

May 14, 2021

# EXISTING PATTERN ANALYSIS

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This is a planning study intended to show basic data trends throughout areas of the City of Atlanta 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 Part 16 of the Code of Ordinances. This analysis has been performed using data from the City of Atlanta, Fulton County, DeKalb County and other sources. Data are not guaranteed.

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May 14, 2021

# CITY SCALE ANALYSIS

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PART 1

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# INTRODUCTION

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OVERVIEW OF MULTI-SCALAR ANALYSIS PROCESS

# EXISTING PATTERN ANALYSIS

## 1. CITY-SCALE



Analyze patterns within ACD's Urban/Suburban/Rural Conservation Areas

Developmental History  
Nonconformities / Variances  
Parcel, Block, Street Patterns

**RESULT:** CITY WIDE PATTERNS  
& IDENTIFY REPRESENTATIVE AREAS

## 2. NEIGHBORHOOD-SCALE

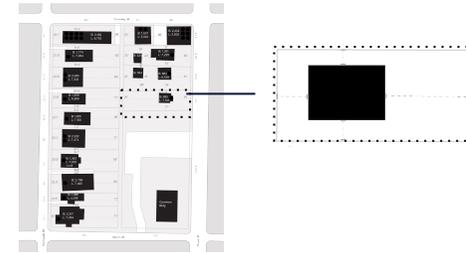


Determine representative subset of neighborhoods by analyzing commonalities and differences in:

Use Mix  
Parcel Size  
Units per Parcel  
Nonconformities  
Building Type Patterns

**RESULT:** SUB-PATTERNS  
IN 19 STUDY AREAS

## 3. BLOCK-SCALE

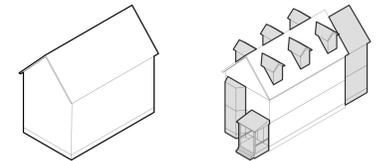


Analyze central/transitional blocks' potential to preserve neighborhood character while accommodating appropriate growth

Historical Context  
Parcel Size Nonconformity  
Intensity  
Setbacks  
Character  
Circulation

**RESULT:** 18 BLOCKS  
ANALYZED

## 4. BUILDING-SCALE



Document existing and potential building types that can support future controlled, context-sensitive growth with desirable design elements.

Observations relevant to future zoning  
Engagement with street  
Conformity / Non conformity

**RESULT:** BUILDING  
TAXONOMY TO TEST  
POTENTIAL CODE CHANGES

# METHOD

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CITY SCALE AND NEIGHBORHOOD SCALE ANALYSIS

# KEY DATASETS

## Notes on Construction of Key Datasets

### Master Parcel Layer

- **Lot vs Parcel:** the dataset used is a combined Fulton and DeKalb County parcel dataset based on ownership and tax records, and in some cases does not align with what is considered a “lot” for City of Atlanta zoning purposes. In most cases, the parcel is the same as the lot, but for condominiums and zero-lot-line developments, the parcel is sometimes a subdivision of the larger zoning lot.
  - **Condominium Disclaimer:** Parcels with an area less than 200 square feet were excluded from all parcel-based analysis. This was because Fulton County often maps condominium ownership as small squares overlaid on the larger master parcel; these squares have no relationship to the actual size of the master parcel or “lot” that zoning applies to. Excluding these squares makes it easier to see patterns in parcel size for buildable parcels.
- **Data Year:** All parcel-based analysis was conducted using a 2016 parcel dataset provided by the City of Atlanta, synthesized by TSW, and supplemented with 2020 County data where needed. This decision was made because the 2016 dataset was far more comprehensive than the 2020 data available at the time this study began. Additionally, since the focus of the study was on existing historic development patterns more so than new development, the difference of a few years did not justify the labor-intensive reconstruction of the comprehensive 2016 dataset already available.
- **Dekalb County Disclaimer:** Please note that the Dekalb County parcel lines are less reliable than the Fulton County parcel areas due to inconsistencies and mis-alignments in the Dekalb County parcel data available. Dekalb County does not readily share tax data.
  - At the neighborhood scale in Edgewood and North Highland, some of these mis-alignments are visible. We did our best to correct for existing misalignments in the dataset we had access to.

# KEY DATASETS

## Notes on Construction of Key Datasets

### Master Building Footprint Layer

- All building-based calculations at the city and neighborhood scale were completed using a 2019 City of Atlanta LiDAR-generated building footprint dataset.
  - **Roof Overhang Disclaimer:** Because this dataset is based on aerial imagery, it includes roof overhangs and so is not a perfect representation of the building footprint, which would be inset from the roofline.
  - **Tree Canopy Interference Disclaimer:** It is also worth noting that Atlanta’s generous tree canopy at times obscures buildings - especially in rear yards where accessory structures are common - so there is likely more error in the dataset’s representation of accessory structures and other structures obscured by dense tree canopy.
- **Year Built:**
  - Disclaimer: 18% of all buildings in the City of Atlanta have a “null” value for year built within this dataset. Many in Fulton County also state “1920,” which is generally assumed to mean 1920 or earlier.
- **Number of Stories:**
  - Disclaimer: 27% of all buildings in the City of Atlanta have a “0” value for the number of stories within this dataset.
- We used this dataset that was provided by the City of Atlanta, instead of the “latest georgia free” because it contained more columns with key information (a lot of the joining had been done).
- **Duplicate and Mis-Alignment Disclaimer:**
  - This dataset contained some duplicate building footprints that were not possible to eliminate at the city or neighborhood scale, but was manually corrected at the block and building scales.
  - 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 FAR and Lot Coverage calculations. However, these labor-intensive manual modifications and ground-truthing of the dataset was not possible at the citywide and neighborhood level.

# NONCONFORMITY ANALYSIS

**Note:** nonconformity analysis was only conducted for R-1 through R-5 districts. All descriptions of the method below apply to both the city-scale and neighborhood-scale nonconformity analysis. Some conservation areas include many other zoning districts, such as PD-H, RG, NC, C-1, etc. and these are shown on the maps but were not included in the R-1 through R-5 nonconformity analysis.

The word “nonconformity” means not conforming to basic zoning district metrics based on the data provided by Fulton County, DeKalb County and the City of Atlanta for purposes of this study and is not intended to determine or conform to legal nonconformities as defined in Chapter 24 of the Zoning Code.

## Form nonconformities

- **Parcel Size**
  - Calculated in GIS based on the Master Parcel Layer.
- **Building Coverage**
  - Calculated in GIS as **(building footprint area)/(parcel area)**, using the Master Building Footprint Layer. This calculation included all building footprints within the parcel - both primary and accessory buildings.
  - As noted in the description of the Master Building Footprint Layer, because this dataset is based on aerial imagery, it includes roof overhangs and so is not a perfect representation of the building footprint, which would be inset from the roofline.
  - This method likely deflates or undercounts lot coverage nonconformity because it does not account for other things like impermeable/paved surfaces that would, under zoning law, count towards the lot coverage calculation. We chose this building coverage method because there was no existing dataset that could reliably and consistently calculate the other contributing factors to lot coverage without introducing unpredictable variation into the analysis.
- **FAR**
  - Calculated in GIS as **(building footprint area)\*(number of stories)/(parcel area)**, using the Master Building Footprint Layer and Master Parcel Layer.
  - The gross square footage attribute data available via county tax datasets was inconsistent by building tax category and so we opted for a story-based calculation method to be able to provide a metric that was comparable across all building types.
  - Most likely, our chosen method inflates or overcounts FAR because some portion of the building area is probably not living space and therefore would not count towards the zoning FAR limit. However, as noted in the description of the Master Building Footprint Layer, 27% of all building footprints had “0” stories in the dataset and so FAR is also, in some cases, undercounted given that the data on the number of stories is incomplete.

