

Regional Data & Mapping Commission Update

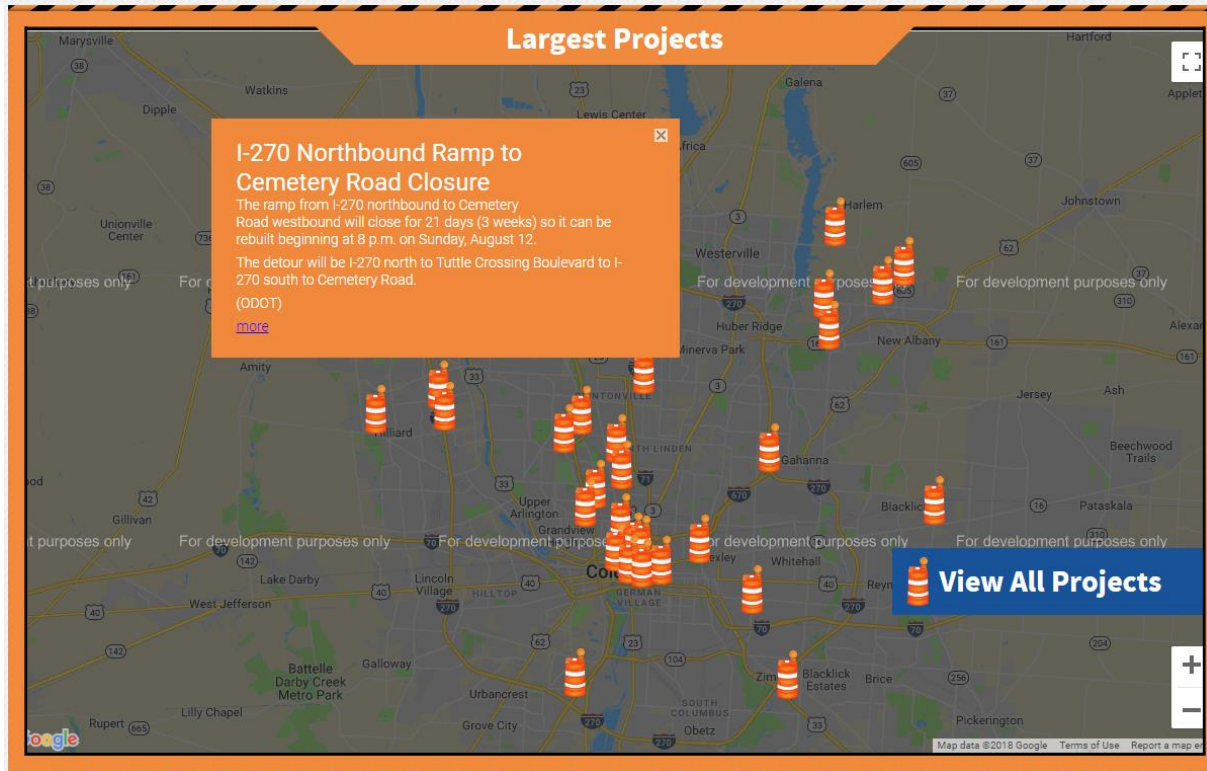
September 2018



Mid-Ohio Regional
Planning Commission

PAVING THE WAY

Central Ohio Road Construction Information



Paving the Way System Redesign

- MORPC took over operations of the Paving the Way program in 2017
- Current system has limited functionality and is time intensive to maintain
- JMT Technologies selected to redesign the system
- Project timeline: September 2018 – February 2019
- New system to include:
 - New Paving the Way website with improved user interface
 - Data input capabilities for local governments and contractors
 - Improved mapping capabilities
 - Broader regional participation
 - More . . .
- User experience research and design occurring this fall, stay tuned!

