
Proposal for Better Aligning Block Groups & TAZs

— Pennsylvania Data User Conference —

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About Us

- 2 States
- 9 Counties
- 351 Municipalities
- 1,379 of tracts
- 4,073 of block groups
- 3,141 of TAZs



Outline

- CTPP Overview: Data & Program
- CTPP Policy Change on Small and Custom Geography
- PSAP Federal Register Comments: Consolidating PSAP & TAZ Delineation Programs
- Aligning Block Groups & TAZs with Proposed Criteria
- Next Steps: Outreach Plans & Getting Involved with PSAP
- Resources

CTPP Overview

Data & Program

What is CTPP Data?



- Census Transportation Planning Products (CTPP)
- Largest special tabulation of Census Bureau data
 - enhanced value for transportation planning & analysis
- Tables to analyze demographics of
 - Residence
 - Workplace
 - Journey-to-work trips (residential origins & workplace destinations)
- Used by transportation planners & travel demand modelers

What is CTPP Data?

Decennial (long-form) vintages

- 1970
- 1980
- 1990
- 2000

ACS-based vintages

- 2006-2010
- 2012-2016 (coming early 2019)
- 2017-2021?



What is CTPP Data?

Residence Tables (examples)

- **Age of worker** by **earnings**
- **Workers' minority status** by **industry**
- **Workers' occupation** by **time leaving home**
- **Vehicles available** by **household income**
- **Household size** by **number of workers**



What is CTPP Data?

Workplace Tables (examples)

- **Minority status** by **means of transportation**
- **Poverty status** by **time leaving work**
- Mean/median/aggregate **travel time** by **means of transportation**
- **Limited English Proficiency** by **language spoken at home**
- **Workers from HHs with/without children** by **means of transportation**



What is CTPP Data?

Commuting Flow Tables (examples)

- Median **household income** by **means of transportation**
- **Vehicles available** by **means of transportation**
- **Poverty status**
- **Minority Status**



What is CTPP Data?

Standard Geographies

- State
- County
- Minor civil division (MCD)
- Metropolitan statistical area (MSA)
- Public use micro area (PUMA)
- Urbanized area*
- Census designated place
- Census tract

**residence only*



Non-Standard Geographies

- Transportation Analysis Zone (TAZ)
- Transportation Analysis District (TAD)

What is the CTPP Program?

- State DOT funded, cooperative program of
 - American Association of State Highway and Transportation Officials (AASHTO)
 - Federal Highway Administration (FHWA)
 - Transportation Research Board (TRB)
- Provides universal access to CTPP data
- Funds and conducts research
- Provides training and technical assistance to the transportation planning community

What is the CTPP Program Oversight Board?

- Voting Members
 - DOT Chair
 - MPO Vice-Chair
 - 6 DOT members (2 from each AASHTO Region)
 - 7 MPO/RPC/Other members
- Non-voting
 - Federal Agency Liaisons (CB, BTS, FHWA, FTA)
 - Associations Adjuncts (AMPO, NARC, TRB)
 - AASHTO Staff & Technical Adjuncts



What is the CTPP Program Oversight Board?

- Subcommittees
 - Data Access Software
 - Tables Specifications
 - Research
 - Training and Outreach
 - Budget
 - Commuting in America
 - Technical Activities Group (TAG)

CTPP Policy Change

On Small and Custom Geography

CTPP Policy Change on Small and Custom Geography

- Future releases will no longer report data by non-standard geographies
- Instead, data will be tabulated at the standard census block group level
- Will not affect next CTPP data release (2012 – 2016)

The change...

Standard Geographies

- State
- County
- Minor civil division (MCD)
- Metropolitan statistical area (MSA)
- Public use micro area (PUMA)
- Urbanized area
- Census designated place
- Census tract



Non-Standard Geographies

- Transportation Analysis Zone (TAZ)
- Transportation Analysis District (TAD)

The change...

Standard Geographies

- State
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- Public use micro area (PUMA)
- Urbanized area
- Census designated place
- Census tract
- Block group



~~Non-Standard Geographies~~

- ~~• Transportation Analysis Zone (TAZ)~~
- ~~• Transportation Analysis District (TAD)~~

Why the change?

- Data quality and usability concerns
 - Smaller geographies ↓ larger errors ↑
 - Non-standard geography adds further error (more sample variation)
 - Census TAZ / travel model TAZ mismatches
- More effective use of resources
 - Projected cost of 2020 TAZ Delineation Program: \$2.5 million
 - Significant part of special tabulation cost is due to non-standard geographies
- Higher costs for lesser quality data

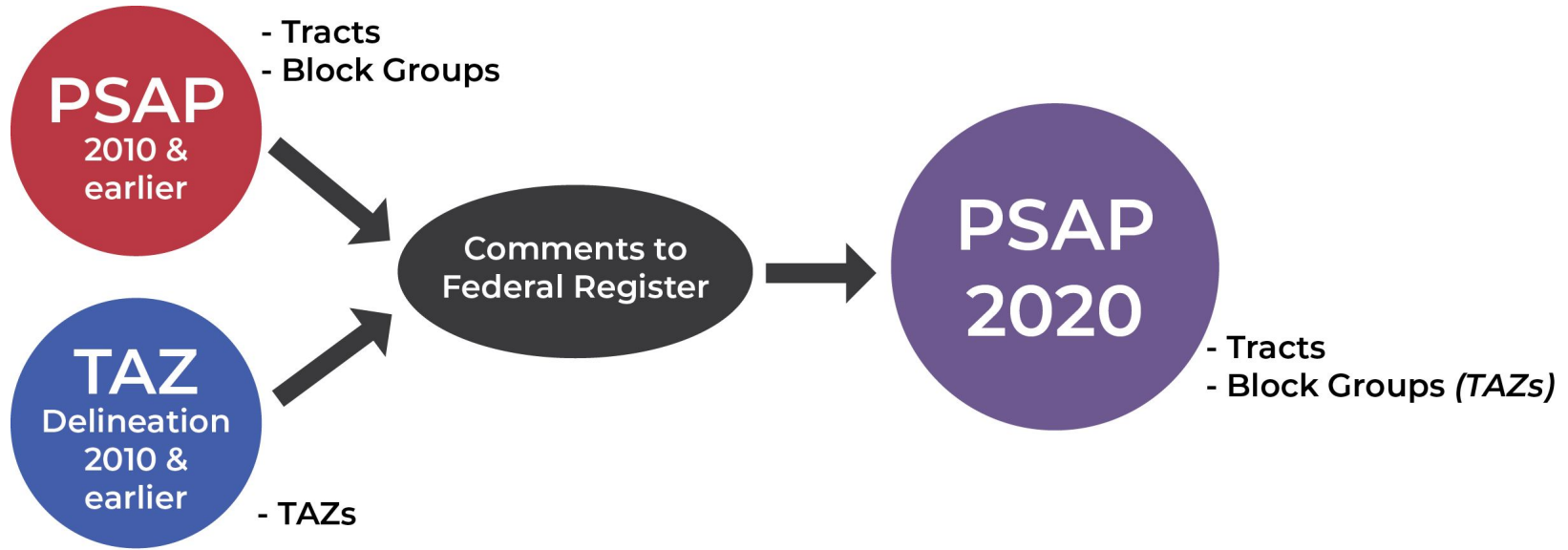
Solution: PSAP to the Rescue!

- Participant Statistical Areas Program (PSAP)
- Census Bureau encouraged us to look at block groups as a TAZ alternative
 - Relative size equivalent
 - Standard geography
- CTPP Board started encouraging transportation planners/modelers to participate in PSAP
- But tract and block group criteria needed to be updated to accommodate transportation planners/modelers' needs
 - Federal Register Comments to the rescue!