# NONCONFORMITY ANALYSIS

## Use nonconformities

- **Use**

- Determined based on attribute data in the Master Parcel Layer
- To show public parks as their own land use category, we did a spatial join and recategorized all parcels that were part of the City of Atlanta parks shapefile as a new land use abbreviated as 'PRK'
- See this [spreadsheet](#) for a detailed description of the land use code grouping and nonconformity:
  - **EXCLUDE:** indicates that this use was not shown as conforming or nonconforming, it was excluded from the use analysis.
  - **CONFORMS:** indicates that this use conforms to a given zoning district
  - **NONCONFORMING:** indicates that this use does not conform to a given zoning district
  - **CONDITIONAL:** this does not mean the same thing as a “conditional use” as described in the zoning - in this spreadsheet “conditional” is used to indicate combinations of use codes and zoning districts where this particular sub-rule about existing multifamily residential uses in R-3 through R-5, RG, and MR districts needed to be applied:
    - The purpose and intent of the following provisions is to allow for the continued existence of certain nonconforming multifamily uses and buildings in combination, whether or not such buildings are currently in use or have been discontinued for a continuous period of one year or more, in order to encourage diverse housing options that have existed for some period of time as well as to provide a range of housing opportunities. Due to their importance to the public health and welfare, these provisions shall apply notwithstanding other contrary provisions elsewhere in chapter 24.
    - The provisions of this section shall apply only to existing nonconforming multifamily uses and buildings in combination that meet each of the following criteria:
      - Contain no less than four and no more than 12 dwelling units;
      - Have not been renovated and used in compliance with the existing zoning district's density or maximum dwelling unit requirements as regulated by section 16-24.005(4) above;
      - Were constructed and used for multifamily uses prior to 1946;
      - Are located in the R-3 through R-5, RG, or MR zoning districts; and
      - Contain no non-residential uses.
    - Note that, because 18% of buildings in the Master Building Footprint Layer are missing a year built attribute, our calculations may have missed or undercounted the number of parcels that were eligible for this legacy missing middle exception.

- **Units**

- Above-max units based on parcel data on units per parcel, compared against allowable units per parcel in the zoning district that parcel is in.
- Units per parcel information was taken from Master Parcel Layer.

# LOT SIZE DISTRIBUTION

## Cumulative distribution of lot size, by zoning district

- The dataset used for this chart is a sub-set of the 2017 citywide parcel dataset used for all nonconformity analysis. This dataset includes all parcels in R-1 through R-5 districts throughout the entire City of Atlanta.
- To avoid distortion, parcels under 200 sf are excluded (see data disclaimer).
- There is some rounding because the lots larger than 200,000sf are excluded in order to be able to see all of the zoning districts on the same chart. This rounding is more notable in the larger parcel size zoning districts (R-1 and R-2) where parcels above 200,000sf are more common.
- Direct export from R, a statistical program that creates data visualizations.

# NONCONFORMITIES SUMMARY CHART

## Cumulative distribution of lot size, by zoning district

- The chart shows the percentage of R1-R5 parcels within each study area that have at least one non conformity (in bright red), at least one form non conformity (in the medium tone of red) and at least one use non conformity (in the lighter tone of red).
- All the study area boundaries are illustrated in the “Friction Areas” map on page 23. For the purpose of this study, only the portions of the Paces and of Midtown neighborhoods marked on the “Friction Areas” map were included in each study area. The North Highland study area includes portions of the Morningside-Lenox Park and Virginia Highland neighborhoods.

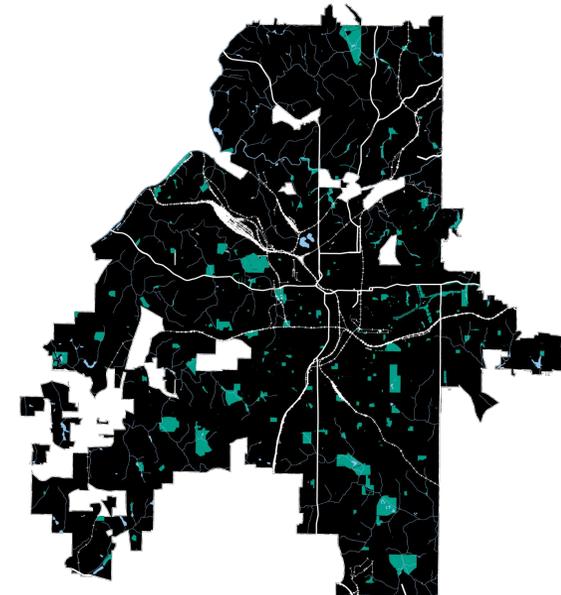
# CITY SCALE ANALYSIS

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## FINDINGS

# CITY-SCALE ANALYSIS

1. Why?
2. Nonconformity → “Friction Areas”
3. Patterns → “Representative Areas”



# WHY?

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## CITY SCALE ANALYSIS

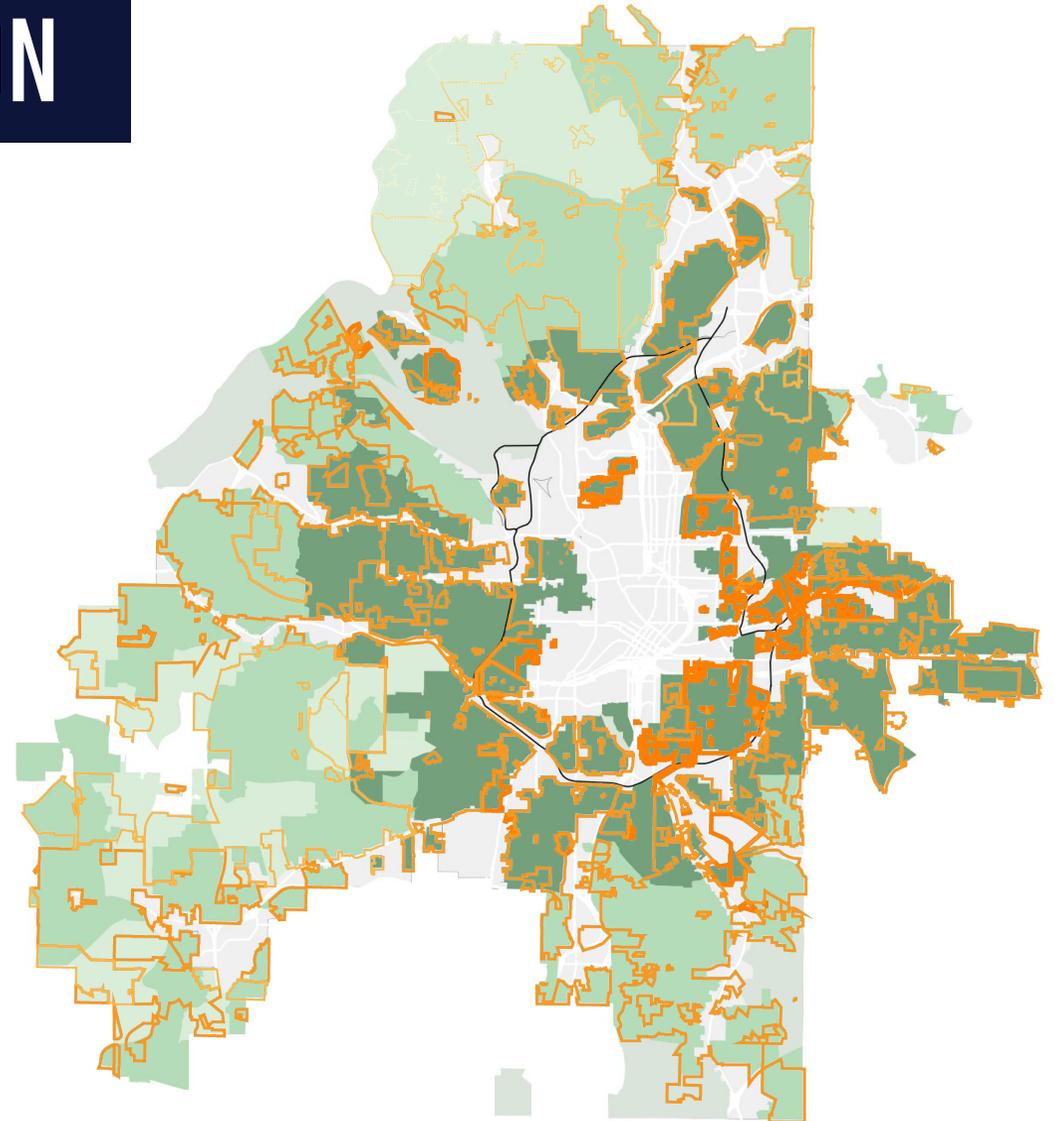
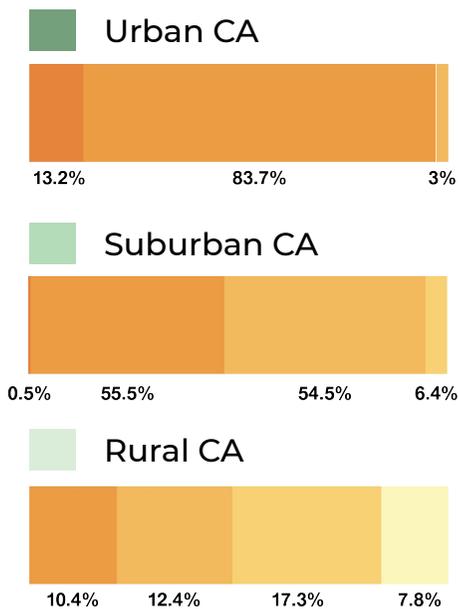
1. Aligning current zoning with ACD Vision
2. Validate and build off ACD
3. Test alignment between zoning and current urban patterns

