

# ZOLA

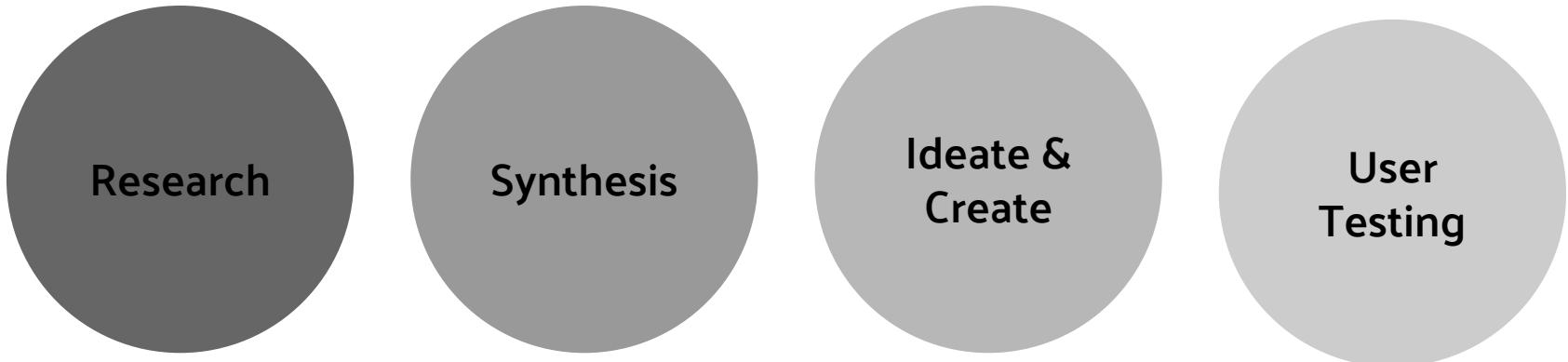
Albert, Alex & Leo  
Planning Labs  
August 2021



# ZoLa Improvements

- 01** User Tests
- 02** User Interface Changes
- 03** Color Accessibility

# The Design Process



# **Research** (38 survey responses + 8 user interviews)

<b>Frequency</b>	Most respondents are heavy users of ZoLa (Desktop) and half never used Mobile before.
<b>Functionalities</b>	Most features are evenly used except for the Bookmark function and Cyclomedia.
<b>Satisfaction</b>	Overall satisfaction is high as people can often find what they need when they need it.

# Research Synthesis (User persona + Empathy maps)



Borough Planner



Non Professional  
User



Zoning Applicant

# Ideate and create (designing for users)

Users have to scroll all the way down to see info

Manually turning off layers

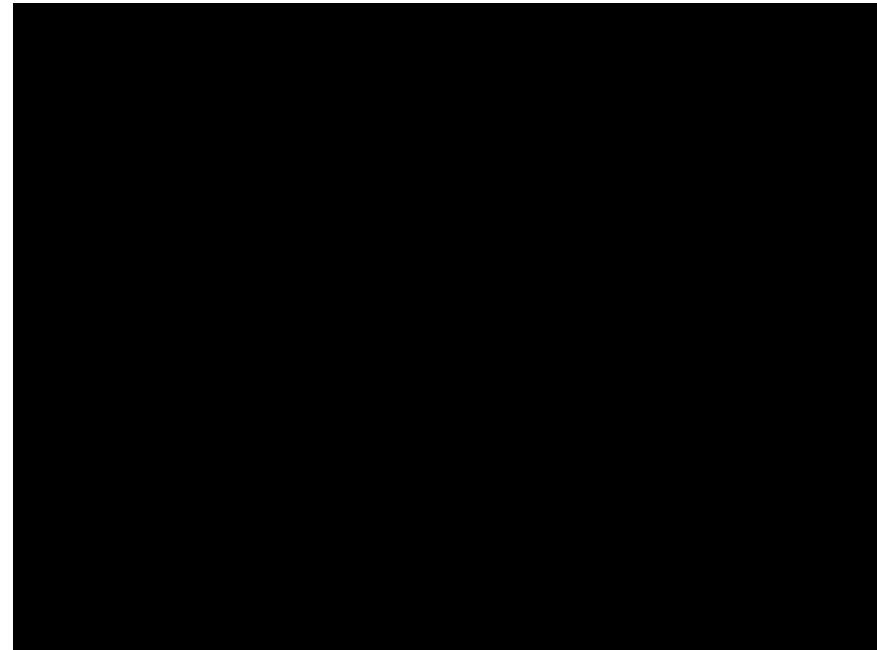
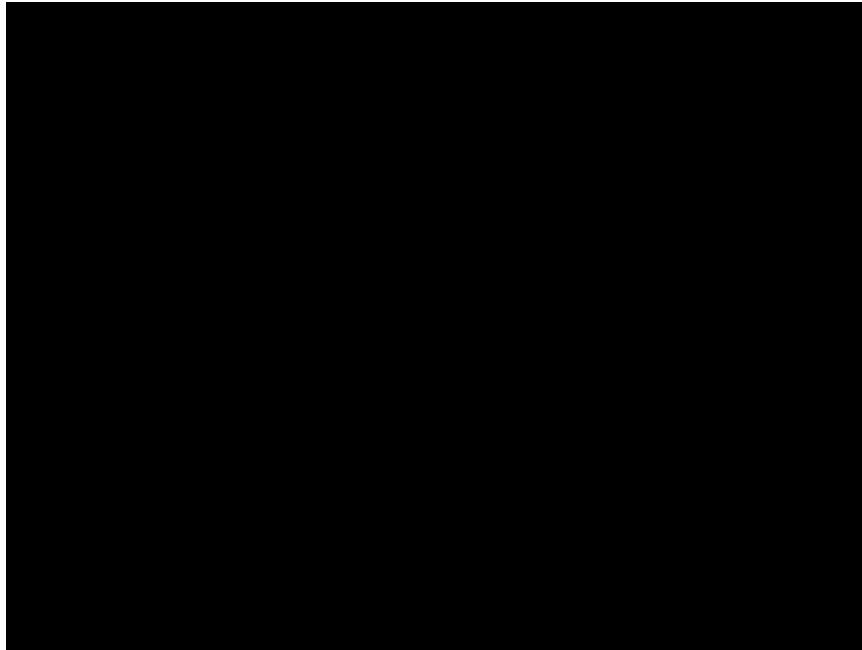
Small and inconsistent color codes

Has to use Google Map

Under utilization of Bookmark

Users have to scroll all the way down to see info

Info tabs for easy navigation



Manually turning off layers

More customizable experience

**Zoning and Land Use** 3

- Tax Lots
- Show Land Use Colors
- Zoning Districts  i
- Commercial Districts  ! i
- Manufacturing Districts  ! i
- Residence Districts  ! i
- Parks  ! i
- Battery Park City  ! i
- Commercial Overlays
- C1-1 through C1-5  ! i
- C2-1 through C2-5  ! i

▲ Collapse All ↻ Reset All Layers ▲

**Zoning and Land Use** 1

- Tax Lots ?
- Show Land Use Color
- Zoning District ! ?
- Commercial Overlay ?

