WORKSHOP
LODES & ONTHEMAP

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DISCLAIMER

Any opinions and conclusions expressed herein are those of the author and do not represent the views of the U.S. Census Bureau.

All results have been reviewed to ensure that no confidential information is disclosed.

AGENDA

- Concepts (15 mins)
- Demo (45 mins)
  - OnTheMap Basics (15)
  - Satellite Validation of OTM (15)
  - DC Metro Blue Line Proposal (15)
- Q&A (15 mins)

THE BASICS

LEHD Origin-Destination Employment Statistics (LODES)

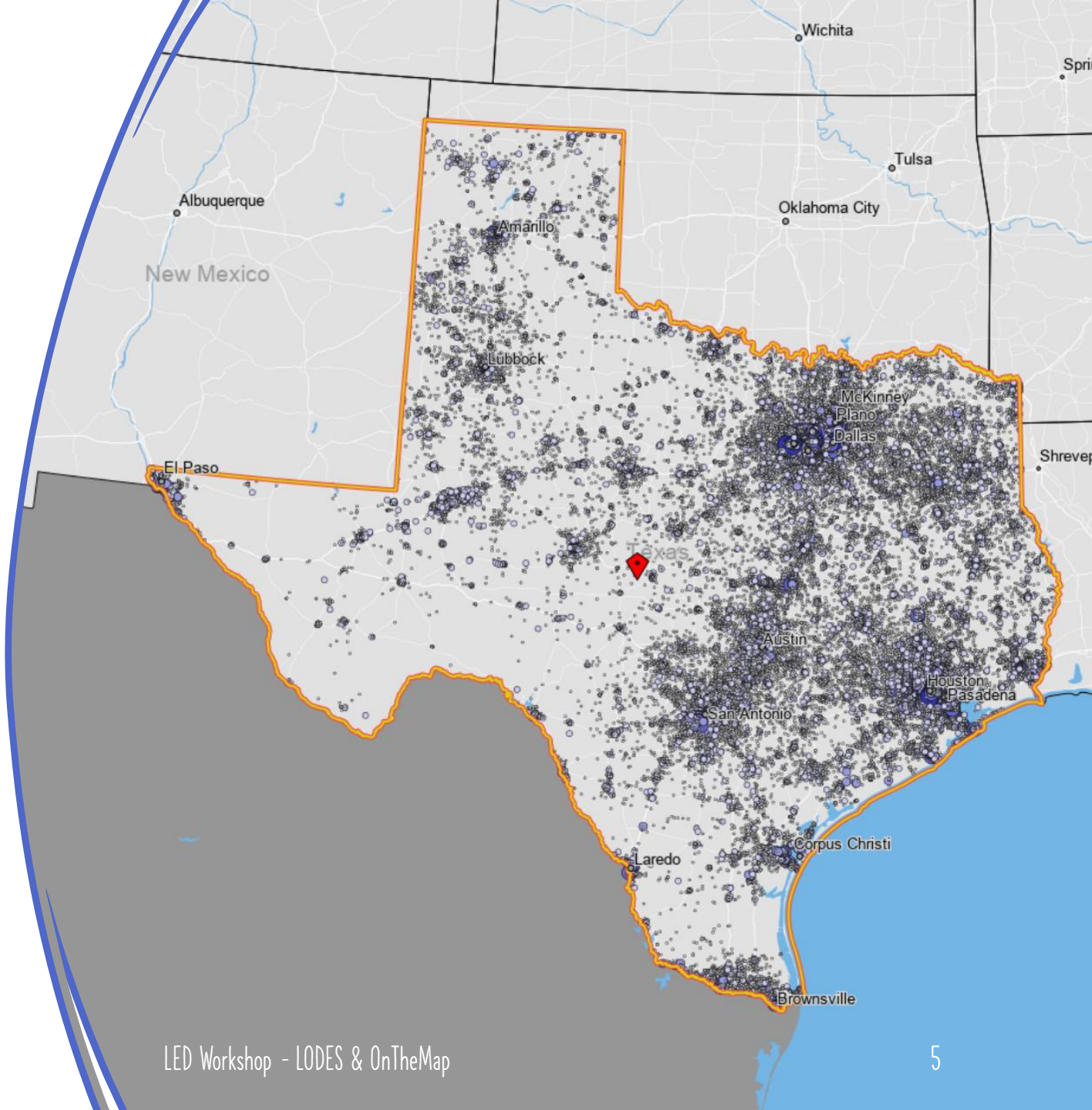
a partially synthetic dataset that describes geographic patterns of jobs by their employment locations and residential locations as well as the connections between the two locations

OnTheMap

a web-based mapping and reporting application that shows where workers are employed and where they live

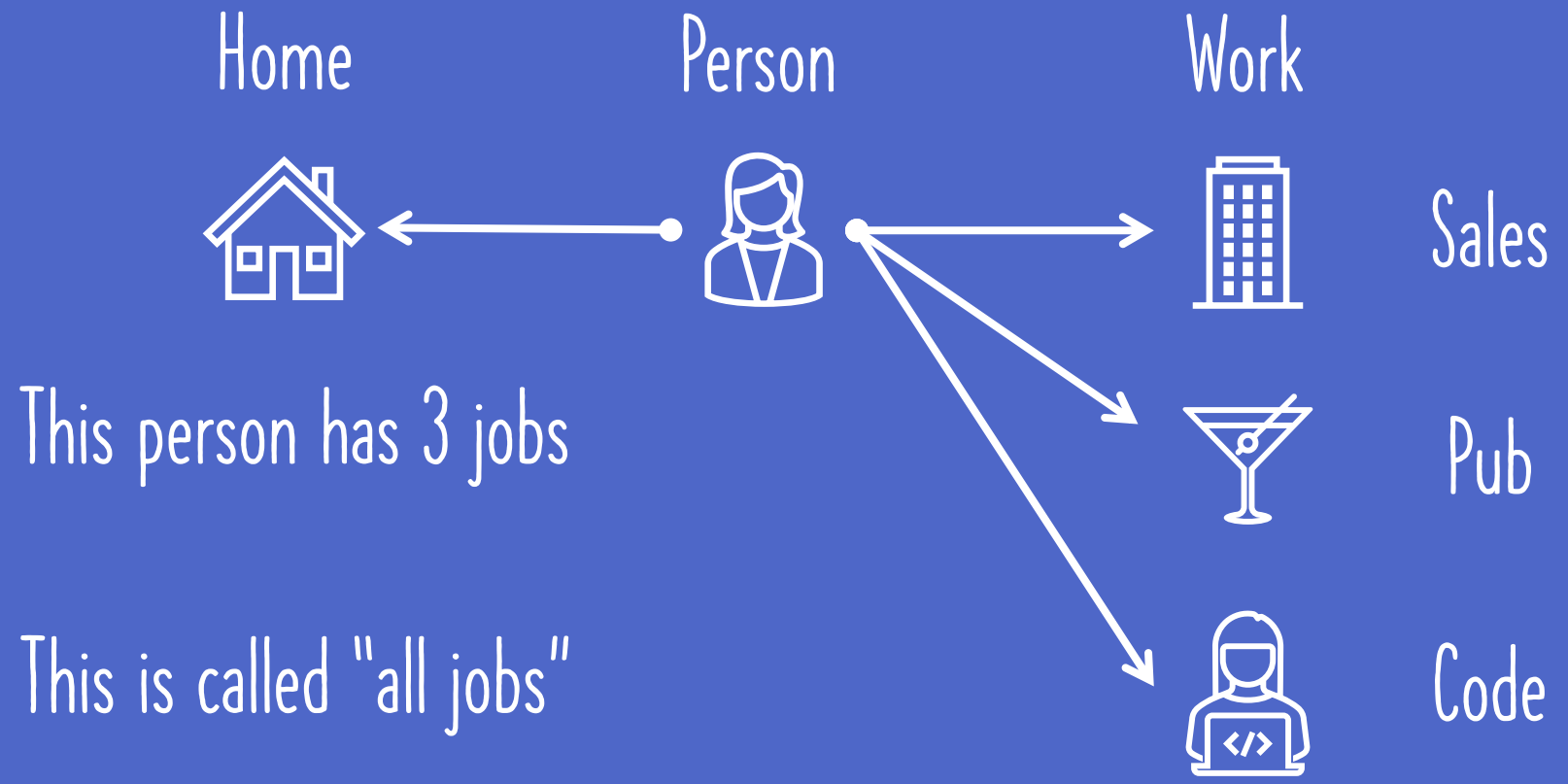
via https://onthemap.ces.census.gov/

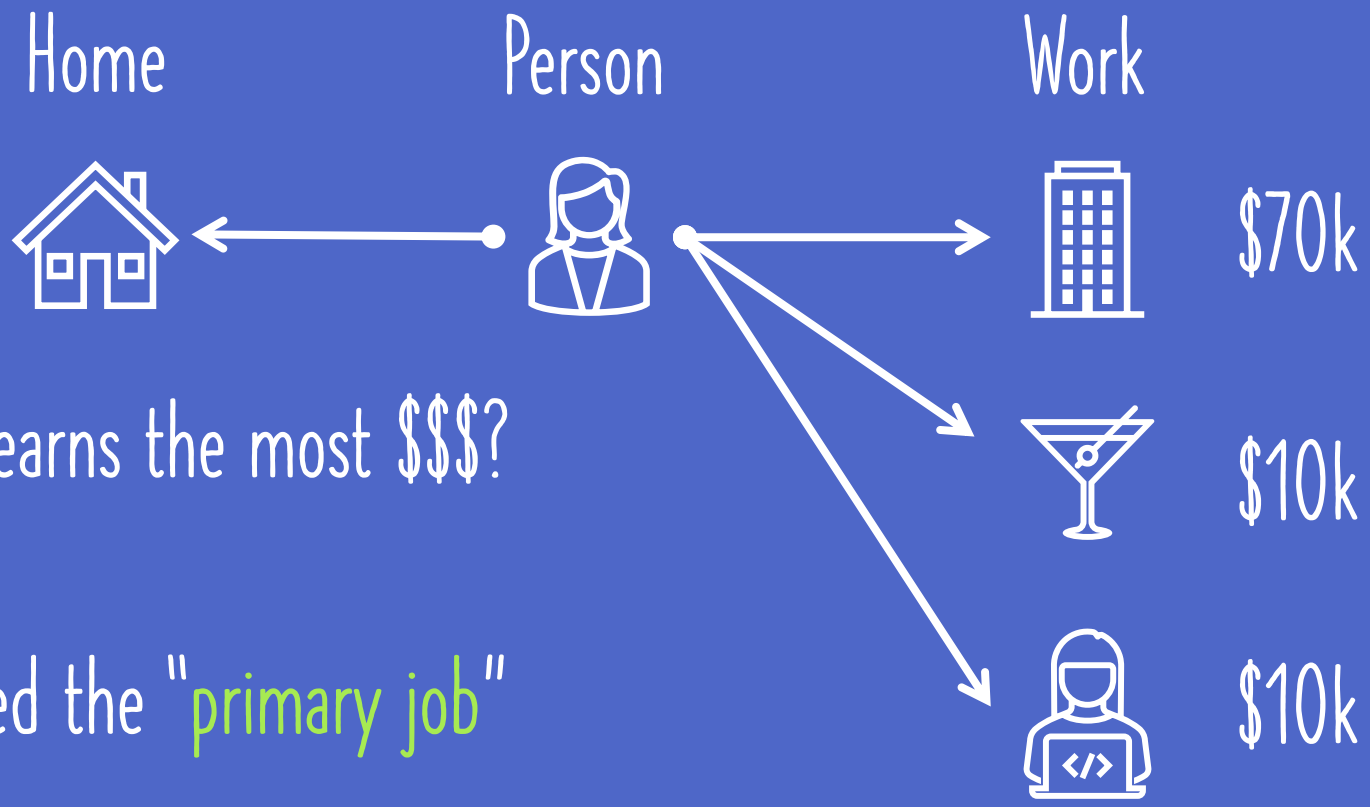
???


Wichita
Tulsa
Albuquerque
Oklahoma City
Amarillo
New Mexico
Lubbock
McKinney
Plano
Dallas
El Paso
Texas
Austin
Houston
Pasadena
San Antonio
Corpus Christi
Laredo
Brownsville

Residence
The location where a worker lives

Job
A link between a worker and a firm


Home
Person
Work
Sales
Pub
Code
This person has 3 jobs
This is called "all jobs"



Which job earns the most $$$?

This is called the "primary job"

Home

Person

Work

Characteristics

Age, Race, Ethnicity,
Education, Sex

Home

Person

Work

Characteristics

Location

Home

Person

Work

Characteristics

Location, Industry,
Firm Age & Size

Home

Person

Work

Private Business

Government (fed, state, local)

Military

Self-Employed

Etc.

PRIVATE INDUSTRY COVERAGE

Source: lehd snapshot documentation (link)

All	Most/Many	None
Wage earners	Corporate officials	Self-employed
Executives	Farmworkers	Business owners
Supervisors		Railroad workers
Clerical workers		Commission sales
Part-time workers		Some seasonal workers
Pieceworkers		Family employee of family business
		Etc.

GOVERNMENT COVERAGE

Source: lehd snapshot docs (link)
lodes design comparison doc (link)

All	Most/Many	None
	State govt employees	Elected officials
	Local govt employees	Legislature members
	Federal civilian employees	Judiciary members
		Uniformed military
		Security agencies (FBI, CIA, DHS, etc.)
		USPS postal workers
		Tax inspectors
		Etc.