# ALIGNING ZONING WITH ACD VISION

## Relationship between current R1-5 Districts and ACD Conservation Areas

### LEGEND

- R-1
- R-2
- R-3
- R-4
- R-5

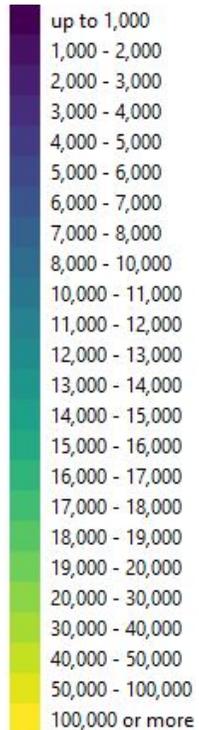


# VALIDATE + BUILD OFF ACD

## ACD Conservation Areas align with lot size patterns

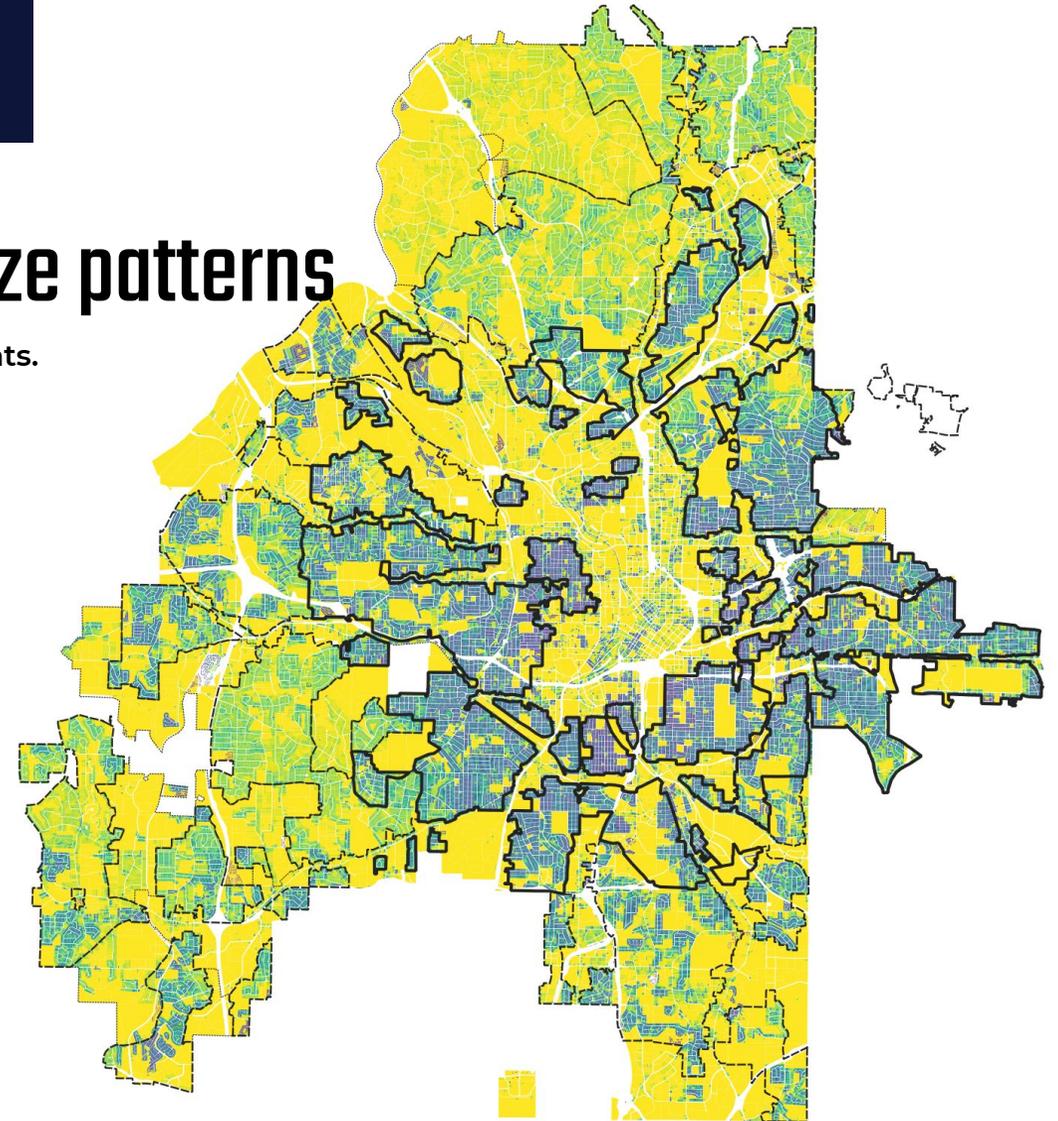
Lot size: in square feet - in 1,000 increments up to 20,000 then in 10,000 increments.