Small and inconsistent color codes

Consistency / bigger blocks

Tax Lots

Show Land Use Colors

- One & Two Family Buildings
- Multi-Family Walk-Up Buildings
- Multi-Family Elevator Buildings
- Mixed Residential & Commercial Buildings
- Commercial & Office Buildings
- Industrial & Manufacturing
- Transportation & Utility
- Public Facilities & Institutions
- Open Space & Outdoor Recreation
- Parking Facilities
- Vacant Land
- Other

Zoning Districts

- Commercial Districts
- Manufacturing Districts
- Residence Districts
- Parks
- Battery Park City

Zoning Districts

<input checked="" type="checkbox"/>	<input type="checkbox"/>	Commercial Districts
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Manufacturing Districts
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Residence Districts
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Parks
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Battery City Park

Zoning and Land Use 1

Tax Lots ?

Hide Land Use Colors

- One & Two Family Buildings
- Multi-Family Walk-Up Buildings
- Multi-Family Elevator Buildings
- Mixed Residential & Commercial Buildings
- Commercial & Office Buildings
- Industrial & Manufacturing
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- Public Facilities & Institutions
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- Other

Has to use Google Map

Provide a short-cut in ZoLa

## Neighborhood Information

Community District	 Manhattan Community District 1
City Council District	 Council District 1
School District	02
Police Precinct	1
Fire Company	E004
Sanitation Borough	1
Sanitation District	01
Sanitation Subsection	1A

 Cyclomedia Street View



Google  
Street View



Cyclomedia  
Street View



TAX LOT | BBL 100477501

## INDIVIDUAL LANDMARK 120 BROADWAY, 10271

Manhattan (Borough 1) | Block 47 | Lot 7501

## Zoning Districts:

 C5 - 5

 LM

Under utilization of Bookmark

Make it more visible

X TAX LOT I BBL 1000477501

# INDIVIDUAL LANDMARK

## 120 BROADWAY, 10271

Manhattan (Borough 1) | Block 47 | Lot 7501

Zoning Districts:  C5-5  LM

INTERSECTING MAP LAYERS i: None found

ZONING DETAILS:

- Digital Tax Map
- Zoning Map: 12b (PDF)
- Historical Zoning Maps (PDF)

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Owner Type: Private  
Owner: [Show Owner](#)  
Land Use: Commercial & Office Buildings  
Lot Area: 49,614 sq ft  
Lot Frontage: 167.92 ft



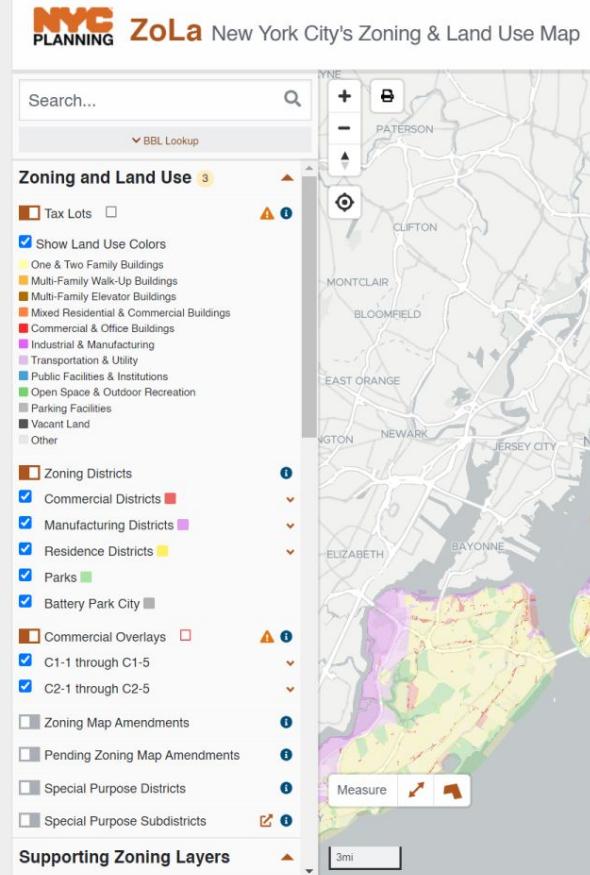
# User Testing (2 user interviews)

Color Blind User + Regular User of ZoLa

- Users liked both the design solutions and overall aesthetics
- Emphasized the importance of the newly added feature (Google street view)
- Some button / font size seem small
- Some icons were not obvious enough, but were able to figure it out upon trying once or twice

Better visual hierarchy,  
more digestible!

## Current Panel



Could some content be collapsed? →

Larger color key →

Left align key →

Info icon too bold →

# A few iterations...!

**Zoning and Land Use**

Tax Lots ⓘ

Show Land Use Colors

- One & Two Family Buildings
- Multi-Family Walk-Up Buildings
- Multi-Family Elevator Buildings
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- Vacant Land
- Other

Zoning Districts ⓘ

Commercial Districts

Manufacturing Districts

Residence Districts

Parks

Battery Park City

Comercial Overlays ⓘ

C1-1 through C1-5

C2-1 through C2-5

Zoning Map Amendments

Pending Zoning Map Amendments ⓘ

Special Purpose Districts ⓘ

**Supporting Zoning Layers**

**Zoning and Land Use**

Tax Lots ⓘ

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Pending Zoning Map Amendments ⓘ

Special Purpose Districts ⓘ

**Zoning and Land Use**

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Special Purpose Districts ⓘ

**Zoning and Land Use**

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Pending Zoning Map Amendments ⓘ

Special Purpose Districts ⓘ

## 03 Color Accessibility

### **Why is Color Blindness relevant to ZoLa?**

ZoLa has very dense and nuanced color information, making it inaccessible to color-blind users.

