



Automating Cache Workflows and Tile Usage Heat Maps

Eric J. Rodenberg

Technical Workshop

What's covered in this session

- **Agenda**
 - **Cache update strategies**
 - **Change detection**
 - **Automating updates**
 - **Building tile usage heat maps**
 - **Strategic Cache Creation**
 - **Cache on demand**
 - **Out of the box analysis tools**
 - **Building a tile usage heat map**

What's covered in other sessions

- **Caching Basics**
 - [Designing and Using Cache Map Services](#)
- **Image service caching**
 - [Caching Imagery using ArcGIS](#)
 - [Understanding Pyramids, Overviews and Caching](#)
- **Caching in the cloud**
 - [Building and Maintaining ArcGIS Online Hosted Tiled Services](#)
 - [Using the Power of Amazon EC2 to Build Map Caches](#)
- **Advanced topics**
 - [Enterprise Architectures for Large Map Caching Projects](#)
 - [ArcGIS Server Performance & Scalability—Optimizing GIS Services](#)

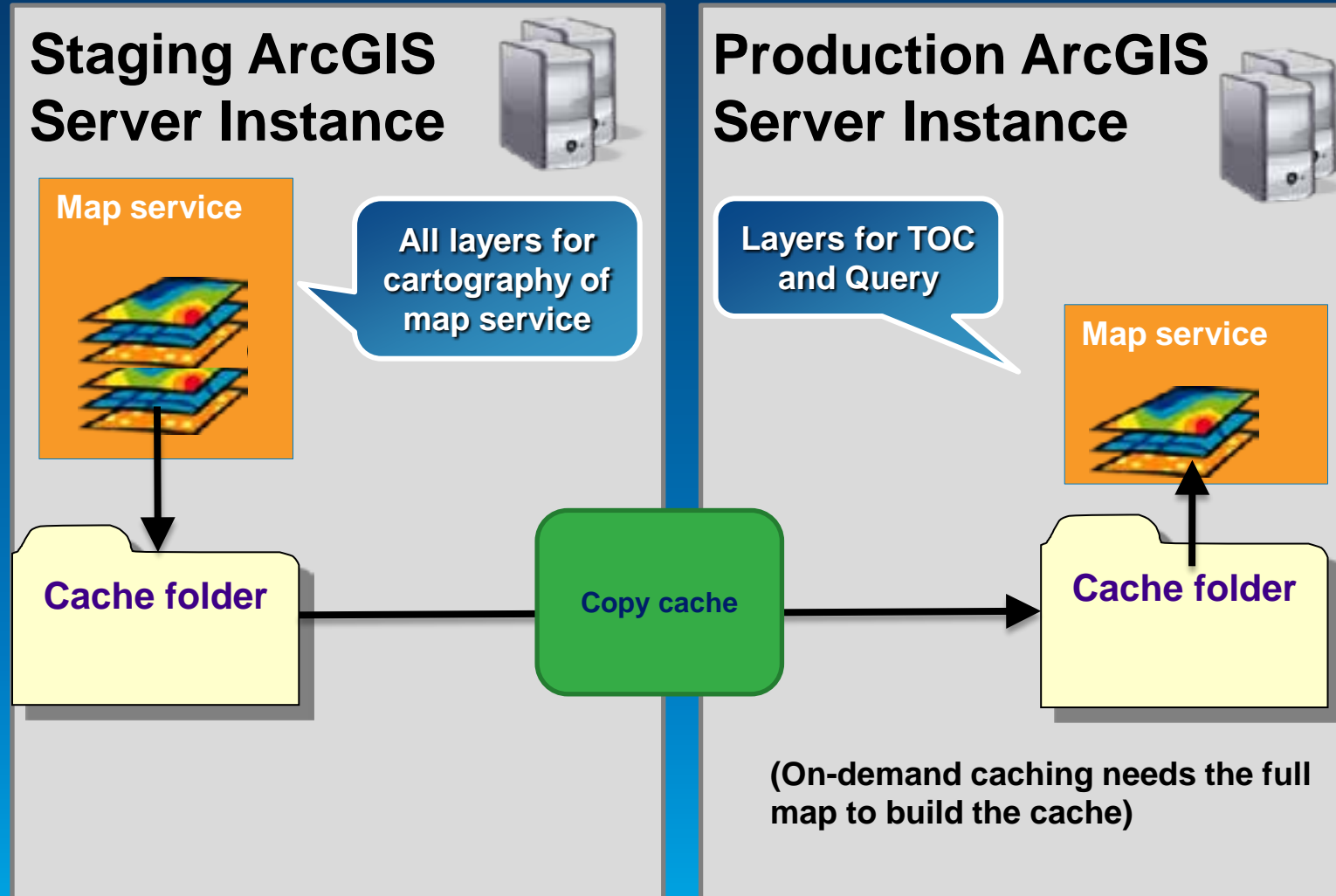
Cache Update Strategies



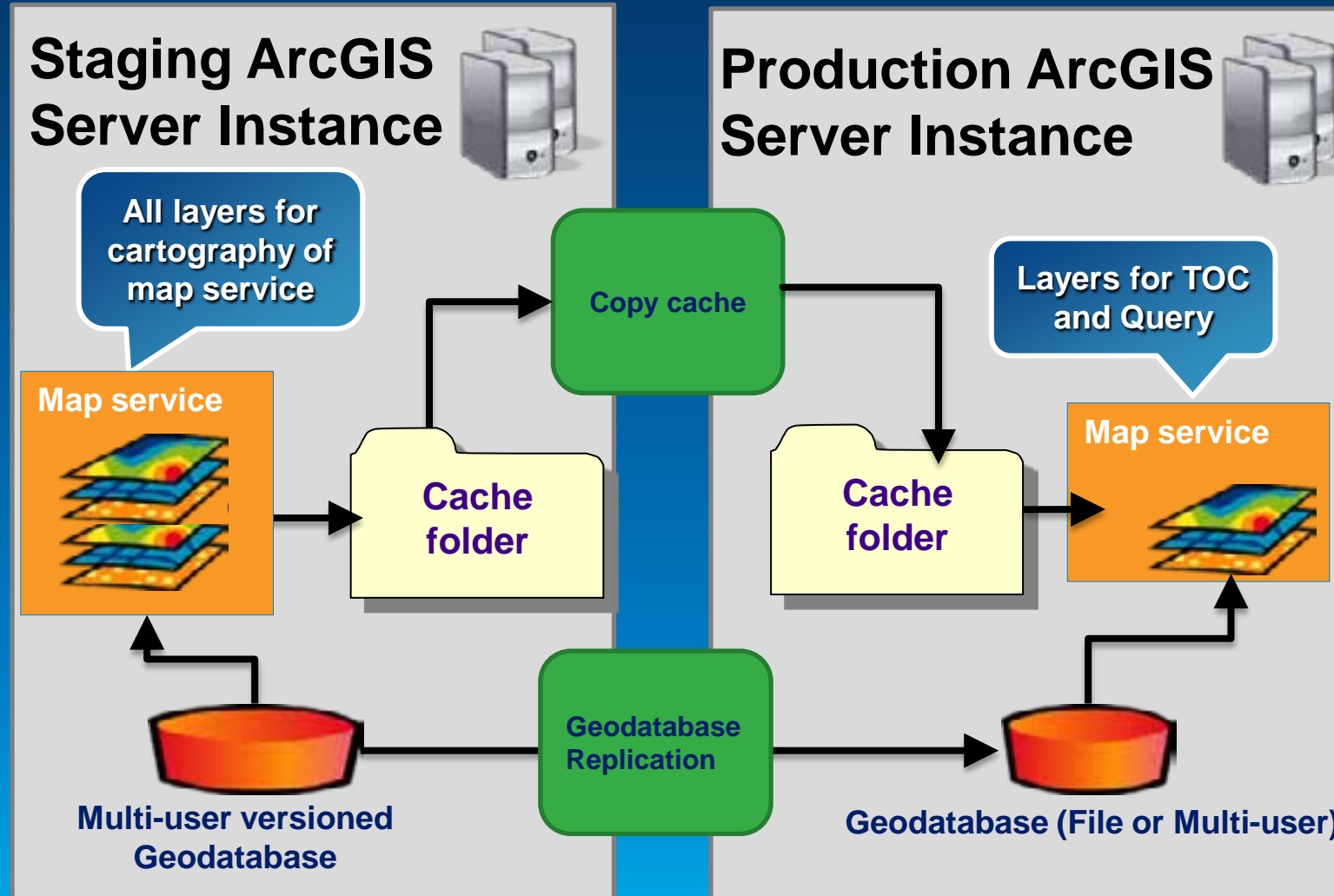
Updating a cache

- Architecture
 - **Use a dedicated caching server**
 - Use a staging server
 - Use a cluster
- Implementation
 - Geoprocessing

Update a cache using a staging server



Update a cache and data using a staging server



Cache update strategies

- Rebuild the entire cache
 - Size of cache
 - Time to cache
- Rebuild specific tiles
 - Rebuild at specific scales
 - Rebuild areas based on change detection

