

**RICHMOND ZONING REFRESH**

# **EXISTING PATTERN ANALYSIS**

**FEBRUARY 24TH, 2025**

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- PART 2: NEIGHBORHOOD SCALE ANALYSIS**
- PART 3: BLOCK SCALE ANALYSIS**
- PART 4: BUILDING SCALE ANALYSIS**

This is a planning study intended to show basic urban patterns and data trends throughout areas of the City of Richmond so as to help inform policy decision-making. It is not intended to determine legal compliance or noncompliance of an individual building or property with any portion of Chapter 30 - Zoning of the Code of Ordinances. This analysis has been performed using data from the City of Richmond, visual assessment, and other sources. Data are not guaranteed.

# WHY A PATTERN ANALYSIS?

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In alignment with the Zoning update, key objectives include:

1. Identify patterns that will give us information about metrics that need to be regulated, which will inform the zoning reform process
2. Communicate to the public why the zoning changes may be necessary to align the regulations with desirable existing built patterns
3. Identifying areas with nonconformities. These are areas with existing buildings that would not be legal to build under current zoning regulations.

**The pattern analysis does not determine if a pattern is “good” or “bad”, it only identifies what the prevalent patterns are and how they align with the current zoning code.**

The Pattern Analysis is not meant to be an audit of each parcel’s degree of zoning conformity but rather a big-picture presentation of what the most prevalent patterns are to better inform the zoning refresh.

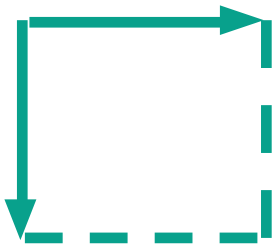
# WHAT PATTERNS ARE WE STUDYING?

- + We are looking at the most common parcel or building **FORMS** and property **USES** in different areas of the city.

# WHAT IS A NONCONFORMITY?

- + When a property does not meet one or more of the existing requirements of the Zoning Ordinance, it is known as a **“nonconformity”**

## FORM NONCONFORMITIES



When requirements related to the form of the parcel or the building are not met

## USE NONCONFORMITIES



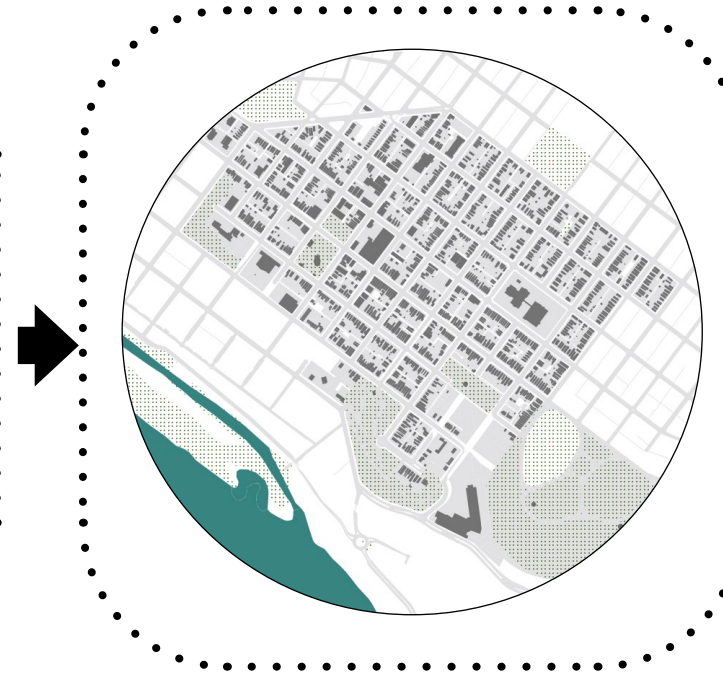
When requirements related to the way the property is used are not met

# ANALYSIS ACROSS SCALES

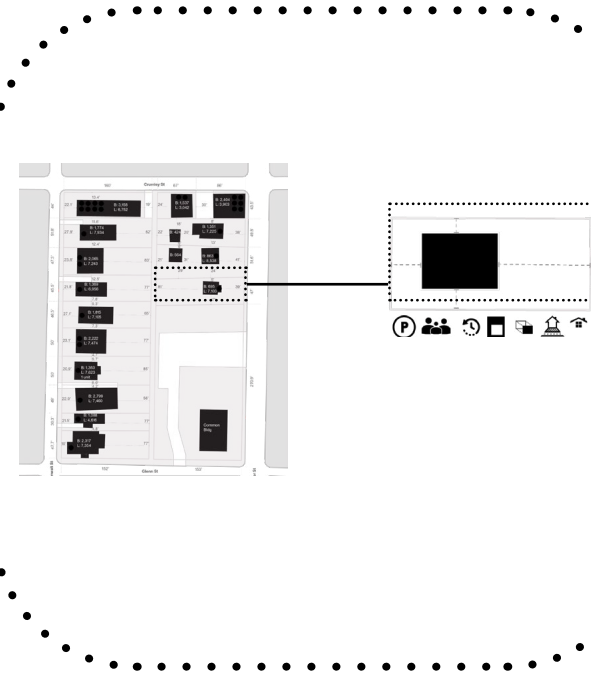
## 1. City Scale



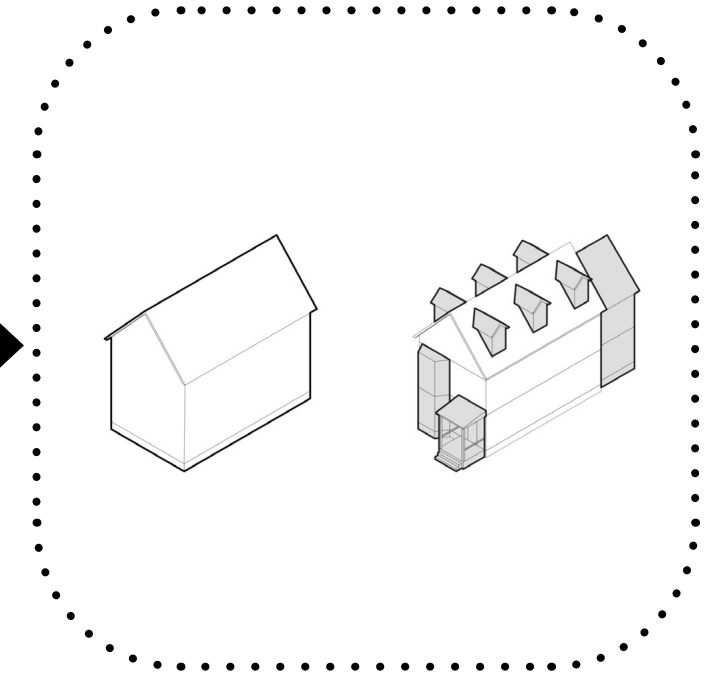
## 2. Neighborhood Scale



## 3. Block Scale



## 4. Building Scale



Mapping contextual patterns and misalignments between existing patterns and zoning.

Identify areas with nonconformities and areas with unbuilt zoning capacity.

What are the most prevailing types non-conformities visible at the city scale?

**RESULT:** City-wide misalignments and selection of 10 representative areas to analyze at the neighborhood scale

Mapping misalignments between existing patterns and zoning.

What are the most prevailing types of form non-conformities visible at the neighborhood scale?

**RESULT:** Sub-patterns in each representative study area. Select 12 representative blocks to test qualitative and metric-specific patterns

Illustrating misalignments between existing patterns and zoning.

Illustrating contextual patterns.

What are the most strategic things we need to regulate at the block scale?

**RESULT:** Sub-patterns in each block analysed

Illustrating misalignments between existing patterns and zoning.

Illustrating relationship between buildings and the public realm.

What are the most strategic things we need to regulate at the building scale?

**RESULT:** Building taxonomy to test potential code changes.

# KEY DATASETS NOTES

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## Parcel Dataset

The parcel dataset used was provided by the city of Richmond and is based on the ownership and tax records from the Assessor of Real Estate. Sometimes, this data does not align with what is considered a “lot” for zoning purposes. For condominiums, the parcel is sometimes a subdivision of a larger zoning lot.

- + Condominium Adjustment: For multi-family condominiums, one single lot will have multiple parcel information stacked on each other, one per property owner. The dataset was adjusted, and duplicates were removed from the different parcel analyses.
- + Addresses Count: If multiple addresses were found on the same geographic parcel, it was accounted as multi-family housing but condensed into a single parcel for zoning analysis purposes.
- + Parcel Characteristics: The characteristics of each parcel were determined by the assessor’s dataset. Some discrepancies in the reported current land use, residential type, or age of the property of some parcels are possible.

## Structures Dataset

All building-based calculations at the city and neighborhood scales were completed using the LiDAR-generated building footprint dataset provided by the City of Richmond. Although useful for large-scale analysis, this dataset can include roof overhangs, hardscapes, and auxiliary structures, and tree canopy can also interfere with it.

At the block scale, the Master Building Footprint Layer was selectively modified, as described within the block-scale analysis intensity method, to arrive at more precise coverage calculations and representation. These labor-intensive manual modifications and ground-truthing of the dataset were not possible at the citywide and neighborhood levels.

# METHODOLOGY NOTES

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## Comparing to what zoning metrics?