8% of world male population, 0.5% of world female population

[http://online.sfsu.edu/trogu/523/fall2012/student\\_work/mailer17x22/523\\_pangilinan\\_color\\_blind.pdf](http://online.sfsu.edu/trogu/523/fall2012/student_work/mailer17x22/523_pangilinan_color_blind.pdf)



## Full Color



# Red-Green Color Blindness

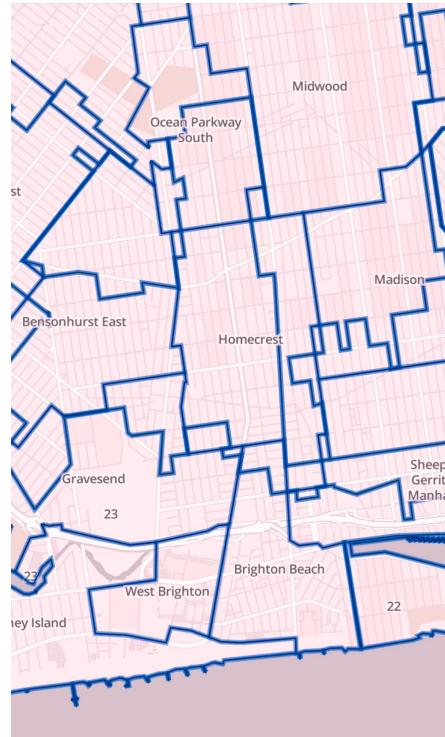


Full Color

Red-Green  
Color Blindness



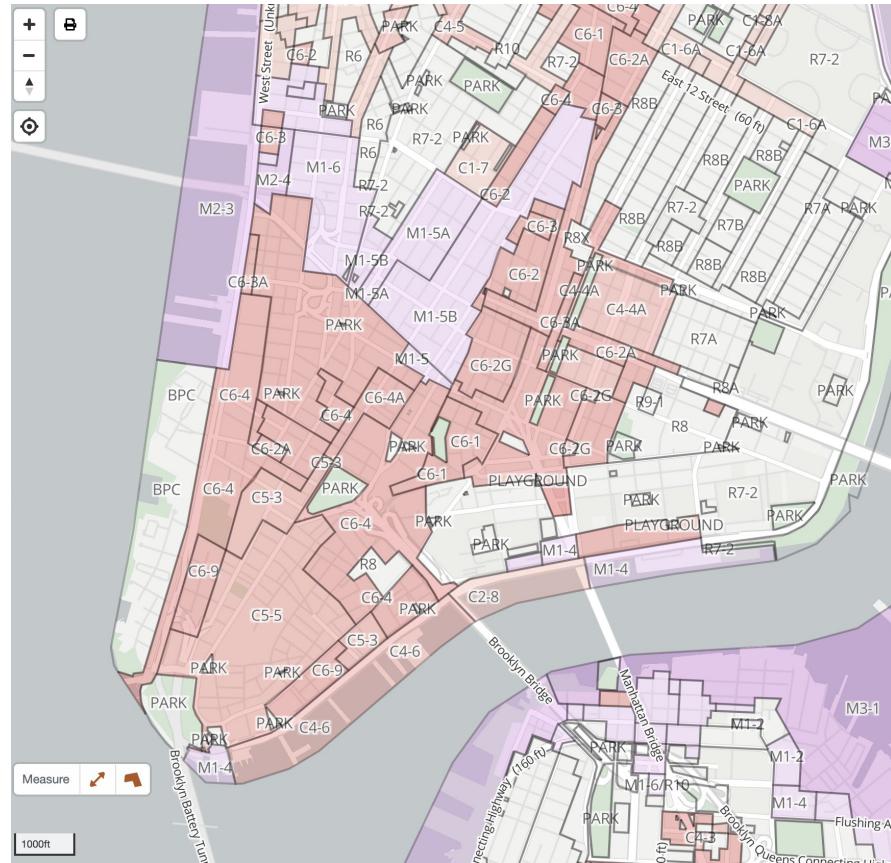
Full Color



Red-Green  
Color Blindness

## Zoning and Land Use 2

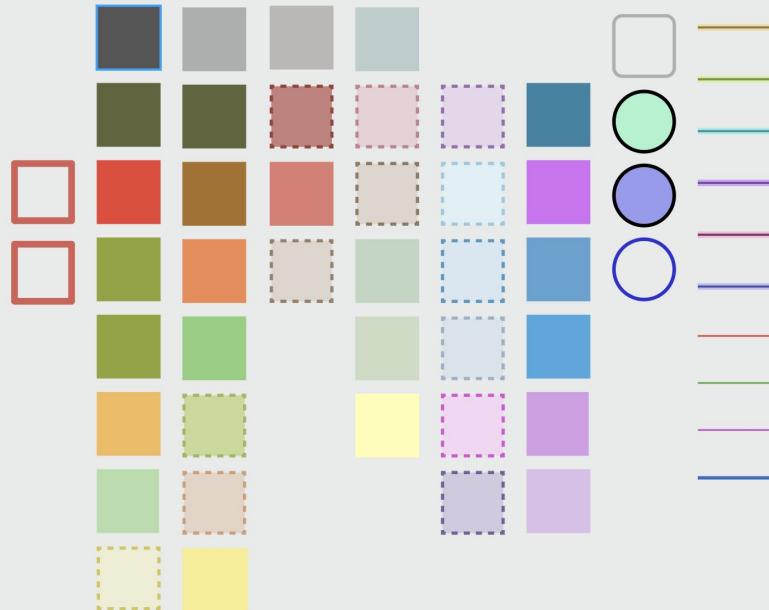
- Tax Lots
  - Show Land Use Colors
  - Zoning Districts
  - Commercial Districts
  - Manufacturing Districts
  - Residence Districts
  - Parks
  - Battery Park City



