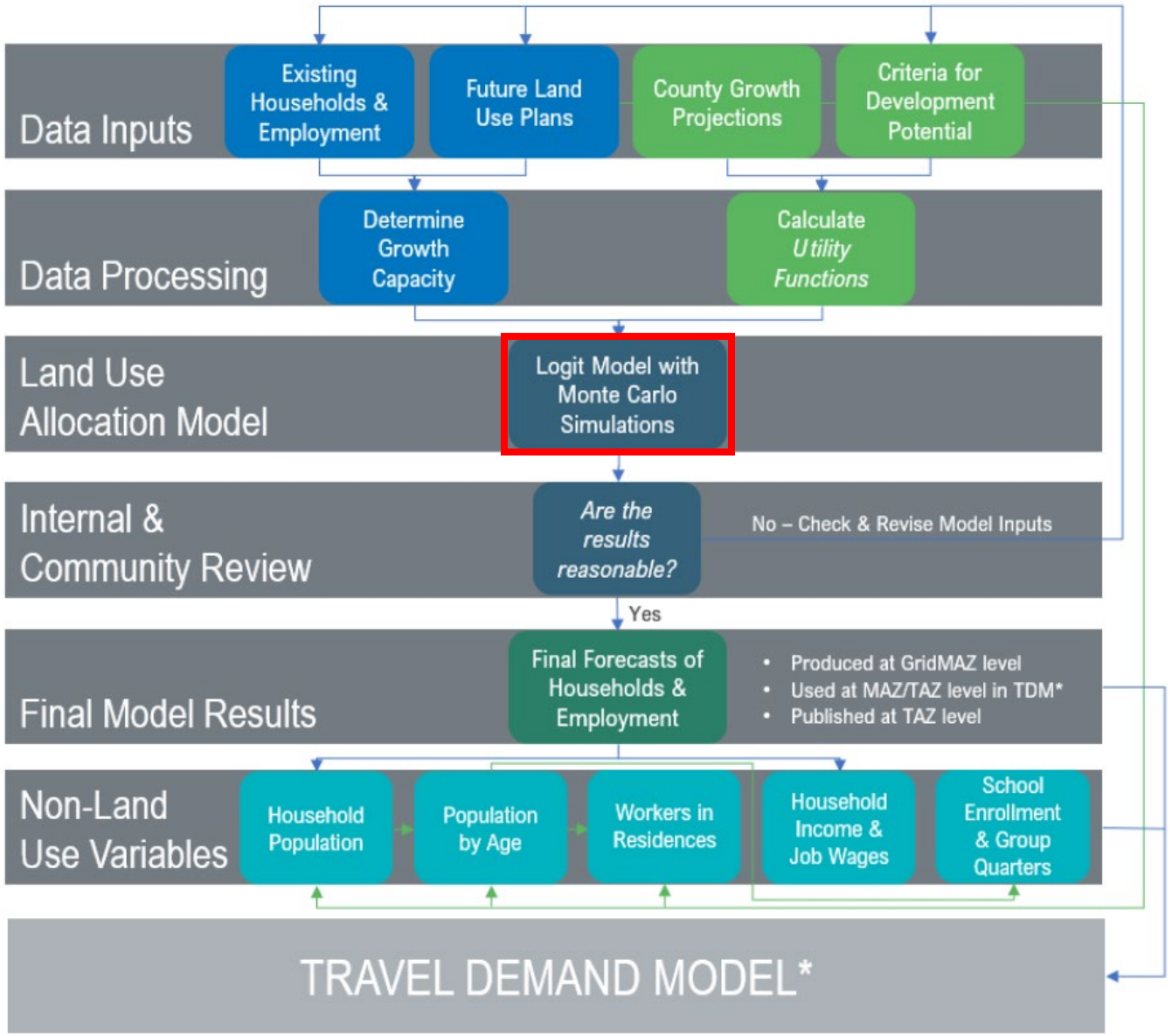
Similar Capacity, Different Utility



	Shape *	GridMAZ20	Place	Type	GrMAZacres	CapHHAv	UHH	TOTGROWHH
1	Polygon	109321	DUBLIN	City	5.923882	59.81697	9.75529	59
2	Polygon	109819	DUBLIN	City	7.433426	97.50705	9.75529	97