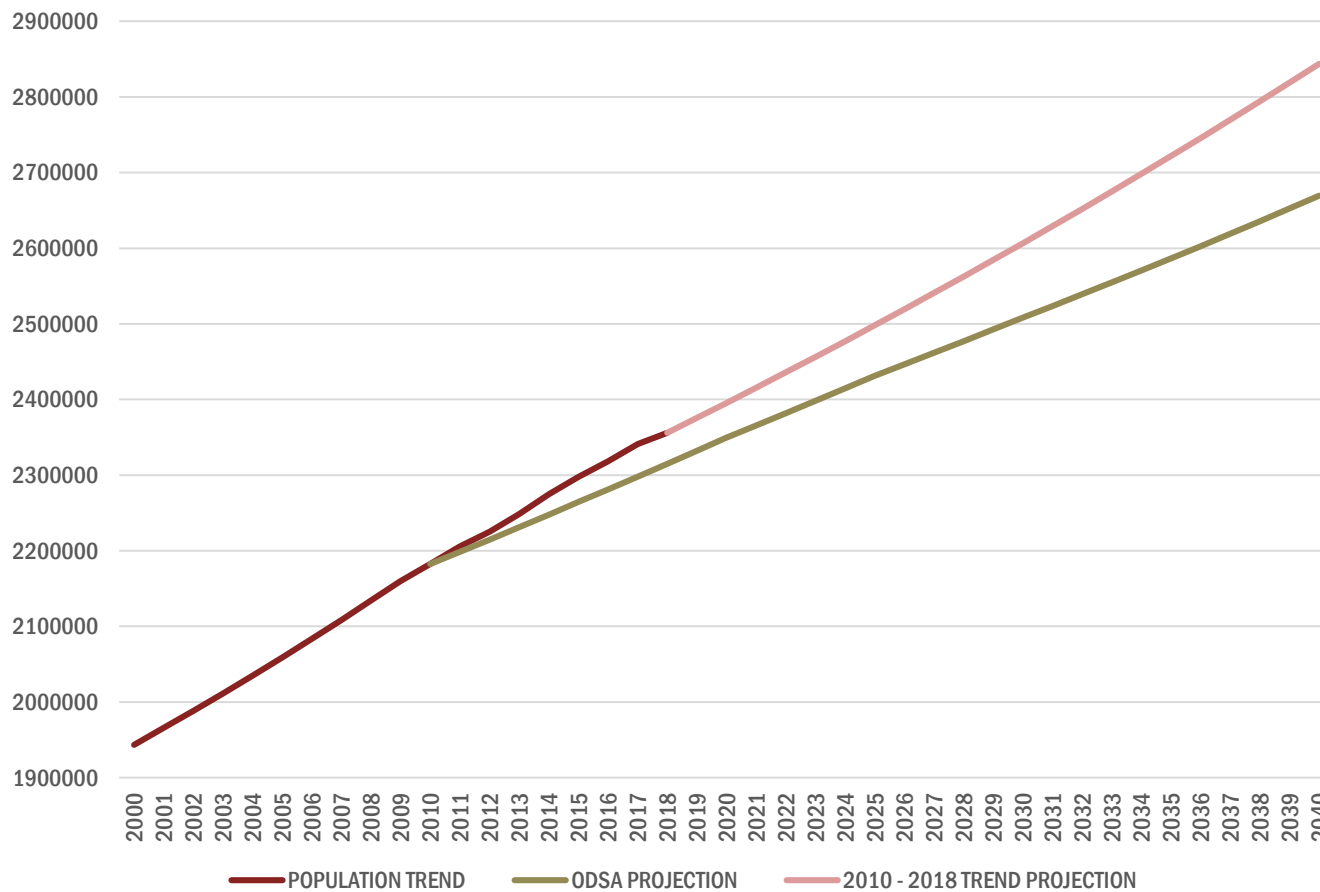


MORPC Draft Regional Population Projections 2020-2050



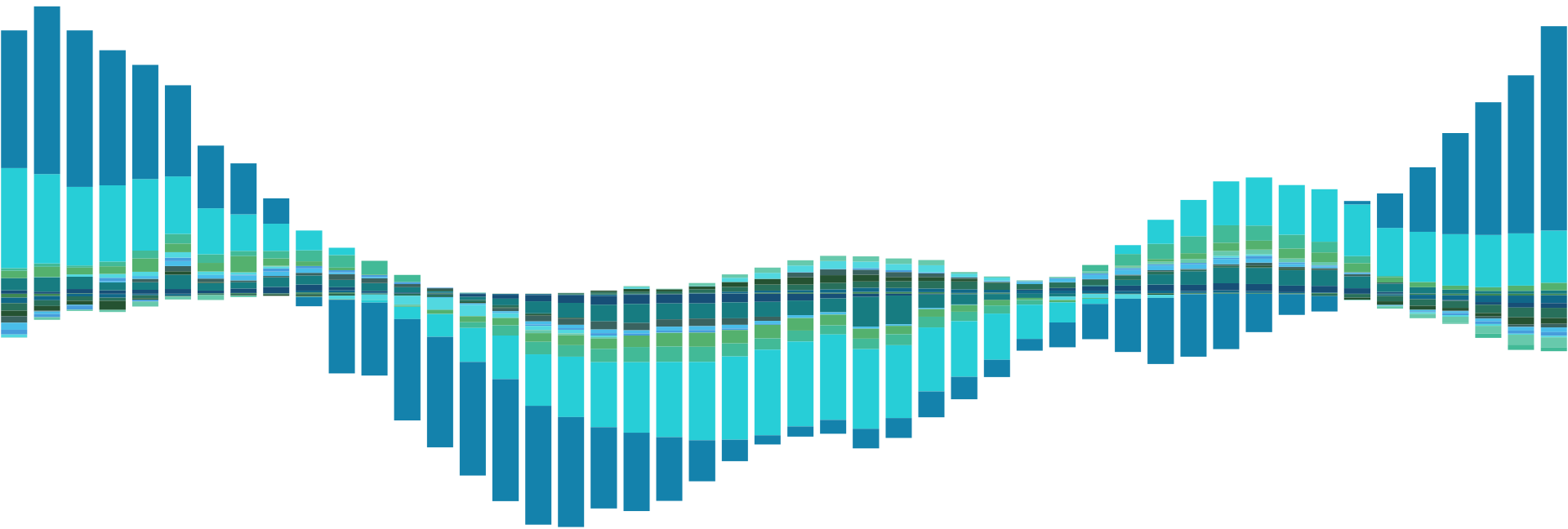
MORPC 2016-2040 Population Projections

MORPC 15-County Region



Recipe for Population Growth

- **Fertility Rates (pretty easy and reliable to predict)**
- **Life Expectancy (also, follows a pattern that isn't too hard to predict)**
- **Net Migration (not so easy to predict)**