Some of Richmond's residential zoning districts include different required minimums (lot size, lot width, and setbacks) depending on the built form (attached or detached) and residential type (single, two, or multi-family) in each parcel. The existing parcel information does not include attached/detached conditions, requiring a parcel-by-parcel survey to accurately determine the required zoning minimums.

- + For the city and neighborhood scale, it was determined for both analyses to use the detached required minimums for the different residential types.
- + For the block scale, each parcel was visually surveyed to determine if it was attached or detached, and its residential typology was confirmed. This allowed a more accurate nonconformity analysis.

## Land Use Nonconformity

The land use nonconformity was determined by comparing the land use reported by the assessors's database and the allowed uses in each zoning district.

- + Some discrepancies between the dataset and the actual conditions might produce false-nonconforming results for some parcels in the city and neighborhood scale analyses.
- + For the block scale analysis, each parcel was visually assessed to confirm the existing land use.

PART 1

# CITY SCALE ANALYSIS



# ANALYSIS ACROSS SCALES

## City Scale



**Mapping contextual patterns and misalignments between existing patterns and zoning.**

Identify areas with nonconformities and areas with unbuilt zoning capacity.

What are the most prevailing types non-conformities visible at the city scale?

**RESULT:** City-wide misalignments and selection of 10 representative areas to analyze at the neighborhood scale

## Neighborhood Scale



**Mapping misalignments between existing patterns and zoning.**

What are the most prevailing types of form non-conformities visible at the neighborhood scale?

**RESULT:** Sub-patterns in each representative study area. Select 12 representative blocks to test qualitative and metric-specific patterns

## Block Scale



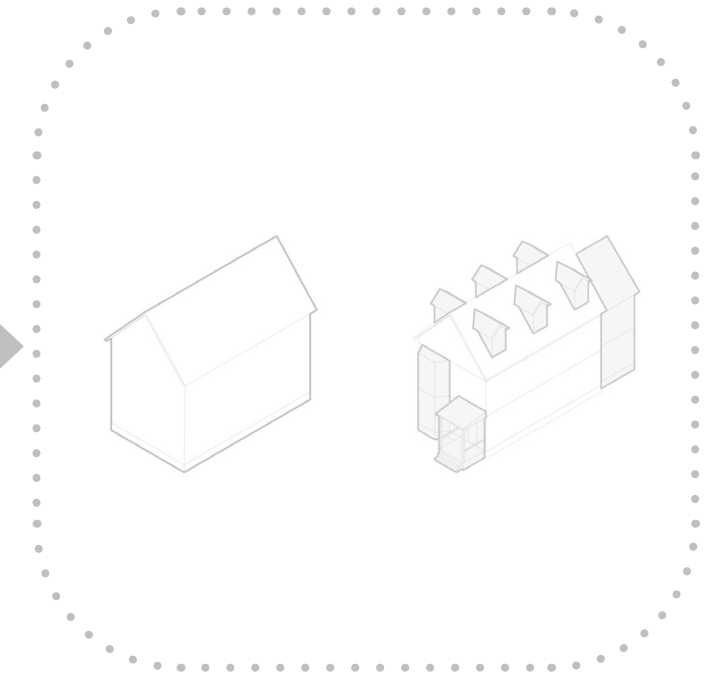
**Illustrating misalignments between existing patterns and zoning.**

**Illustrating contextual patterns.**

What are the most strategic things we need to regulate at the block scale?

**RESULT:** Sub-patterns in each block analysed

## Building Scale



**Illustrating misalignments between existing patterns and zoning.**

**Illustrating relationship between buildings and the public realm.**

What are the most strategic things we need to regulate at the building scale?

**RESULT:** Building taxonomy to test potential code changes.

# CITY SCALE ANALYSIS

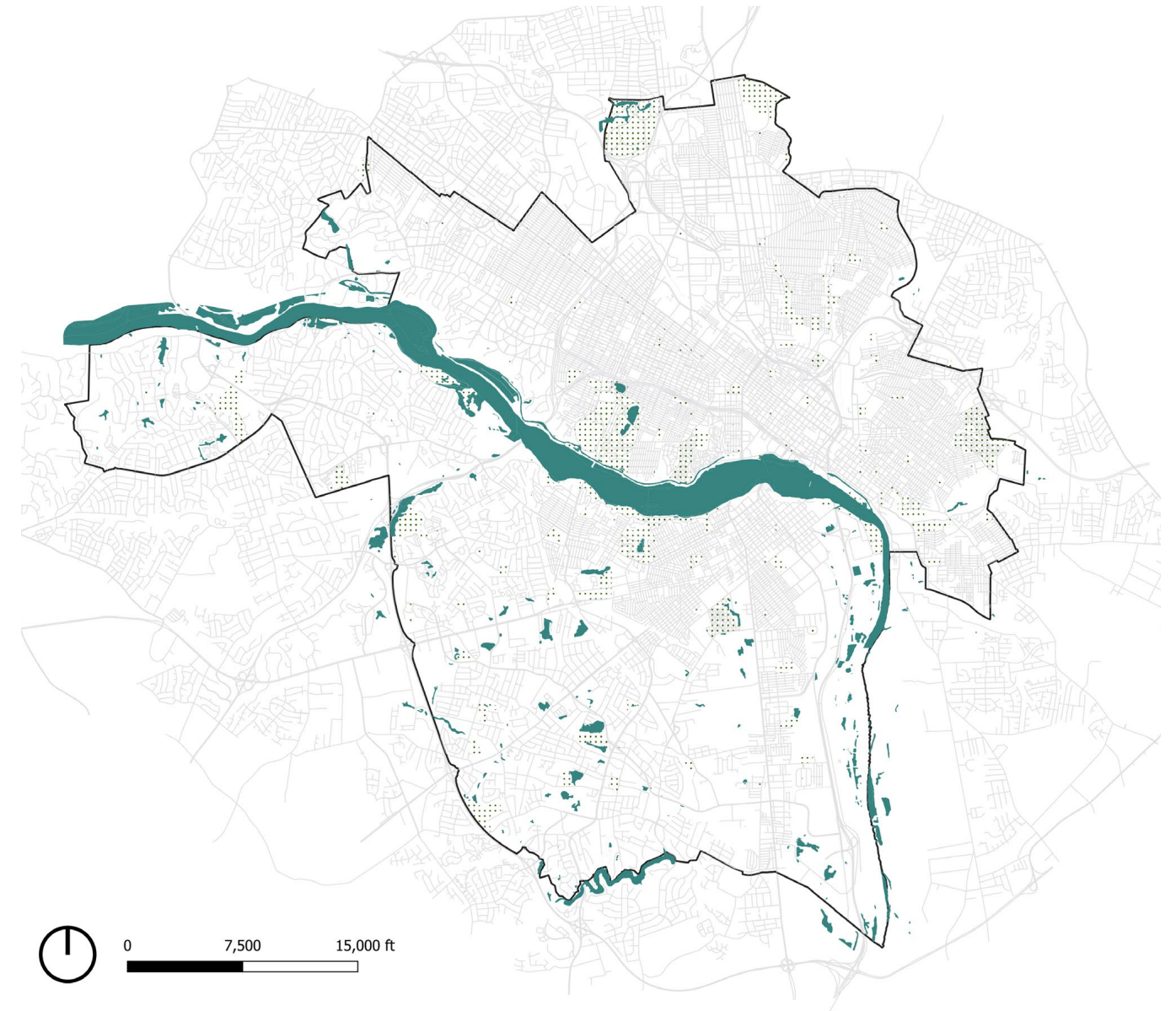
## Mapping contextual patterns

- + Historic patterns
- + Urban fabric patterns
- + Existing Land Use and Zoning

## Mapping nonconformities between existing patterns and zoning

- + Parcel size
- + Building height
- + Unbuilt building height
- + Special Use Permits

Where does the current zoning not reflect existing traditional patterns of parcel size and use- what planners like to call their “conformity”?  
Where can we zoom in to unpack these disconnects?