Federal Register Comments

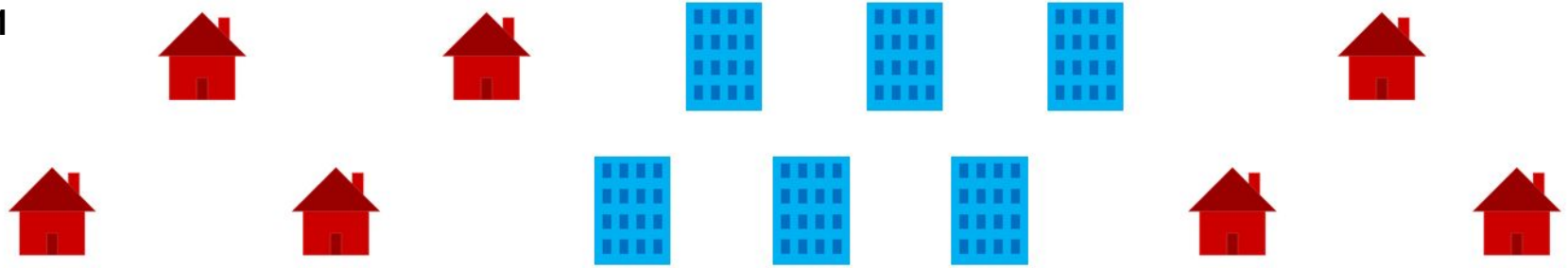
Consolidating PSAP & TAZ
Delineation Programs

Consolidating PSAP and TAZ programs

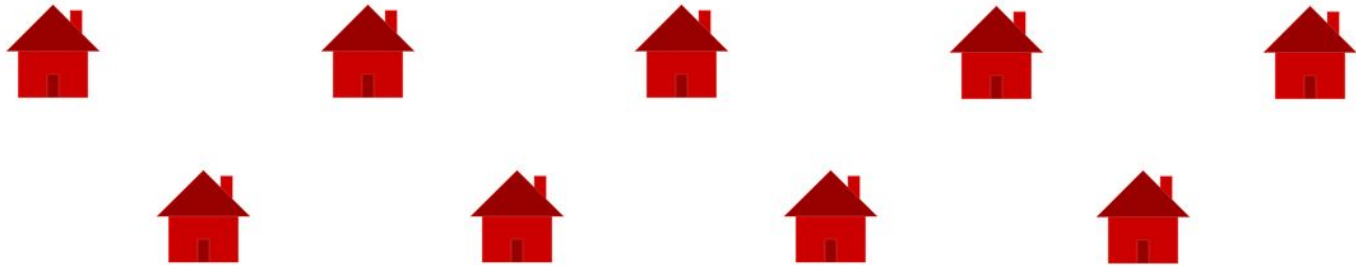


PSAP 2010

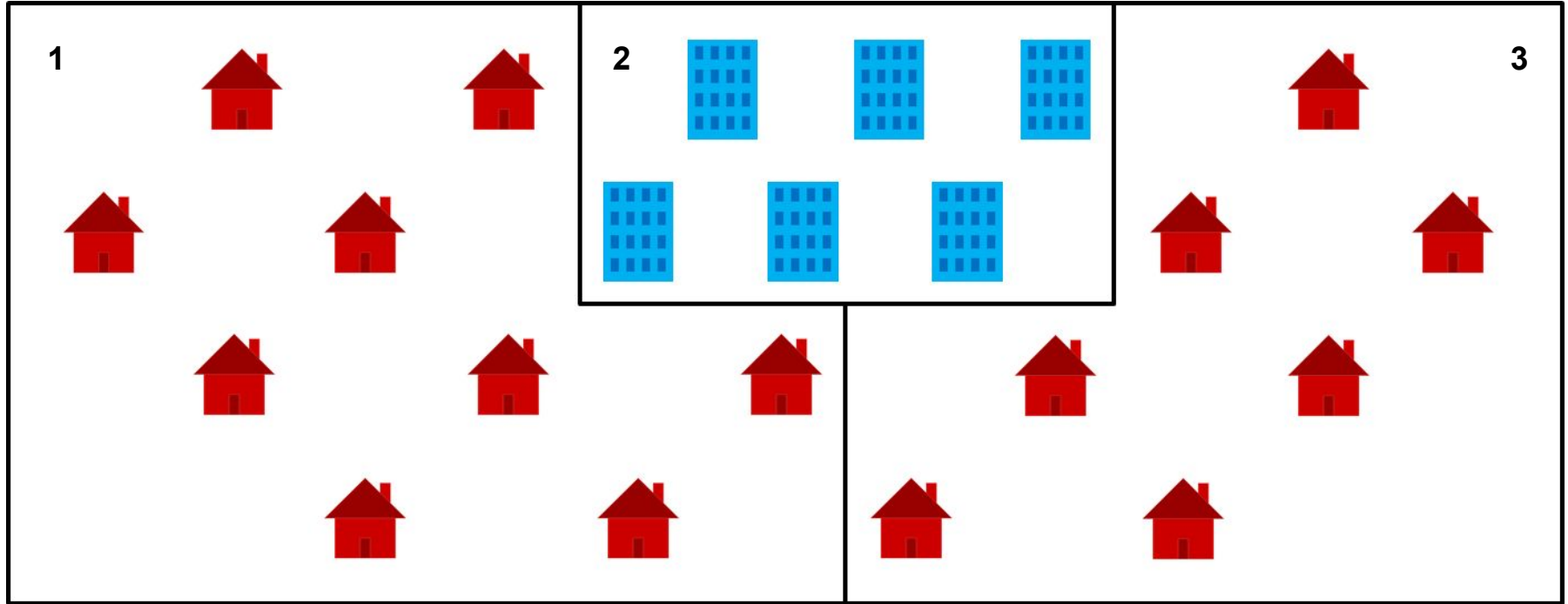
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2



PSAP 2020 (proposed)



83 FR 6941

Table 3—Summary of Census Tract Types

| Census tract types | Distinction from standard census tract | Population thresholds | Housing unit thresholds | Area measurement thresholds |
|--------------------------|---|---|---|---|
| Standard census tract | | Min: 1,200 Max: 8,000 | Min: 480 Max: 3,200 | None. |
| Tribal census tract | Tribal census tracts are conceptually similar and equivalent to census tracts defined within the standard state-county-tract geographic hierarchy used for tabulating and publishing statistical data | Min: 1,200 Max: 8,000 | Min: 480 Max: 3,200 | None. |
| Special use census tract | A census tract encompassing a large airport, public park, public forest, or large water body with no (or very little) population or housing units | None (or very little) or within the standard census tract threshold | None (or very little) or within the standard census tract threshold | Within an urban area: min. 1 square mile; Outside an urban area: min. 10 square miles. |

83 FR 6941

Table 3—Summary of Census Tract Types

Recommendation



| Census tract types | Distinction from standard census tract | Population thresholds | Housing unit thresholds | Employment thresholds | Area measurement thresholds |
|--------------------------|---|---|---|---|---|
| Standard census tract | | Min: 1,200 Max: 8,000 | Min: 480 Max: 3,200 | Min: 1,200 (?) Max: None. | None. |
| Tribal census tract | Tribal census tracts are conceptually similar and equivalent to census tracts defined within the standard state-county-tract geographic hierarchy used for tabulating and publishing statistical data | Optimum: 4,000 Min: 1,200 Max: 8,000 | Optimum: 1,600 Min: 480 Max: 3,200 | Min: 1,200 (?) Max: None. | None. |
| Special use census tract | A census tract encompassing a large airport, public park, public forest, or large water body with no (or very little) population or housing units | None (or very little) or within the standard census tract threshold | None (or very little) or within the standard census tract threshold | None (or very little) or within the standard block group thresholds | Within an urban area: min. 1 square mile; Outside an urban area: min. 10 square miles. |

83 FR 6937

Table 3—Summary of Block Group Types

| Block group types | Distinction from standard block groups | Population thresholds | Housing unit thresholds | Area measurement thresholds |
|--------------------------|--|---|---|---|
| Standard block groups | | Min: 600 Max: 3,000 | Min: 240 Max: 1,200 | None. |
| Tribal block groups | Tribal block groups are conceptually similar and equivalent to census block groups defined within the standard state-county-tract-block group geographic hierarchy used for tabulating and publishing statistical data | Min: 600 Max: 3,000 | Min: 240 Max: 1,200 | None. |
| Special use block groups | A block group, usually coextensive with a special census tract, encompassing a large airport, public park, public forest, or large water body with no (or very little) population or housing units | None (or very little) or within the standard block group thresholds | None (or very little) or within the standard block group thresholds | Within an urban area: min. 1 square mile. Outside an urban area: min. 10 square miles. |

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CTPP Board's Recommended Comments to Federal Register

(1/2)

The Census Bureau should...

