A Strong Towns Approach to Reducing Emissions

STRONG TOWNS

Norm Van Eeden Petersman
Director of Membership

Featuring Shawn Champagne
Superintendent of Planning
City of Medicine Hat

strongtowns.org
@strongtowns
linkedin.com/in/normvep/



Volts is a podcast about leaving fossil fuels behind. I've been reporting on and explaining clean-energy topics for almost 20 years.

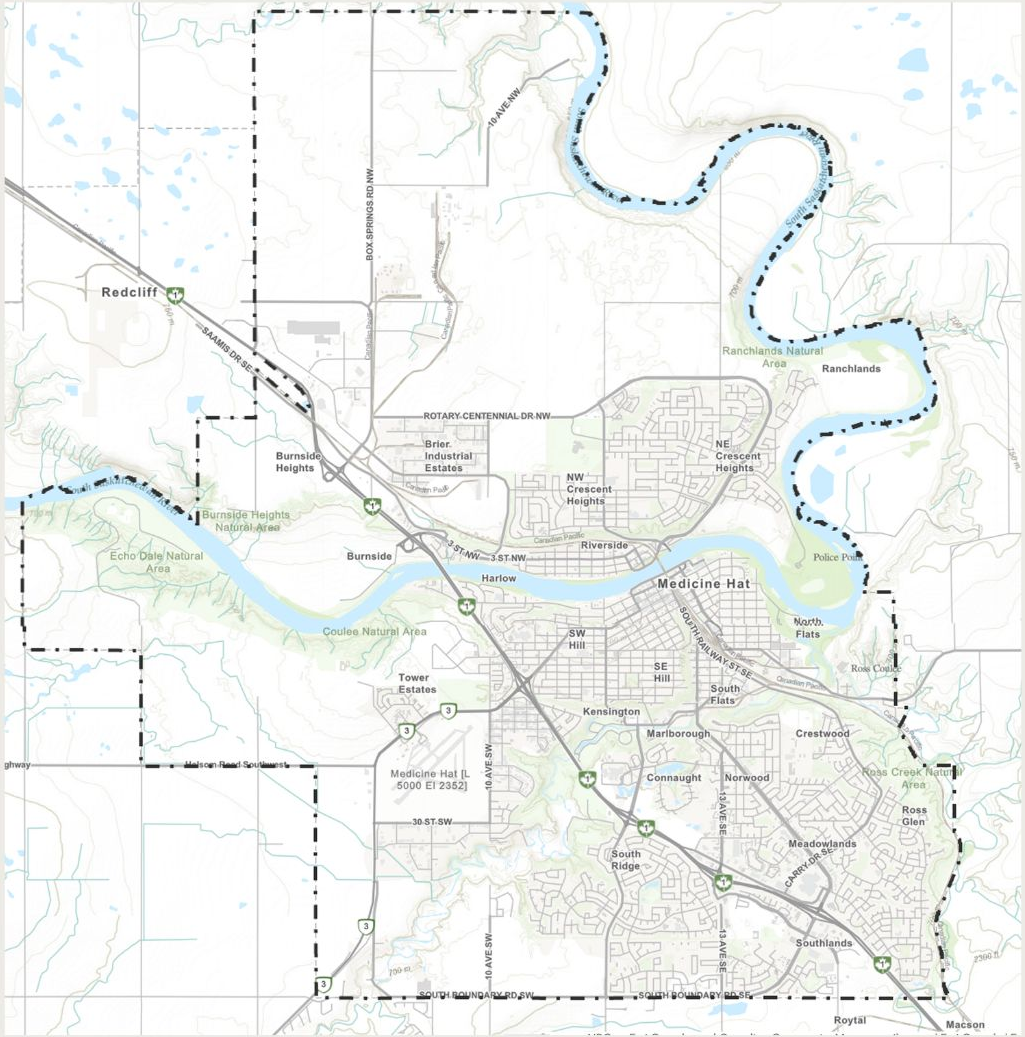
David Roberts

“Do you see bottom-up reform in cities moving fast enough, or being dramatic enough, to get a handle on greenhouse gas emissions?

I can envision a lot of good things coming out of bottom-up [action], but it's real hard for me to envision climate change coming under control without some centralized, top-down action.”

