

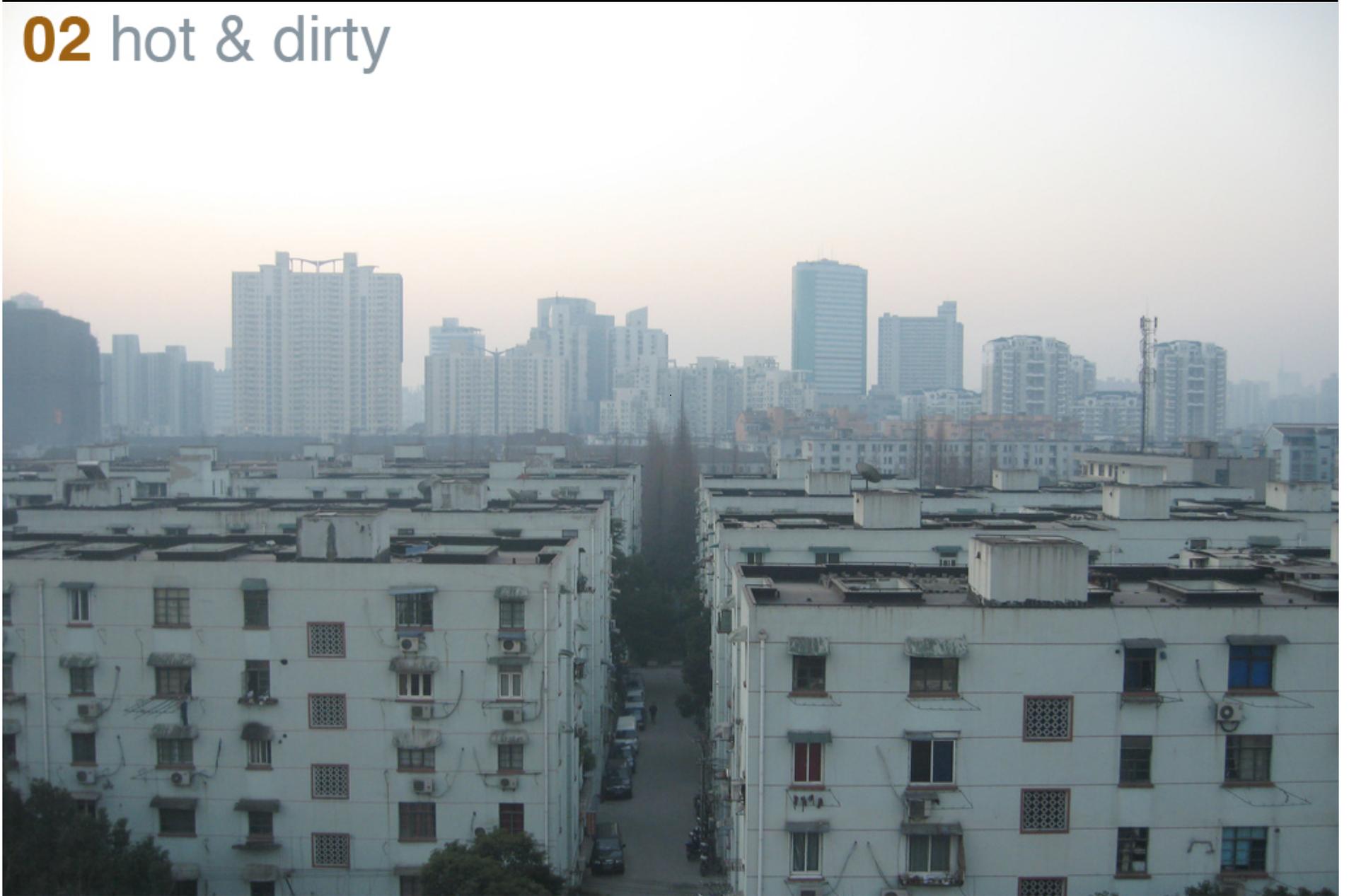
# Why density?

03 green



# Why density?

02 hot & dirty



# Why density?

**The San Francisco Bay Area must add 200,000 dwellings by the year 2020 to accommodate population growth according to the Bay Area Business Council.**



# Why density?

San Francisco has an area of 47 square miles.

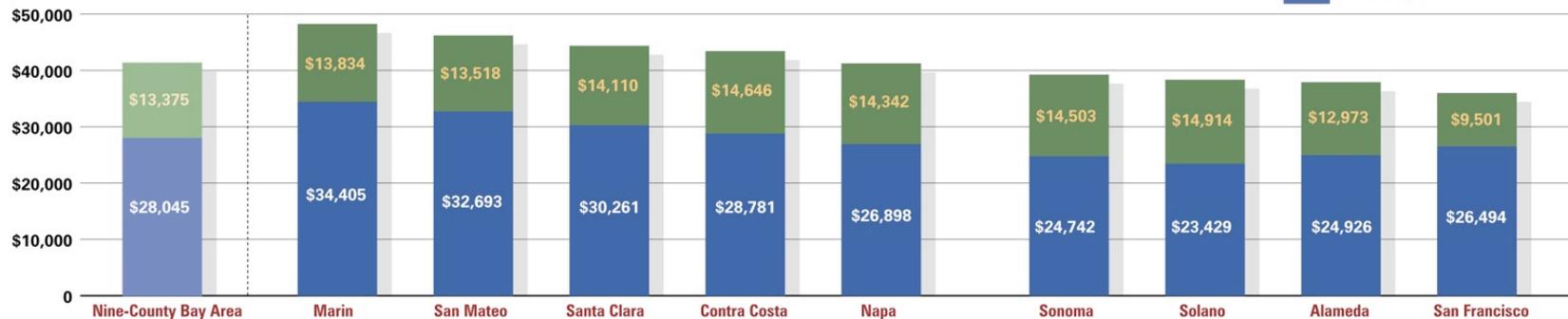
New housing the Bay Area needs will require 80+ square miles at suburban densities (6,000 people/square mile).

space

# Why density?

**Housing + Transportation Costs for Bay Area Counties**

■ Transportation  
■ Housing



	Nine-County Bay Area	Marin	San Mateo	Santa Clara	Contra Costa	Napa	Sonoma	Solano	Alameda	San Francisco
Average H+T Costs	\$41,420	\$48,239	\$46,212	\$44,371	\$43,428	\$41,240	\$39,245	\$38,342	\$37,899	\$35,995
Average Median Income	\$75,103	\$84,028	\$82,262	\$85,314	\$78,468	\$66,709	\$62,348	\$65,291	\$68,985	\$66,523
Average H+T as % of Median Income	59%	60%	58%	54%	59%	64%	66%	61%	61%	58%

ULI Terwilliger Center for Workforce Housing

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**affordability**

Why density?

# carbon footprint

Reducing carbon production is the key to reducing global warming.

Why density?

**VMT** (driving)

**= 50%**

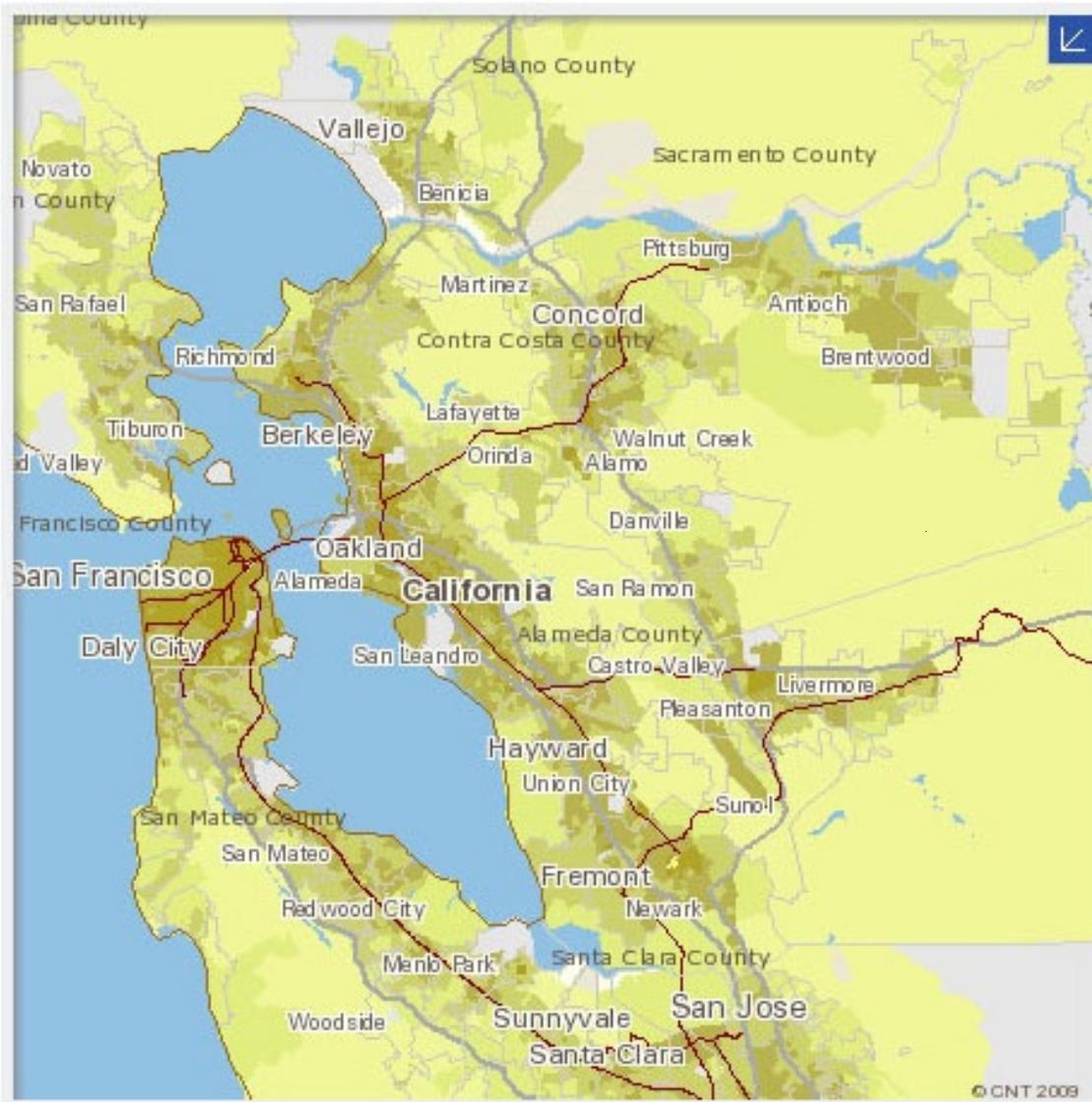
**of SF Bay Area's carbon footprint.**

Why density?