### LEGEND



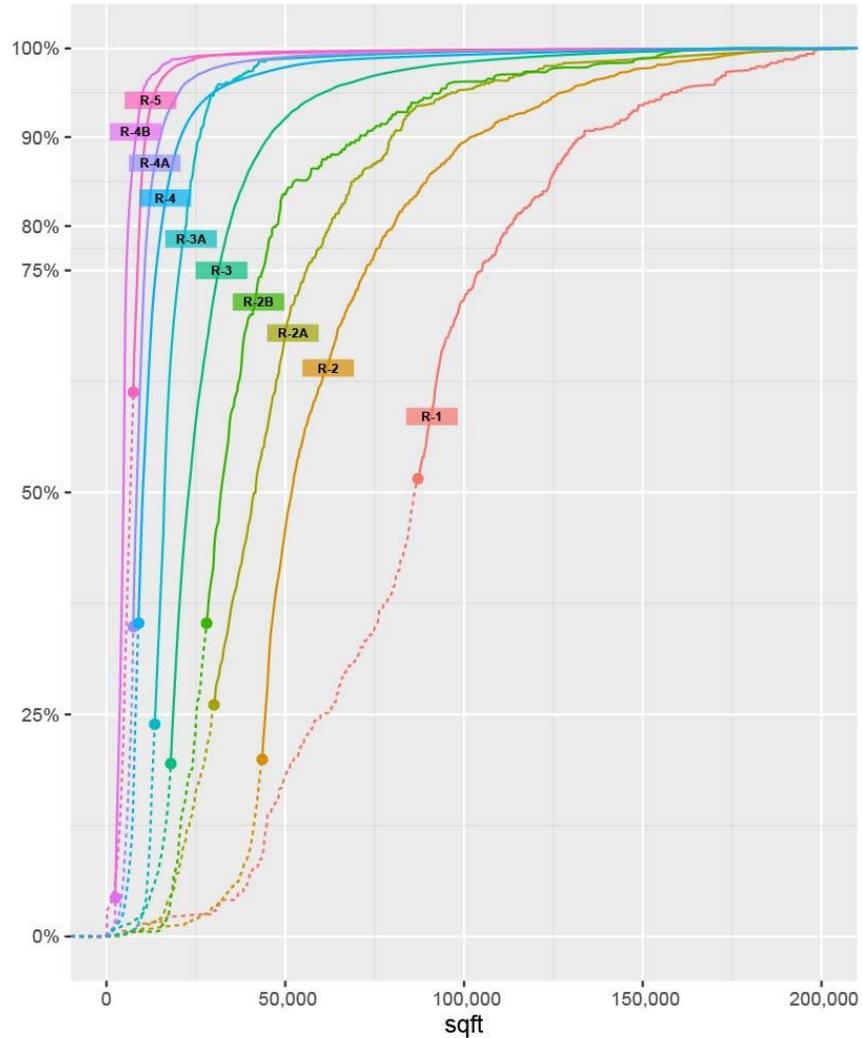
### ZONING MIN LOT SIZE (SQFT)

ZONING	MIN LOT SIZE (SQFT)
R-1	87,120
R-2	43,560
R-2A	30,000
R-2B	28,000
R-3	18,000
R-3A	13,500
R-4	9,000
R-4A	7,500
R-4B	2,500
R-5	7,500



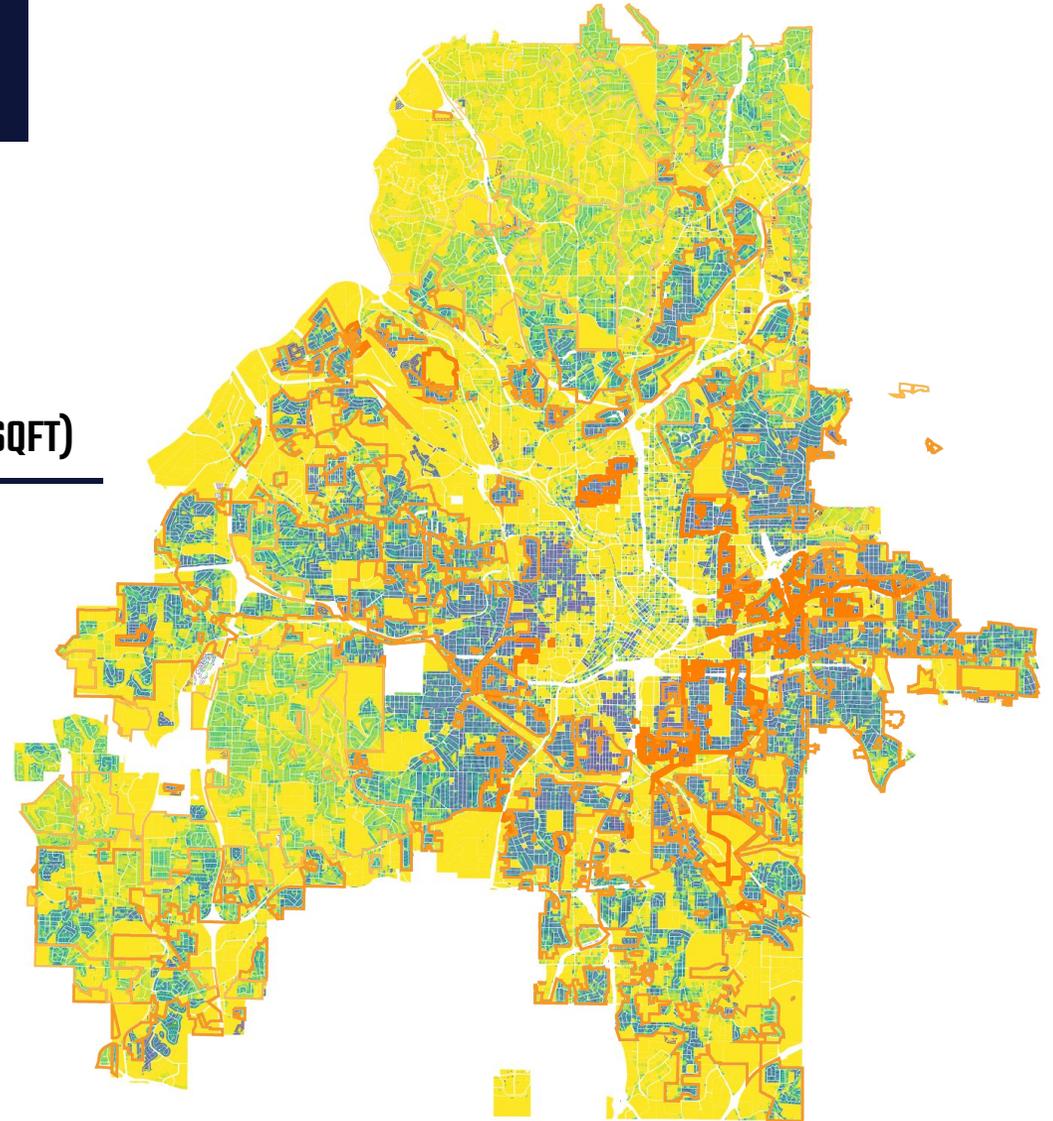
# TEST ALIGNMENT OF ZONING

Cumulative distribution of lot size by zoning district



ZONING	MIN LOT SIZE (SQFT)
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R-1	87,120
R-2	43,560
R-2A	30,000
R-2B	28,000
R-3	18,000
R-3A	13,500
R-4	9,000
R-4A	7,500
R-4B	2,500
R-5	7,500



