city of **yes**

city of solar
city of health
city of energy
city of carbon neutrality
city of resilience





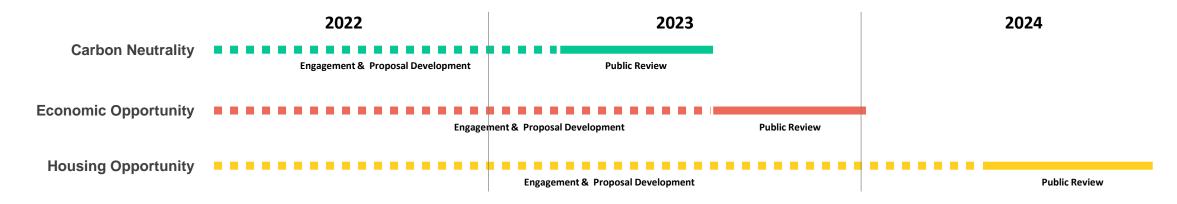




for Economic OpportunityGrowing jobs and small businesses with more flexible zoning



for Housing OpportunityEnsuring all neighborhoods are meeting the need for housing opportunities



Recap

Why carbon?

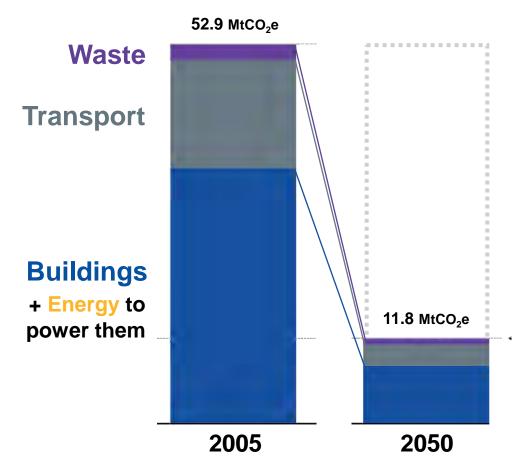
- We are in a climate emergency, caused by greenhouse gas emissions.
- Carbon dioxide (CO₂) is the primary greenhouse gas (GHG) emitted through human activities 80% of US GHG emissions in 2019.
- CO₂ is largely produced through the burning of fossil fuels
- Paris Agreement aims to limit global warming to 2°C and avoid greater climate damage by curbing GHG



What do we mean by a "carbon-neutral city"?

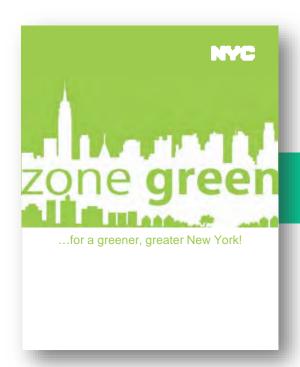
It's a city where we've...

- Reduced our energy needs (retrofit buildings to be efficient)
- 2. Cleaned the grid (decarbonize the source of electricity)
- 3. Electrified buildings + vehicles (all remaining energy needs are powered by the clean electric grid)



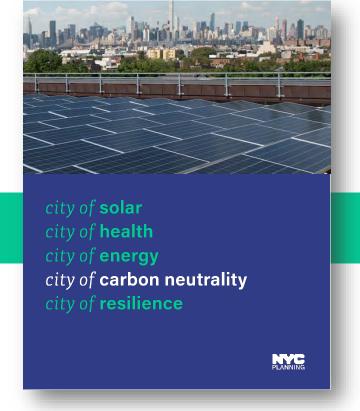
Necessary operational carbon reductions to meet 2050 goals, in millions of metric tons of carbon dioxide equivalent. Source: NYC's Roadmap to 80x50 Recap

What has New York City already done?



2012: Designed to support elective, progressive experiments with "green building features"





2023: Respond to the climate crisis by removing zoning impediments to urgent retrofitting work, solar, energy storage, and EVs

Engagement process to date



to date:

Four open-to-the-public pre-referral info sessions

100+ meetings with stakeholders

Two in-depth working sessions convened with Urban Green Council

Where do we need to go? How can zoning help?

Meeting the challenge of our climate crisis is a massive undertaking.

We've worked with our partner agencies, as well as dozens of non-profit and private-sector groups, to understand what they're working on – and how zoning can help support their efforts.



Inclusion here does not necessarily indicate endorsement.



Decarbonize our energy grid

By 2040, the New York energy grid must be 100% renewably-based

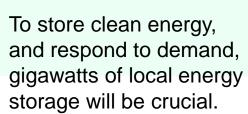
see: 2019 NYS CLCPA

Since 2016, we have an ambitious goal for solar in NYC – and to date, we're only a third of the way there.

see: 2016 Climate Week NYC

The grid of the future will be less centralized with 'distributed resources' spread across the city

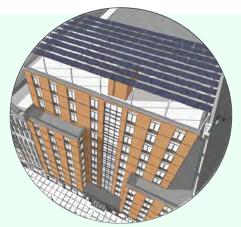
see: 2015 NYS Reforming the Energy Vision

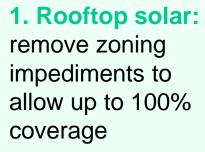


see: 2022 State of the State



Decarbonize our energy grid







2. Parking lots: ensure zoning always allows solar canopies



3. Community Solar: allow renewable energy generation in all zoning districts



4. Energy Storage: allow some facilities as-of-right in all zoning districts



5. On-shore wind: create a tool for future review of proposed wind



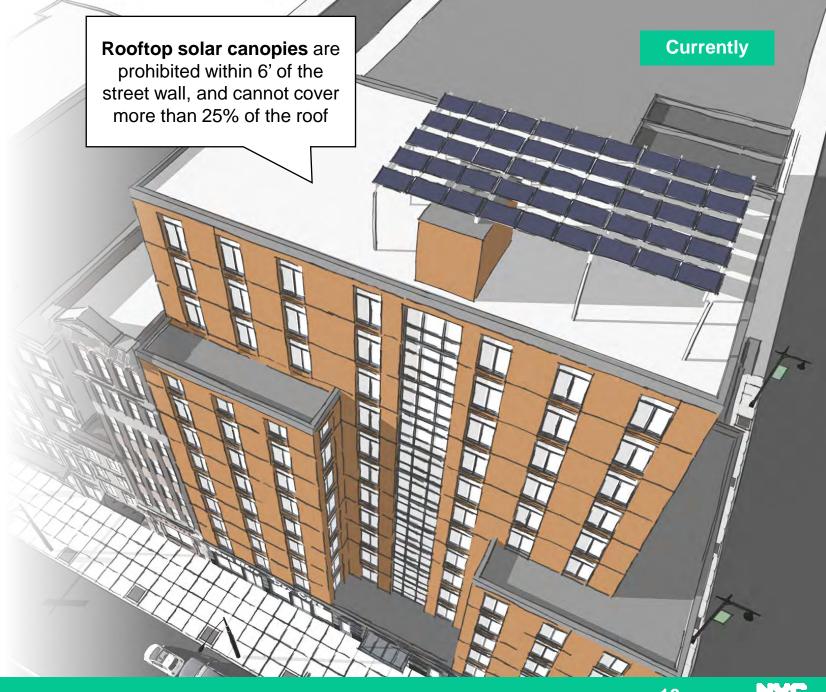
Solar on building rooftops (flat)