**VMT** (driving)

IS GROWING TWICE  
AS FAST AS  
POPULATION.

# Why density?



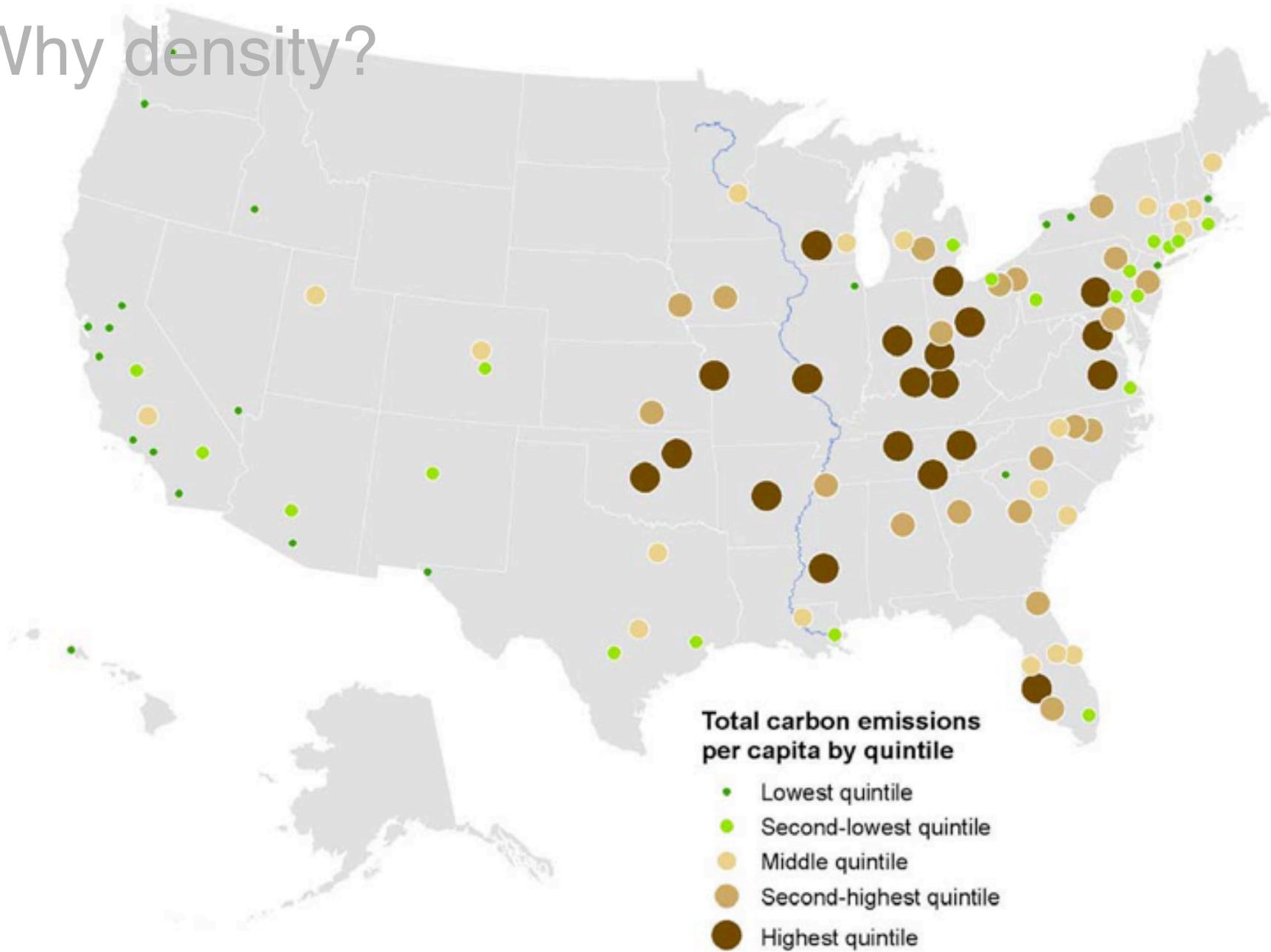
## Transit Ridership, % of Workers

- Data not available
- 0 to 1%
- 1 to 4%
- 4 to 8%
- 8 to 14%
- 14+%

Transit Ridership represents the percentage of workers in a **Block Group** who utilize **Public Transportation (Transit)** as their primary mode of transportation to work. Transit ridership impacts all three components of **Transportation Costs**.