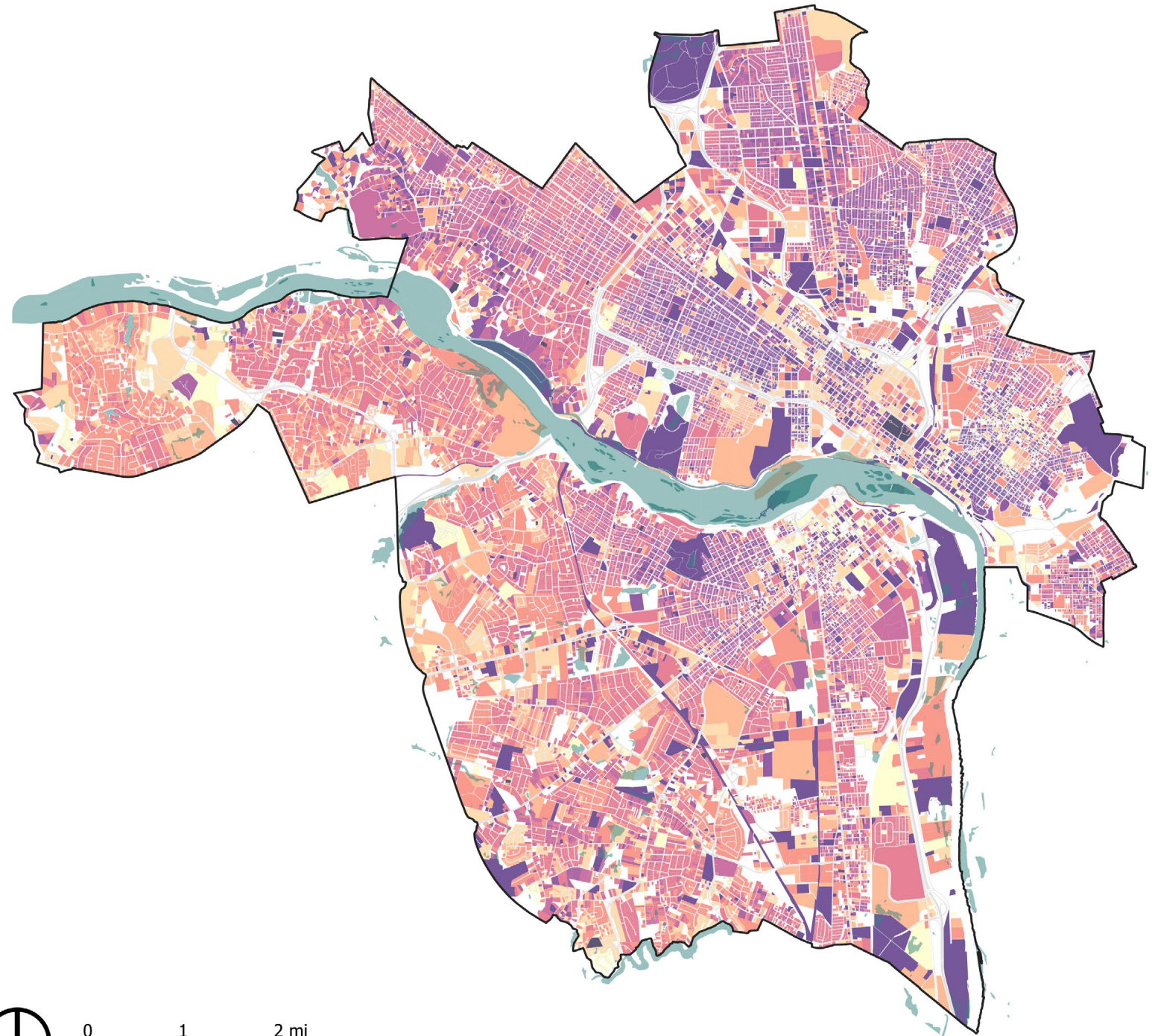
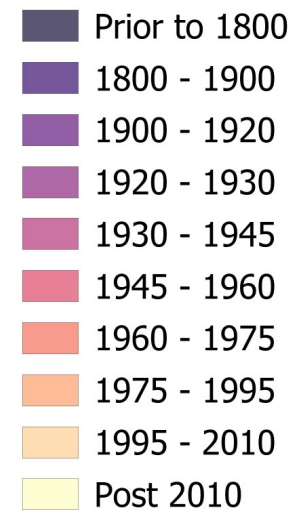


## Contextual Patterns

# HISTORIC PATTERNS

- Larger concentration of newer structures in the outer neighborhoods and south of the river.

ASR Parcels by Year Built

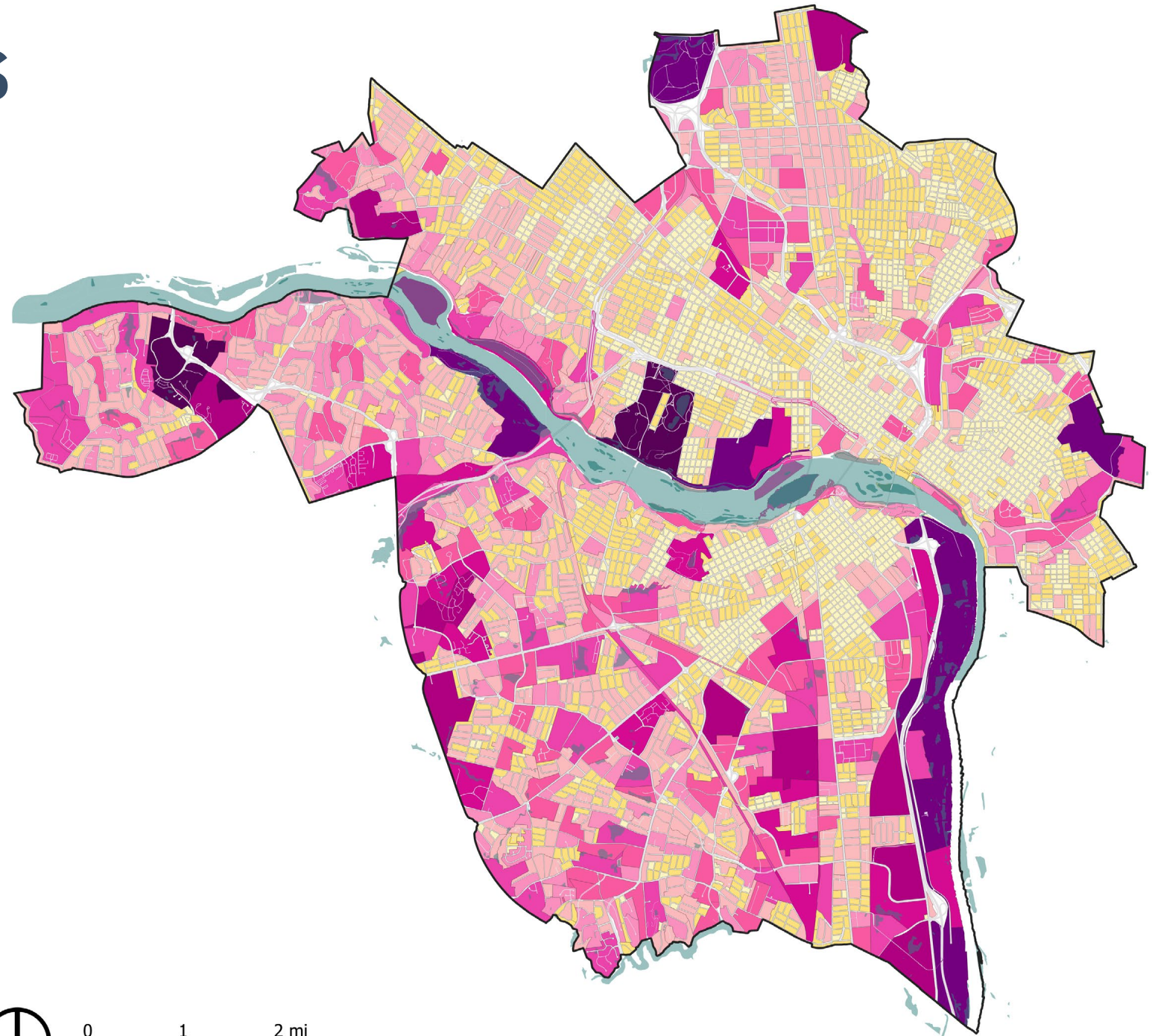
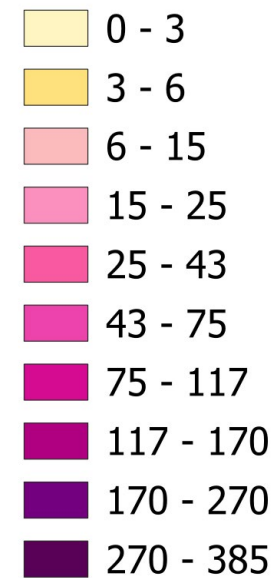


## Contextual Patterns

# URBAN FABRIC - BLOCKS

- Larger city blocks are located in South Richmond and along the river.
- Larger blocks are consistent with a more suburban urban pattern.