COVERAGE SUMMARY

~97% of private employment
Most state & local govt jobs
Ballpark half of federal jobs

No margin of error, not a survey
Coverage gaps are important

Employed on April 1st

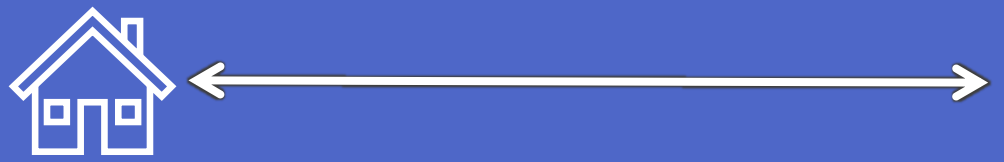
Residence

The location where a worker lives

Job

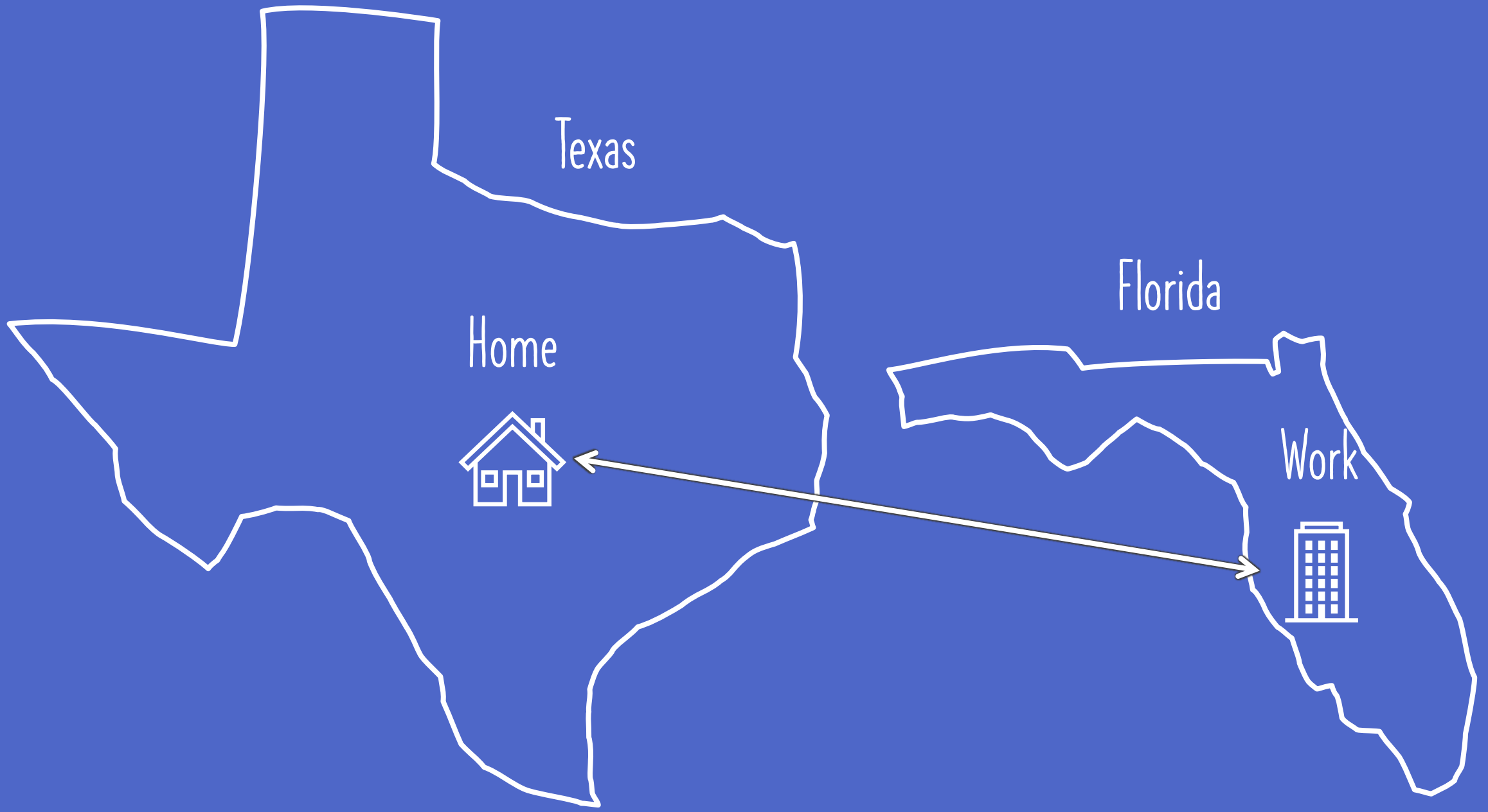
A link between a worker and a firm

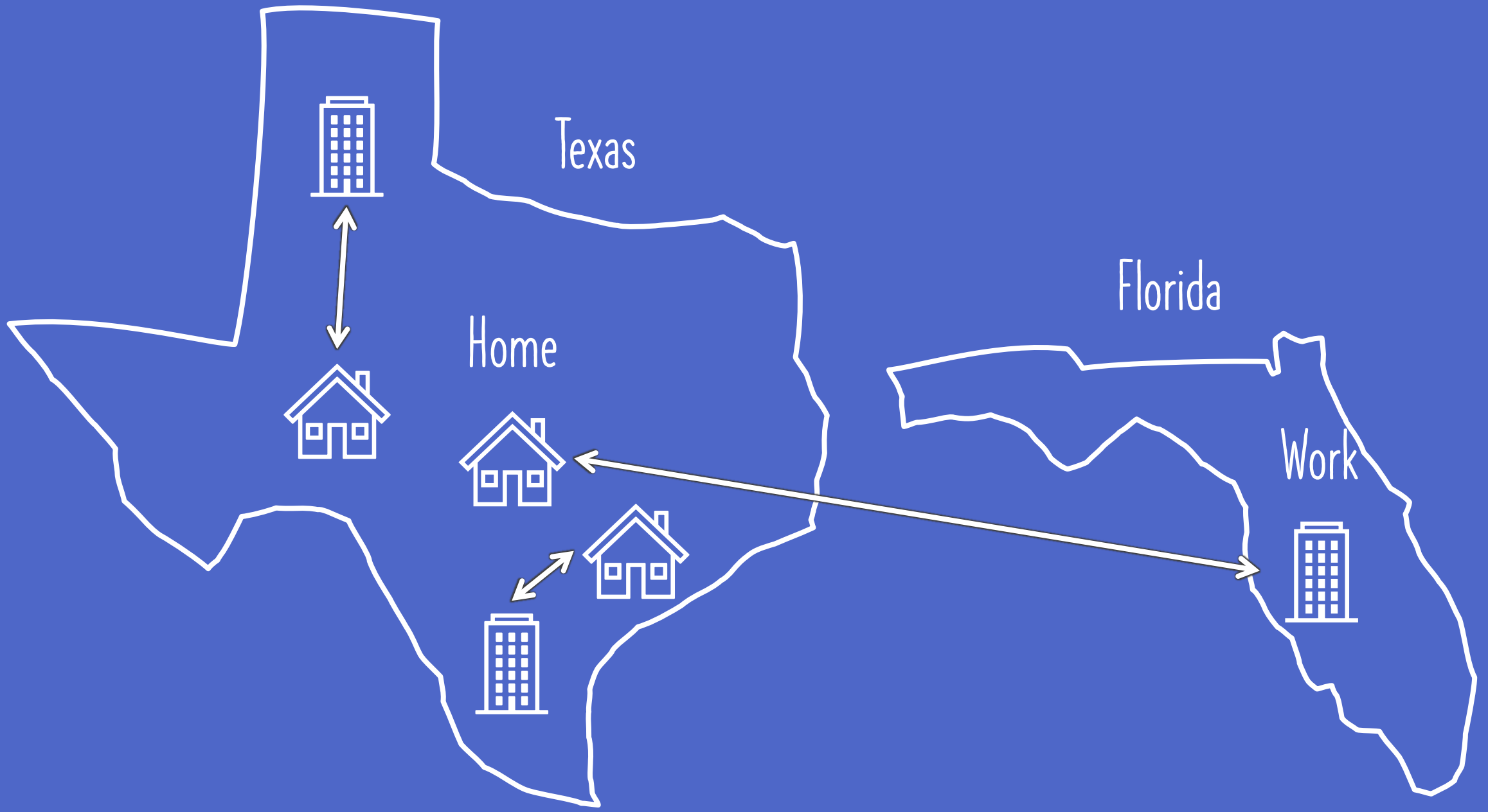
Home

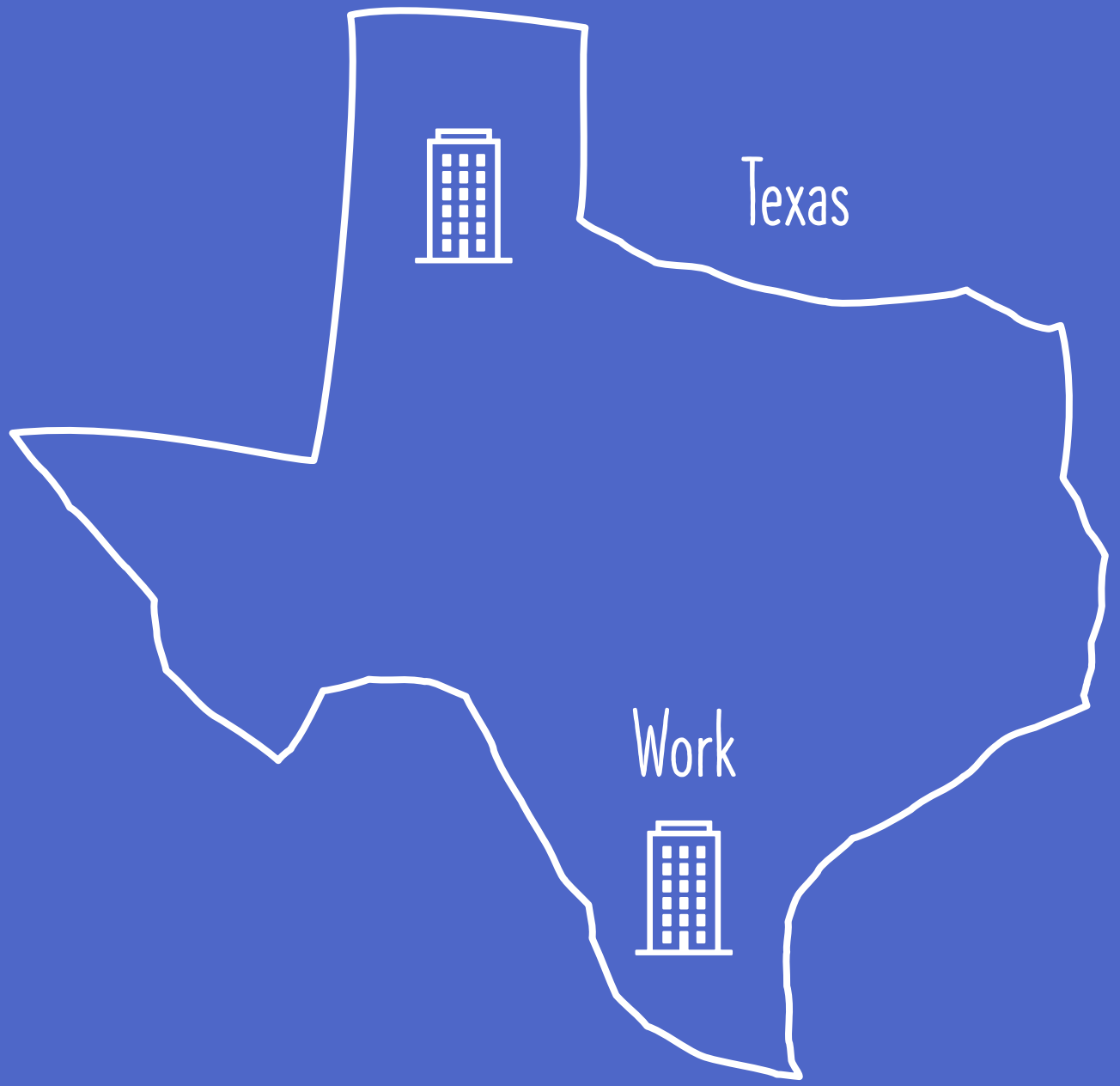


Work

Imagine there's a connection ↑ that contains all the information about the job, business, person, etc.