Currently:

- 6-foot height limit in R1-R5 zoning districts
- 15-foot height limit in R6 and denser zoning districts and commercial and manufacturing zoning districts
- 25% maximum coverage and 6-foot setback from the façade

Issue:

- Limits amount of solar installation
- Creates feasibility problems for some solar installation configurations



Solar on building rooftops (flat)

Proposal:

- <u>15-foot height limit</u> in all zoning districts
- <u>No</u> maximum coverage or setback requirements



Solar on building rooftops (sloped)

Currently:

Solar panels on sloped roofs are above the height limit are limited to 18 inches

Issue:

Solar panels cannot be tilted to catch more sun due to height limitation

Proposal:

Expand height limit to 60 inches



Solar canopies over parking areas

Currently:

Accessory off-street parking spaces can obstruct some required open spaces

Issue:

"Solar awnings/canopies" are not always permitted in the same areas as parking, preventing their installation

Proposal:

Allow solar awnings / canopies (pictured at right) can cover parking areas by adding them as 'permitted' obstructions'



Community solar + other renewable energy

Currently:

"Non-accessory" solar generation is a commercial use in zoning

Issue:

 Solar arrays are limited in size to remain an accessory use in many parts of the city

Proposal:

 Reclassify this use as "energy infrastructure equipment (EIE)" and permit installations of <10,000 ft² in Residential zoning districs as-of-right





Energy storage systems (ESS)

What is energy storage?

- Battery-based systems are extremely safe and different from e-bike batteries
- Each facility is essentially customdesigned and installed by speciallytrained engineers and electricians
- All installations must use technologies pre-approved by FDNY
- All installations must be reviewed on a site-specific basis by DOB, and large systems must also be reviewed by FDNY



Decarbonize our building stock

Our buildings are NYC's biggest source of CO₂ emissions

see: 2019 NYS CLCPA



To decarbonize our building stock, virtually every one of our city's 1,000,000+ buildings will need to be retrofit.

2015 Roadmap to **80x50**

Windows and walls will need to be improved or replaced with new

efficient ones.

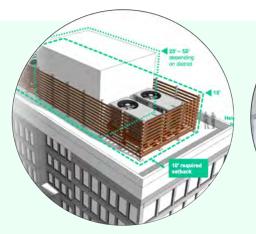
Large buildings (> 25,000 sf) that fail to cut their CO₂ emissions will face steep fines

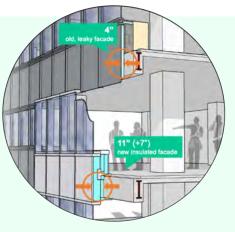
2019 NYC Climate Mobilization Act (Local Law 97)

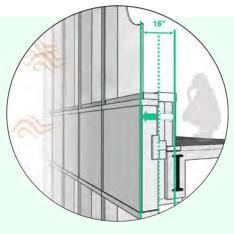
New buildings will be prohibited from installing fossil-fuel equipment Local Law 154

Boilers and furnaces will need to be replaced with all-electric heat pumps

Decarbonize our building stock









6. Electrification retrofits:

expand rooftop and yard allowances to accommodate increased need for outdoor electrified equipment like heat pumps

7. Building exterior retrofits:

fix rules to ensure that the widest range of exterior retrofits are allowed.

8. Fix Zone Green:

update and improve this floor area exemption to ensure it continues to promote better-thancode performance.

Funding?

NYC Accelerator from the MOCEJ can help connect homeowners to funding assistance.



Retrofitting mechanical equipment for electrification

Currently:

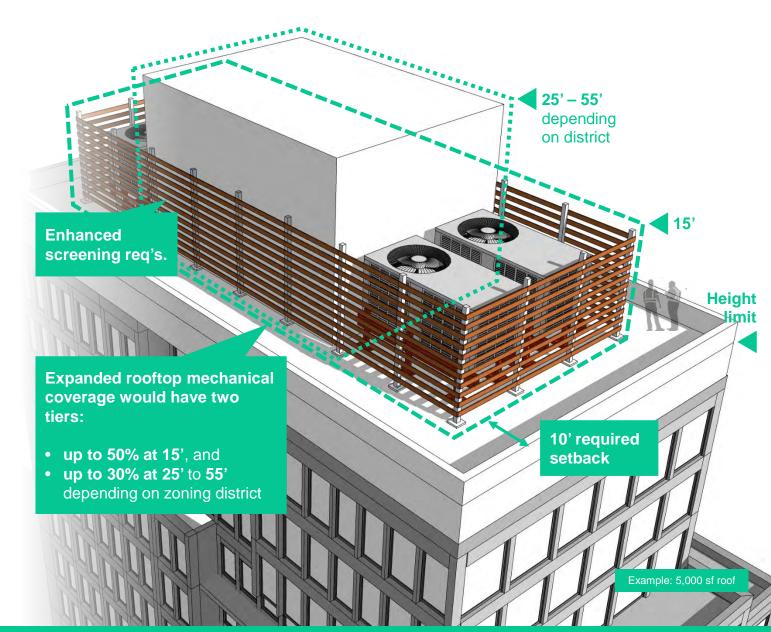
 Rooftop mechanical equipment is limited by coverage and height

Issue:

 Boilers in the basement need to be replaced with outdoor heat pumps, typically on the rooft

Proposal:

- Apply zoning allowances for buildings in the floodplain to the citywide context
- Expand screening requirements to all rooftop mechanical equipment



Allowing envelope retrofits to meet code

Currently:

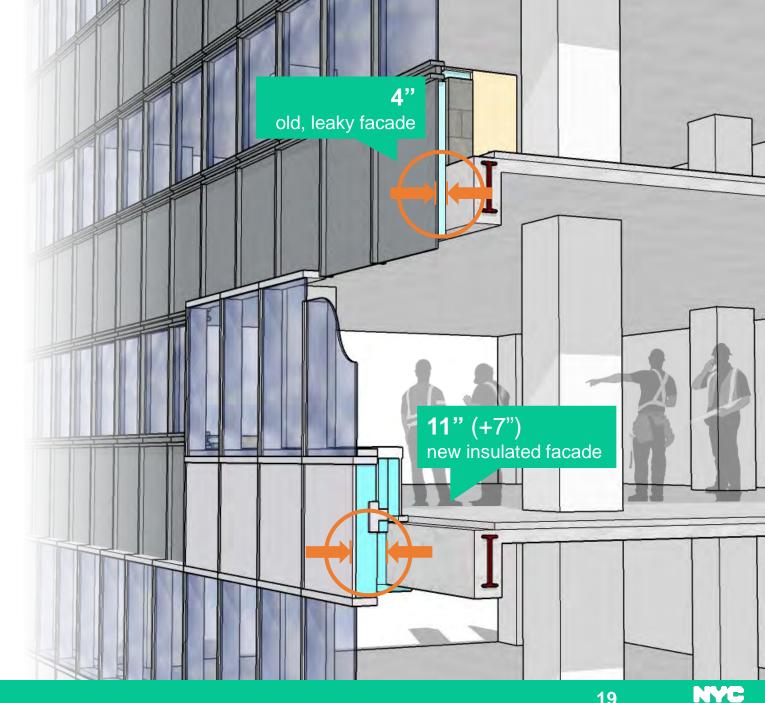
Wall thickness is "floor area"