### City Block Size (Acres)

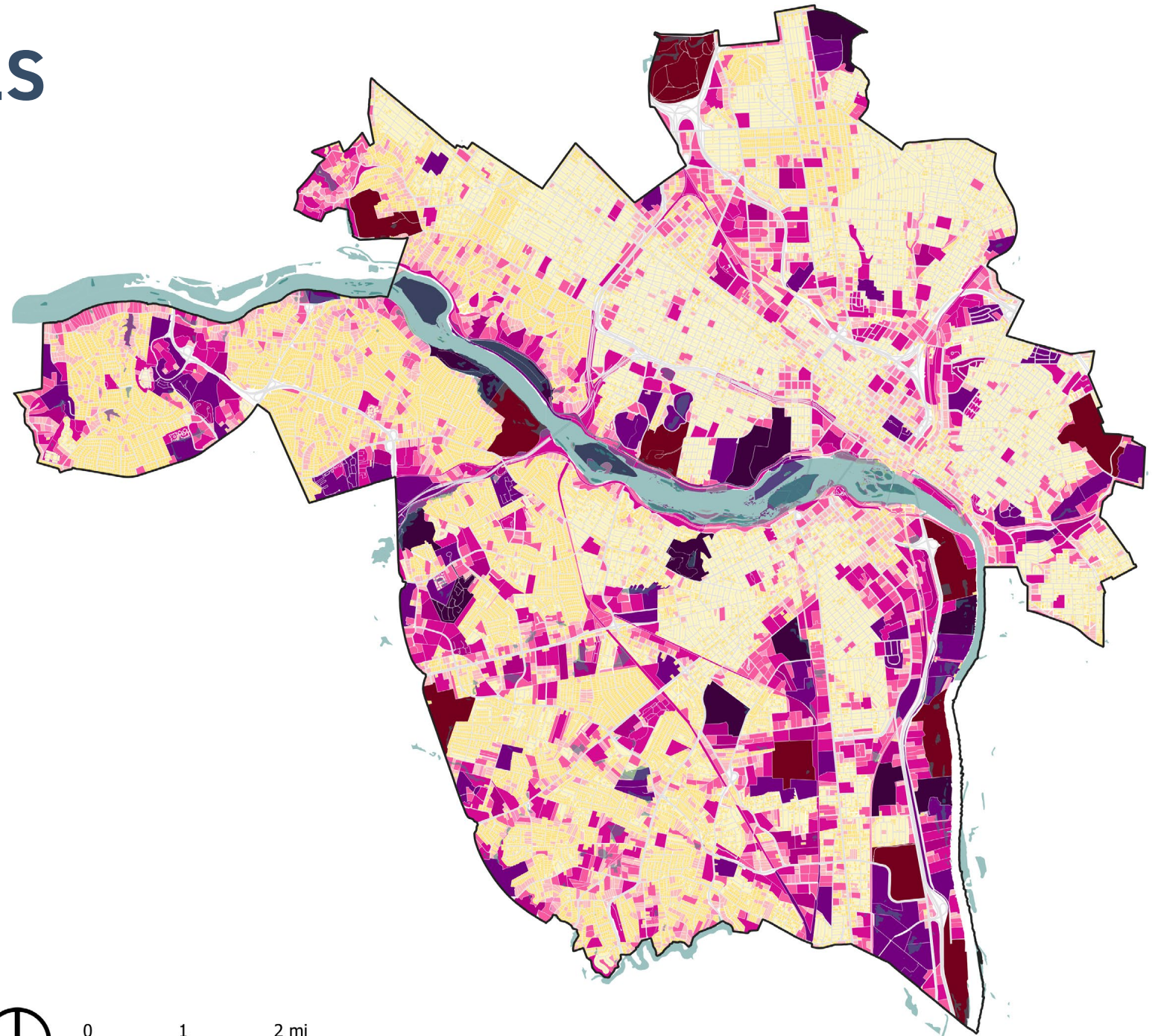
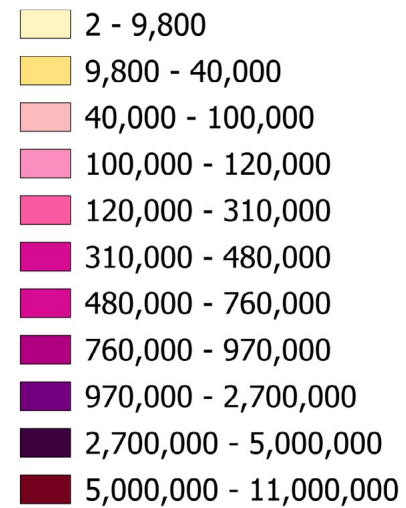


## Contextual Patterns

# URBAN FABRIC - PARCELS

- Larger parcels are found along the river and different industrial areas and highway corridors.
- Outer residential neighborhoods have larger parcels than inner districts.

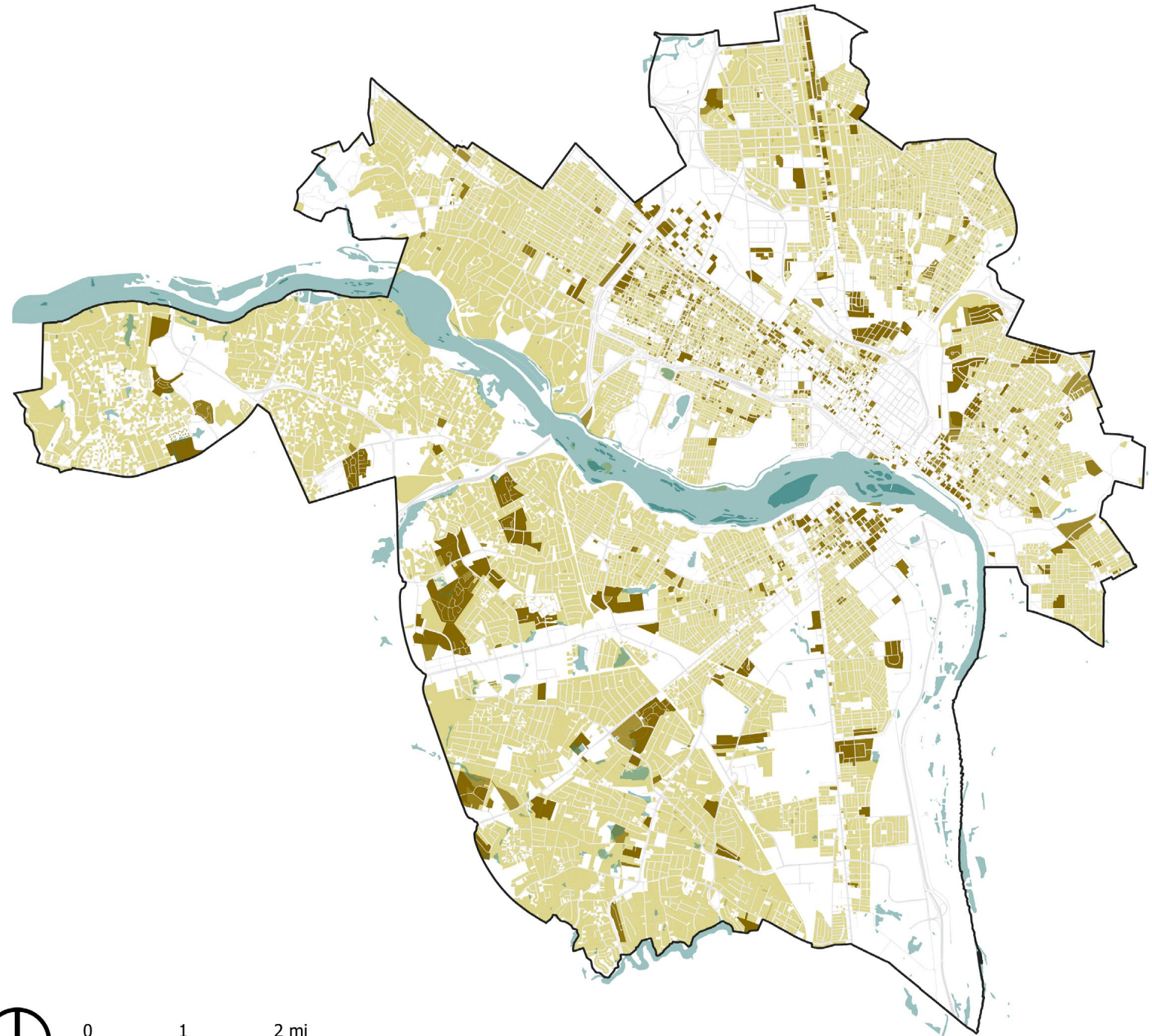
Parcel Size (Square Feet)