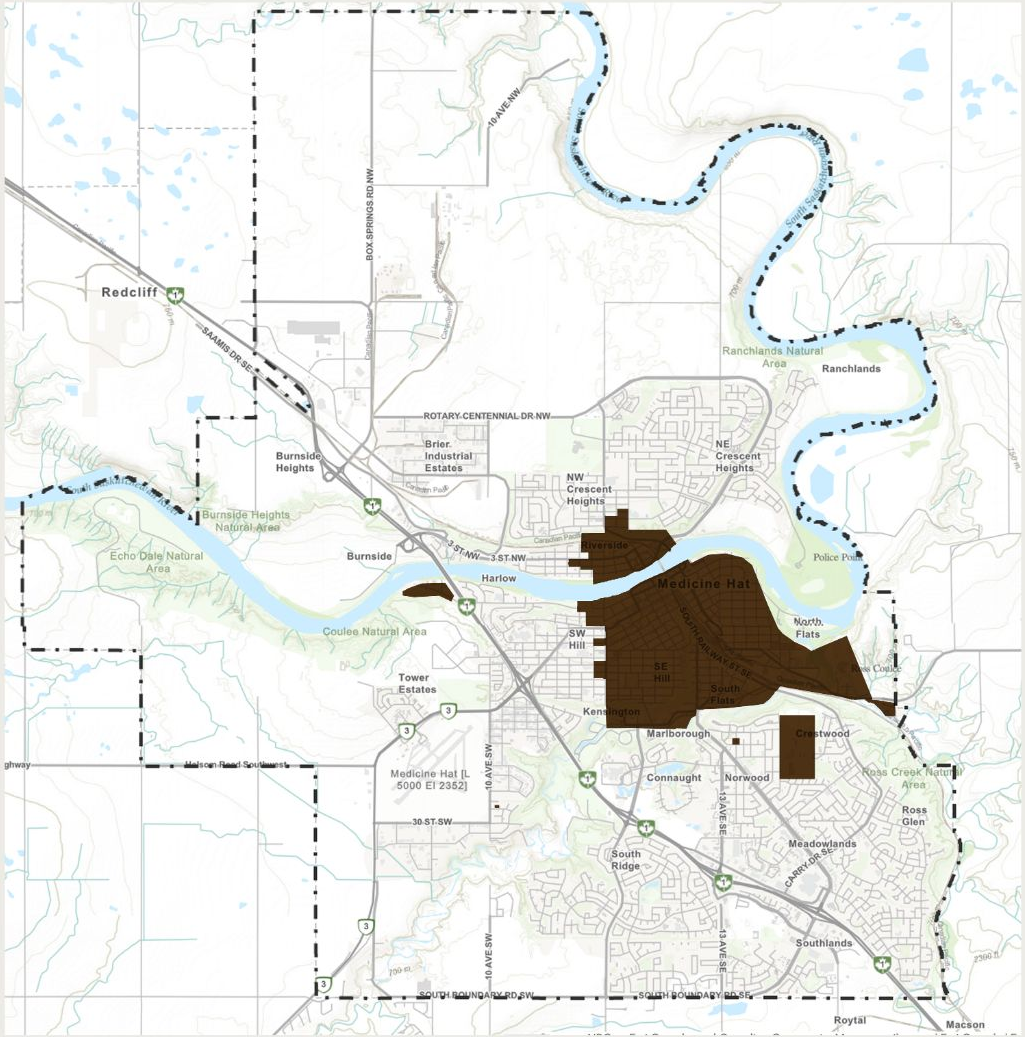
Medicine Hat, AB

City Growth



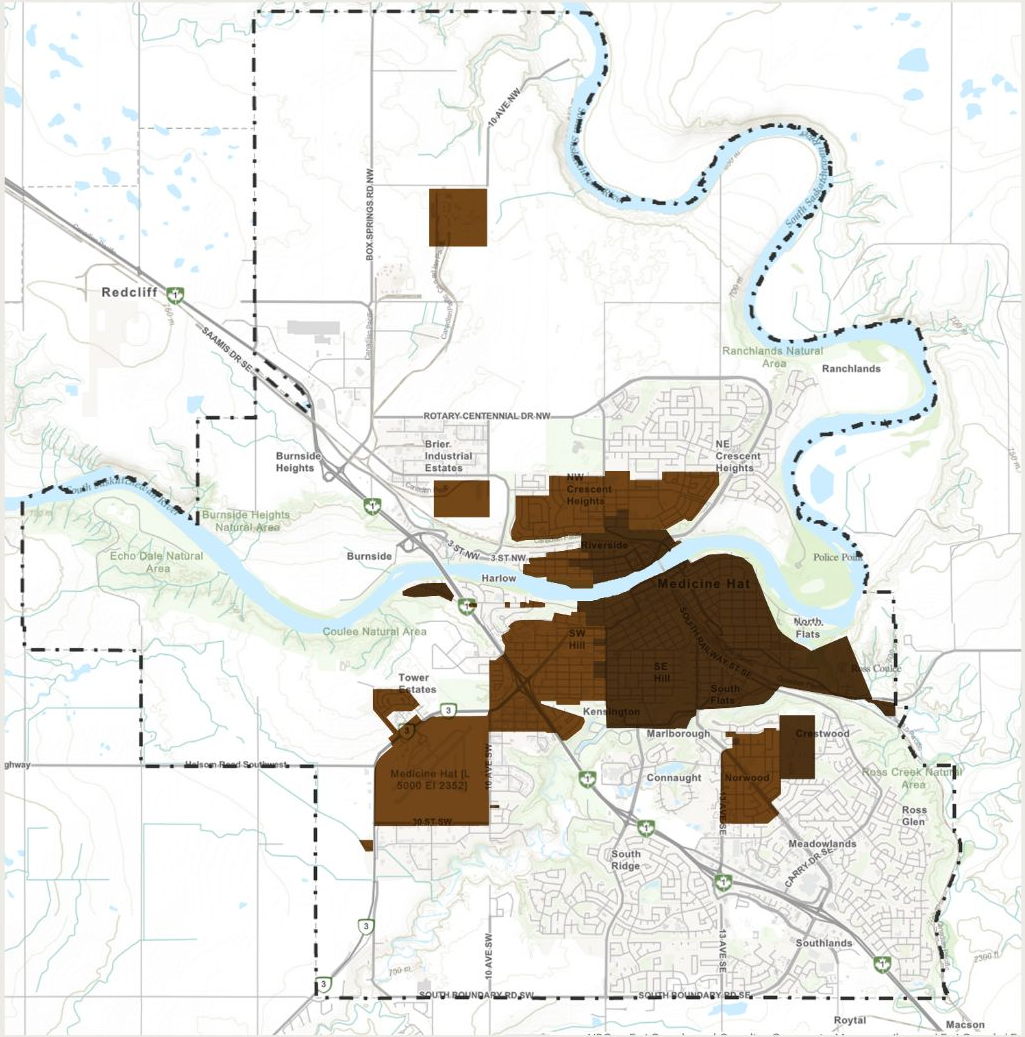
Medicine Hat, AB

City Growth 1945



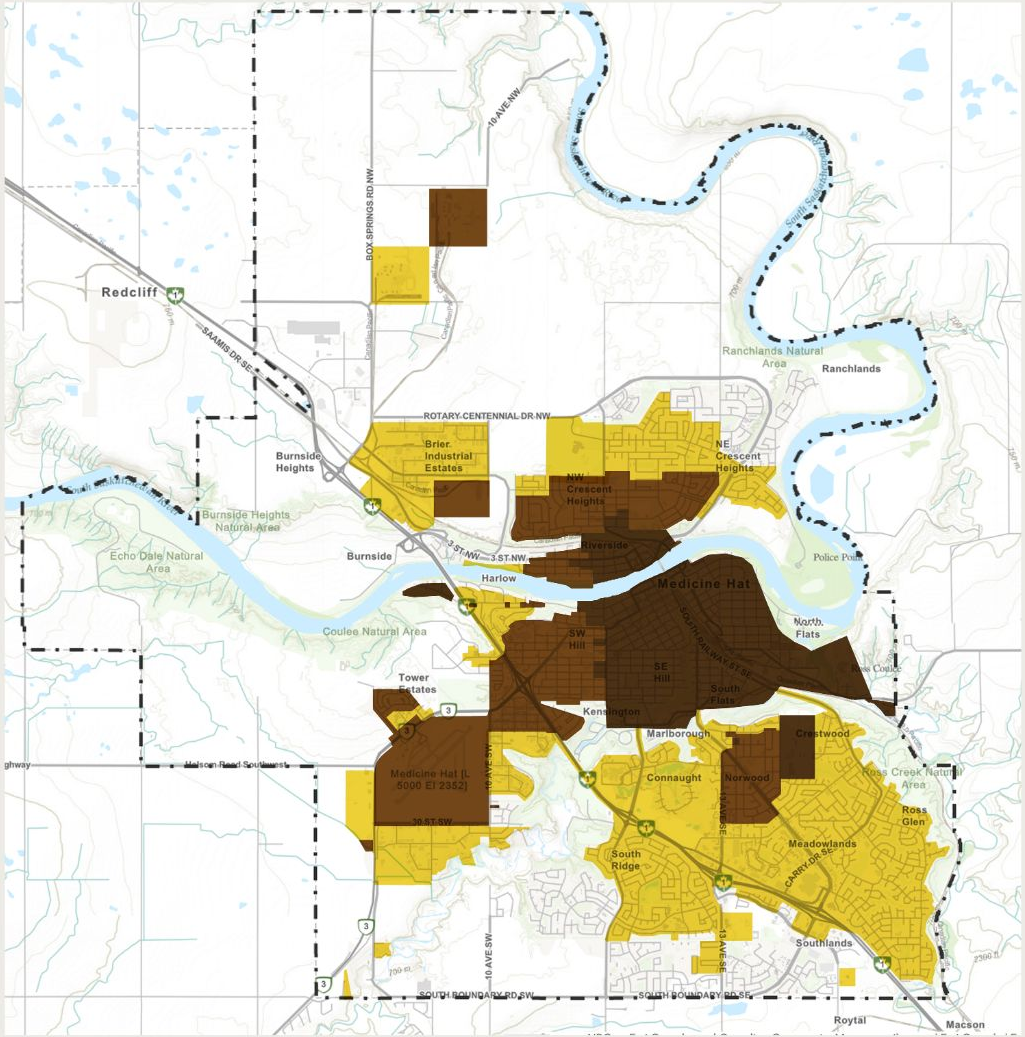
Medicine Hat, AB

City Growth 1969



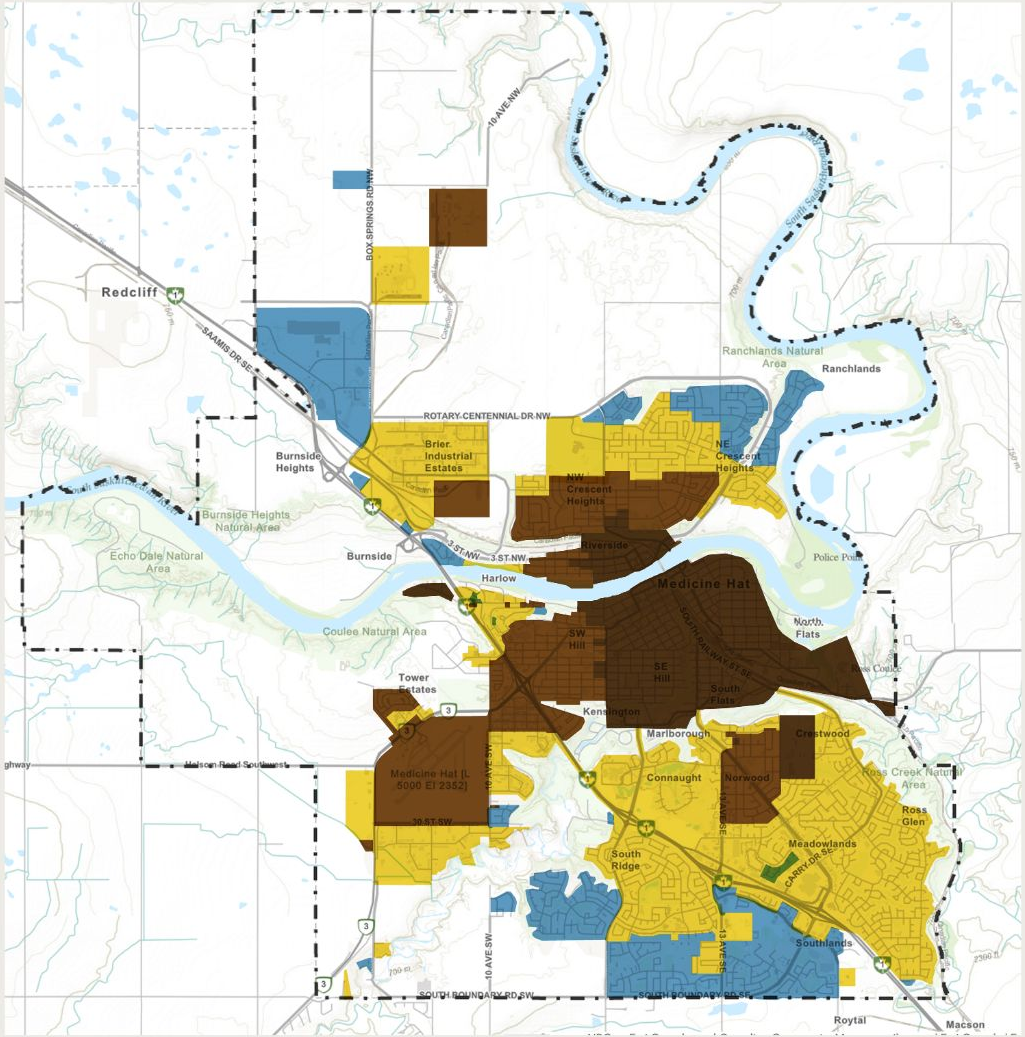
Medicine Hat, AB

City Growth 1999



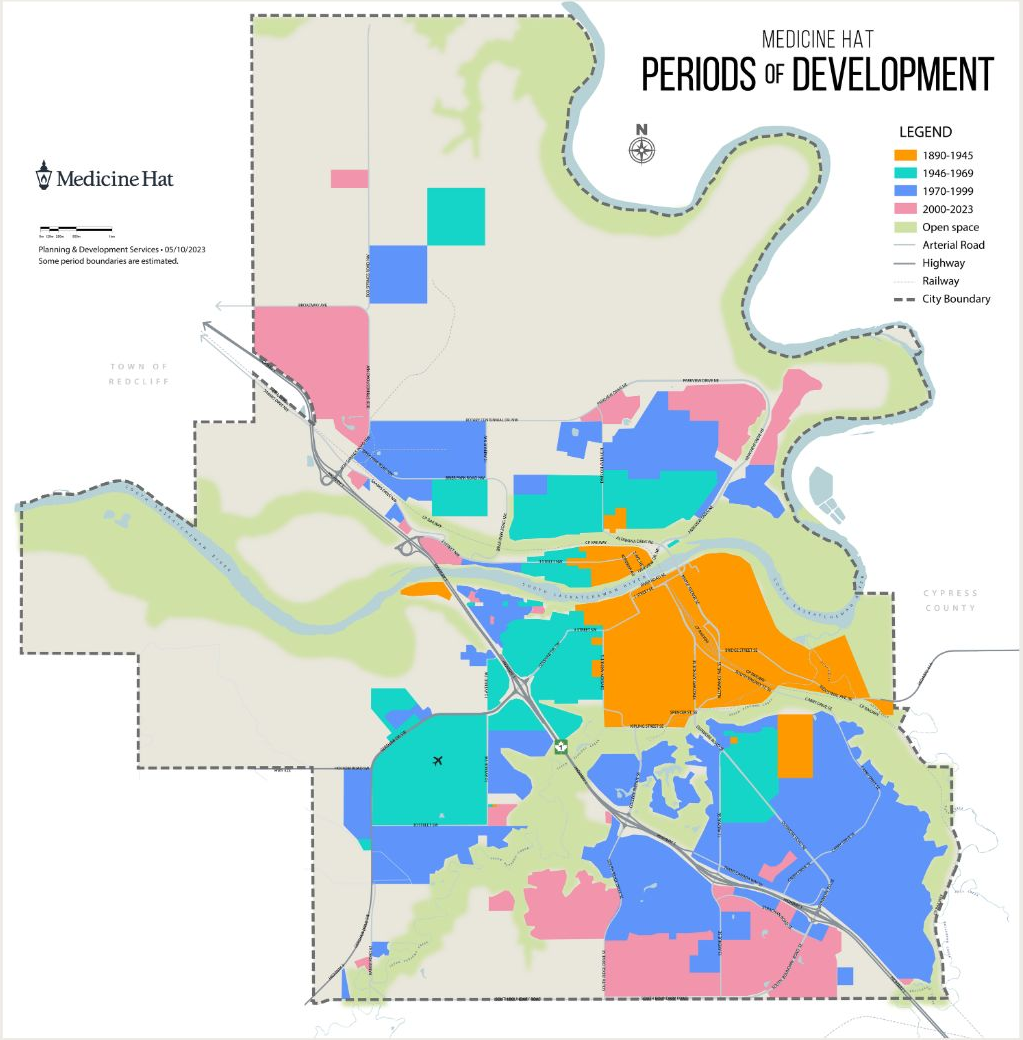
Medicine Hat, AB

City Growth 2023



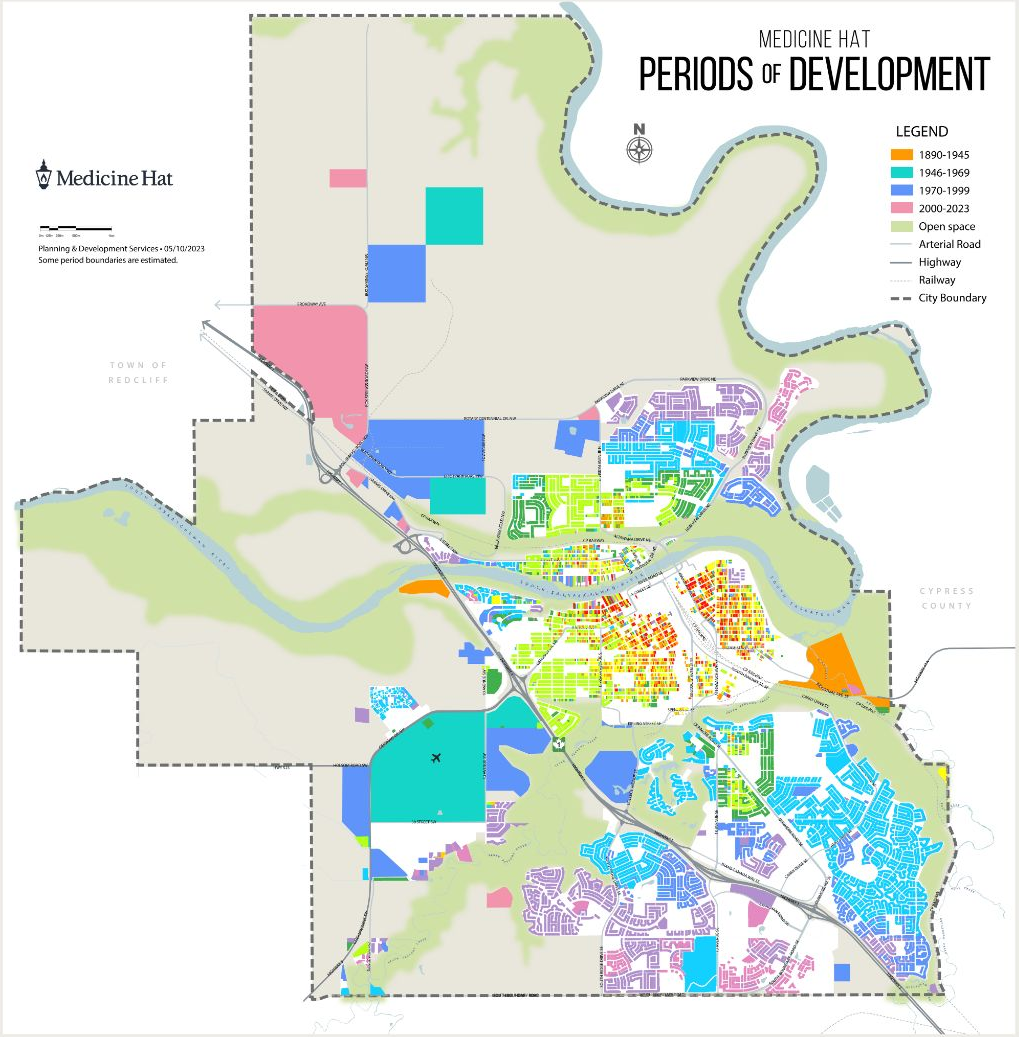
Medicine Hat, AB

City Growth



Medicine Hat, AB

City Growth Permits

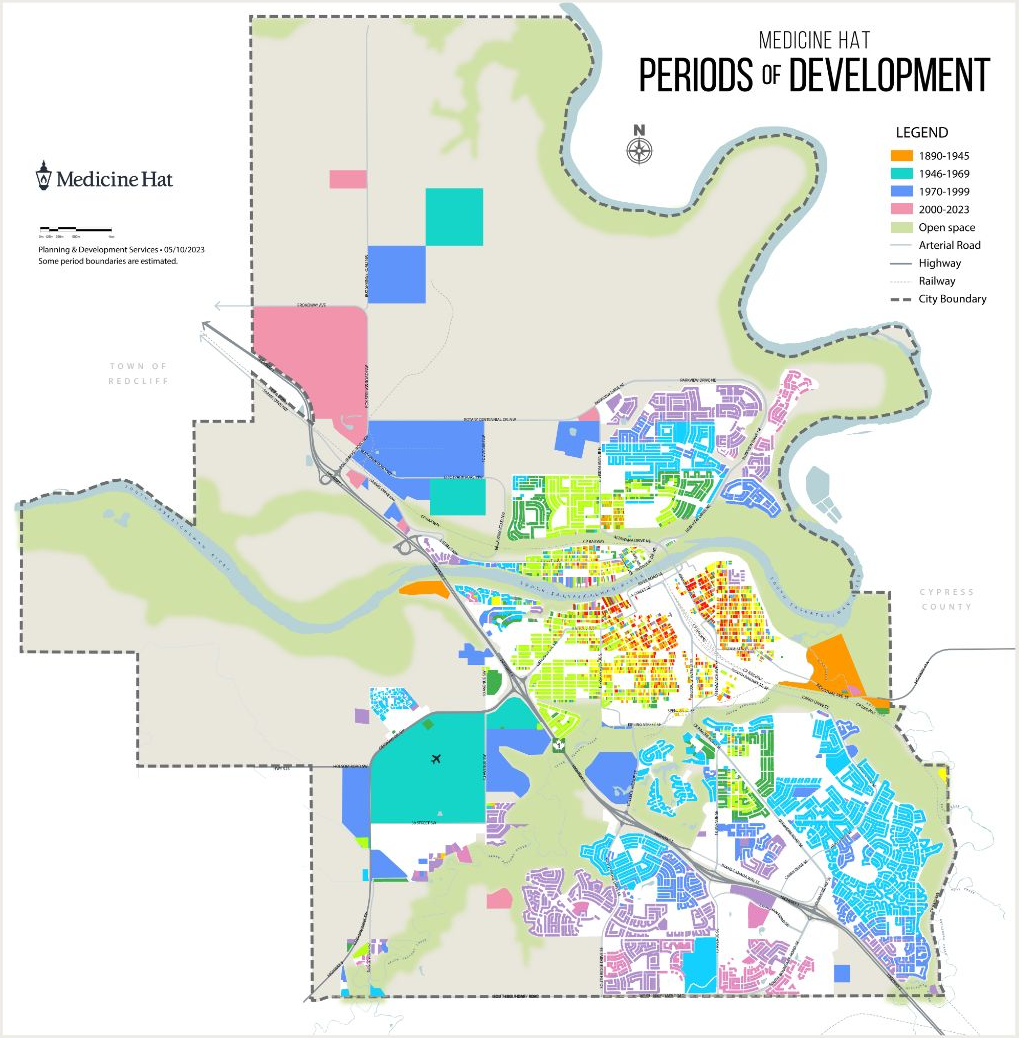


Medicine Hat, AB

City Growth Permits

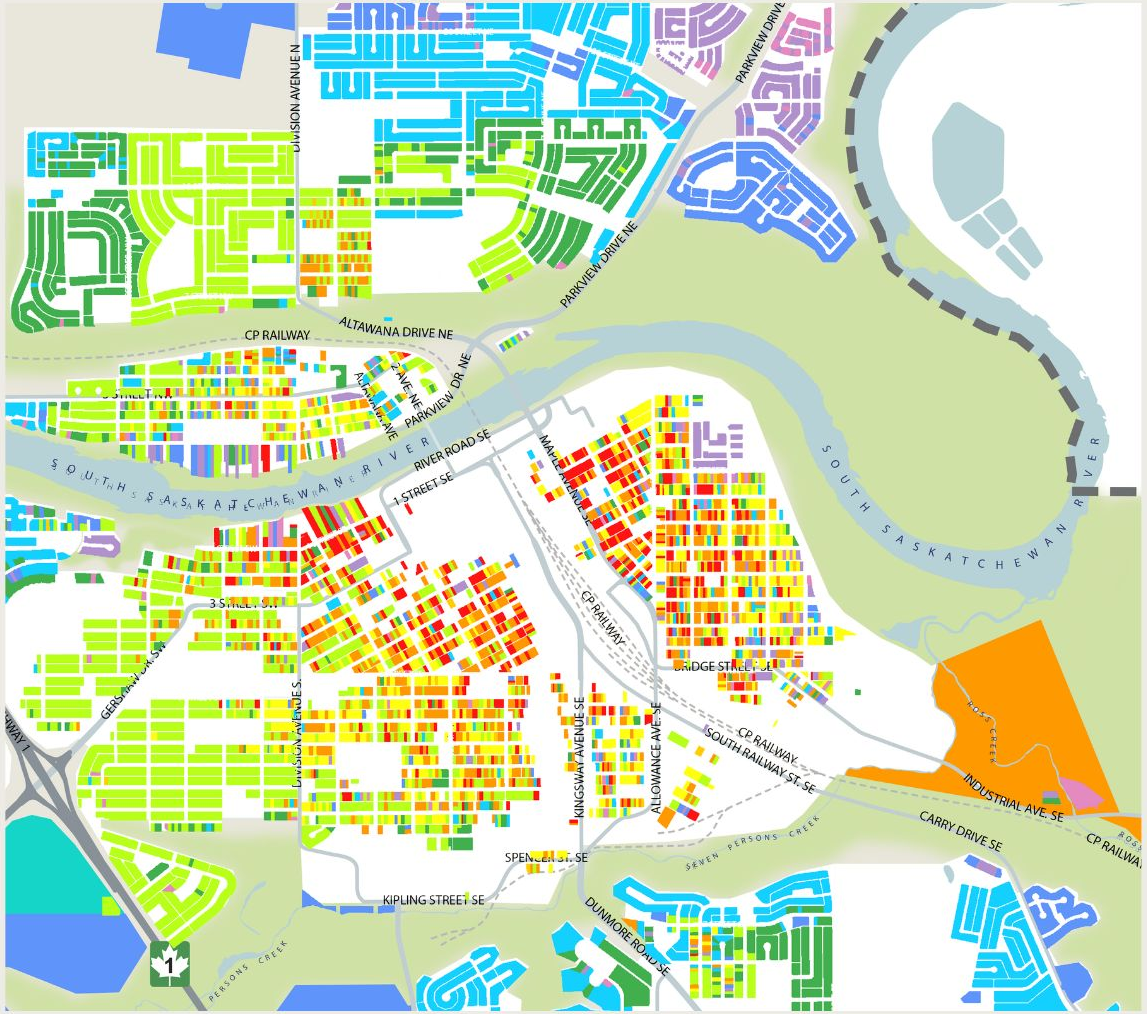
LEGEND

- 1890-1945
- 1946-1969
- 1970-1999
- 2000-2023



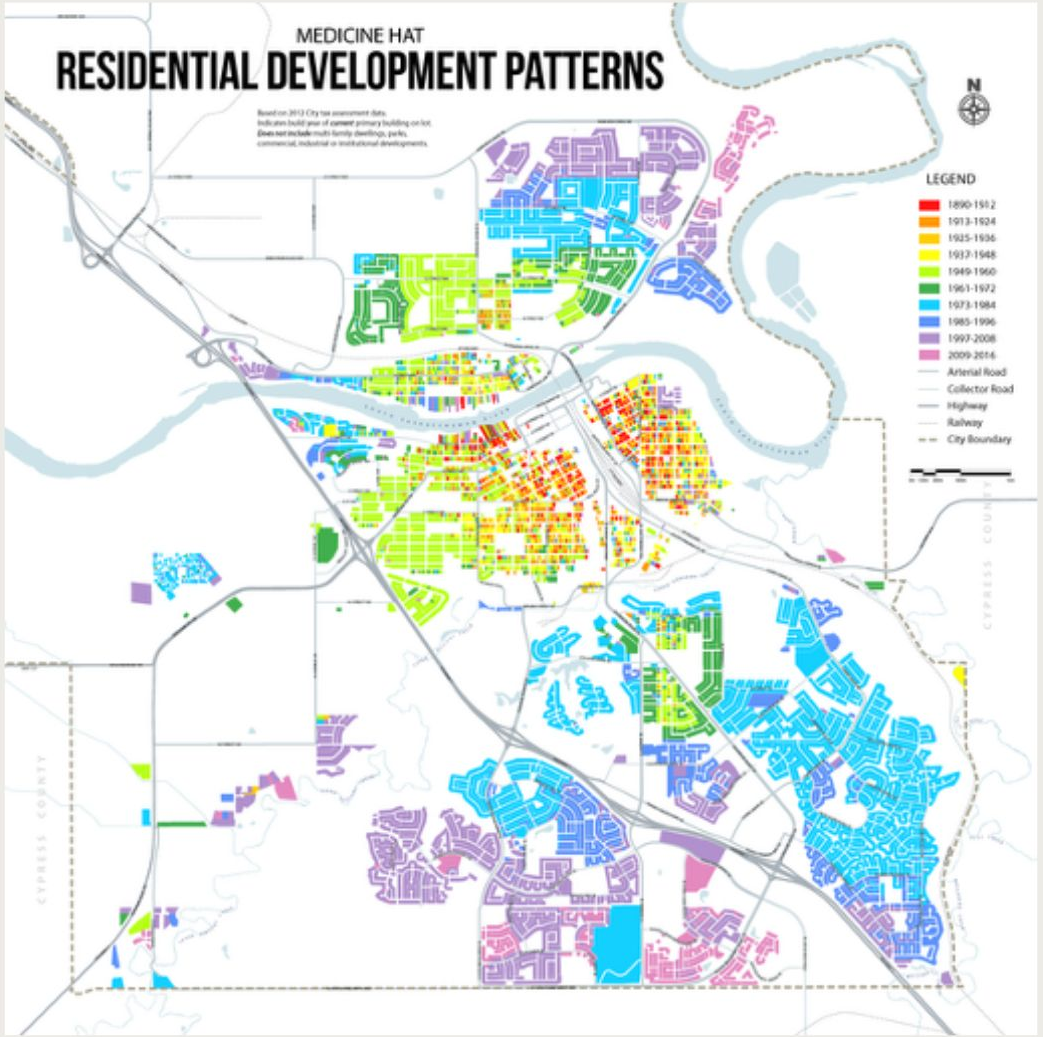
Medicine Hat, AB

City Growth Permits



Medicine Hat, AB

City Growth





The Traditional Development Pattern

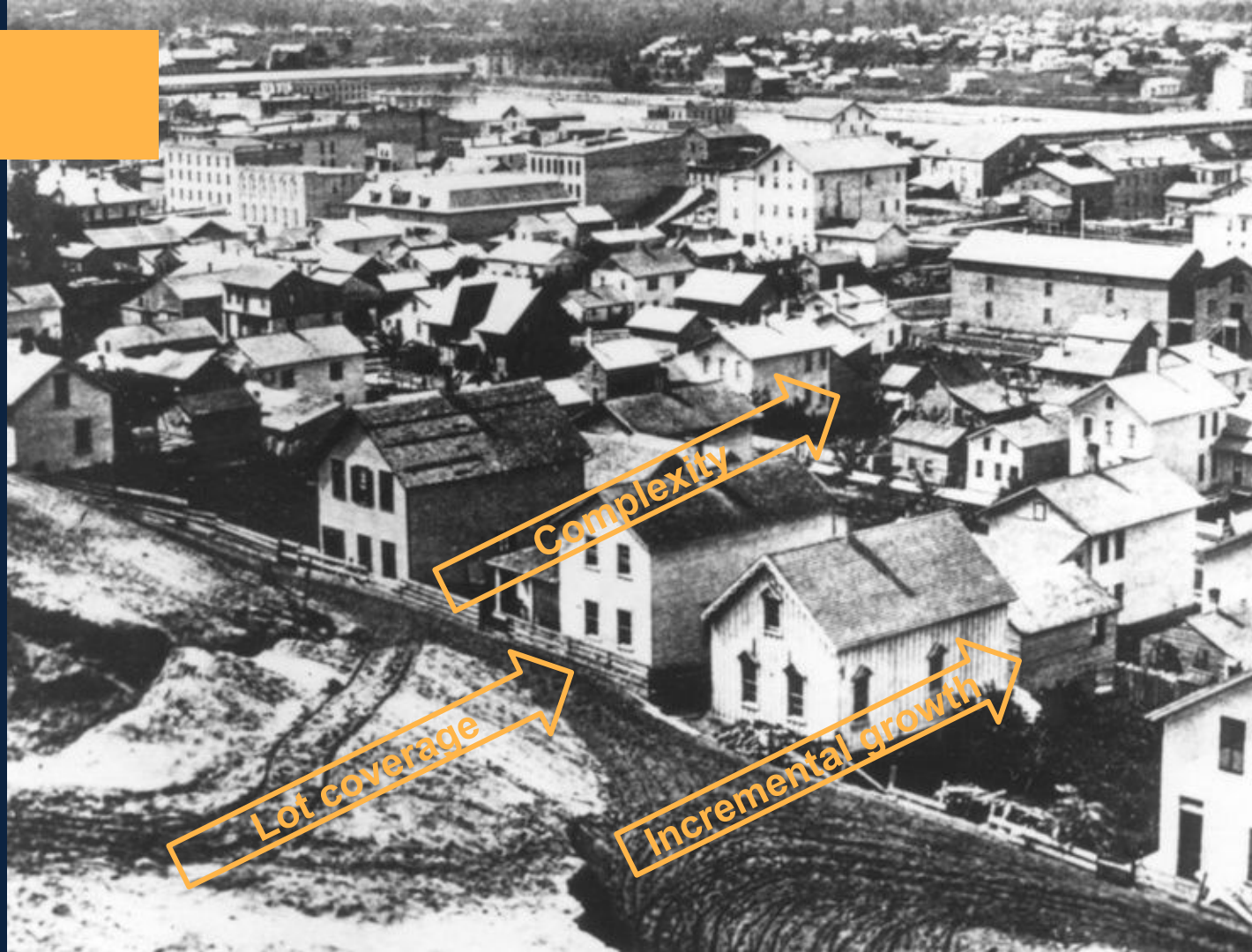
Assemblies of (increasingly) independent neighbourhoods

