The Built Environment and Public Health

How planners and public health practitioners can build healthier, more livable communities

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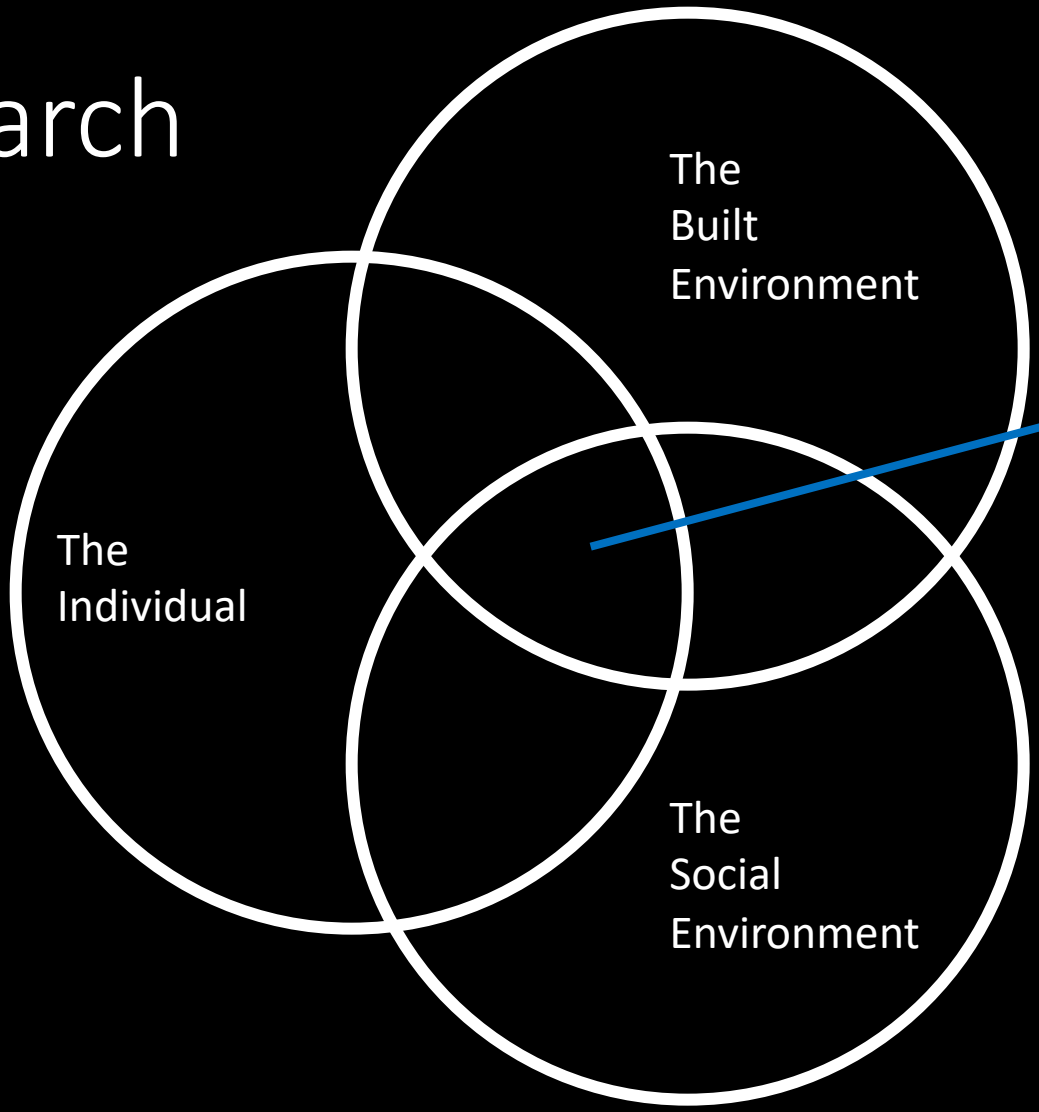
My Research



Outcomes

- Physical Activity
- Transportation

The intersection of transportation planning and urban design to promote active modes of transportation

Michael Nagle/Getty Images

America's Cities Are Still Too Afraid to Make Driving Unappealing

Tough policies are the ones that would truly change commuter habits, but we're barely seeing them.

The Washington Post

Democracy Dies in Darkness

Economic Policy

Let's talk seriously about why cyclists break traffic laws

By Emily Badger
January 9, 2015

Children pass in front of a self-driving GM Bolt EV during a media event in San Francisco. // Elijah Nouvelage/Reuters

Self-Driving Cars Could Be Bad for Walkable Cities

DANIEL PIATKOWSKI OCT 4, 2018

Advocates say self-driving cars will make other road users safer—but at what price?

Do We Look Fat in These Suburbs?

People in dense cities are thinner and have healthier hearts than people in sprawling subdivisions. New research says the secret is in the patterns of the streets.

JAMES HAMBLIN | AUG 13, 2014 | HEALTH

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(Everett Collection/Shutterstock/The Atlantic)

Traditional Grid Design (circa 1900)

Curvilinear Loop Designs & Beginning of Cul-De-Sacs (approx. 1930 – 1950)

Conventional Cul-De-Sac Design (since 1950)

Overview

- Part 1 - Defining Terms
- Part 2 - A History Lesson
- Part 3 - Planning and Public Health Today (in the US)
- Part 4 - Solutions

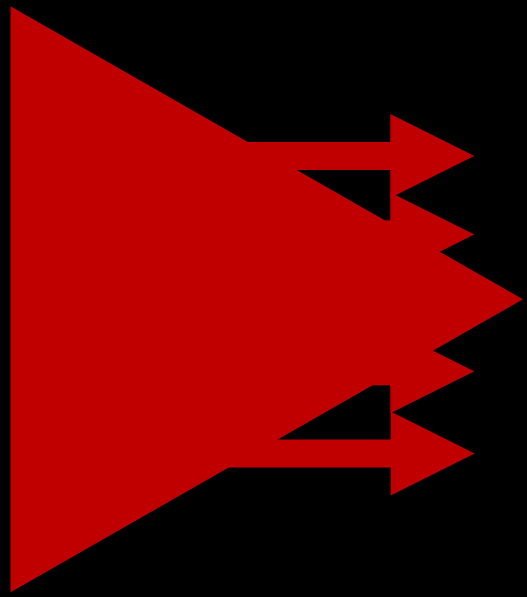
Defining terms

- The built environment:
  - The physical characteristics of the places we live and work

- (associated) Health impacts:

Urban Planning → Behavior → Pathway → Morbidity → Mortality

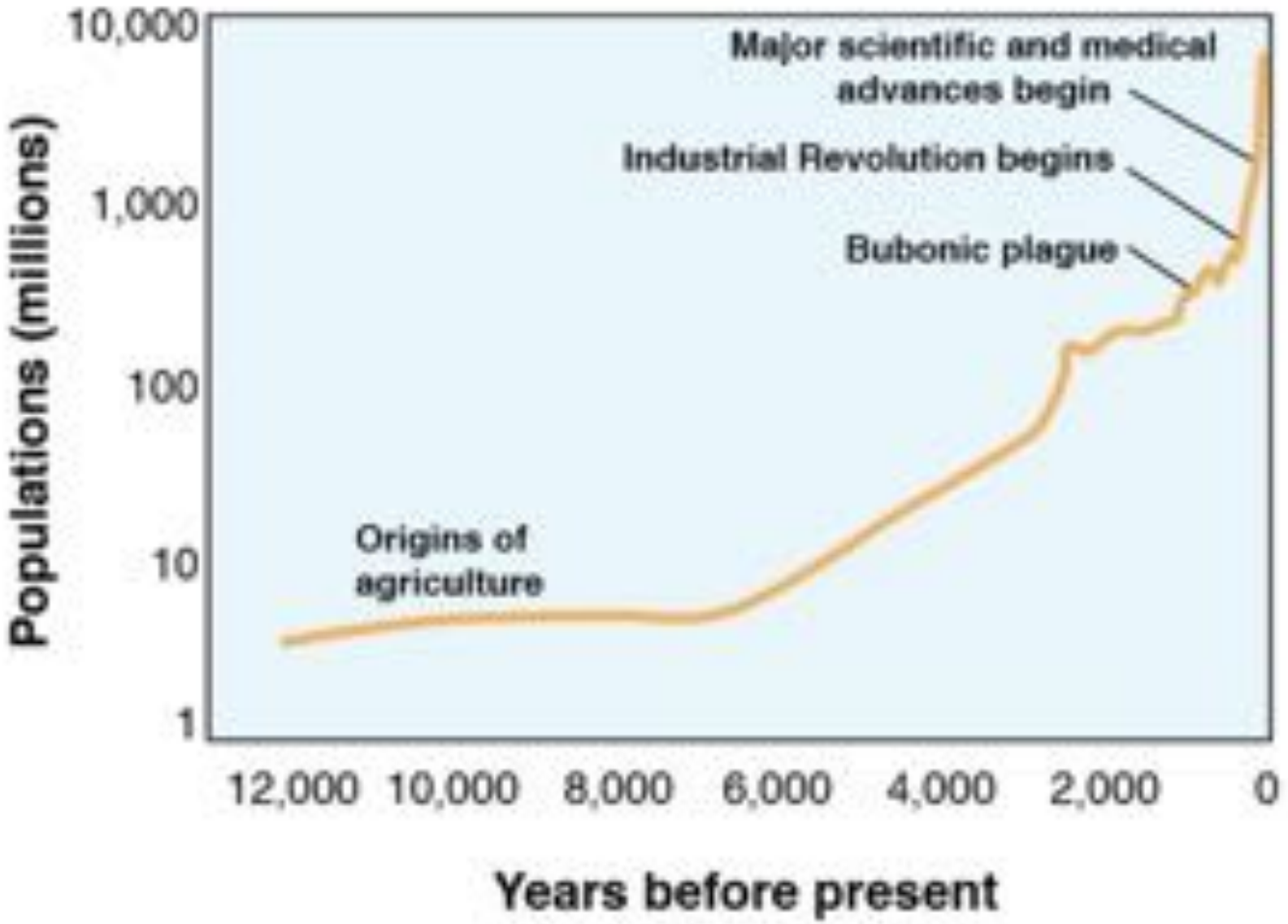
- Physical activity
- Noise/Pollution exposure
- Mental health
- Social contacts



Part 1 - History lesson:
How (and why) did we end up here?

A brief history of urban planning and public health

Ur (ancient Sumer, modern day Iraq)


Populations (millions)
10,000
1,000
100
10
1
Major scientific and medical advances begin
Industrial Revolution begins
Bubonic plague
Origins of agriculture
12,000
10,000
8,000
6,000
4,000
2,000
0
Years before present

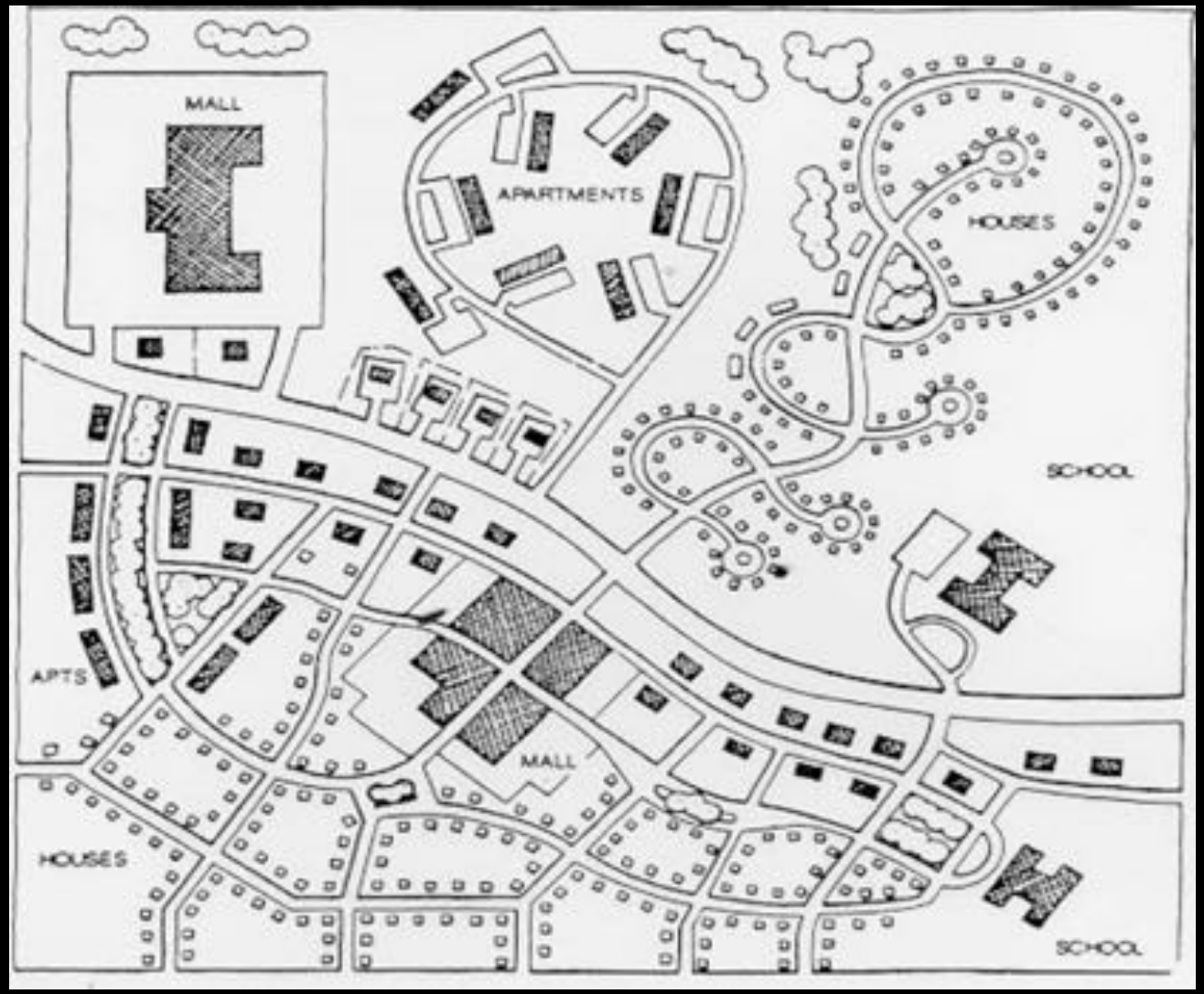
The technology that solved: ”The problem of the city”

“We shall solve the city problem by leaving the city” -Henry Ford

1900-1950: A confluence of forces

1. Existing cities are deemed to be “bad”
2. Cars offer the opportunity to escape
3. Street space becomes highly regulated
4. Good roads movement gains momentum
5. New city forms are invented and codified