How to Model Migration Uncertainty?

ARIMA: Auto-Regressive Integrated Moving Average

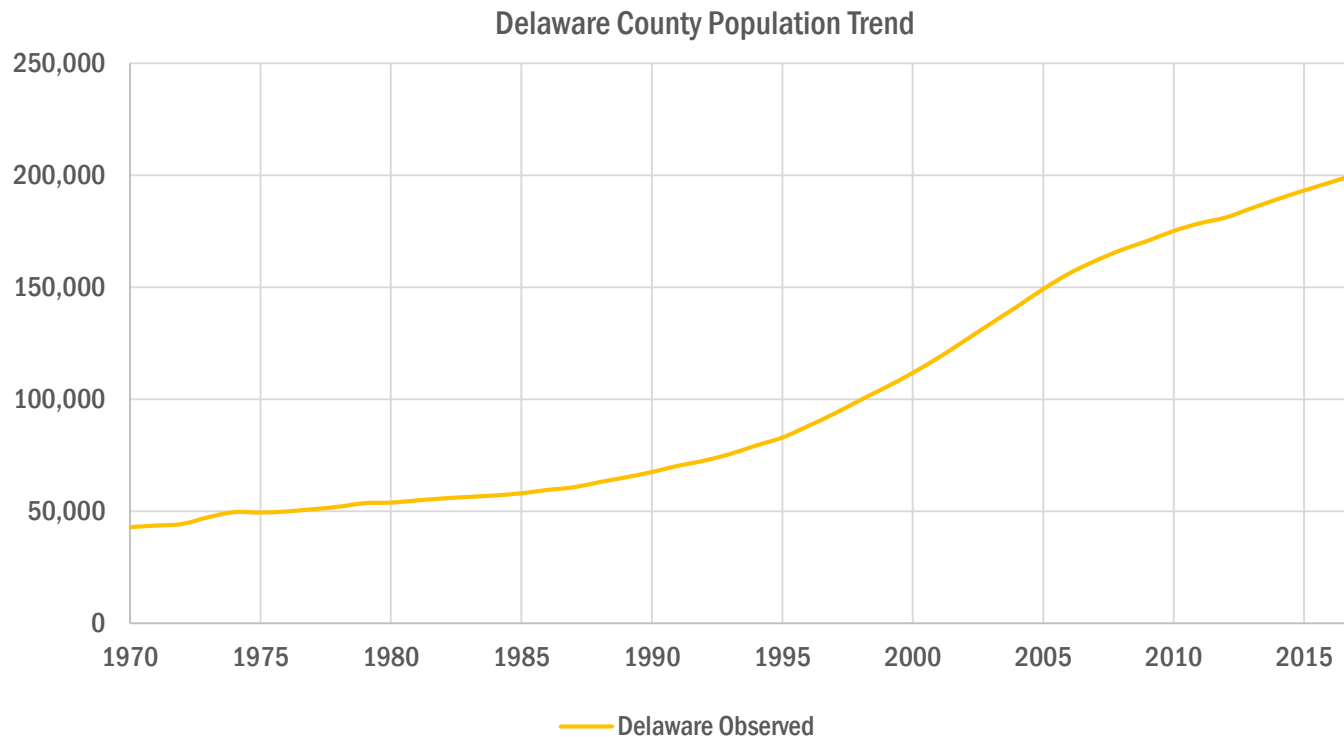
- A family of statistical 'time-series' models
- Work best for data that have some kind of trend, and some kind of random wave pattern about the trend
- With caution, fairly efficient to run tests and implement using statistical software
- Efficient to calculate ranges of uncertainty using statistical software