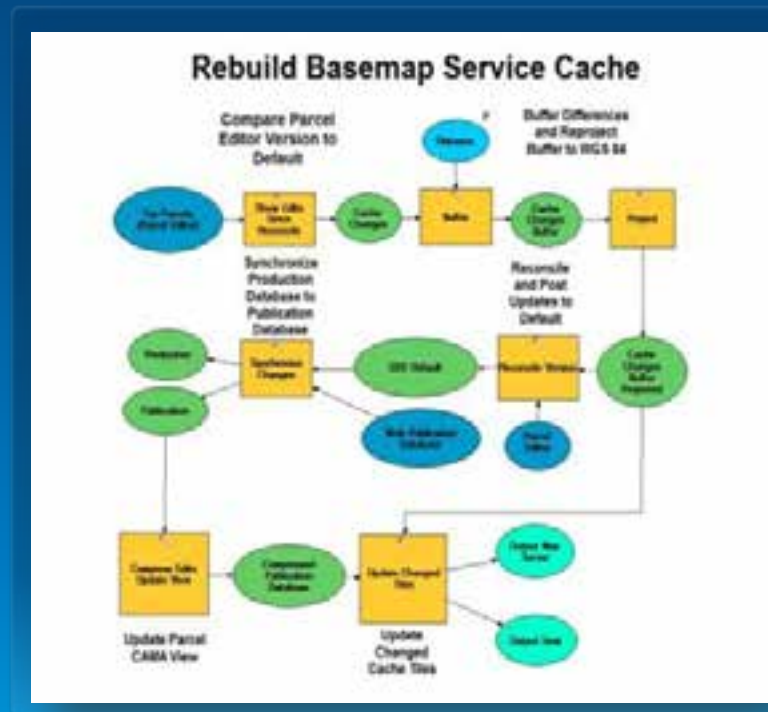


Cache Update Automation

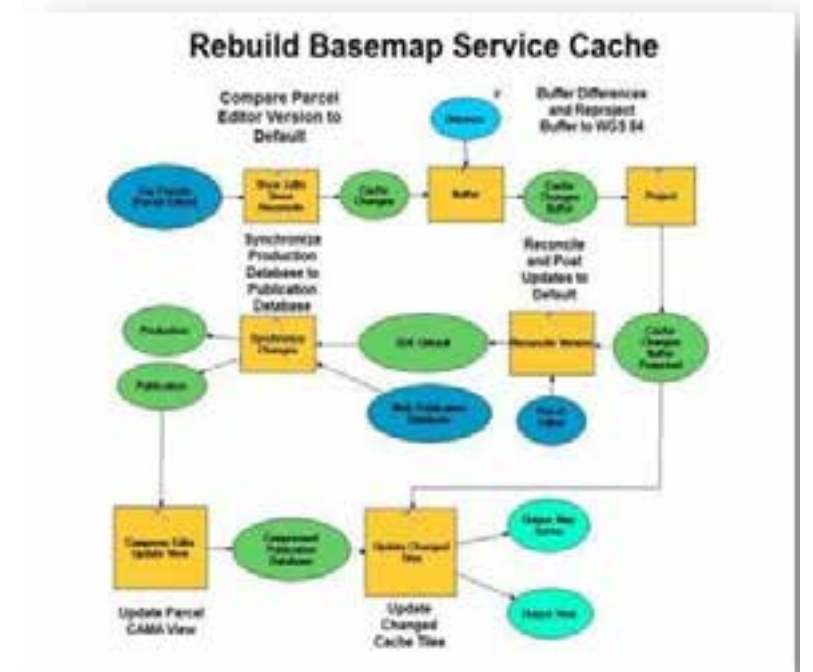
- Use Model Builder to script Cache Update Automation
 - Rebuild Specific Tiles
 - Export to Python
 - Schedule Run Time