# NONCONFORMITY

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## CITY SCALE ANALYSIS

1. Map disconnects b/ zoning, built fabric and ACD
2. Identify “Friction areas”

# LOT SIZE NONCONFORMITY

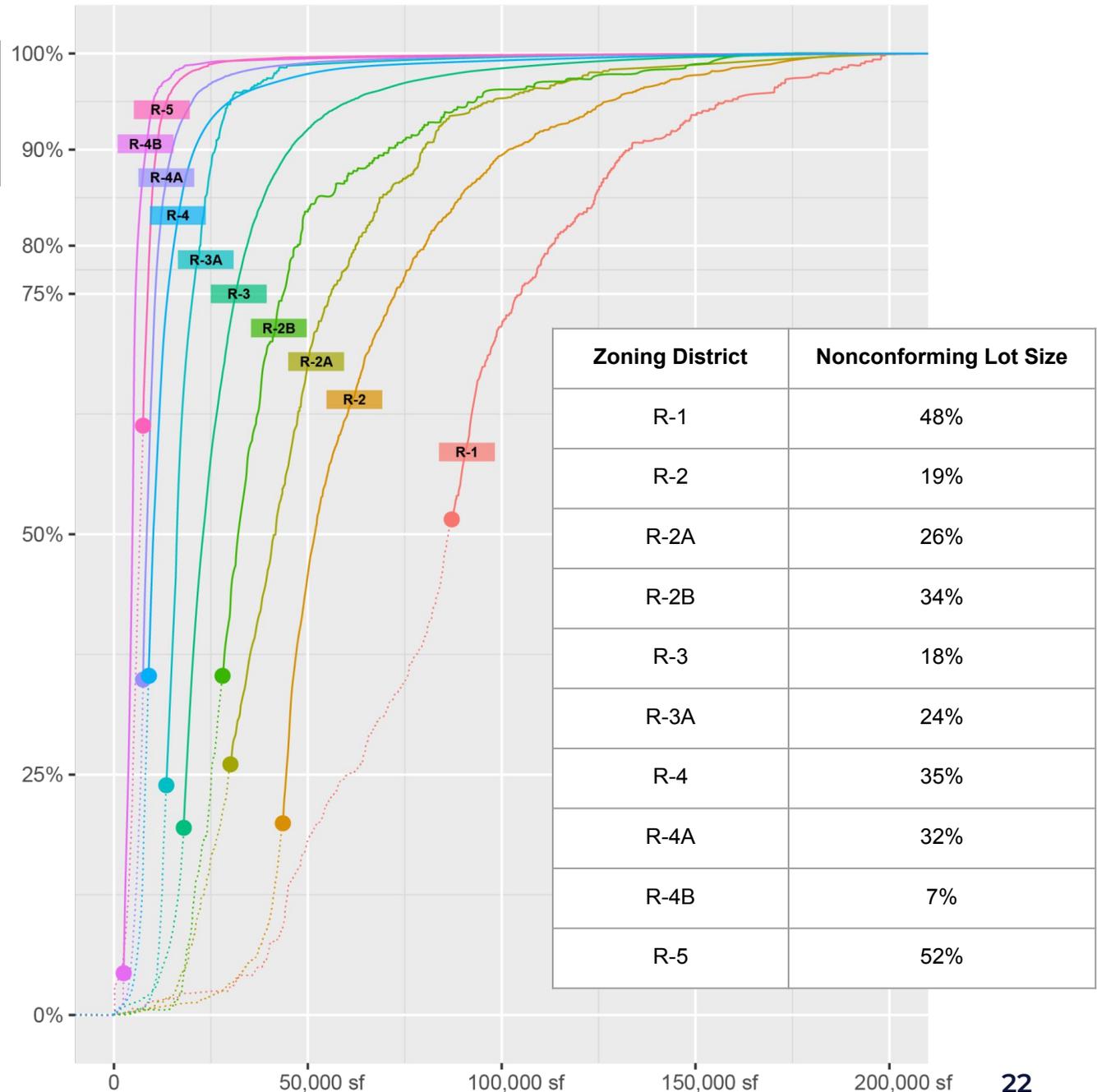
## Cumulative distribution of lot size, by zoning district.

Dots represent the approximate minimum lot size in that district. If you scan from the dot to the vertical axis, you'll see what percentage of parcels in that district are nonconforming.

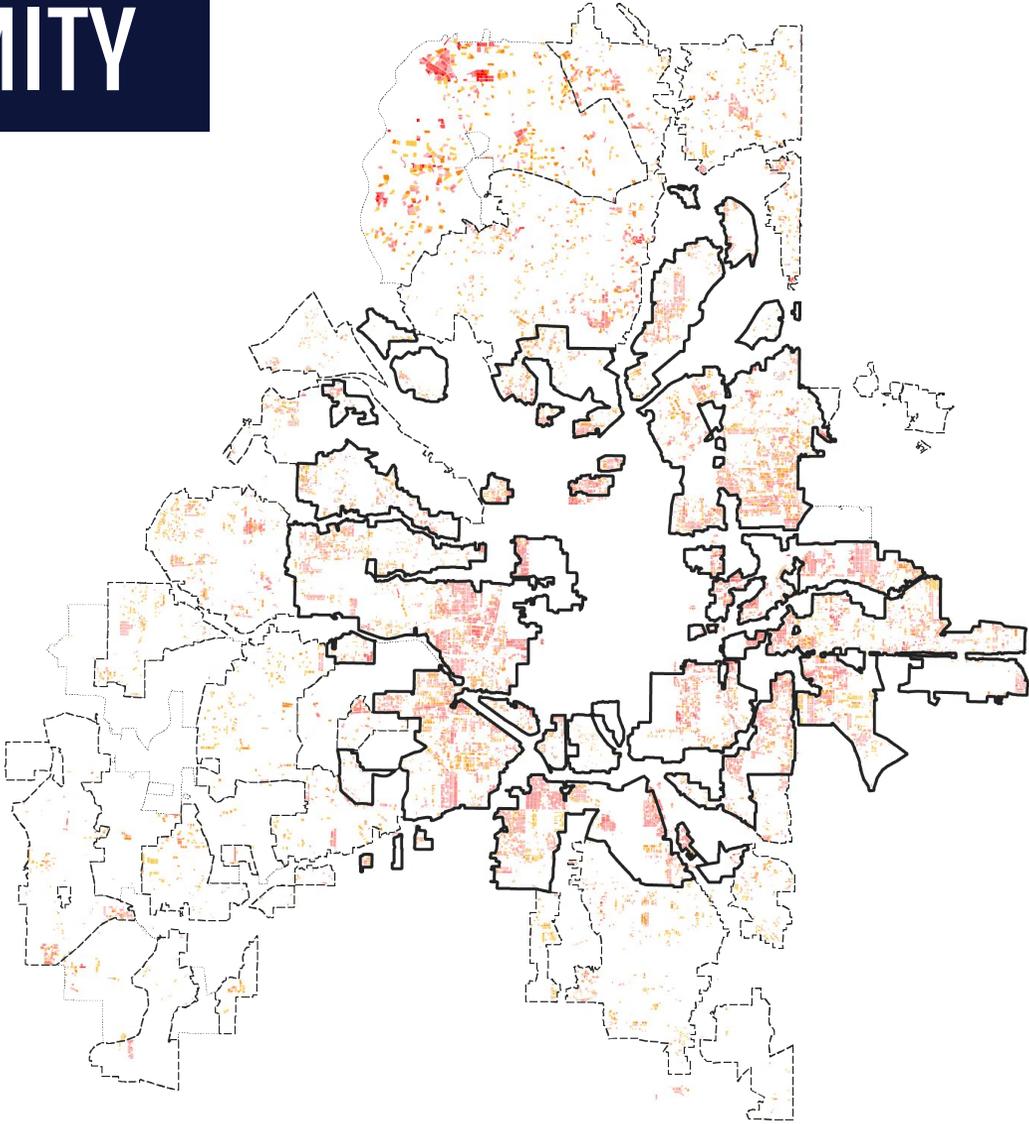
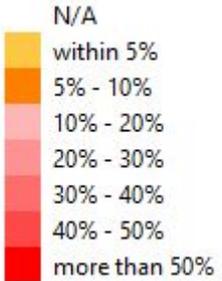
### Zoning District

- R-1
- R-2
- R-2A
- R-2B
- R-3
- R-3A
- R-4
- R-4A
- R-4B
- R-5

NOTE: the nonconforming lot size percentages were calculated after removing all parcels that were 200sf or less, for consistency with other analysis. As mentioned previously, many condos are recorded using small square parcels overlaid on a master parcel - these condo parcels are different from the lot size regulated by zoning, and so are deliberately excluded from nonconformity analysis and statistics. Variations between the chart and the table are due to rounding resulting from the chart cutting off some of the large outlier parcels. The table gives precise and accurate percentages.



