



Innovations in Land Use Planning – Cutting Edge Practices & Future Trends



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“The best way to predict the future... is to create it”

Future Proofing With Flexibility in New Rochelle

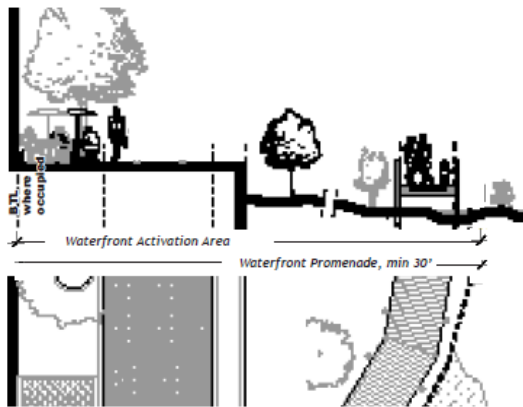
2024 Alfred B. DelBello Land Use and Sustainable Development Conference
December 6, 2024

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Land Use, Zoning & Economic Development

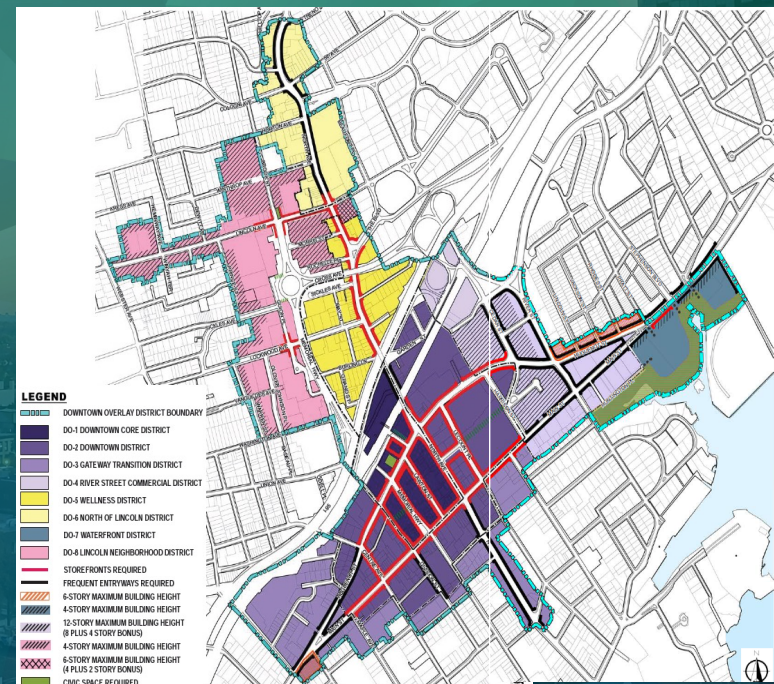
- Form Based Code & the Downtown Overlay Zone
 - Expansion and adaptability
 - Sustainability and resiliency
 - LEED
 - Environmental disclosures
 - Waterfront design

A required civic space located in Waterfront Activation Area that provides a continuous public access along waterfront, and integrates a combination of Waterfront Boardwalk, Pedestrian Trail, other civic spaces, and Public Frontages, with nearby sidewalks and parkland



Waterfront Promenade shall:

- [1] be a minimum of 30' wide and include shoreline restoration and beneficially improved landscaping areas planted by native species
- [2] provide a continuous pedestrian path of 8 feet minimum width along water's edge, providing views and access to the water at different locations
- [3] be located between the mean-high water line (or property line if mean-high water line doesn't exist) and Build-to-Line
- [4] provide diverse landscaping, furnishing, and programmed activities and recreation areas



Land Use, Zoning & Economic Development



Land Use, Zoning & Economic Development



Land Use, Zoning & Economic Development



Land Use, Zoning & Economic Development

- Anderson Plaza
 - Public plaza
 - Living street
 - Economic development
 - Community Benefit Bonus
- Vanguard District
 - Eases restrictions on nightlife/entertainment
 - Eases parking restrictions
 - Encourages activation of commercial spaces



Land Use, Zoning & Economic Development

- LINC – reclamation of a highway to create a linear park.
- Project will create/encourage/improve:
 - Open space
 - Economic Development
 - Circulation
 - Resiliency
 - Place making

EXISTING CONDITION



CONCEPTUAL DESIGN



Land Use, Zoning & Economic Development

- LINC – reclamation of a highway to create a linear park.
- Project will create/encourage/improve:
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 - Resiliency
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Parking

- Plan for parking
- Right size parking requirements.
 - Could mean eliminating (Hartford, Buffalo)
 - Fees
- Structured parking considerations
 - Valet
 - Generators
 - Fire
- Visibility/Layout



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Innovating for the Future: Port Chester's Adaptive Zoning and Placemaking Strategies

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Westchester Municipal Planning
Federation, Director-at-Large
NY APA, Hudson Valley East Rep





Land Use & Zoning

- Form Based Code
- Immense Development Response
- Fair Share Mitigation Fees → Infrastructure Improvements