Grand Rapids

1870s

Notice the mix of sizes & uses

1. Complexity
2. Lot coverage
3. Incremental growth & adaptation



Medicine Hat

Present

Notice the mix of sizes & uses

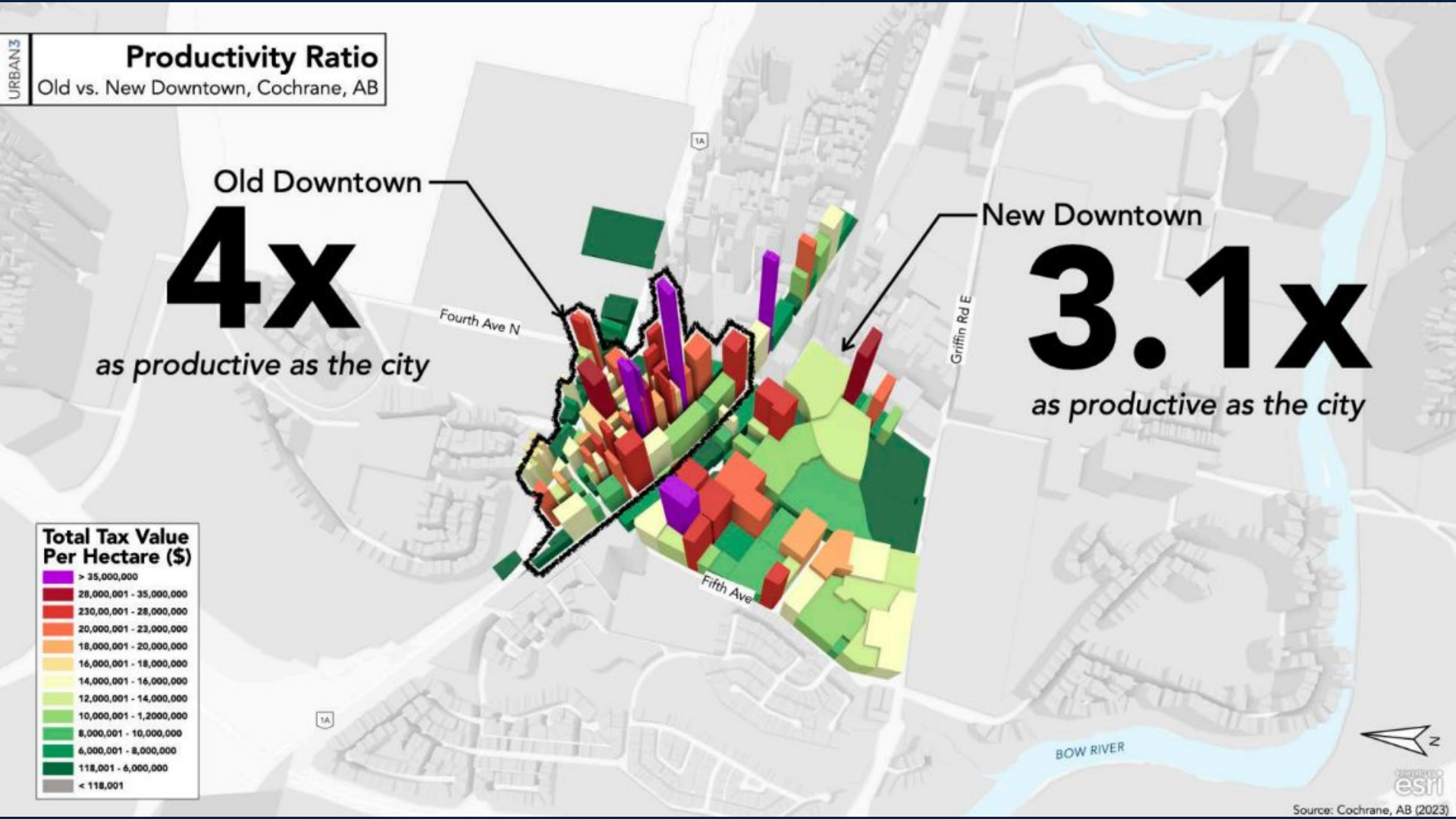
1. Complexity
2. Lot coverage
3. Incremental growth & adaptation



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Productivity Ratio

Old vs. New Downtown, Cochrane, AB



Source: Cochrane, AB (2023)

URBAN3

Value Per Hectare: Main Street Commercial

Cochrane, AB

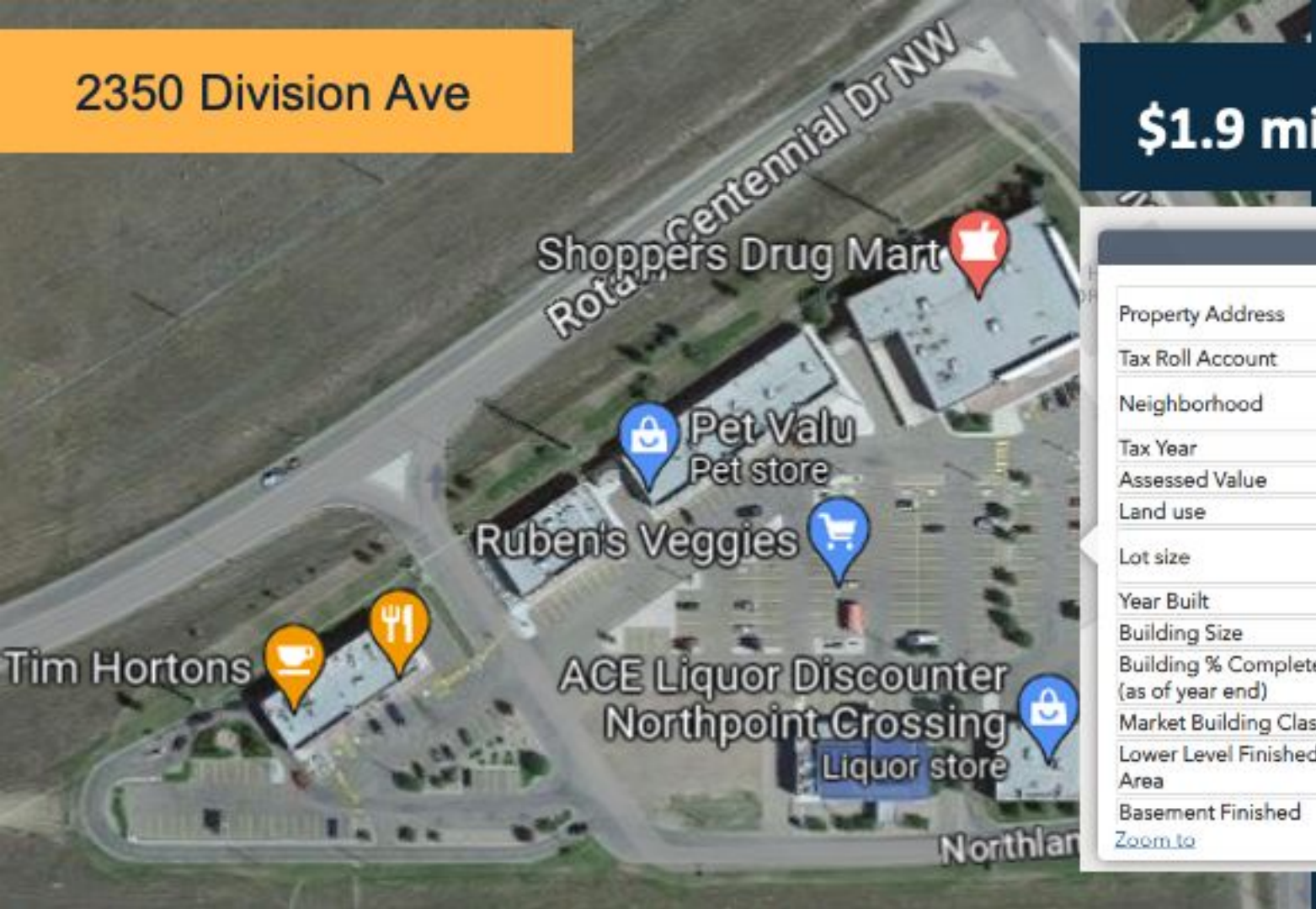


Walmart Average
$9M per hectare

Source: Cochrane, AB GIS (2023) & Google Maps

2350 Division Ave

$1.9 million/acre

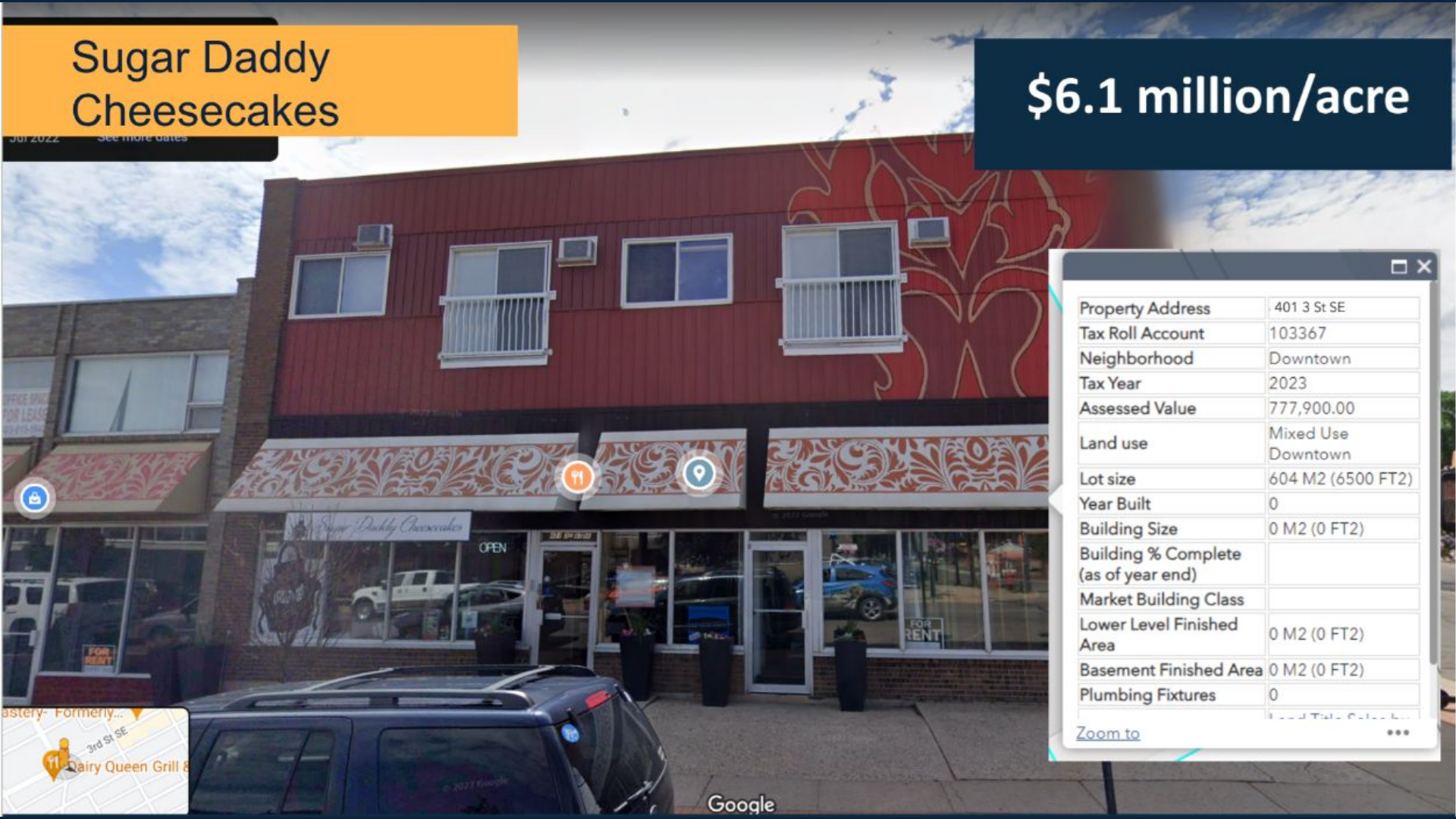


Property Address	2350 DIVISION AVENUE NW
Tax Roll Account	125561
Neighborhood	NE Crescent Heights 8
Tax Year	2023
Assessed Value	14,240,700.00
Land use	Mixed Use
Lot size	29380 M2 (316246 FT2)
Year Built	0
Building Size	0 M2 (0 FT2)
Building % Complete (as of year end)	
Market Building Class	
Lower Level Finished Area	0 M2 (0 FT2)
Basement Finished	

Zoom to

Sugar Daddy Cheesecakes

$6.1 million/acre



Property Address	401 3 St SE
Tax Roll Account	103367
Neighborhood	Downtown
Tax Year	2023
Assessed Value	777,900.00
Land use	Mixed Use Downtown
Lot size	604 M2 (6500 FT2)
Year Built	0
Building Size	0 M2 (0 FT2)
Building % Complete (as of year end)	
Market Building Class	
Lower Level Finished Area	0 M2 (0 FT2)
Basement Finished Area	0 M2 (0 FT2)
Plumbing Fixtures	0

Zoom to



Duplex
$3.9 million/acre



Mixed-Use
$7.7 million/acre



Single Family
$1.5 million/acre



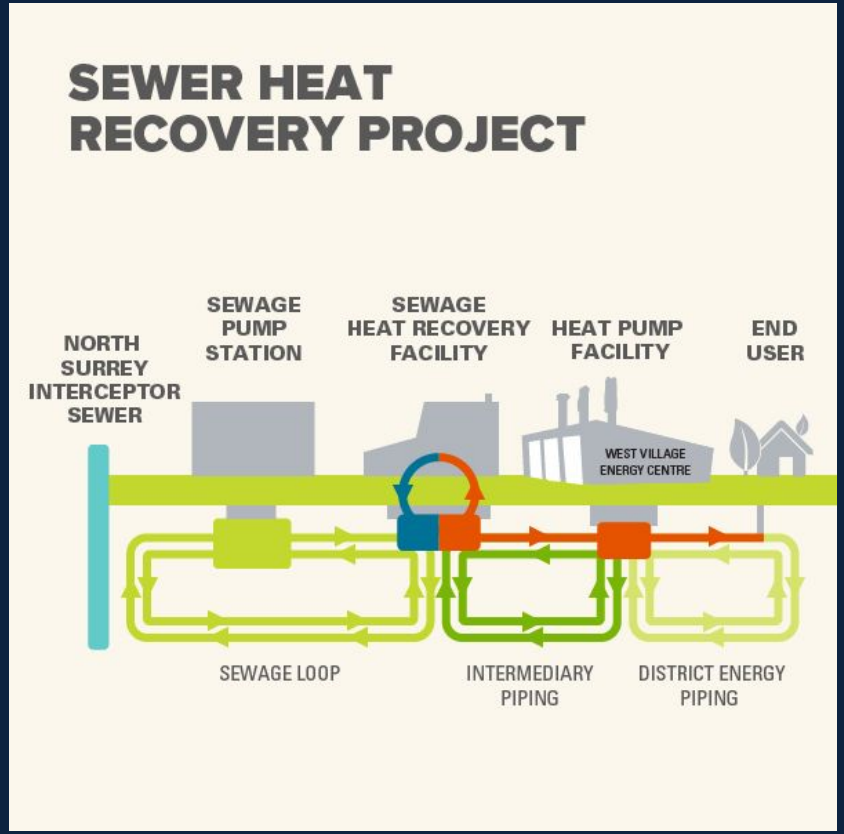
Costly Infrastructure to Keep This Going

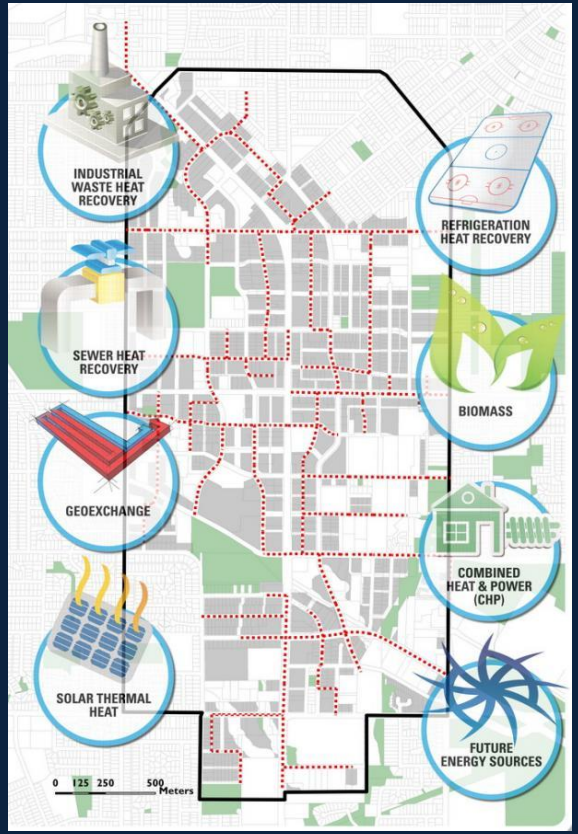
For every $3 in private assets, there is $1 of municipal investment in Delta (our “assets”).

Better ratio is, at minimum, $20 for every $1


“The prevailing pattern of development is making North American cities and towns weak and fragile.
We seek to change that.”
STRONG TOWNS

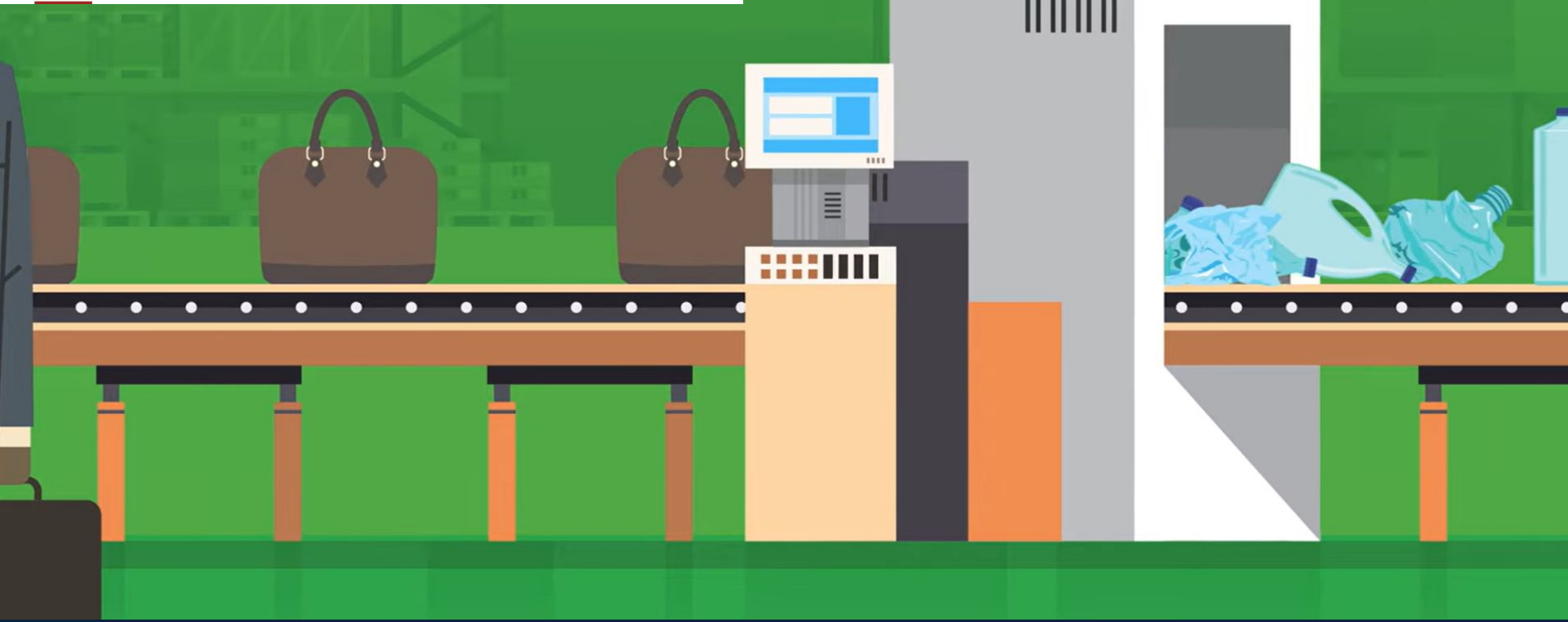
Must Have -> Can’t Justify -> Not Feasible