- Determine minimum employment thresholds needed to have an equivalent level of sampling validity as population thresholds have for both the block group and census tract levels
- If population sample size requirements are a reasonable sample size proxy for employment sample size needs, the minimum employment thresholds could be the same thresholds as population:
 - Block group - 600
 - Census tract - 1,200

CTPP Board's Recommended Comments to Federal Register

(2/2)

- Have no maximum employment threshold
- Add these employment thresholds as alternative criteria of the standard block group type or census tract type
- Allow PSAP participants to use their own local employment data to justify delineating within these thresholds
- Allow employment number to be reflective of 2010 to current year data, or projections for growth by approximately 2020

Suggested Employment Sources

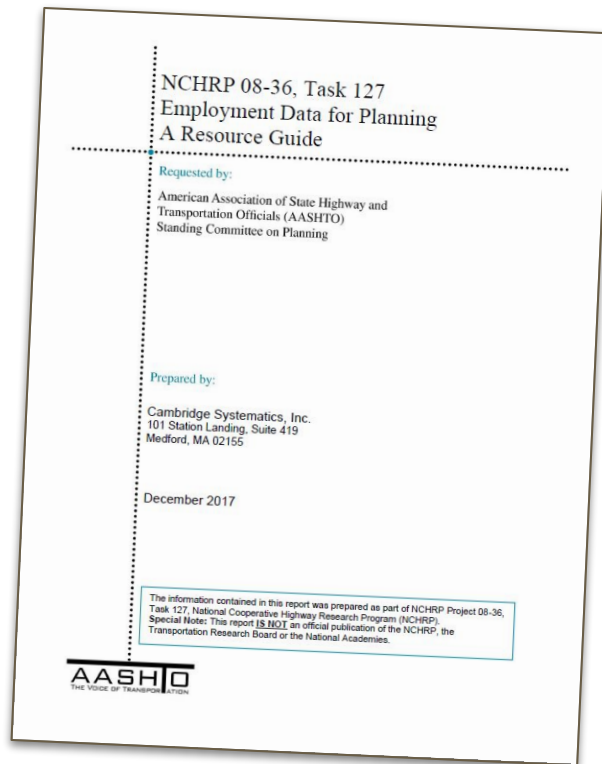
NCHRP 08-36, Task 127 *Employment Data for Planning: A Resource Guide*

Private point-level data

- InfoGroup (InfoUSA)
 - Derivative: YourEconomy Time Series (YTS)
- Dun & Bradstreet, Inc. (D&B)
 - Derivative: National Establishment Time-Series (NETS)

Public data

- LEHD-LODES by block or higher
- Census Transportation Planning Products (CTPP) by TAZ or tract



Aligning Block Groups & TAZs

with Proposed Criteria

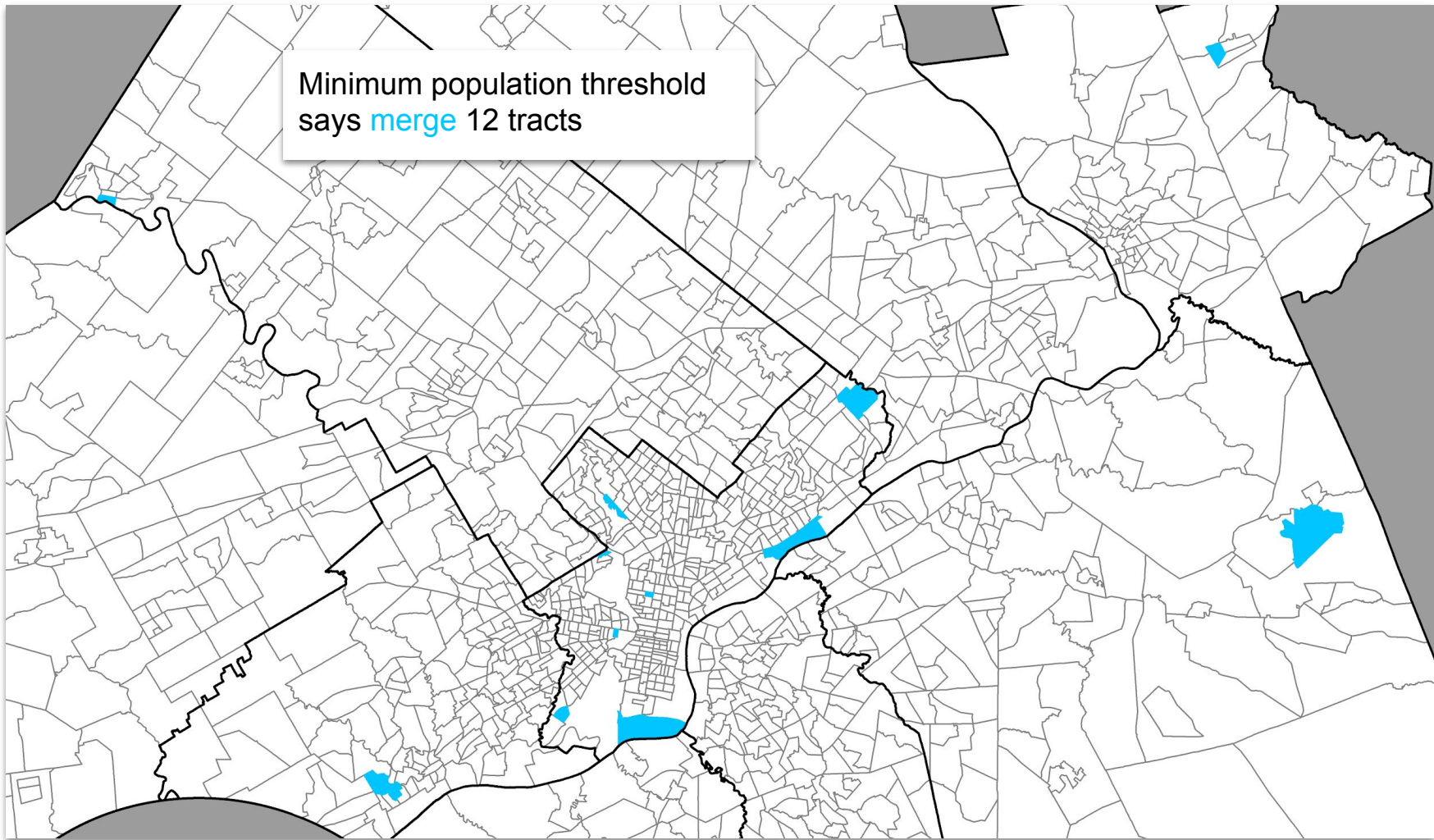
Getting Started

- Review your geographies: where they do and don't align
- Approach tract and block group delineation from the point of view of a traditional PSAPer and see where employment thresholds and current TAZ delineations solve problems
- So far we know
 - Our modelers don't want to change TAZs
 - Our county contacts don't want to change block groups
- But people like TAZs and block groups because they are small

Employment Thresholds & TAZs to the Rescue!

- Show tangible benefits of your participation. Example...
 - PSAP delineation starts with a look at tracts
 - Split those over population maximum
 - Merge tracts under population minimum