# Color Summary

Full Color Vision

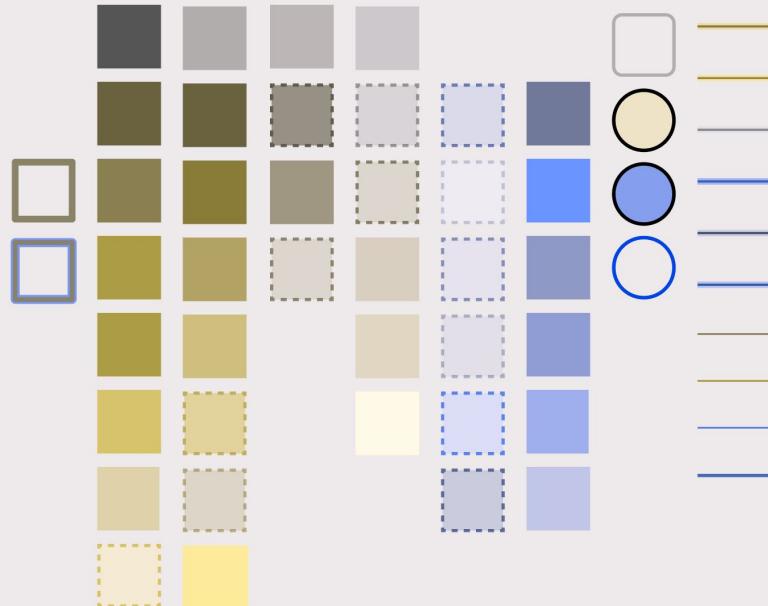
~ 53  
Zoning Categories



# Color Summary

Protanopia

~ 53  
Zoning Categories



**Challenge:** Design for ~53 distinguishable zoning + land use categories for red-green color-blind users.

**Challenge:**

**~1128 different ways to choose 2 categories.**



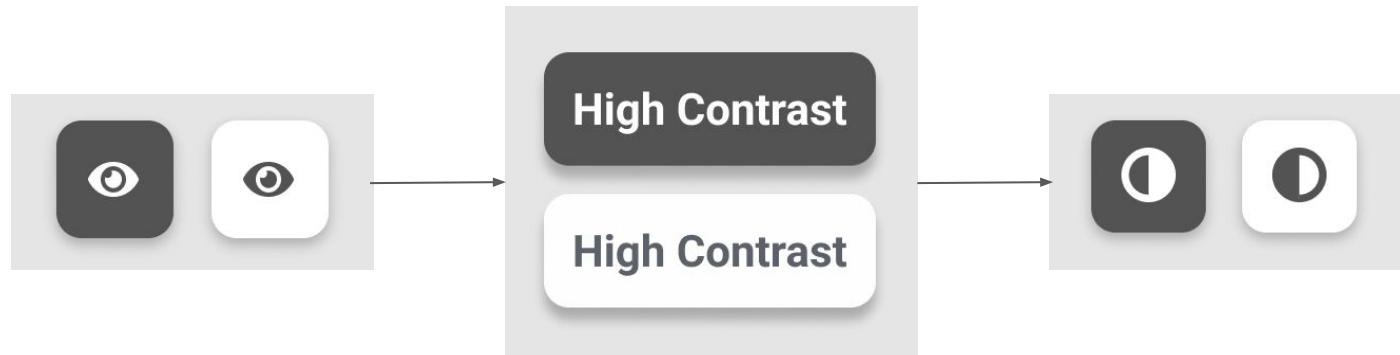
**~17,296 different ways to choose 3 categories.**



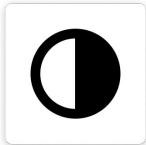
**~194,580 different ways to choose 4 categories.**



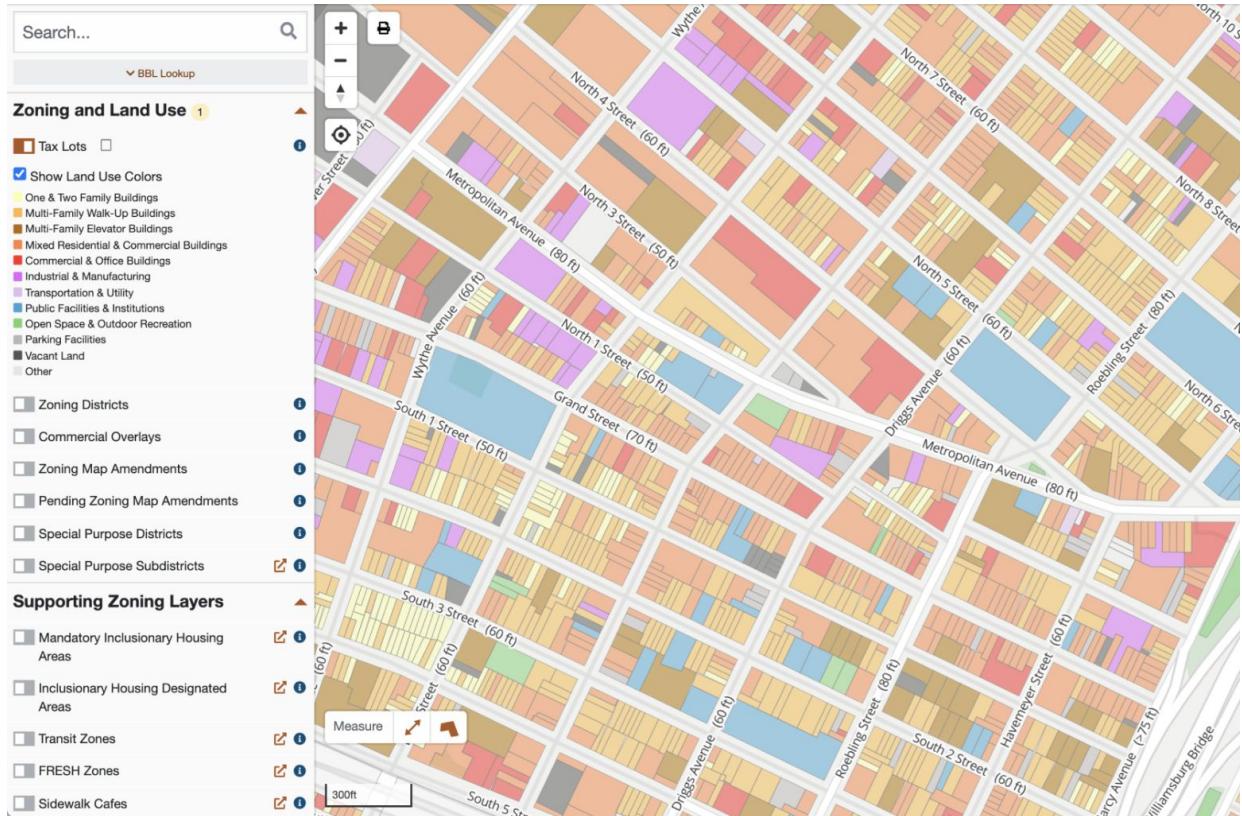
# The evolution of the “High Contrast” Button



# Solution: High Contrast Mode



Version 1.1



# Solution: **High Contrast Mode**



Version 1.1

**Zoning and Land Use**

- Tax Lots
- Show Land Use Colors
  - One & Two Family Buildings
  - Multi-Family Walk-Up Buildings
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  - Mixed Residential & Commercial Buildings
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  - Public Facilities & Institutions
  - Open Space & Outdoor Recreation
  - Parking Facilities
  - Vacant Land
  - Other
- Zoning Districts
- Commercial Overlays
- Zoning Map Amendments
- Pending Zoning Map Amendments
- Special Purpose Districts
- Special Purpose Subdistricts

**Supporting Zoning Layers**

- Mandatory Inclusionary Housing Areas
- Inclusionary Housing Designated Areas
- Transit Zones

**Zoning and Land Use**

- Show Land Use Colors
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**Supporting Zoning Layers**

- Mandatory Inclusionary Housing Areas
- Inclusionary Housing Designated Areas
- Transit Zones
- FRESH Zones
- Sidewalk Cafes

Search... (BBL Lookup)

Measure

300ft

**NYC PLANNING** **ZoLa** New York City's Zoning & Land Use Map

About

Features

Data

Saved 4

Search... 