Similar Utility, Different Capacity

Next: Allocation of growth based on simulation

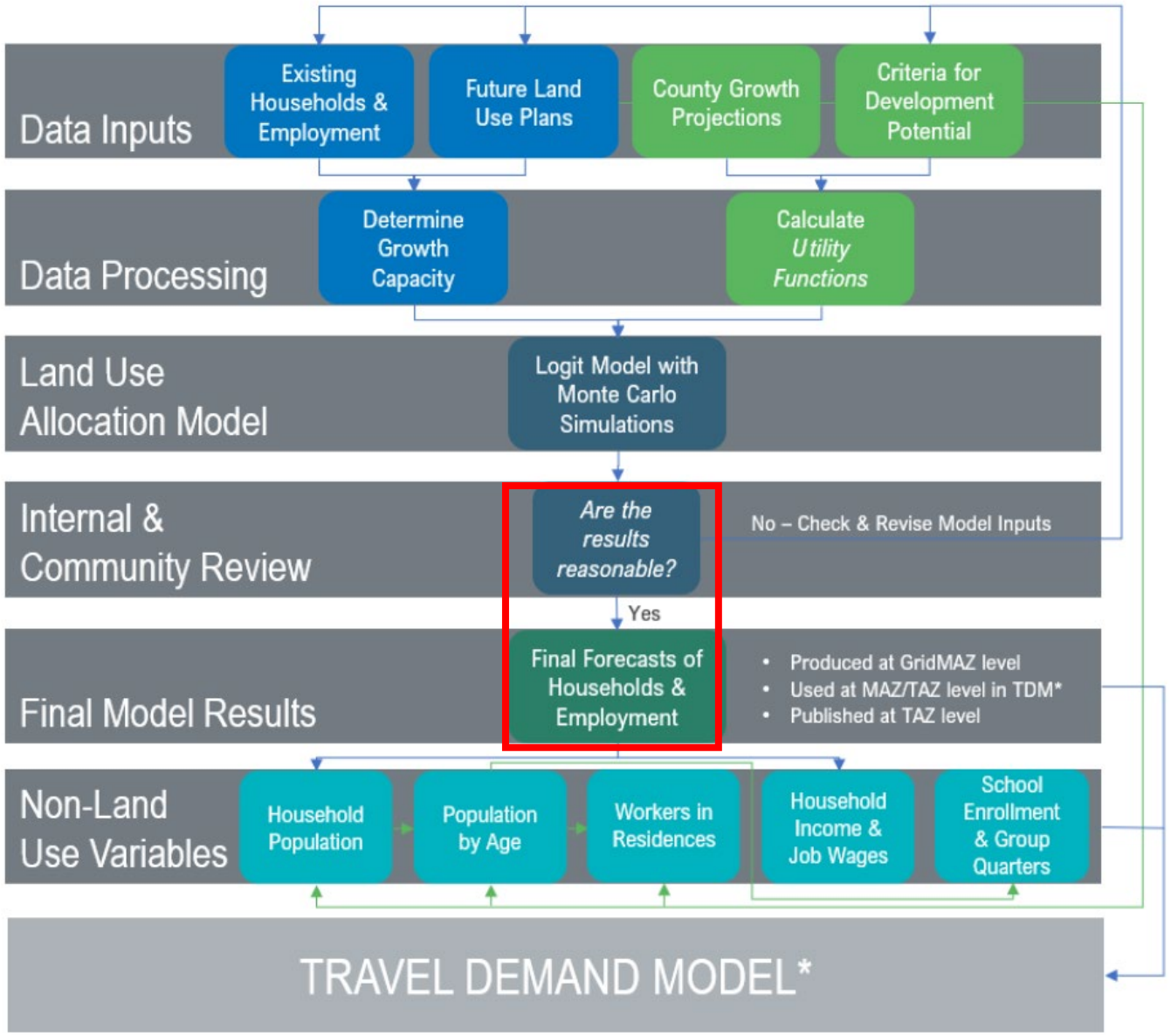


Growth for each GridMAZ is the average of 200 randomized simulations

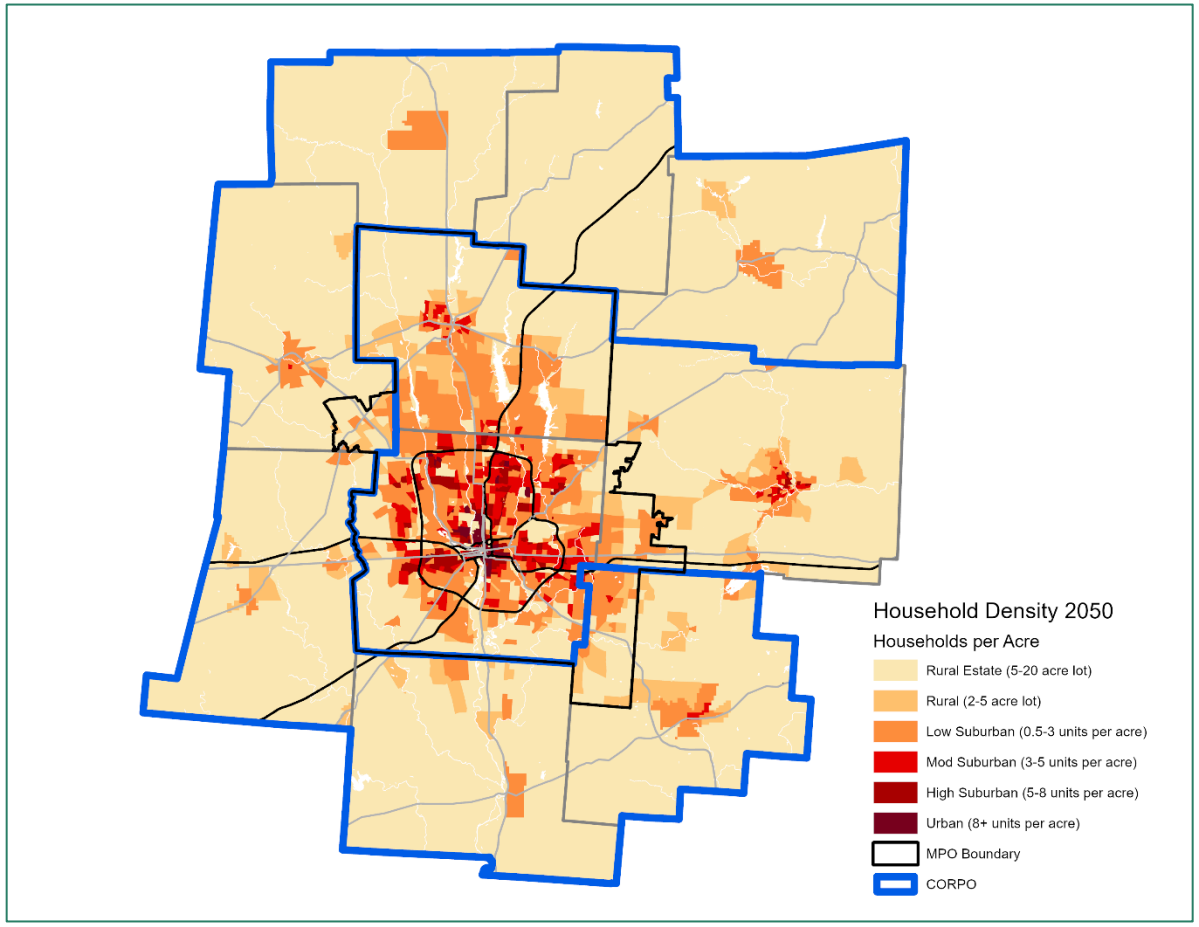
Think of this like a game of darts:

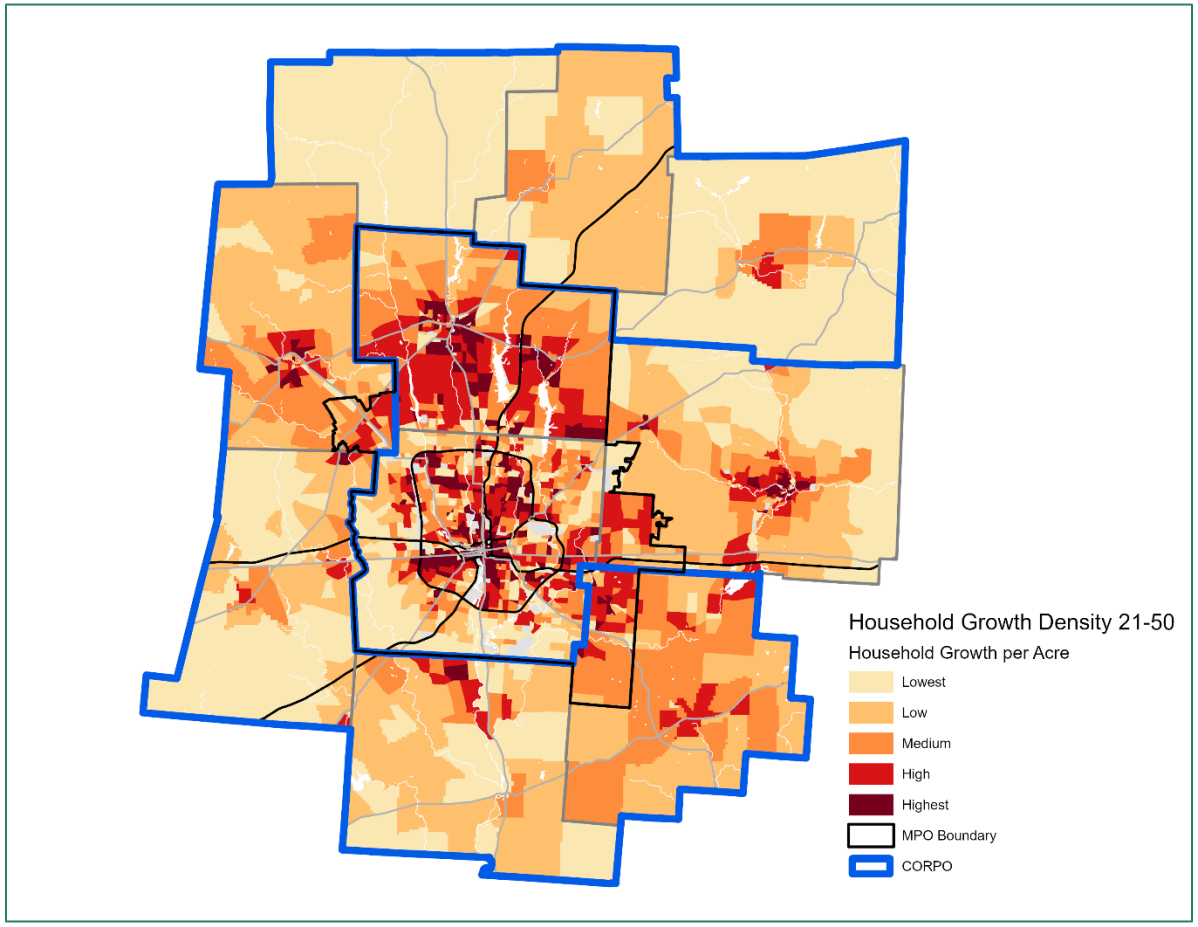
1. Two players collect their darts.
    1. One player throws for households, one for jobs
    2. Total number of darts for each is equal to the forecasted county-level growth in households and growth in jobs, respectively
2. Players each throw their darts at their own copy of the 10-county map
    1. Each aims for a GridMAZ with a preference for those having the highest attractiveness for their land use.
    2. When capacity is reached for a land use, that player can no longer throw darts at that GridMAZ.
3. When all darts are expended, the players tabulate the number of darts in each GridMAZ for both maps
4. Players repeat the game 199 more times
5. For each GridMAZ, compute the average number of darts of each type for the 200 games
6. For each land use, adjust the values for all GridMAZ such that their sum is equal to the county growth (i.e control the values to the county control total)