# DEGREE OF LOT SIZE NONCONFORMITY



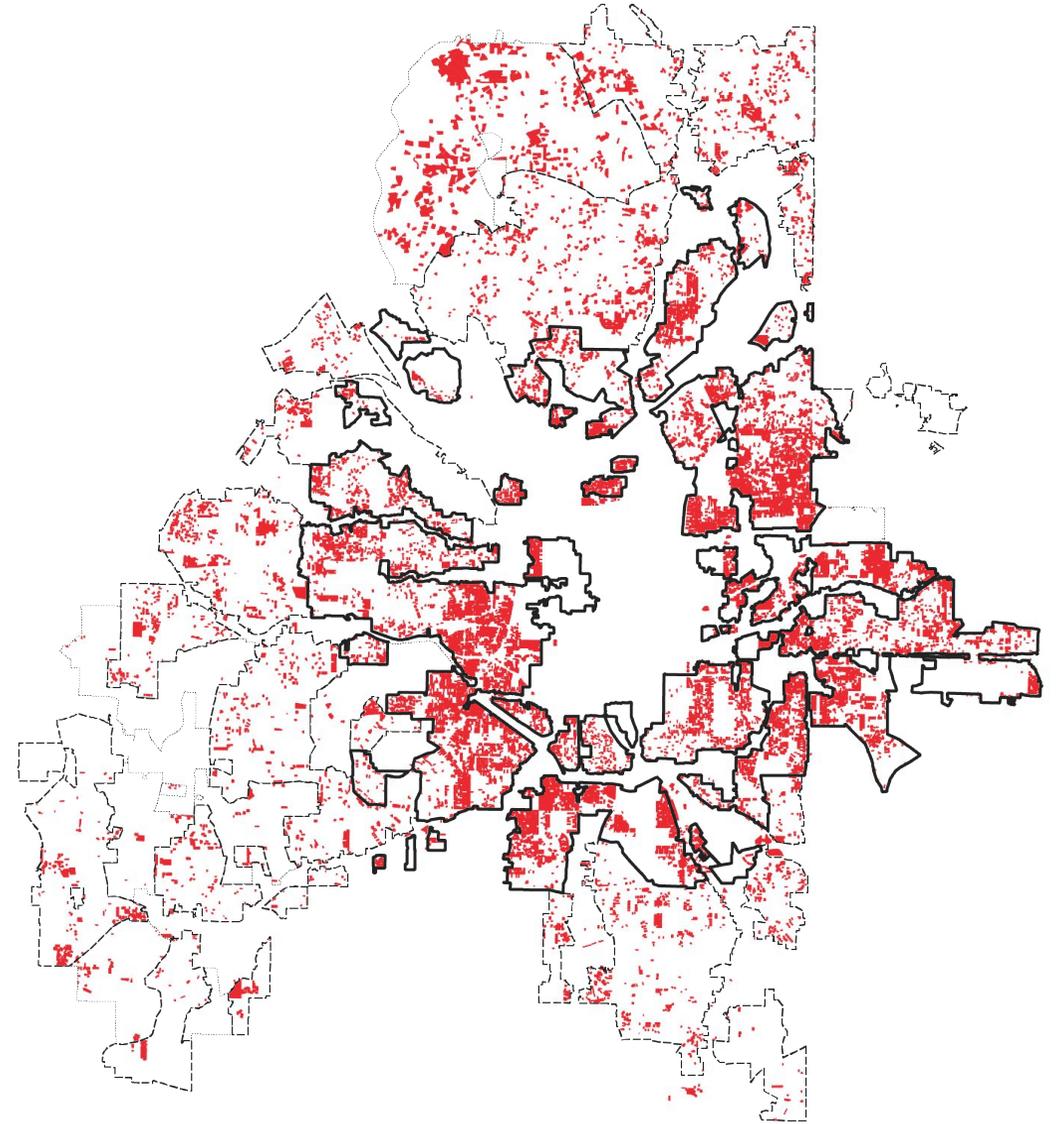
# NONCONFORMING FORM

**Lot Size**

**Building coverage**

**FAR**

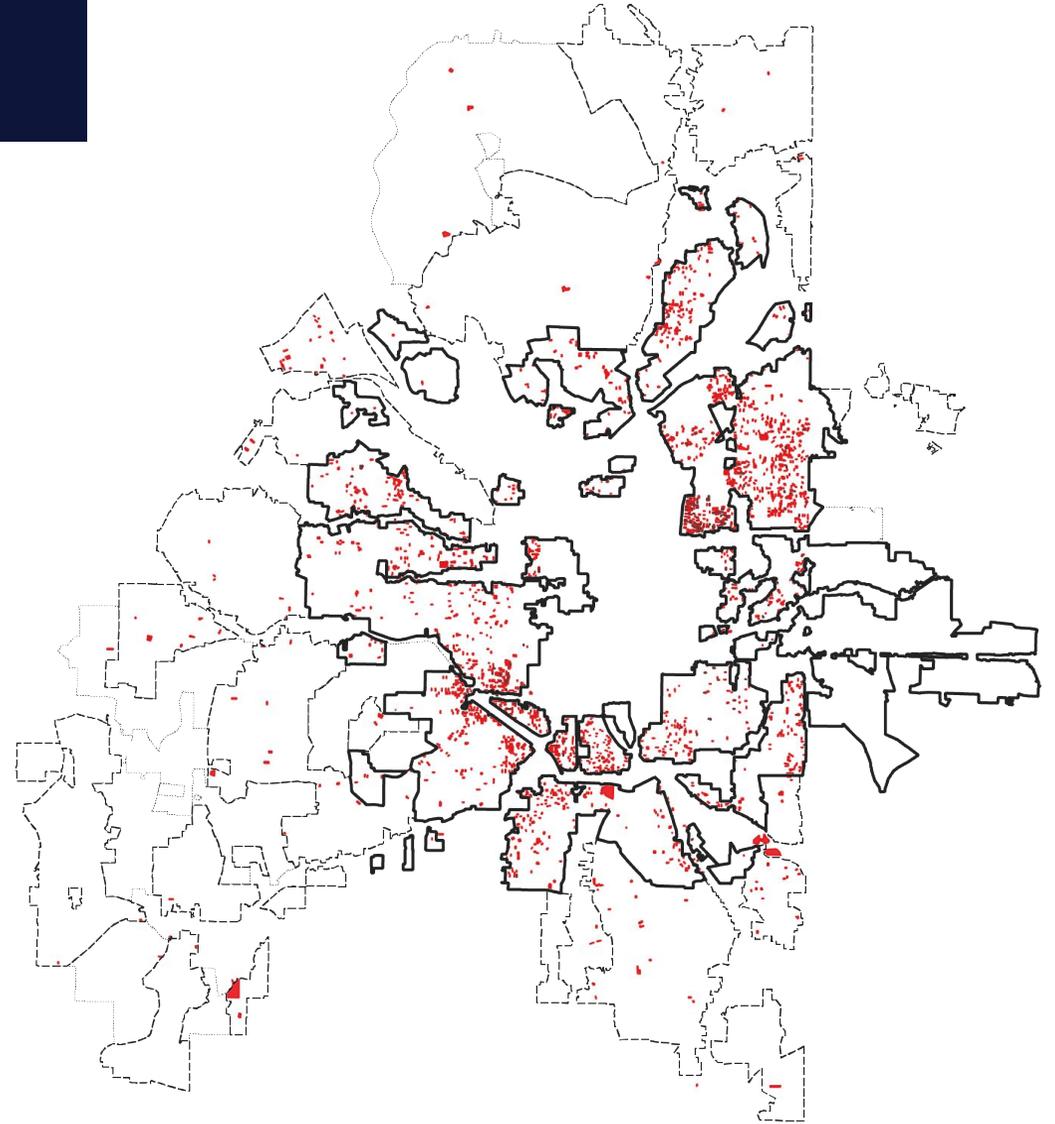
 Nonconforming in lot size,  
building coverage and/or FAR