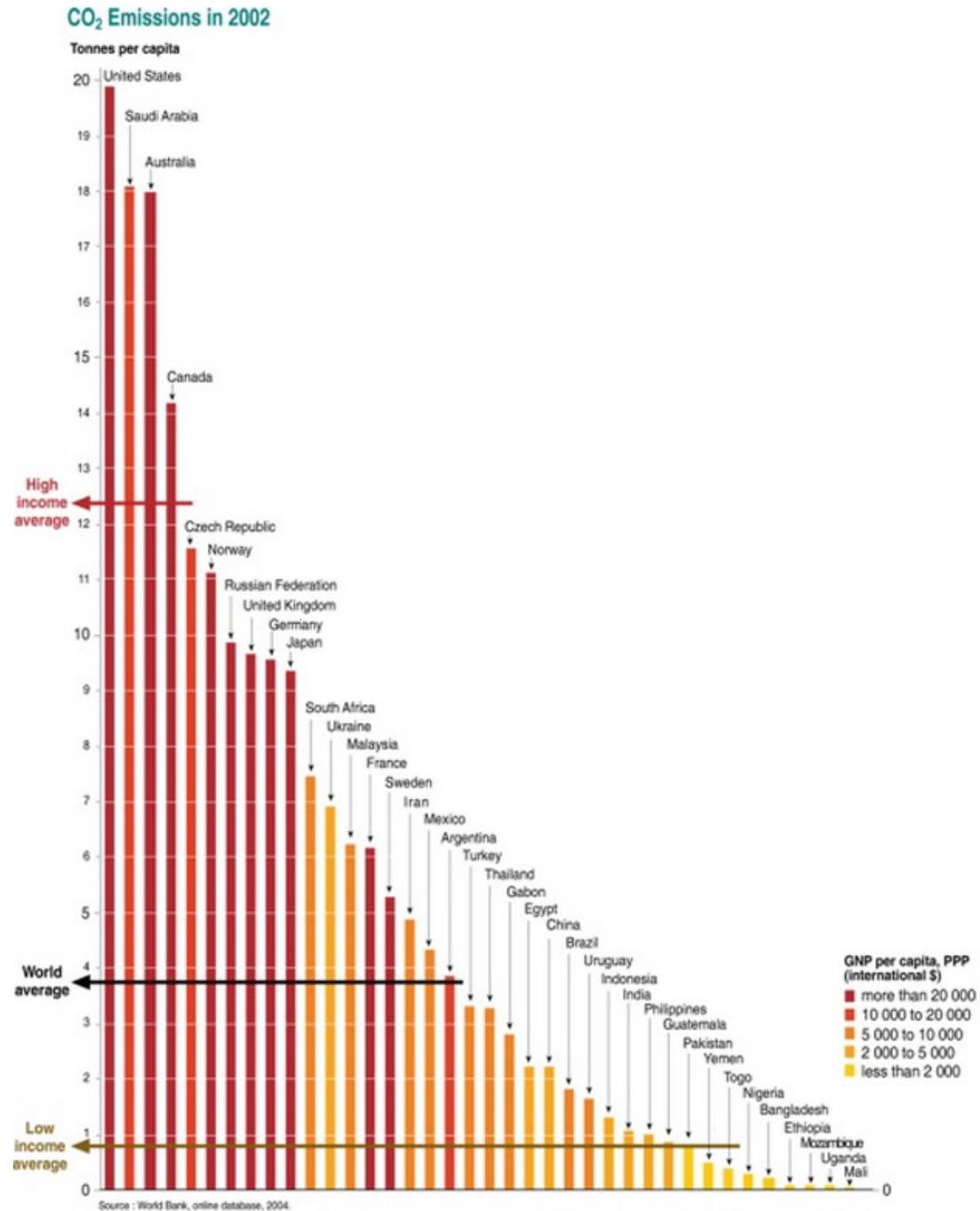


# Why density?



**Denser urban areas have lower per capita carbon emissions.**

# Why density?



# PSM (People per Square Mile)

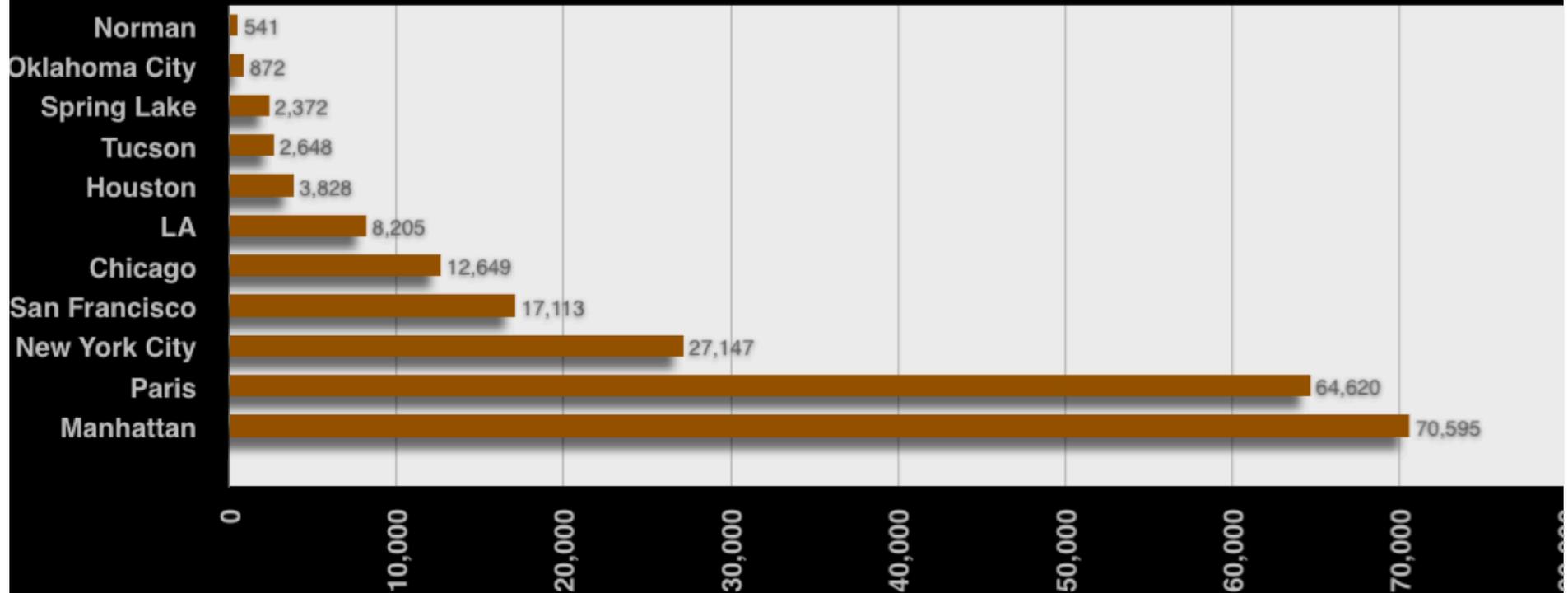
architects typically think of density in terms of “Dwelling Units per Acre” on specific sites, inside the property line

disadvantages of this metric:

- a “unit” can be a studio, or a 5 bedroom dwelling
- factors such as public R.O.W., % of parkland, etc. are ignored

**think “outside the property line”**

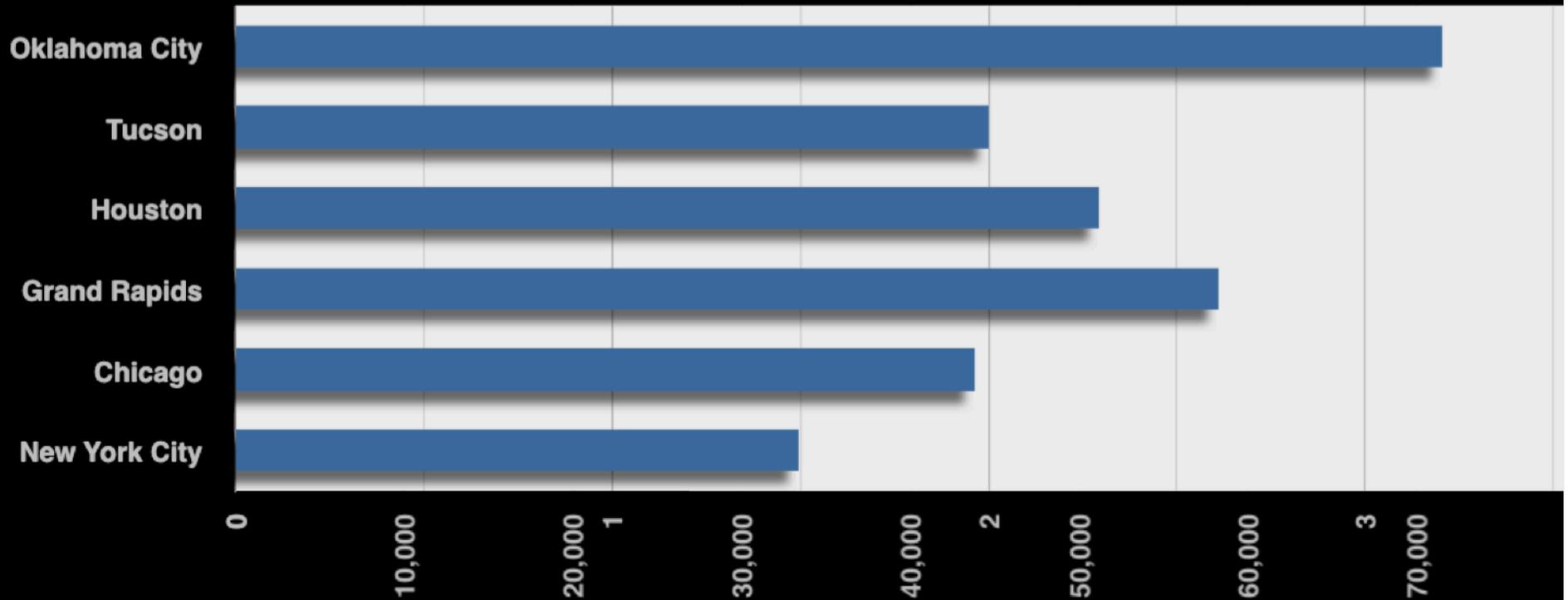
# PSM (People per Square Mile)



different cities have different densities



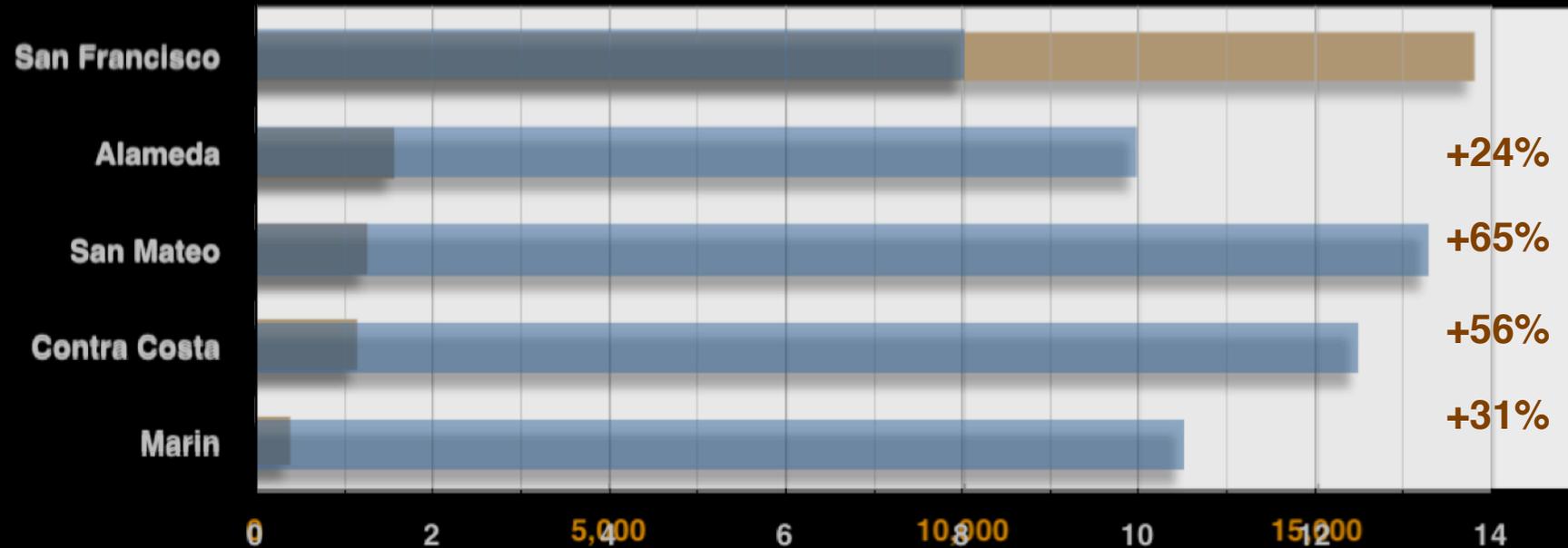
# PSM (People per Square Mile)