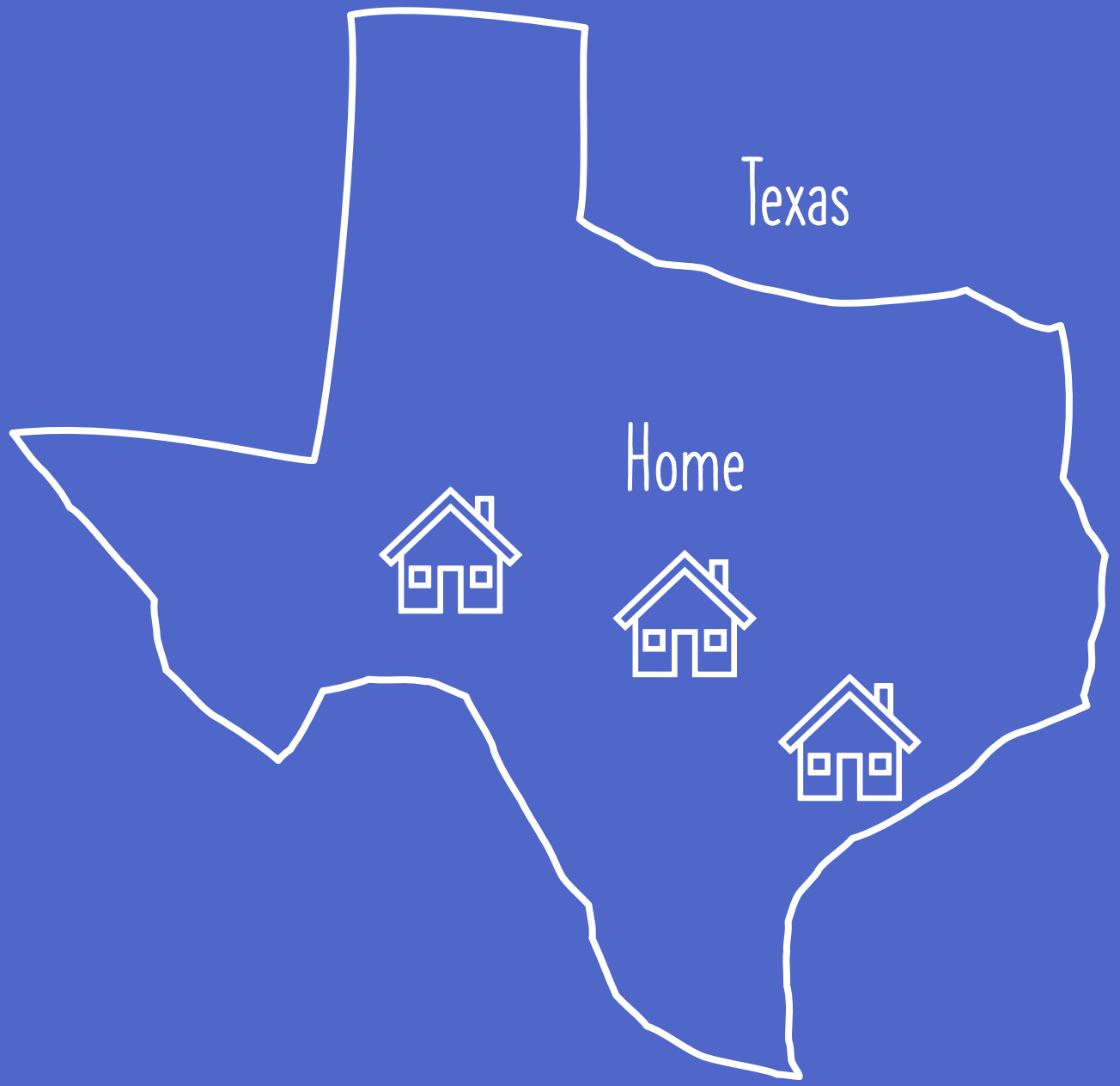

Texas
Florida
Home
Work


Texas
Florida
Home
Work



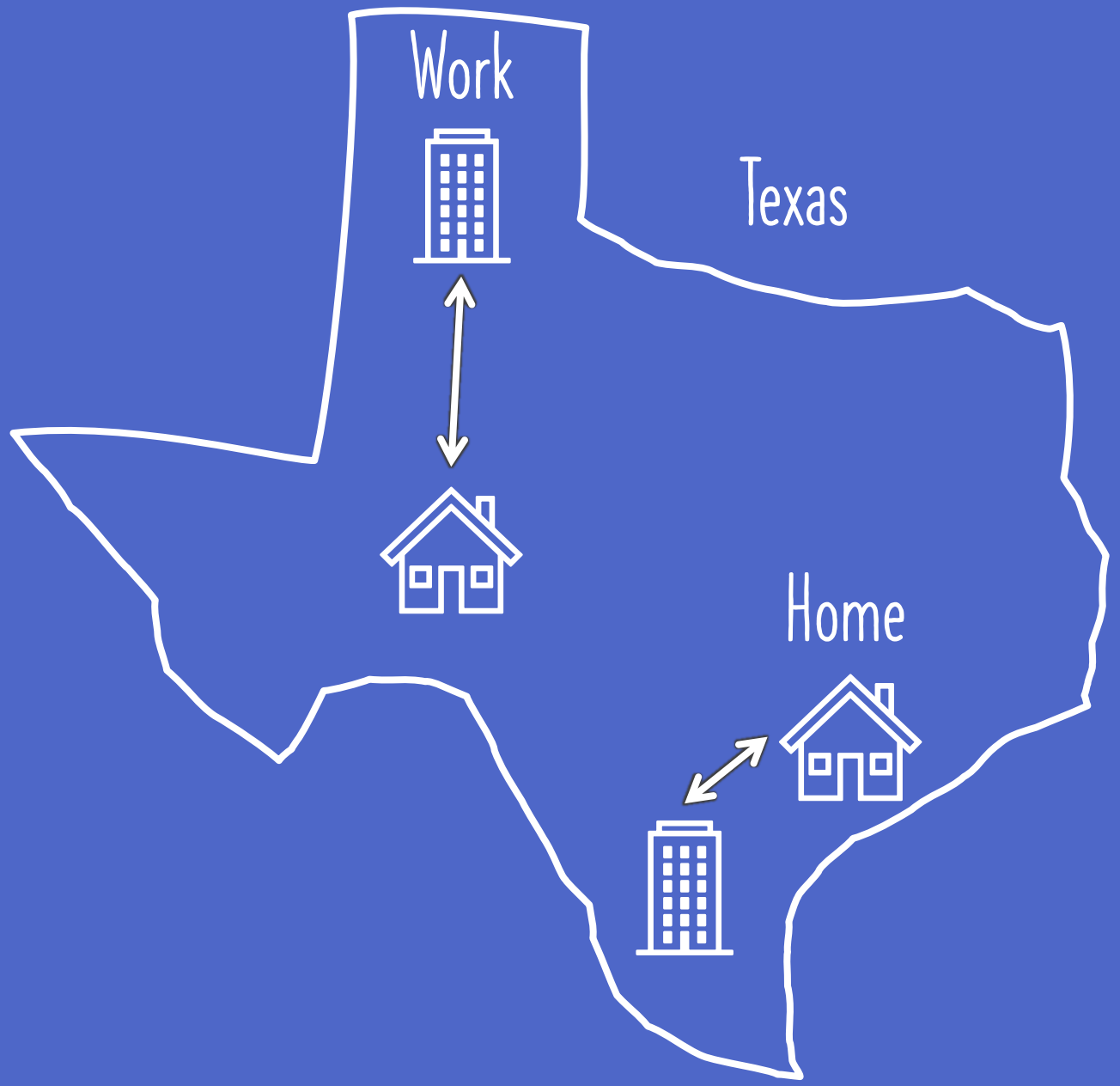
Work Analysis

2 Jobs with work locations in Texas



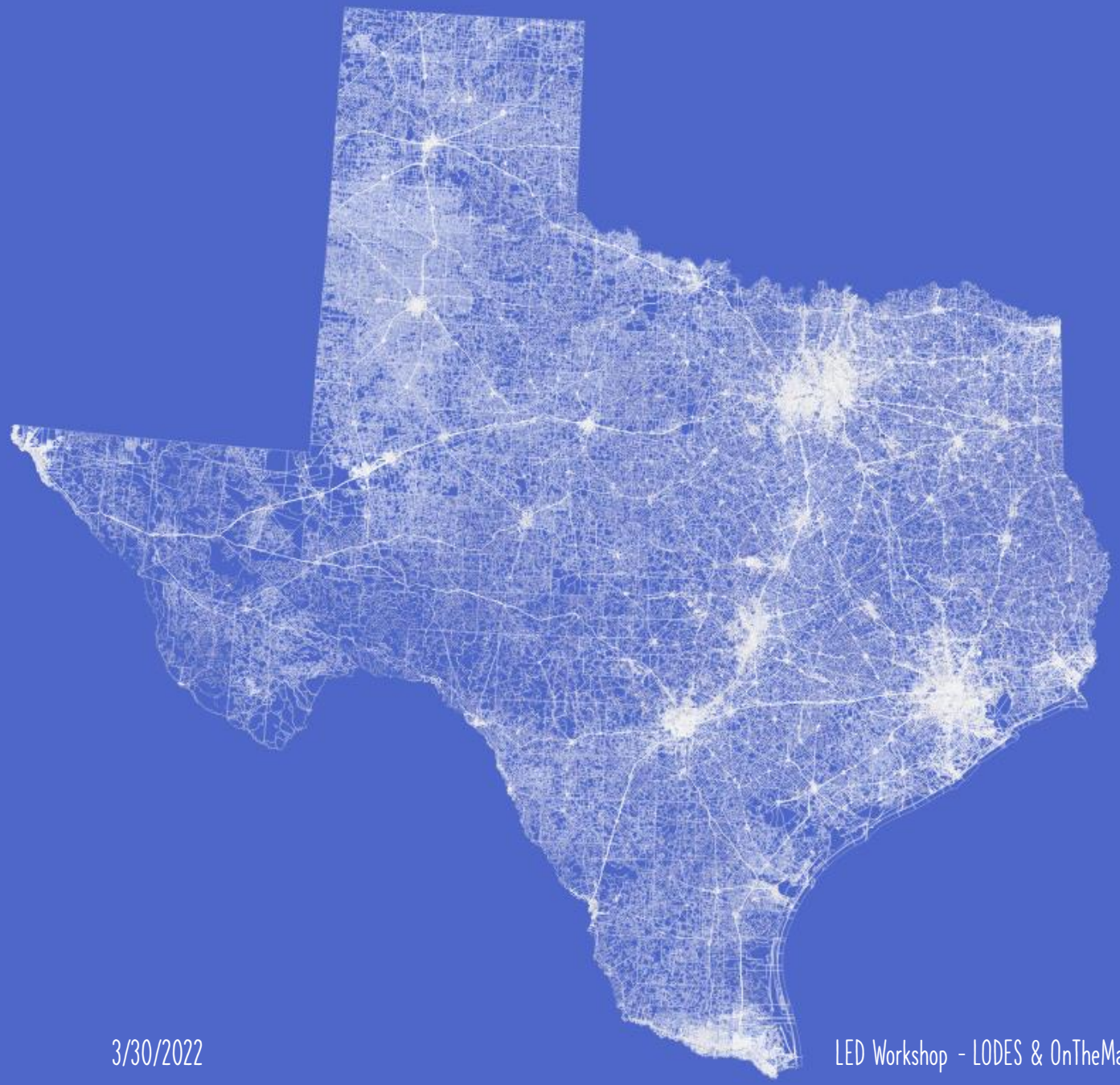
Home Analysis

3 Jobs with home locations in Texas



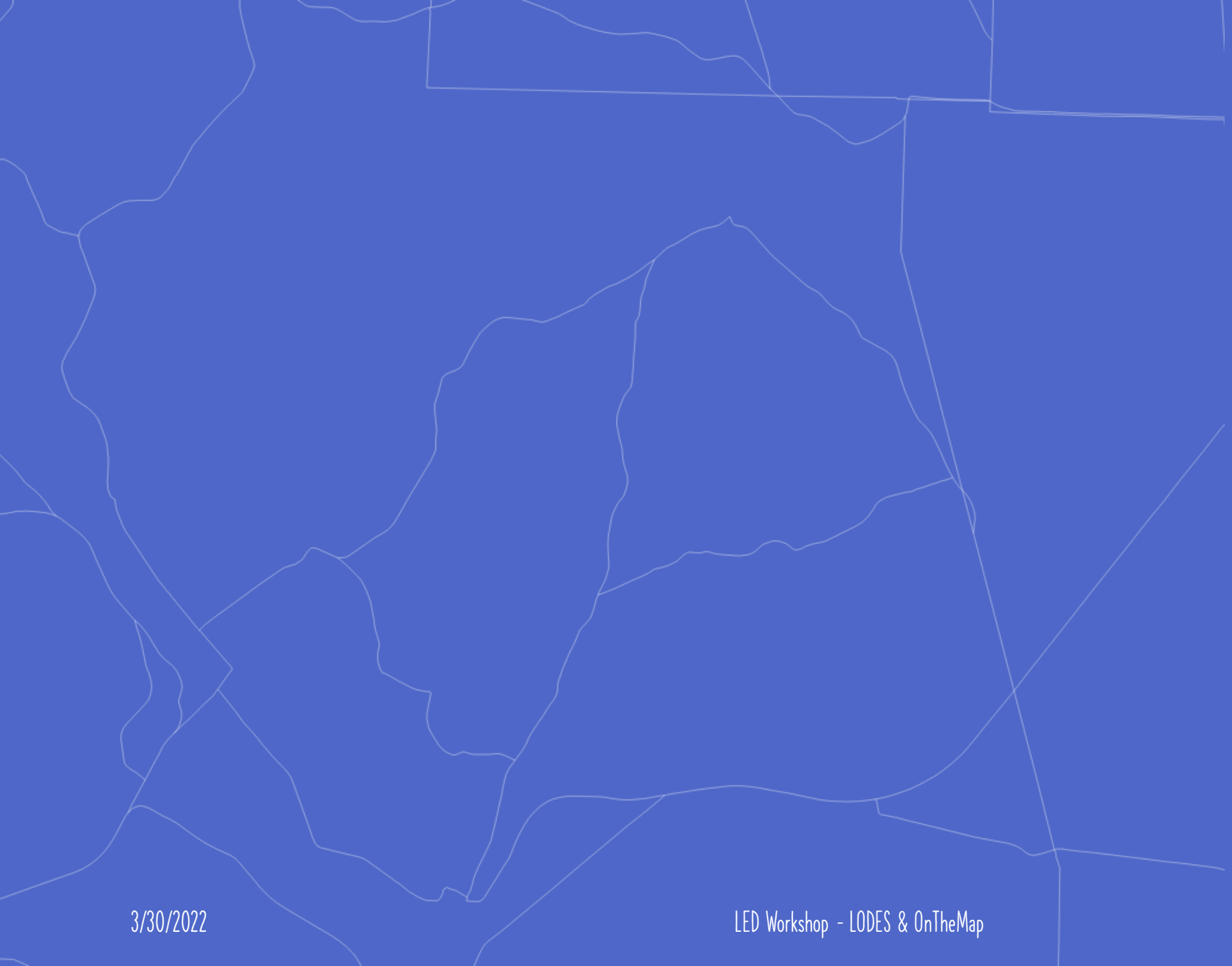
OD (Origin-Destination) Analysis

2 jobs with both home and work locations in Texas



LODES/OnTheMap is published at the Census Block

~669k Blocks in Texas



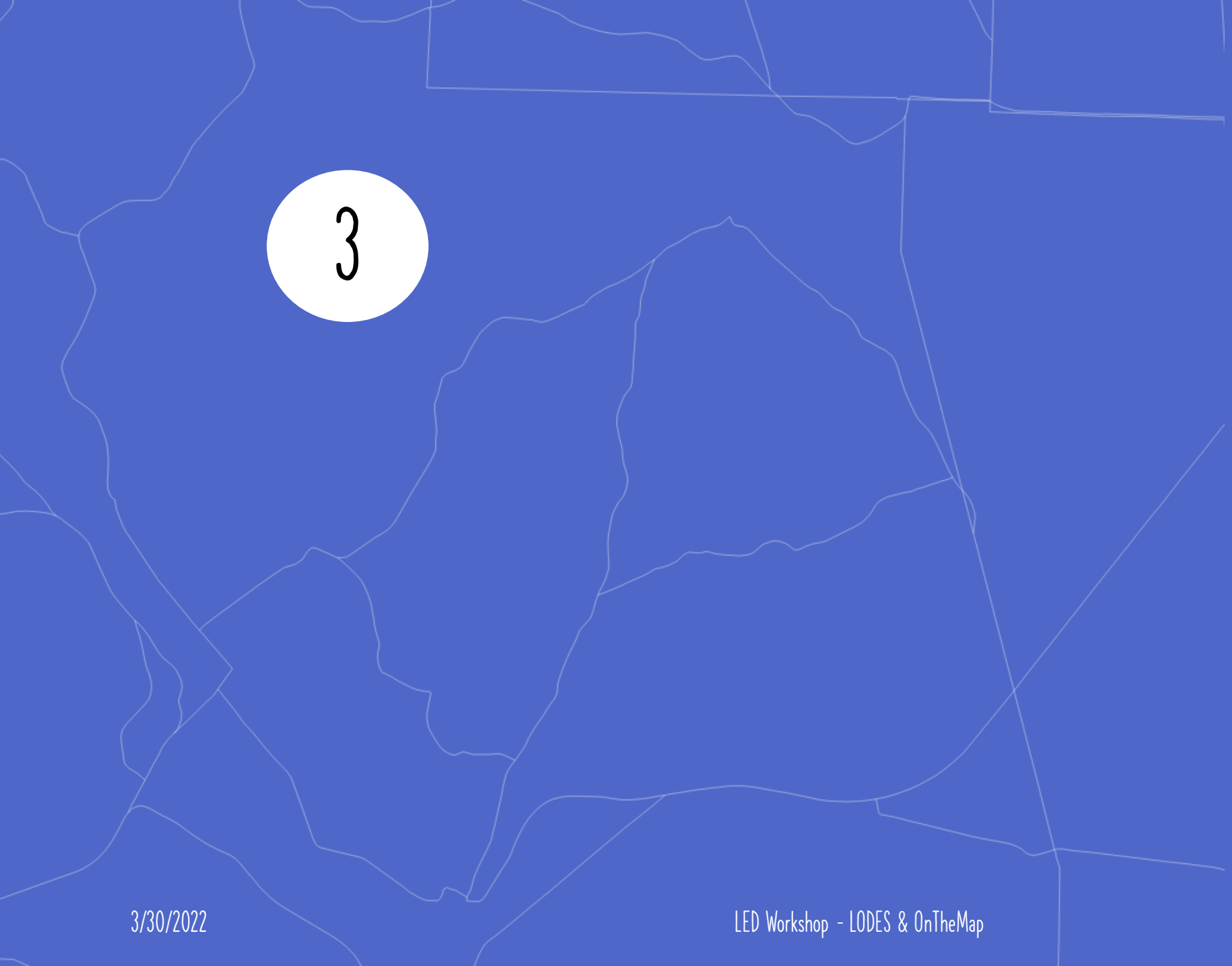
Let's zoom in a little