City of Surrey, District Energy Strategy

Circular economy

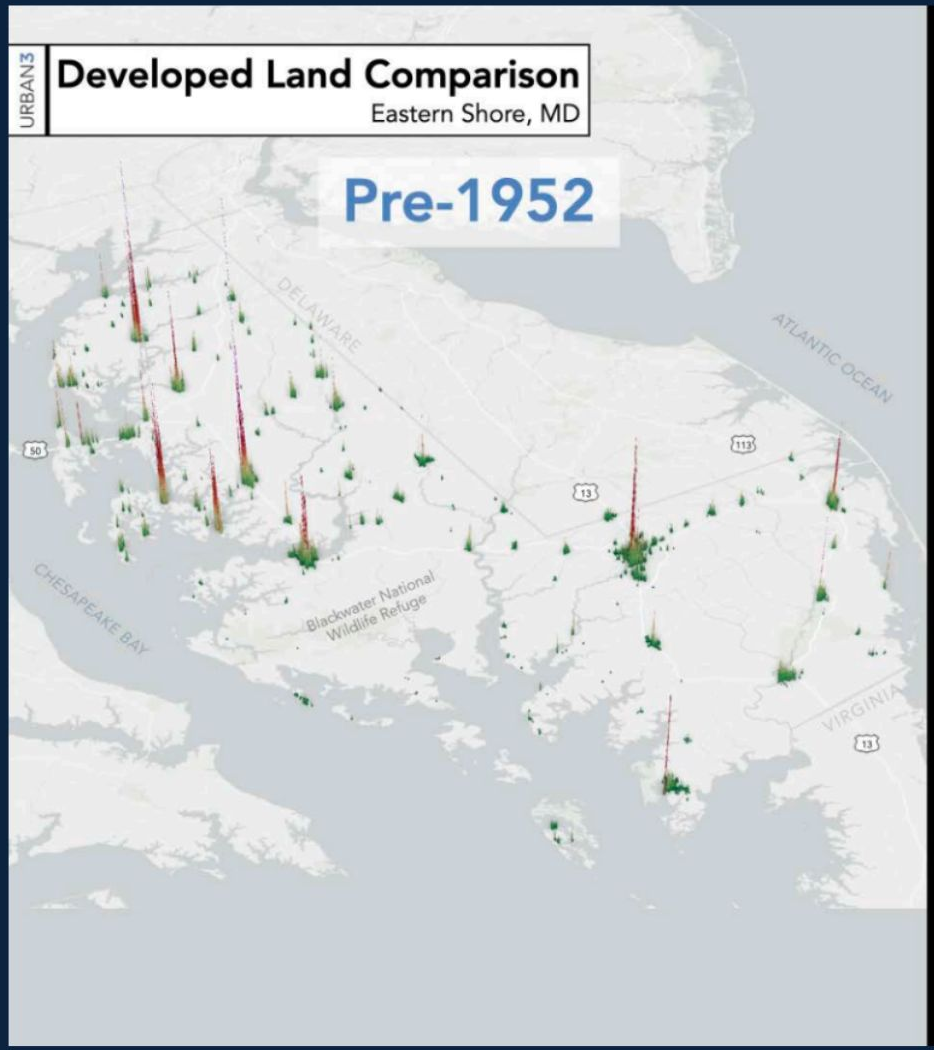


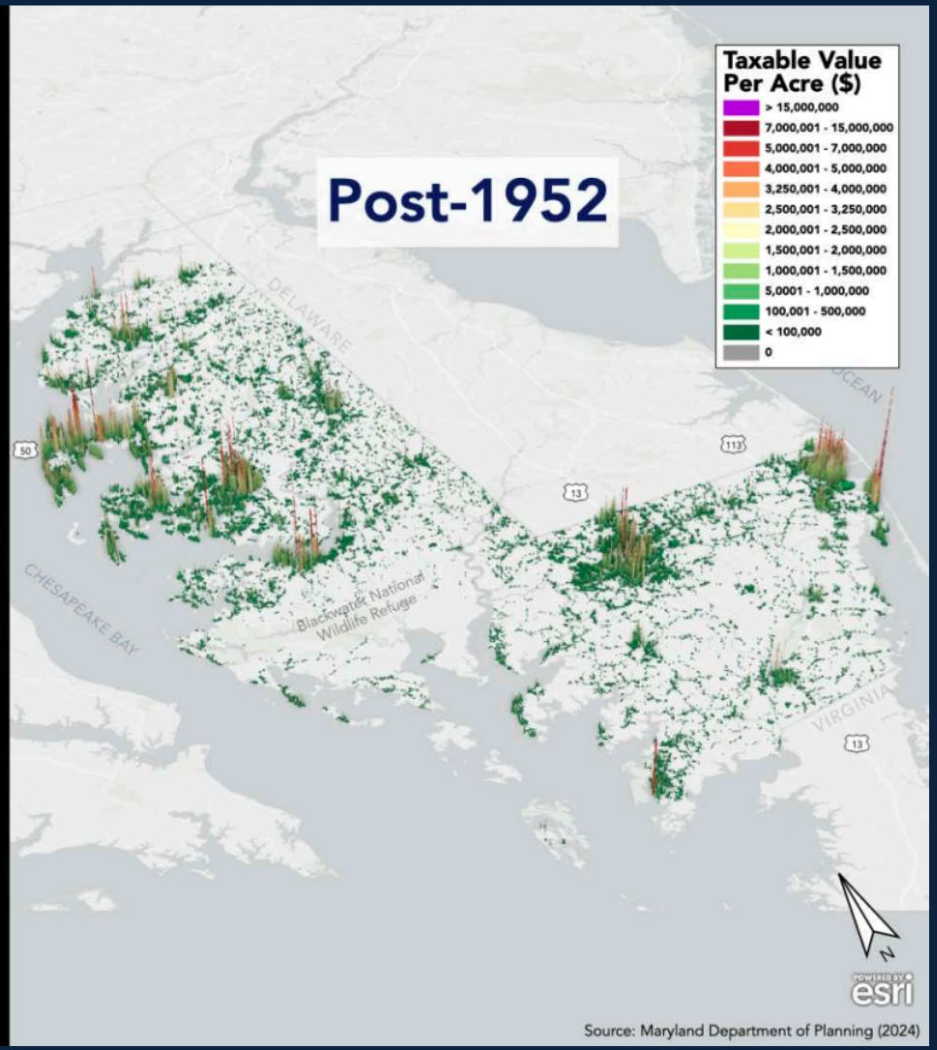

Star Thai Massage
Coconut Hill Indian Grocery
S Murphy Ave
Bishop Ave
Ellis Elementary School
Jarvis Ct
Floor Store
Flooring store
O'Reilly Auto Parts
Auto parts store
Camino Real
Walgreens
Drug Store
PAMF Sunnyvale Diagnostic Imaging
Central Ave
Hellos School
PAMF
sunnyvale first united methodist church
St Martin Catholic Church
Fu Niu Tang Noodle Talk
Noodle Shop · $$
S Sunnyvale Ave
Wells Fargo Bank
Old San Francisco Rd
Sprouts Farmers Market
Boudin SF
Ross Dress for Less
Clothing store
Olivewood, Spruce Apartments
DELHIWALA CHAAT
Life's Garden
Gold Star Gymnastics
Maplewood, Spruce Apartments
Five Guys
Hamburger · $$
DICK'S Sporting Goods
Sporting goods store
Northwood, Spruce Apartments
S Fair Oaks Ave
Spruce Apartments
Cakes & Bakes
Cedarwood, Spruce Apartments
REI
Camping store
Sunnyvale Saratoga Rd
King's Seafood Center
Spruce Apartments
Villa Cerise Apts
Juniperwood, Spruce Apartments
Starbucks
Petco
Pet store
Black Bear Diner Sunnyvale
American · $$
24 Hour Fitness
Pep Boys
Tire shop
El Camino Real
Fair Oaks Plaza
S Mathilda Ave
Arbor Terrace Apartments
Layers

URBAN3

Developed Land Comparison

Eastern Shore, MD





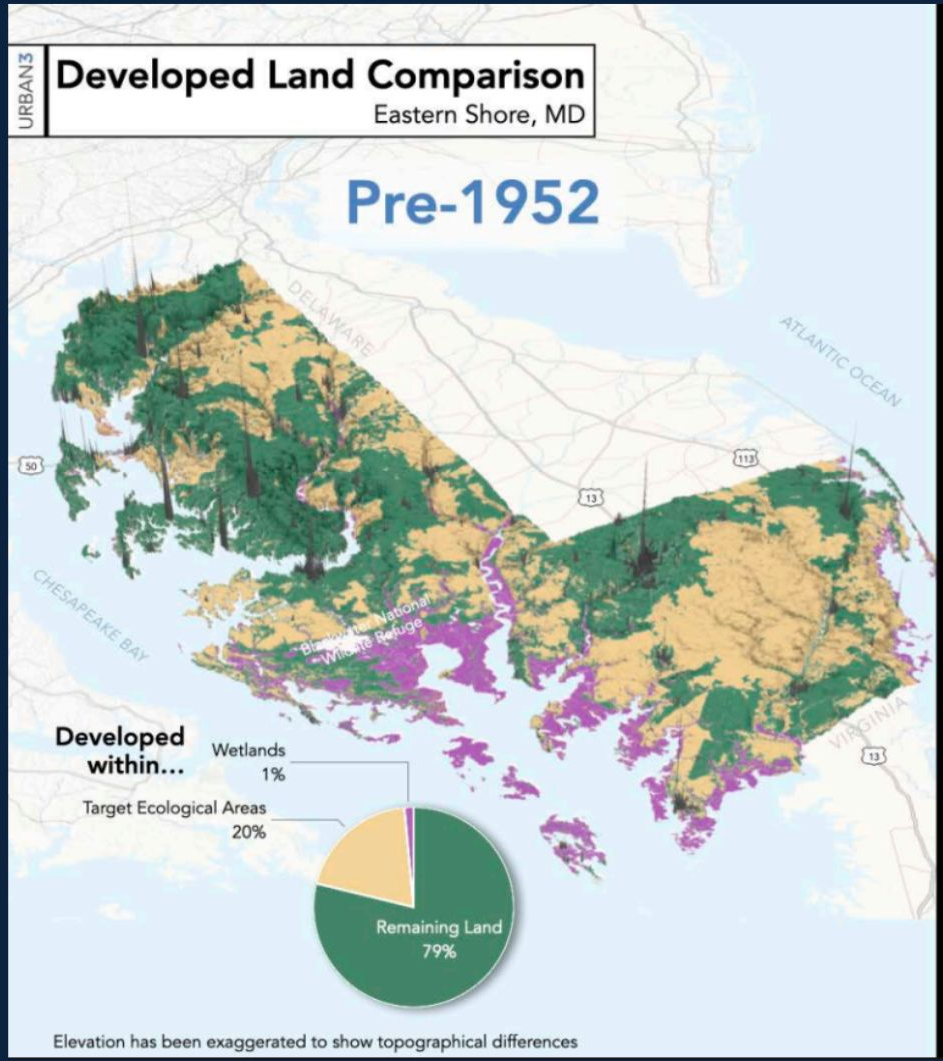
Source: Maryland Department of Planning (2024)

URBAN3

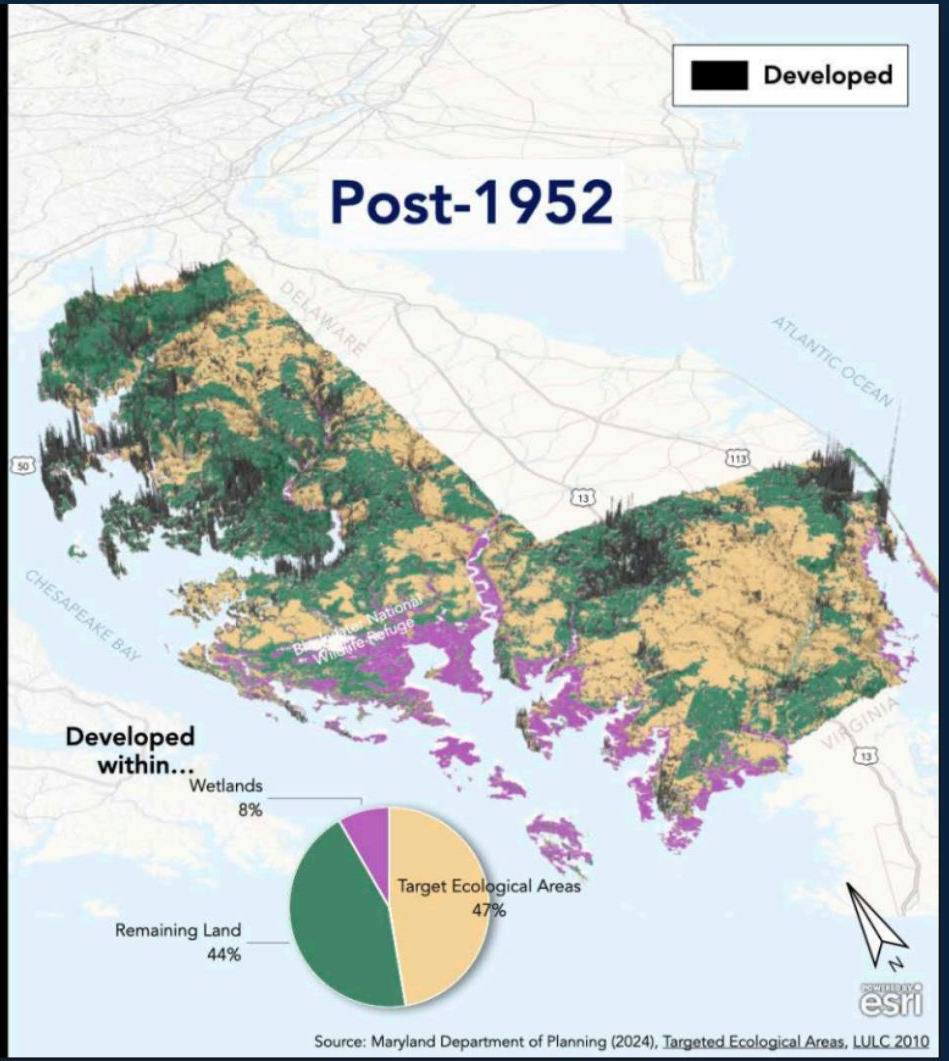
Developed Land Comparison

Eastern Shore, MD

Pre-1952



Post-1952



Elevation has been exaggerated to show topographical differences

Source: Maryland Department of Planning (2024), Targeted Ecological Areas, LULC 2010

URBAN3

Land Use Within Your Control

Eastern Shore, MD



Current





Current pattern:
predominantly Single Family
Detached

2100 Trend*





Alternate pattern:
predominantly Single Family
Attached

2100 Alternative*

*After 3 ft sea level rise

Source: Maryland Department of Planning (2024), Targeted Ecological Areas, LULC 2010, NOAA Sea Level Rise

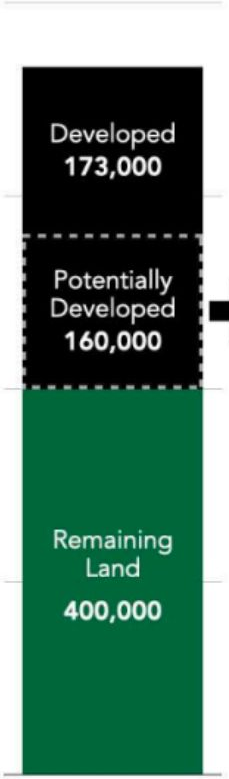
URBAN3

Land Use Within Your Control

Eastern Shore, MD



Current



2100 Trend*

Total Value:

$38B



Current pattern:
predominantly Single Family
Detached



2100 Alternative*

Total Value:

$38B



Alternate pattern:
predominantly Single Family
Attached

*After 3 ft sea level rise

Source: Maryland Department of Planning (2024), Targeted Ecological Areas, LULC 2010, NOAA Sea Level Rise



The Question

How do we set in motion a process that strengthens and builds lasting prosperity?

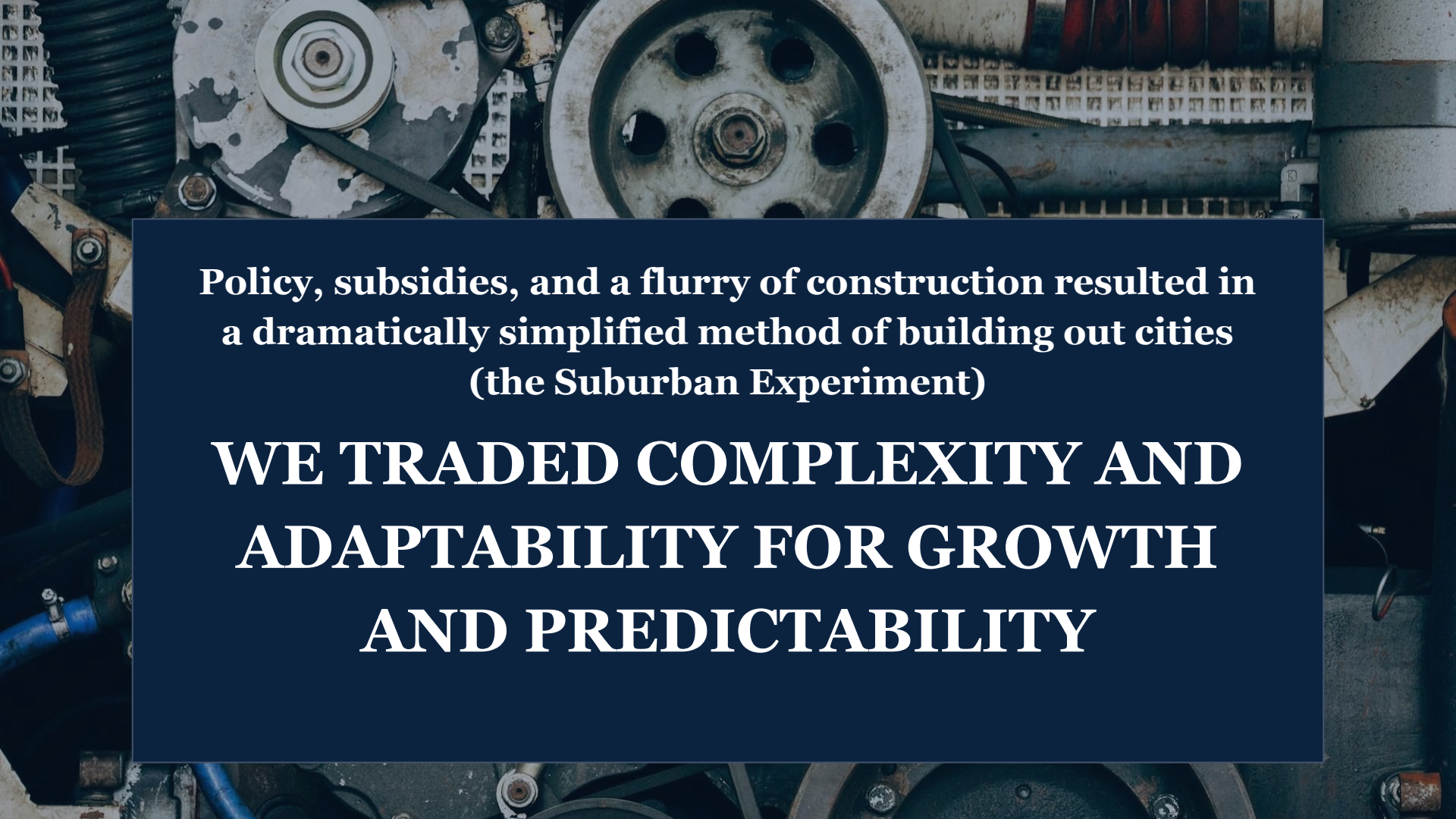




Complex

Complicated





Policy, subsidies, and a flurry of construction resulted in a dramatically simplified method of building out cities (the Suburban Experiment)