Compare feature classes

Show edits since reconcile



Change Detection & Cache Automation



Building Tile Usage Heatmaps



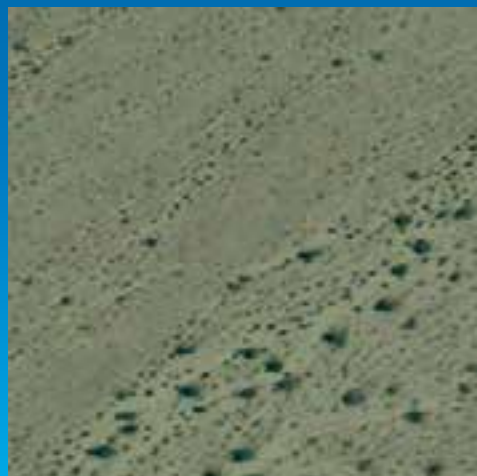
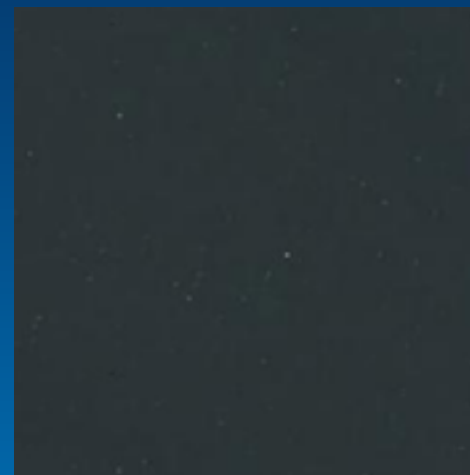
Strategic cache creation

- **Feature class covers about 25% of California**
- **Contains about 97% of California's population**
- **Caching with this layer saves:**
 - **943,000 tiles**
 - **9.3 GB of space**
 - **17 hours of caching time**



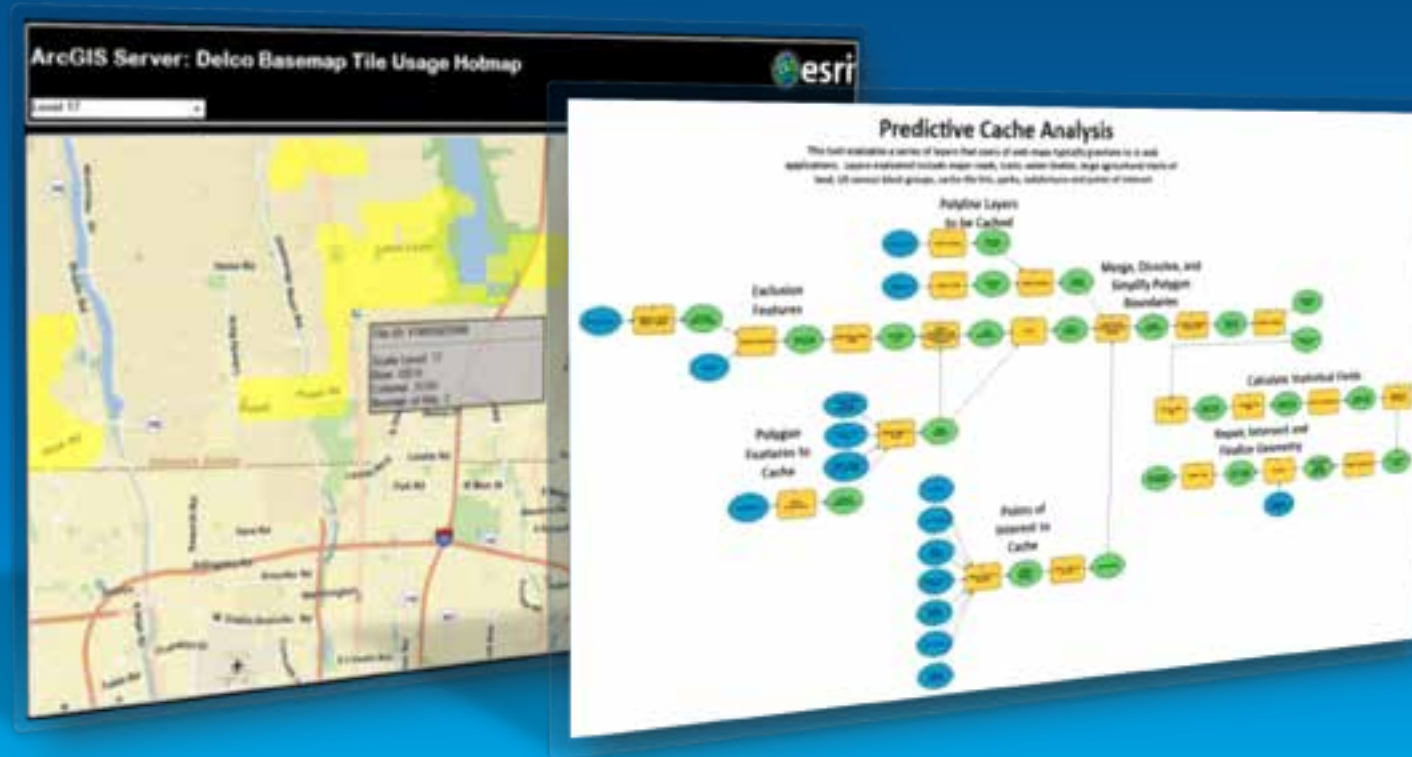
The ideal tiles to cache on demand

- **Few simple features**
 - Barren homogenous area
 - Rarely accessed
- **Draw relatively fast**
- **Large scales only**