Done

These are block boundaries

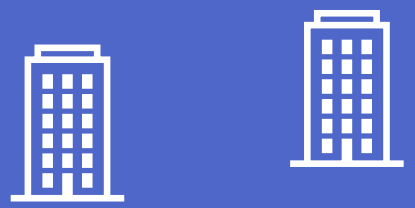
OnTheMap/LODES
Counts jobs by block

3 jobs have a residential location in this one block



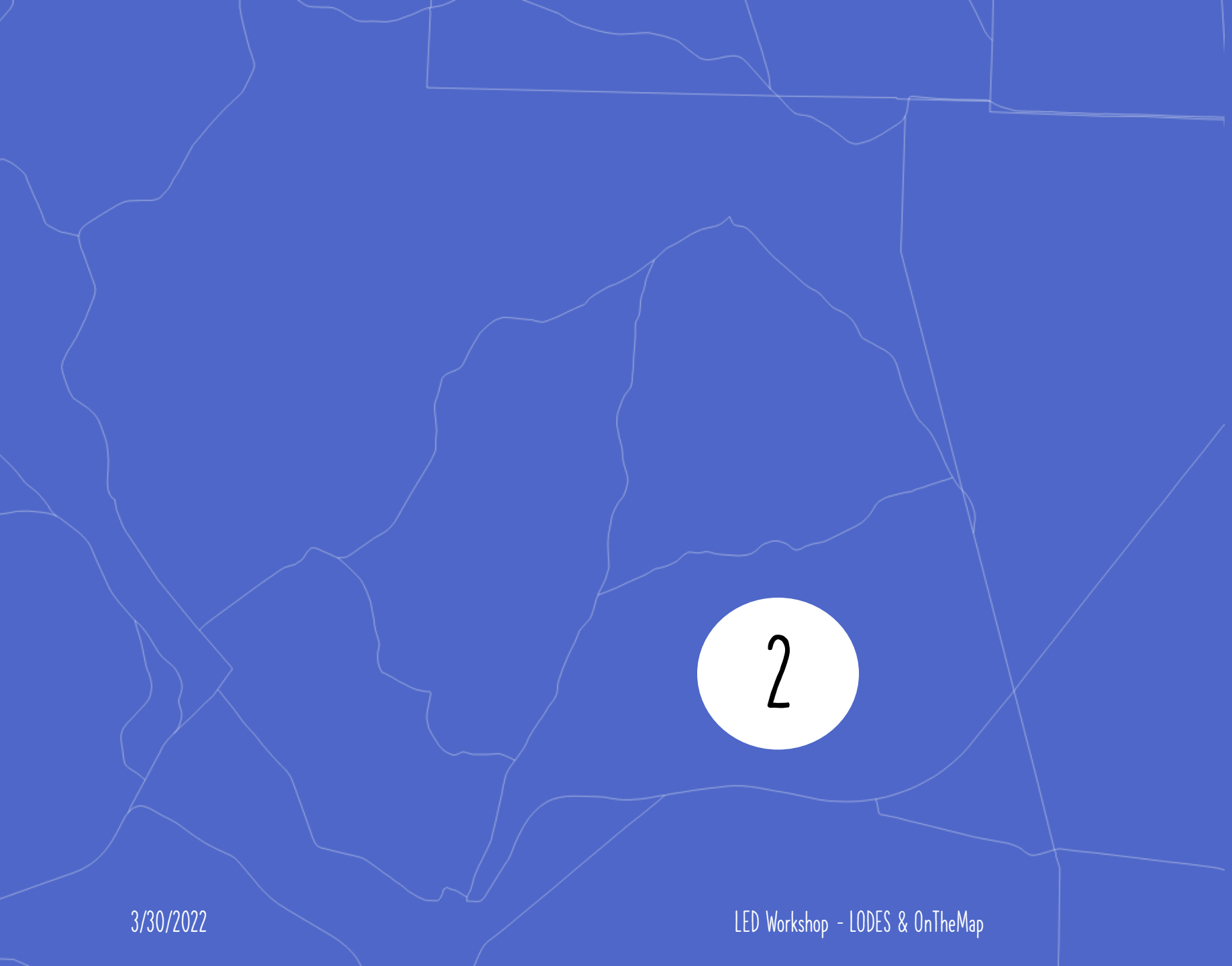
Each block will have a total of the number of jobs inside

3 jobs have a residential location in this block



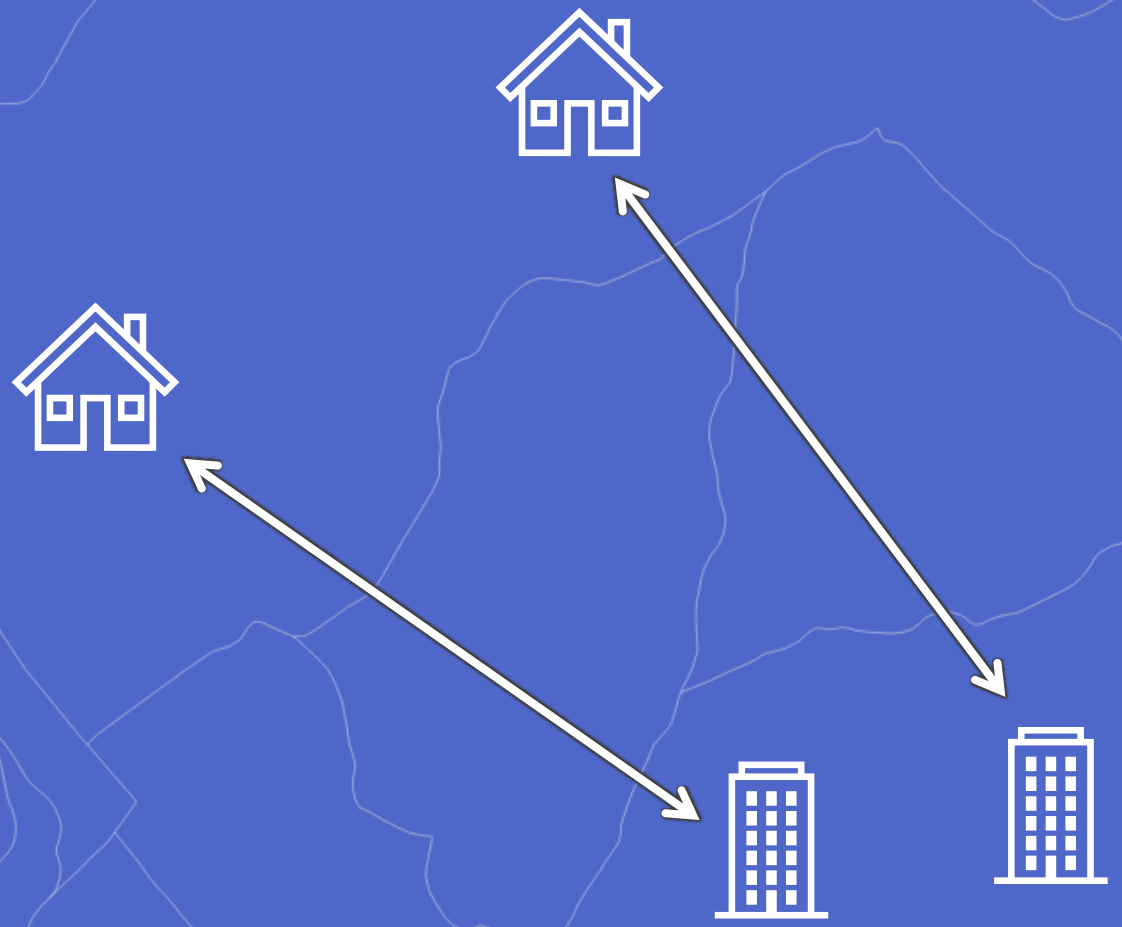
Same thing for work locations

2 jobs have a work location in this block



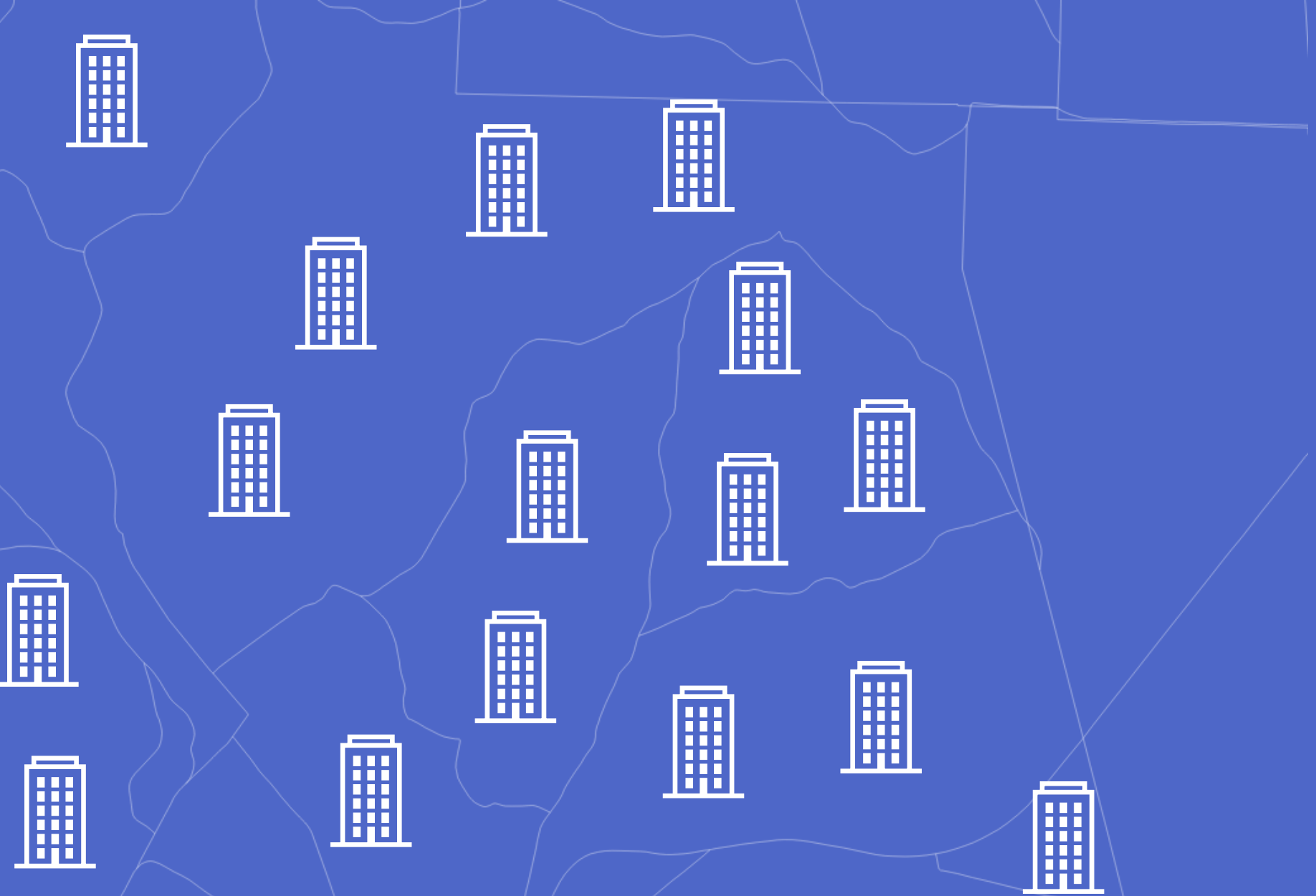
Each block will have a total of the number of jobs inside