County Population Forecasts

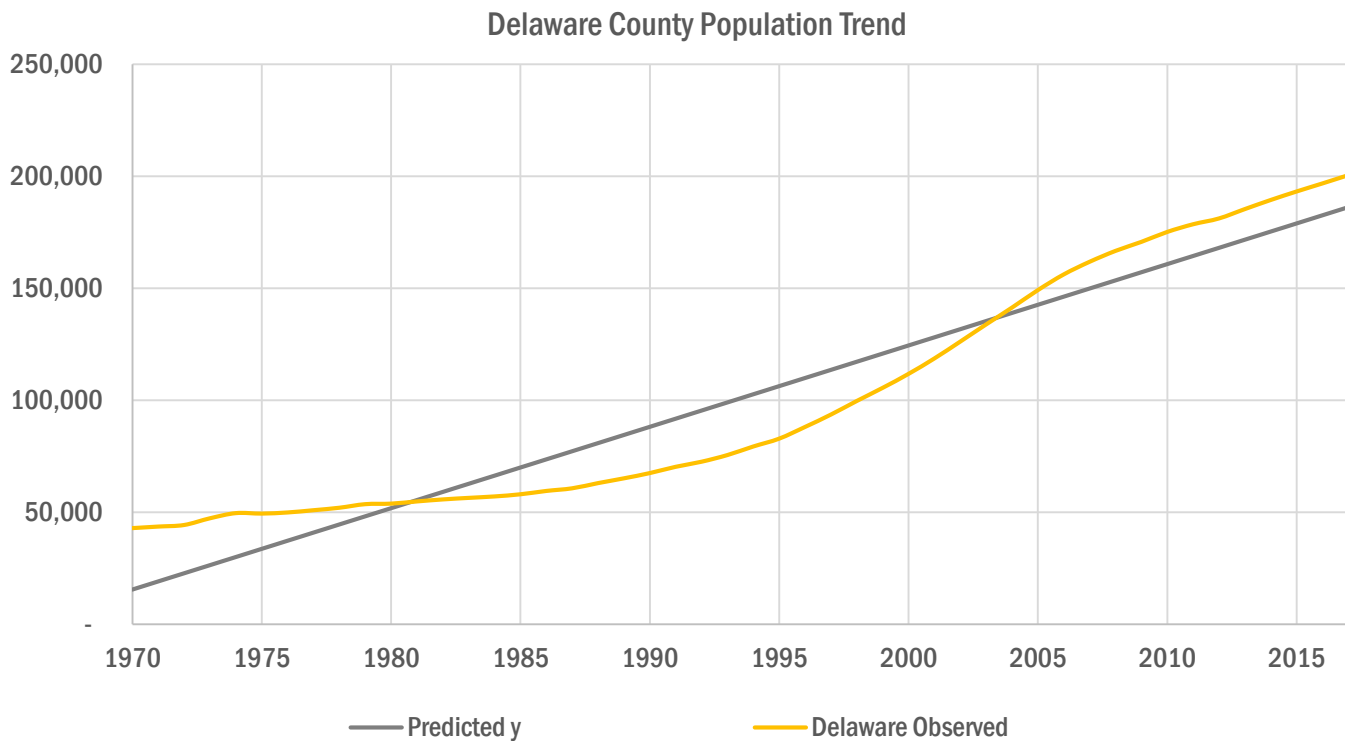
GOAL :

Choose a model for the future, informed by the patterns of the past.