WE TRADED COMPLEXITY AND ADAPTABILITY FOR GROWTH AND PREDICTABILITY



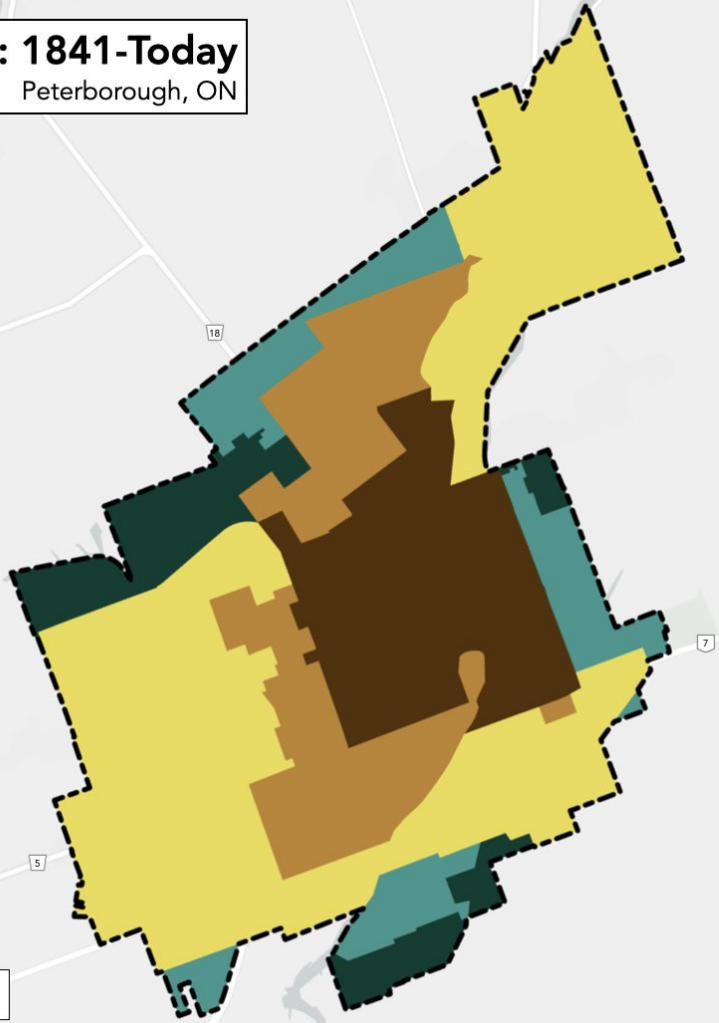
Our Core Message

This path, meant as a means of securing prosperity for all, has unwittingly trapped us in a system that is incapable of building lasting prosperity

URBAN3

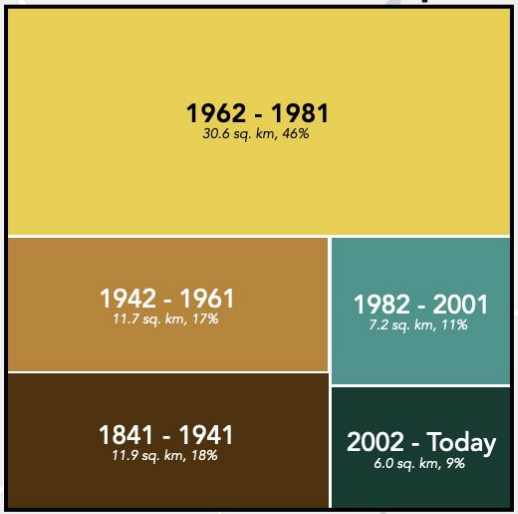
City Growth: 1841-Today

Peterborough, ON

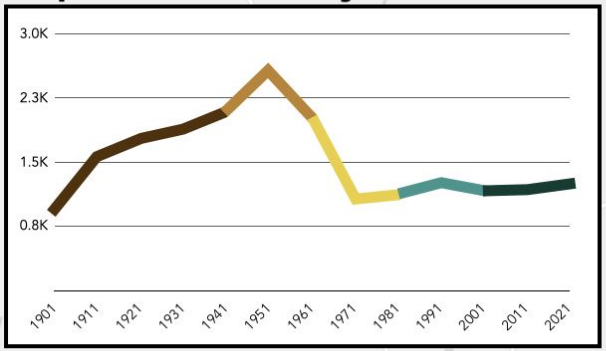


Present Day City Limits

Area 67.3 sq. km



Population Density (people per sq. km)



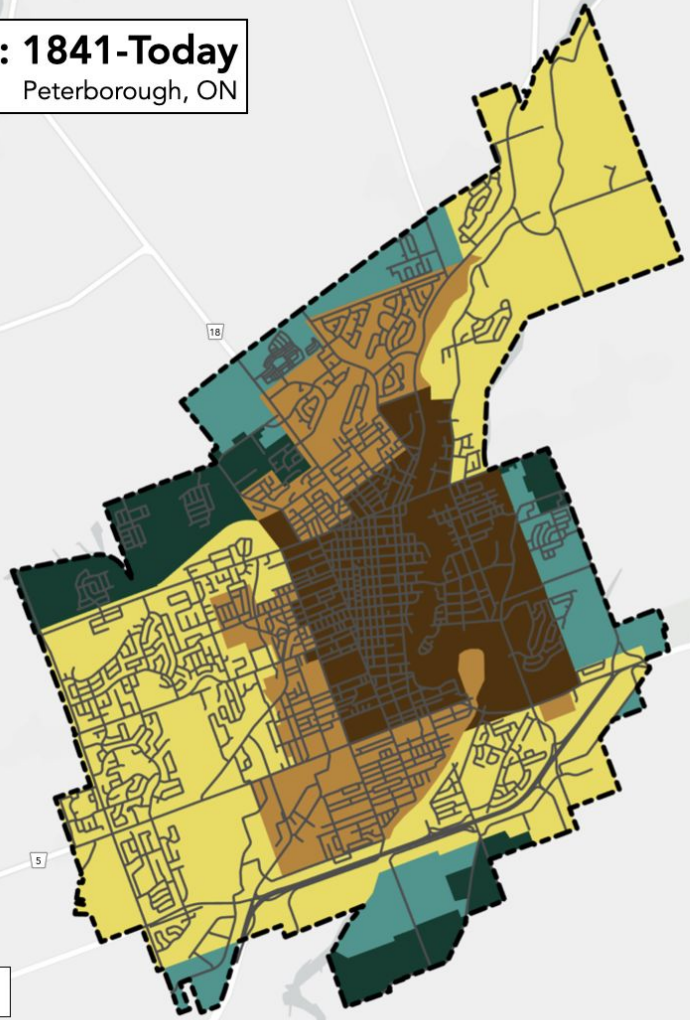
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Source: City of Peterborough (2023); Statistics Canada

URBAN3

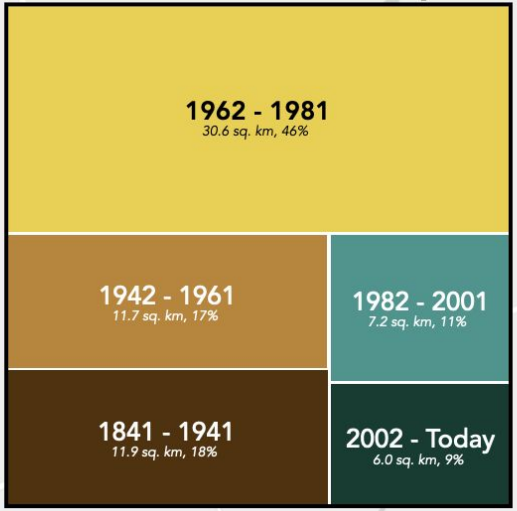
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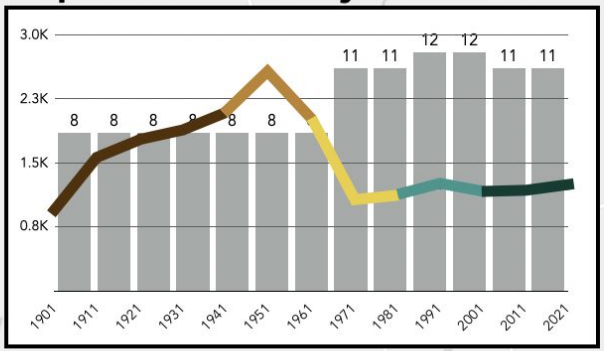
Present Day City Limits

Area 67.3 sq. km



Road Per Person (Meters)

Population Density (people per sq. km)



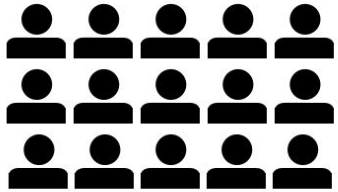
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Source: City of Peterborough (2023); Statistics Canada

URBAN3

Sewer System Change Over Time

Kansas City, KS

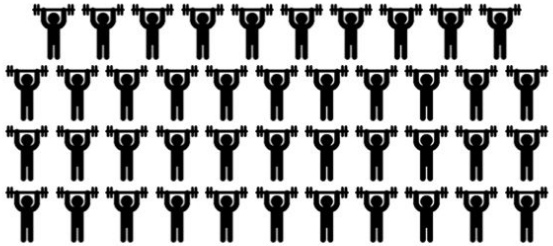
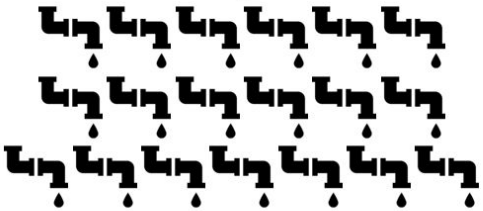
	1910	2010	Change
Population	82,331 	145,786 	1.8x
Feet of Sewer Per Person	1.1 	30.1 	27x

Source: Wyandotte Unified Government, Jud Knapp

URBAN3

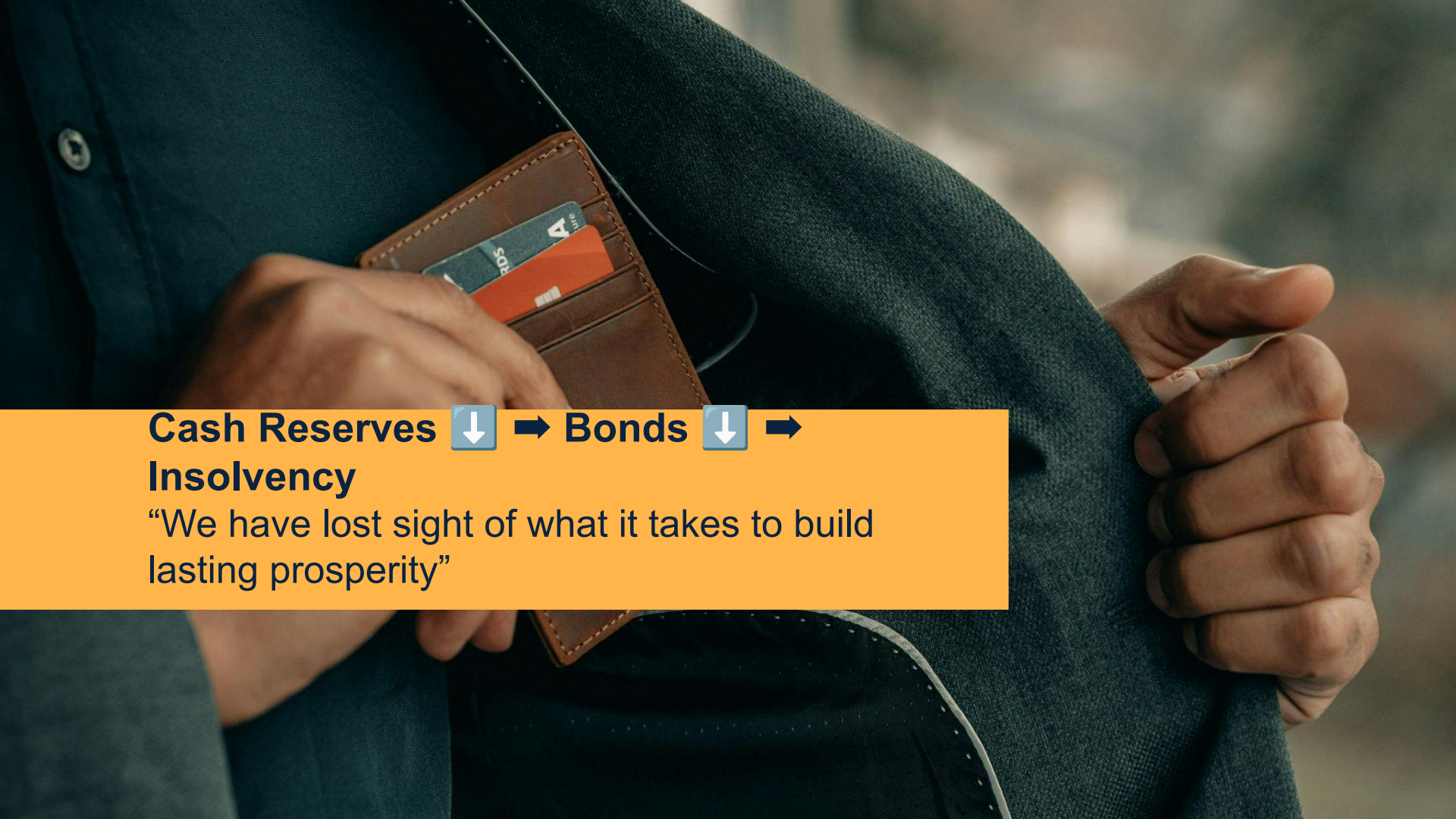
Sewer System Change Over Time

South Bend, IN

	1960	2020	% Change
Population	132,445 	103,453 	-22%
Lift Stations	3 	43 	1,333%
Miles of Force Main	0.3 	19 	6,452%

Source: Sanborn Maps, South Bend Records


YOU'LL PAY
FOR THIS!
THE CITY PROJECT
Series Editors Emma and Michel Durand-Wood
Michel Durand-Wood



Cash Reserves ⬇️ ➡ Bonds ⬇️ ➡ Insolvency

“We have lost sight of what it takes to build lasting prosperity”

Serious implications for the future

- The “Mechanisms of Growth” we have become accustomed to are waning.
- Local governments are going to be forced to absorb the local costs of the current development pattern.
- This can’t be done in the current pattern of development without **large tax increases** and/or **large cuts in services**.



The Traditional Development Pattern

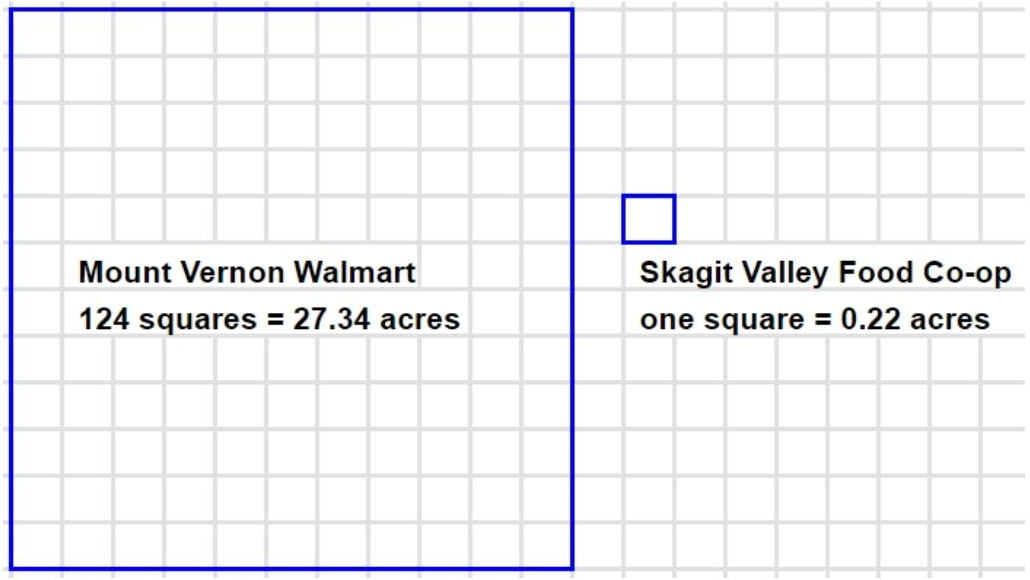
Ongoing adaptation to local pressure – accepting incremental change and ensuring greater financial opportunity through proximity

Mount Vernon, WA



Skagit Valley
Food Co-op
$27,977.41

Land Consumed to Generate Local Economic Prosperity

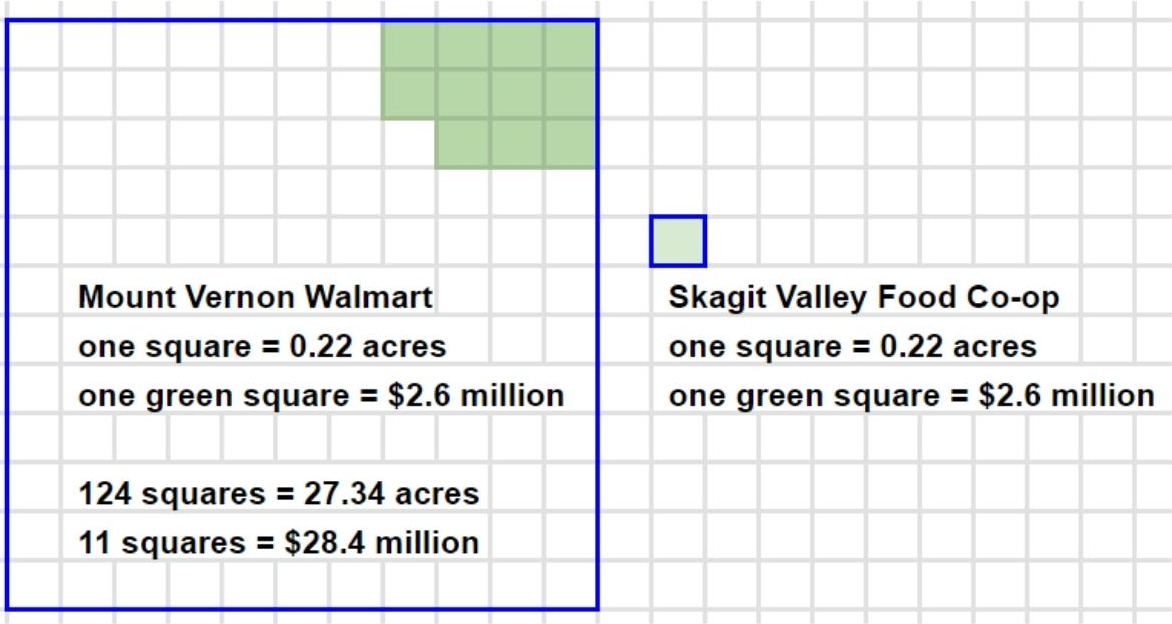


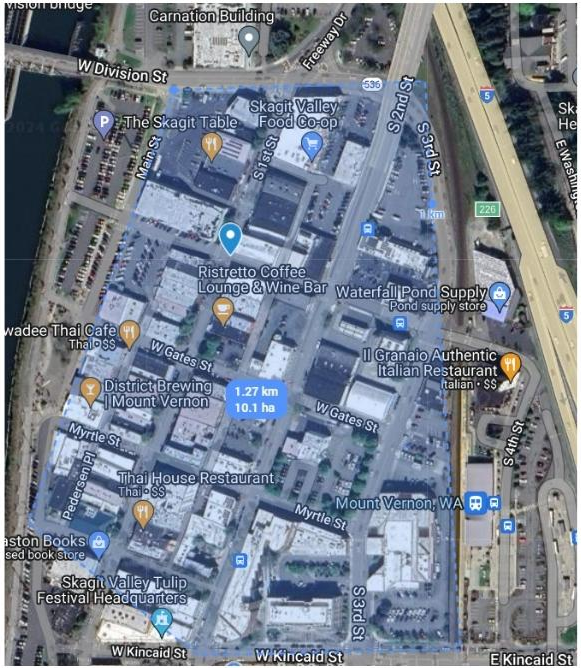


Walmart's Annual Property Tax
$327,289.42

If the Co-op occupied a 2.42 acre site in a similarly productive way, it would equal the total assessed value of the Walmart on its 27 acre site.

If the Walmart land use pattern was changed to be more like the Co-op, it would result in a total assessed value in the range of $280-$325 million.