BBL Lookup

**Zoning and Land Use** 1

Tax Lots  Show Land Use Colors

- One & Two Family Buildings
- Multi-Family Walk-Up Buildings
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- Other

Zoning Districts

Commercial Overlays

Zoning Map Amendments

Pending Zoning Map Amendments

Special Purpose Districts

Special Purpose Subdistricts

**Supporting Zoning Layers**

Mandatory Inclusionary Housing Areas

Inclusionary Housing Designated Areas

Transit Zones

A detailed map of a residential area in Brooklyn, showing a grid of streets and tax lots. The map uses color-coding to represent different zoning categories. Labels on the map include Wythe Street, North 4 Street (60 ft), North 7 Street (60 ft), North 10 Street (60 ft), Richardson Street (60 ft), Withers Street (60 ft), Metropolitan Avenue, North 3 Street (50 ft), North 5 Street (60 ft), North 8 Street (60 ft), North 9 Street (60 ft), North 6 Street (60 ft), North 7 Street (60 ft), Wyne Avenue (60 ft), Grand Street (70 ft), Driggs Avenue, Metropolitan Avenue (80 ft), South 1 Street (50 ft), South 3 Street (60 ft), South 5 Street, Robbing Street (80 ft), Havemeyer Street (60 ft), Carly Avenue (>75 ft), Rodney Street (>75 ft), Keap Street (60 ft), Devoe Street (60 ft), Williamsburg Bridge, and Union Avenue. A scale bar indicates distances up to 300ft. A measurement tool is shown in the bottom left corner.

Measure  

300ft

© OpenMapTiles © OpenStreetMap contributors

## Full-Color Palette



## Deutanopia/Protanopia-Friendly Palette

**21 Categories Adjusted**

\*Marking changed categories

- One & Two Family Buildings
- \*Multi-Family Walk-Up Buildings
- \*Multi-Family Elevator Buildings
- \*Mixed Residential & Commercial Buildings
- \*Commercial & Office Buildings
- \*Industrial & Manufacturing
- \*Transportation & Utility
- \*Public Facilities & Institutions
- \*Open Space & Outdoor Recreation
- Parking Facilities
- Vacant Land
- Other

- Commercial Districts
- Manufacturing Districts
- Residence Districts
- \*Parks
- Battery Park City
- \*Commercial Overlays

- Zoning Map Amendments
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- Mandatory Inclusionary Housing Areas
- Inclusionary Housing Designated Areas
- Transit Zones
- FRESH Zones

- \*Effective Flood Insurance Rate Maps 2007/2015

- Limited Height Districts
- Lower Density Growth Management Areas
- Coastal Zone Boundary
- Waterfront Access Plan
- \*Historic Districts



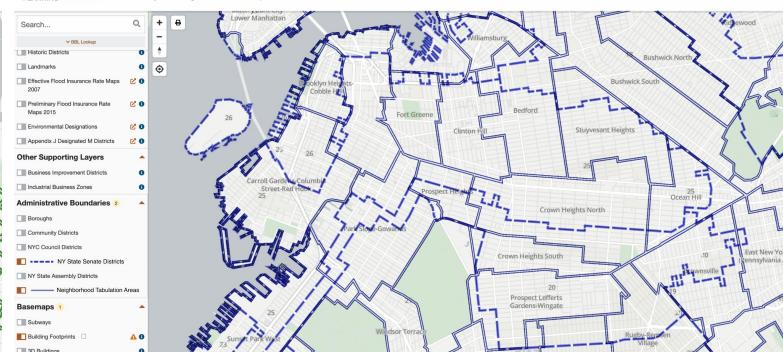
\*Landmarks

- Environmental Designations
- Appendix J Designated M Districts
- Business Improvement Districts
- Industrial Business Zones



\*Sidewalk Cafes

- Boroughs
- \*Community Districts
- NYC Council Districts
- NY State Senate Districts
- \*NY State Assembly Districts
- \*Neighborhood Tabulation Areas

**NYC PLANNING** ZoLa New York City's Zoning & Land Use Map**NYC PLANNING** ZoLa New York City's Zoning & Land Use Map**NYC PLANNING** ZoLa New York City's Zoning & Land Use Map**NYC PLANNING** ZoLa New York City's Zoning & Land Use Map**NYC PLANNING** ZoLa New York City's Zoning & Land Use Map**NYC PLANNING** ZoLa New York City's Zoning & Land Use Map**NYC PLANNING** ZoLa New York City's Zoning & Land Use Map

## **Readability Tests**

Compared readability between original ZoLa map and color-accessible map:

- 9 red-green color-blind users (3 DCP users)
- 7 map scenarios
- 25 questions

## Question Types

1. **Identification:** Questions that asked users to identify a zoning category.
2. **Ease of Reading:** Questions that asked users the ease/difficulty of identifying a zoning category.
3. **Map Preference:** Questions that directly asked users which map they preferred.

### **Metric for Success**

Improvement in identification, ease of use, or map preference between the color accessible map and the regular map.

**Test Results:** In most scenarios, every color-blind user preferred the color accessible map. In all scenarios, a significant majority preferred color accessible map.

**A. General Zoning (3 scenarios)**

Scenario 1: **100% of respondents prefer color accessible map**

Scenario 2: **83% of respondents prefer color accessible map, 16% prefer original map**

Scenario 3: **83% of respondents prefer color accessible map, 16% no difference**

**B. Tax Lots (1 scenario)**

Scenario 1: **100% of respondents prefer color accessible map**

**C. Administrative Boundaries (1 scenario)**

Scenario 1: **100% of respondents prefer color accessible map**

*“Map 2 [color accessible map] hands down. Don’t see any difference between the boundaries on map 1.”*