Next: Review results

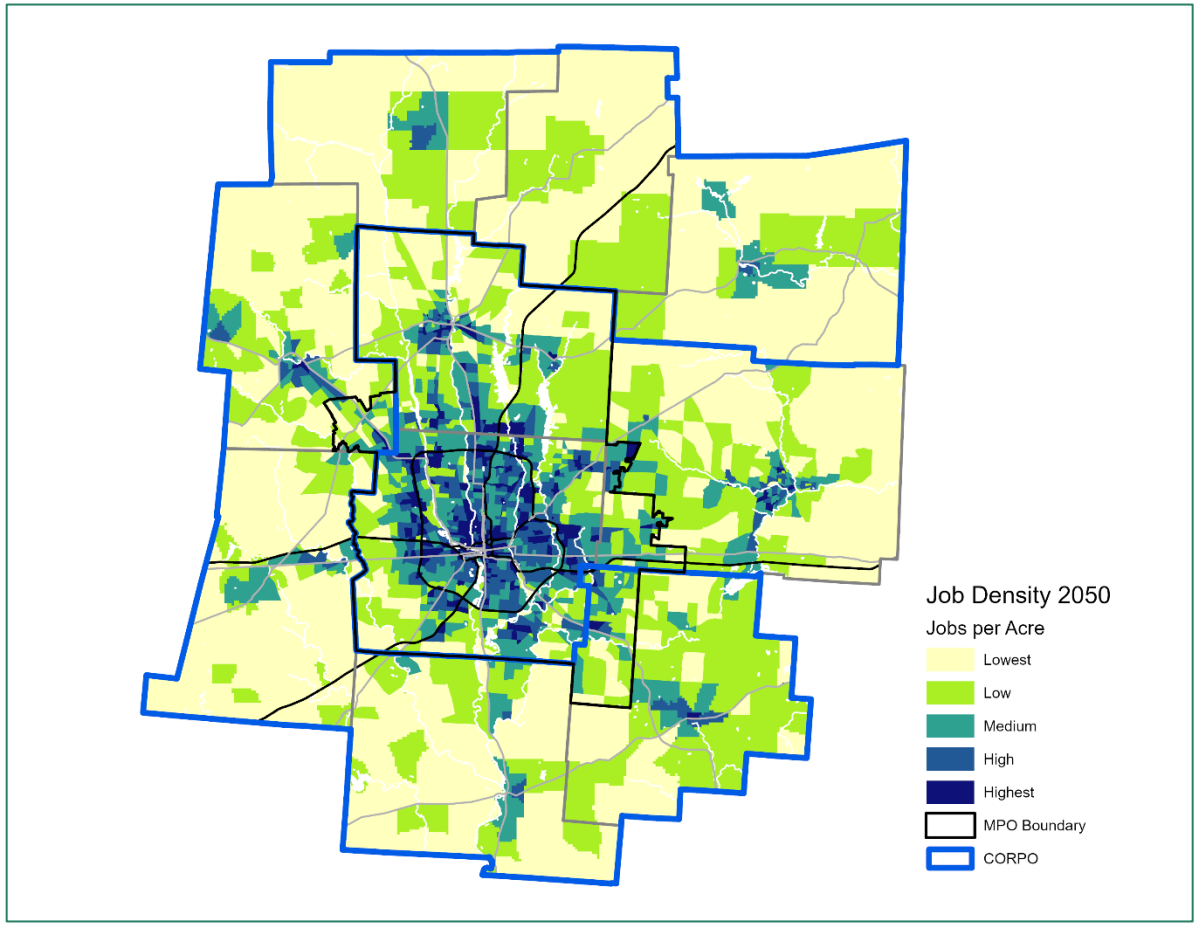


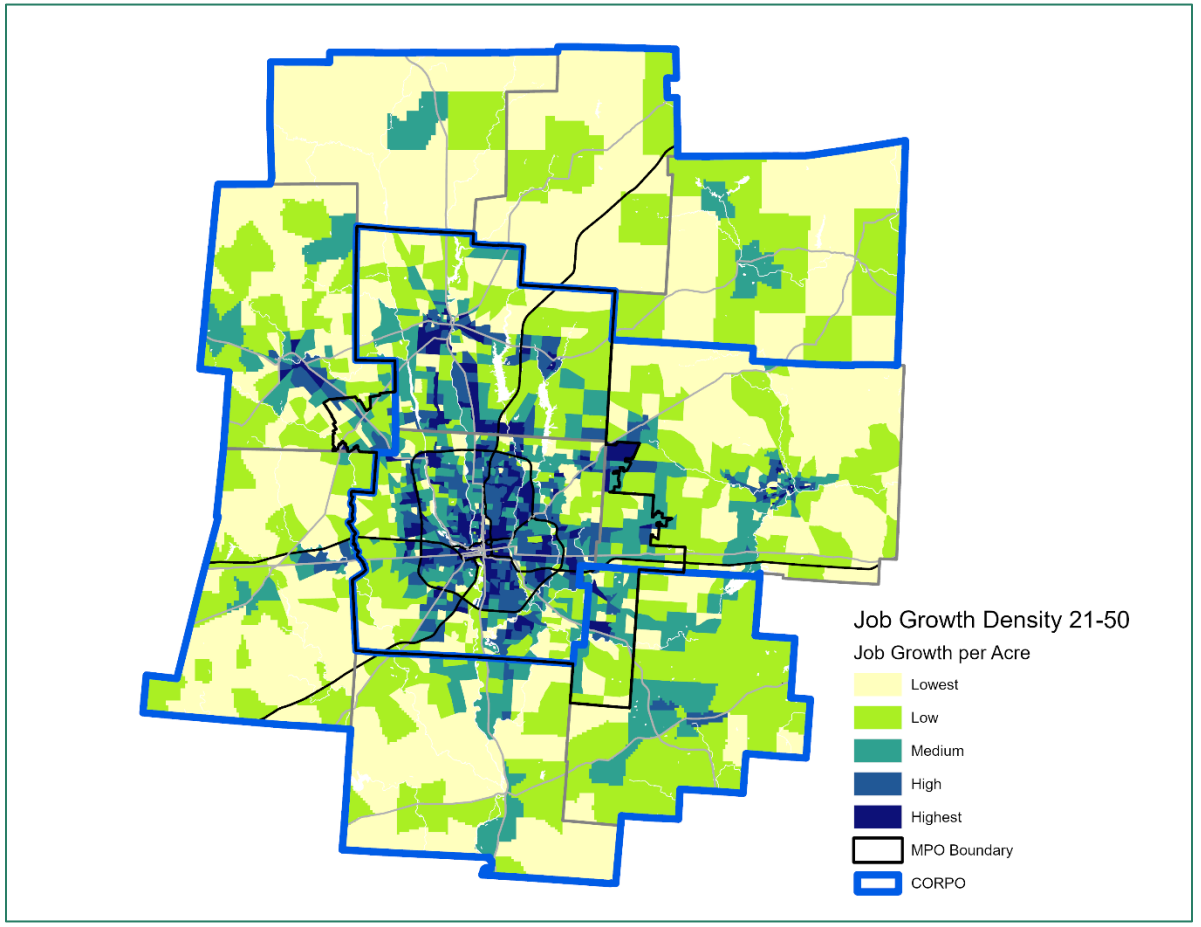
Final Results - Households