County Population Forecasts

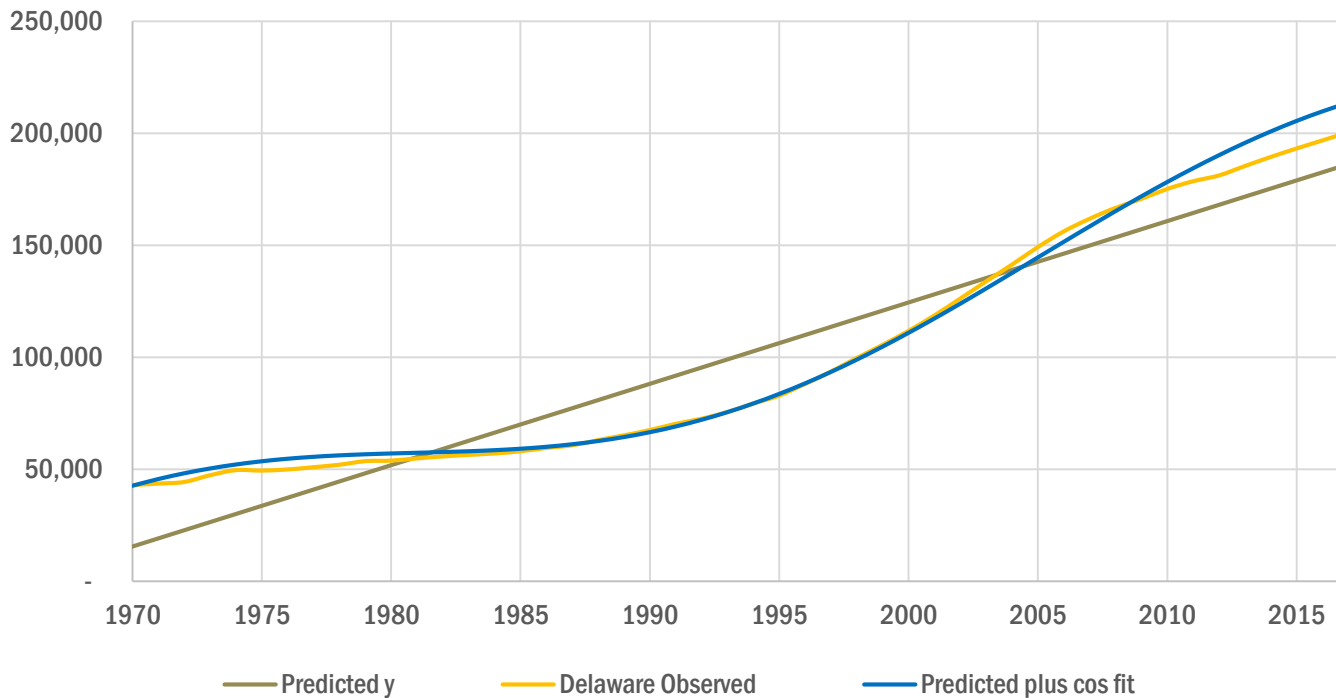
Population rarely grows in a straight line...



County Population Forecasts

...it's pretty consistently a 'wave' pattern showing periods of faster or slower growth.