# NONCONFORMING USE: UNITS

## Above-Max Living Units

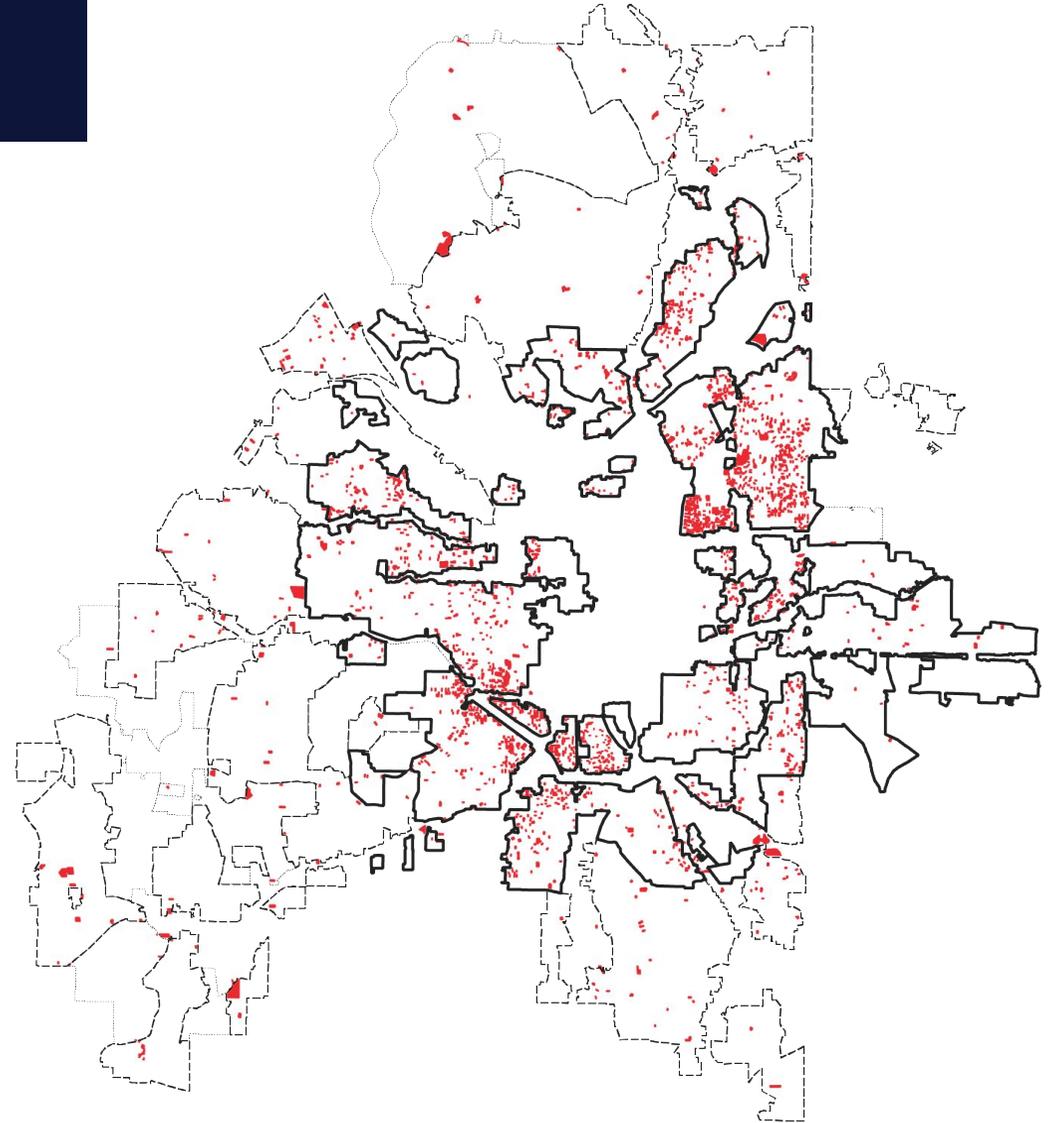
- Above max living units
- Above max living units (only including parcels with 4-12 units)