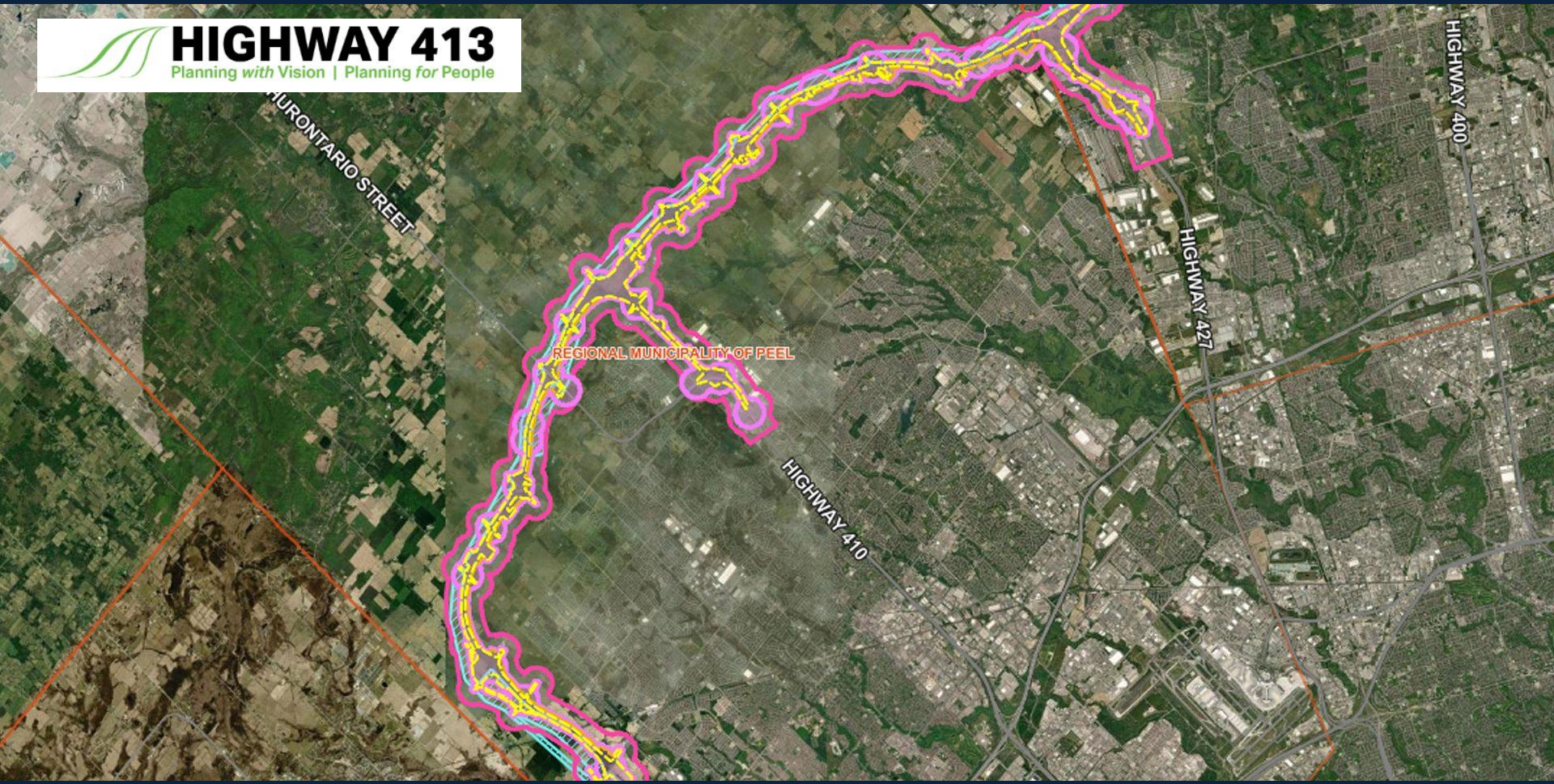




Tax Revenue Lost Through Change in Development Patterns



To learn more, read Charles Marohn's book
Strong Towns: A Bottom-Up Revolution
To Rebuild American Prosperity


HIGHWAY 413
Planning with Vision | Planning for People
HURONTARIO STREET
REGIONAL MUNICIPALITY OF PEEL
HIGHWAY 410
HIGHWAY 427
HIGHWAY 400



Our Core Message

This path, meant as a means of securing prosperity for all, has unwittingly trapped us in a system that is incapable of building lasting prosperity



The Traditional Development Pattern

Ongoing adaptation to local pressure – accepting incremental change and ensuring greater financial opportunity through proximity



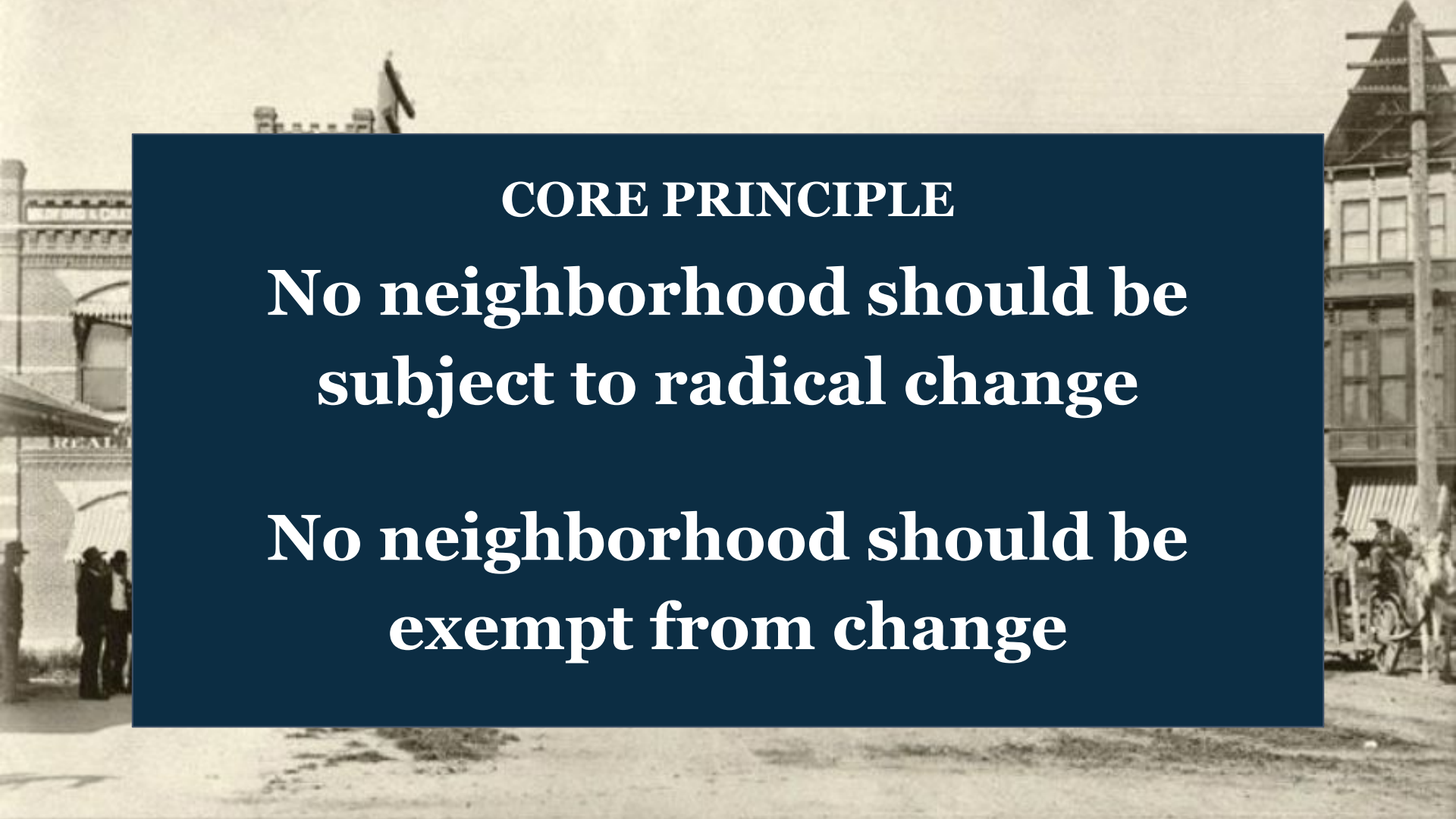
The Traditional Development Pattern

Assemblies of (increasingly) independent neighbourhoods

Public Investment Process
for a Strong Town

1. Humbly observe where people in the community struggle.
2. Ask the question: What is the next smallest thing we can do right now to address that struggle?
3. Do that thing. Do it right now.
4. Repeat.


Make Complex Adaptation
Our Default Expectation



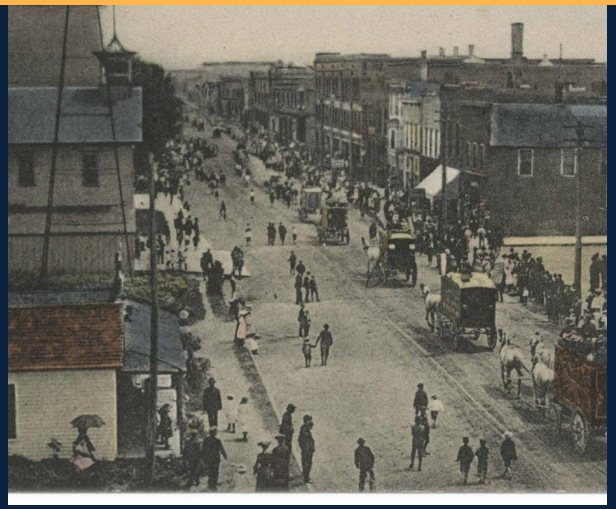
CORE PRINCIPLE

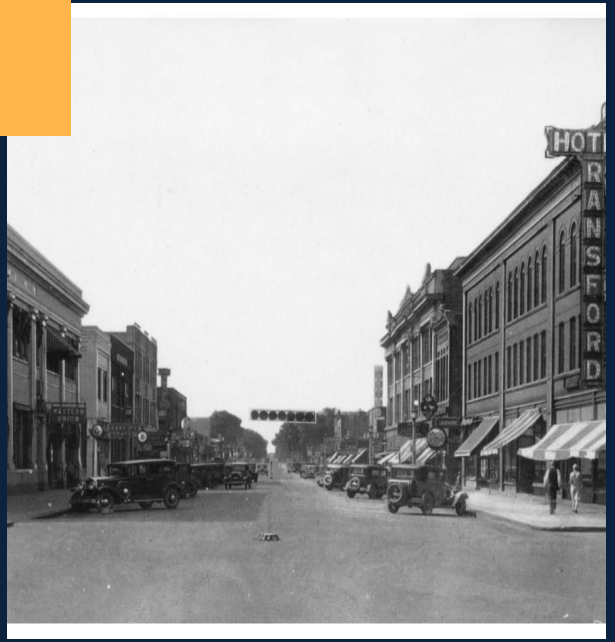
No neighborhood should be subject to radical change

No neighborhood should be exempt from change

ALLOW THE NEXT INCREMENT BY RIGHT







- a minimum amount of regulatory friction to increase housing density
- approval to build to next increment OR seek permission to skip increments

THE COMPLEXITY CONUNDRUM

KRONBERG URBANISTS ARCHITECTS

ANYTHING ELSE

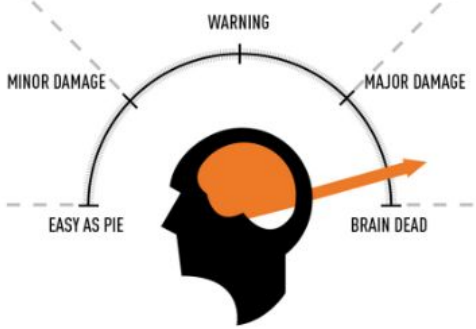
- High brain damage
- Low returns
- Higher expenses

SINGLE FAMILY

- Low brain damage
- Low returns

LARGE MULTIFAMILY

- High brain damage
- High returns



Too much brain damage,
not enough money

THE COMPLEXITY CONUNDRUM

KRONBERG URBANISTS ARCHITECTS

INCREMENTAL INFILL

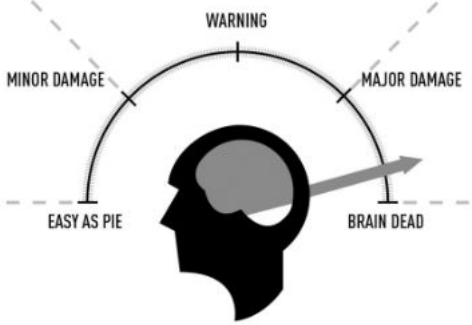
- High brain damage
- Low returns
- Higher expenses

SINGLE FAMILY

- Low brain damage
- Low returns

LARGE MULTIFAMILY

- High brain damage
- High returns



We have to reduce brain cells
for this stuff

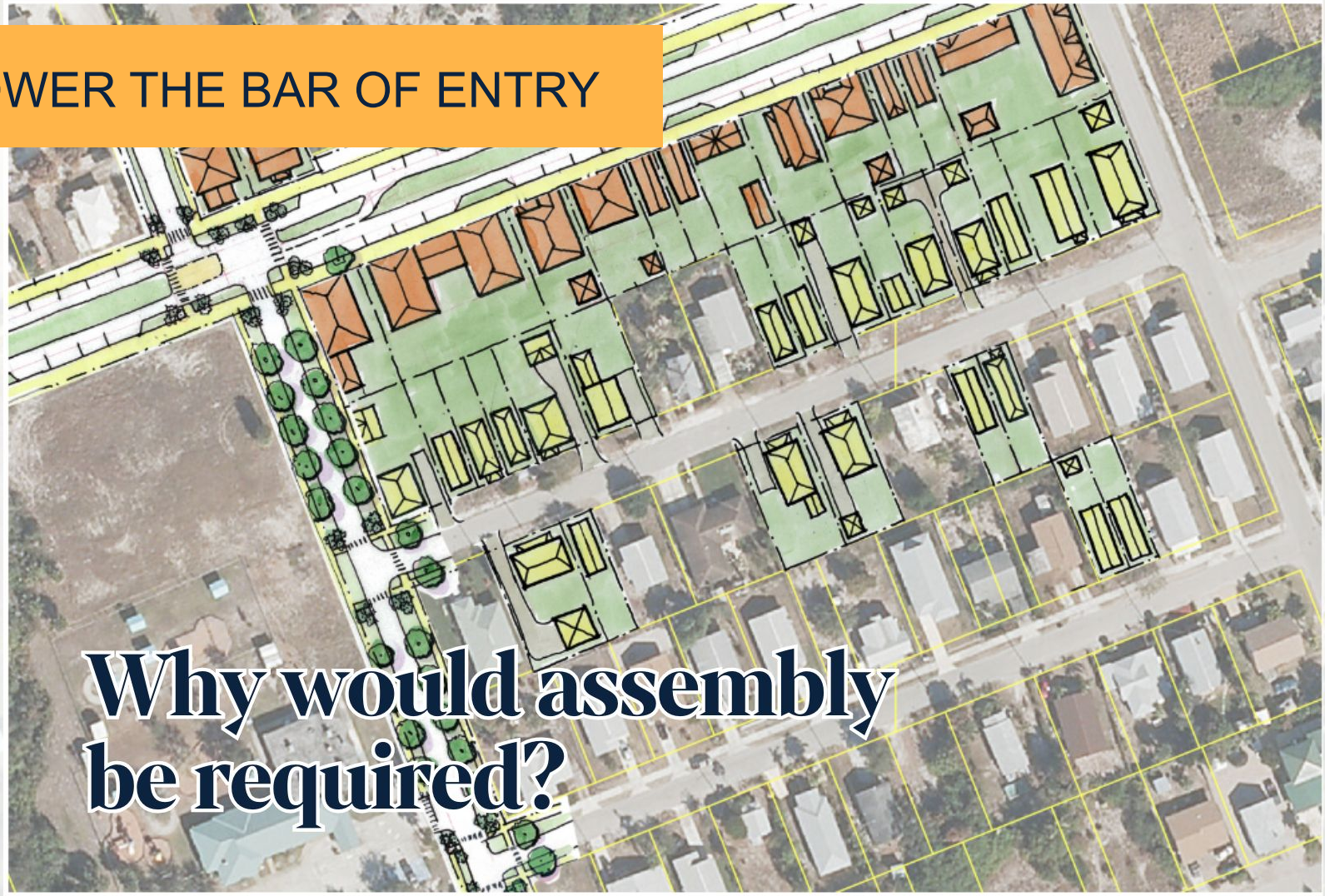
LOWER THE BAR OF ENTRY





This development “scores well” but requires moonscaping, major change, wholesale displacement of residents, absence of persistent adaptation

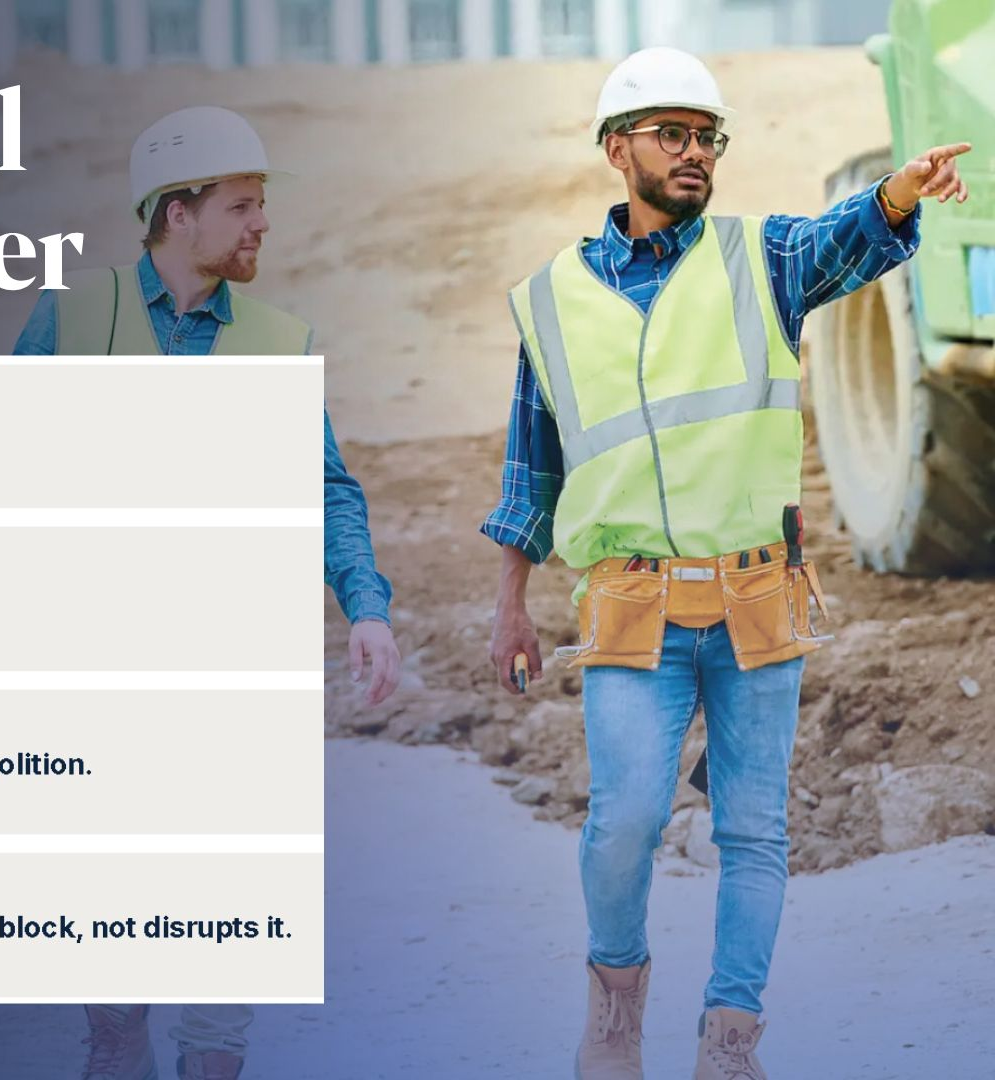
LOWER THE BAR OF ENTRY



Why would assembly be required?