Land Use & Zoning Growing Pains

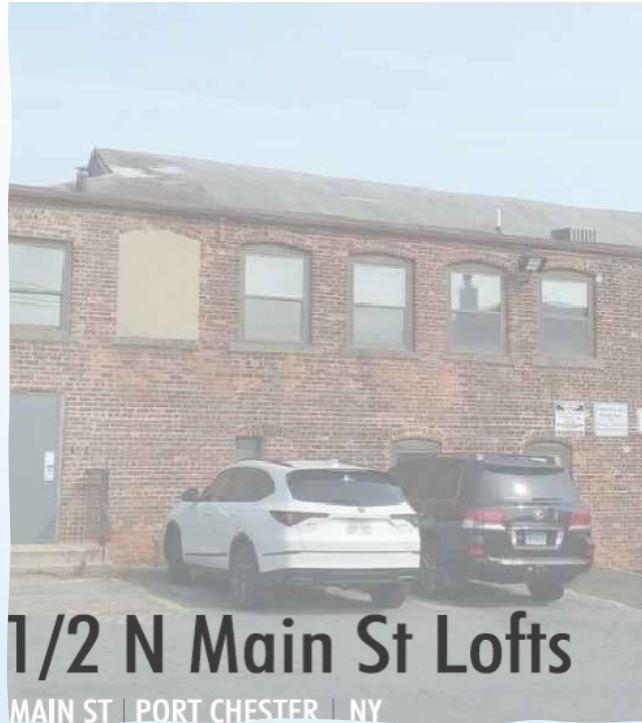
- Sewer Infrastructure (20+ Million in grant funds, contract awards 12/2024)
- Water Company
- Pedestrian Detours
- Constant need for innovative phasing and coordination between many agencies, levels of government, utility providers, and developers (repaving, utilities, etc)





Public Spaces and Placemaking

- The Waterfront – Redesign
- Liberty Square Reimagining
- The Port Chester “Loop”



Housing

- Increase heights in Downtown and near transit
- Varying housing types by zoning districts, including “missing middle”
- Adaptive Reuse

Parking



Parking

- Transit-Oriented Parking Law Adopted 10/2024
- Exempt existing downtown buildings from parking requirements Adopted 12/2024
- Discussing micromobility options in downtown:
 - EV shuttle
 - Westchester County Bus Redesign Report proposal for first/last mile zone





**2024 ANNUAL ALFRED B. DELBELLO
LAND USE AND SUSTAINABLE DEVELOPMENT CONFERENCE
DECEMBER 6, 2024**

**FOSTERING THE DEVELOPMENT OF SUSTAINABLE COMMUNITIES THROUGH
INNOVATIVE STRATEGIES**

CUTTING EDGE PRACTICES AND FUTURE TRENDS

INNOVATIVE ZONING TECHNIQUES

LINDA B. WHITEHEAD, ESQ., PARTNER, MCCULLOUGH, GOLDBERGER & STAUDT, LLP

INNOVATION?

Elimination of parking requirements

Elimination of single-family zoning

Zoning for sustainability

Builder's Remedy

ELIMINATION OF PARKING REQUIREMENTS

- BRIDGEPORT, CT
- CAMBRIDGE, MA
- BUFFALO, NY
- PORT CHESTER, NY



BRIDGEPORT

8.0 Parking, Mobility, & Access 8.10 General

8.10 General

8.10.1 PURPOSE

- A. The parking, mobility, and access regulations of this article are intended to protect the public health, safety, and general welfare by:
- (1) Promoting economically viable and fiscally beneficial use of land;
 - (2) Helping avoid the negative impacts that can result from requiring or allowing excessive supplies of off-street parking (e.g., impervious surfaces, stormwater runoff, heat island affect, visual environment, parking encroachment into stable neighborhoods);
 - (3) Promoting bicycling and other forms of active transportation; and
 - (4) Otherwise helping ensure safe mobility and transportation access options for city residents and visitors.

8.20 Motor Vehicle Parking

8.20.1 MINIMUM RATIOS

This zoning code does not establish minimum off-street parking requirements (note: accessible parking spaces to serve persons with disabilities may be required in accordance with the state building code).

8.20.2 MAXIMUMS

New and expanded uses may not provide off-street motor vehicle parking in excess of the maximum parking ratios established in [Table 8-1](#), unless approved through the special permit approval procedures of [11.50](#). Spaces located within parking structures are not counted in determining compliance with these parking maximums. No parking

Table 8-1. Maximum Motor Vehicle Parking

USE	MOTOR VEHICLE PARKING SPACES (MAXIMUM)
COMMERCIAL	
Office	4 per 1,000 sq. ft.
Retail & Entertainment	
Retail Sales	4.5 per 1,000 sq. ft.
Eating and Drinking	8 per 1,000 sq. ft.
General Entertainment	1 per 4 seats or 10 per 1,000 sq. ft.
Live Entertainment Venue	1 per 4 seats or 10 per 1,000 sq. ft.
Consumer Service, Indoor	3.5 per 1,000 sq. ft.
Controlled Sales & Service	4 per 1,000 sq. ft.

sq. ft. = square feet of gross floor area

maximums apply to unlisted use types.

8.20.3 PARKING AREA LOCATION AND DESIGN

The parking area location and design standards of this section apply to all off-street parking areas for motor vehicles, whether containing accessory or non-accessory motor vehicle parking spaces.