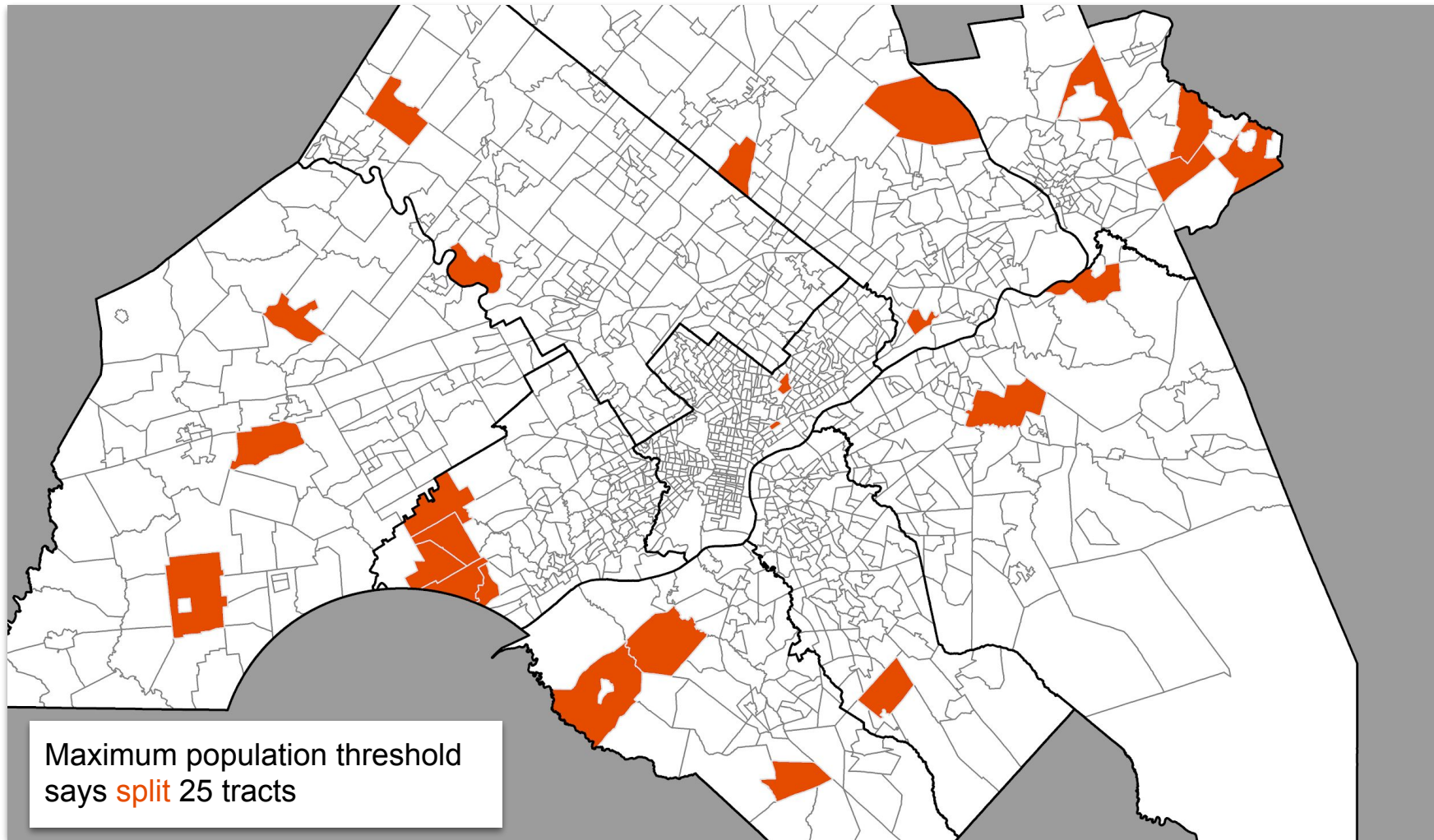
Minimum population threshold
says **merge** 12 tracts



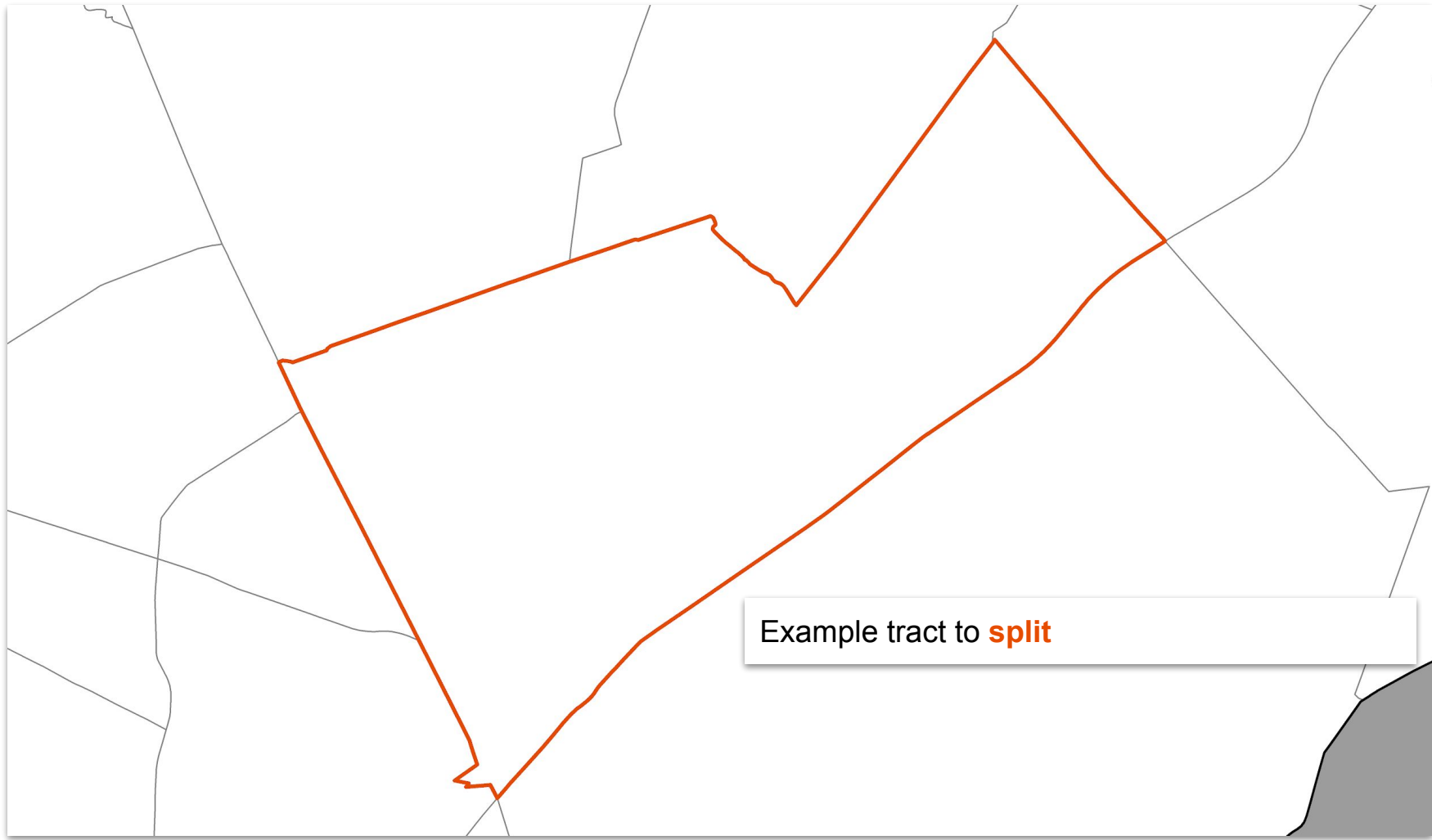
Minimum population threshold
says **merge** 12 tracts