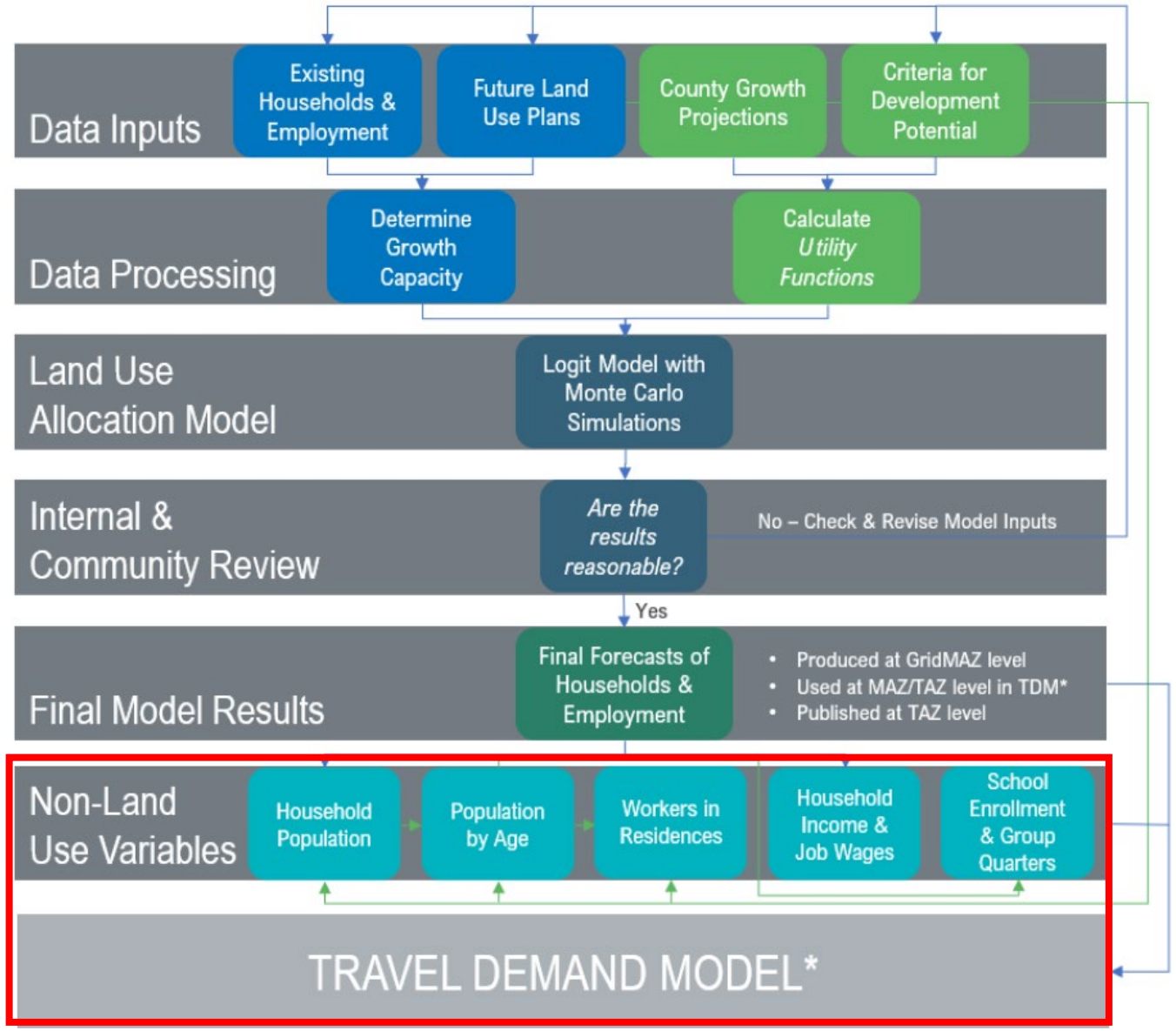


Final Results - Jobs



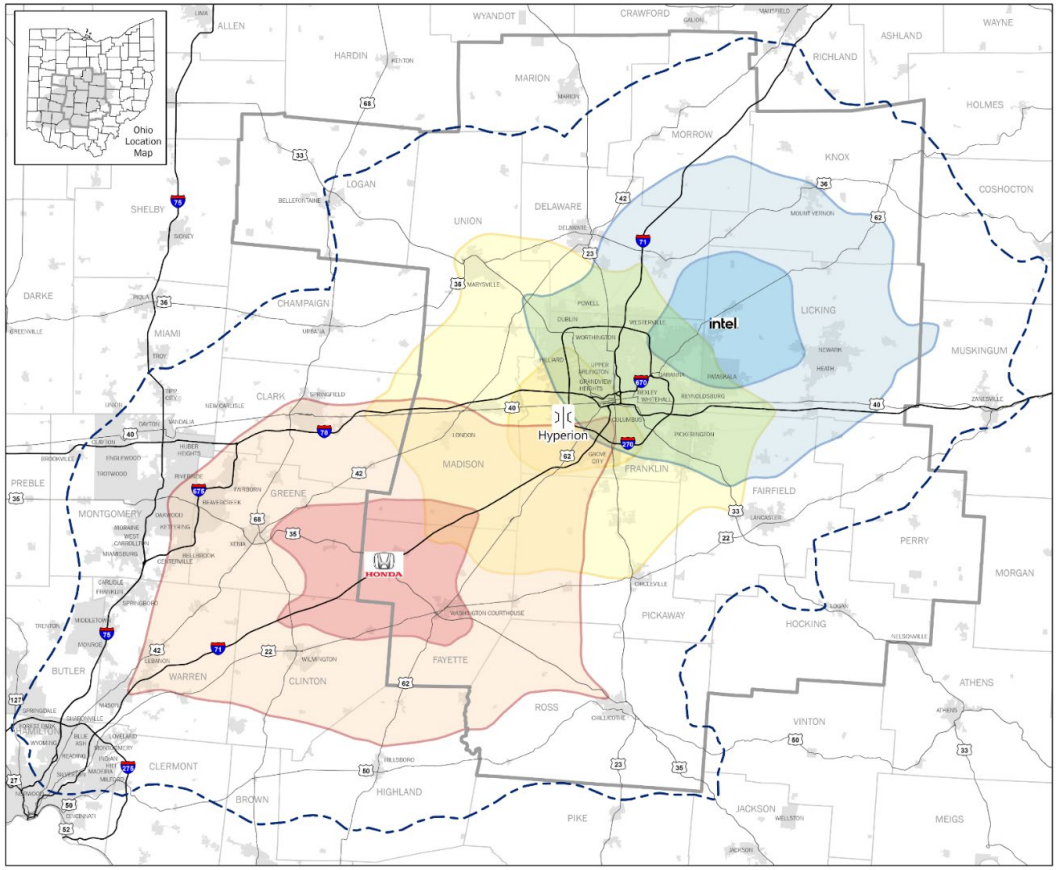


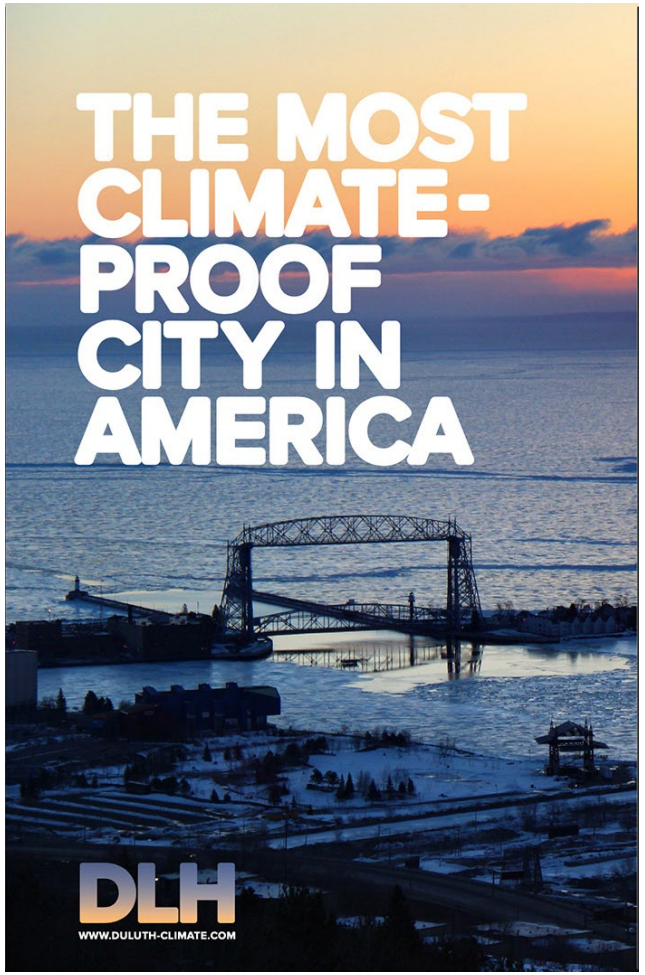
What's left? A lot!