2 jobs have a work location in this block

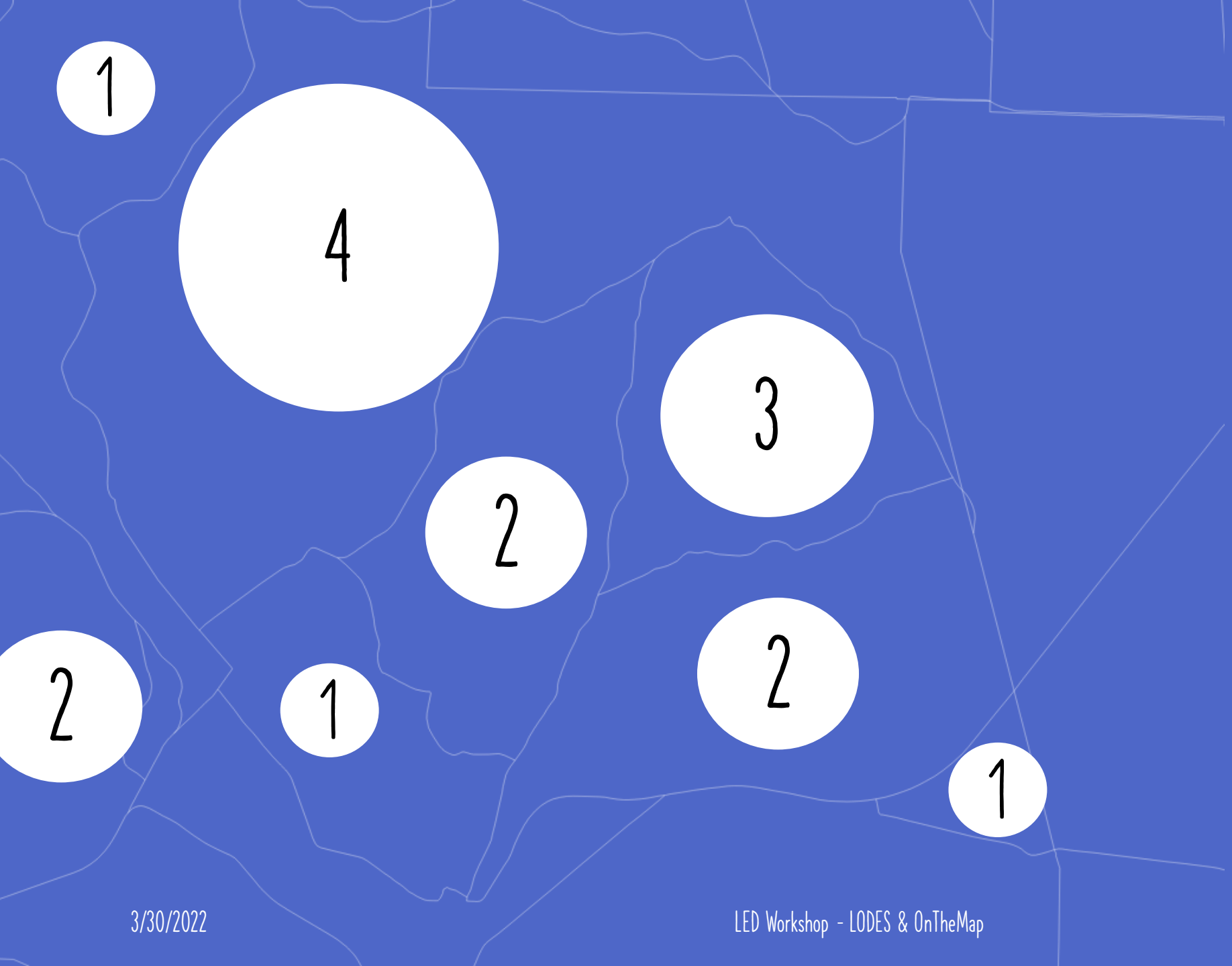


The connections between home and work are still there

Just ask OnTheMap the right questions

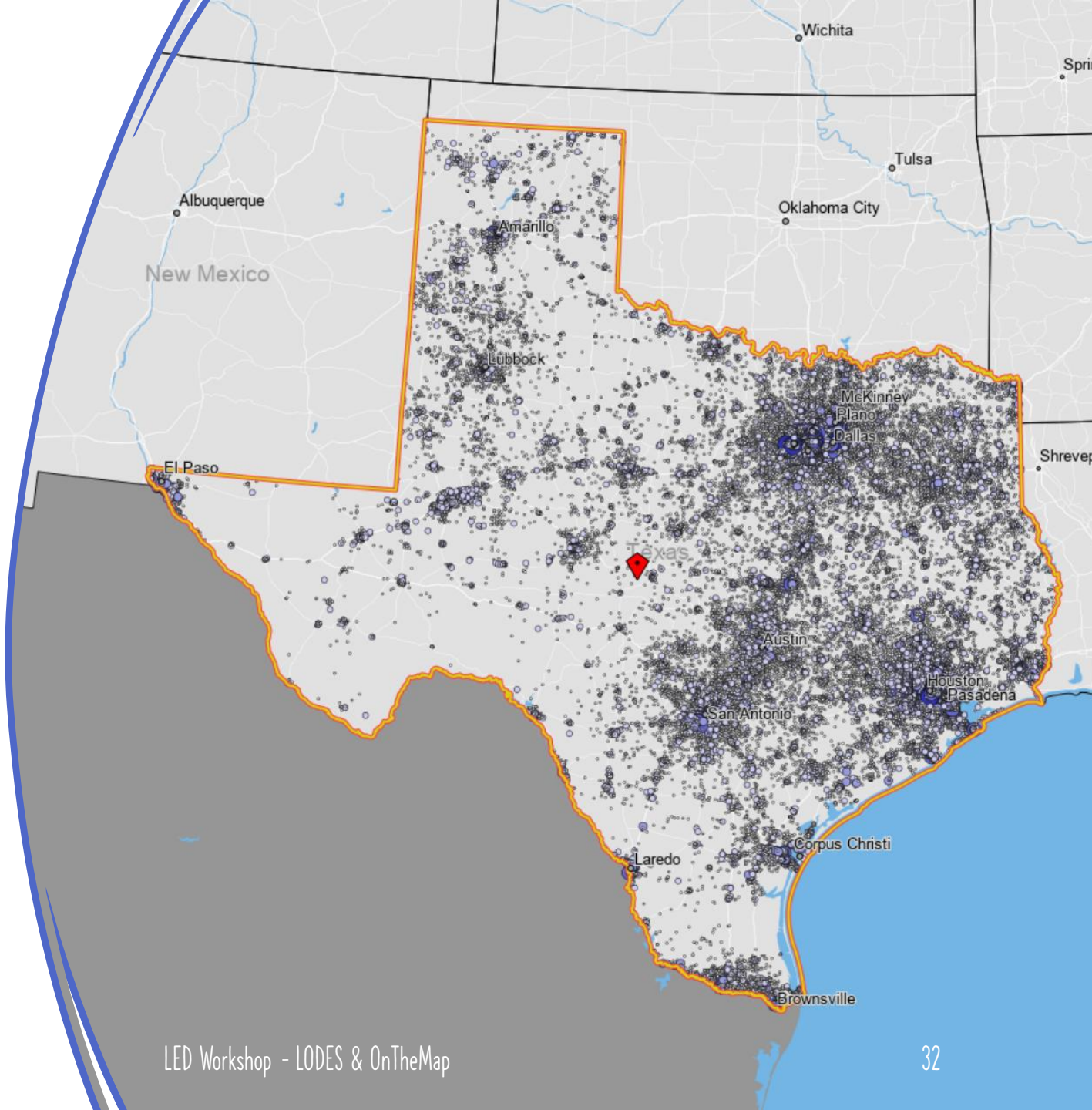


Jobs are everywhere



They just look a little different than you may be used to in LODES/OnTheMap

MORE CLEAR NOW?



ONTHEMAP BASICS

Bend City, OR

Q&A

OnTheMap Basics - Bend City, OR

USING SATELLITE IMAGERY TO VALIDATE RESIDENTIAL DATA

Chesapeake Beach, MD

WE NEED YOU TO UNDERSTAND YOUR REGION

You're probably the only person looking at your area

There are so many

- Data points
- Geographies
- Settings

Be careful, go slowly, and try to understand your region/area

No one else has probably ever seen it

FINDING ODDITIES

Same area/settings - 2019 vs 2018

LODES/OnTheMap is released at the Block level (super small)

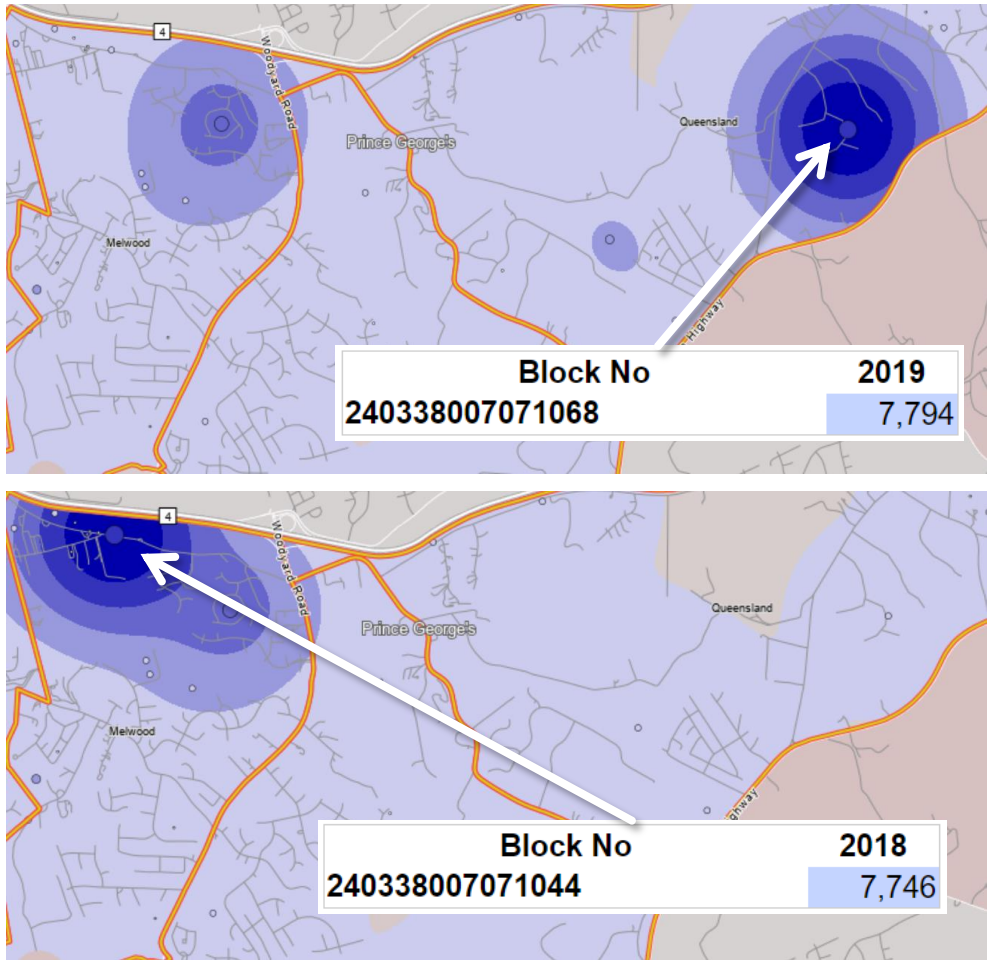
Blocks are composed into an Area of Interest

Lots of large, visible changes happen (e.g. seen right ⟶)

Plenty of small, hard to see ones are happening too

All data has this

It's just visible in LODES/OnTheMap



Goal:

Validate "Synthetic" Home Data

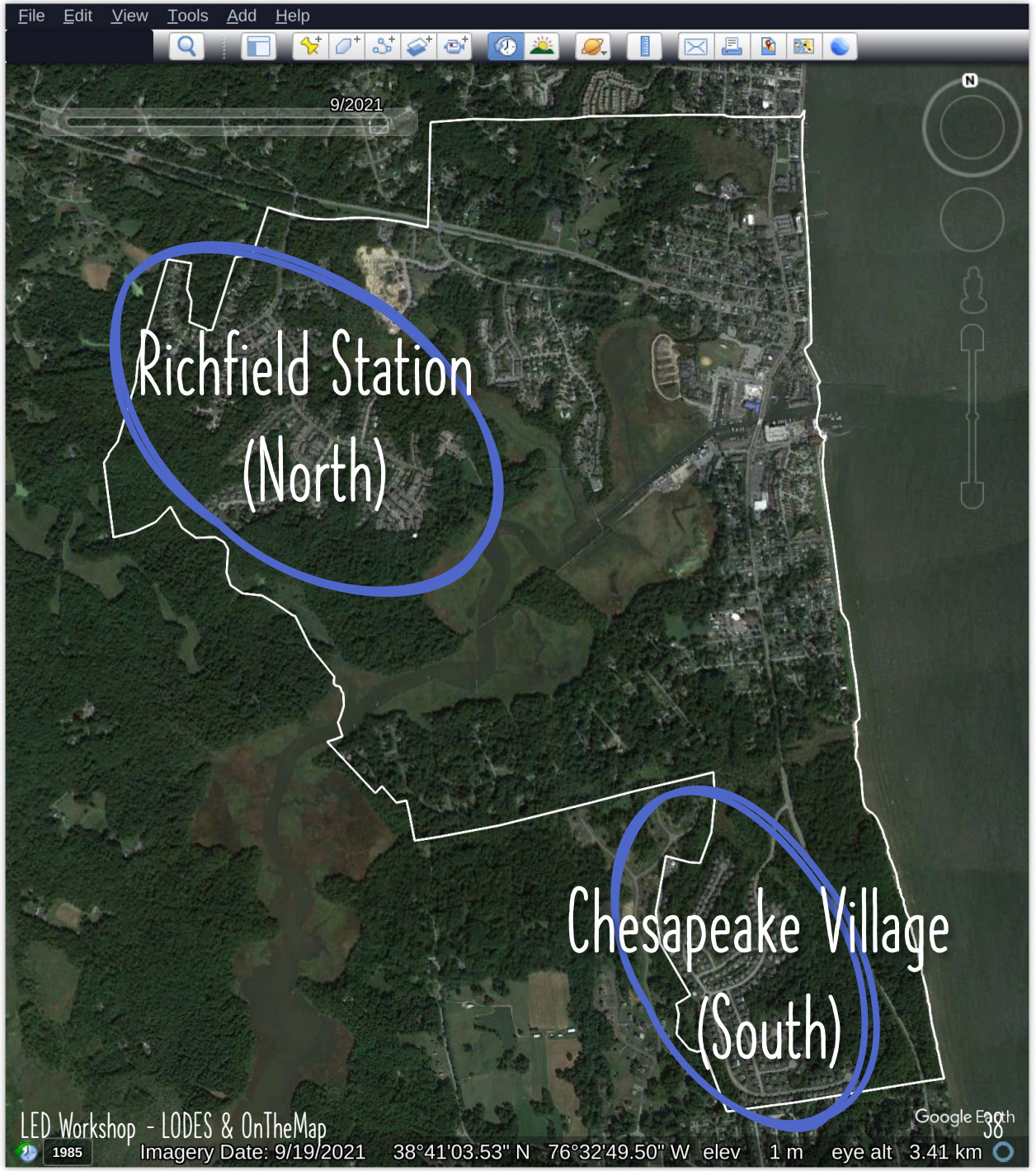
More info: Confidentiality Protection Link

Richfield Station

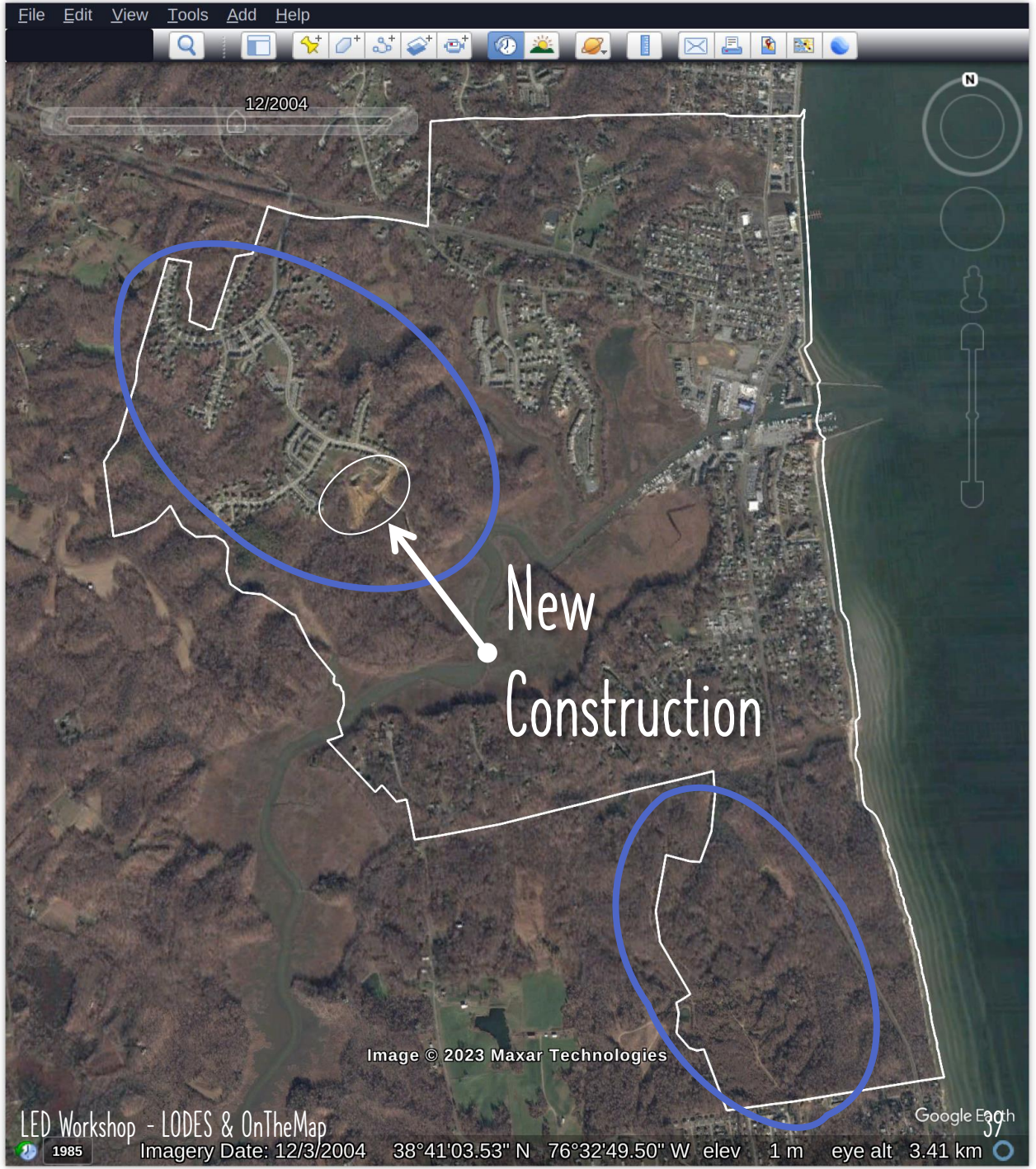
- Existing neighborhood
- Single family & medium density expansion

Chesapeake Village

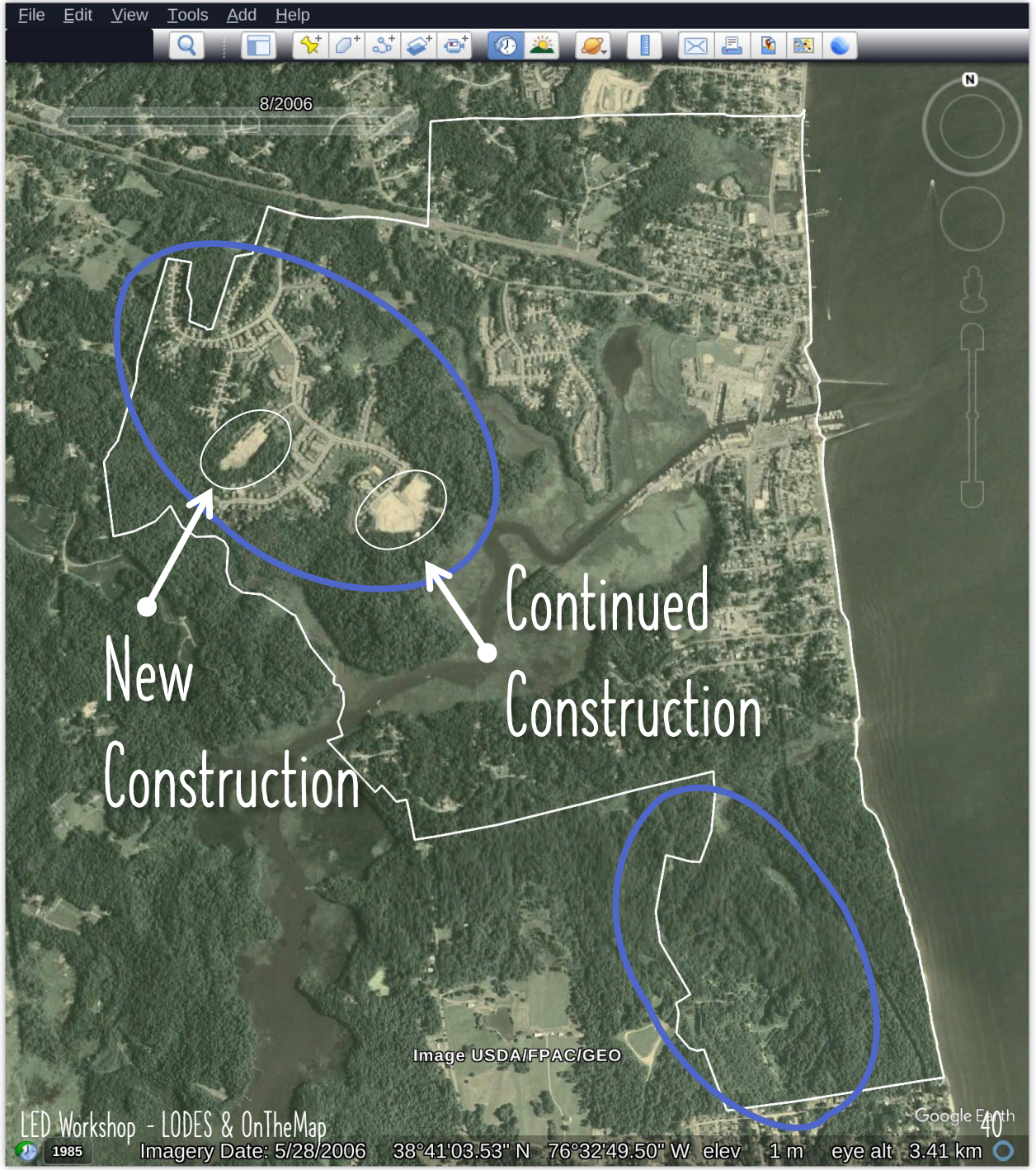
- New Neighborhood



2004


File Edit View Tools Add Help
12/2004
N
New Construction
Image © 2023 Maxar Technologies
LED Workshop - LODES & OnTheMap
Google Earth
1985
Imagery Date: 12/3/2004 38°41'03.53" N 76°32'49.50" W elev 1 m eye alt 3.41 km