Fixing “bad” cities: The invention of zoning

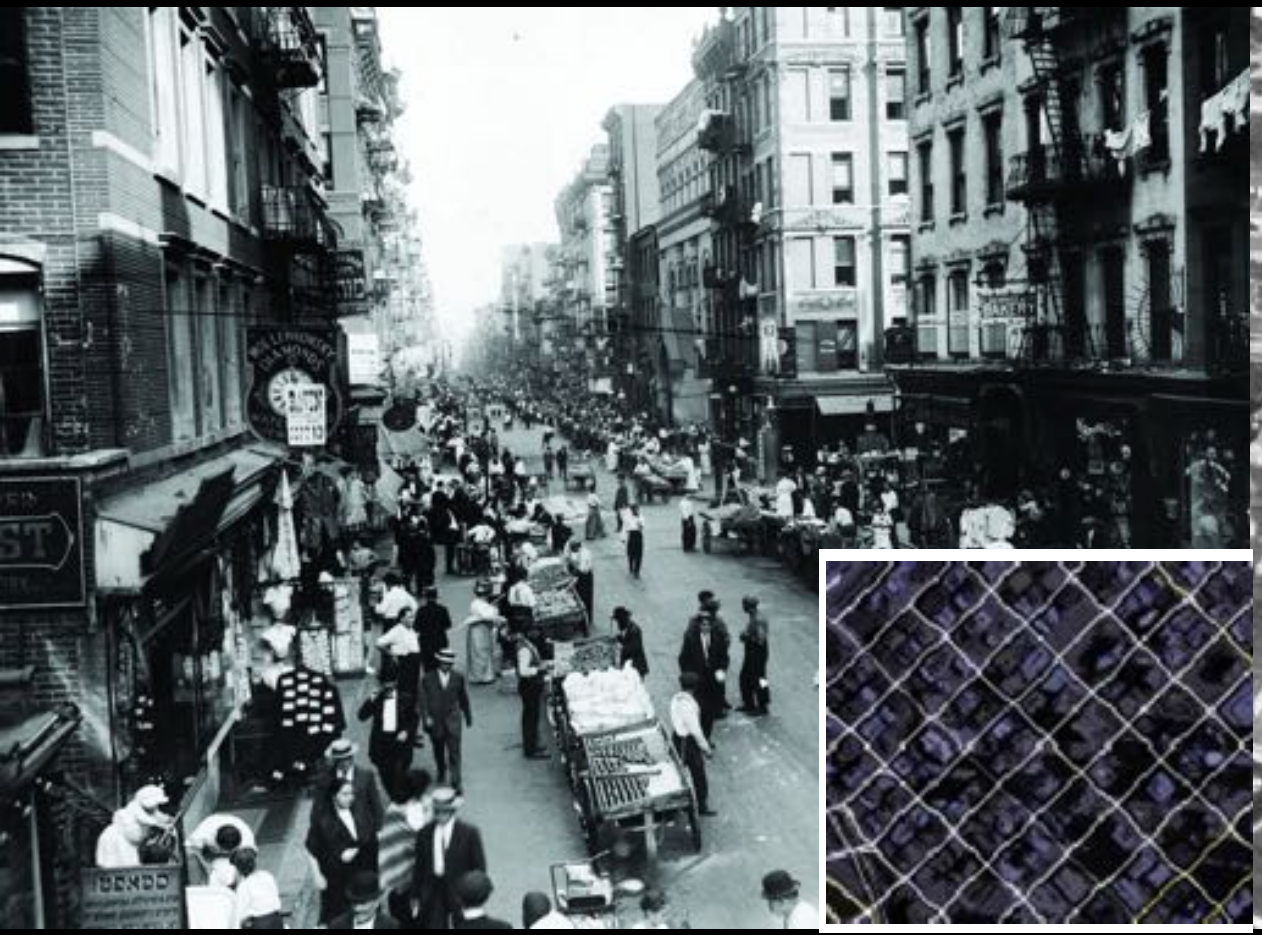


- A system dictating possible land uses in a given geographic location
- To separate ”incompatible” land uses”
- Codified sprawling development
  - Single-use zoning
  - Minimum parking requirements

The Good Roads Movement

- 1916: First Federal Highway Act
- 1932: Federal gas tax adopted
- 1956: Interstate Highway Act Passed
  - Created a 41,000 mile “National System of Interstate Defense Highways”
  - Federal government would pay 90% of construction costs (up from 50%)
  - Highways became primary trade routes

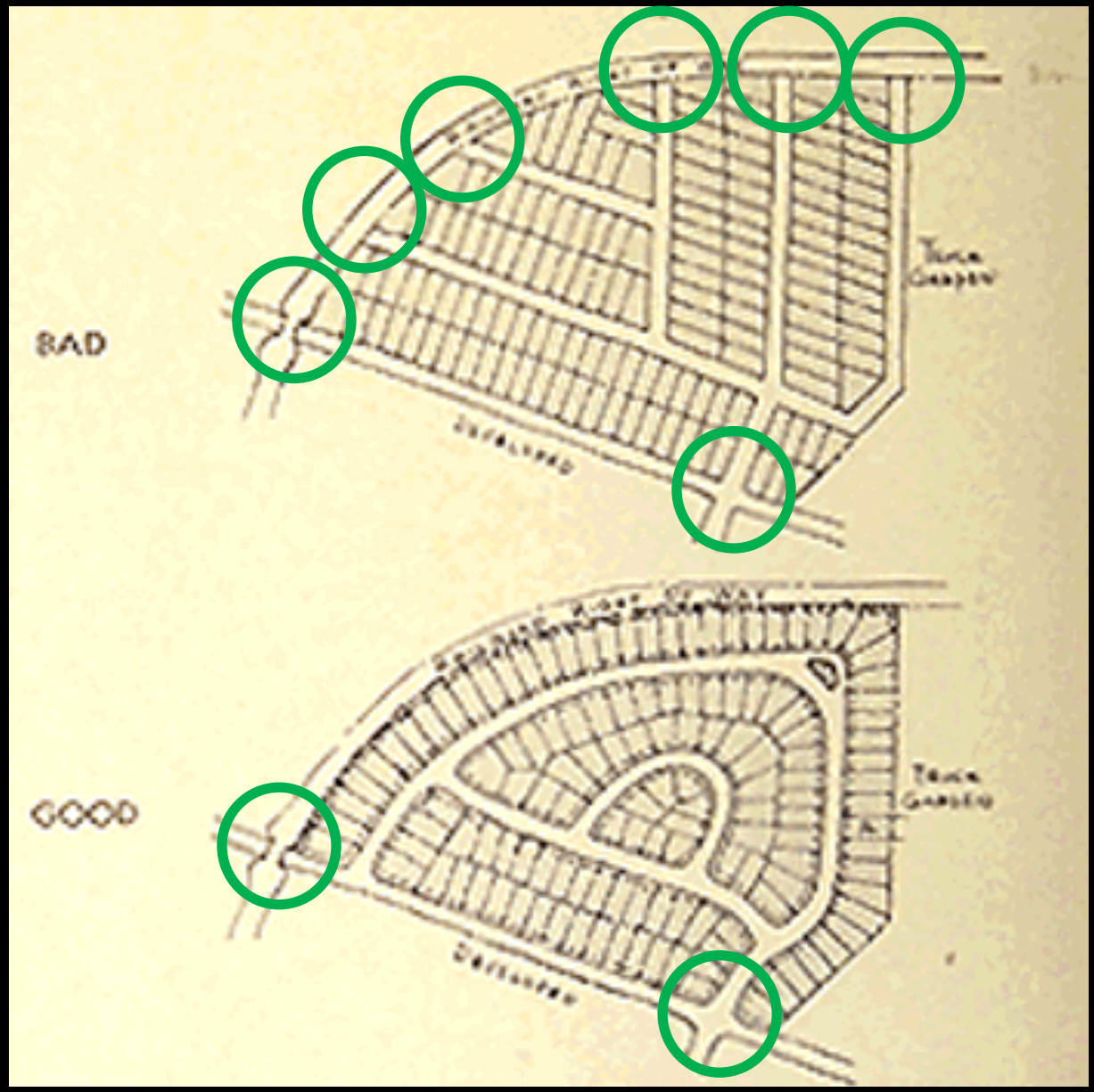
New city forms are invented and codified