Minimum employment threshold
says **merge** only 6





Maximum population threshold
says **split** 25 tracts



Example tract to **split**

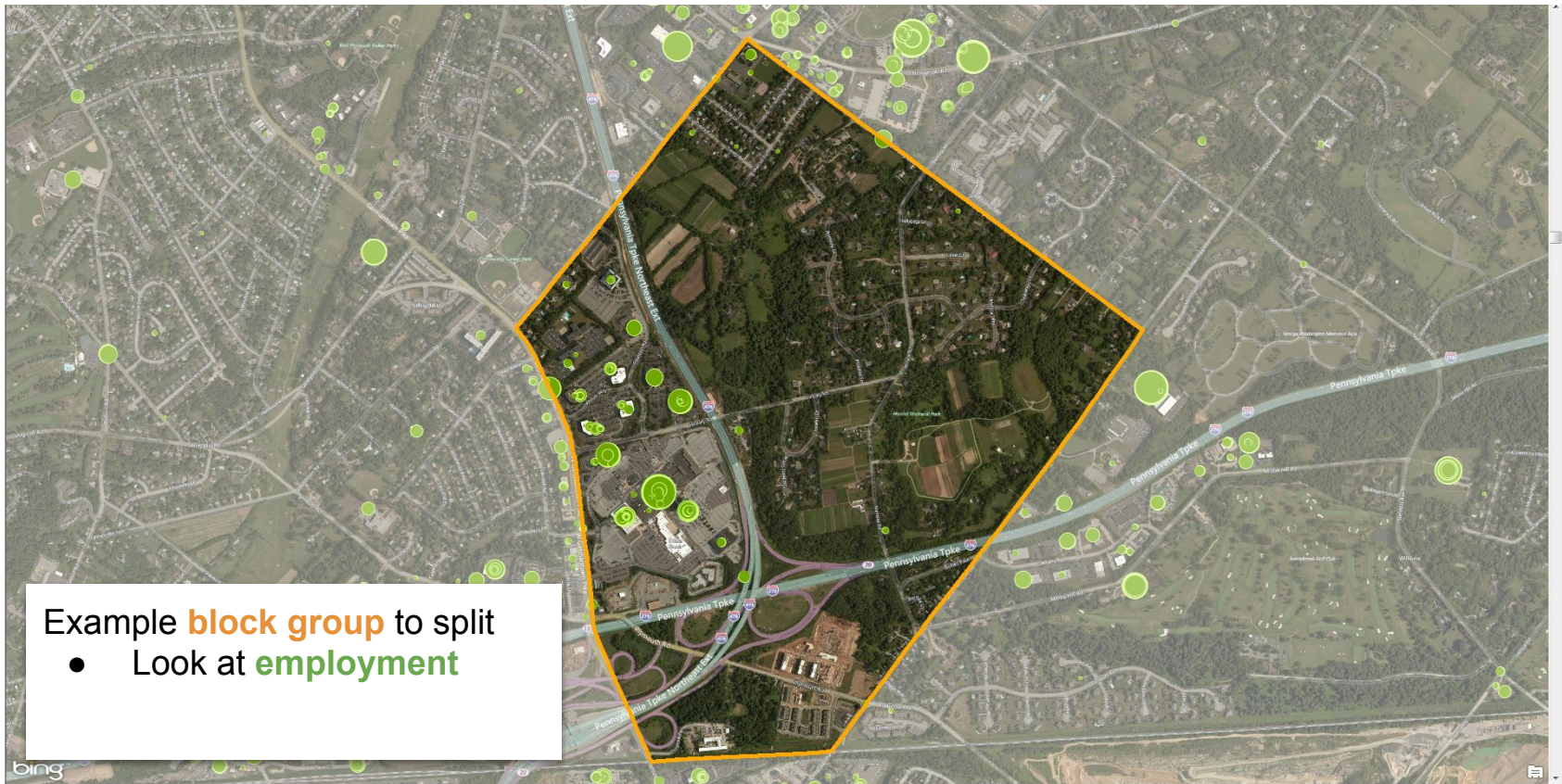


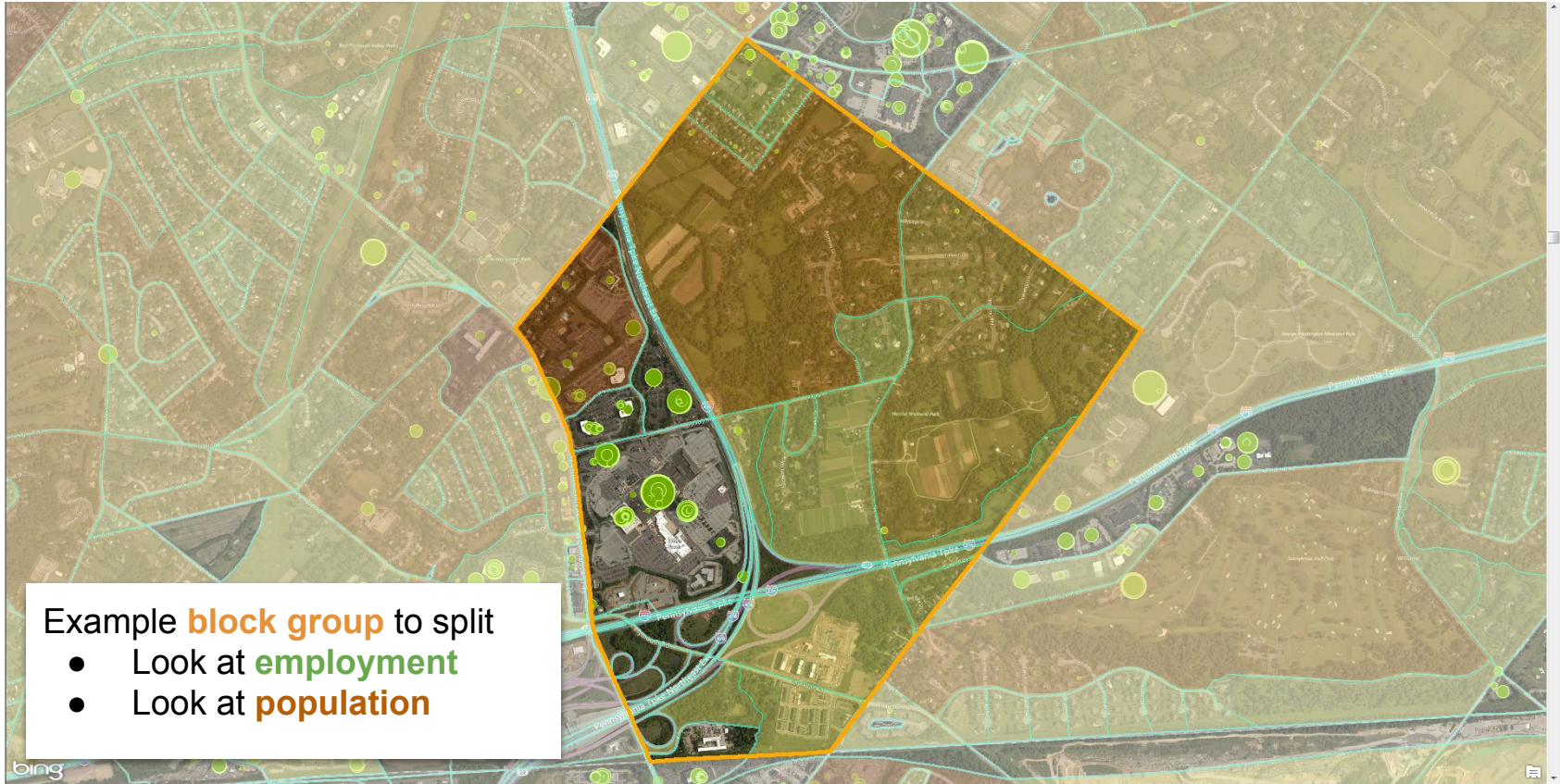


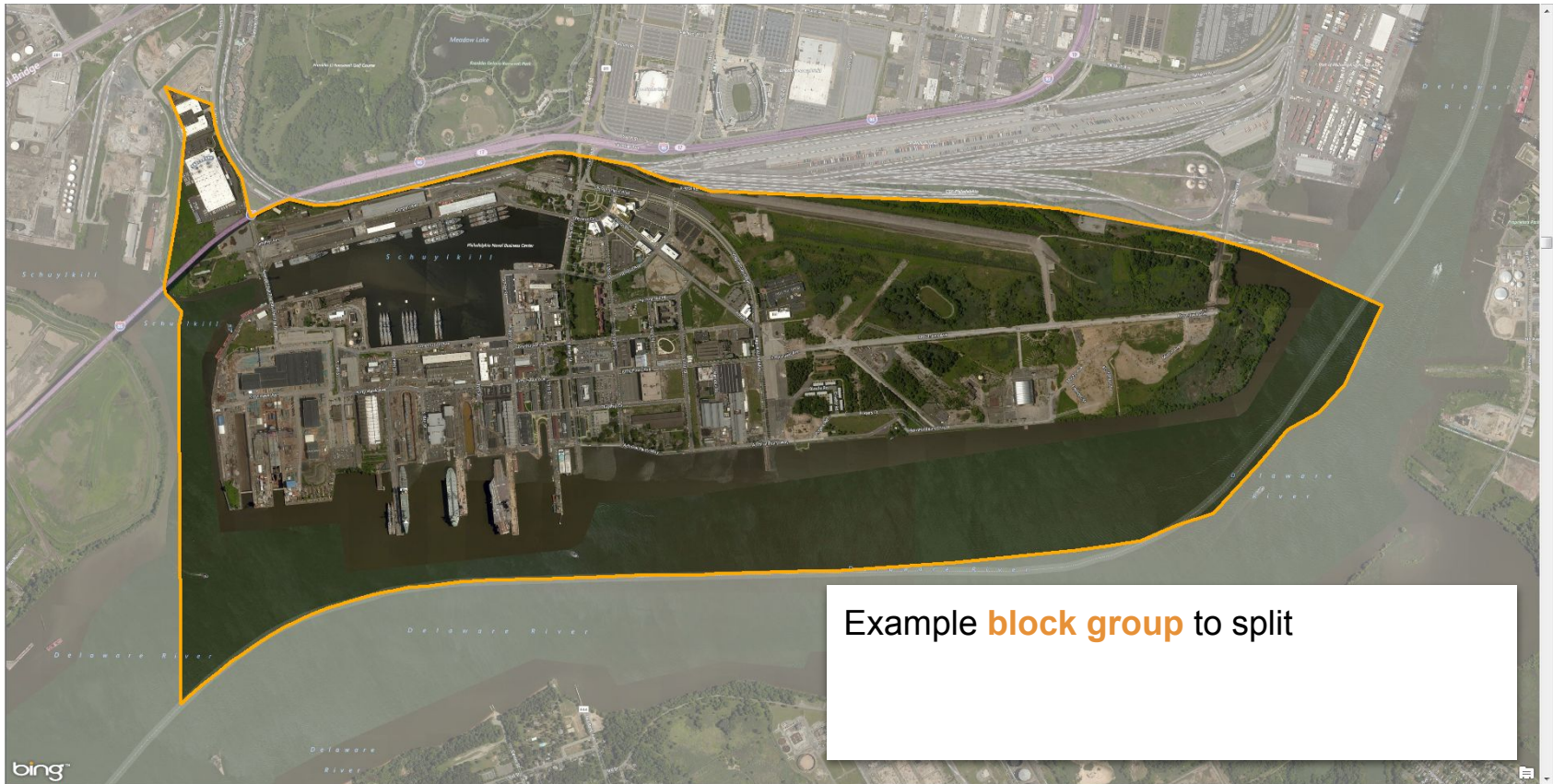
Example tract to **split**

- 3 block groups within - 2 need **split**
- 4 existing **TAZs** split block groups within population or employment thresholds
- 1 needs further split