Carbon per citizen in tons for residential and transportation uses

Urban densities in people per square mile

# PSM (People per Square Mile)



**Metric tons carbon per citizen in tons for residential and transportation uses**

**Urban densities in people per square mile**

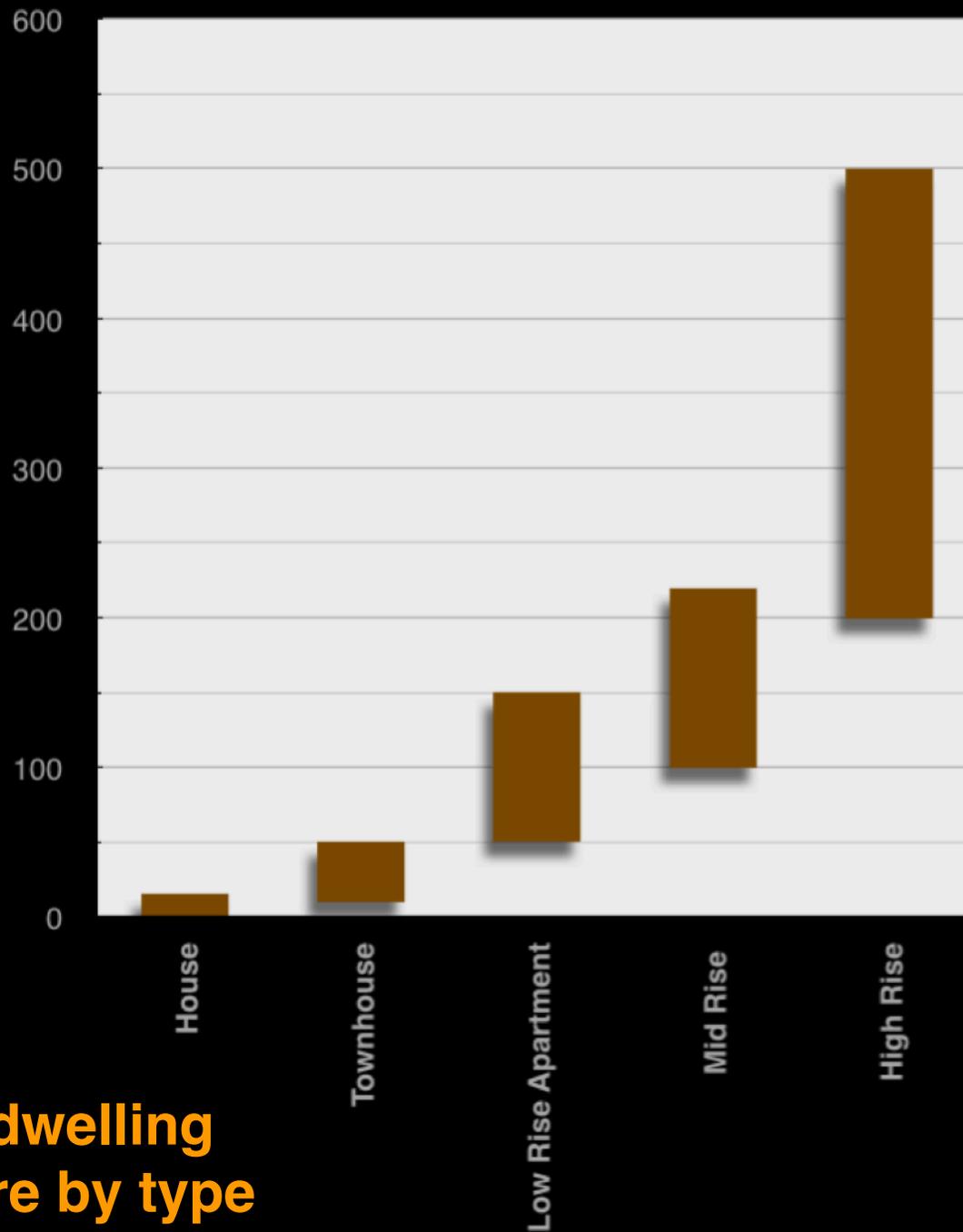
# PSM (People per Square Mile)

city recipe:

housing	50%
commercial/industrial	20%
streets	20%
parks	10%

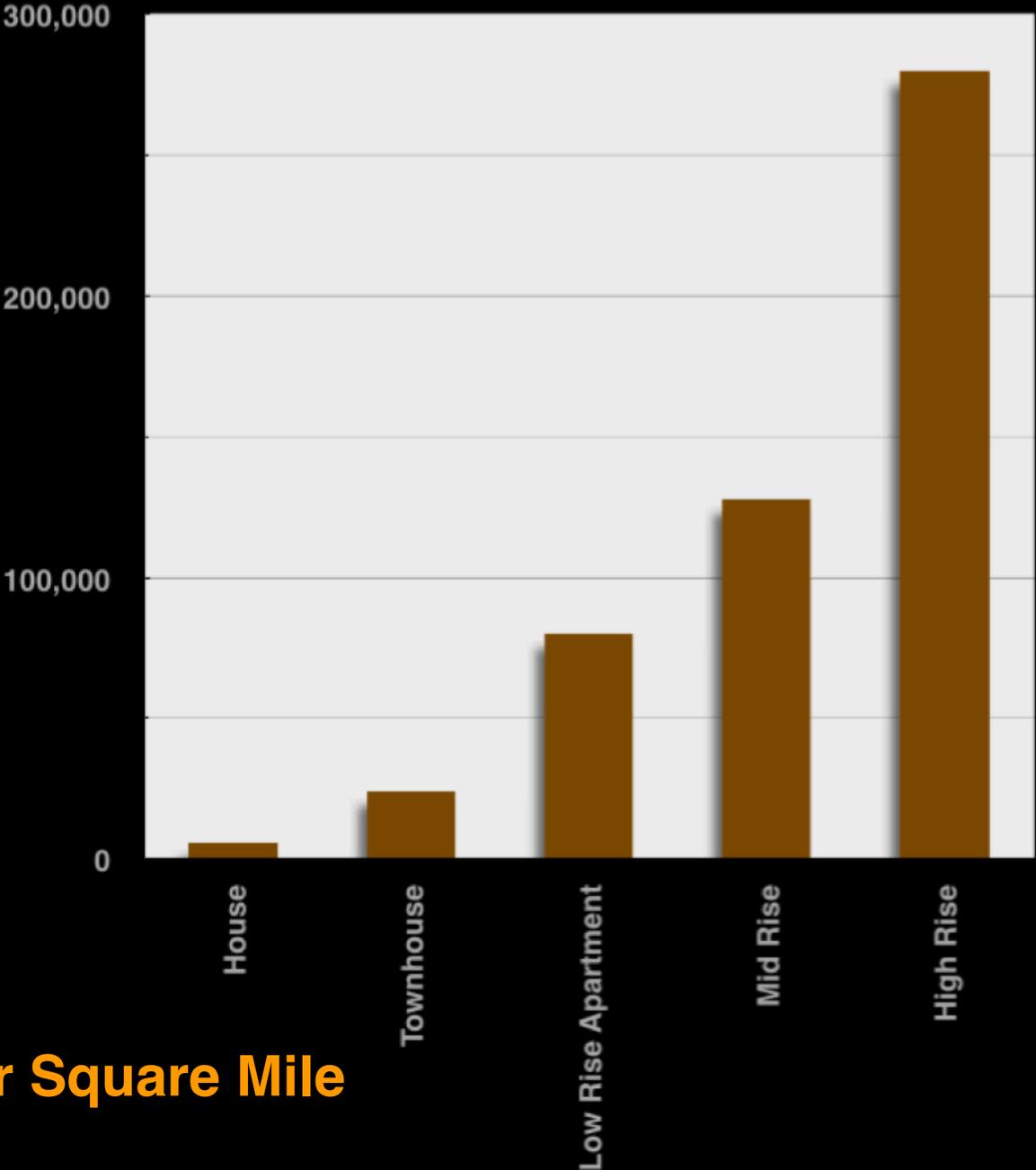
What does density look like?





**Residential dwelling  
units per acre by type**

assuming 50% residential footprint, 2.5 citizens per dwelling.



People per Square Mile by type



**33** units per acre

**17,000** people per square mile



86 units per acre

46,000 people per square mile



**172** units per acre

**92,000** people per square mile



226 units per acre

119,000 people per square mile



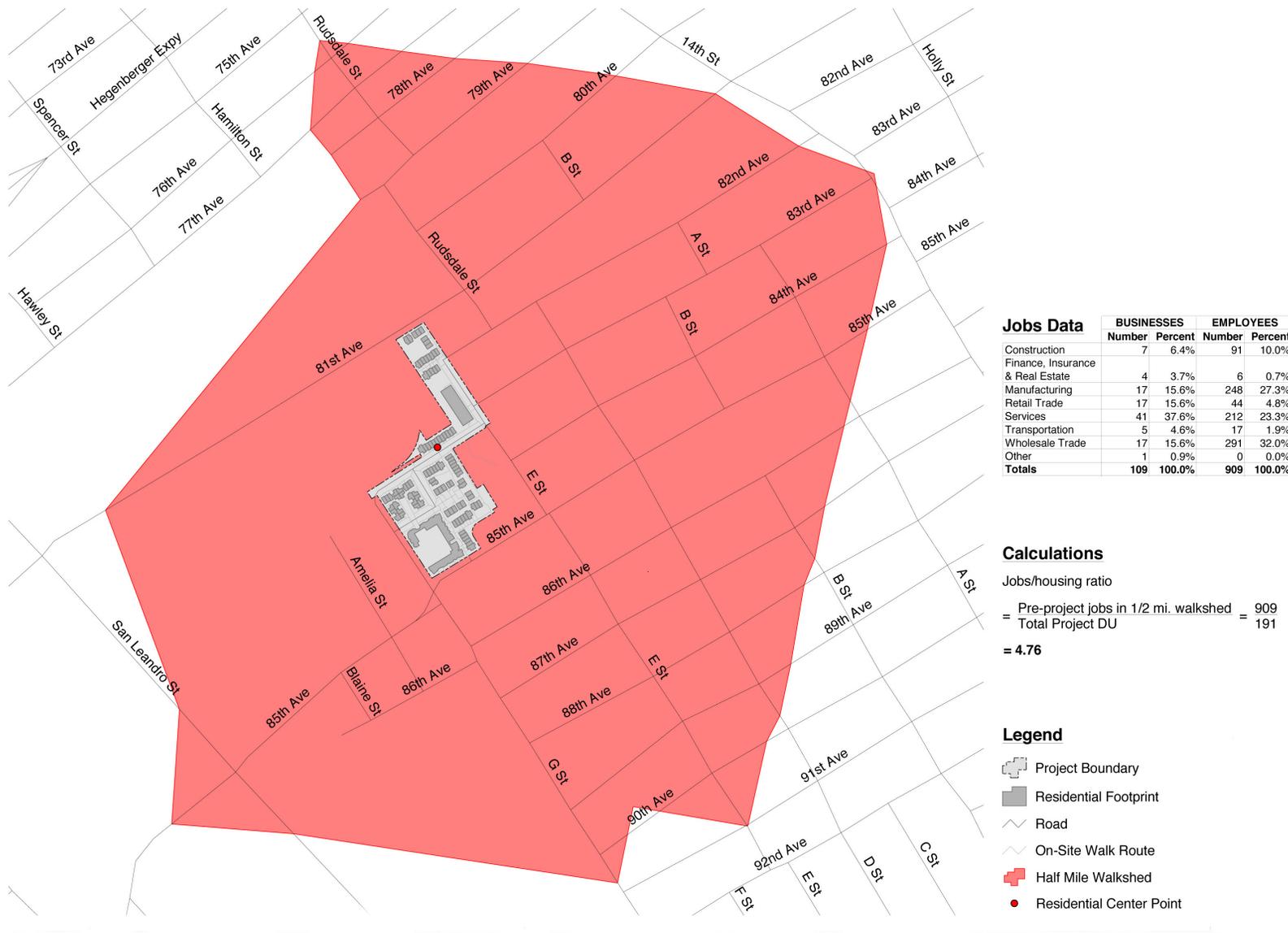
# A Thought Experiment: Utopian TOD

The premise of the “utopian TOD” thought experiment is to investigate the potential for very high density districts in zones where they make sense, such as Transit Oriented District Plans.