Government Policies

In the 1930s Federal Housing Administration (FHA) created publications recommending specific street patterns…

Formally endorsed hierarchical street layouts with cul-de-sacs



(Source: www.columbia.edu/cu/gsapp/projs/call-it-home/html/chapter8.1.html)

Government Policies

FHA called the grid layout:

monotonous,

with little character,

uneconomical,

and a safety issue…

“Short blocks are not economical”

”We should discourage through traffic”

(Source: www.columbia.edu/cu/gsapp/projs/call-it-home/html/chapter8.1.html)

Government Policies

FHA was not only responsible for providing both mortgages & mortgage insurance, they also reviewed subdivision plans & made recommendations based upon these standards.

Overall, FHA played a role in
over 22 million
properties before 1960

BOSTON

PORTLAND

SAN FRANCISCO

SACRAMENTO

IRVINE

ROME

Why does street network matter?

Do We Look Fat in These Suburbs?

People in dense cities are thinner and have healthier hearts than people in sprawling subdivisions. New research says the secret is in the patterns of the streets.

JAMES HAMBLIN | AUG 13, 2014 | HEALTH

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(Everett Collection/Shutterstock/The Atlantic)

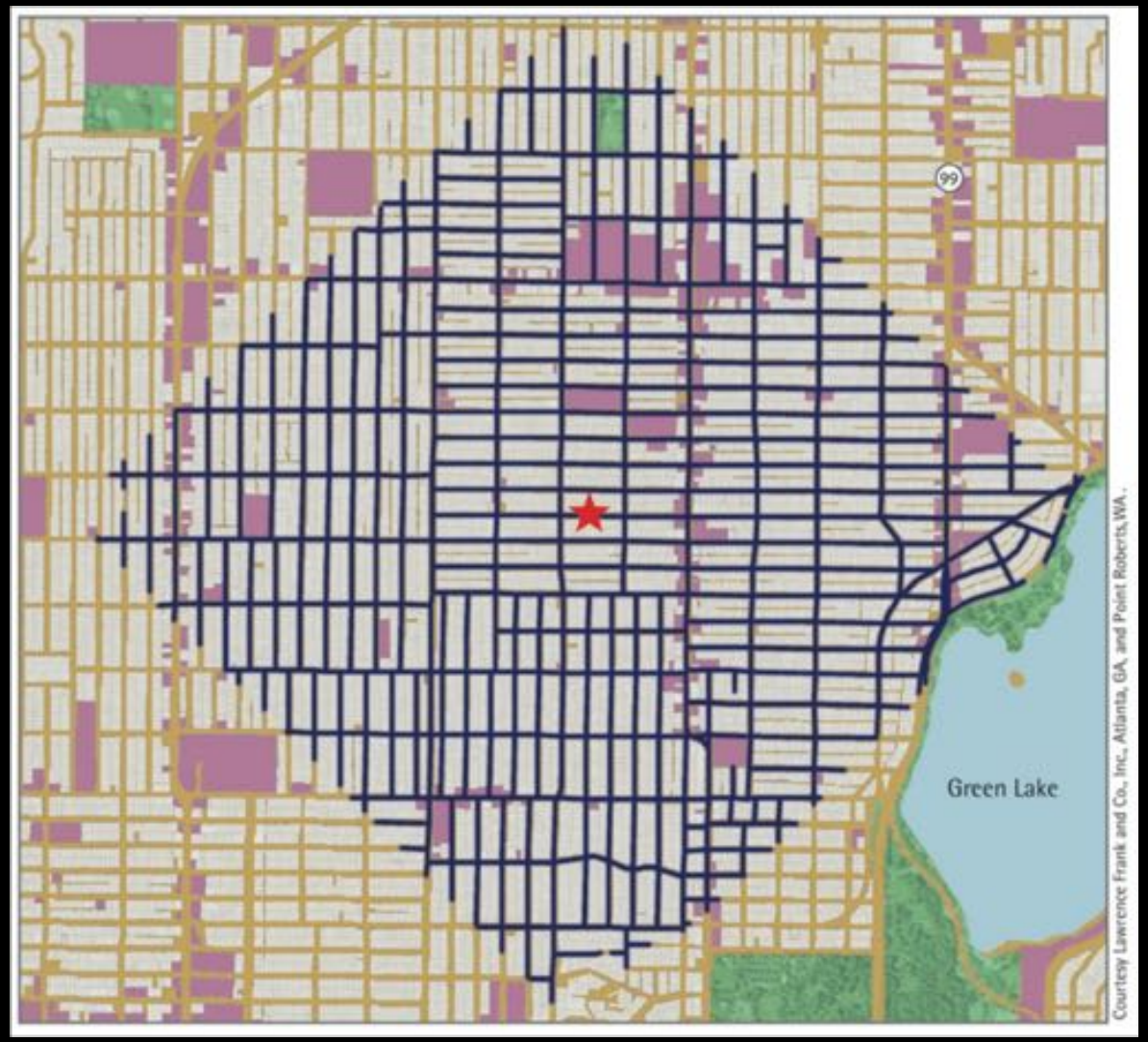
Associated with higher rates of asthma, obesity, high blood pressure, and heart disease

Traditional Grid Design (circa 1900)

Curvilinear Loop Designs & Beginning of Cul-De-Sacs (approx. 1930 – 1950)

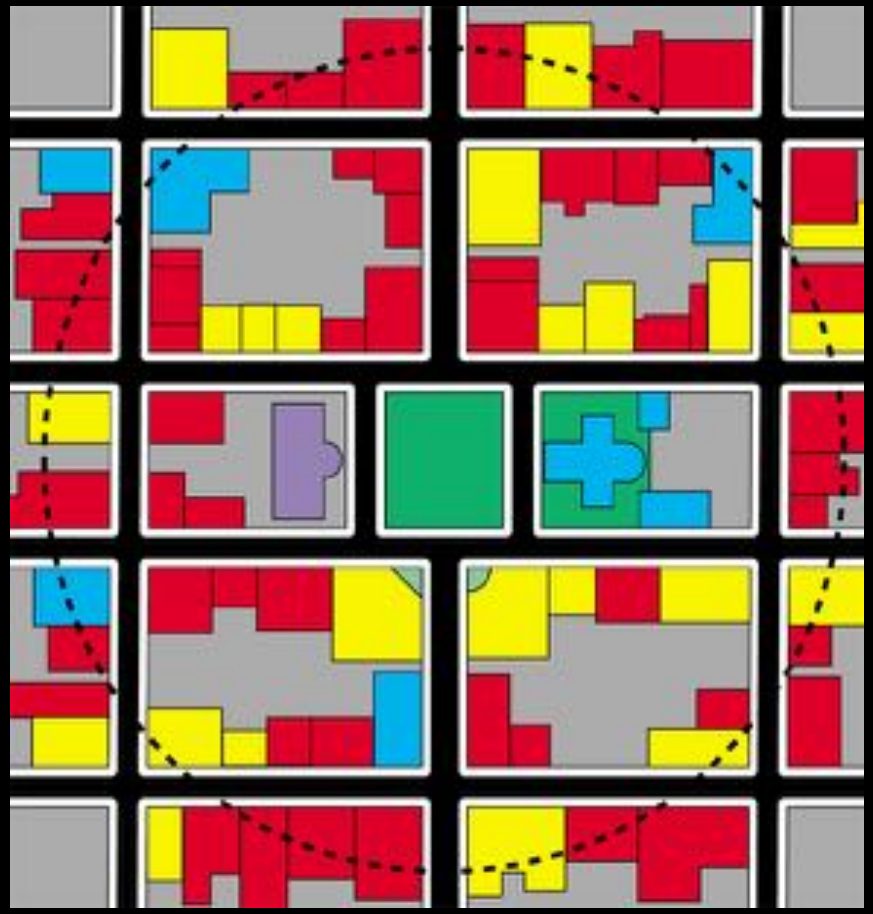
Conventional Cul-De-Sac Design (since 1950)