Issue:

Existing buildings cannot be retrofitted to have better-performing walls if there is insufficient floor area allowed

Proposal:

- Allow additional wall thickness up to 8 inches, provided the new wall complies with the latest thermal barrier requirements in the NYC Energy Code
- Allow flat 5% floor area exemption for building envelopes that meet "ultra-lowenergy" usage standards



Decarbonize our vehicles

Less than 1% of the 2,000,000 cars registered in NYC are zero-emission.

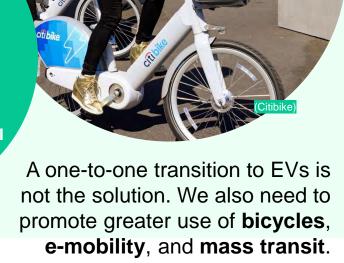


One of the biggest hurdles to achieving **EV adoption** is finding a place to charge overnight.

see: The New York Times

By 2035, all vehicles sold in NYS must be EV; demand for charging will rapidly increase

see: NYS Adv. Clean Cars II



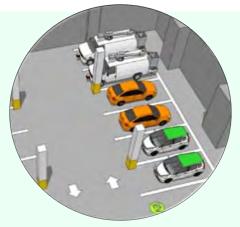
see: 2016 PlaNYC



Decarbonize our vehicles











9. Vehicle charging:

allow public charging stations to locate in all Commercial Districts (not just some)

10. Charge-sharing:

allow 20% of parking spaces to be shared with the public in most residential districts and all non-residential districts

11. Parking flex:

streamline carsharing, car rental, and commercial parking rules in nonresidential facilities

12. Automated parking:

expand rules to encourage more automated facilities outside existing areas **13. Bike parking:** add rules for

add rules for storage and charging



Charge Sharing & Flex parking:

Currently:

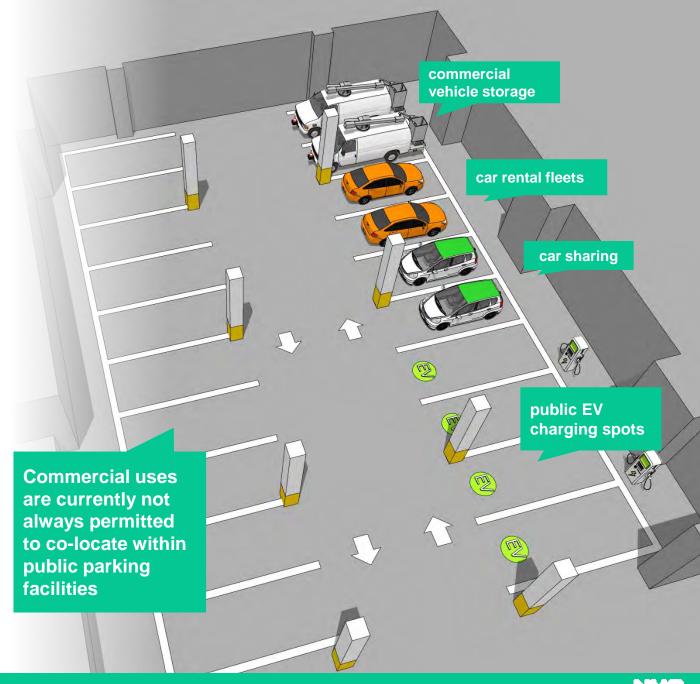
- Accessory EV stations are allowed
- Car sharing, rental, and commercial storage are regulated separately
- Some car sharing parking is allowed

Issue:

- Rules are varied, confusing, and limited
- Accessory EV stations not open to public use

Proposal:

- Expand 20% of accessory parking to be used for public EV charging, car sharing, and commercial vehicle storage, or a mix thereof in most residential and all commercial and manufacturing districts
- Allow 50% of spaces in public lots and garages (100% may be EV charging)



Bicycle and e-mobility: storage & charging uses

Currently:

No use regulations for bicycles and other e-mobility transportation

Issue:

 There is regulatory uncertainty around where bike / micromobility parking facilities are permitted

Proposal:

- Create a new commercial use for public bicycle and micromobility parking
- Provide for secure outdoor bike storage lockers as permitted obstructions in yards & open spaces





Decarbonize our waste streams

Our waste stream only accounts for 4% of our City's greenhouse gas footprint – but there are some clear steps to take.

80x50



Decarbonize our waste streams







16.



14.
Porous paving:
clarify language to
ensure permeable
paving is allowed

15.
Street Trees:
update rules to
accommodate new
raingardens and
connected tree
beds

Organics:
add new use
regulations clarifying
when composting
and recycling are
allowed

17. Rooftop
greenhouses:
simplify the process
for adding them by
allowing as-of-right

Clarify regulations for composting & recycling

Currently:

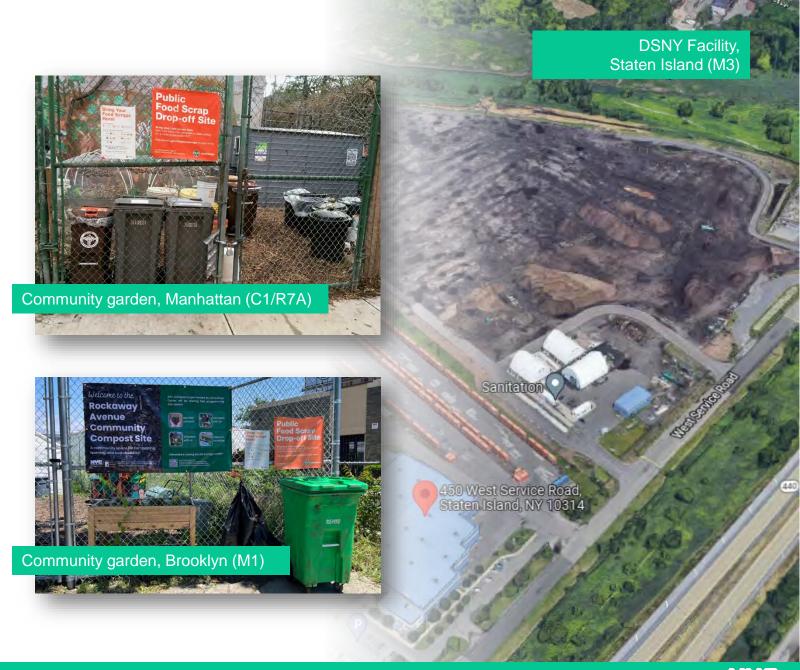
 Zoning doesn't mention "composting" or "recycling" at all.