And plenty to think about for next time.

- Other economic development (Hyperion, Honda, Carmenton)
- Climate migration
- Declining natural increase
- Population decline in Ohio
- Etc.





Thanks! Questions?

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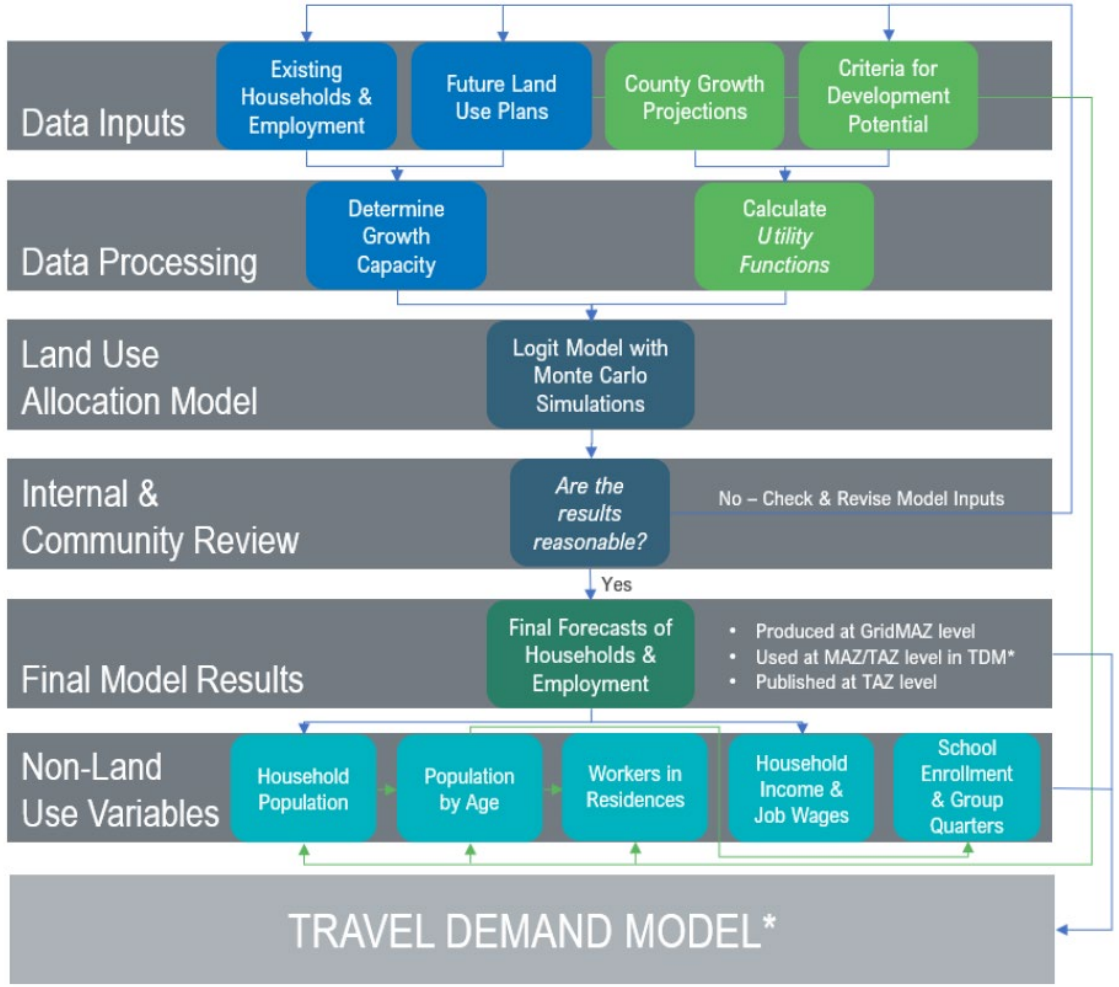