Why Incremental Developers Matter

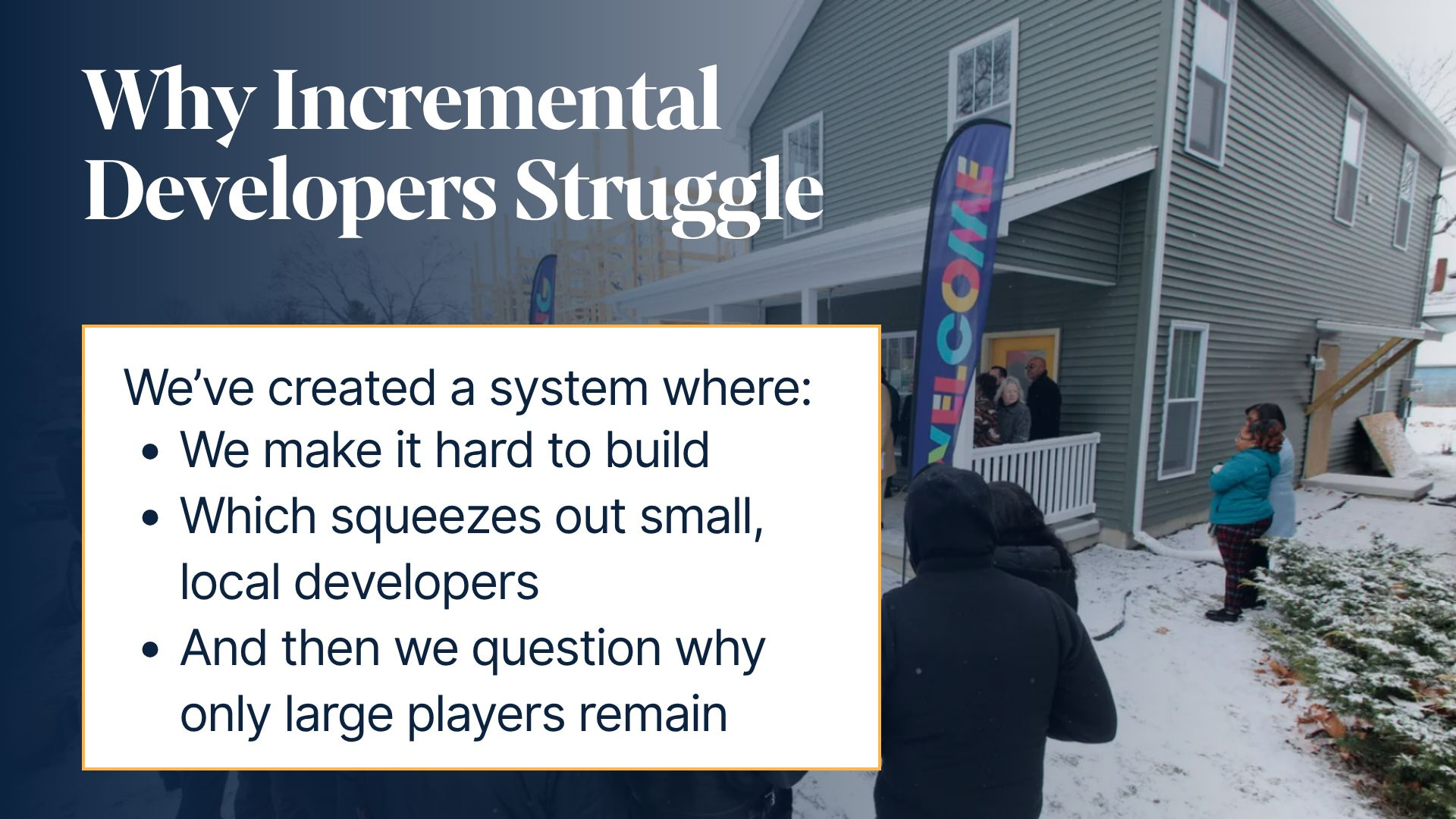
1. Build wealth that stays in the neighborhood.
2. Use infrastructure that already exists.
3. Heal the gaps left behind by disinvestment or demolition.
4. Expand housing opportunity in a way that fits the block, not disrupts it.

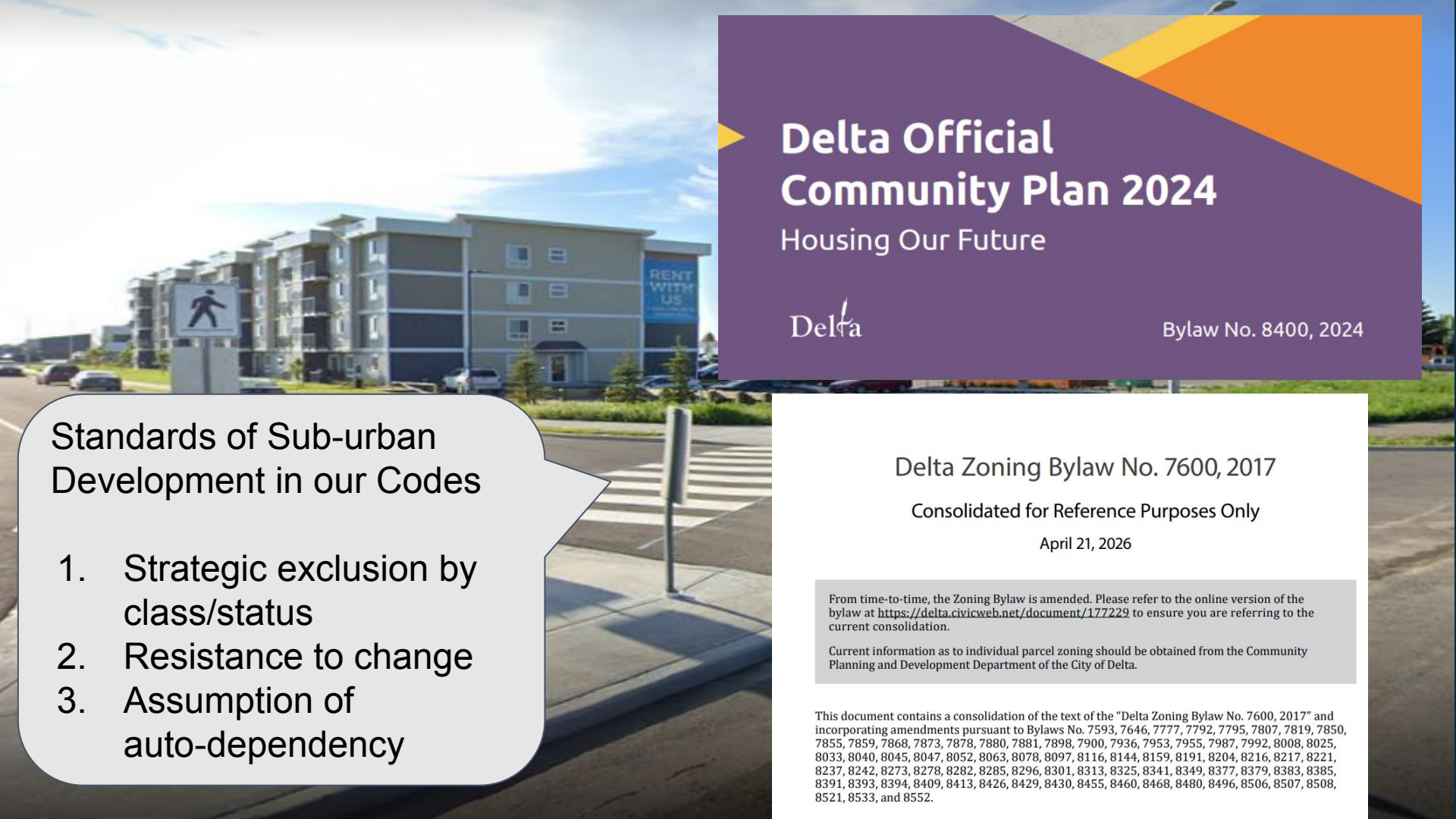


Why Incremental Developers Struggle

We've created a system where:

- We make it hard to build
- Which squeezes out small, local developers
- And then we question why only large players remain





Delta Official Community Plan 2024

Housing Our Future

Delta

Bylaw No. 8400, 2024

Standards of Sub-urban Development in our Codes

1. Strategic exclusion by class/status
2. Resistance to change
3. Assumption of auto-dependency

Delta Zoning Bylaw No. 7600, 2017

Consolidated for Reference Purposes Only

April 21, 2026

From time-to-time, the Zoning Bylaw is amended. Please refer to the online version of the bylaw at https://delta.civicweb.net/document/177229 to ensure you are referring to the current consolidation.

Current information as to individual parcel zoning should be obtained from the Community Planning and Development Department of the City of Delta.

This document contains a consolidation of the text of the "Delta Zoning Bylaw No. 7600, 2017" and incorporating amendments pursuant to Bylaws No. 7593, 7646, 7777, 7792, 7795, 7807, 7819, 7850, 7855, 7859, 7868, 7873, 7878, 7880, 7881, 7898, 7900, 7936, 7953, 7955, 7987, 7992, 8008, 8025, 8033, 8040, 8045, 8047, 8052, 8063, 8078, 8097, 8116, 8144, 8159, 8191, 8204, 8216, 8217, 8221, 8237, 8242, 8273, 8278, 8282, 8285, 8296, 8301, 8313, 8325, 8341, 8349, 8377, 8379, 8383, 8385, 8391, 8393, 8394, 8409, 8413, 8426, 8429, 8430, 8455, 8460, 8468, 8480, 8496, 8506, 8507, 8508, 8521, 8533, and 8552.



Standards of Sub-urban Development in our Codes

1. Strategic exclusion by class/status
2. Resistance to change
3. Assumption of auto-dependency



In many cities and towns, most development activity is located in concentrated pockets with other areas overlooked

NEIL HELLER, BRIAN REILLY
Counting the impact of incremental development

REMOVE AVERSIONS TO COMPLEX ADAPTATION

- Mandatory parking minimums
- Minimum lot size requirements
- Building codes blocking cheaper, better designs
- Design rules limiting density (e.g., low floor-area and lot coverage ratios)
- Single-use zoning





REMOVE AVERSIONS TO COMPLEX ADAPTATION

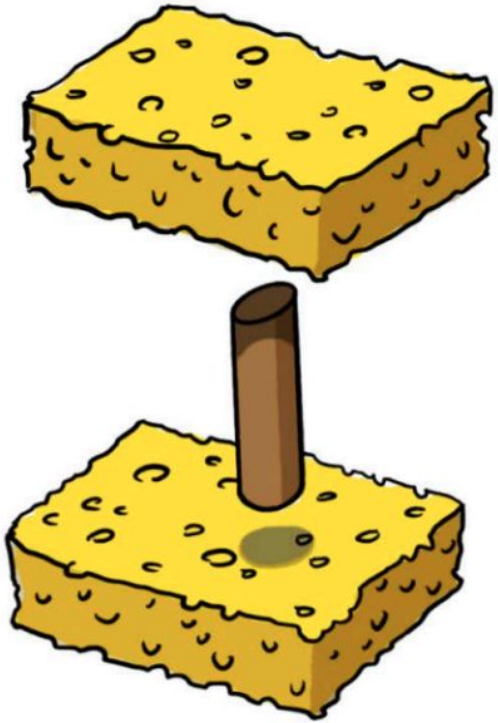
Pass the Mic: What aversions to ‘messiness’ or a bit of ‘creative chaos’ are commonplace in your communities?

URBAN3

Impact of Trees on Stormwater System

Springfield, MO





Water interception

Water absorption

Source: City of Springfield MO (2022), agnr.osu.edu

URBAN3

Annual Impacts of a Single Tree

Springfield, MO



Intercepts 770 gallons rainfall

Absorbs 1,500 gallons stormwater

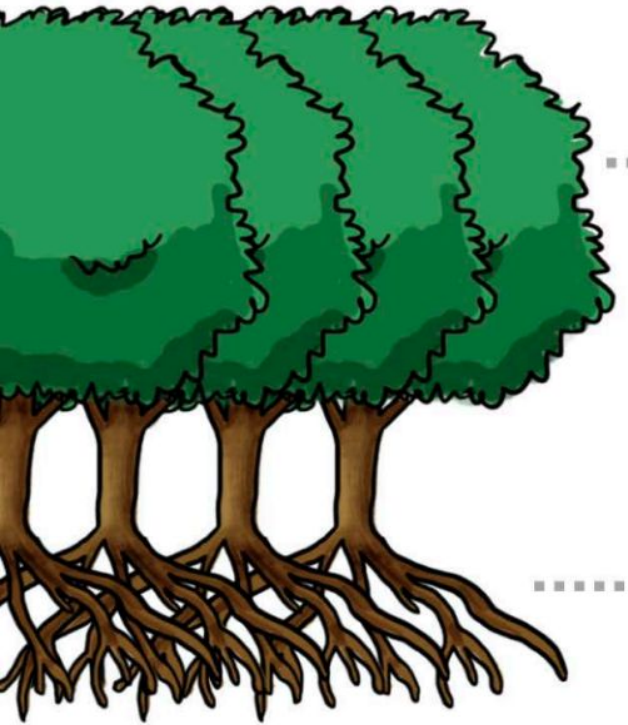
100 gallons

Source: City of Springfield MO (2022), agnr.osu.edu

URBAN3

Annual Impacts of Total Tree Canopy

Springfield, MO



Intercepts 13M gallons rainfall

Absorbs 35M gallons stormwater

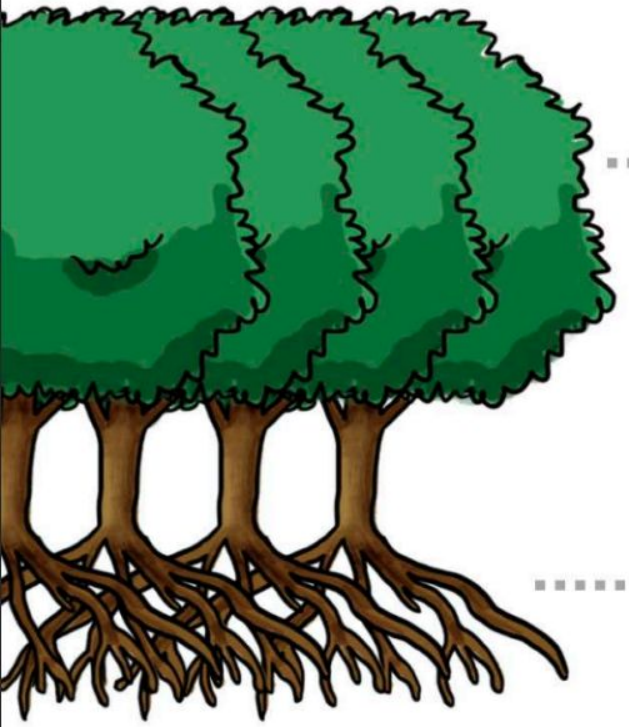
1,000,000 gallons

Source: City of Springfield MO (2022), agnr.osu.edu

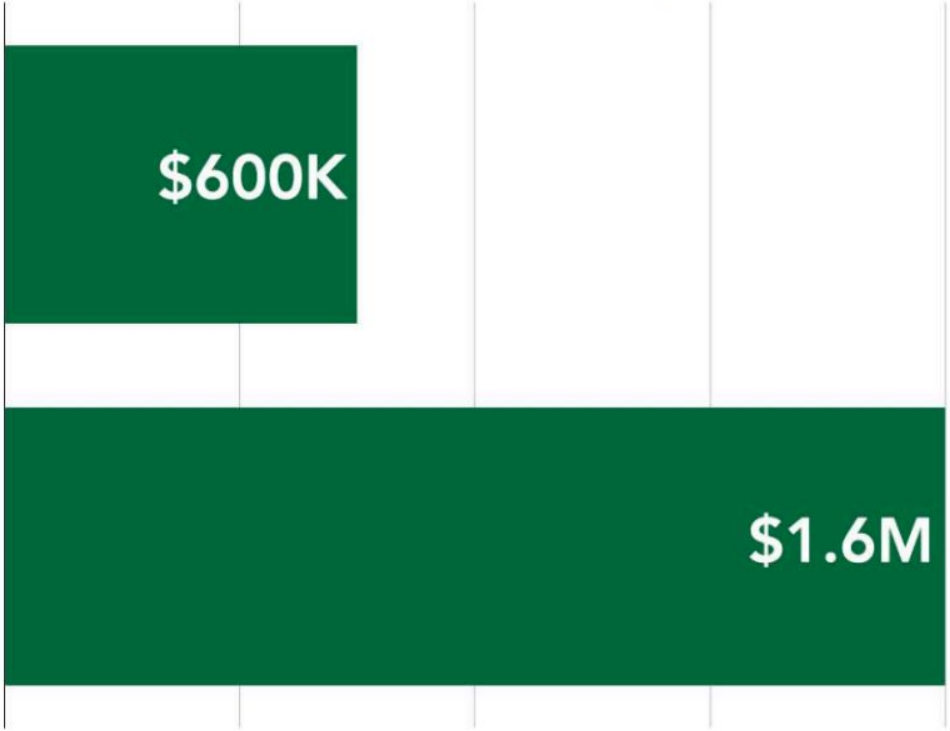
URBAN3

Annual Impacts of Total Tree Canopy

Springfield, MO



Reduces stormwater system cost by



Source: City of Springfield MO (2022), agnr.osu.edu

URBAN3

Annual Impacts of a Single Tree

Springfield, MO



Benefit

$115

energy savings, stormwater runoff reduction, and air-pollutant uptake

tree care & maintenance

Cost

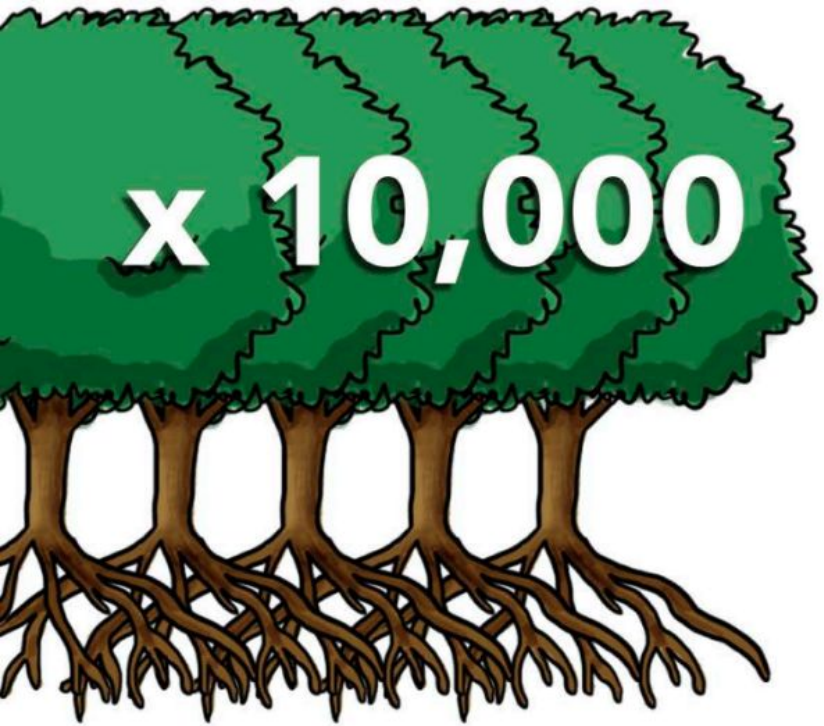
$75

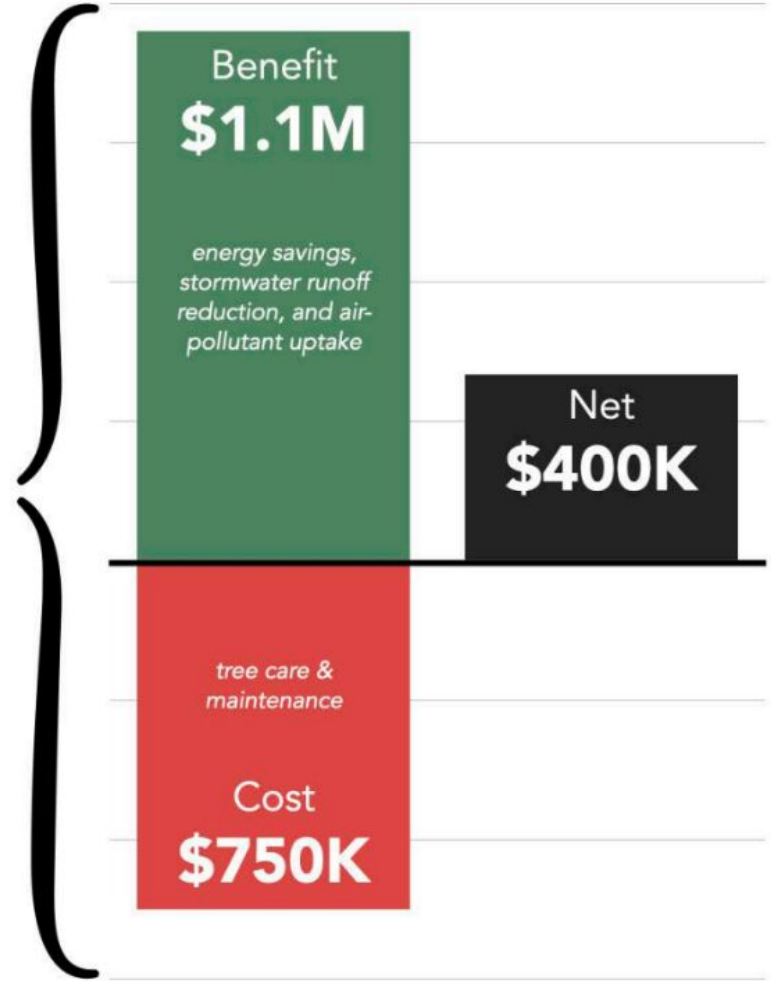
Source: City of Springfield MO (2022), agnr.osu.edu