Issue:

 Confusion on where composting and recycling are allowed to occur. (DSNY's only compost facility is classified as a "dump" and located in a heavy M3 District on Staten Island.)

Proposal:

- Clarify that small-scale composting can be considered an "accessory use"
- Neighborhood-focused recycling facilities can locate in commercial storefronts
- Large-scale facilities should continue to locate in Manufacturing Districts



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Facilitate rooftop food production

Currently:

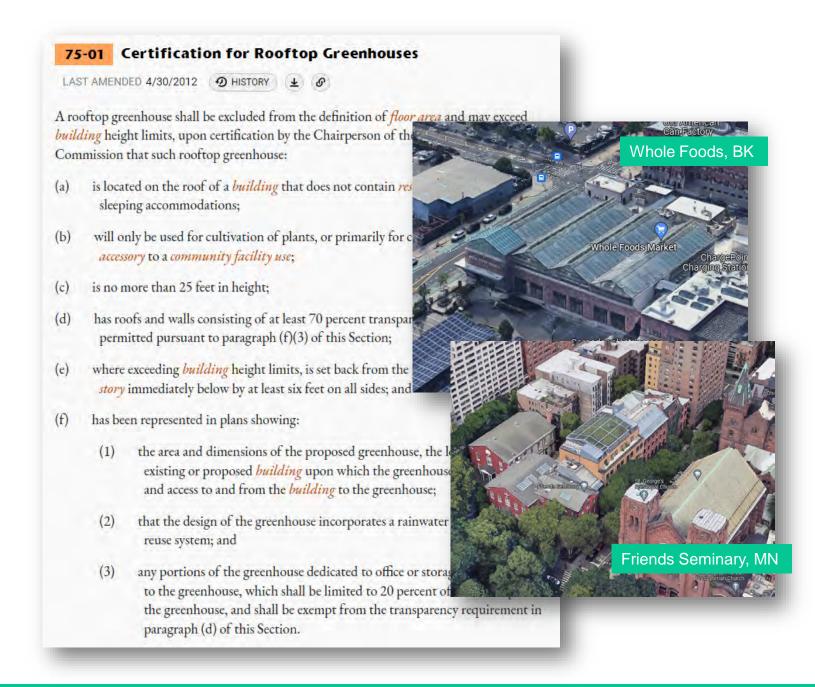
 Rooftop greenhouses are allowed atop non-residential buildings, beyond maximum FAR and height limits

Issue:

 CPC certification is required despite few straightforward requirements for applicants – increasing the cost and process and discouraging projects.

Proposal:

 Change the rooftop certification to an as-of-right allowance. (Proposals would still be evaluated for compliance by DOB.)



Summary of proposal



- Rooftop solar: removing zoning impediments.
- 2. Solar parking canopies: remove zoning impediments to allow.
- Solar: ensure standalone generation is allowed
- 4. On-shore wind: add a new tool for the CPC to consider future applications
- 5. Energy storage (ESS): add new rules to allow gridsupporting ESS in a wide range of zoning districts



- 6. Electrification retrofits: expand rooftop and yard allowances to accommodate increased need for outdoor electrified equipment like heat pumps
- Building exterior retrofits: fix rules to ensure that the widest range of exterior retrofits are allowed.
- 8. Fix Zone Green:
 update and improve this floor
 area exemption to ensure it
 continues to promote betterthan-code performance.



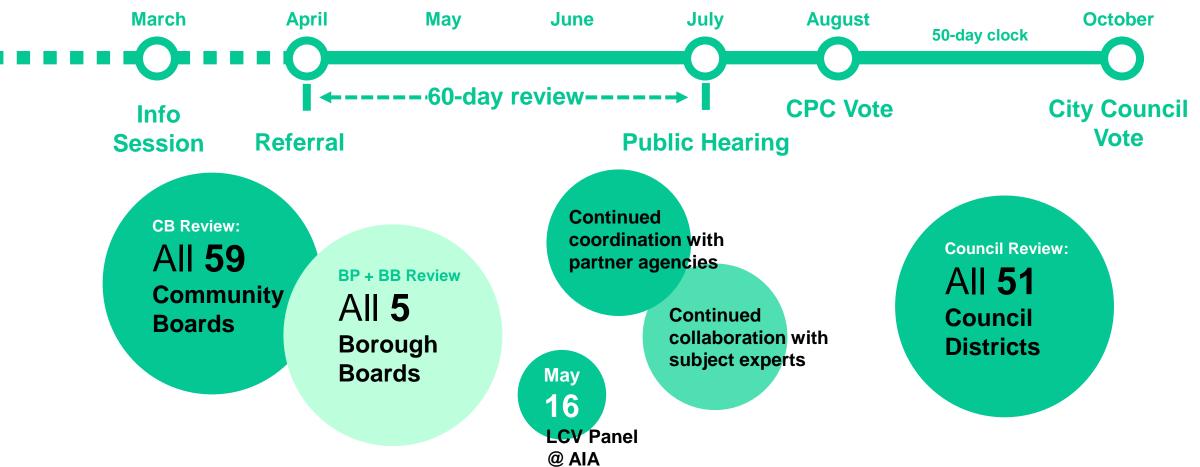
- Vehicle charging: expand allowance to all Commercial Districts
- 10. Charge-sharing: allow a % of residential spaces to be shared w/ the public
- 11. Parking flex: streamline car-sharing, car rental, and commercial parking rules
- 12. Automated parking: expand rules to encourage more automated facilities
- **13. Bike parking:** add rules for storage and charging



- 14. Porous paving: clarify language to ensure permeable paving is allowed.
- **15. Street Trees:** update rules to accommodate new raingarden prototypes
- 16. Organics: add new use regulations clarifying when composting and recycling are allowed.
- 17. Rooftop greenhouses: simplify the process to allow them as-of-right