**D. Sidewalk Cafes (1 scenario)**

Scenario 1: **67% of respondents prefer color accessible map**

**E. Landmarks (1 scenario)**

Scenario 1: **100% of respondents prefer color accessible map**

## **Survey + Product Owner Feedback:**

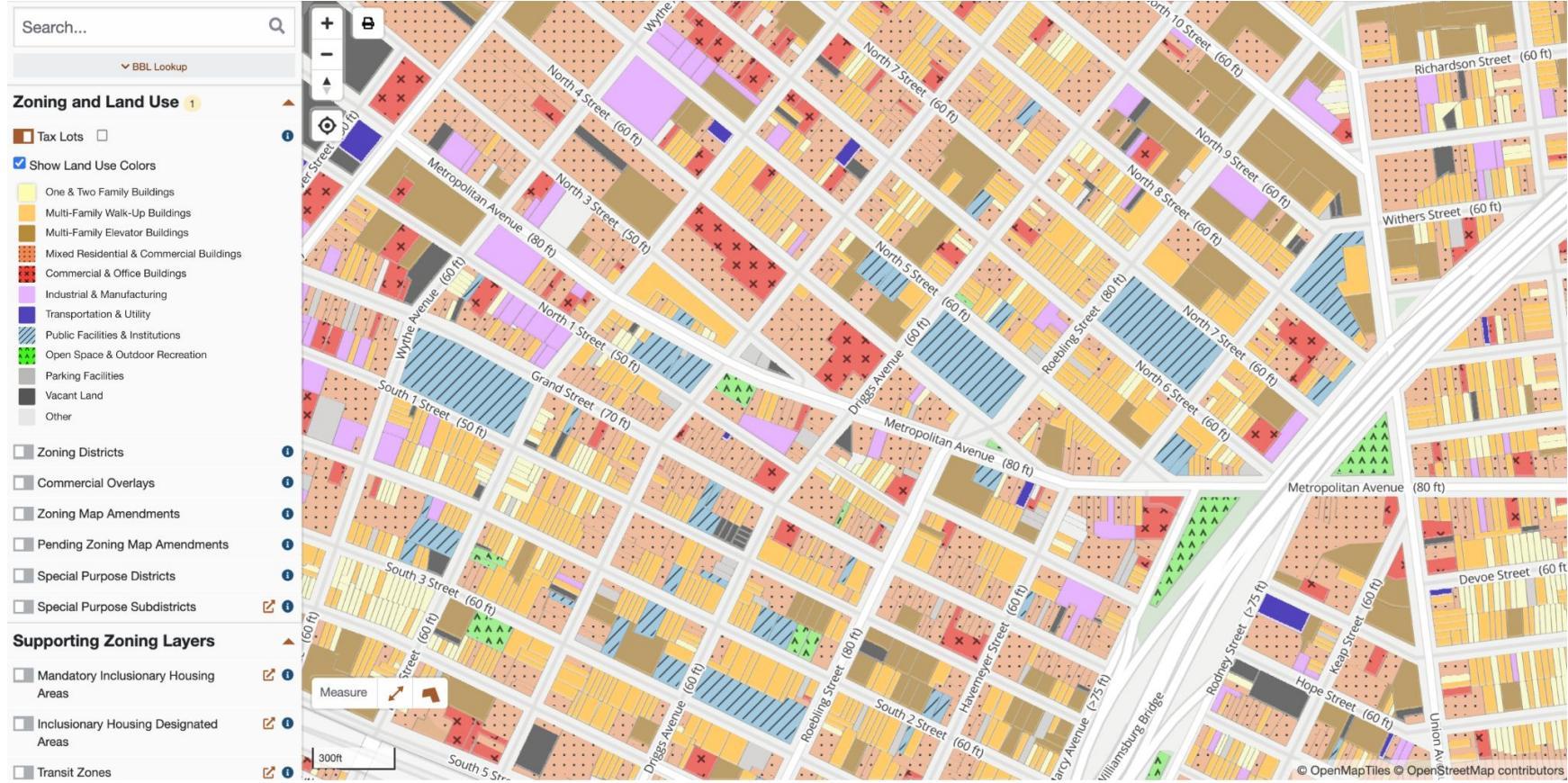
- 1. Patterns that can interrupt reading experience:**
  - a. Patterns that compete for visual attention
  - b. Patterns unrelated to the zoning category
  - c. Visibility of tax lot lines and building footprints
- 2. Grayscale Feature to isolate texture effectiveness.**
- 3. User testing: consolidating questions + refining map scenarios.**

**Results:**

Completed V2 High Contrast Map

*Pending User Tests*

# High Contrast Mode: Version 1.1



# High Contrast Mode: Version 2

**Zoning and Land Use** 1

Show Land Use Colors

- Tax Lots
- One & Two Family Buildings
- Multi-Family Walk-Up Buildings
- Multi-Family Elevator Buildings
- Mixed Residential & Commercial Buildings
- Commercial & Office Buildings
- Industrial & Manufacturing
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- Parking Facilities
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- Other