# RESIDENTIAL TYPOLOGY

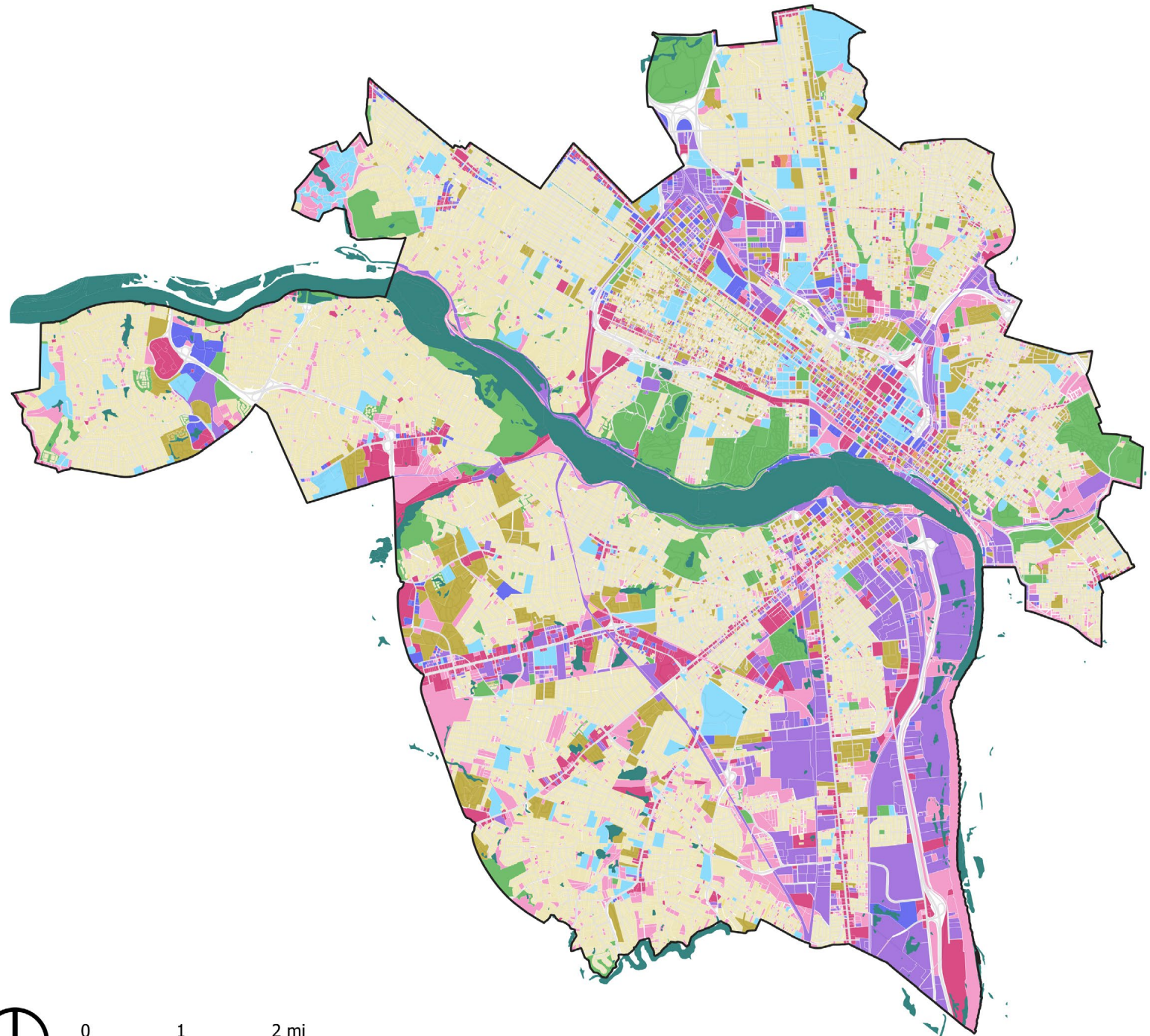
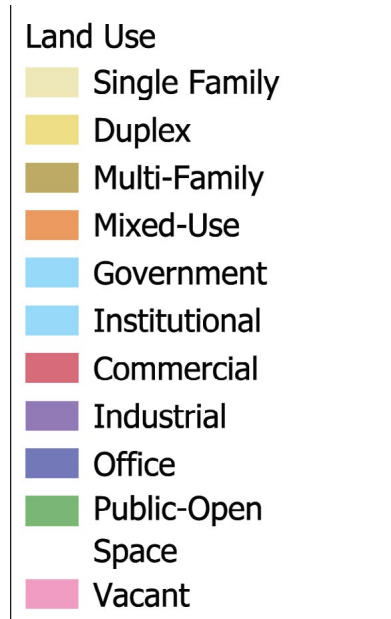
## Residential Parcel Typology

- 100+ Units
- 50+ Units
- 25-99 Units
- 10-50 Units
- 5-49 Units
- 1-10 Units
- Multi-Family
- Mixed Use
- Mobile Home Park
- Senior Living
- Four Family
- Three Family
- Two Family
- Two Story
- One Story
- Single Family



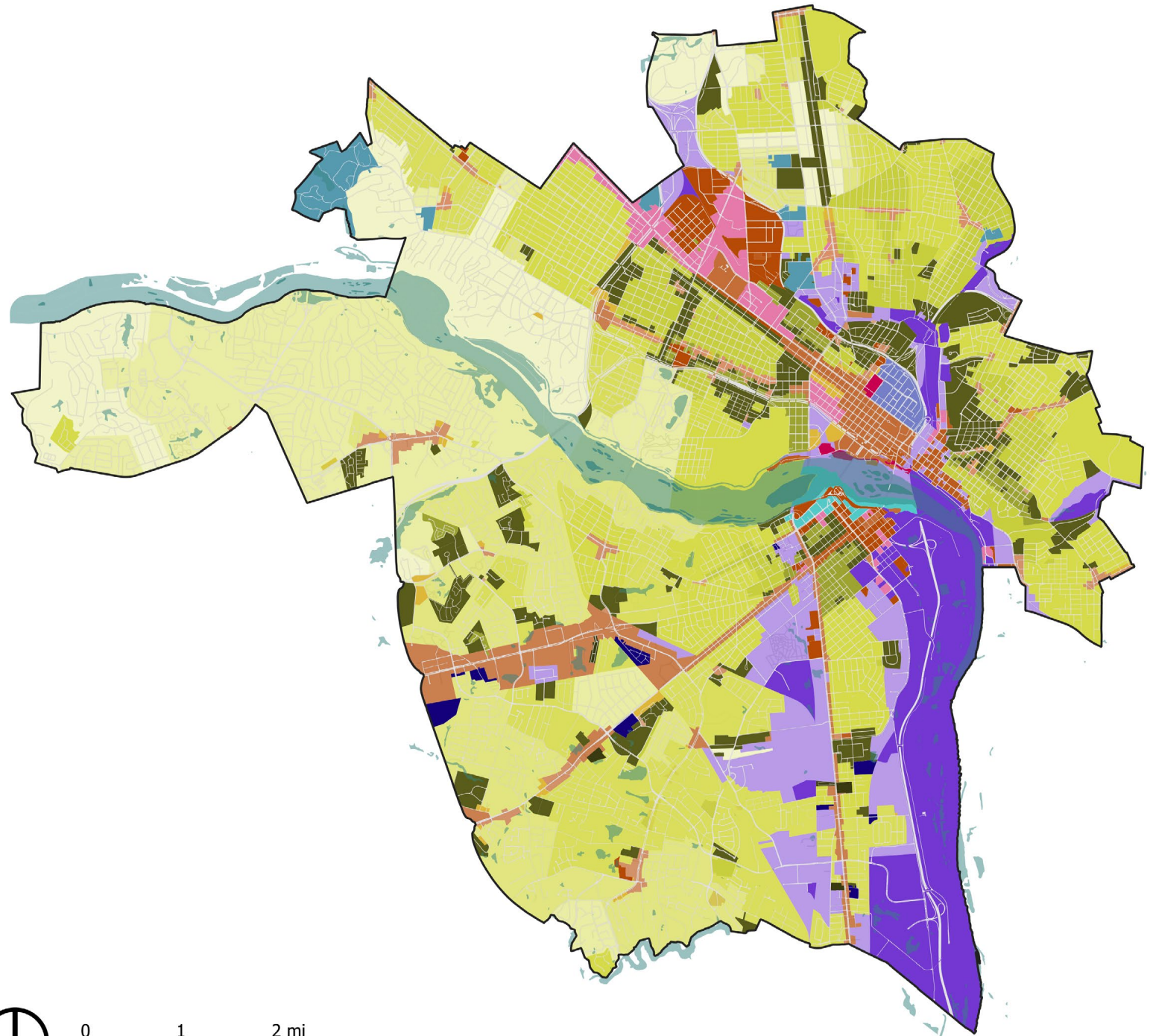
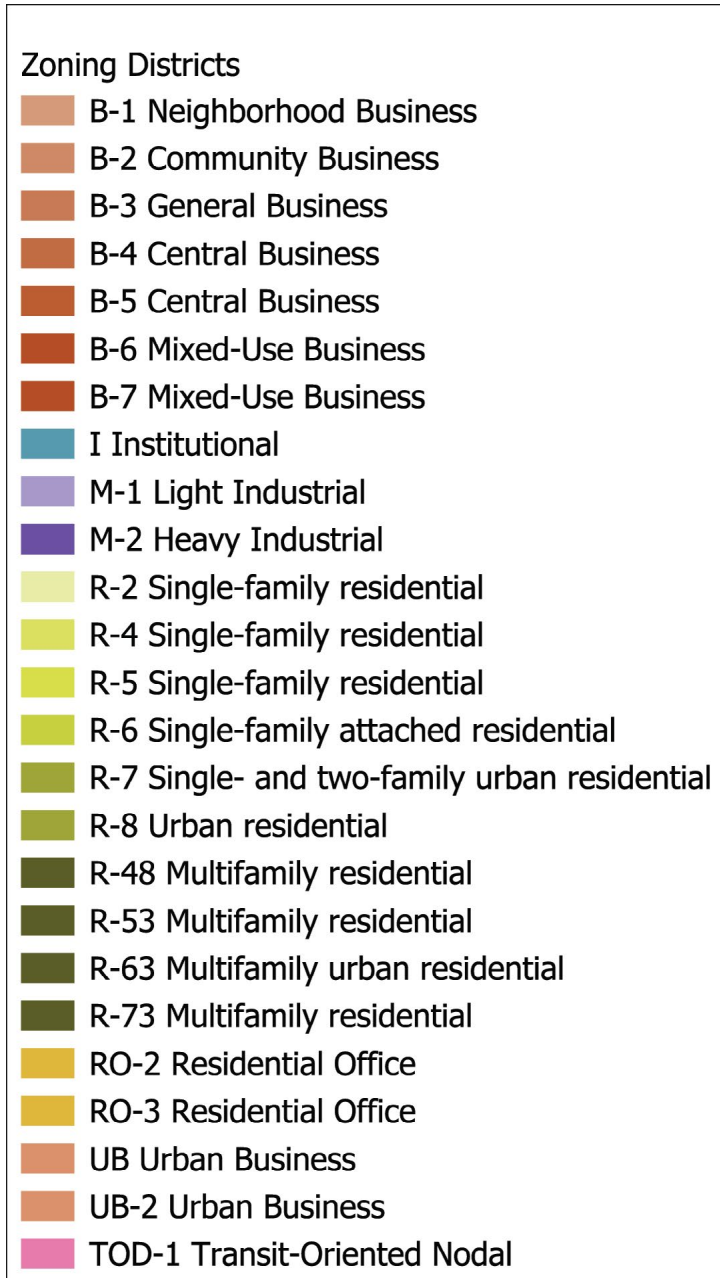
## Contextual Patterns