Beginning the public review process



Approximate schedule of public review, for illustrative purposes only

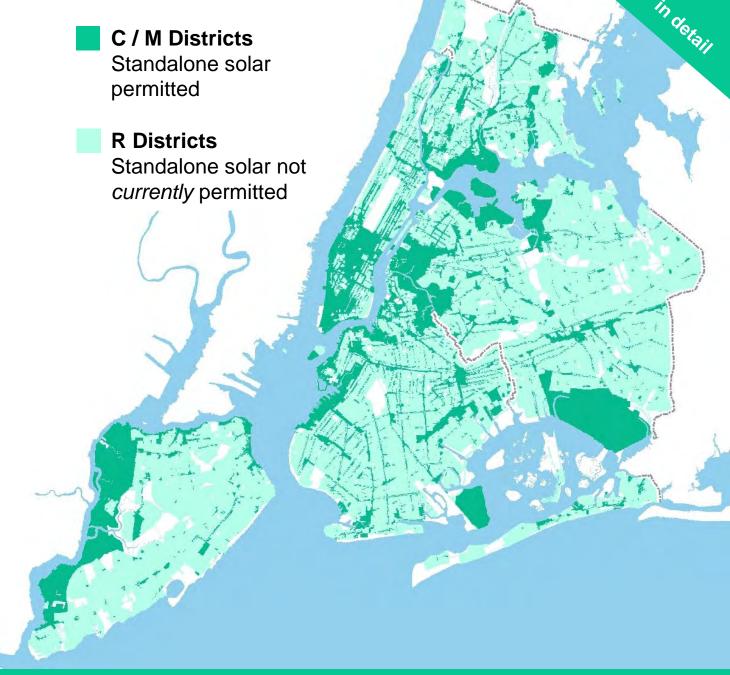


Appendix

Proposal 3

Community solar + other renewable energy

- Currently: The Zoning Resolution (ZR) currently classifies "non-accessory" solar generation as a commercial use.
- Issue: Large parts of the city are offlimits to crucially-needed, gridsupporting solar arrays. To locate here, solar and storage systems need to be kept small so that they can be considered "accessory" – precluding grid-supporting installations.
- Proposal: Reclassify this use as "energy infrastructure equipment (EIE)" and permit installations of <10,000 ft² in Residence Districts as-of-right.

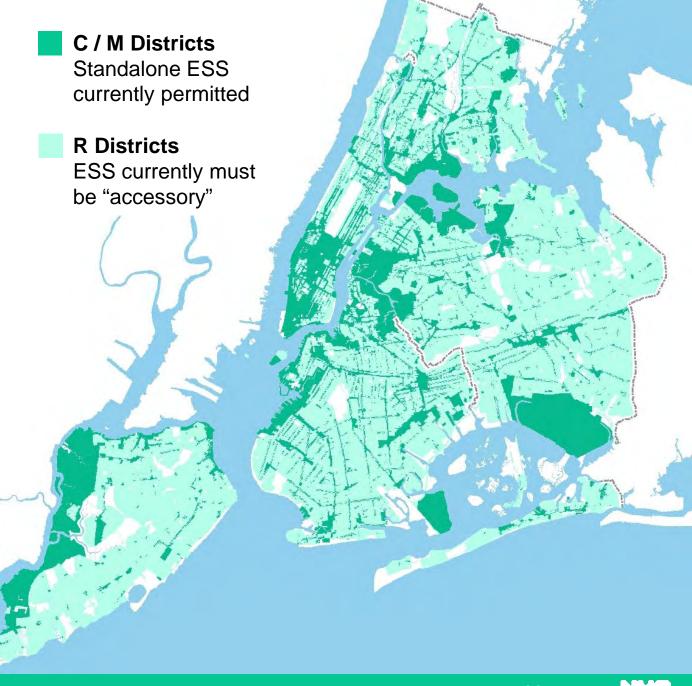


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Proposal 4

Energy storage systems (ESS)

- Issue: The ZR currently does not have clear regulations governing energy storage. By interpretation, such uses can qualify as "electric utility substations" and thus must obtain a BSA special permit to locate in Residence Districts.
- Proposal: Create new uses within the ZR's Use Group 4 and Use Group 6 to accommodate grid-supporting "energy infrastructure equipment" (EIE):
- **Smaller installations**, with footprints smaller than 10,000 ft², would be permitted as-of-right in Residence Districts.
- Larger installations, with footprints larger than 10,000 ft², would still require BSA review before locating in Residence Districts. They would be allowed as-of-right in Commercial + Manufacturing Districts.



Energy storage systems (ESS)

	R	C	M
	Districts	Districts	Districts
Accessory solar / wind	Permitted	Permitted	Permitted
Accessory ESS	AOR	AOR	AOR
Electric utility substation <10k sf	BSA permit	Permitted	Permitted
	needed	AOR	AOR
Electric utility substation 10k-40k sf	BSA permit needed	BSA permit needed	Permitted AOR
Electric utility substation >40k sf	CPC permit needed	CPC permit needed	Permitted AOR



	R	C	M
	Districts	Districts	Districts
Accessory solar / wind Accessory ESS	Permitted	Permitted	Permitted
	AOR	AOR	AOR
Energy infrastructure equipment ≤10k sf	Permitted	Permitted	Permitted
	AOR	AOR	AOR
Energy infrastructure equipment >10k sf	BSA permit	Permitted	Permitted
	needed	AOR	AOR
Electric utility substation regs will remain for actual substations	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

- + Clarifications that accessory energy storage + electrical equipment is included in "mechanical" floor area exemption
- + Clarifications allowing within rooftop mech. obstructions

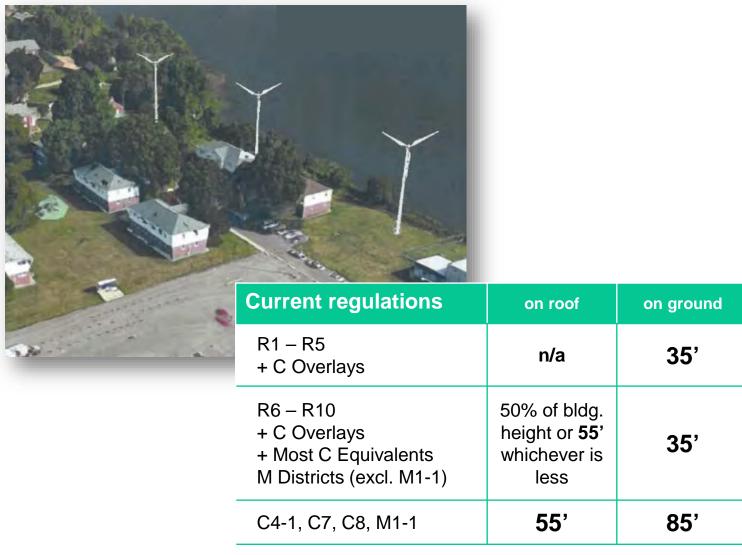


^{*} ESS Installations will always require safety review by DOB, and for systems >250kW, FDNY as well.