Zoning Districts

Commercial Overlays

Zoning Map Amendments

Pending Zoning Map Amendments

Special Purpose Districts

Special Purpose Subdistricts

**Supporting Zoning Layers**

Mandatory Inclusionary Housing Areas

Inclusionary Housing Designated Areas

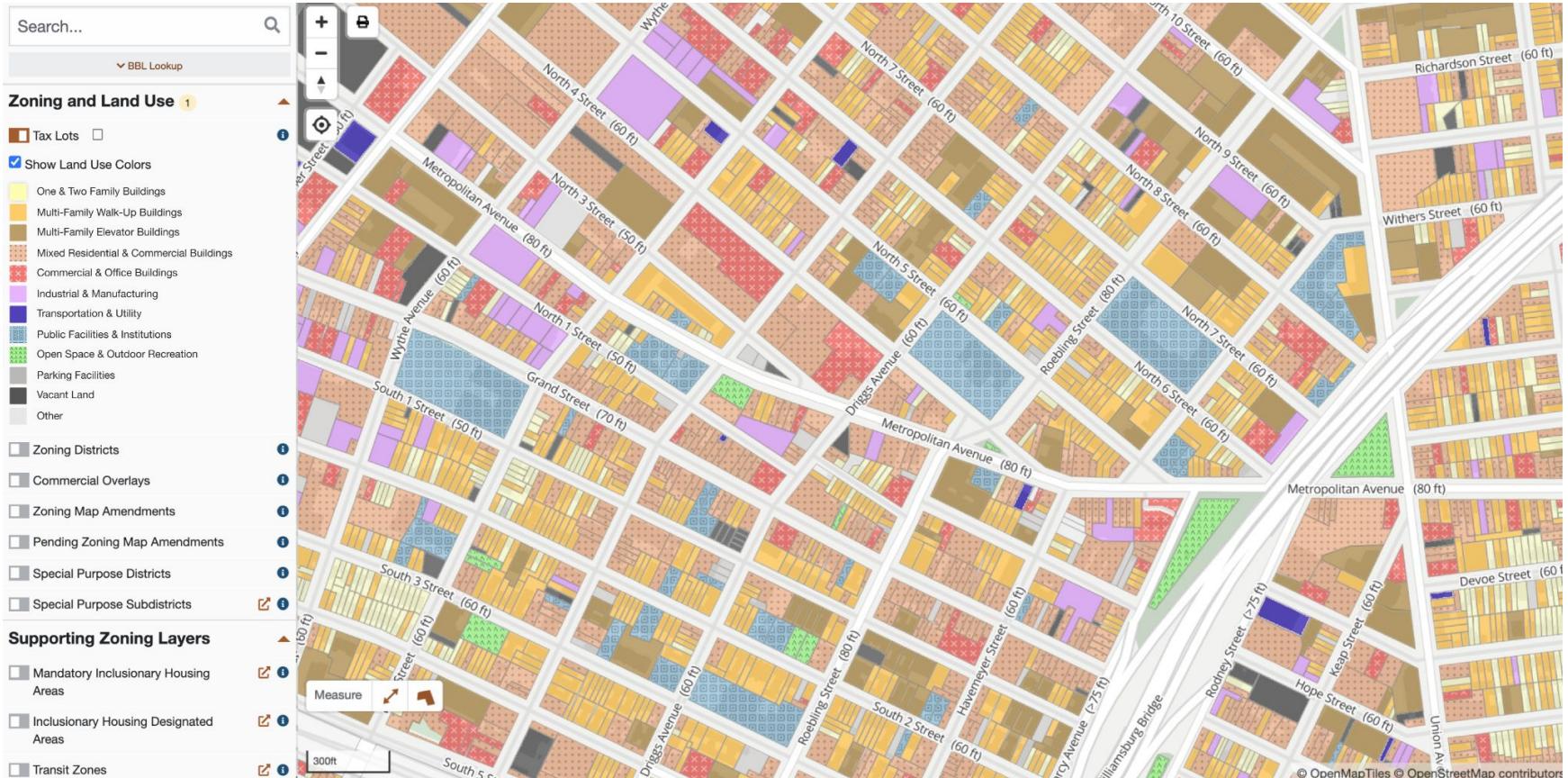
Transit Zones

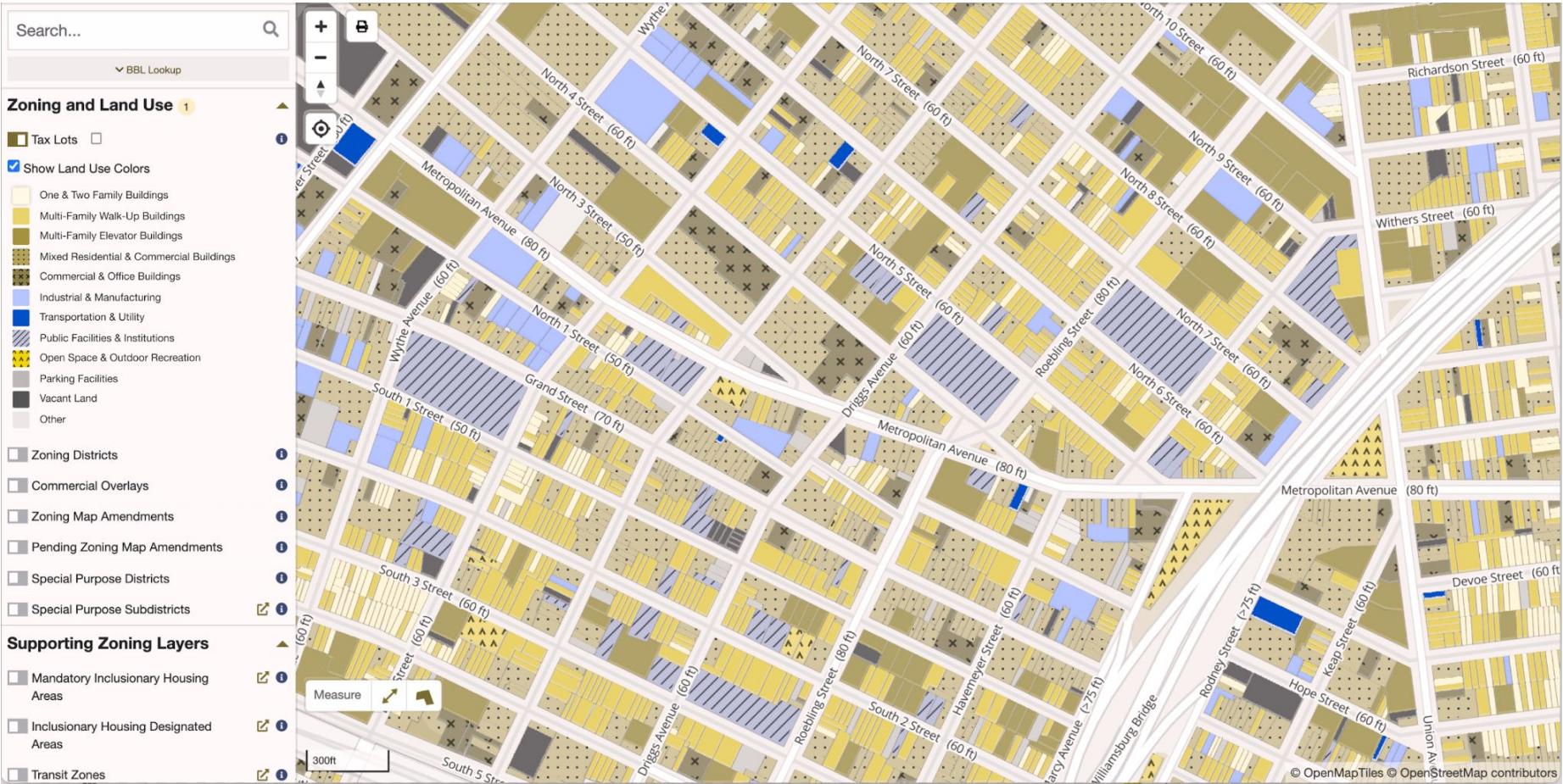
Measure

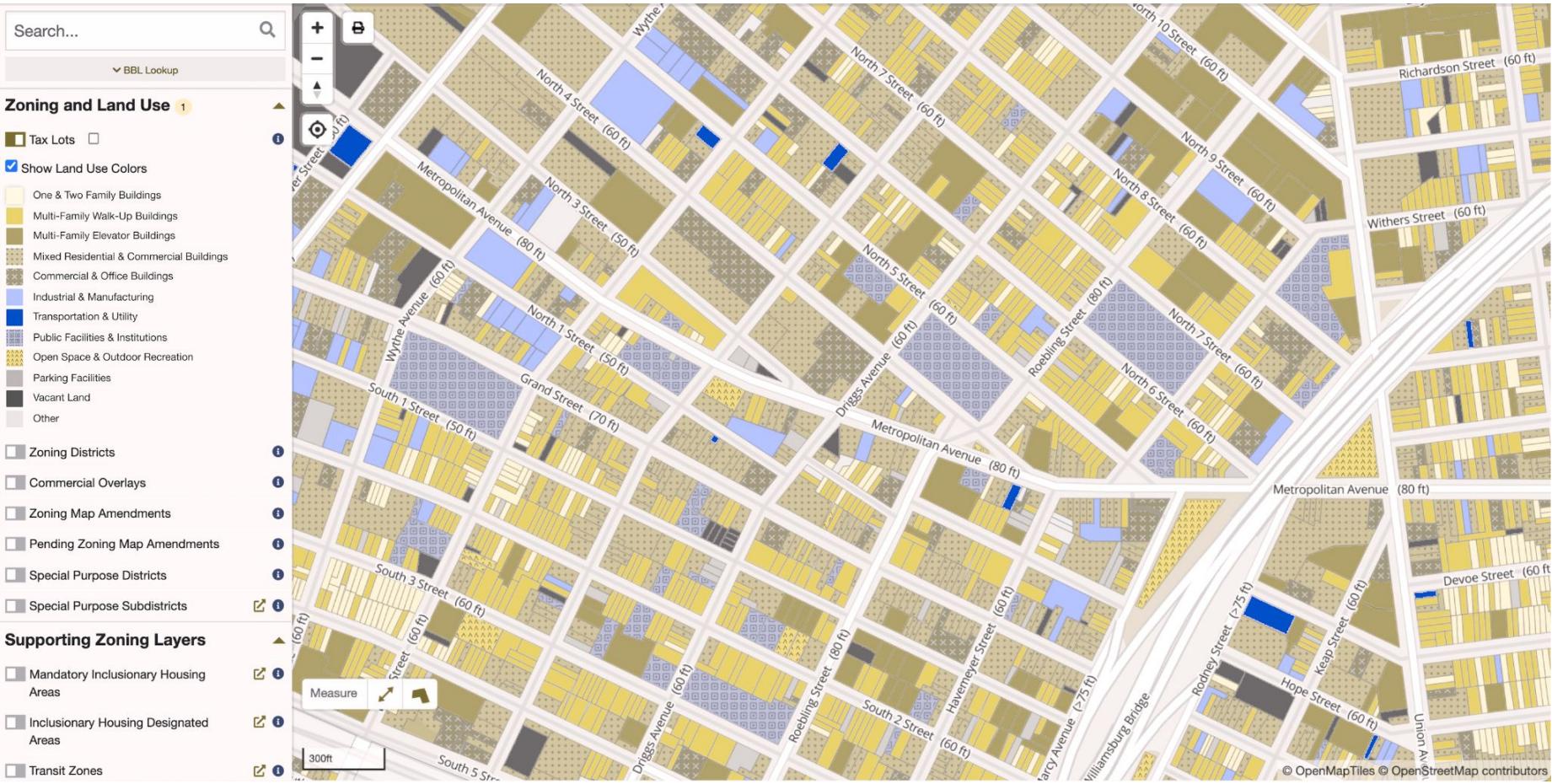
300ft

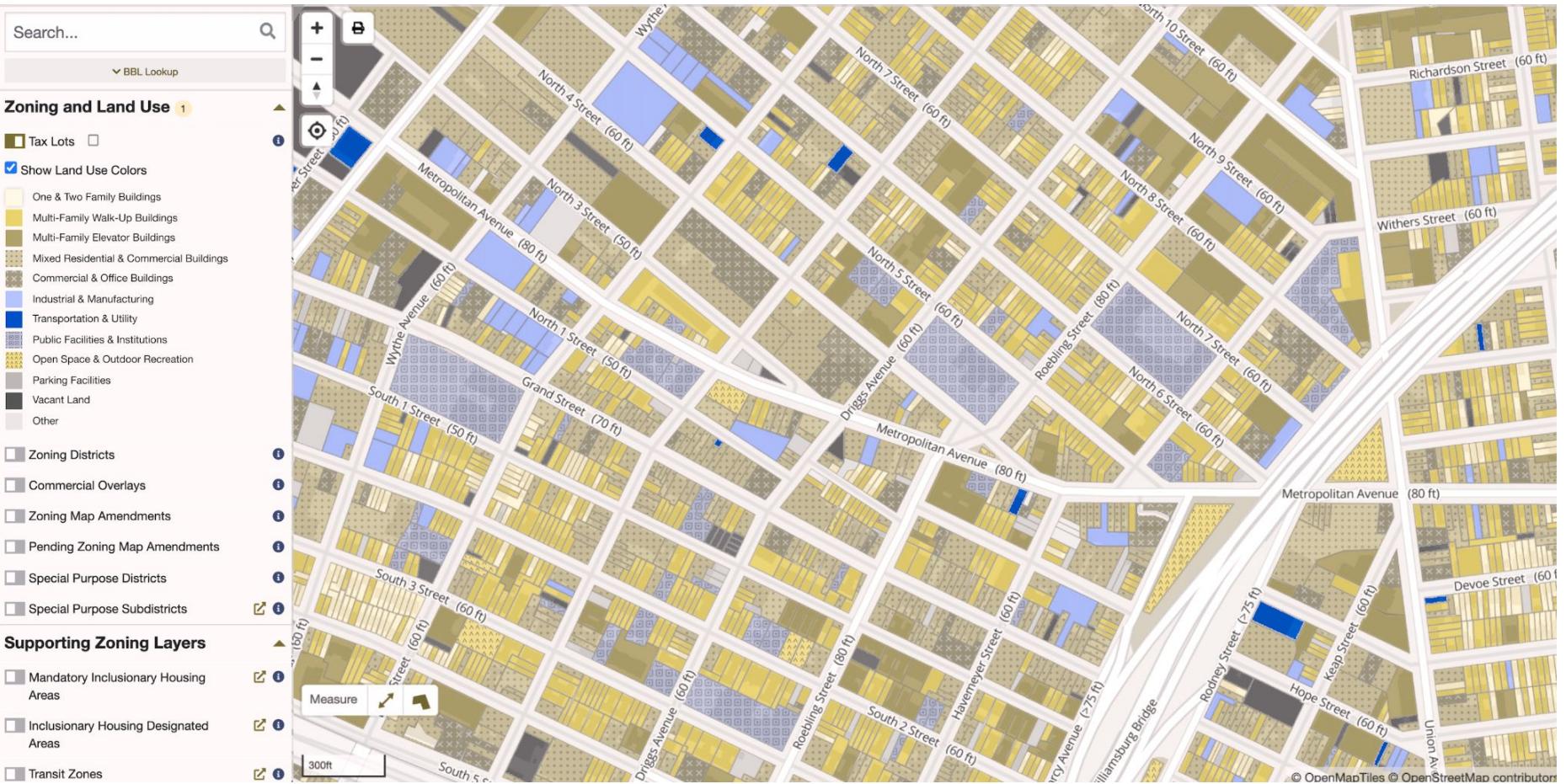