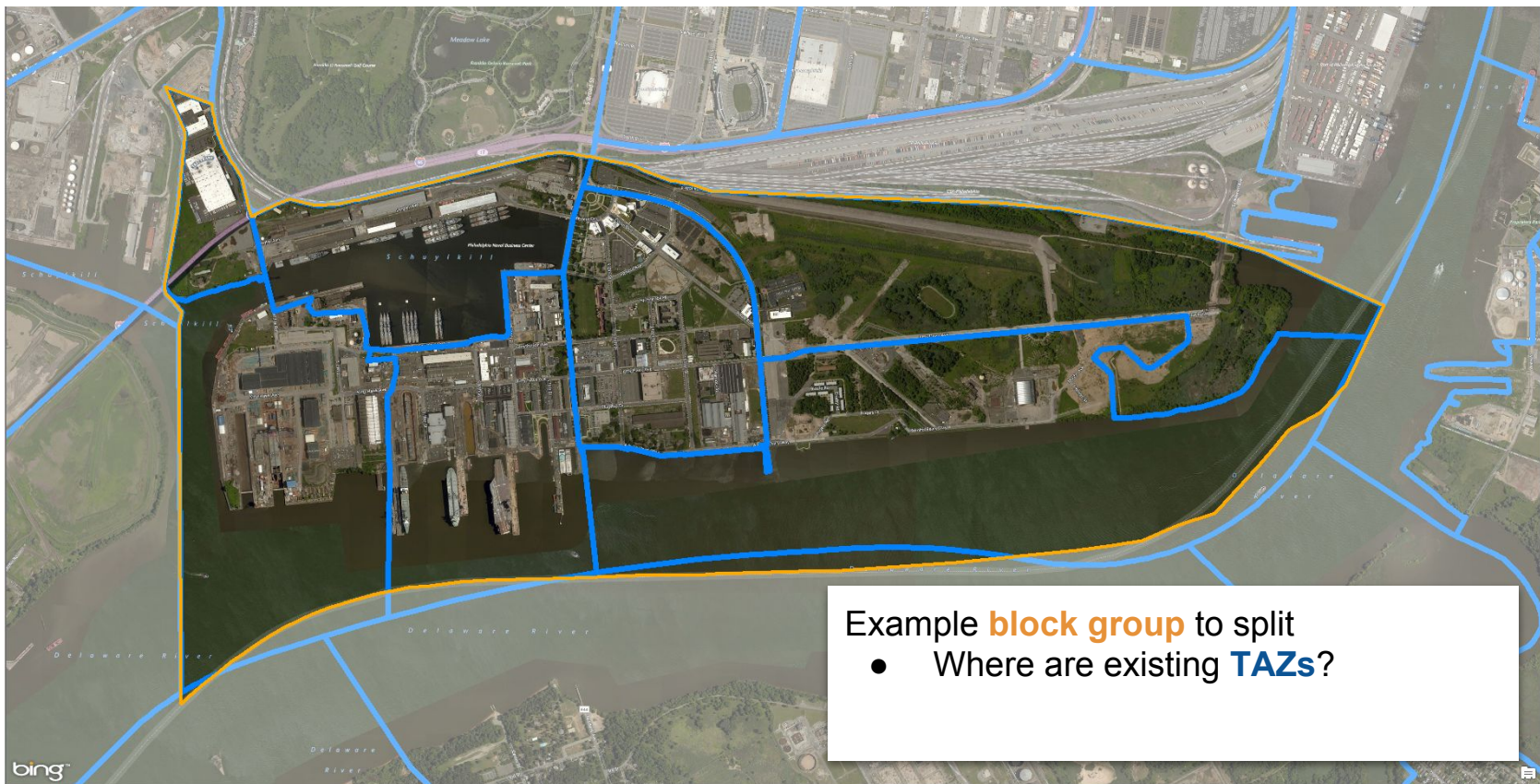






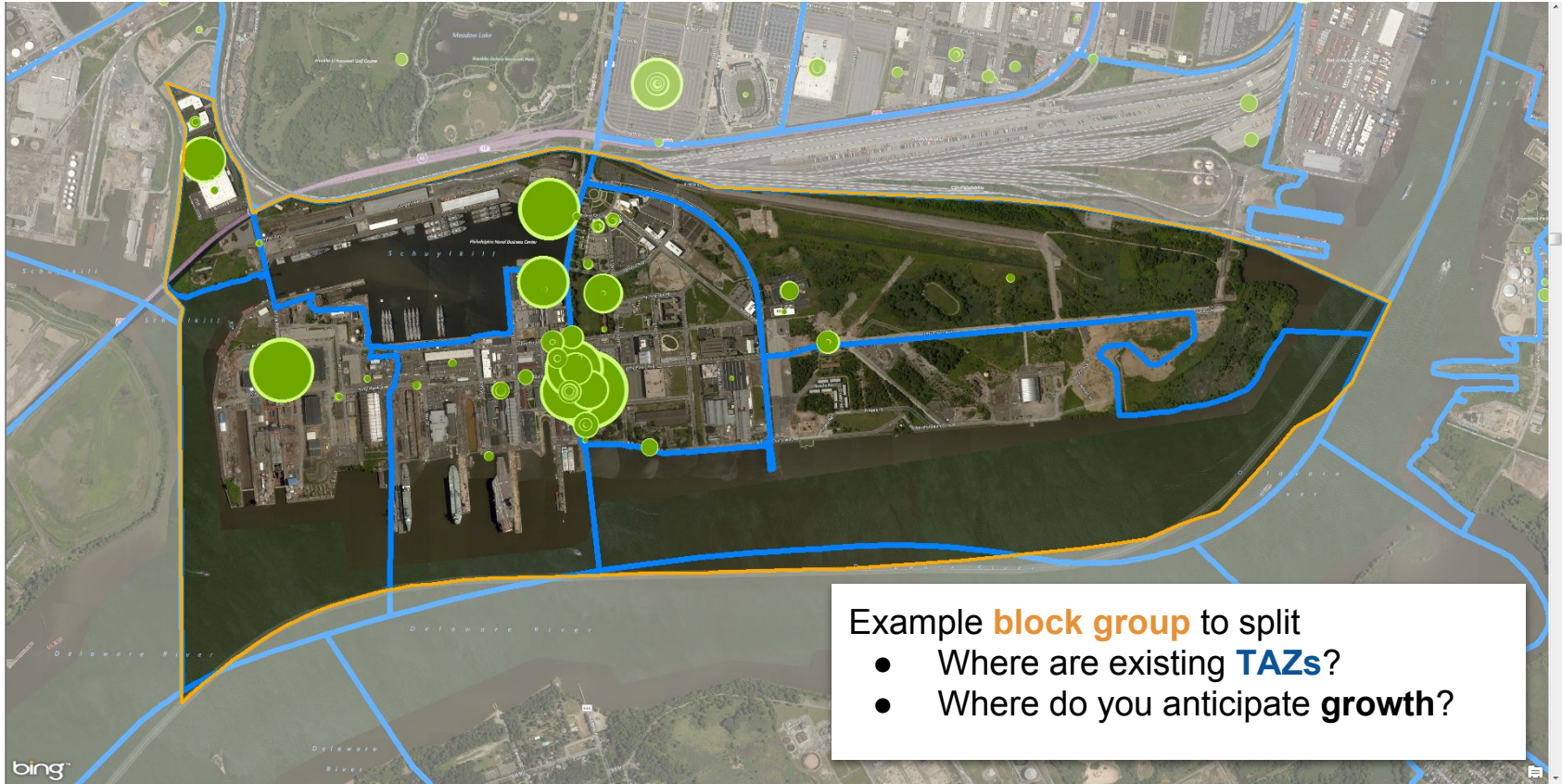


Example **block group** to split

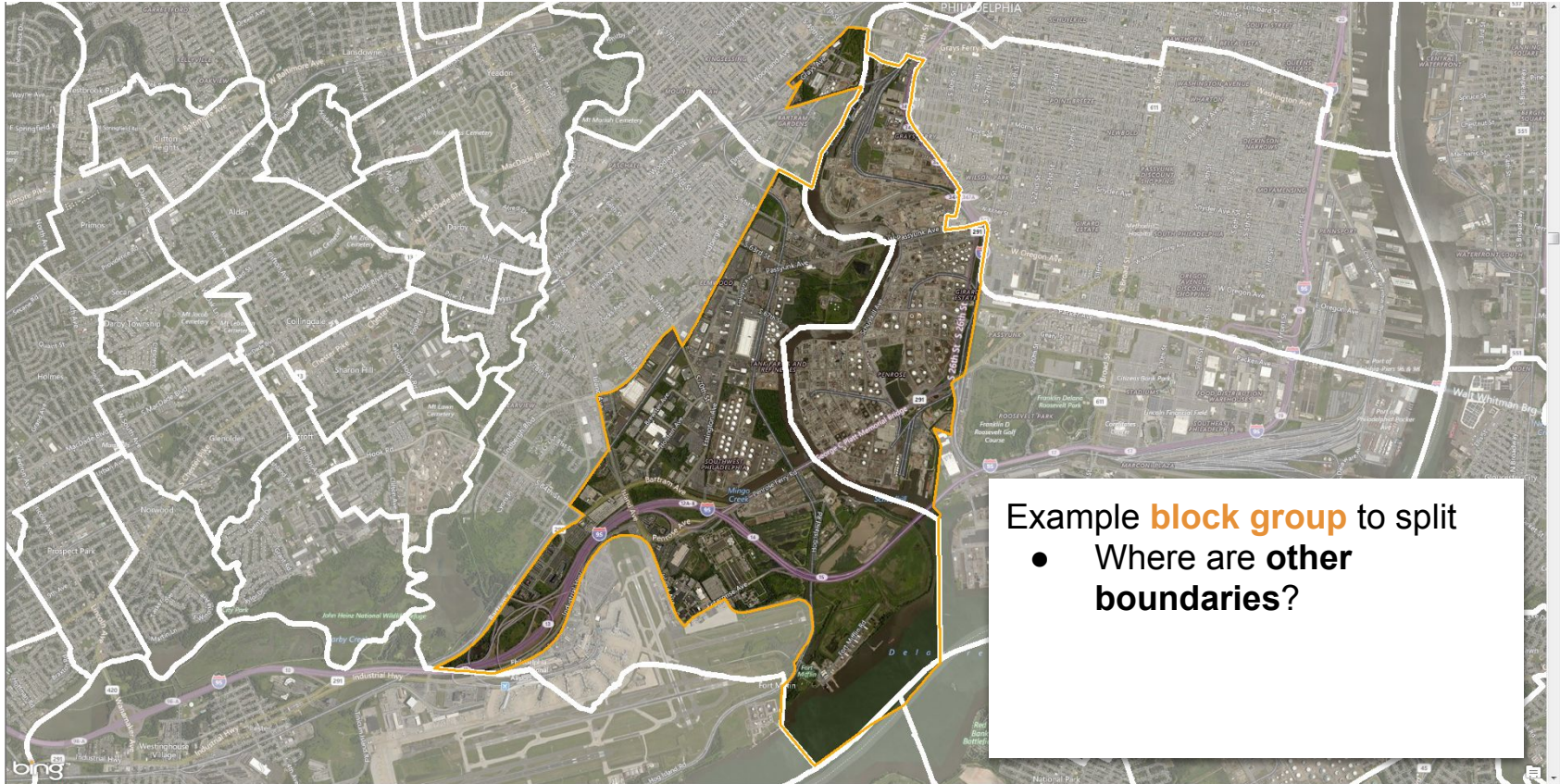


Example **block group** to split

- Where are existing **TAZs**?