- A. Parking on Sidewalks.** Parking is prohibited on sidewalks and on sidewalk crossings of driveways.
- B. Parking in Yard Areas.** Parking is prohibited in yard areas except on approved driveways and parking pads that comply with all applicable regulations of this zoning code.
- C. Ingress and Egress.** All driveways and parking areas must be designed to allow vehicles to enter and exit a street and cross public sidewalks in a forward motion, except that this requirement does not apply to lots occupied by 5 or fewer dwelling units when motor vehicle access is to a local street.
- D. Driveway Widths.** Maximum driveway widths are established for each building type in [3.0](#). See also municipal code [Section 12.08.030](#) for additional regulations governing driveway approaches.
- E. Surfacing.**
 - (1) **General.** All off-street parking areas and access drives must be surfaced and maintained with an asphaltic or Portland concrete pavement or other hard, dust-free surface approved by the city engineer.
 - (2) **Ribbon Driveways.** Ribbon (wheel strip) driveways are allowed on N-zoned lots containing no more than 2 dwelling units. Such driveways must consist of 2 paved wheel strips, each of which is at least 18 inches in width. A permeable surface, such as turf or ground cover plantings, must be maintained between the paved wheel strips. The driveway must be fully paved for its entire width within the public right-of-way, from the property line to the curbline.
- F. Drainage and Stormwater.** Surfacing, curbing, and drainage improvements for all parking and loading facilities must be sufficient to provide adequate drainage and to preclude the free flow of water onto adjacent properties and public rights-of-way. Stormwater management must be provided in accordance with the city's *Stormwater Management Manual*.
- G. Landscape and Screening.** See [7.100](#) and [7.110](#).

HARTFORD

USES	REQUIRED NUMBER OF OFF-STREET PARKING SPACES
Residential & Lodging Uses	
One-Unit Dwelling, Group Living for Health Reasons	Maximum 4 spaces per lot For One-Unit Dwelling Building in N-1-1, maximum 6 spaces per lot
2- & 3- Unit Dwelling, Multi-Unit Dwelling, Efficiency/Micro Unit	Maximum 2 spaces per unit
Bed & Breakfast, Hotel/ Apartment Hotel	Maximum 1.5 spaces per guest rooms
Temporary Shelter Facility	Maximum 1 space per bed
Group Living	In accordance with special permit review, guideline is maximum 1.5 spaces per adult resident, or for foster homes and children's homes guideline is maximum 2 spaces per 4 children residents
Residential Care	Maximum 1 space per bed (excluding bassinets)
Roominghouse/ Boardinghouse	In accordance with special permit review, guideline is maximum 1 space per rooming unit, plus maximum 1.5 spaces per dwelling unit of owner or manager
Civic & Institutional Uses	
Hospital	In accordance with special permit review, guideline is maximum 1 space per bed (excluding bassinets)
Library/Museum	None
All Other Civic & Institutional Uses	In accordance with special permit review
Open Space Uses	
Park, River Uses, Urban Farm	In accordance with special permit review
Retail Uses	
Outdoor Sales Lot for Vehicles	1 space for each unregistered vehicle permitted to be sold, plus 1 additional space per minimum 10, maximum 5 such vehicles, reserved for visitors/ employees
All Other Retail Uses	Maximum 3 spaces per 1,000 square feet net floor area devoted to retail space

USES	REQUIRED NUMBER OF OFF-STREET PARKING SPACES
Service Uses	
Automobile Fueling & Limited Service, Automobile Service/Car Wash, Drinking Places, Entertainment Assembly, & Smoking Places	In accordance with special permit review or, if special permit not required, in accordance with site plan review
Eating Places	Maximum 3 spaces for every 5 persons based on maximum capacity
All Other Service Uses	Maximum 3 spaces per 1,000 square foot of net floor area devoted to customer service
Adult Uses	
Adult Establishment	In accordance with special permit review guideline is minimum 1 space, maximum 3 spaces per 600 square feet net floor area devoted to retail space; OR for assembly-type uses: minimum 1 space for every 4 persons based on maximum capacity
Employment Uses	
All Employment Uses	Maximum 4 spaces per 1,000 square feet
Infrastructure Uses	
All Infrastructure Uses	In accordance with special permit review
Industrial Uses	
All Industrial & Warehouse Uses	Maximum 1 space per employee
Notes: These off-street automobile parking requirements shall not be applied to lots in the DT-1, DT-2, and DT-3 districts. Where special permit review is required for particular projects, these off-street automobile parking requirements shall be used as guidance but are not binding.	

PARKING OPTIONS

- REDUCTION OF PARKING REQUIREMENTS IN DOWNTOWNS OR TOD
- TRANSPORTATION DEMAND MANAGEMENT
- SHARED PARKING



BENEFITS

Encourage use of alternative methods of transportation

Allow greater residential density

Create more walkable neighborhoods

Environmental benefits – reduction of traffic congestion and pollution

ELIMINATION OF SINGLE-FAMILY ZONING



Improve housing
affordability



Address housing shortage



Reduce urban sprawl and
promote more efficient
use of land



Promote more diverse and
inclusive communities by
diversifying housing types

ELIMINATION OF SINGLE-FAMILY ZONING

PROVIDE FOR MIDDLE HOUSING AND DIVERSITY OF HOUSING TYPES

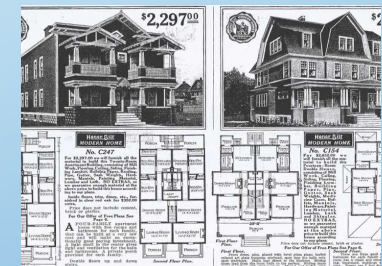
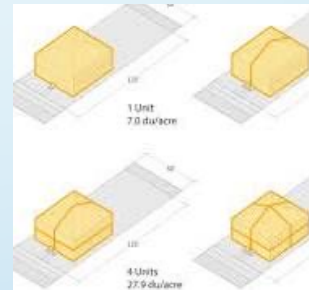
- BUILDINGS THAT ARE COMPATIBLE IN SCALE, FORM, AND CHARACTER WITH SINGLE-FAMILY HOUSES AND CONTAIN TWO OR MORE ATTACHED, STACKED, OR CLUSTERED HOMES
- DUPLEXES, TRIPLEXES, FOURPLEXES, FIVEPLEXES, SIXPLEXES
- TOWNHOUSES, STACKED FLATS, COURTYARD APARTMENTS, AND COTTAGE HOUSING
- ADU'S