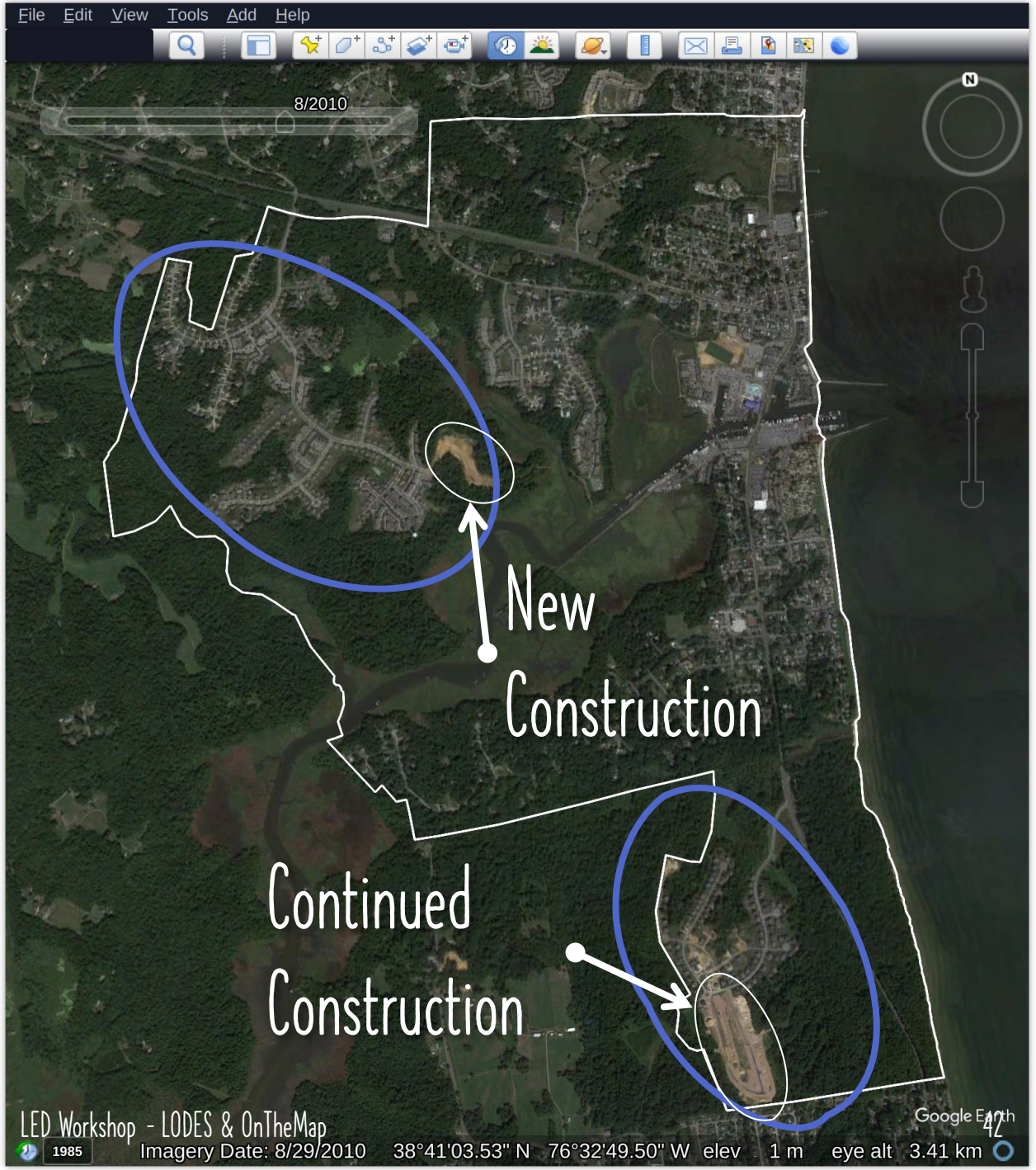
2006


File Edit View Tools Add Help
8/2006
New Construction
Continued Construction
Image USDA/FPAC/GEO
Google Earth
1985
Imagery Date: 5/28/2006 38°41'03.53" N 76°32'49.50" W elev 1 m eye alt 3.41 km

2007

File Edit View Tools Add Help
9/2007
N
Continued Construction
New Construction
LED Workshop - LODES & OnTheMap
Google Earth
1985
Imagery Date: 6/6/2007 38°41'03.53" N 76°32'49.50" W elev 1 m eye alt 3.41 km

2010


File Edit View Tools Add Help
8/2010
New Construction
Continued Construction
LED Workshop - LODES & OnTheMap
1985
Imagery Date: 8/29/2010 38°41'03.53" N 76°32'49.50" W elev 1 m eye alt 3.41 km
Google Earth

2014

File Edit View Tools Add Help
10/2014
N
LED Workshop - LODES & OnTheMap
1985
Imagery Date: 10/8/2014 38°41'03.53" N 76°32'49.50" W elev 1 m eye alt 3.41 km
Google Earth

DATES TO KEEP IN MIND

Richfield Station (North)

2004 - construction starts

2010 - mostly done

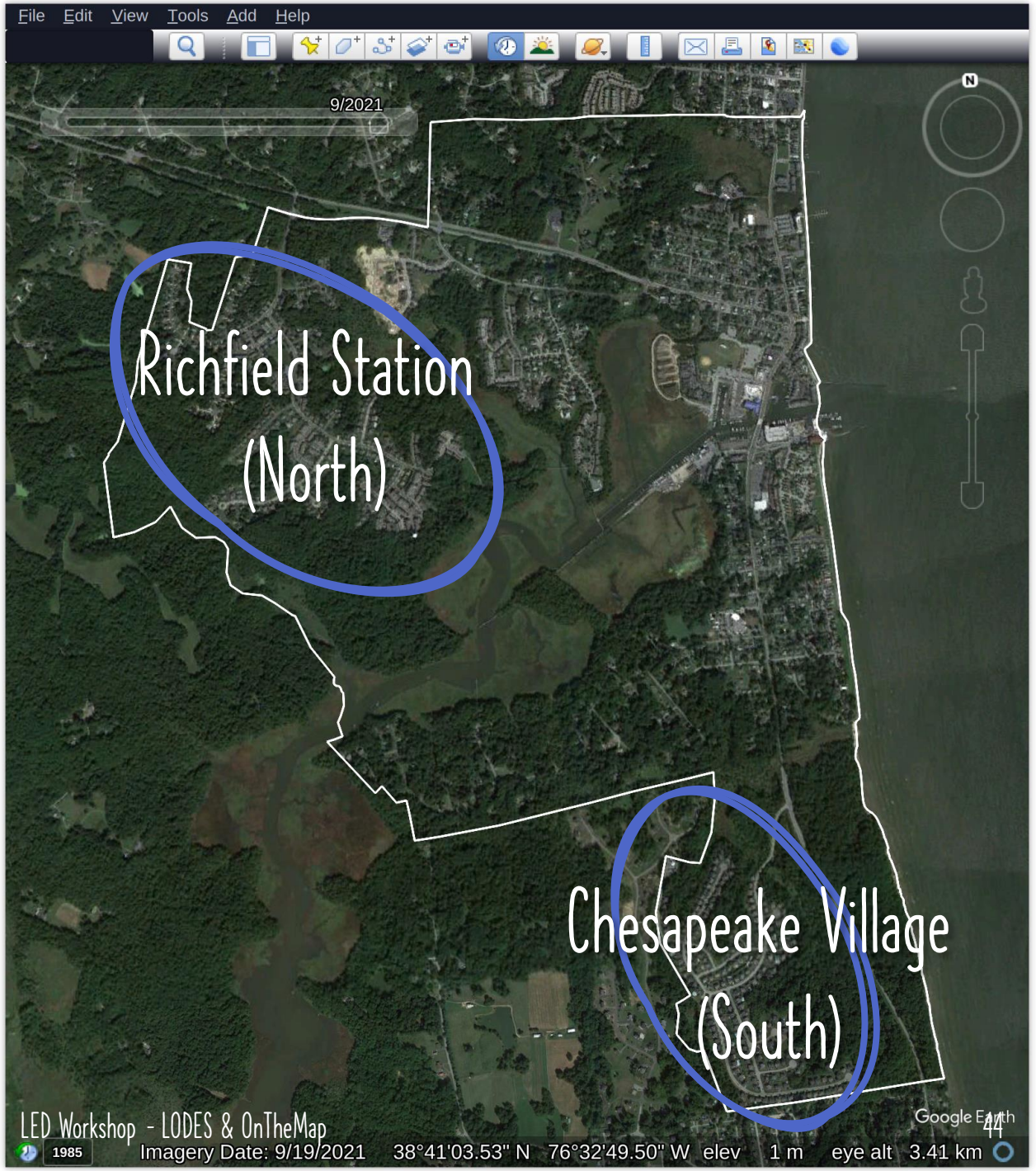
2014 - done

Chesapeake Village (South)

2007 - construction starts

2010 - halfway done

2014 - done



GENERAL RESULTS

Richfield Station (North)

2004 - construction starts

2010 - mostly done

2014 - done

Chesapeake Village (South)

2007 - construction starts

2010 - halfway done

2014 - done

Primary Jobs

2004 = 149

2010 + 1 = 323

2014 + 1 = 578

2007 = 0

2010 + 1 = 78

2014 + 1 = 106

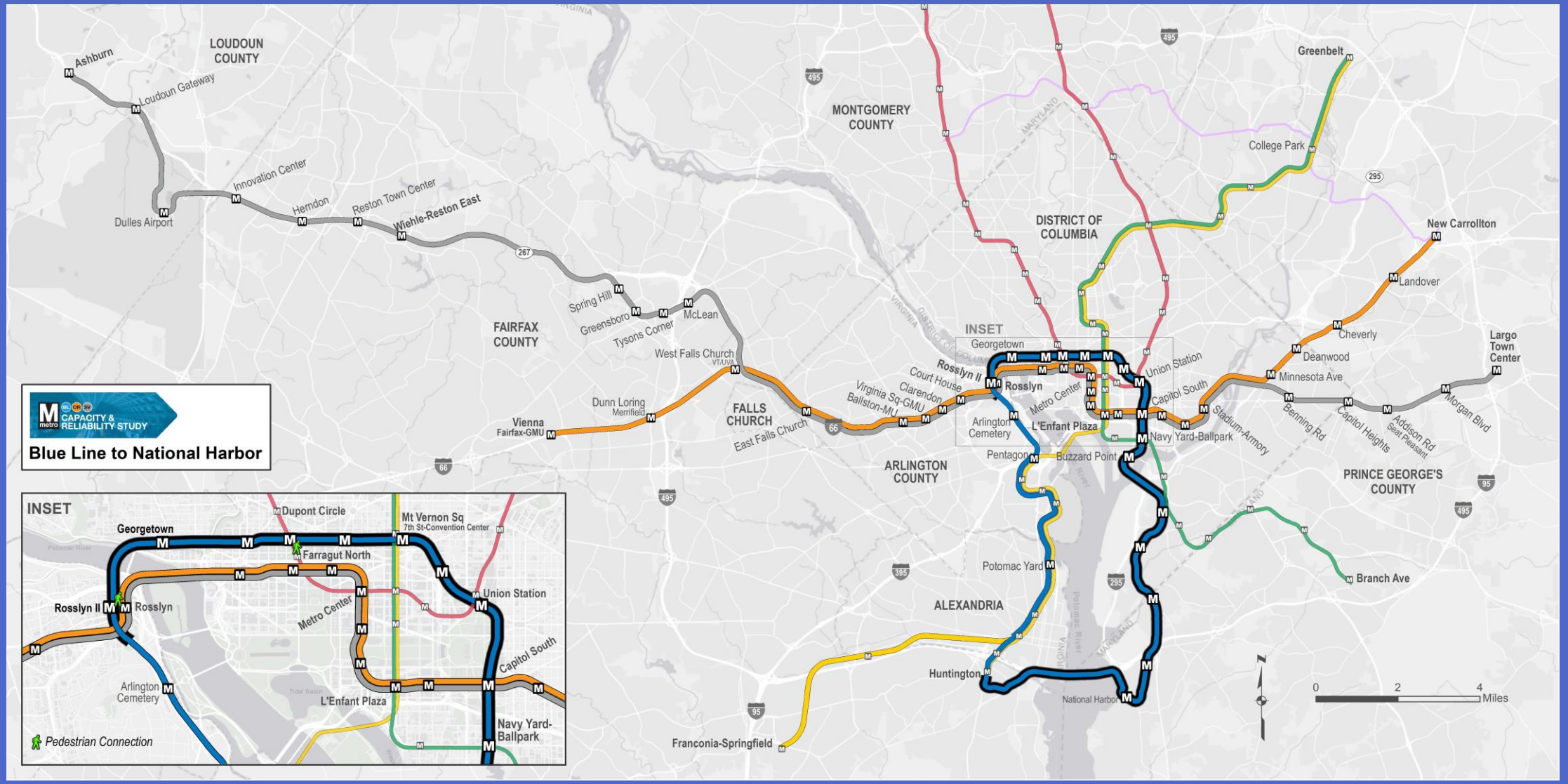
Q&A

Validate "Synthetic" Residential Data w/ Satellite Imagery

DC METRO BLUE LINE

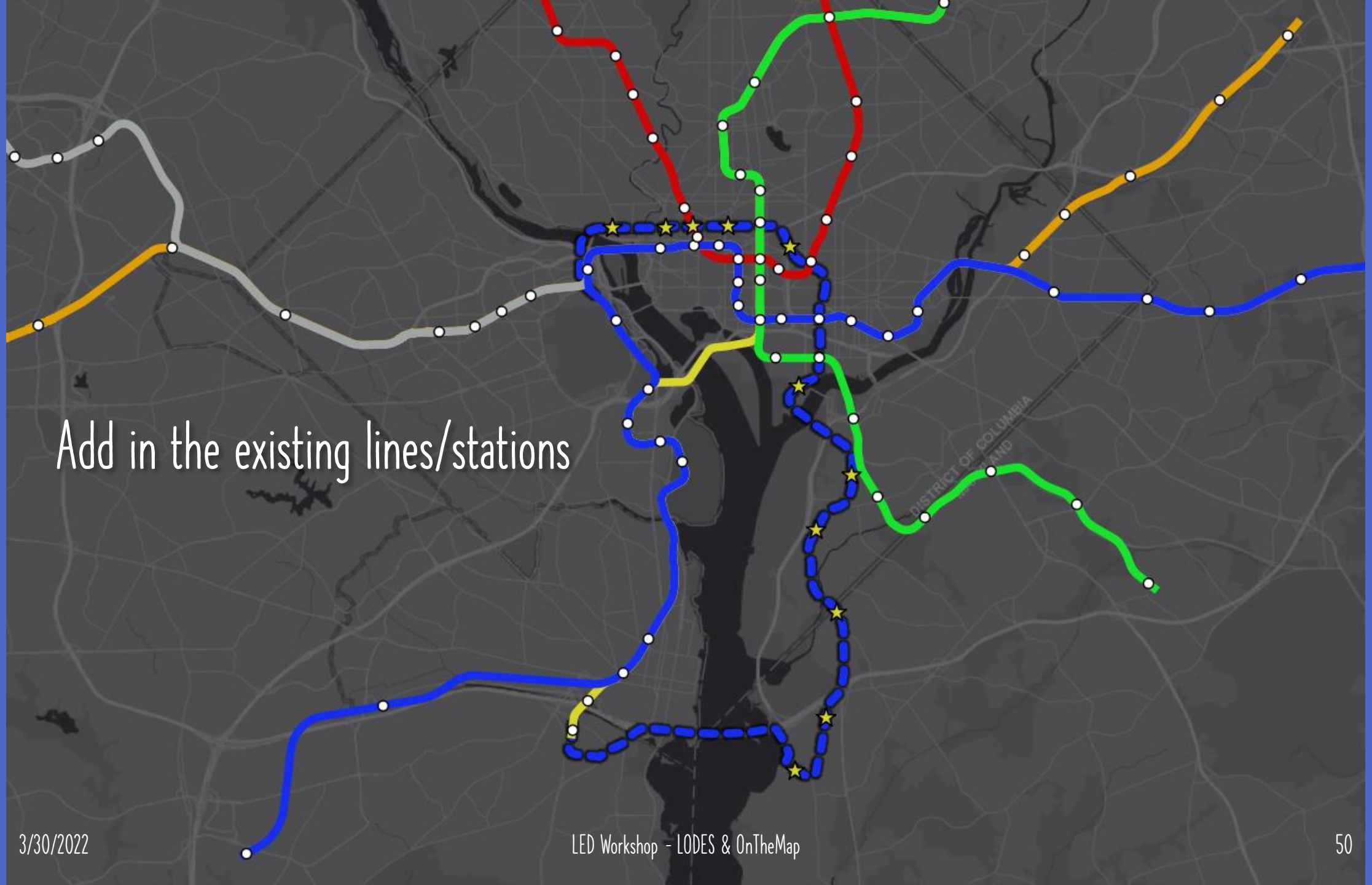
Using LODES to evaluate the WMATA Proposals