Typically in California no goal has been established. Without measurement no improvement is possible.

**I propose a goal of 100,000 people per square mile. What type of urban form does that produce?**

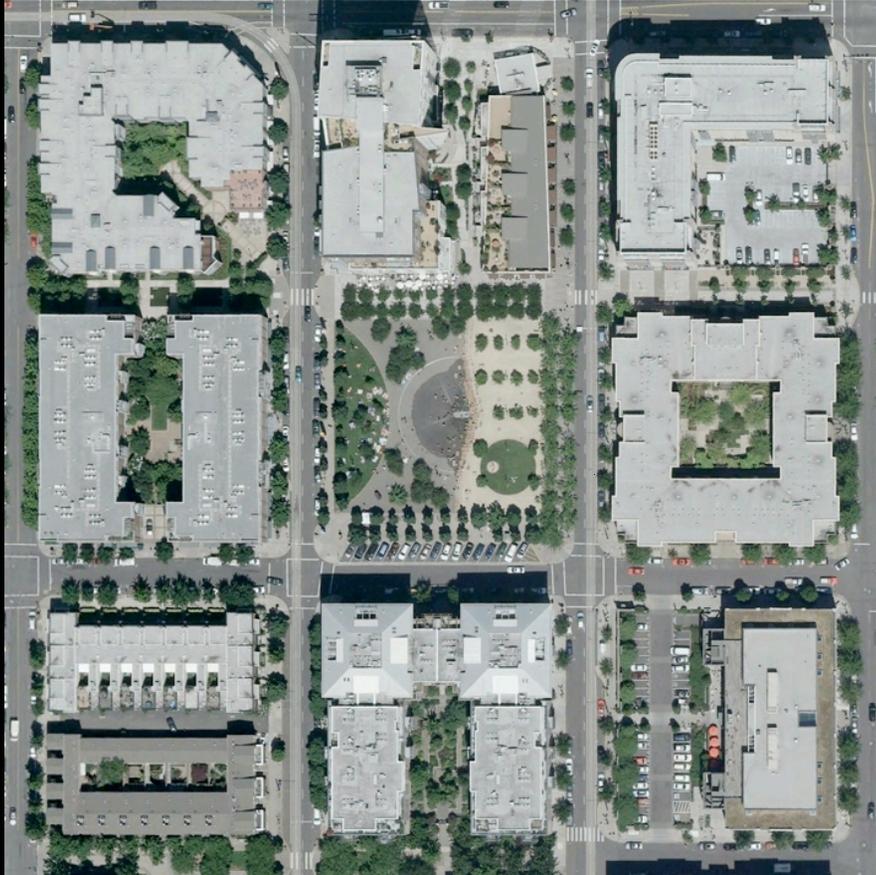




**0.5 mile diameter “5 minute walk zone” by GIS analysis**

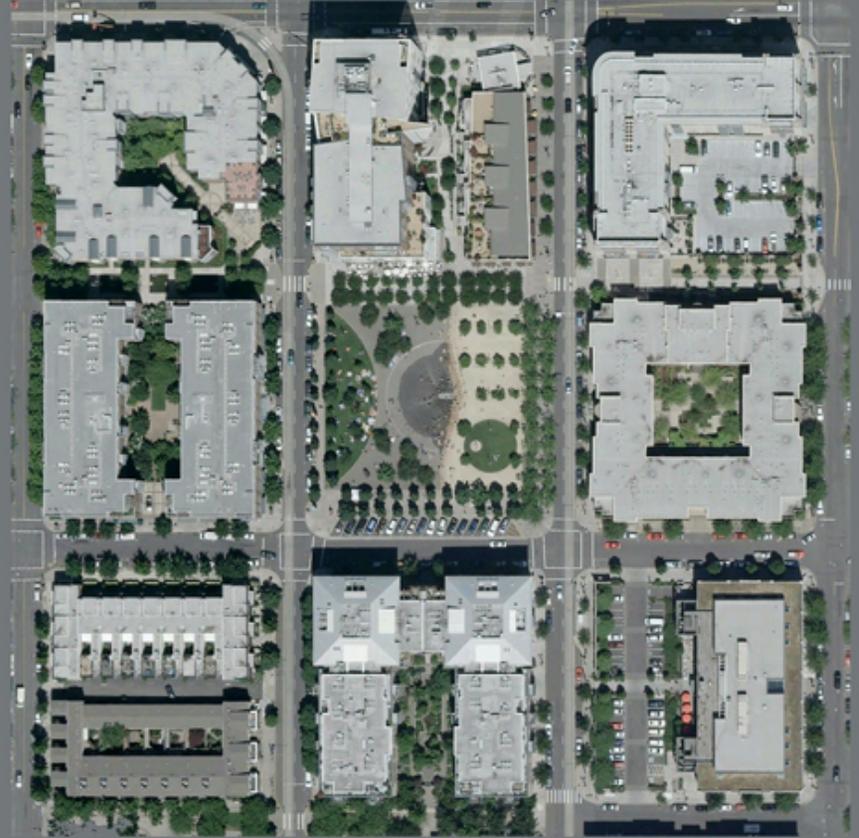
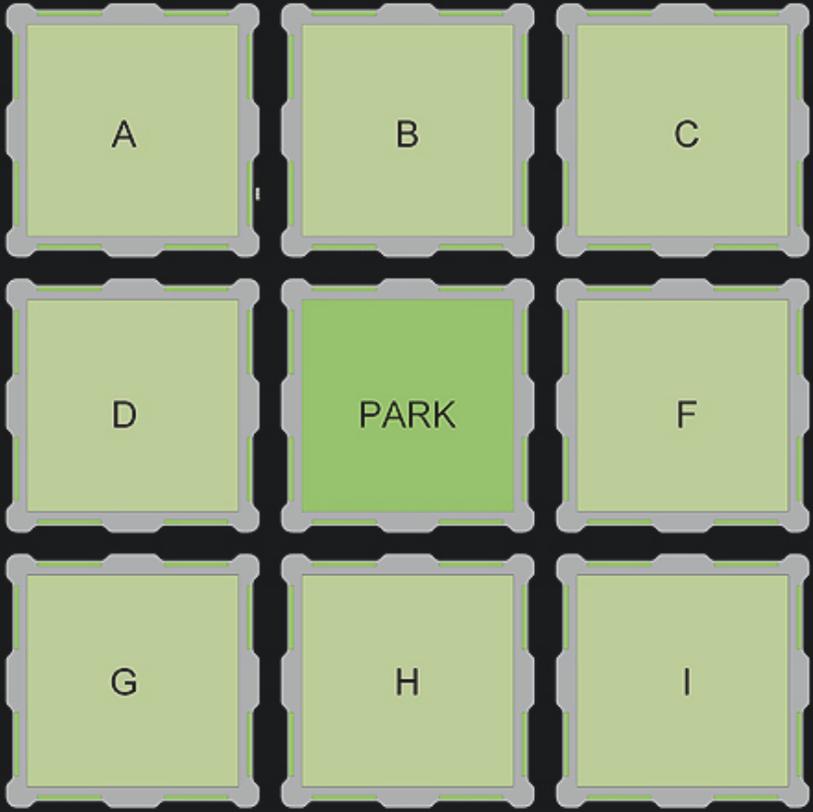