# EXISTING LAND USE



## Contextual Patterns

# EXISTING ZONING





# HOW TO TEST FOR NONCONFORMITIES?

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## Comparing existing conditions with dimensions required by zoning:

### PARCEL SIZE MIN

- + Parcel minimums for Single-Family and Two-Family
- + Parcel minimum range for zoning with multiple metrics

*To select which minimum to apply to each property, all parcels were determined as "detached."*

### BUILDING HEIGHT MAX

- + Comparison of current building height to the allowed height by zoning
- + Height was calculated by allowed stories

### UNBUILT BUILDING HEIGHT

- + Comparison of current building heights that are below the potential height allowed by zoning
- + Height was calculated by allowed stories

**Where does the current zoning not reflect existing patterns of lot size, height, and use?**

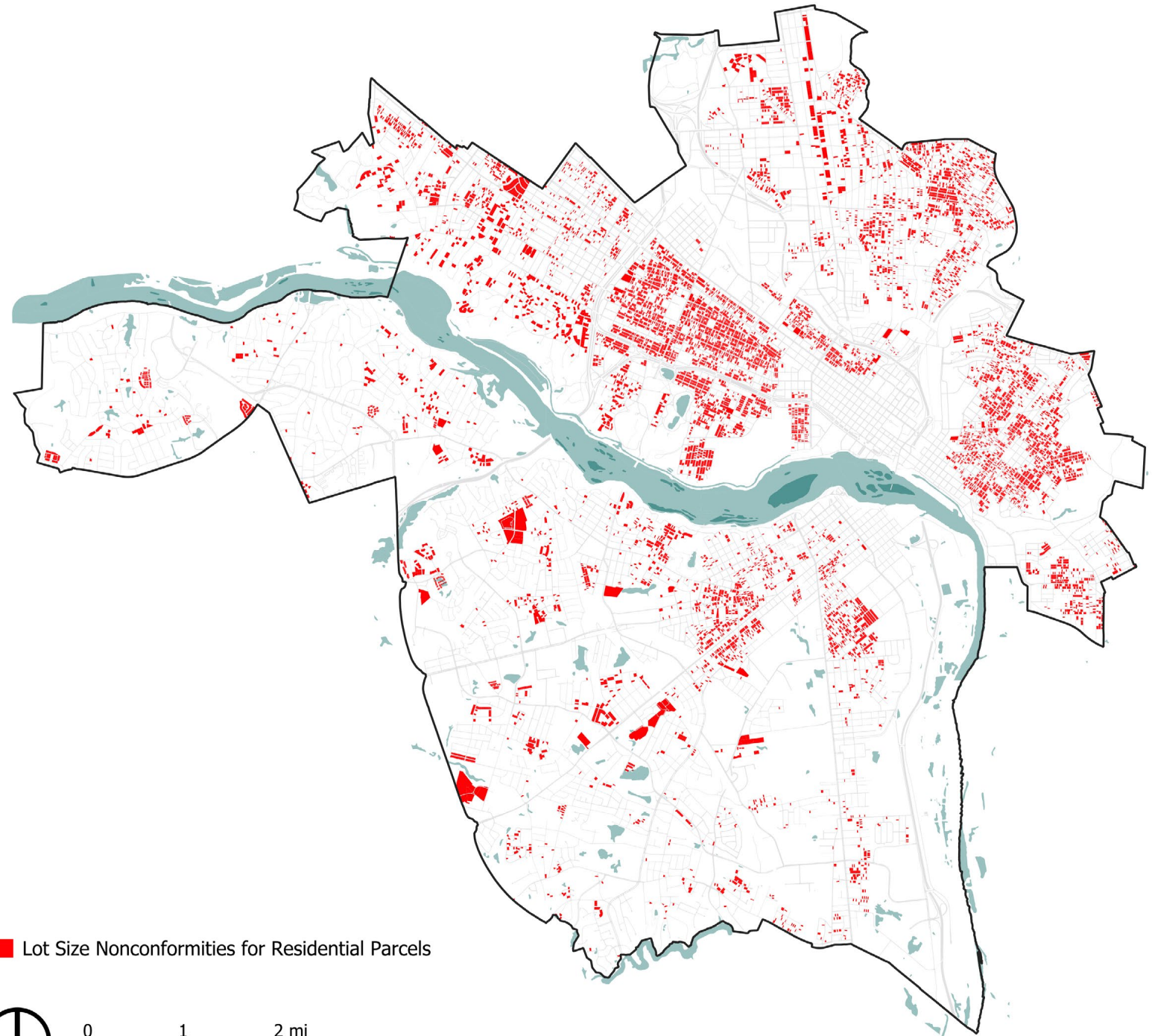
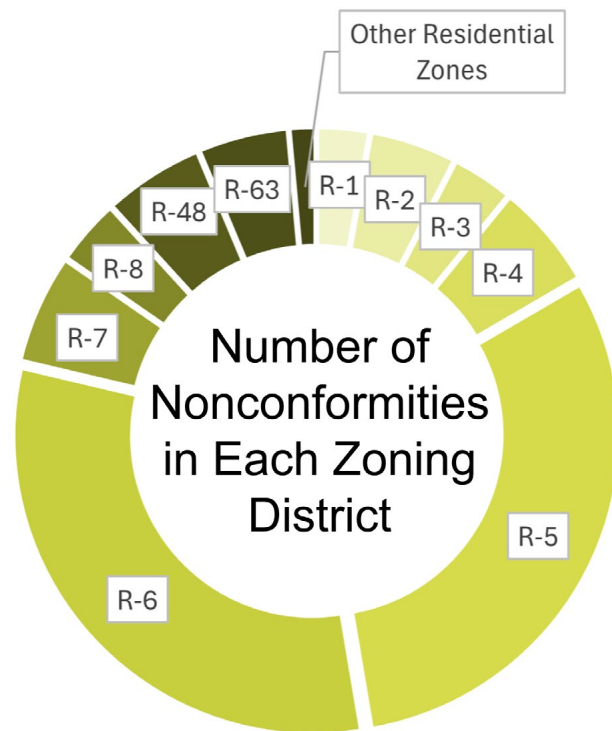
**Where has the city seen the most special permit requests to bridge those misalignments?**

**Where can we zoom in to unpack these disconnects?**

## Mapping nonconformities

# PARCEL SIZE

- + **Up to 27% of parcels** citywide are smaller than the minimum required by current zoning
- + The two zones with the **most nonconformities** was the **R-5 Single-Family Residential District** and **R-6 Single-Family Attached Residential District**, with **31%** of parcels in each district being nonconforming