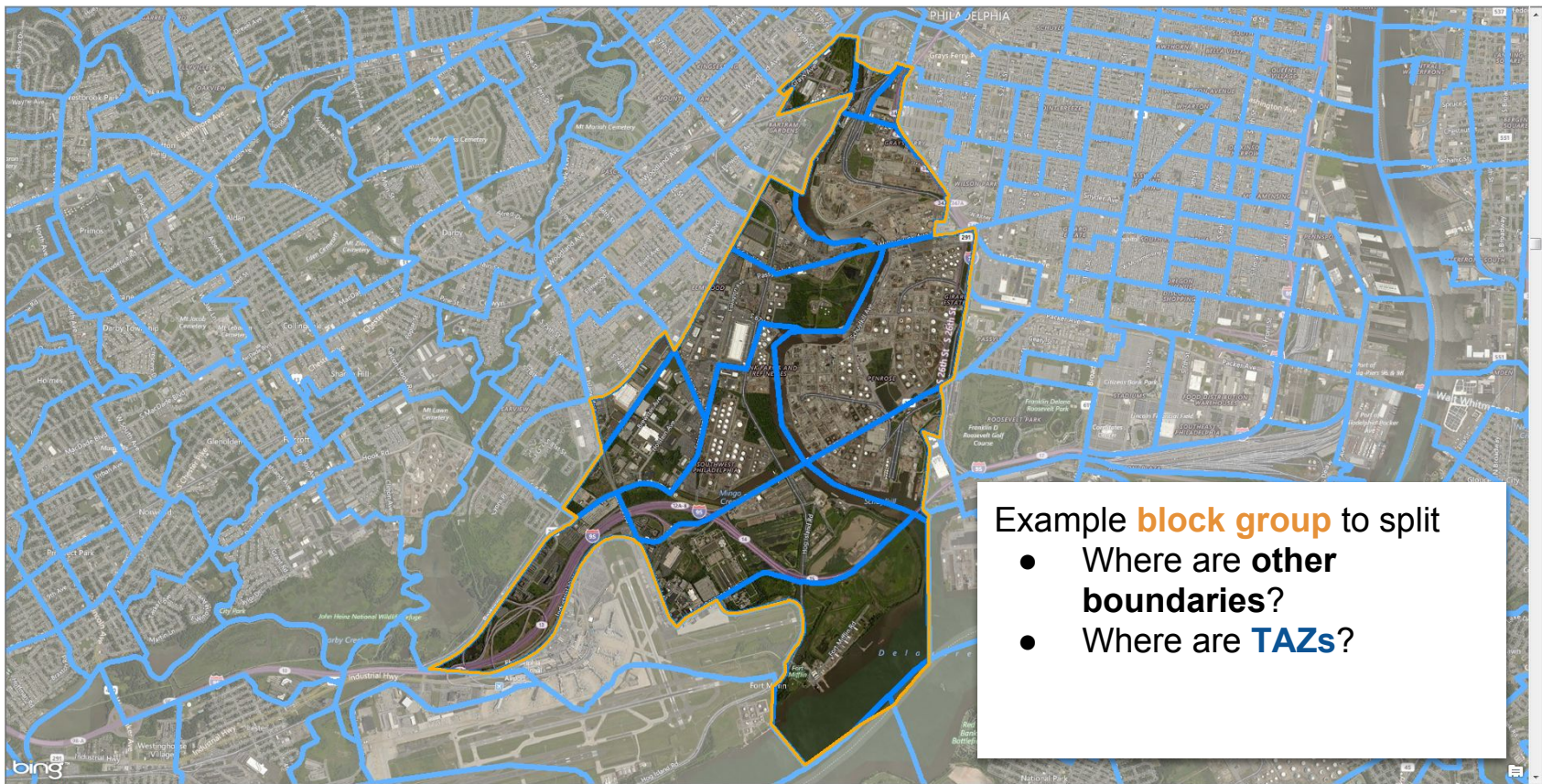




Example **block group** to split

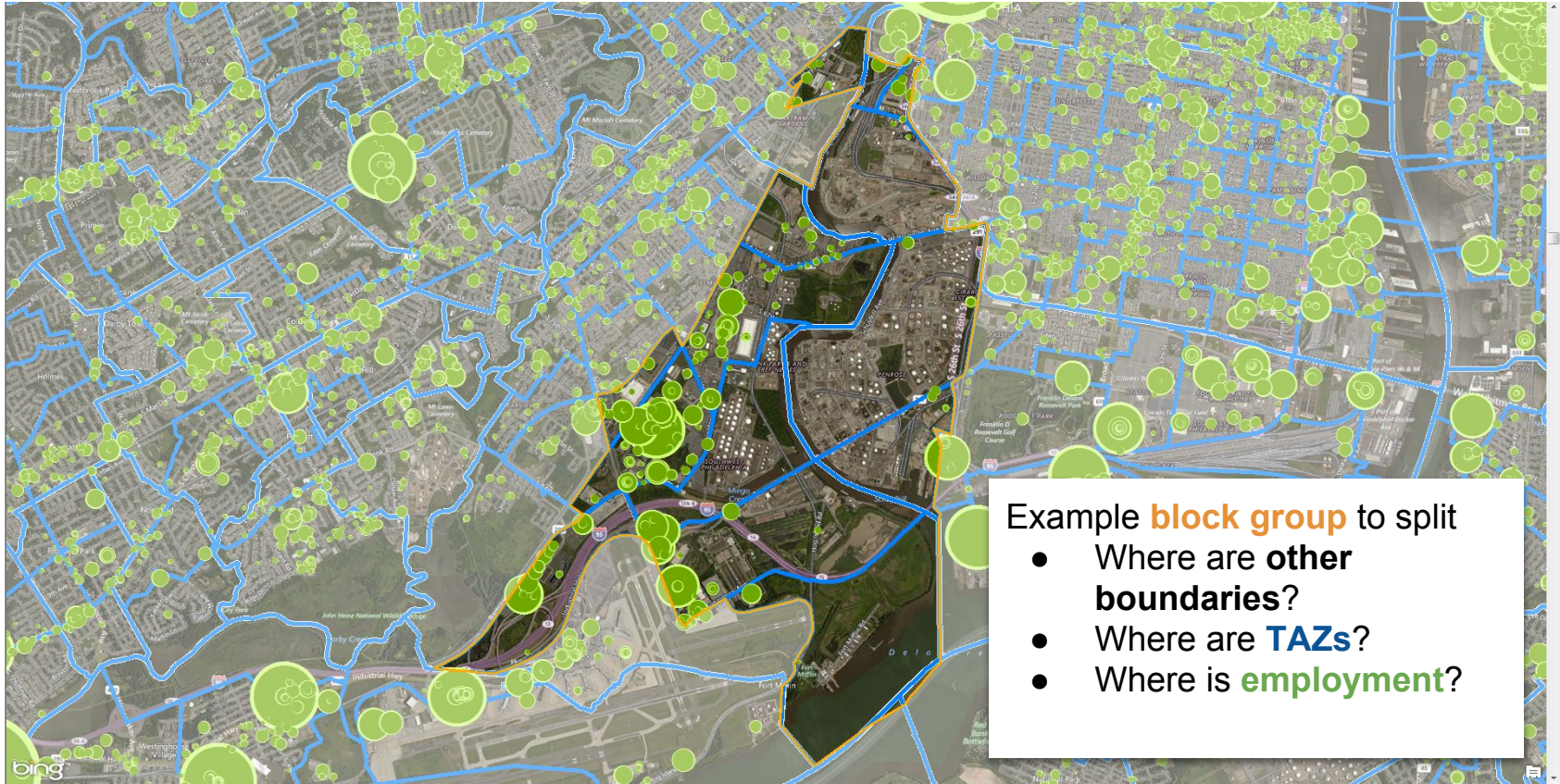
- Where are **other boundaries**?





Example **block group** to split

- Where are **other boundaries**?
- Where are **TAZs**?



Ingredients for Success

If...

- Employment thresholds are in place,

...and...

- You can get all parties to agree that TAZs and block groups matched
 - One-to-one or
 - As nested geographies (TAZs within block groups or block groups within TAZs)

... a lot of progress can be made

Next Steps

Outreach Plans & Getting Involved
with PSAP

Brainstorm

- How will the CTPP policy change affect your agency?
- How can the 2020 PSAP be used to ensure your agency's data needs are met in future CTPP releases?
 - Get to know your geographies (how well do your TAZ and census geographies align?)
 - Identify goals

Comment on the Federal Register by May 16th

Submit your written comments to the DoC

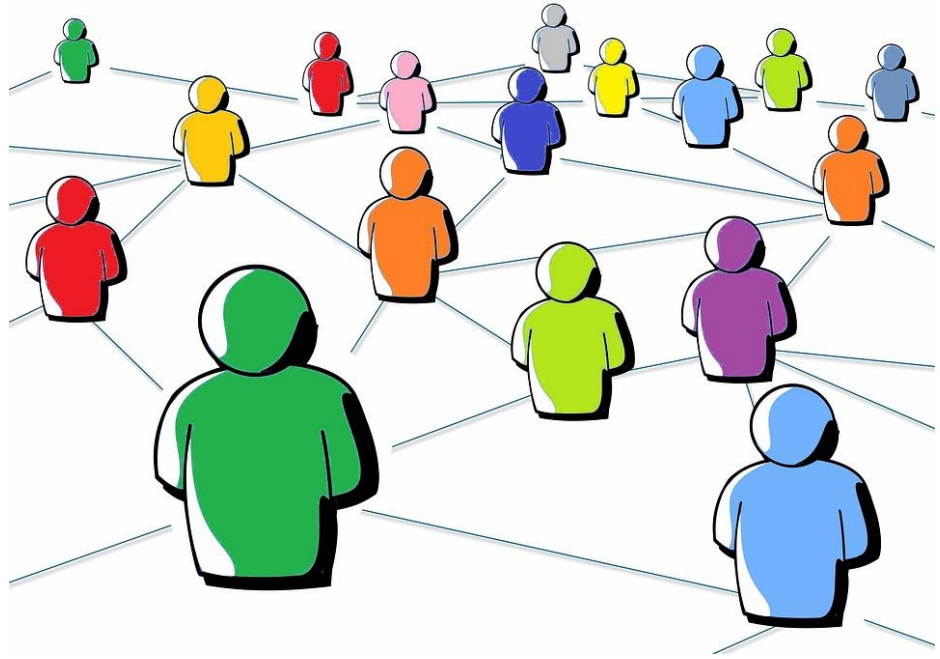
- DIY based on your agency's needs
- Borrow or modify CTPP Oversight Board's Recommendations



Get Involved in PSAP

Reach out to:

- The Census Bureau
- State Data Center(s)
- Previous PSAP'ers
- Others?



Get Involved in PSAP

Identify opportunities for alignment with your planning partner's goals

- Seek agreement that nesting works for everyone
 - Multiple TAZs within a block group or tract
 - Multiple block groups within a TAZ
- Highlight that some problems can be solved by using TAZ boundaries and employment data

Tell the CTPP community how it's going on the listserv

Resources

Federal Register (Census Tracts: 83 FR 6941; Block Groups: 83 FR 6937)

<https://www.federalregister.gov/documents/2018/02/15>

Census Bureau: 2020 Participant Statistical Areas Program (PSAP)

<https://www.census.gov/programs-surveys/decennial-census/about/psap.html>

Email: geo.psap@census.gov

CTPP Website: Policy Change on Small and Custom Geography

<http://ctpp.transportation.org/Pages/Policy-Change-on-Small-Geography.aspx>

CTPP User Community Listserv

<http://www.chrispy.net/mailman/listinfo/ctpp-news>

NCHRP 08-36, Task 127 | Employment Data for Planning: A Resource Guide

[http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36\(127\)_EmployDataGuide.PDF](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36(127)_EmployDataGuide.PDF)

Great webinar on responsibly mapping ACS data (and how unreliable it is at smaller geographies)

<https://attendee.gotowebinar.com/recording/7518816042246149377>

Thank you!

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