# NONCONFORMING USE: LAND USE

**Existing Commercial, Industrial  
& Residential Uses Not Allowed  
by Current Zoning**

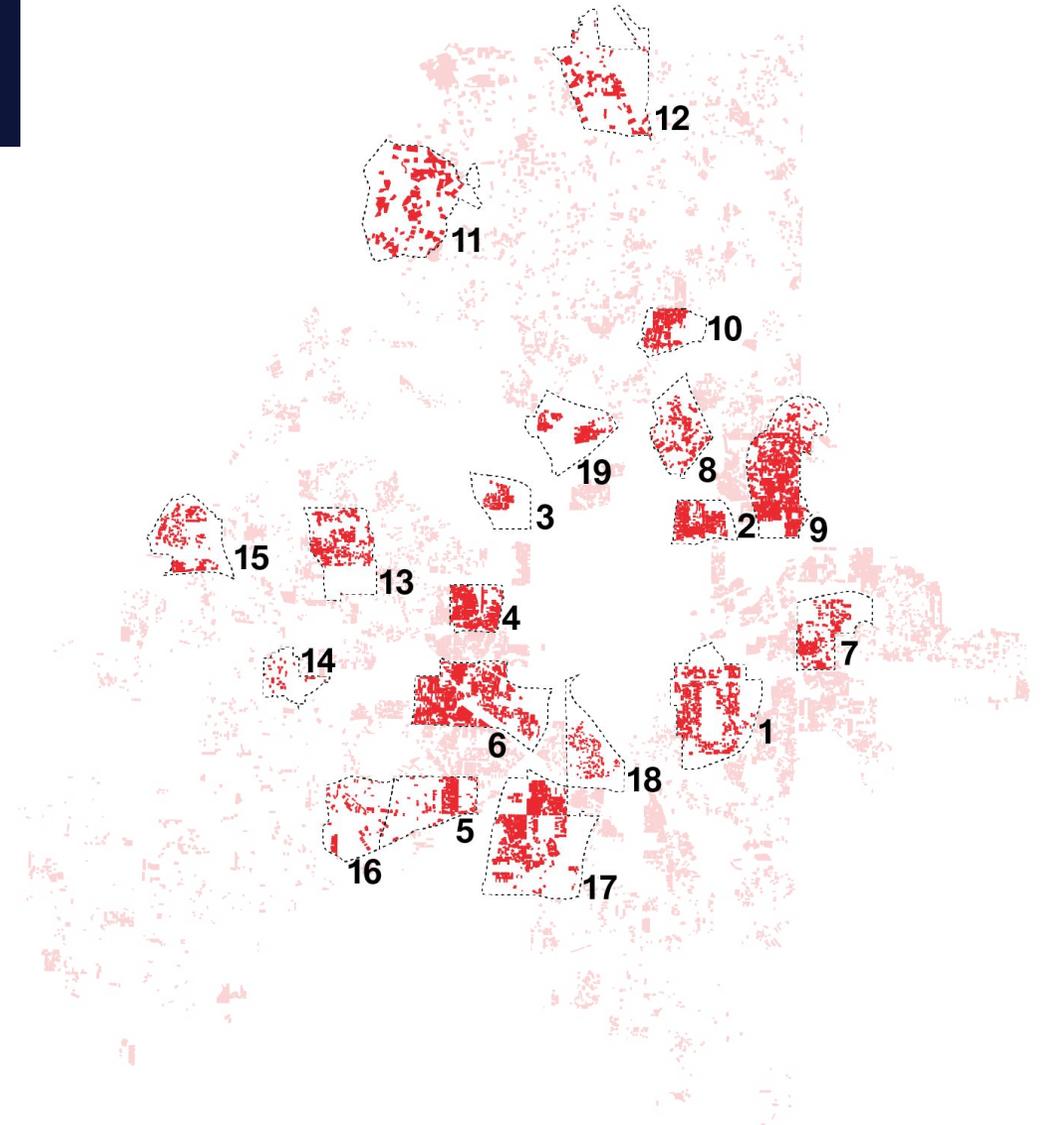
 Nonconforming in land use



# FRICION AREAS

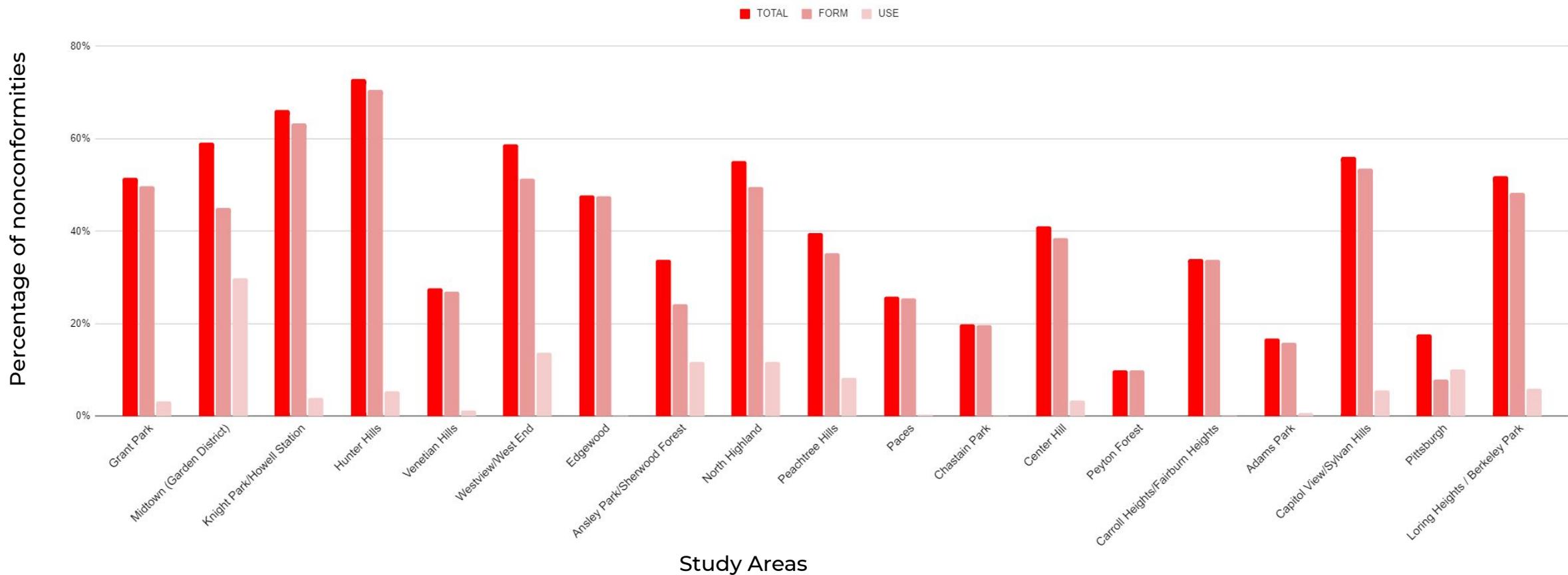
19 study areas were identified for further exploration:

	Study Area	Dominant Zoning	Council Districts	NPU
1	Grant Park	R-5	1	W
2	Midtown (Garden District)	R-5	2	E
3	Knight Park/Howell Station	R-4A	3	K
4	Hunter Hills	R-4	3	K
5	Venetian Hills	R-4	4	S
6	Westview/West End	R-4, R-4A	4	T
7	Edgewood	R-4A, R-5	5	O
8	Ansley Park/Sherwood Forest	R-3, R-4	6	E
9	North Highland	R-3, R-4	6	F
10	Peachtree Hills	R-4	7	B
11	Paces (south portion)	R-1	8	A
12	Chastain Park	R-2, R-2B, R-3	8	A
13	Center Hill	R-4, R-4A	9, 3	J
14	Peyton Forest	R-3	10	I
15	Carroll Heights/Fairburn Heights	R-4	10	H
16	Adams Park	R-3, R-4	11	R
17	Capitol View/Sylvan Hills	R-4	12	X
18	Pittsburgh	R-4B	12	V
19	Loring Heights / Berkeley Park	R-4, R-4A	9, 8	D, E



# FRICION AREAS

## Rate of non conformity, normalized by # R1-R5 parcels



# CHARACTER PATTERN MATRIX

STUDY AREA	History		Threshold & Growth Potential					Urban Fabric			Parcel-Level Physical Patterns			Policy & Regulatory Context	
	BUILDING AGE	HISTORIC STREETCAR NETWORK	PROXIMITY TO TRANSIT	PROXIMITY TO ACD GROWTH AREAS	PARK ACCESS	PROXIMITY TO NON-RESI ZONING	PROXIMITY TO NON-RESI EXISTING LAND USE	BLOCK SIZE	BLOCK SHAPE	STREET NETWORK TYPE / DEGREE OF CENTRALITY	LOT SIZE	FAR	LOT COVERAGE	ACD CONSERVATION AREA TYPE	RI-R5 DISTRICT
1: Grant Park															R-5
2: Midtown (Garden District)															R-5
3: Knight Park / Howell Station															R-4A
4: Hunter Hills															R-4
5: Venetian Hills															R-4
6: Westview / West End															R-4 / R-4A
7: Edgewood	No info						No info				No info				R-4A / R-5
8: Ansley Park / Sherwood Forest															R-3 / R-4
9: Morningside / Lenox Park / VA-Hi															R-3 / R-4
10: Peachtree Hills															R-4
11: Paces															R-1
12: Chastain Park															R-2 / R-2B / R-3
13: Center Hill															R-4 / R-4A
14: Peyton Forest															R-3
15: Carrol Heights / Fairburn Heights															R-4
16: Adams Park															R-3 / R-4
17: Capitol View / Sylvan Hills															R-4
18: Pittsburgh															R-4B
19: Loring Heights / Berkeley Park															R-4 / R-4A

# WORKSHOP FORMAT: Miro

## Virtual board with all the maps produced

### 1 MAP INVENTORY

**HOW DOES THE ACD VISION ALIGN WITH CURRENT ZONING?**

**HOW HAS HISTORY SHAPED CURRENT URBAN CHARACTER PATTERNS?**

**WHAT ARE SOME PATTERNS THAT VARY ACROSS CONSERVATION AREAS?**

**WHERE ARE THERE DISCONNECTS BETWEEN CURRENT ZONING AND BUILT FABRIC?**

### 2 DYNAMIC ANALYSIS

**KIT OF PARTS FOR PATTERN IDENTIFICATION**

**PATTERNS**

**WHICH PATTERNS DO YOU THINK ARE MOST IMPORTANT?**

### 3 IDENTIFICATION OF NONCONFORMITY FOCUS AREAS

**A Nonconformity heat map**  
Using ACD Conservation Area boundaries, draw potential "areas of study" with significant nonconforming patterns.

**B Representative Areas Pattern Matrix**  
Identify unique characteristics in potential "areas of study" and then choose 10 "representative areas" that have different patterns from one another.

Area	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Pattern 7	Pattern 8	Pattern 9	Pattern 10	Pattern 11	Pattern 12	Pattern 13	Pattern 14	Pattern 15	Pattern 16	Pattern 17	Pattern 18	Pattern 19	Pattern 20
1. Cedar Park	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
2. Midtown (Urban District)	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
3. Midtown (Retail District)	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
4. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
5. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
6. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
7. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
8. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
9. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
10. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
11. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
12. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
13. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
14. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
15. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
16. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
17. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
18. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
19. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow
20. Midtown Hill	Blue	Red	Green	Yellow	Orange	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow	Light Blue	Light Green	Light Purple	Light Orange	Light Yellow