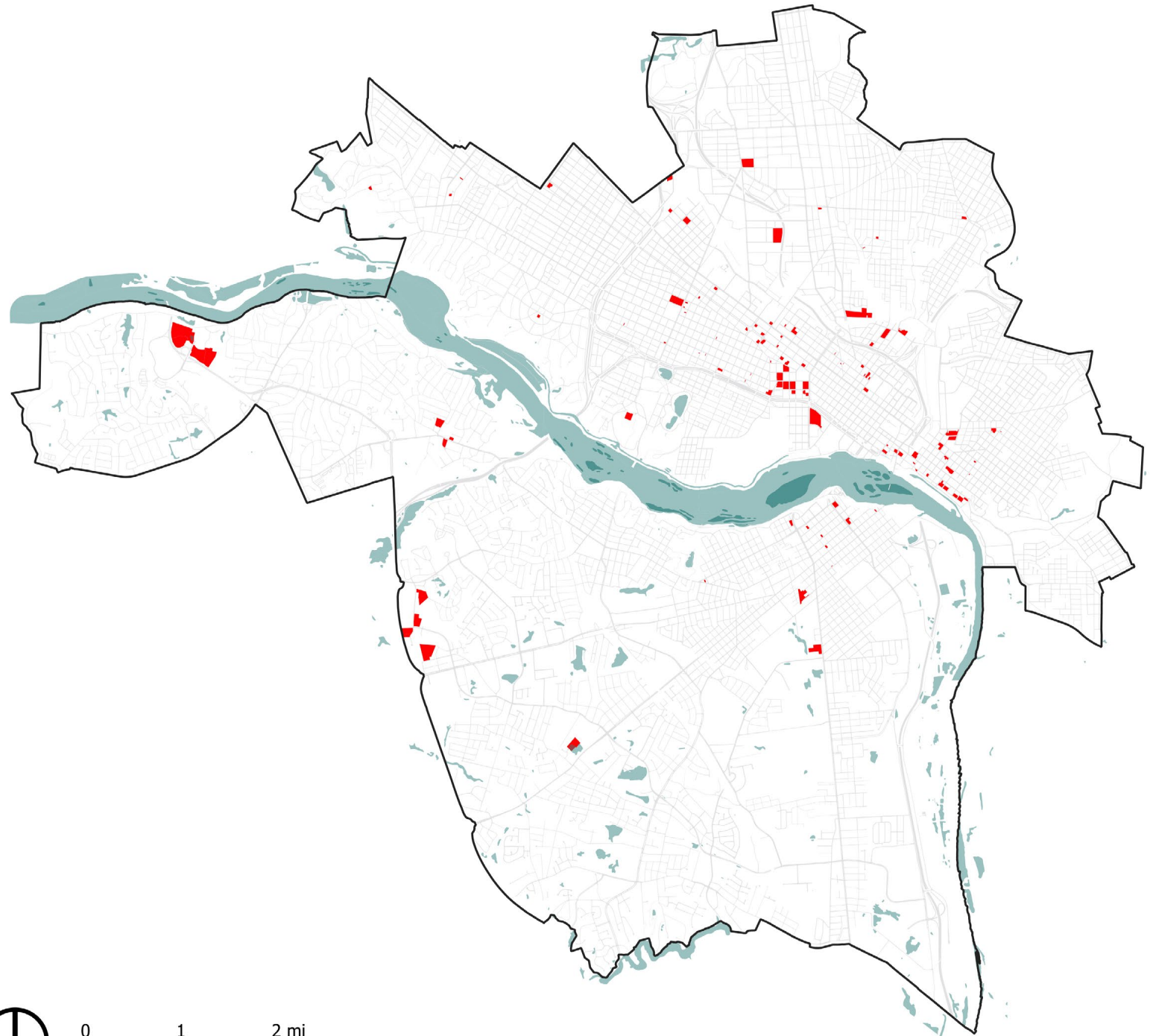


\* For this city-wide scale, all parcels were determined as "detached."

## Mapping nonconformities

# BUILDING HEIGHT

- + Only around 1% of parcels citywide are nonconforming with zoned building height
- + Most buildings that exceed allowed height are around the downtown area.



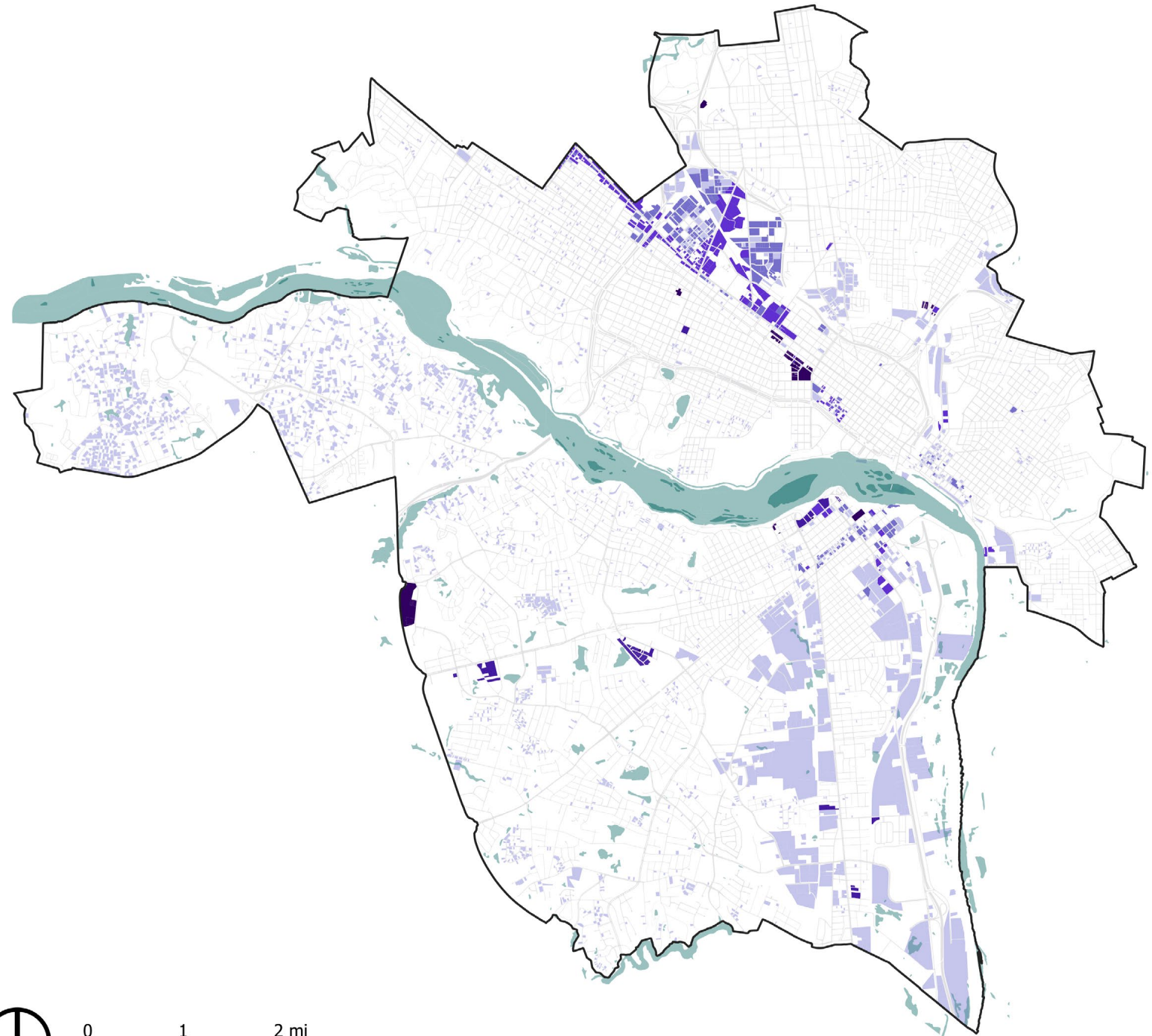
 Building Height Nonconformities



## Mapping nonconformities

# UNBUILT HEIGHT

- + There are pockets of unbuilt height concentrated at Mixed-use and TOD districts, and at industrial zones



Three or more stories of unbuilt height

- 12 to 14 stories
- 9 to 12 stories
- 6 to 9 stories
- 4 to 6 stories
- 3 to 4 stories

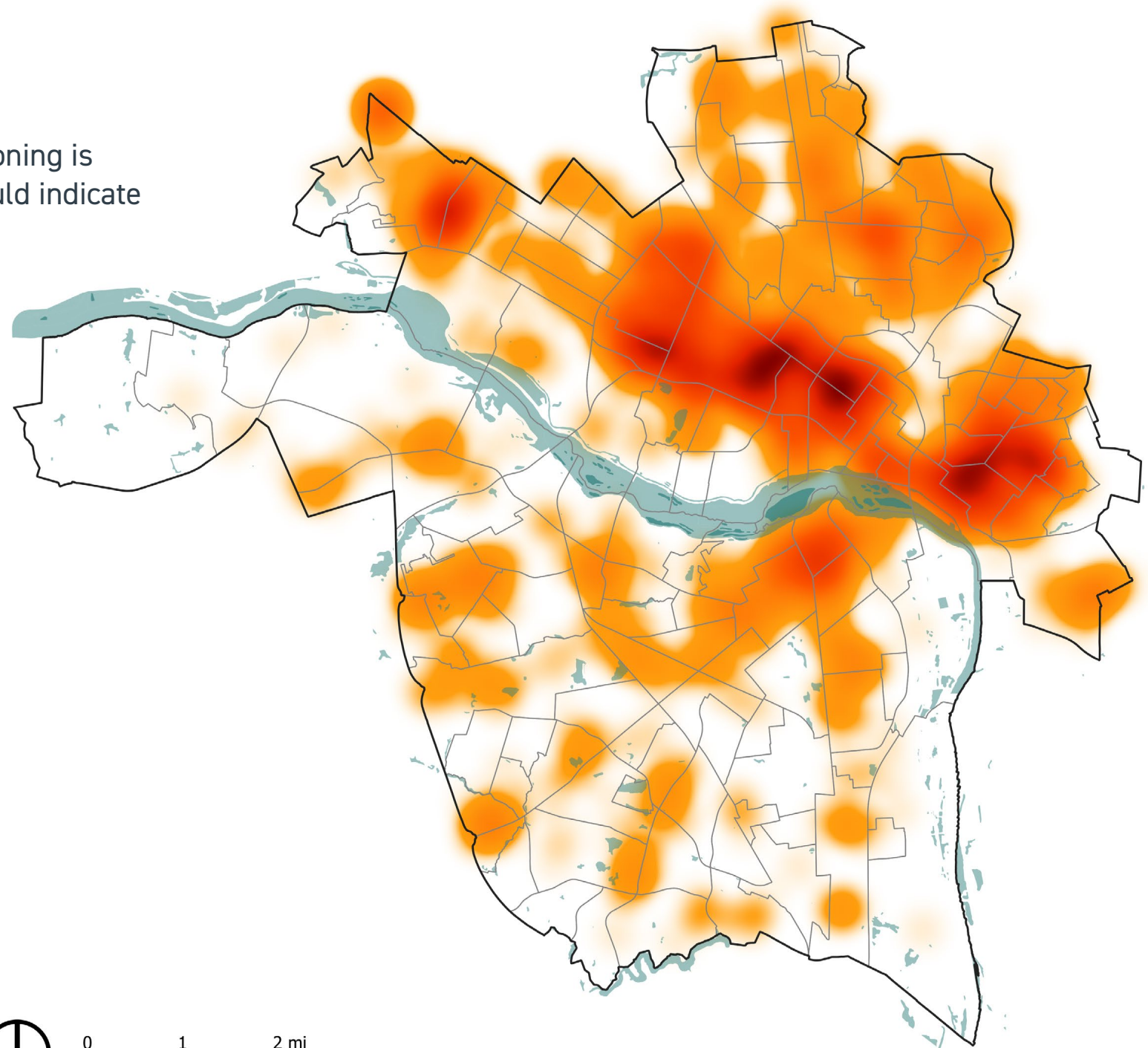


## Mapping nonconformities

# SPECIAL USE PERMITS

+ A higher volume of SUPs indicates more cases where the zoning is misaligned with the development pattern in an area and could indicate a higher density of zoning nonconformities.