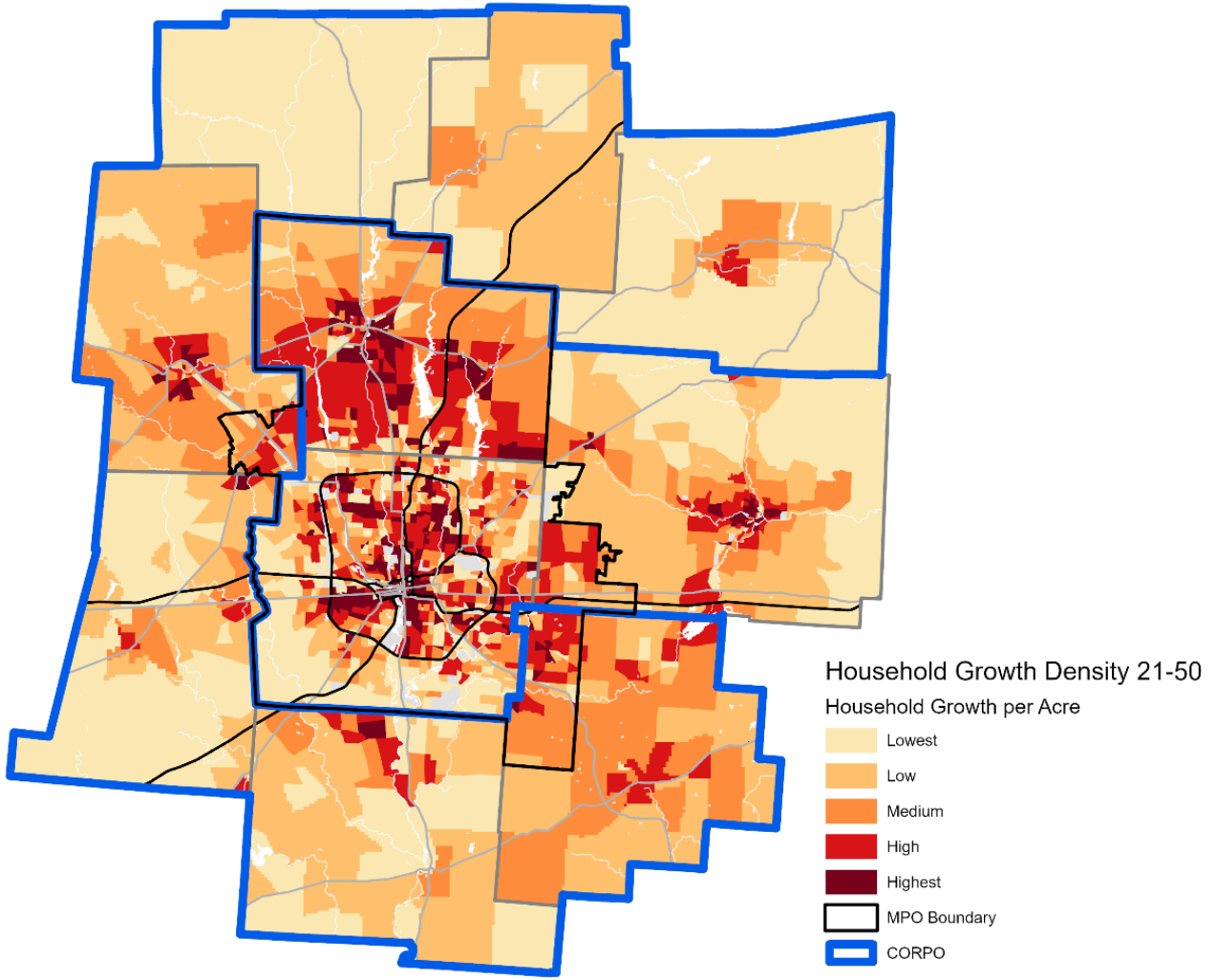

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Adjourn

Glenn Marzluf
Chair
Sustaining Scioto Board
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