Delaware County Population Trend

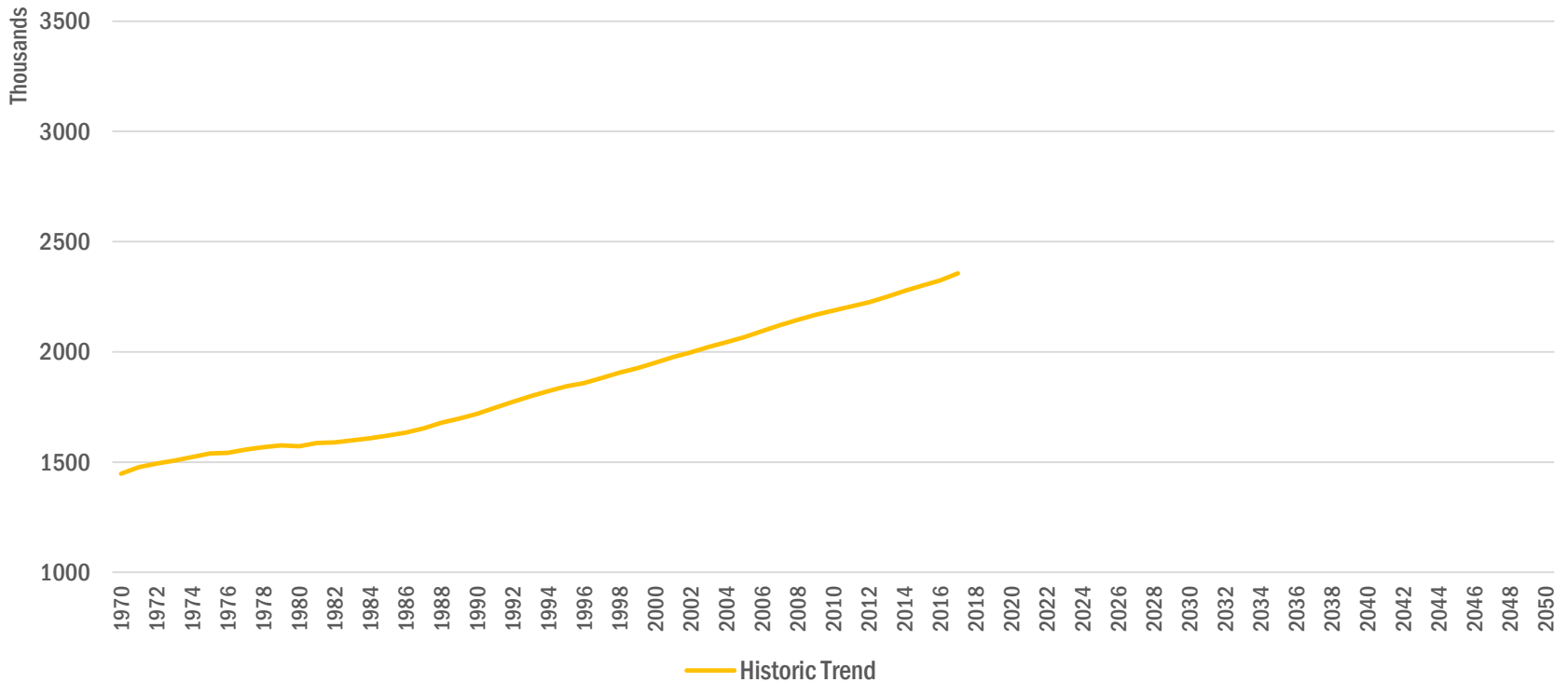


The Model

ARIMA (1,1,2)

aka Holt's Linear Exponential Smoothing with Damped Trend

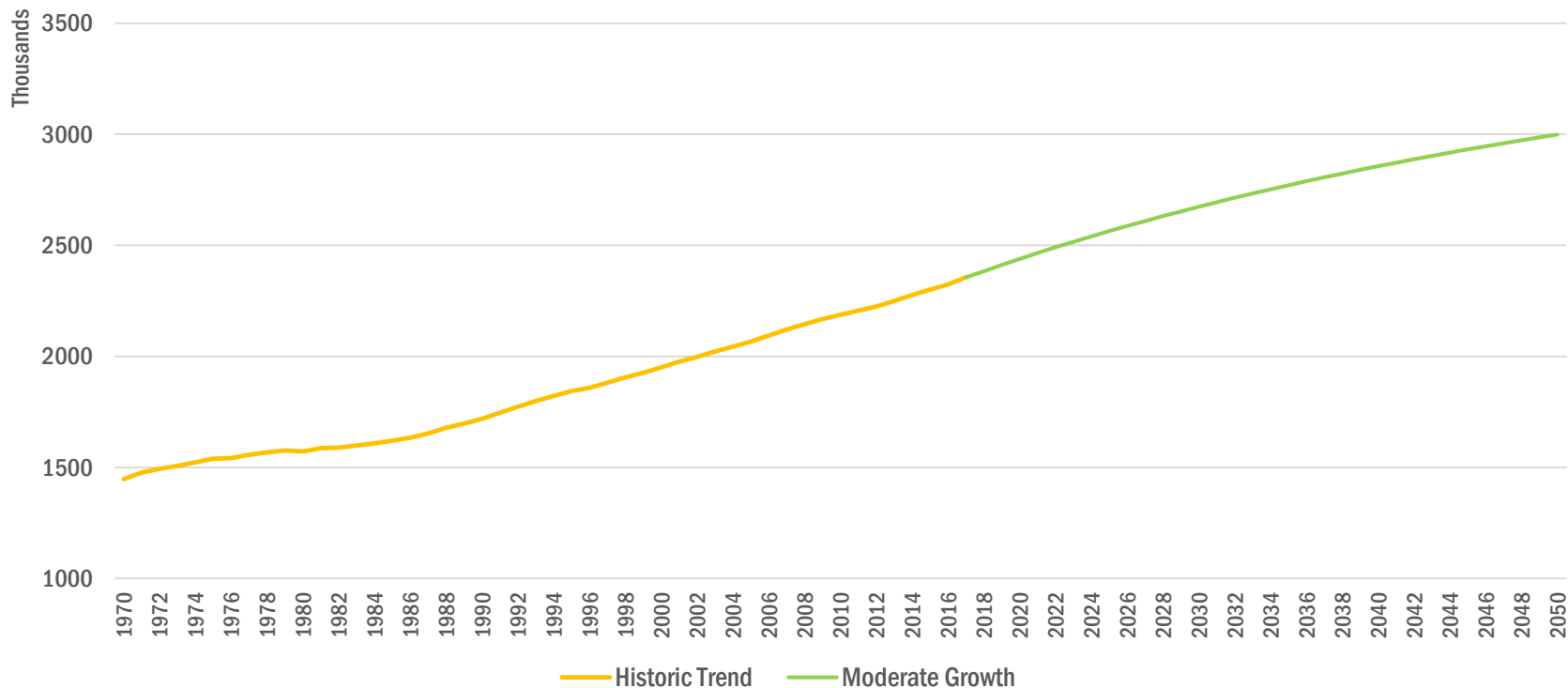
DRAFT Central Ohio Regional Population Forecast