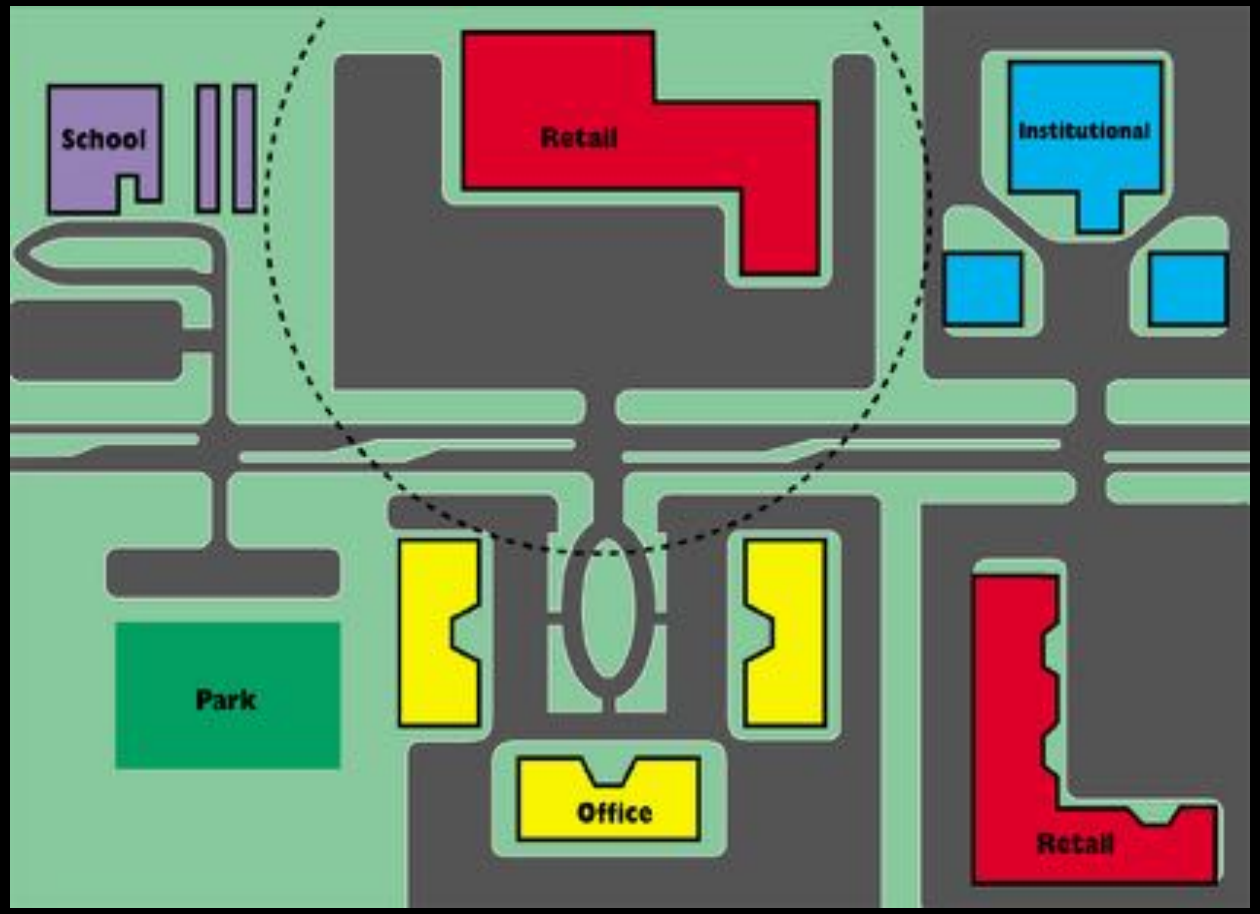
One-Mile Network Distance:
Traditional versus Sprawling Neighborhood



(Lawrence Frank, Sightline Institute; Steuteville, 2015)

The street network defines the types (and scale) of land uses





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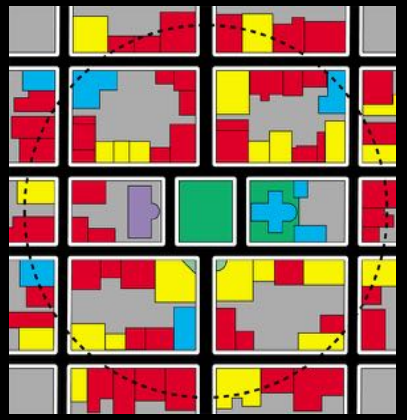

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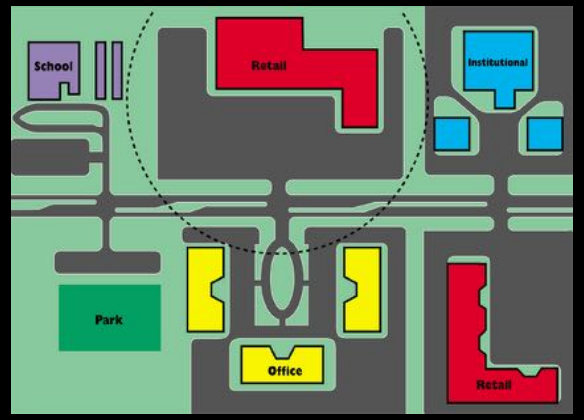
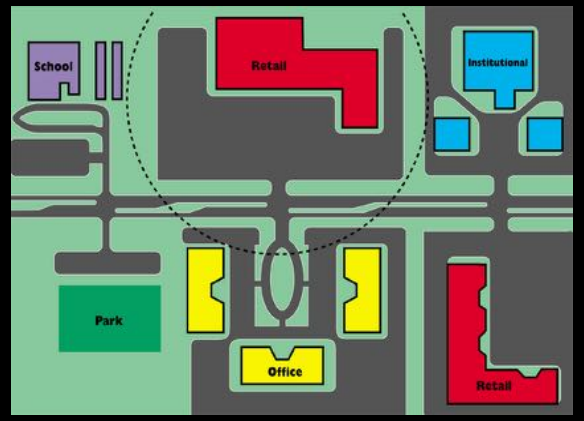


Part 3: Planning and public health today

Urban Planning → Behavior → Pathway → Morbidity → Mortality



- Physical activity
- Noise/Pollution exposure

- Obesity
- Asthma
- Heart Disease
- Cancer

- Mental health
- Social contacts

Individual and Structural Context

Part 3: Planning and public health today

Physical activity is an event (not a part of normal day), and we interact primarily with those similar to ourselves.