© OpenMapTiles © OpenStreetMap contributors

## High Contrast Mode: Version 2 (With Building Footprints + Tax Lines)









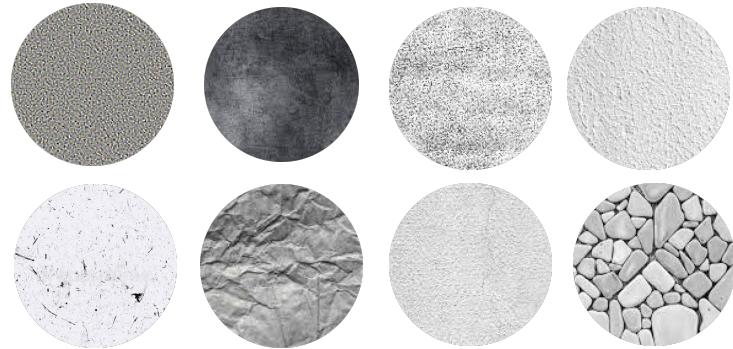
# Patterns: Experimenting with Texture and Micropatterns



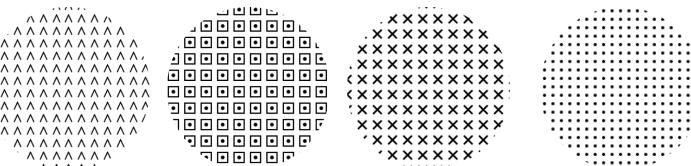
Drawn  
Texture



Vector-based  
Texture



Physical Texture



Micro Patterns

**Summary:**

Ready-to-implement High Contrast Mode

V2 High Contrast Mode in development