EXAMPLES OF MIDDLE HOUSING



EXAMPLES



NO MORE SINGLE-FAMILY ZONING AND THE SHIFT TO LOW DENSITY ZONES

- WALLA WALLA, WASHINGTON
- PORTLAND, OREGON
- MINNEAPOLIS, MINNESOTA
- CALIFORNIA
- SACRAMENTO, CA
- BOISE, IDAHO
- AUSTIN, TEXAS

ZONING FOR SUSTAINABILITY - EXAMPLES

- HASTINGS GREEN BUILDING CODE
- NEW CASTLE NG-ZERO SPECIAL PERMIT
- VILLAGE OF MAMARONECK SPECIAL PERMIT FOR RESIDENTIAL USES IN COMMERCIAL AND TOD DISTRICTS
- VILLAGE OF OSSINING DENSITY BONUS

BUILDER'S REMEDY

BUILDER'S REMEDY IS A LEGAL MECHANISM THAT CAN BE USED TO EXPEDITE THE CONSTRUCTION OF LOW OR MIDDLE INCOME HOUSING WHEN A MUNICIPALITY FAILS TO COMPLY WITH LAWS RELATED TO HOUSING DEVELOPMENT REQUIRING THE ADOPTION OF CERTAIN ZONING PROVISIONS OR ADOPTION OF A HOUSING PLAN.

THE BUILDER'S REMEDY EITHER ALLOWS A DEVELOPER TO BYPASS OR IGNORE NEARLY ALL OF THE MUNICIPALITY'S ZONING LAWS AND BEGIN CONSTRUCTION ON A DEVELOPMENT IN AN EXPEDITED MANNER OR PROVIDES THE DEVELOPER WITH A LEGAL REMEDY THAT CAN BE ENFORCED IN COURT OR THROUGH AN ADMINISTRATIVE PROCESS.

BUILDER'S REMEDY IN CALIFORNIA

- ORIGINALLY ADOPTED IN 1990
 - IF A MUNICIPALITY DID NOT HAVE A SUBSTANTIALLY COMPLIANT HOUSING PLAN (HOUSING ELEMENT) OUTLINING HOW IT WILL COMPLY WITH ACCOMMODATING ITS SHARE OF THE REGIONAL HOUSING NEED, DEVELOPER COULD BYPASS ZONING PROVIDED A HOUSING PROJECT INCLUDED AT LEAST 20% LOW INCOME OR 100% MIDDLE INCOME HOUSING
 - RARELY UTILIZED, BUT OCCASIONALLY UTILIZED FOR LEVERAGE IN GETTING PROJECTS APPROVED
- 2024 ASSEMBLY BILL 1893 EXPRESSLY CONFIRMS THE "BUILDER'S REMEDY" AS AN INTENDED CONSEQUENCE OF LOCAL GOVERNMENTS' FAILURE TO ADOPT LEGALLY SUFFICIENT HOUSING PLANS AND WRITES IT INTO THE HOUSING ACCOUNTABILITY ACT.
 - THE LAW REPLACES THE "FREE-FOR-ALL" APPROACH
 - NEW PROVISIONS OUTLINING NEW PARAMETERS FOR BUILDER'S REMEDY PROJECTS
 - NEW INCOME GUIDELINES
 - PROVISIONS WILL BE EFFECTIVE 1/1/2025
 - COMPANION BILL AB 1886 CLARIFIED THAT HOUSING ELEMENT MUST BE APPROVED BY THE DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT OR A COURT

BUILDER'S REMEDY IN MASSACHUSETTS

- ORIGINALLY ADOPTED IN 1969 AS THE LOW AND MODERATE INCOME HOUSING ACT, "CHAPTER 40B"
 - PROVIDED FOR EXPEDITED REVIEW PROCESS FOR PROJECTS INCLUDING AFFORDABLE HOUSING, AND A STATE LEVEL APPEAL PROCESS IF APPROVAL IS DENIED LOCALLY.
 - LOCAL DENIALS OFTEN OVERTURNED AND LITIGATION OFTEN FOLLOWED, BUT EVENTUALLY LED TO A COLLABORATIVE PROCESS WITH MUNICIPALITIES LEADING TO CONSTRUCTION OF MANY LOW AND MODERATE INCOME HOUSING UNITS

POTENTIAL PRECAUTIONARY TALE FOR TOD

- CASE TO WATCH IN MASSACHUSETTS – *ATTORNEY GENERAL V. TOWN OF MILTON AND JOE ATCHUE*
 - IN 2021 THE STATE ADOPTED THE MBTA COMMUNITIES ACT REQUIRING MBTA COMMUNITIES TO HAVE A ZONING ORDINANCE CREATING AT LEAST 1 DISTRICT OF REASONABLE SIZE IN WHICH MULTI-FAMILY ZONING IS PERMITTED AS OF RIGHT WITHIN 0.5 MILES FORM A COMMUTER RAIL STATION, SUBWAY STATION, FERRY TERMINAL OR BUS STATION.
 - ATTORNEY GENERAL IS SUIING THE TOWN OF MILTON FOR FAILURE TO COMPLY.
 - CASE WAS ARGUED OCTOBER 7, 2024. NO DECISION YET.