The Model

ARIMA (1,1,2) conservatively models the random 'wave'...

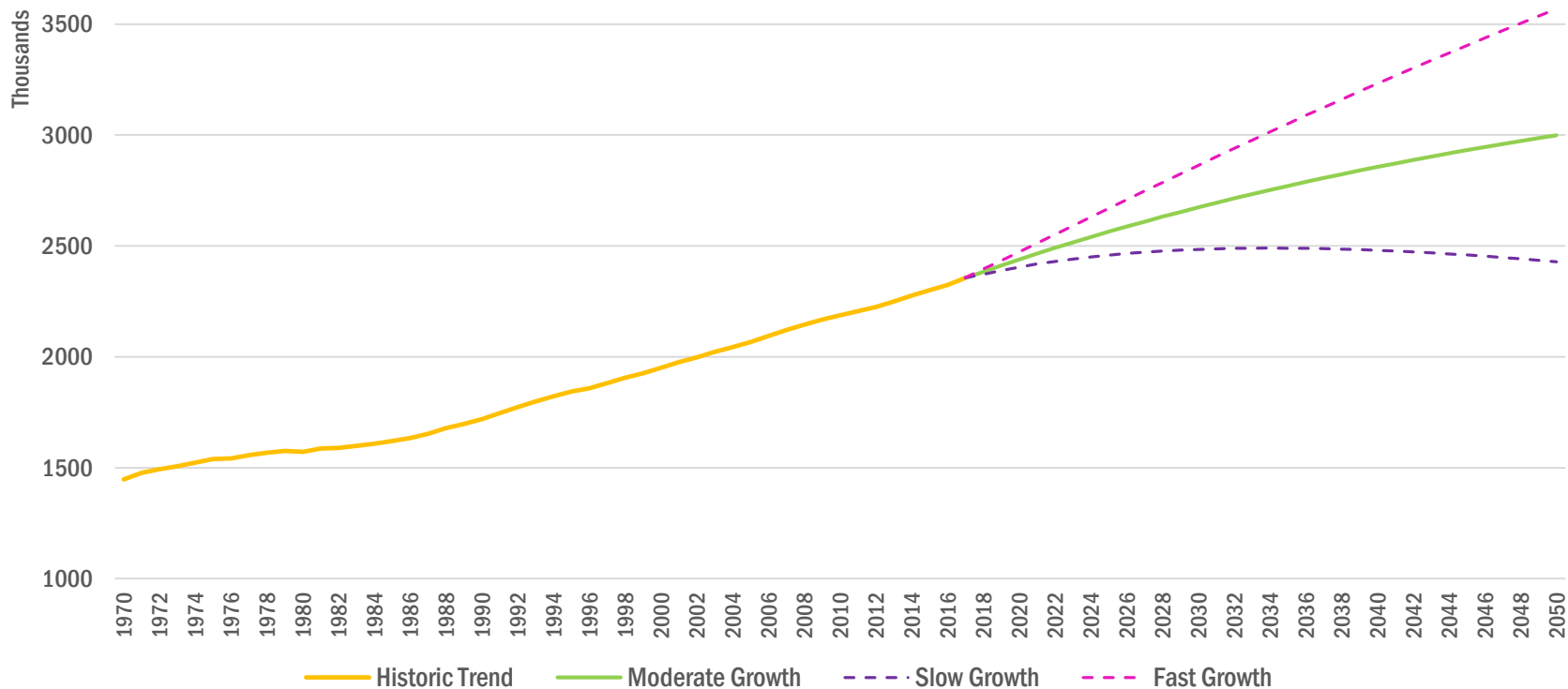
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The Model