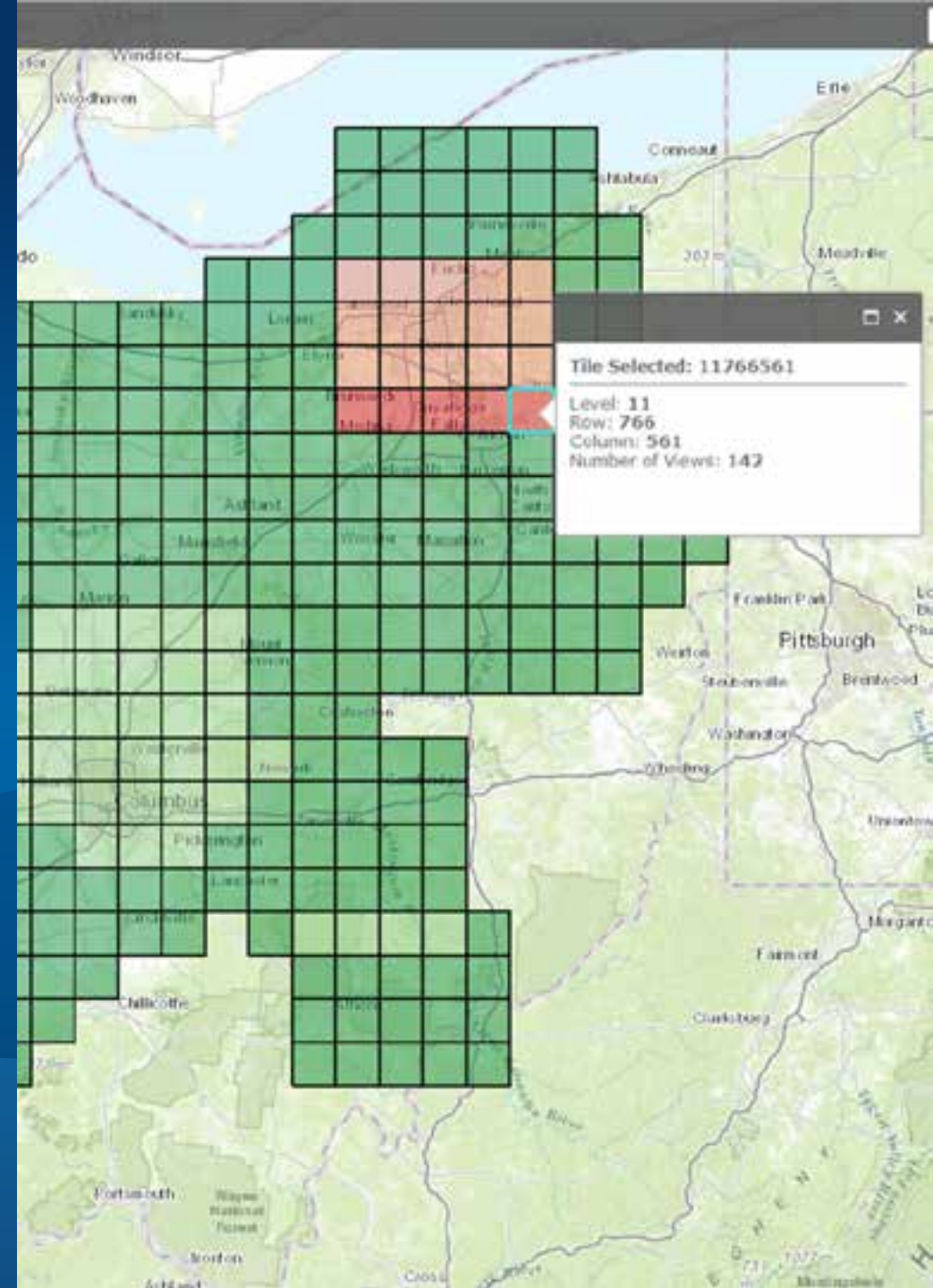
ArcGIS Server Descriptive Tile Analysis

- Tile Usage Heat map
- ArcGIS Server descriptive tile analysis



Demo

Predictive Caching & Tile Usage Heatmaps



Thank you...

- **Please fill out the session survey:**

Paper – pick up and put in drop box



Understanding our world.