FINAL THOUGHTS - AGAIN

- HERE ARE 25 VARIATIONS OF NIMBY:
- **NAY-SAYERS**
- **NAMBI:** NOT AGAINST MY BUSINESS OR INDUSTRY [A FAVORITE OF DEEP POCKETED POLITICAL DONORS]
- **NIMD:** NOT IN MY DISTRICT [A FAVORITE OF POLITICIANS]
- **NIMEY:** NOT IN MY ELECTION YEAR [ANOTHER FAVORITE OF POLITICIANS]
- **NIMFOS:** NOT IN MY FIELD OF SIGHT
- **NIMFYE:** NOT IN MY FRONT YARD EITHER
- **NIMTOO:** NOT IN MY TERM OF OFFICE [YET ANOTHER FAVORITE OF POLITICIANS]
- **NITL:** NOT IN THIS LIFETIME
- **NOPE:** NOT ON PLANET EARTH
- **NORF:** NO OBSERVABLE REDEEMING FEATURES
- **NOT:** NONE OF THAT
- **NOTE:** NOT OVER THERE EITHER

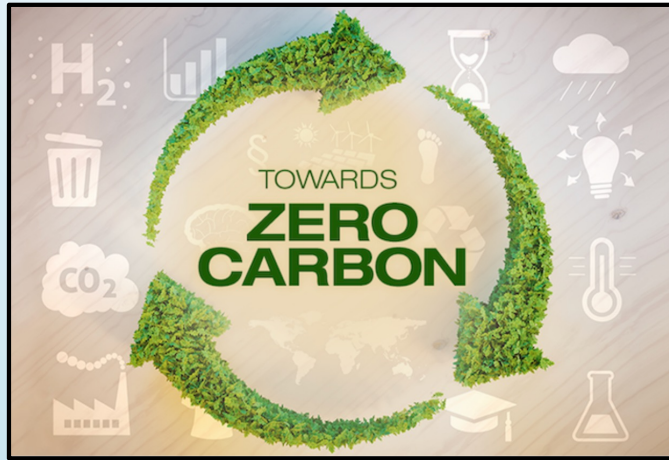
FINAL THOUGHTS

- **BACKYARDERS**
- **GOOMBY:** GET OUT OF MY BACKYARD [COMMON IN NEW SUBURBS THAT ENCROACH ON INDUSTRIAL SITES OR AIRPORTS]
- **GUMBY:** GAZE UPON MY BACKYARD [OPPONENTS OF RESIDENTIAL WALLS AND FENCES]
- **KIIMBY:** KEEP IT IN MY BACKYARD [A POSITIVE VARIATION]
- **NIABY:** NOT IN ANYONE'S BACKYARD
- **NIMN:** NOT IN MY NEIGHBORHOOD
- **NUMBY:** NOT UNDER MY BACKYARD
- **PIITBY:** PUT IT IN THEIR BACKYARD
- **QUIMBY:** QUIT URBANIZING IN MY BACKYARD [POPULAR IN SUBURBIA]
- **WIMBY:** [WELCOME TO MY BACKYARD](#) [ANOTHER POSITIVE VARIATION]
- **YIMBY:** YES IN MY BACKYARD [ONE MORE POSITIVE VARIATION]
- **THE FINAL FOUR**
- **BANANA:** BUILD ABSOLUTELY NOTHING ANYWHERE NEAR ANYTHING
- **BANYS:** BUILDERS AGAINST NIMBYS
- **GOAH:** GEDOUDAHEAH [SAID IN YOUR BEST JERSEY ACCENT]
- **GOOMBA:** GET OUT OF MY BUSINESS AREA [ANOTHER FAVORITE OF CORPORATE DONORS]
-

Future trends that land use practitioners need to be prepared for

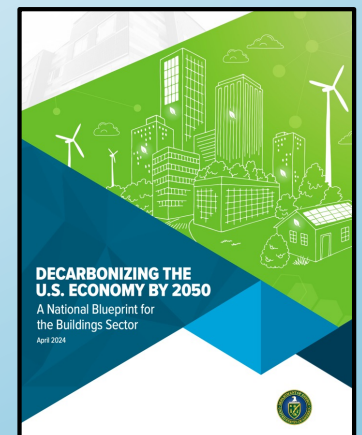


Decarbonization



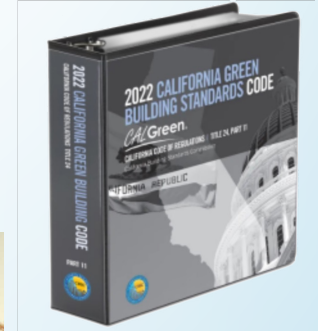
Shift from carbon based fuels to electric and lower carbon fuels.

To keep the planet from warming more than 1.5°C above pre-industrial levels, most countries, including the US have goals to reach net zero by 2050.



What can we do now?

✓ Adopt green building codes



✓ Embed EV infrastructure into local zoning codes



✓ Address Micro-Mobility



✓ Plan for solar and battery storage



What can we do now?