Proposal 5

New authorization for on-shore wind

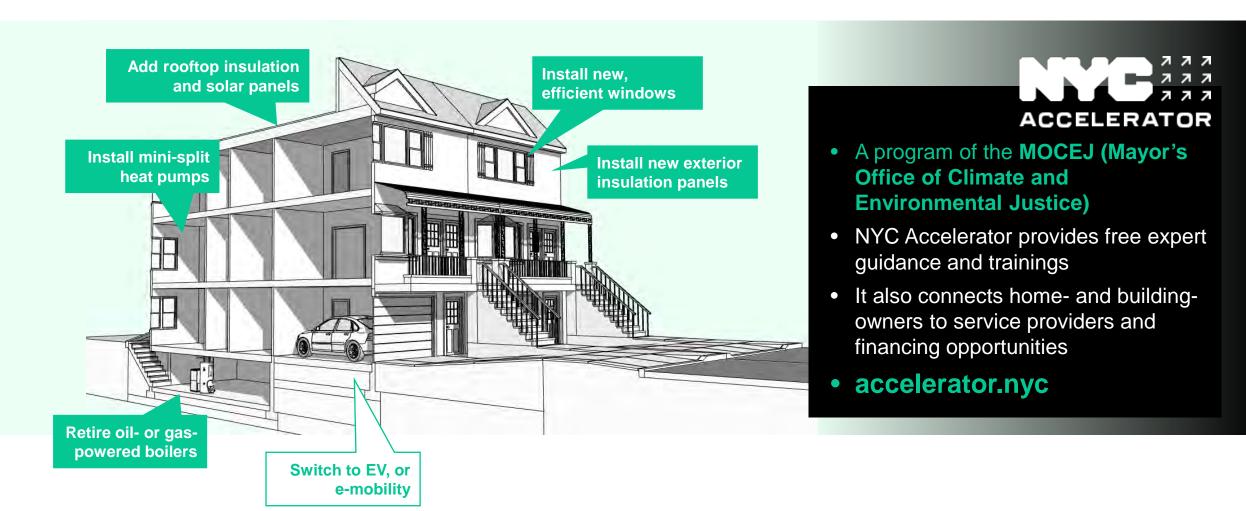
- Currently: Along the waterfront, onshore wind turbines must comply with strict height limits (see table at right).
- Issue: Some installations may need greater height flexibility. However, there is no tool to allow the CPC to consider such applications.
- Proposal: Create a new authorization that will allow the CPC to consider future applications for height & setback relief to facilitate onshore wind. (This proposal itself will not change the height limits for onshore wind.)



Not allowed in, or within 10' of, waterfront yards and/or WPAAs



Decarbonize our building stock



Topic 6

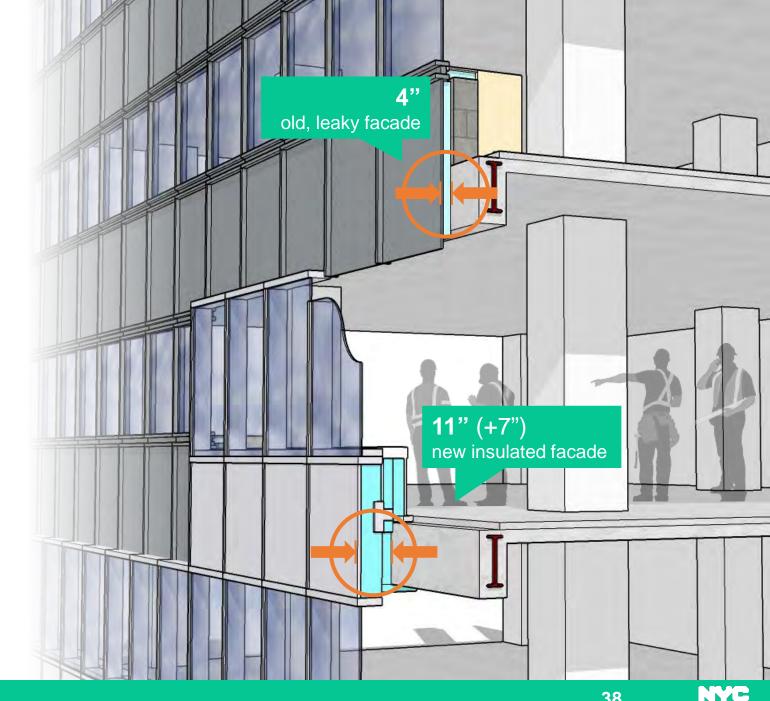
Retrofitting mechanical equipment: screening

- Currently: Zoning currently requires
 accessory mechanical equipment that is
 a "permitted obstruction" above zoning
 height and setback requirements to be
 screened.
- Issue: Rooftop mechanical equipment that is not a "permitted obstruction" because it is below the zoning height limit has no applicable requirement.
- Proposal: We will be expanding our screening requirements to ensure better screening of permitted obstructions, as well as, for the first time ever, require other rooftop mechanical equipment which is not a permitted obstruction to be screened as well.



Allowing envelope retrofits to meet code

- **Currently:** Zoning considers wall thickness as "floor area" - this counts against your FAR, or the amount you are allowed to build.
- **Issue:** When trying to completely replace a thin (4") façade with a thicker (11") façade, those additional 7" count as new floor area - and are not allowed to be added. This makes this façade replacement project impossible.
- Proposal: To ensure that a recladding is allowed, create a new allowance for additional wall thickness, provided the new wall complies with the latest thermal barrier requirements in the NYC Energy Code.

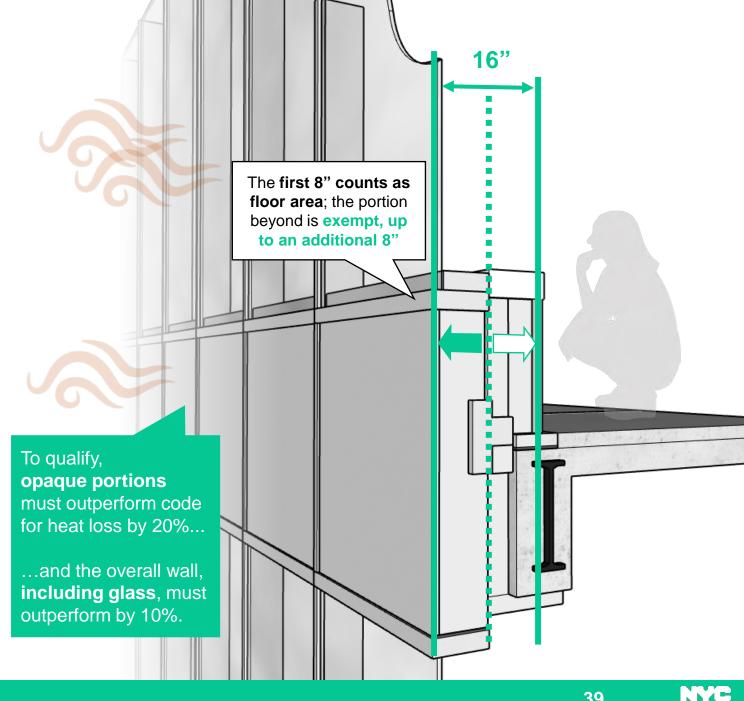


Promoting envelopes that perform better-than-code

Currently: Zoning allows a 'wall thickness floor area exemption' (the "Zone Green bonus") for portions of walls that <u>exceed</u> Energy Code.

Issues:

- The current exemption focuses on the **heat** transmission (u-factor) of a wall. This misses other key criteria, such as air leakage.
- Code's "u-factor" has been heavily revised since Zone Green. It is very difficult to outperform today's u-factor, and nearly **impossible** to outperform future u-factors.
- Administering this "up to 8 inch" wall exemption is **complex + prone to issues**.
- It is impractical for **existing buildings** to take advantage of this exemption.