- Driving is a necessity for most of us
- Community, and community centers, are auto-dependent
- We tend to lead private lives in private spaces

Urban vs. Rural?
(big city vs. small town)

Big cities and small towns: Built environment and health challenges

Similarities

- Living in an isolated area and not being able to walk to any destinations is similar to living in an auto-oriented suburb

Differences

- Scale: Super-sized suburban problems
  - Access (e.g., transportation) burdens are multiplied
  - Resources (e.g., tax base, population) are limited
- Demographics:
  - Aging and shrinking

Part 4: Solutions - Using the built environment to improve health means focusing on public space and transportation

Step 1: Rethinking public space

Step 2: Reducing red tape

Rethinking public space activity:
What is transportation?

Write down a one-sentence definition of transportation:

What is the purpose(s) of transportation?

What is the form that transportation takes in US cities today?

When is transportation more than *just* transportation?

Write down each unique activity occurring on the streets….

~100 years ago, what was a street for?

Today, good public space is considered a fairy tale….

Venice, Italy

Greenwich Village, NYC

Boulder, CO

Part 4: Solutions -
Using the built environment to improve health means focusing on public space and transportation

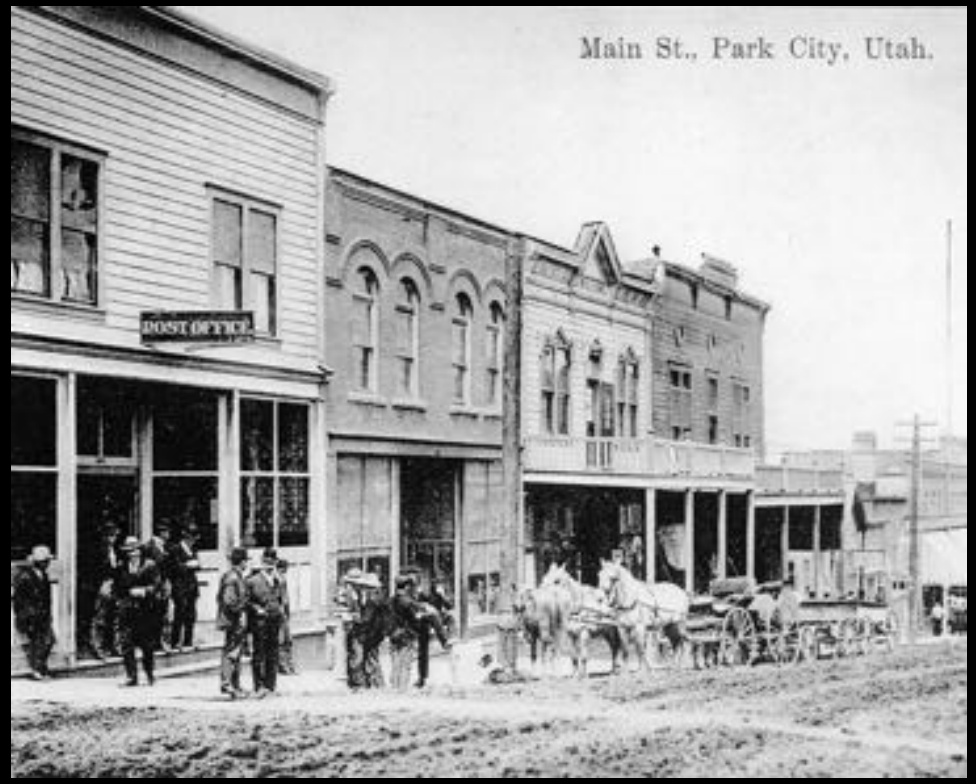
Step 1: Recognizing what you have

Step 2: Rethinking public space

Step 3: Reducing red tape

Imaging what you want is pretty easy…

MEAT
Main St., Bozeman, Mont.


Main St., Park City, Utah.
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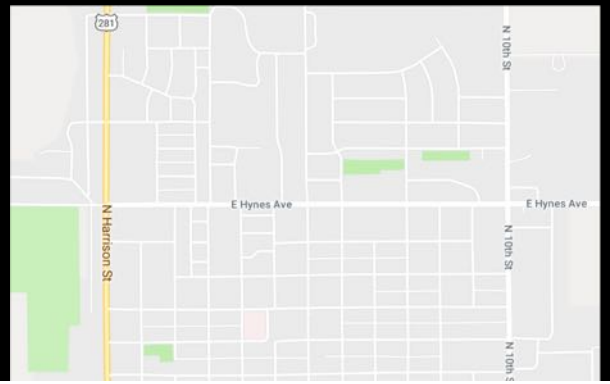
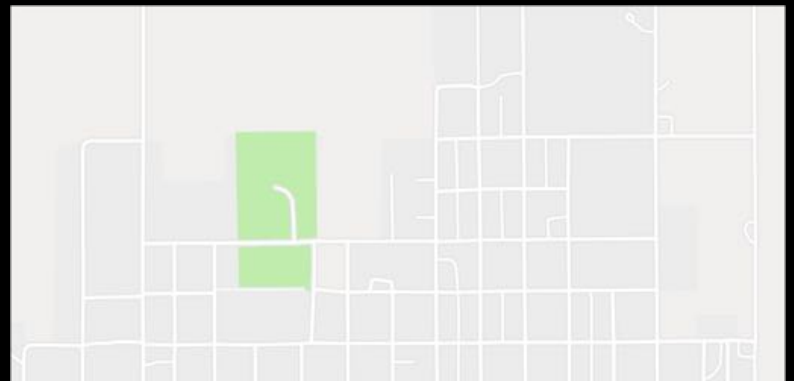
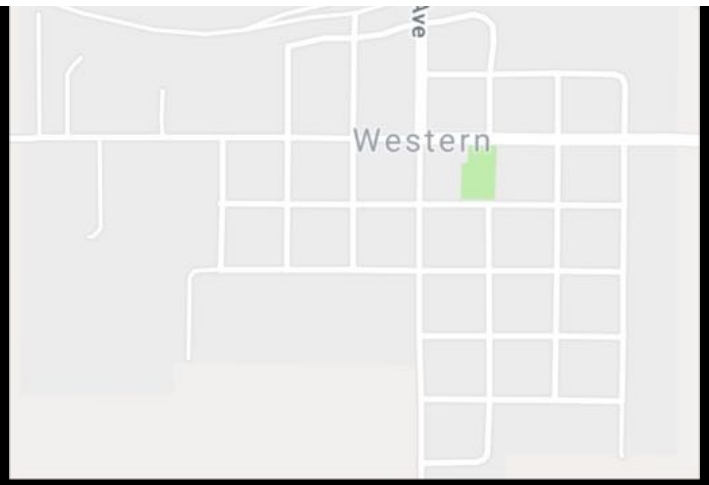
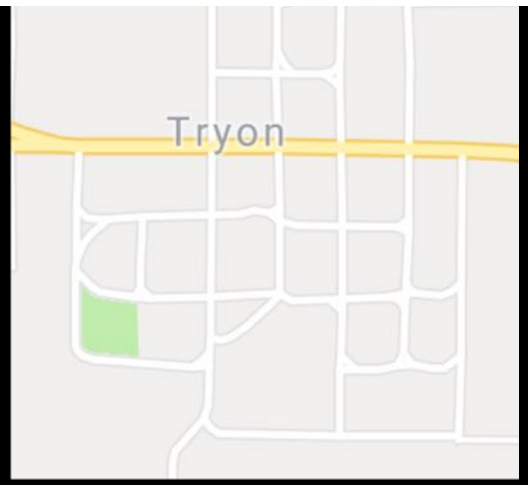
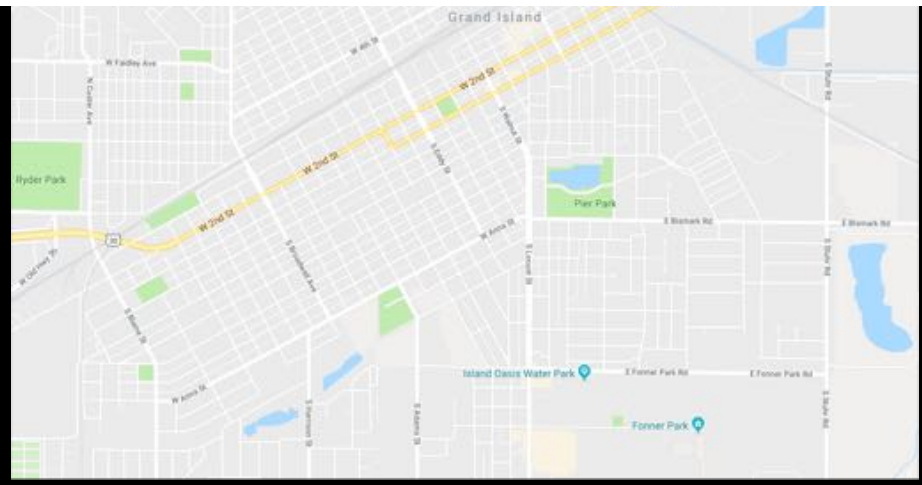