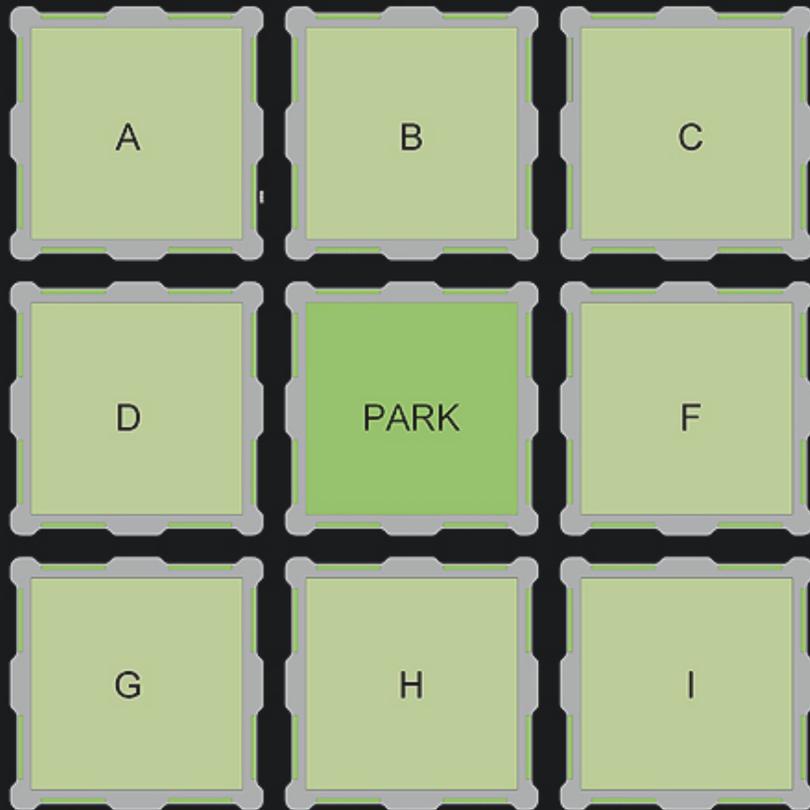




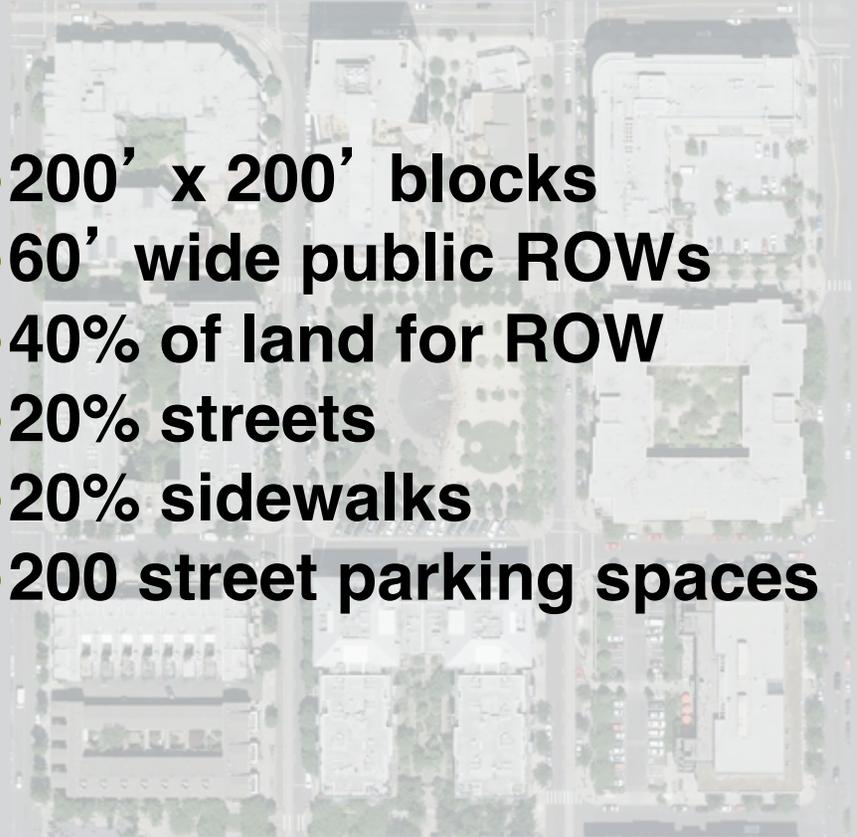
## Portland's Pearl district

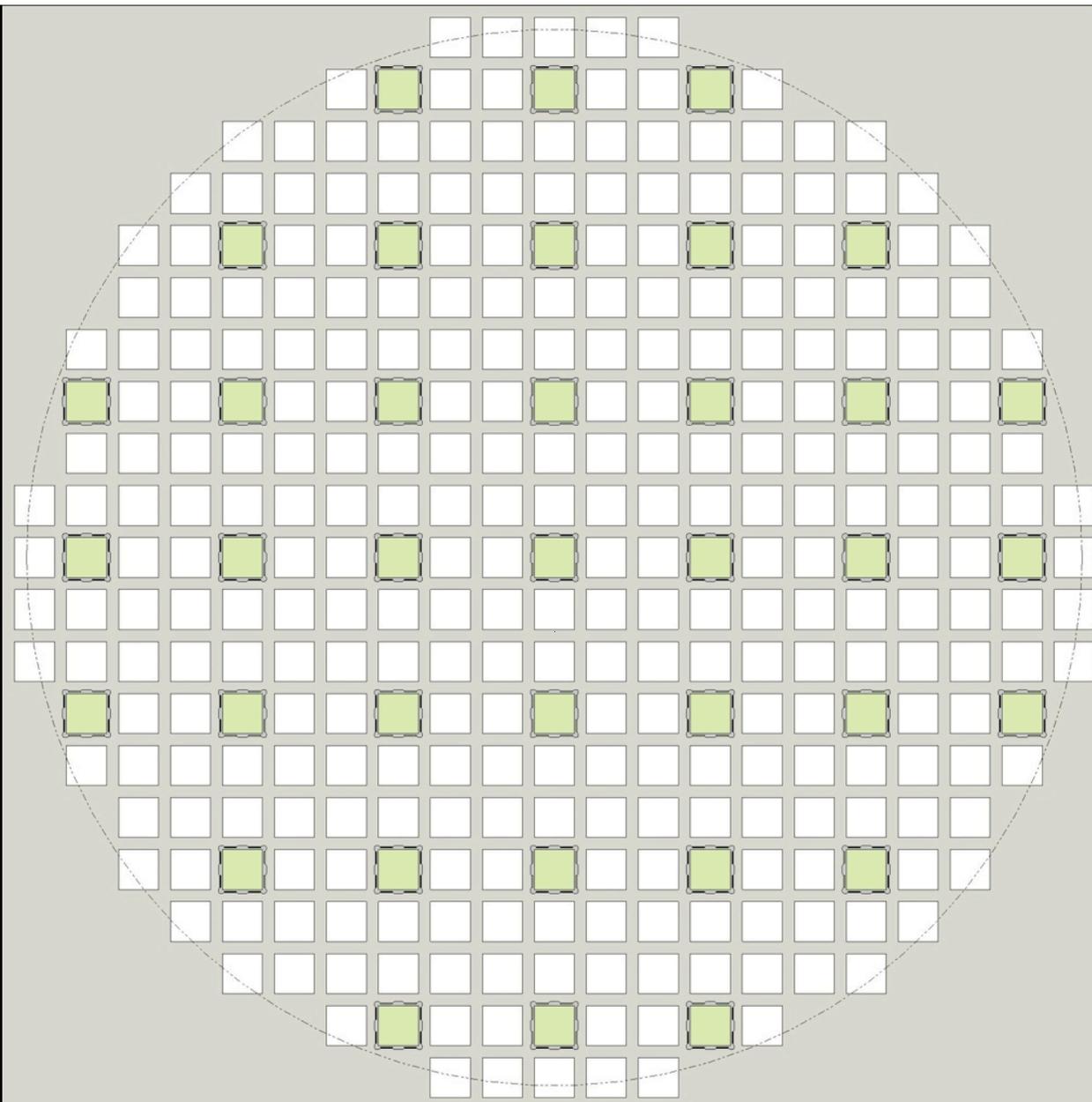
- 200' x 200' blocks
- 60' wide public ROWs





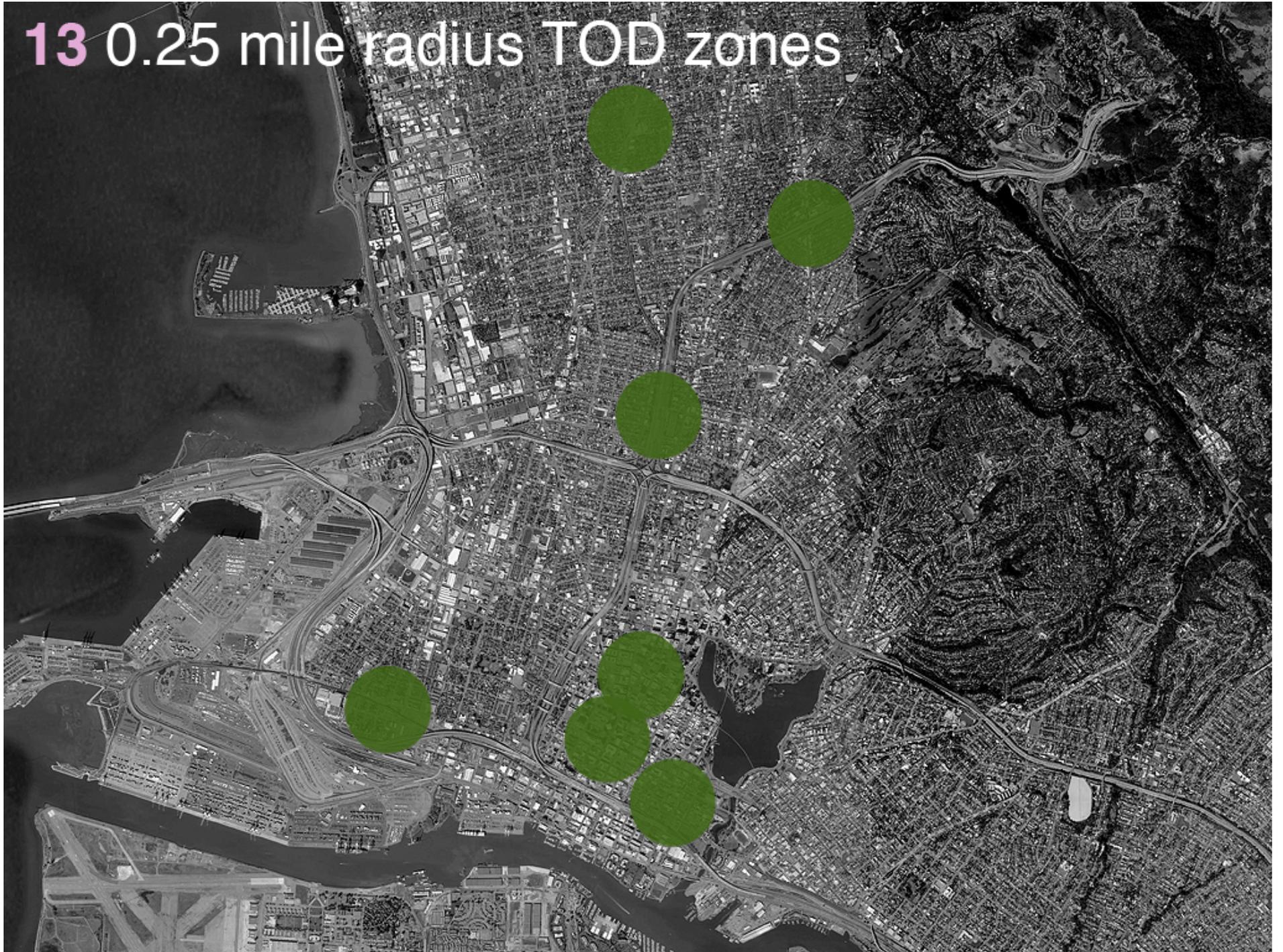
- **200' x 200' blocks**
- **60' wide public ROWs**
- **40% of land for ROW**
- **20% streets**
- **20% sidewalks**
- **200 street parking spaces**