Neighborhood	SUP Count
The Fan	151
The Museum District	66
Church Hill	60
Church Hill North	52
Three Chopt	47
Jackson Ward	42
Monroe Ward	42
Carytown	37
Shockoe Bottom	33
Carver	32
Westhampton	31
Scott's Addition	29
Swansboro	29
Manchester	28
Northern Barton Heights	27
Ginter Park	26
Union Hill	21
VCU	21
Oregon Hill	18



Concentration of SUPs



## Mapping nonconformities

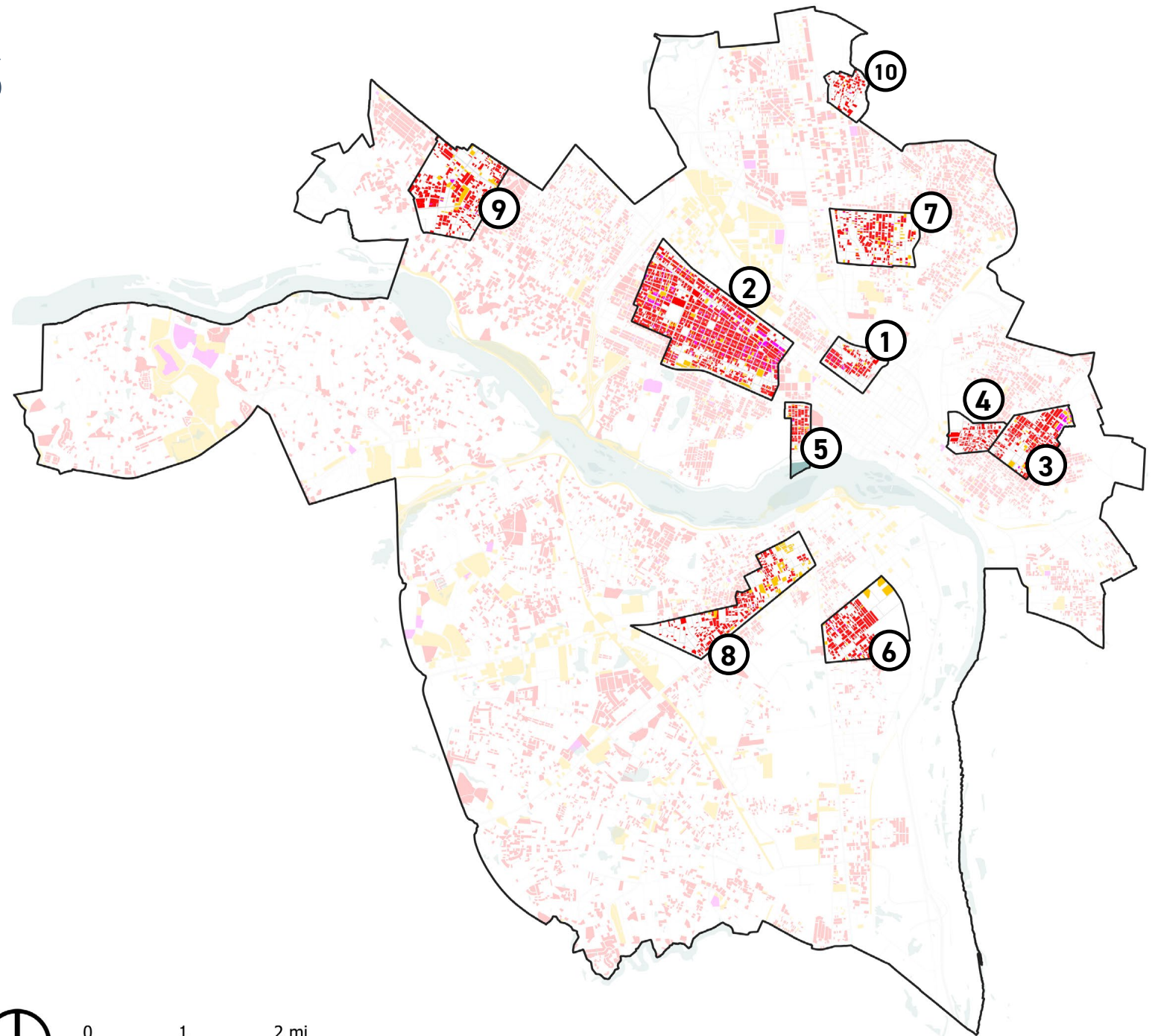
# REPRESENTATIVE AREAS

+ These areas are a selection to represent examples across the different residential zoning districts where lot size nonconformities and SUPs are more common.

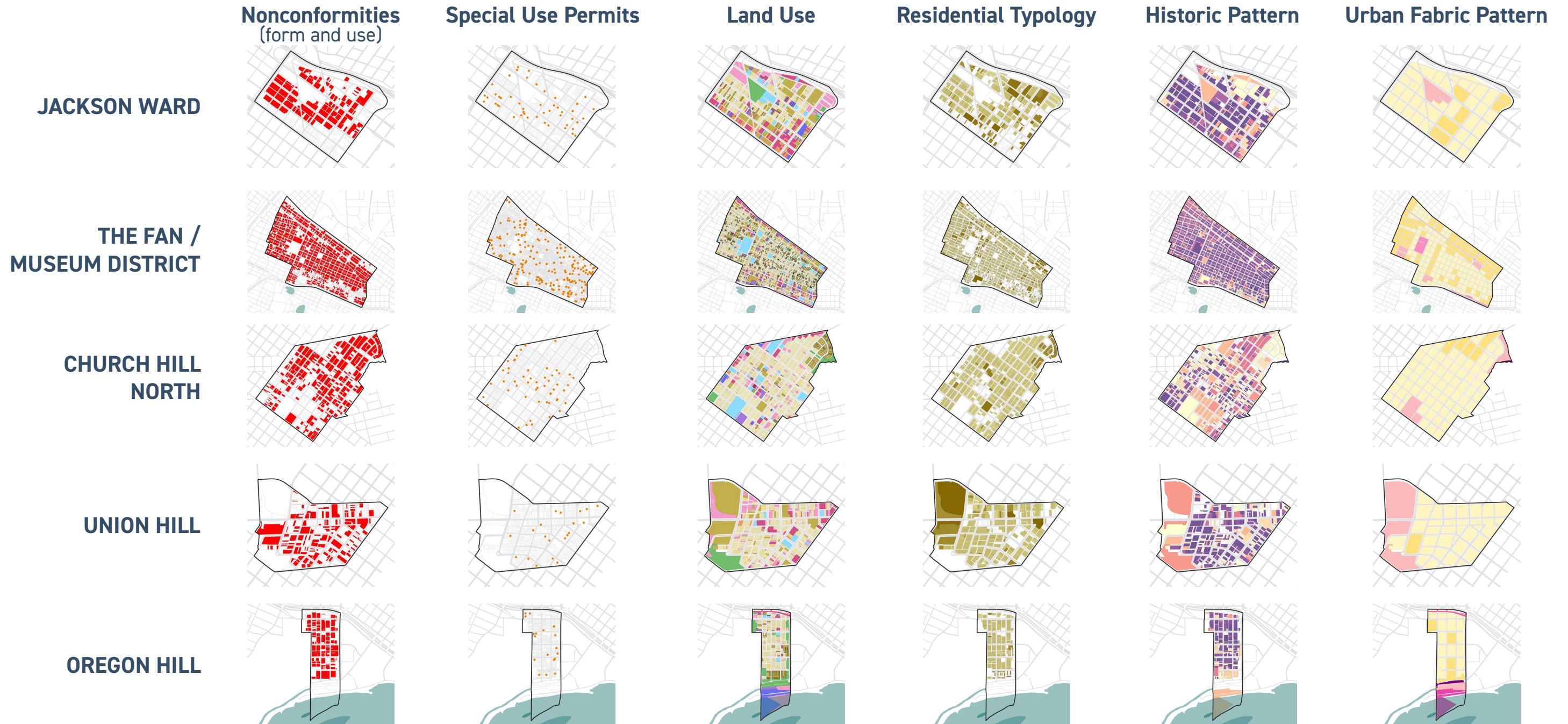
Representative Neighborhoods	Dominant Zoning
1. Jackson Ward	R-6 / R-63
2. The Fan / Museum District	R-6
3. Church Hill North	R-5 / R-6
4. Union Hill	R-63
5. Oregon Hill	R-7
6. Oak Grove	R-5
7. Northern Barton Heights	R-5
8. Swansboro / Swansboro West	R-5
9. Three Chopt / Westhampton	R-4
10. Washington Park	R-5

### Nonconforming Parcels by Use and Form

- Use
- Form
- Both



# COMPARISON MATRIX



# COMPARISON MATRIX