URBAN3

Annual Impacts of 10,000 Trees

Springfield, MO





Source: City of Springfield MO (2022), agnr.osu.edu

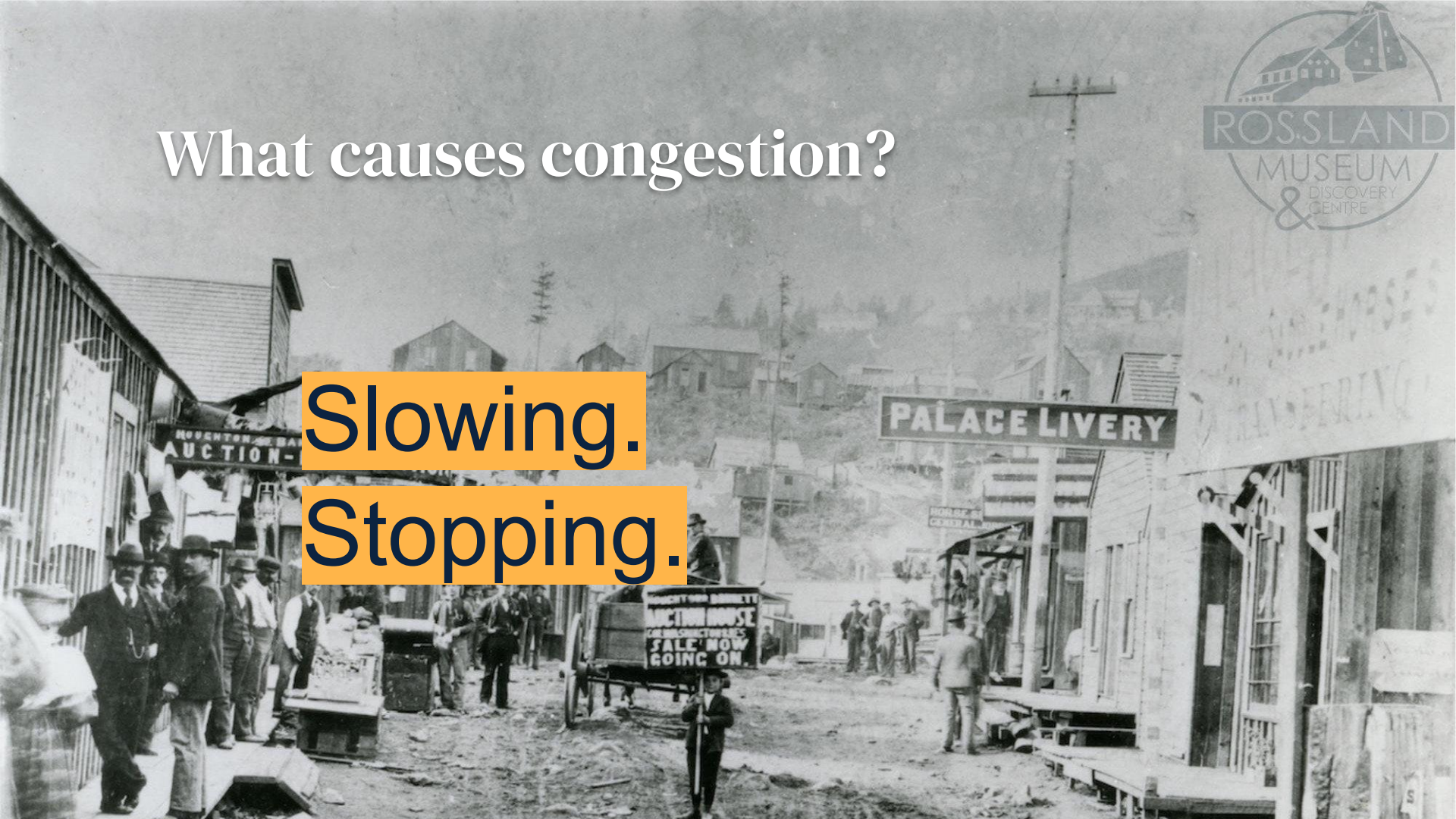
THE ONLY THING WORSE THAN HAVING CONGESTION



IS NOT HAVING CONGESTION

STRONG TOWNS

What causes congestion?



Slowing.

Stopping.

What Creates Prosperous Places?



Slowing…. to notice

Stopping… to engage



Any place worth going to is going to have congestion

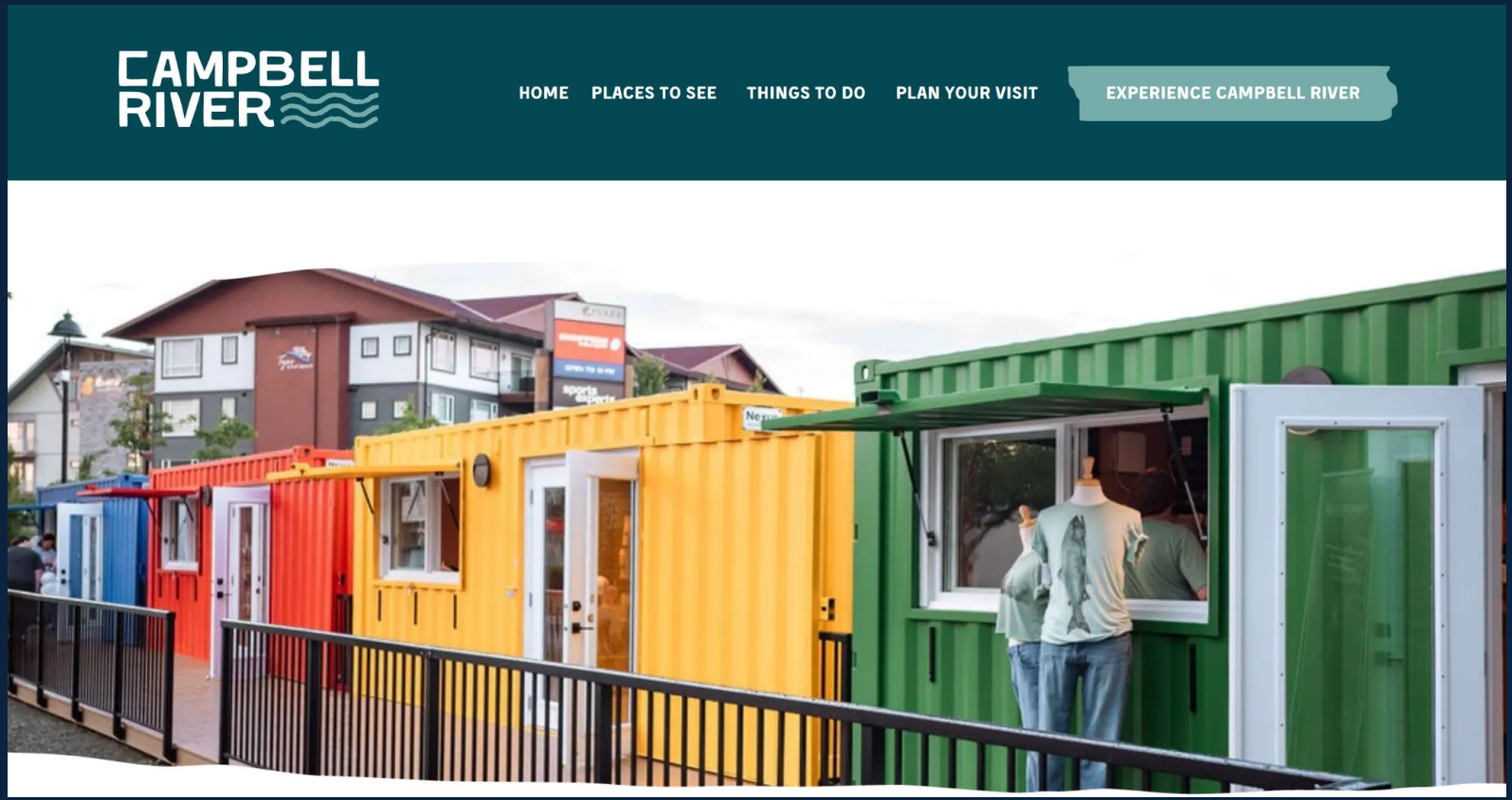
“When you think about it, the entire purpose of a city is literally to create congestion. Ever since the first businessperson decided to set up a brothel or a saloon on the side of a well-used oxcart trail, the only goal has been to get people to stop.”

(Dear Winnipeg)



Congestion is the price we pay for nice things

LOWER THE BAR OF ENTRY



LOWER THE BAR OF ENTRY



LOWER THE BAR OF ENTRY

Started with 12, now 17

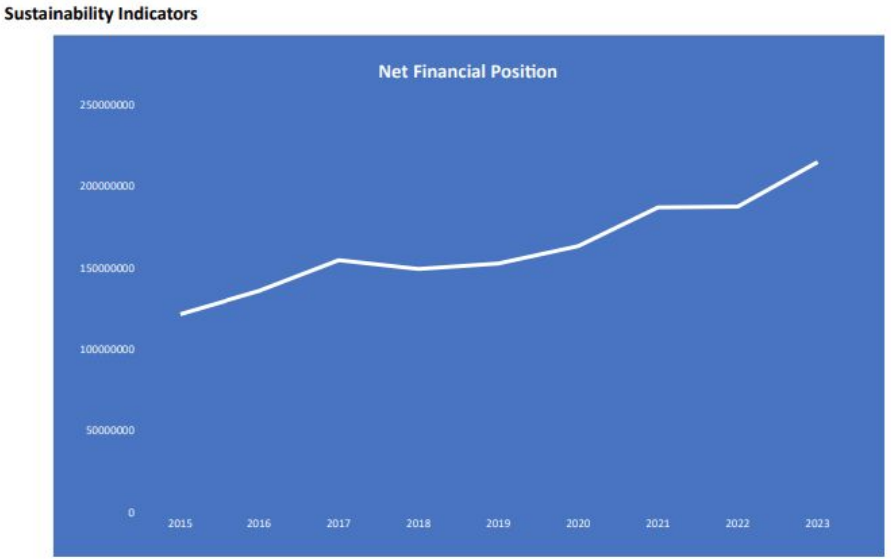


Strong Towns
@StrongTowns

Years ago, the city of Muskegon (MI) built several low-cost chalets on a vacant part of downtown and rented them to local businesses. Not only have they created opportunities for new businesses, but they've also helped existing ones grow into more permanent shops over time.



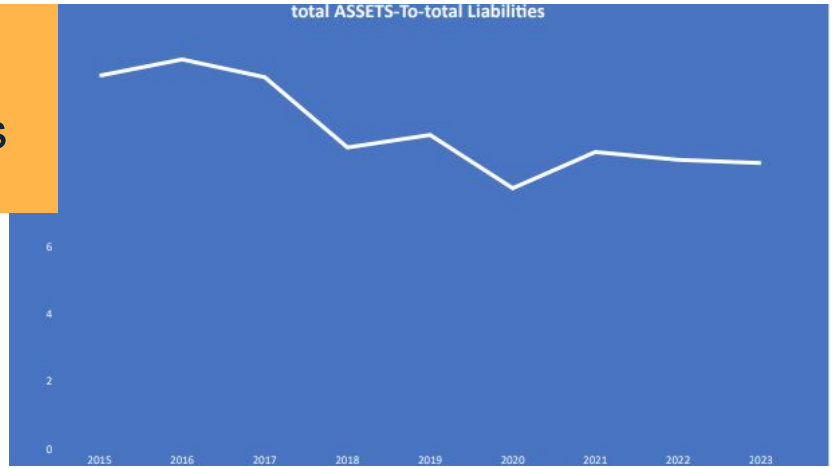




Do the Math

Long-Term Thinking, Honest Numbers





6 PRINCIPLES *for building a* STRONG TOWN



1 FINANCIAL SOLVENCY IS A PREREQUISITE FOR LONG-TERM PROSPERITY

The goal of a city is to endure. To do that, they have to be solvent. At minimum, this means having more assets than liabilities, and an ability to pay our debts. we need to do the math on every proposed new development: What are the short-term costs now, and what will we be paying to maintain or replace for generations to come?

STRONG TOWNS

6 PRINCIPLES *for building a* STRONG TOWN



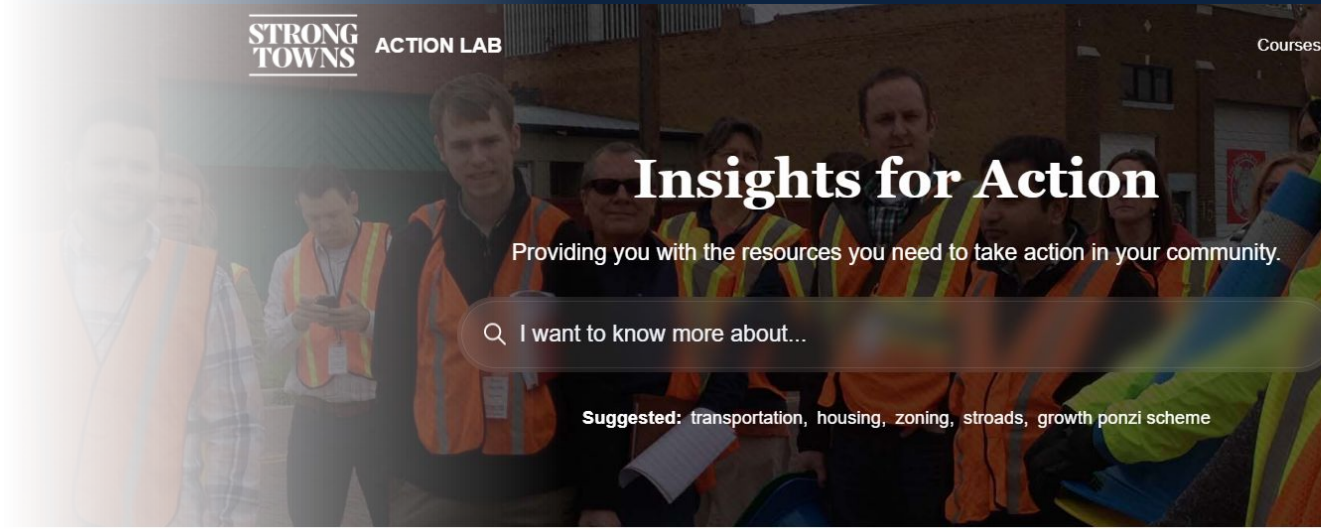
2 LAND IS THE BASE RESOURCE FOR COMMUNITY PROSPERITY

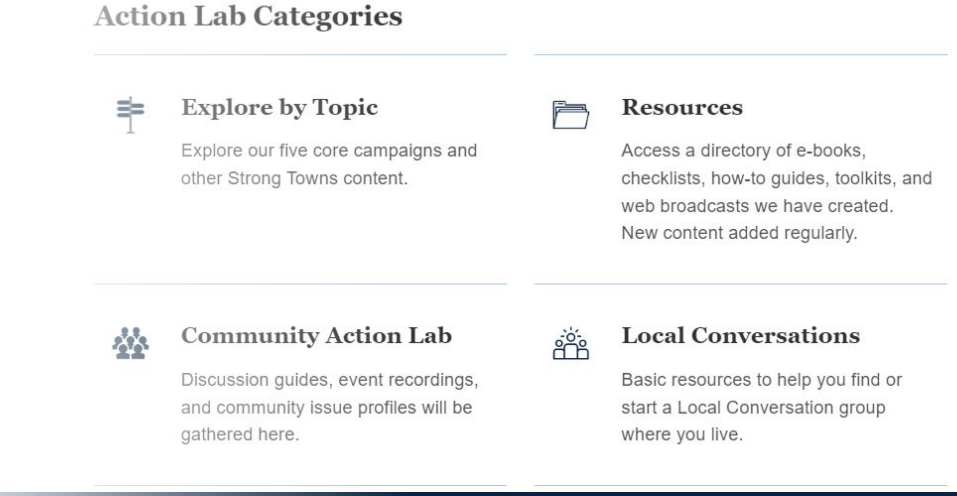
Land is a finite resource and, as the literal foundation of a community's success, it has to be stewarded well. We must use the land we have productively. As Strong Towns senior editor Daniel Herriges has written, "the activity taking place on that city's land [must be] creating enough wealth to support the infrastructure and services needed for that place to continue to exist and thrive."

STRONG TOWNS

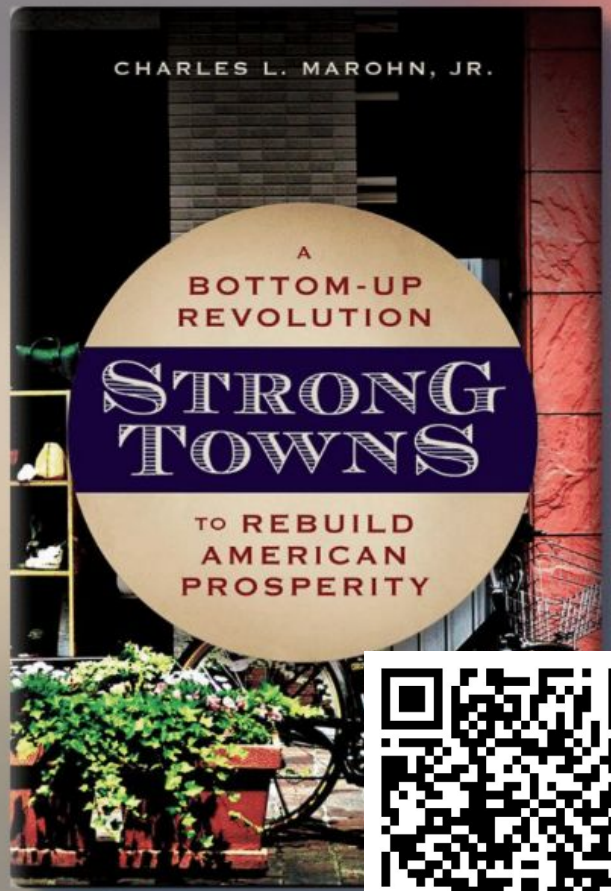
Resources

Strong Towns Action Lab
actionlab.strongtowns.org





STRONG TOWNS



Welcome!

Become a Strong Towns Member Today

Scan the QR code above or go to **strongtowns.org/membership**