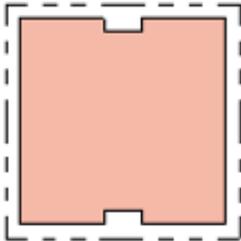




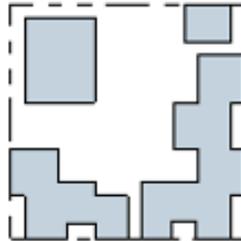
**20,000 people within a 5 minute walk radius**

# 13 0.25 mile radius TOD zones

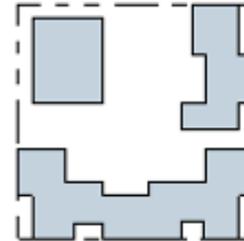




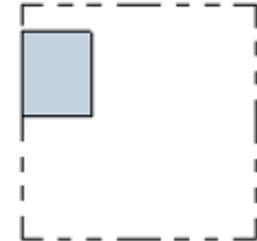
1 Floors 1-3  
1" = 100'-0"



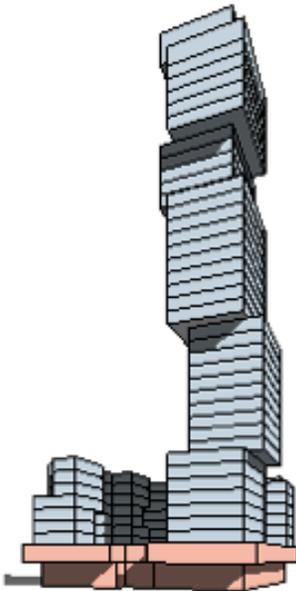
4 Floors 4-5  
1" = 100'-0"



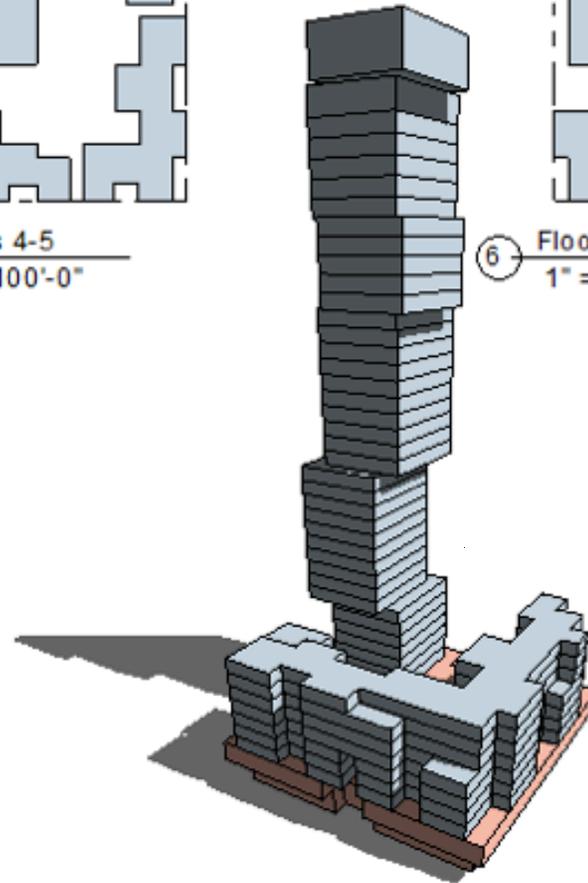
6 Floors 5-6  
1" = 100'-0"



10 Level 12  
1" = 100'-0"

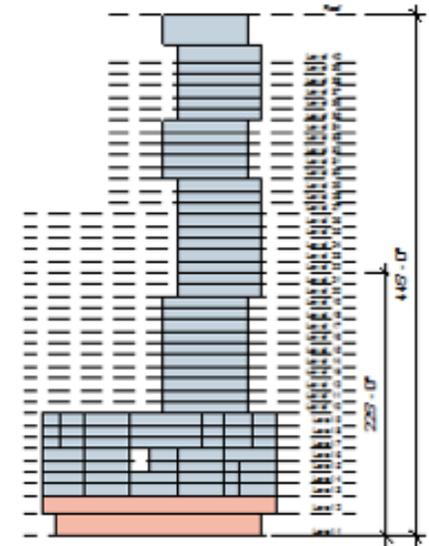


3 3d View B



5 3D View

Building Square Footage	
Type	Gross Floor Area
Commercial	68672 SF
Residential	260877 SF
	329549 SF



2 Elevation  
1" = 100'-0"

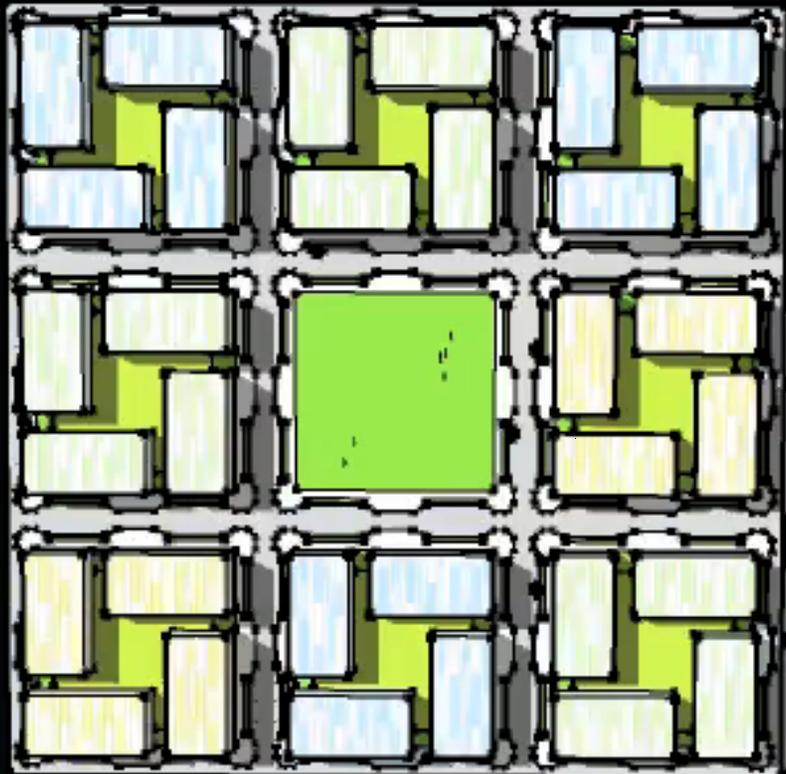


David Baker + Partners  
100 West 42nd Street, 11th Floor  
New York, NY 10018-3602  
Tel: 212 692 7200 Fax: 212 692 6100

High Rise db  
TOD

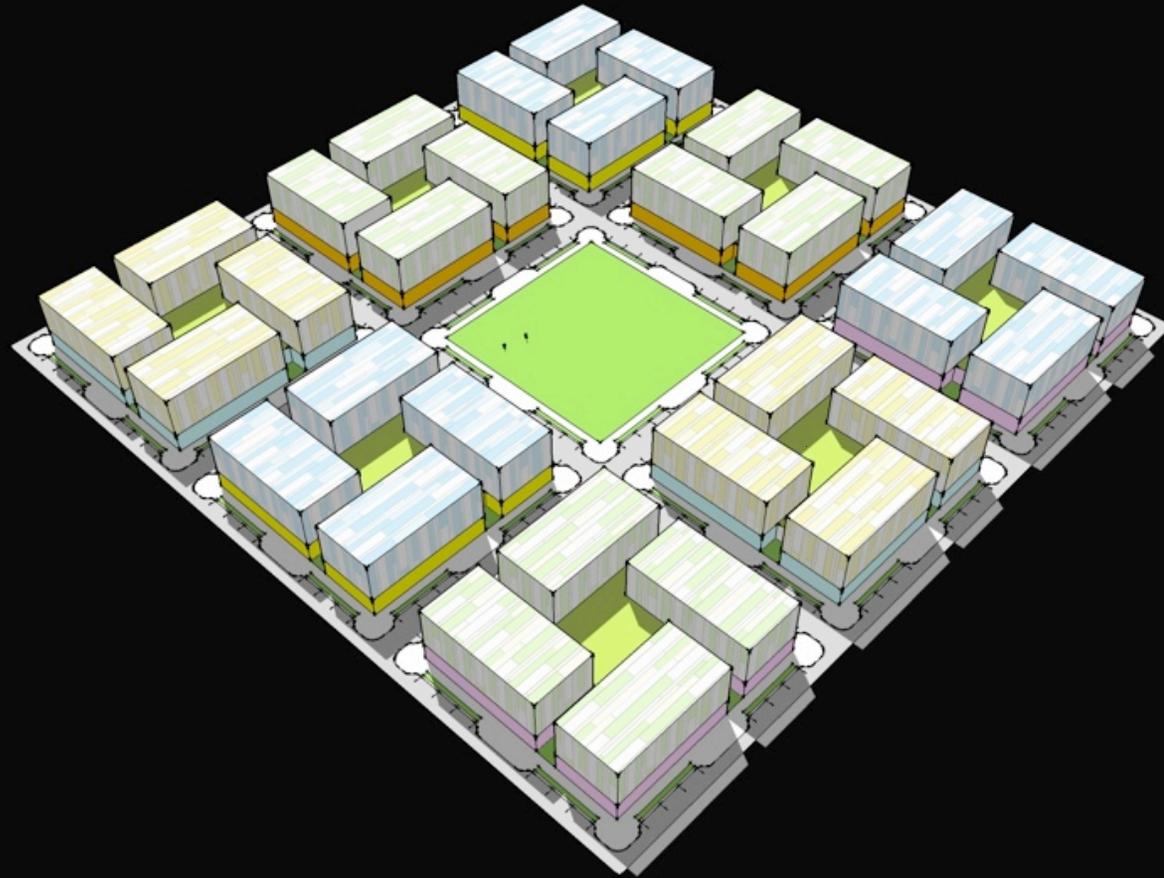
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Scale: 1" = 100'-0"  
Date: 10/10/07  
Author: [illegible]