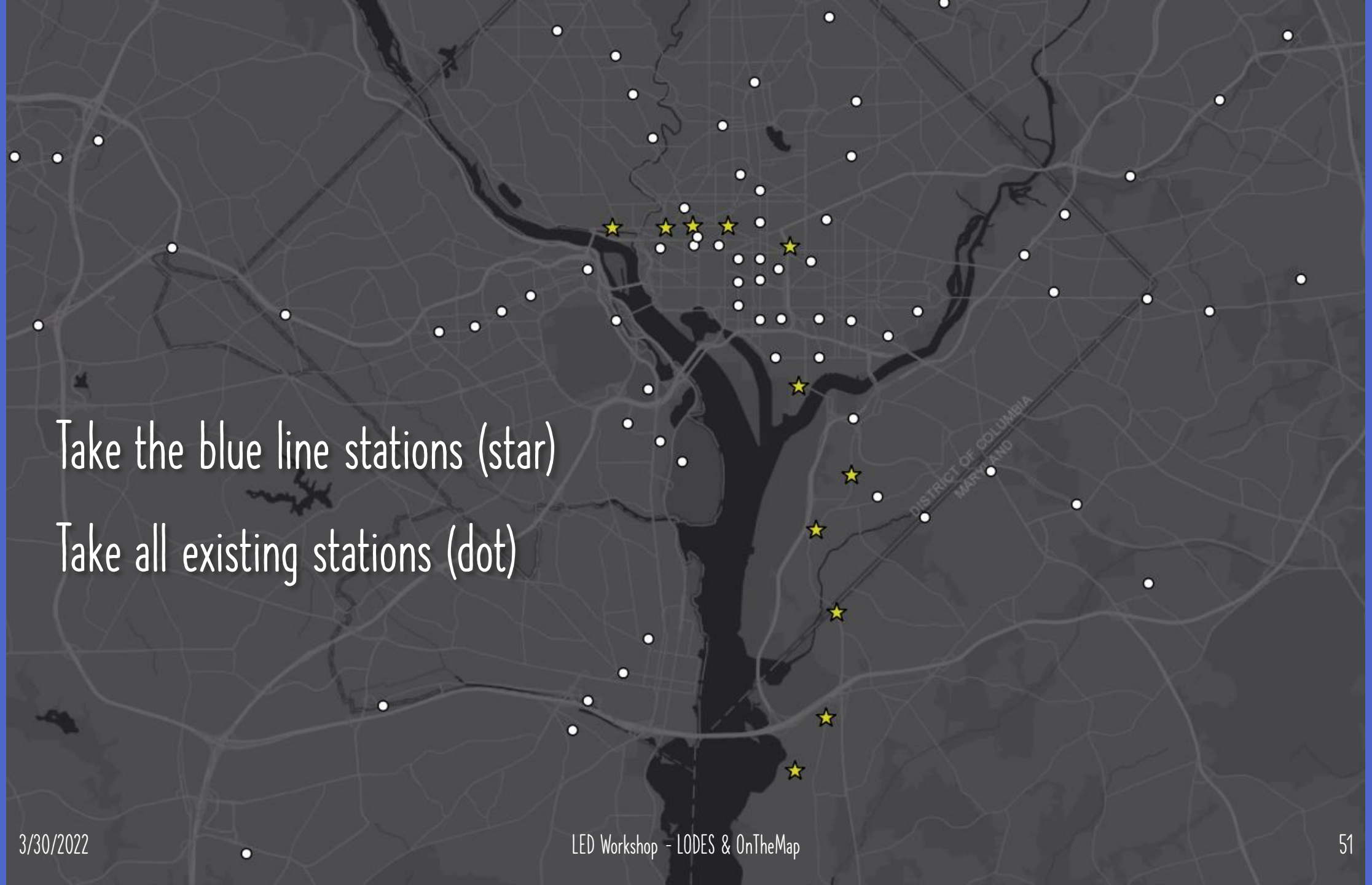
Source Data: WMATA Concepts/Proposal PDF (link)



New blue line (dashed)

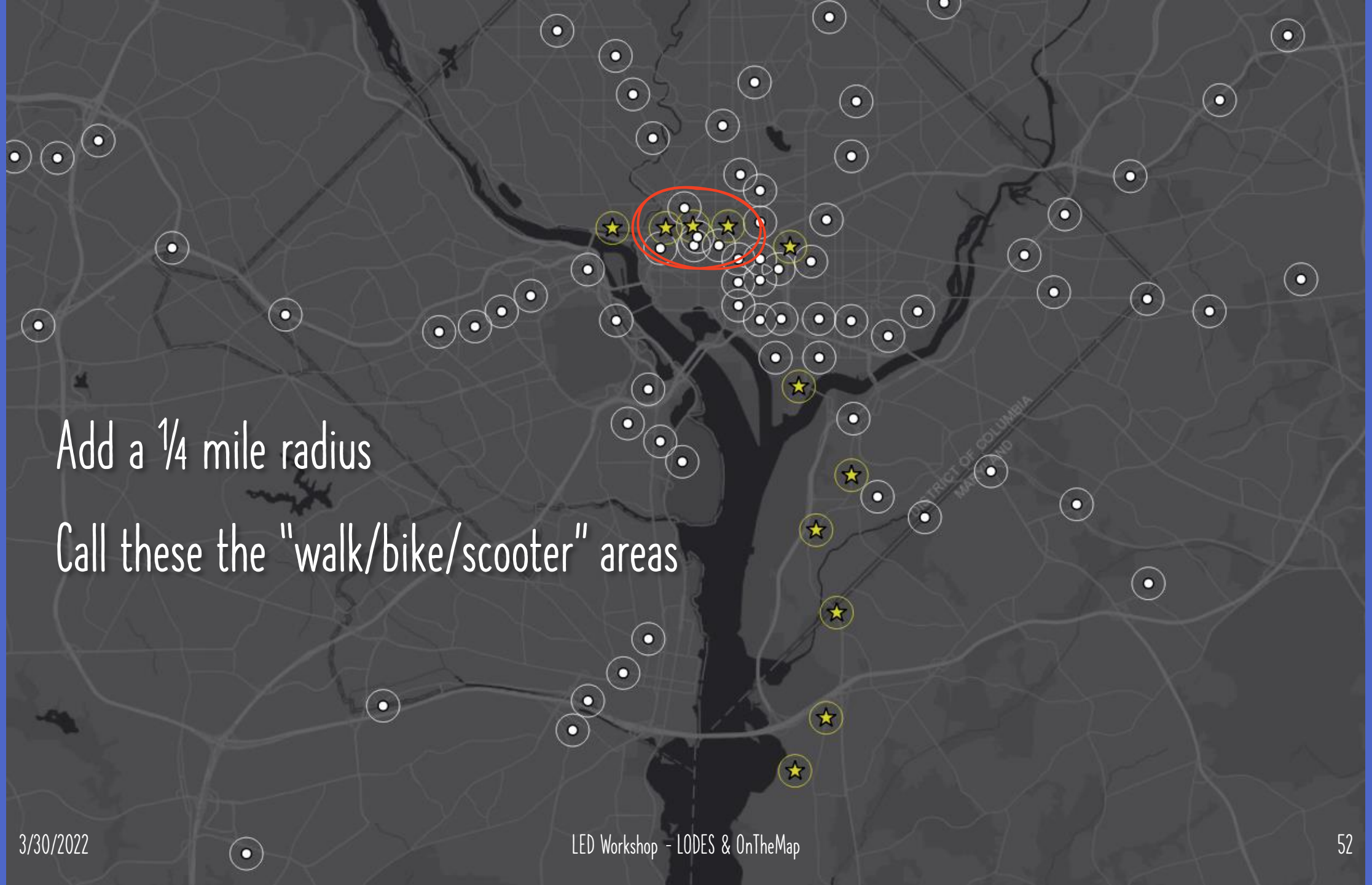
New blue stations (star)

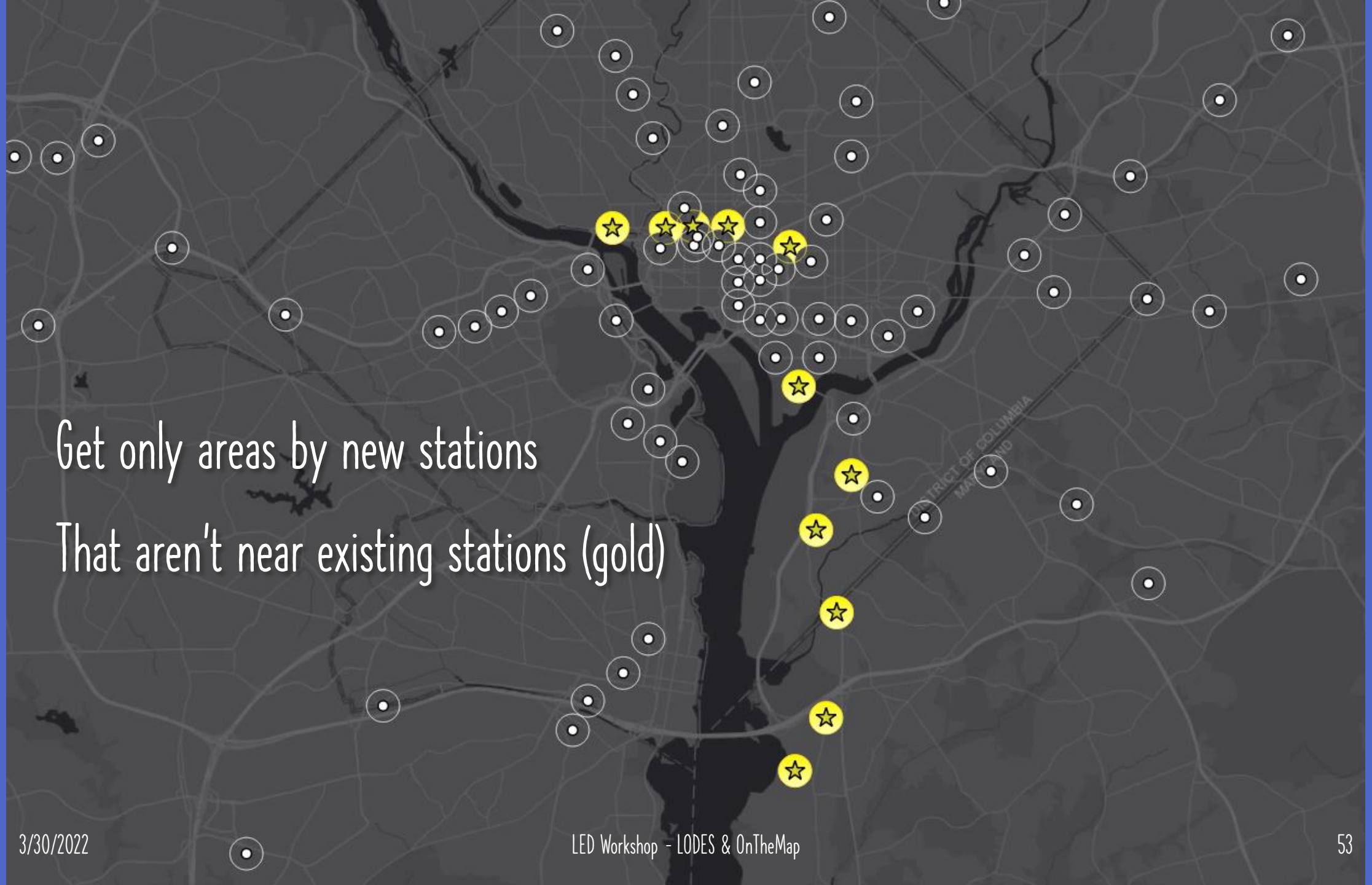

Add in the existing lines/stations
DISTRICT OF COLUMBIA



Take the blue line stations (star)

Take all existing stations (dot)


Add a ¼ mile radius
Call these the "walk/bike/scooter" areas


Get only areas by new stations
That aren't near existing stations (gold)

GENERAL RESULTS

	Primary Jobs (2019)
Work near new station but live by existing station	4574
Live near new station but work by existing station	5200
Live and work near new station	927

Q&A

Blue Line Concept or Other