Promoting buildings that perform better-than-code

Proposal:

Simplify the deduction from "up to 8in. beyond the first 8in. of wall thickness" into a **flat 5% exemption** from total FAR.

Align the exemption with Local Law 97 by promoting newer performance criteria:

- existing buildings which retrofit to become "fully electrified buildings" would be eligible for the exemption
- new buildings, which are already required to be fully electric (LL 154) would be eligible for the exemption if they design to "ultra-low-energy" usage building design standards.





Promoting buildings that perform better-than-code

Today	
Wall thickness	deduction

Primarily for **new buildings**

up to 8" of wall thickness

Promote **higher u-factor** than required by Energy Code

- Focused on envelope heat transmission based on prescriptive Code requirements (u-factor) which are very hard to meet for opaque walls
- Hard for practitioners as well as DOB to evaluate and enforce
- Leads to contrived wall designs to unlock maximum 8" beyond 8" deduction.

Proposed Pathway A **Promoting Code outperformance**

Available to **new** buildings

Proposed Pathway B **Supporting LL97 compliance**

Available to existing buildings

flat 5% FAR exemption

Promote **ultra-low-energy** buildings which exceed today's requirements

- Flat FAR exemption eliminates complexity/issues
- Assumes a fully electrified building
- Building must demonstrate specific at time of plan review that they will be either a "net zero" building or achieve "ultra low energy" consumption:
 - a source energy use intensity (EUI) of 38 kBTU per square foot per year
 - or, 50% outperformance of comparable building which comply with code
 - will require testing to verify performance

Support compliance with LL97 by awarding floor area to **#fully electrified buildings#**

- Flat FAR exemption eliminates complexity/issues
- New construction will be required to be fully electric by 2024/2027 per LL 154
- Existing buildings have no incentive other than fines that may be levied under LL97 (if applicable to that building)



Decarbonize our vehicles



PLANNING

Open-to-the-public EV charging facilities

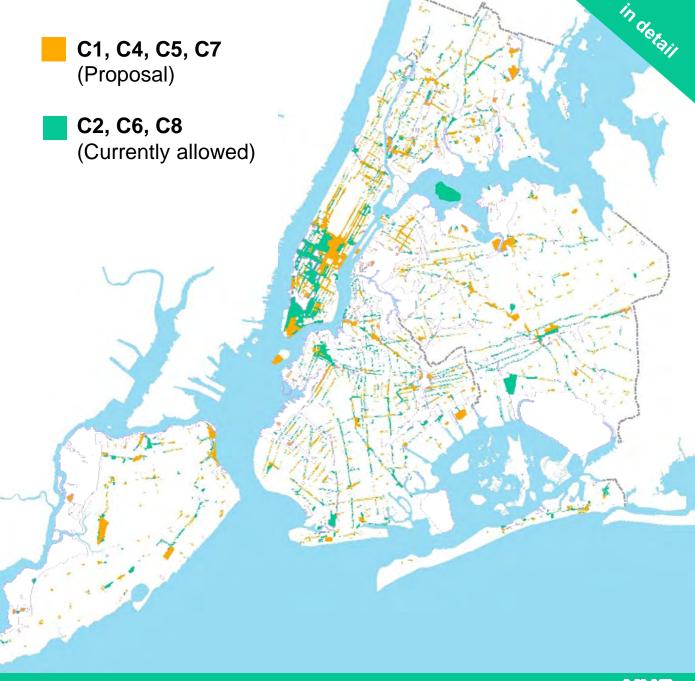
- Currently: Zoning considers opento-the-public EV charging facilities as "Use Group 7" commercial uses.
- Issue: These facilities aren't allowed in many C Districts commonly mapped closest to where people live.
- Proposal: Reclassify these facilities as Use Group 6 uses that are permitted in all Commercial Districts, more than doubling the commercial land area available for EV charging facilities.



Open-to-the-public EV charging facilities

	Currently	Proposed
C1, C4, C5, C7	No	Yes
C2, C6, C8	Yes	Yes
All M Districts	Yes	Yes

^{*} See next proposal

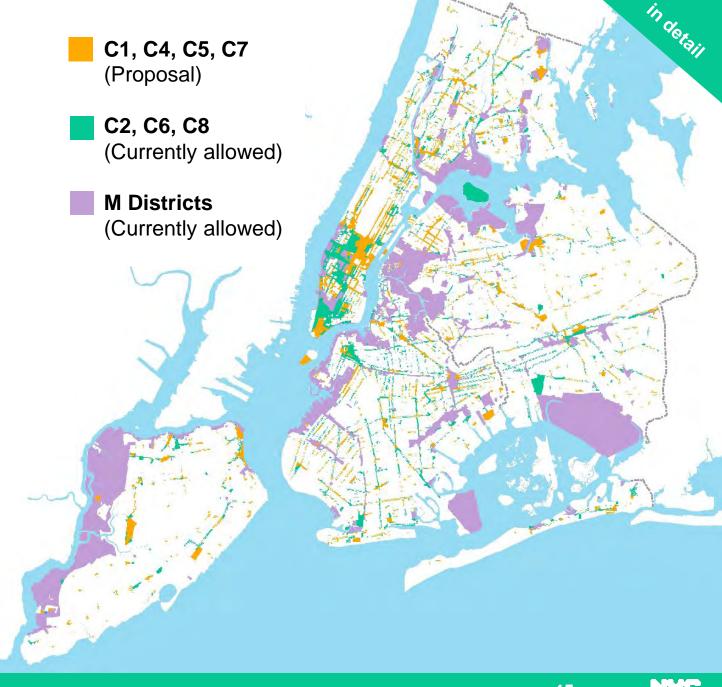


Open-to-the-public EV charging facilities

	Currently	Proposed
C1, C4, C5, C7	No	Yes
C2, C6, C8	Yes	Yes
All M Districts	Yes	Yes