✓ Implement zero-waste programs



✓ Plan for compact, walkable transit-oriented communities

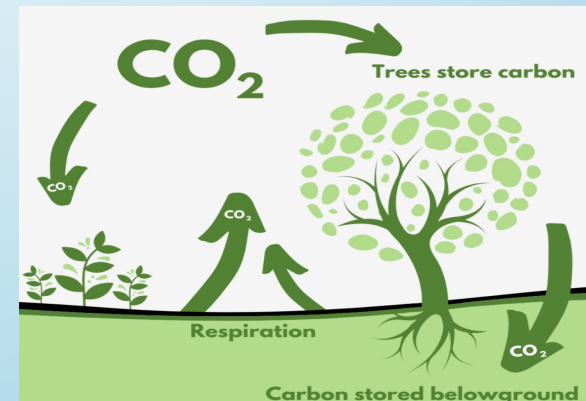
Design Principles of TOD

The 8 Principles of the TOD standard for designing better streets and better cities:

1. WALK
2. CYCLE
3. CONNECT
4. TRANSIT
5. MIX
6. DENSIFY
7. COMPACT
8. SHIFT

A diagram illustrating the 8 Design Principles of TOD. It features a central illustration of a city street scene with various elements like buildings, trees, and people. Eight circular callouts are overlaid on the scene, each labeled with a principle: 1. WALK (pedestrians), 2. CYCLE (cyclists), 3. CONNECT (streets), 4. TRANSIT (public transport), 5. MIX (mixed-use buildings), 6. DENSIFY (taller buildings), 7. COMPACT (dense urban form), and 8. SHIFT (land use change).

✓ Carbon sequestration in land planning



Digitalization & the Metaverse

Digitalization has been occurring for decades, but has dramatically accelerated as a result of the COVID-19 pandemic.

The world has shifted from the *information age* towards a *digital era* spurred by big data and the Internet of Things (IoT).

How is this impacting local communities?

How is this Impacting Local Communities?

Negatively...

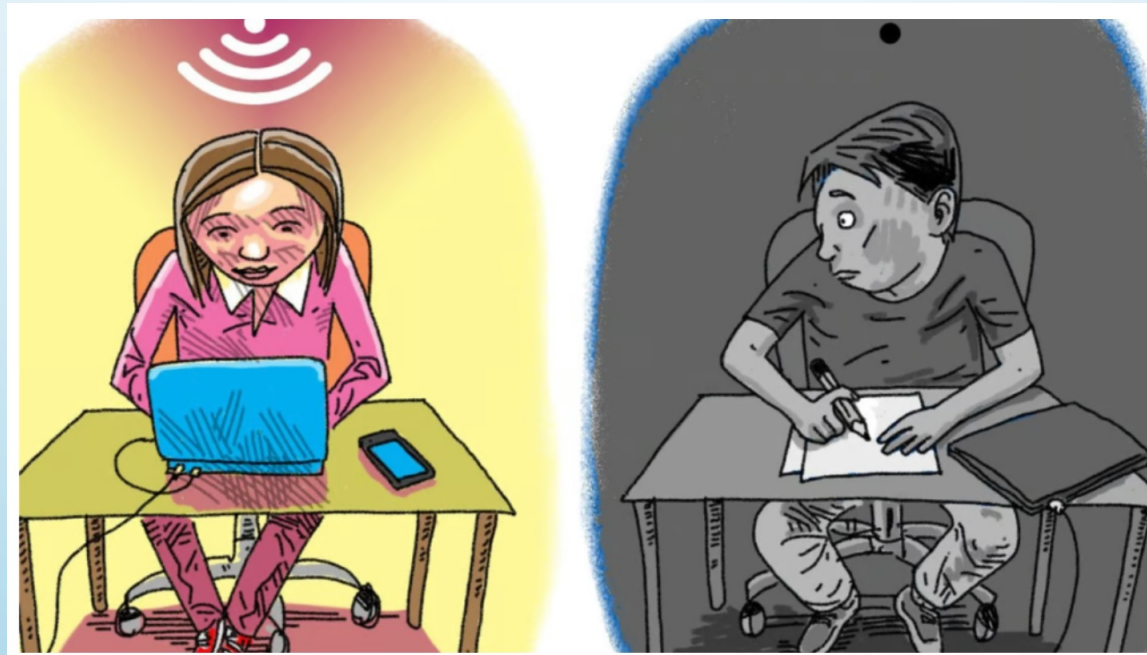
- ✓ E-commerce and its impact on main street



How is this Impacting Local Communities?

Negatively...

- ✓ The “Digital Divide” and inequality



How is this Impacting Local Communities?