...and uncertainty around the 'wave'.

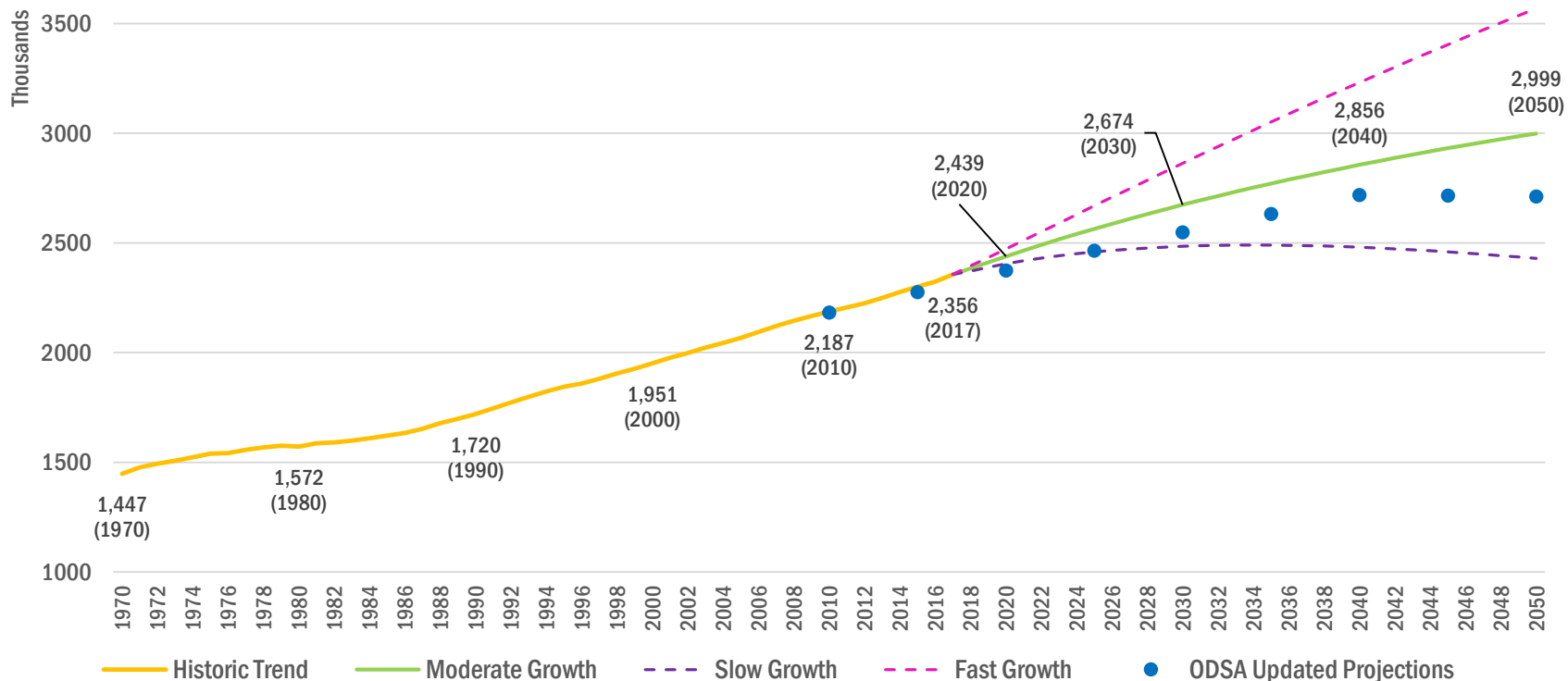
DRAFT Central Ohio Regional Population Forecast



The Model

Compared to the State of Ohio's projections for validation

DRAFT Central Ohio Regional Population Forecast





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