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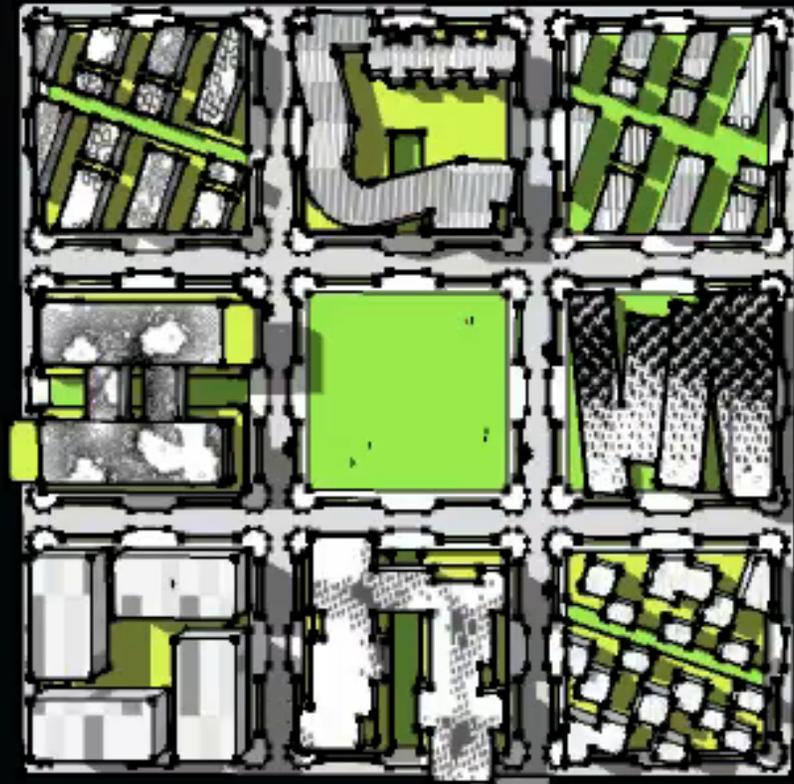


cost effective 100,000 psm district





100,000 PSM 106

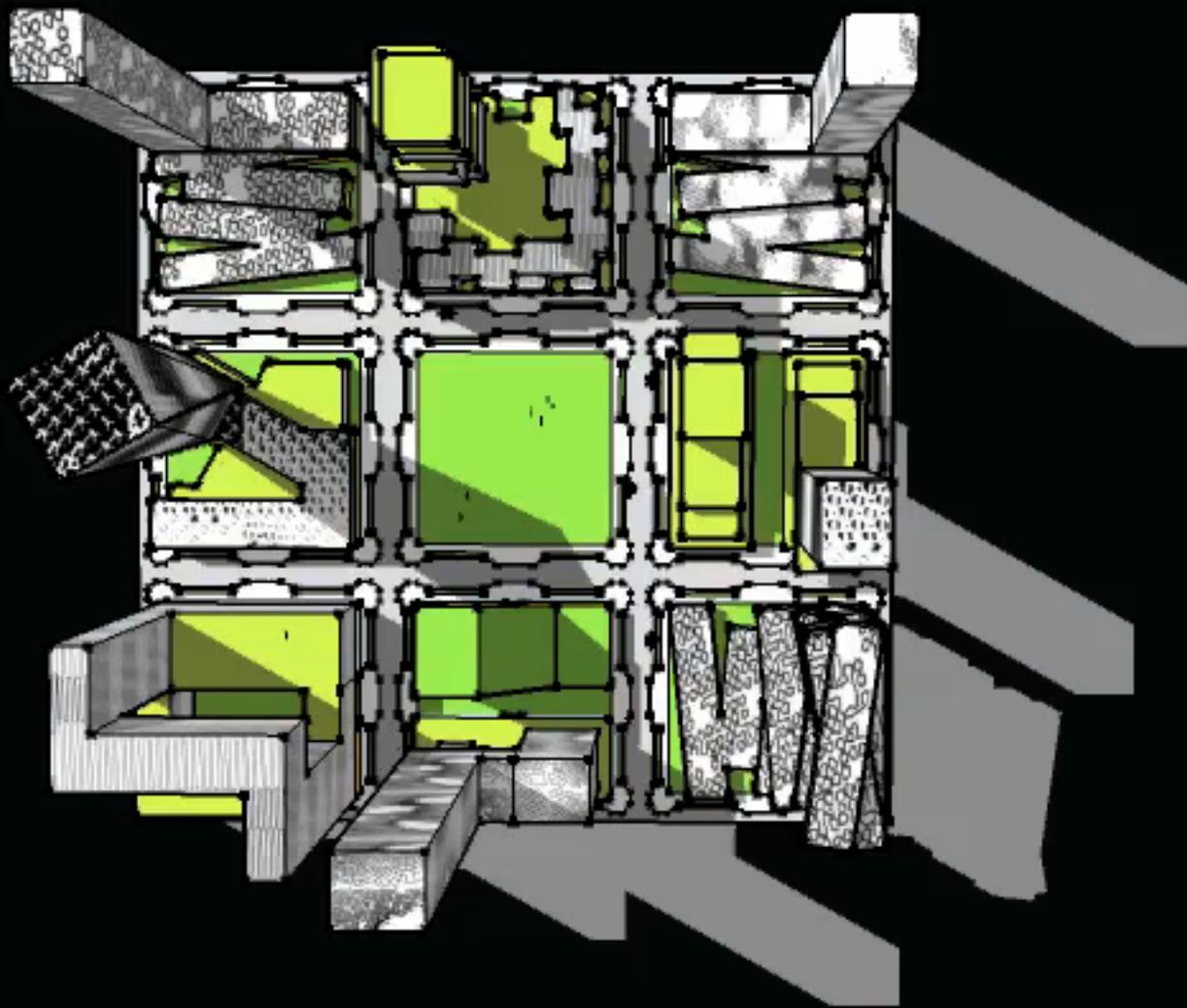


100,000 people psm diverse typologies design.



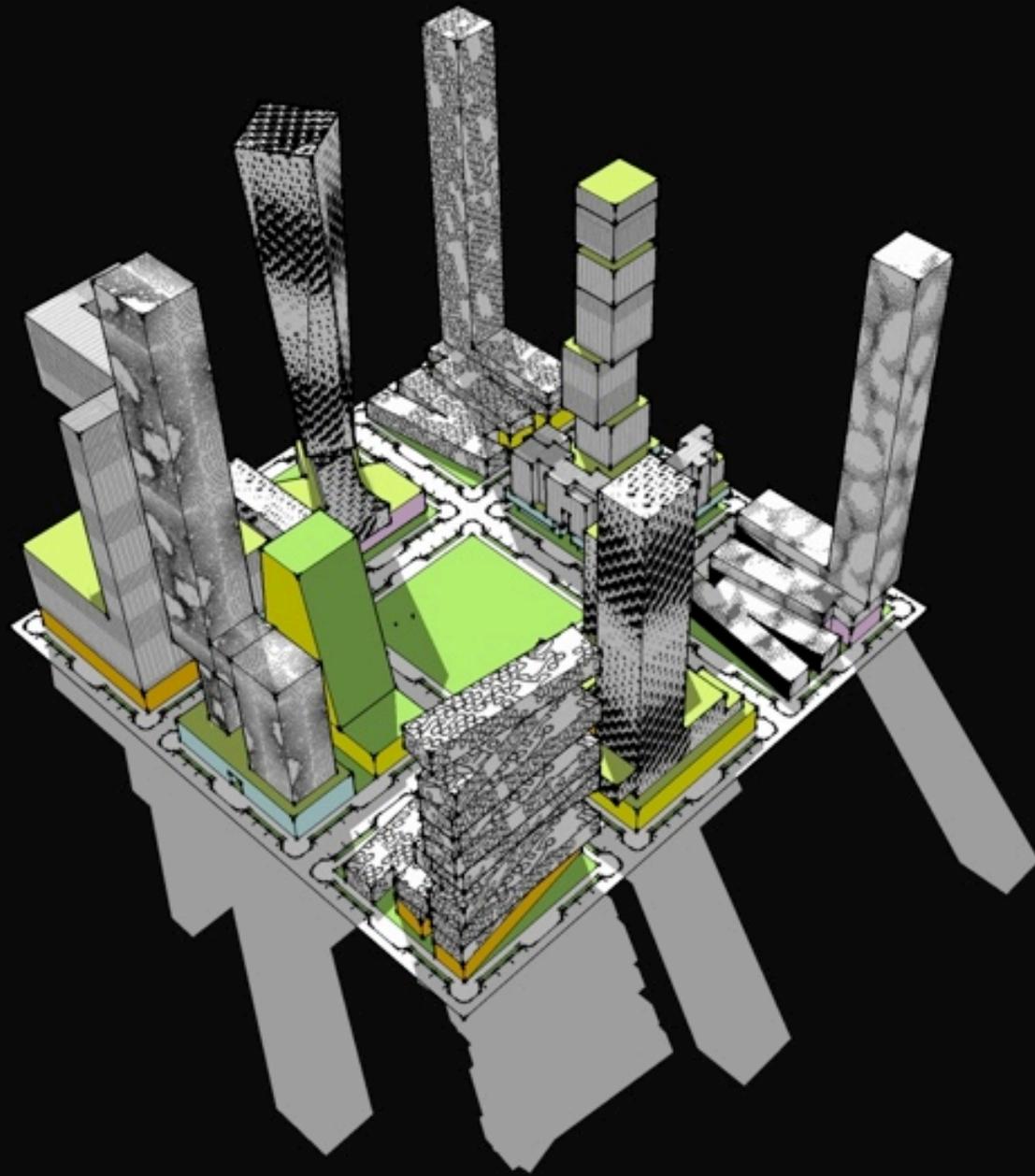


100,000 PSM 



“wild and crazy” super high density district





270,000 PSM 

01 crowded