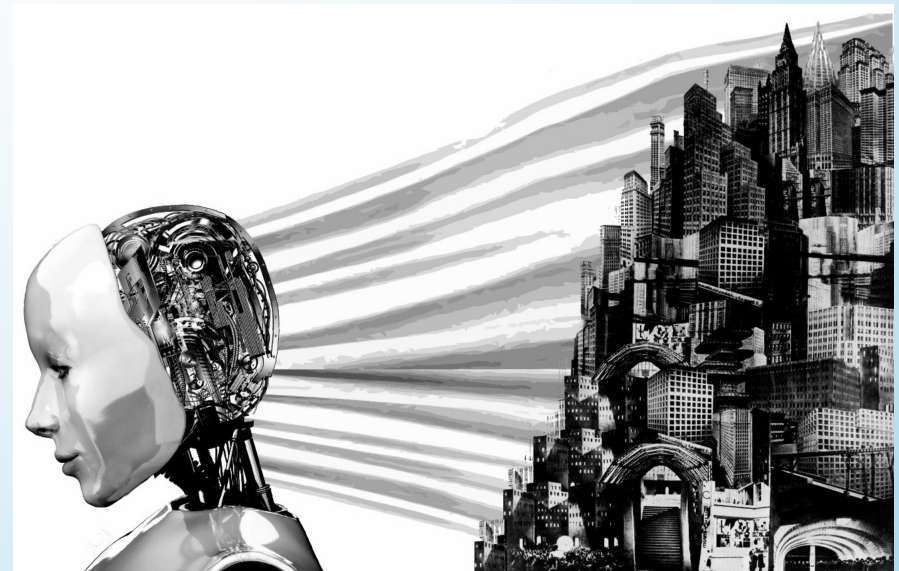
Positively...

- ✓ Improved educational equity through online and remote learning
- ✓ Providing medical services to underserved communities through tele-medicine as well as improved health outcomes through access to better data.
- ✓ Enhanced civic participation



What can we do now?

- ✓ Facilitate high-speed internet access. 5G to 6G and the IoT
- ✓ Anticipate and accommodate digital transformations in local codes
- ✓ Smart Cities – Digitally connecting and integrating infrastructure, energy management, transportation systems, public services, local and regional commerce, the work place with physically untethered citizens.



Automation of Transportation

- ✓ Autonomous Vehicles
- ✓ Advanced Driver Assistance Systems
- ✓ Intelligent Traffic Management
- ✓ Drones and Unmanned Aerial Vehicles
- ✓ Automated Public Transit
- ✓ Connected Infrastructure



Future of Work

- ✓ AI and Machine Learning – Job Transformation
- ✓ Remote and Hybrid Work
- ✓ Gig Economy and Freelancing
- ✓ Upskilling and reskilling – emphasis on soft skills
- ✓ Focus on life/work balance – employee well being, burnout prevention
- ✓ Decentralization
- ✓ Nonlinear career paths
- ✓ Global work force



Artificial Intelligence (AI)

- ✓ Technological foundation for smart cities of the future
- ✓ Improved predictive decision making for land use boards
- ✓ Designing to achieve desired outcomes
- ✓ The fusion of AI with GIS
- ✓ Enhanced site selection and feasibility analysis
- ✓ Predictive analytics



Artificial Intelligence (AI)

... Or the end of civilization as we know it!



Virtual Reality

- ✓ Enhanced visualization and design
- ✓ Improved stakeholder engagement
- ✓ Data integration with simulations
- ✓ Accessibility and inclusivity
- ✓ Real time planning



3D Printing

- ✓ Rapid modeling of development options
- ✓ 3D printed buildings
- ✓ Impact on affordable housing
- ✓ Customization of architectural forms
- ✓ 3D printing will reduce construction waste
- ✓ 3D printed custom street furniture and fixtures
- ✓ Rapid recovery post disaster



The Commercialization (Privatization) of Outer Space

Inter-galactic land use lawyers and planners!!



Innovation Today

Masdar City – Abu Dhabi

A planned city built from scratch – one of the most sustainable urban developments in the world

Features:

- ❖ City entirely powered by solar energy
- ❖ Zero carbon
- ❖ Zero waste
- ❖ Smart infrastructure
- ❖ Buildings designed for passive cooling
- ❖ EV cars and underground transit

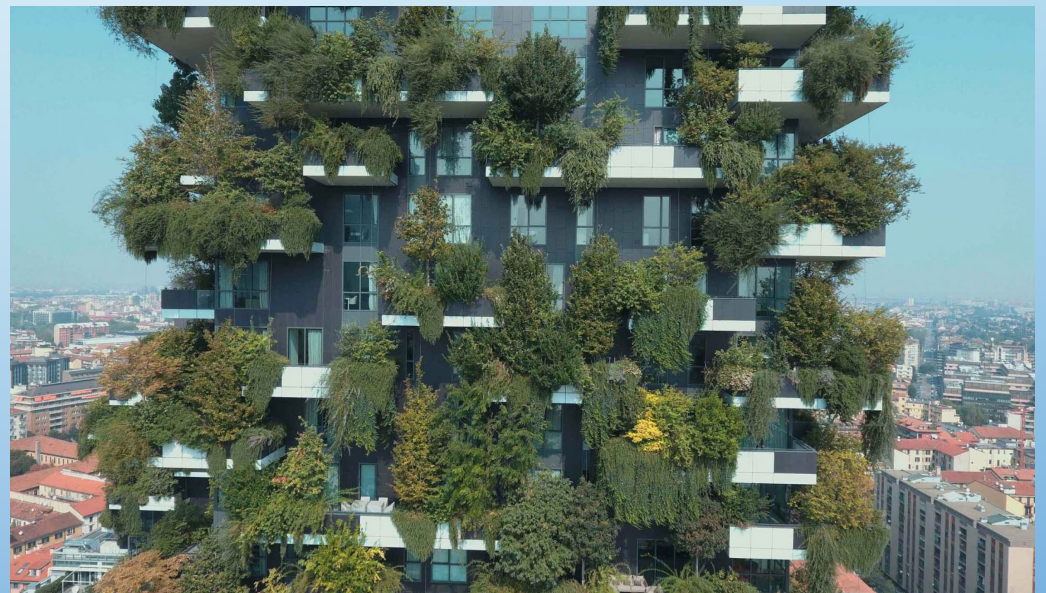


Bosco Verticale – Milan Italy

“Vertical Forest” – Pair of residential towers covered with thousands of trees, shrubs and plants

Features:

- ❖ Vertical farming
- ❖ 9,000 trees, 5,000 plants & 13,000 shrubs
- ❖ Plants on buildings reduce energy use and need for heating and air conditioning.
- ❖ Plants absorb CO₂ and filter air pollution
- ❖ Integrates urban living with nature



Verban District, Freiburg Germany

Developed as a model for sustainable living in a former military base. Focused on low-impact living, green transport and green energy.