281
N 10th St
E Hynes Ave
E Hynes Ave
N Harrison St
N 10th St



Prague


Western


Tryon

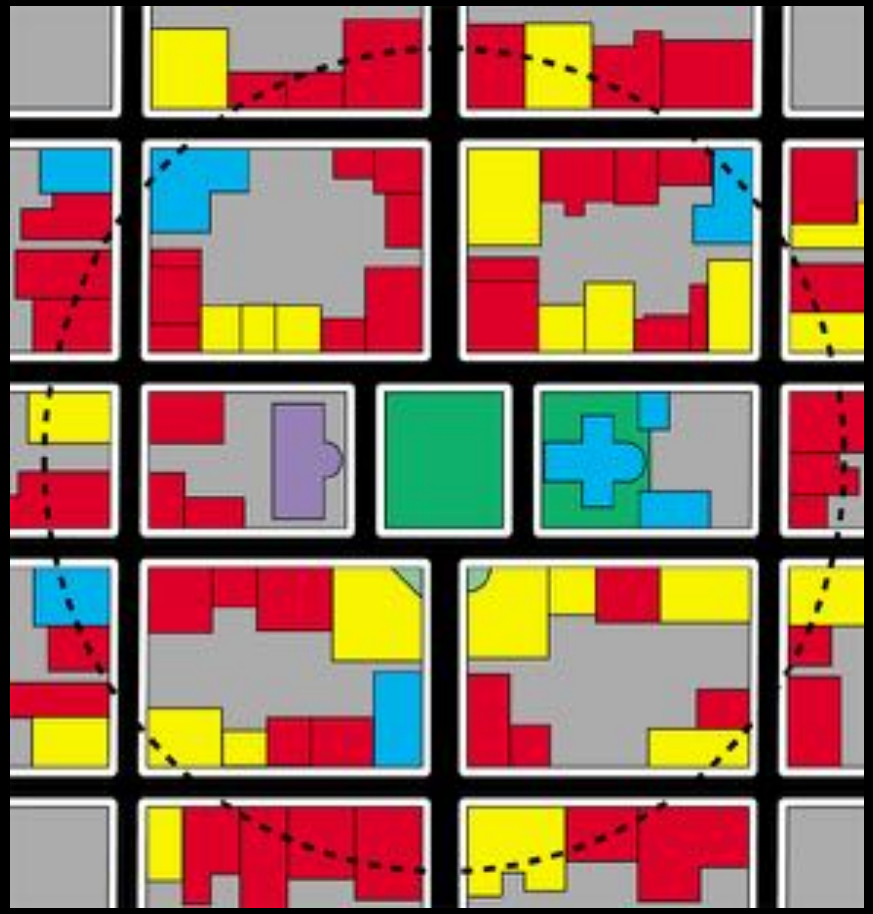

Grand Island
W 2nd St
Ryder Park
Pier Park
Island Oasis Water Park
Fonner Park

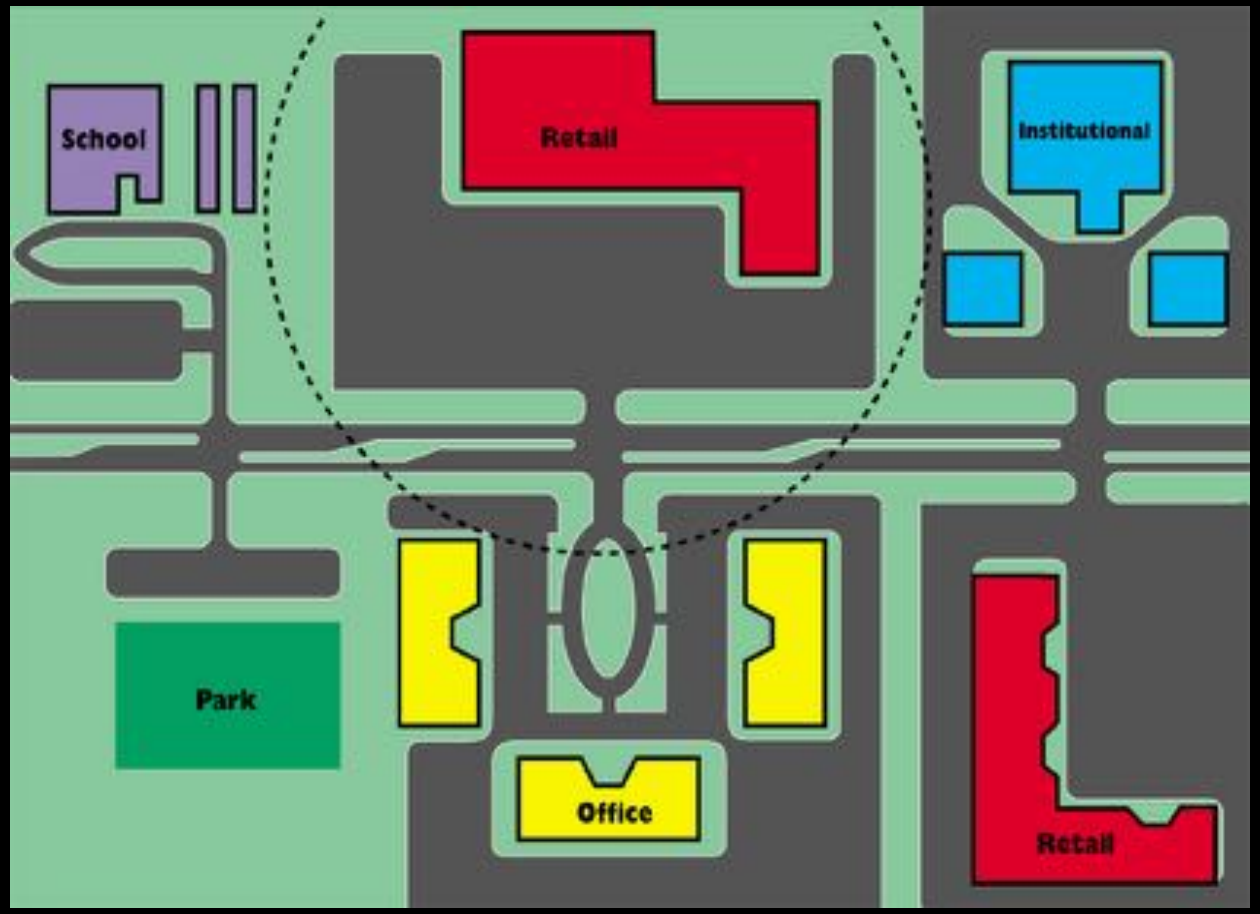
Part 4: Solutions -
Using the built environment to improve health means focusing on public space and transportation