Features:

- ❖ Car free district
- ❖ Residents rely on public transit, bicycles and shared vehicles
- ❖ Building built to passive house standards (Passivhaus)
- ❖ District powered by solar and biomass heating
- ❖ Negligible carbon footprint with high standard of living.



Songdo International Business District, South Korea

Newly build City near Incheon with the goal of being a global hub for technology, finance and sustainable living

Features:

- ❖ Smart infrastructure (sensors for traffic management, energy consumption and waste collection)
- ❖ Sustainable design – green roofs, energy efficient buildings, extensive recycling
- ❖ Green spaces connected by a network of walking and cycling paths
- ❖ Cited as one of the most advanced examples of a “smart city”



HafenCity Hamburg, Germany

HafenCity is one of Europe's largest urban developments, transforming a former industrial port into a mixed-use neighborhood.

Features:

- ❖ Waterfront resilience – designed to be resilient to rising sea levels, with flood protection measures like elevated buildings with integrated stormwater systems
- ❖ Sustainability – energy efficient buildings, green roofs, efficient waste and water management systems.
- ❖ Mixed-use zoning blending residential, office, cultural and recreational spaces.



NEOM, Saudi Arabia (The Line)

NEOM is an ambitious megacity project (10,200 square miles or 33 times the size of NYC) being developed in Saudi Arabia, designed to be a futuristic urban center utilizing cutting edge technology, focused on sustainability.

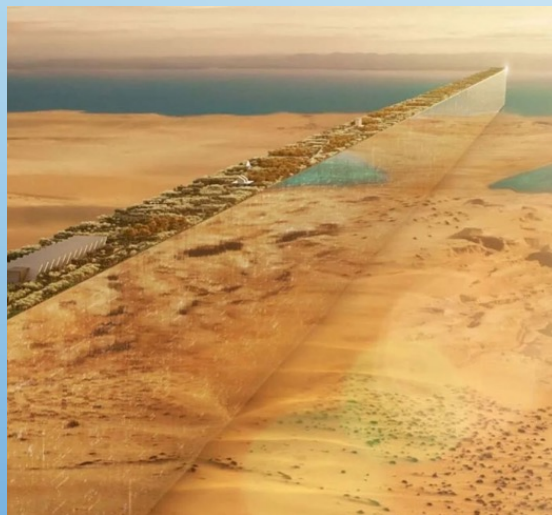
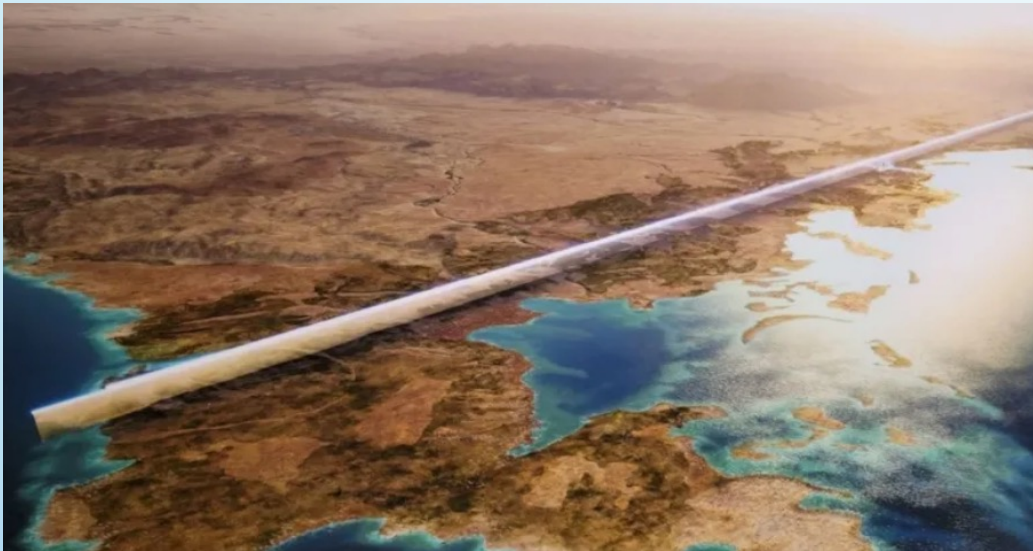
Features:

- ❖ Oxagon – Designed as the worlds largest floating structure, serving as a hub for manufacturing and trade.
- ❖ NEOM bay and Trojena – residential developments with entertainments centers
- ❖ Sustainability – NEOM will be powered entirely by renewable energy, and will be carbon neutral with zero emissions.
- ❖ The IoT and AI will operate all aspects of the project.



Neom, Saudi Arabia (The Line)

- ❖ The Line – a long linear city, with no cars or streets, with two parallel interconnected 105 mile long skyscrapers.



How does the height of The Line compare to other landmarks?