Step 1: Recognizing what you have

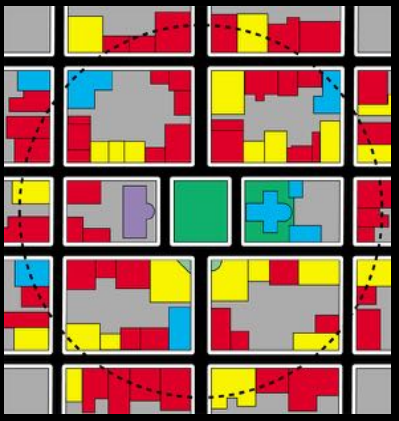
Step 2: Rethinking public space
Step 3: Reducing red tape

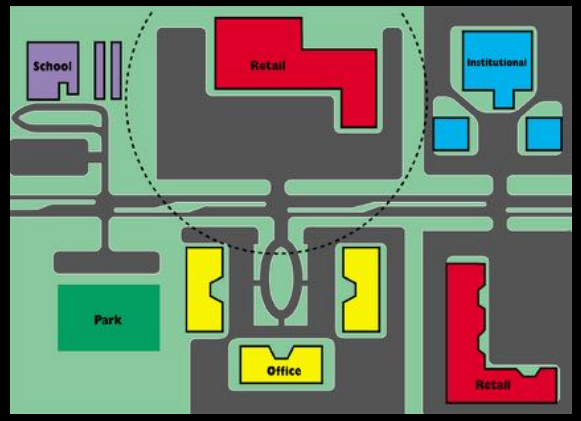
Which one can you build without changing any laws?





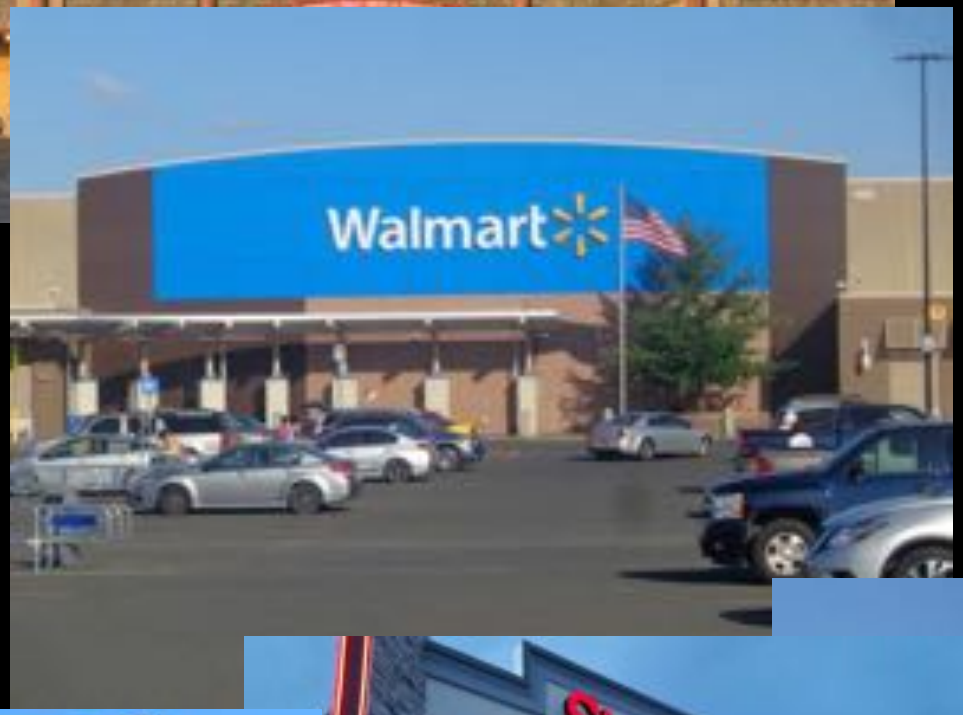
Zoning and parking minimums





Current state of development

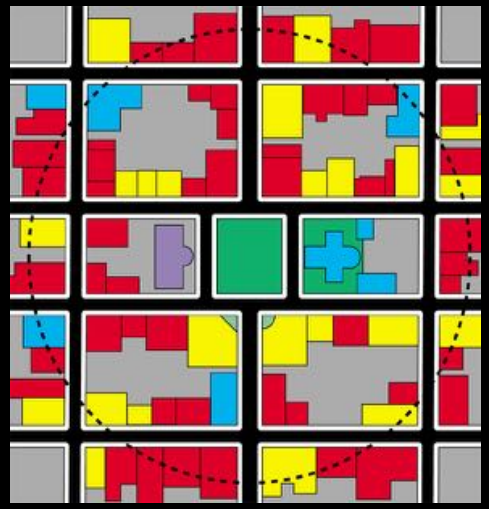
1. New is always cheaper
2. The bigger the better
3. Nothing can change

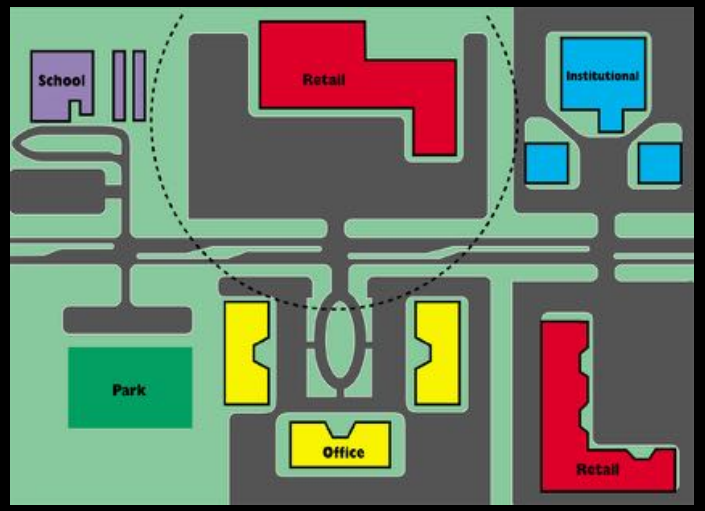


Part 4 - Solutions: Land use policies

- Existing zoning codes are inflexible
- Nothing can change
  - Neighborhoods cannot evolve
    - Whether we like it or not, everything changes
    - Prioritizing incremental change
  - Any change occurs on the fringe or as brownfield remediation
    - Large scale
    - Costly
    - Not incremental

Making both of these viable options





Allowing for incremental neighborhood change

Solutions: The small town perspective

- Small town strengths
  - Social Capitol
  - Manageable scale (ROI)
- Small town challenges
  - Larger economic and social context
  - Limited examples of success
    - Tourist-centered
    - Education-centered
    - (Single) Industry-centered
- Small town opportunities
  - Supporting local business
  - Allowing flexibility in use and reuse of existing infrastructure
  - Prioritizing residents
    - Existing needs
    - Existing strengths
  - Work backwards from a goal

Conclusions

- The current health crises facing cities are largely a result of land use and transportation systems that
  - Limit daily physical activity
  - Limit spontaneous social interaction
  - Are particularly limiting for those unable to drive
- Historically, we have
  - Built cities around walking
  - Prioritized high-quality public spaces
- Planners and Public Health Practitioners can collaborate:
  - Change zoning codes
  - Prioritize walkable communities
  - Support affordable housing and small business growth

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How planners and public health practitioners can build healthier, more livable communities

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