All R Districts	No	Limited*

* See next proposal



Expanding car sharing: public EV charger sharing

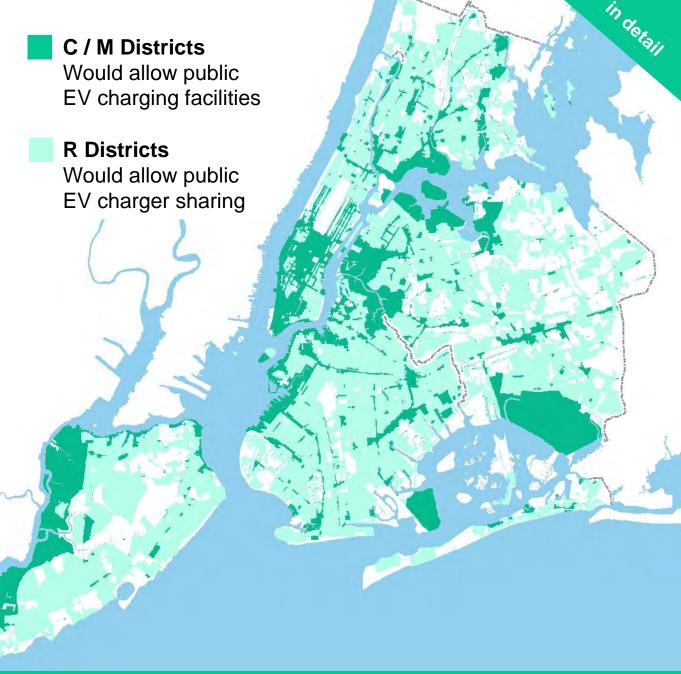
- Currently: Zoning generally requires
 parking spaces serving uses, such as retail
 stores, or apartment buildings. Accessory
 charging is permitted in all of these
 spaces. Some of these spaces are
 permitted to be occupied by commercial
 car share program vehicles.
- Issue: EV chargers installed in accessory spaces are not available to the public, per zoning rules.
- Proposal: Expand existing car share rules to allow property owners to designate up to 20% of their spaces (or 5, whichever is greater) for flexible, public EV 'charger-sharing', or car sharing, or any combination thereof.





Expanding car sharing: public EV charger sharing

	Current Car Sharing	Proposed Car Sharing + EVCS Sharing
R1, R2, R4-1, R4A, R4B, R5A	Not allowed	Not allowed
R3-2, R4	10% in facilities w/ 20+ spaces	20% Or 5 spaces whichever is greater
R5 – R10	20% or 5 spaces whichever is greater	20% or 5 spaces whichever is greater
Non-residential uses	20% or 5 spaces whichever is greater	20% or 5 spaces whichever is greater



city of **yes**

Commercial Fleet EV Charging in both Accessory and Public Parking Lots + Garages

Proposal: Allow up to 20% of accessory spaces, to be occupied by any combination of:

1. car share vehicles, 2. car rental vehicles, 3. public EV charging spaces, 4. commercial vehicle (<20') storage

And allow, in public lots/garages, up to **50% of total spaces**, to be occupied by any combination of: 1. car share vehicles, 2. car rental vehicles, 3. commercial vehicle (<20') storage. (100% of spaces may be public EV charging.)

	R Dist	ricts		C Dis	tricts		M Dis	tricts
	Accessory	Public Lots / Garages	Accessory		Accessory Public Lots / Garages		Accessory	Public Lots / Garages
	R3-2+ MF	N/A	C1, C2 mapped in R3-2+	C4, C5, C6, C7, C8	C1, C2	C4, C5, C6, C7, C8	M1, M2, M3	where permitted
Publicly-accessible EV charging (not inclusive of any EVCS for below uses)	20% of total spaces, or 5 spaces, whichever	N/A	20% of total spaces, or 5 spaces, whichever	20% of total spaces, or 5 spaces, whichever	100% of total spaces	100% of total spaces	20% of total spaces, or 5 spaces, whichever	100% of total spaces
Car share services	is greater	N/A	is greater	is greater	50% of total	E00/ of total	:	50% of total
Automobile rental services	N/A	N/A		- G	spaces	50% of total	3 3 3 3 3 3	spaces
Commercial vehicle storage (< 20 feet)	N/A	N/A	N/A		N/A	spaces		spaces

Expansion of automated parking regulations

- Currently: In limited areas, the ZR provides special allowances to "automated parking facilities" that are tailored to their unique operational needs versus a typical parking facility. For example, the minimum size requirements for a parking space are reduced to reflect the unique 'tray-and-rack' system used to store cars.
- Issue: These allowances don't apply outside of the Manhattan Core and a few other areas, limiting the feasibility of such facilities citywide.

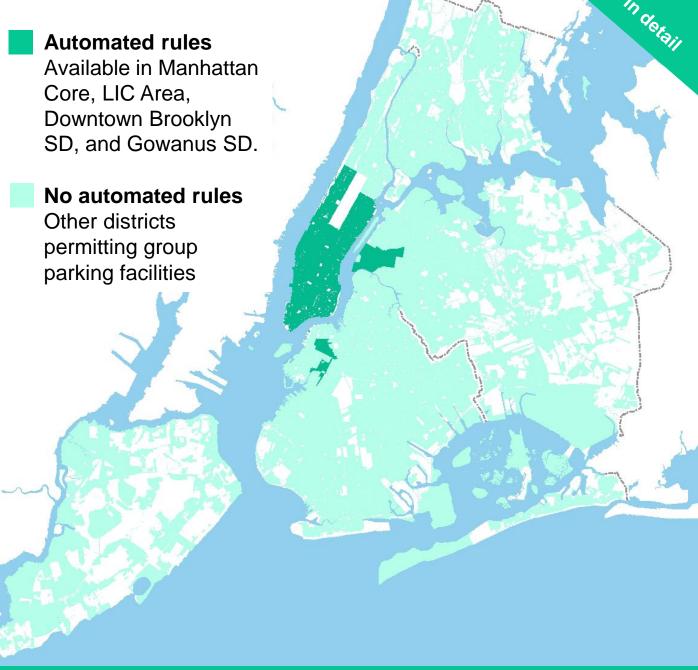


Expansion of automated parking regulations

Proposal: To support the growth of automated facilities, this proposal would proactively expand the allowance and associated lower maneuvering requirements due to their high efficiency, on a citywide basis.

Typically	Current zoning- mandated size
Standard parking space	300 ft ²
Attended or alternate maneuverability space	200 ft ²

Automated rules	Current size set forth in zoning
Automated parking tray (in designated areas only)	153 ft ²



50

Expand the use of permeable paving

- Currently: Zoning is supposed to allow any paving area to be paved with permeable paving.
- Issue: The text, as drafted, requires the Department of Buildings to investigate each proposed installation to deem it appropriate. Ambiguity about how to do so has complicated the process of using permeable paving in NYC.
- Proposal: Revise this language to make it clear that permeable paving is always allowed.



Allow for highperformance street beds

- Currently: Zoning requires street trees to be installed alongside new developments and enlargements.
- Issue: As drafted, the zoning text precludes the use of newer, more inventive prototypes such as "connected tree beds" and "raingardens" that have been designed and approved by DOT.
- Proposal: Add flexibility to the street tree requirements to allow location of required trees within connected tree beds or raingardens, as well allow as substitution of one required street tree with a DEP-compliant raingarden.



PLANNING

Racial equity report

As a zoning text amendment affecting more than 5 community districts, this proposal is subject to the racial equity reporting requirement.

The proposal serves as an important step to meet the City's climate goals by alleviating regulatory burdens and allowing for the creation of a more sustainable, more resilient and more equitable city.

Due to the nature of this proposal, no increases in residential space, non-residential space, or other development activity are anticipated. Therefore, analysis of residential affordability, employment, or construction jobs is not applicable.



A 'peaker' plant – among the dirtiest forms of energy production in NYC.

Source: Gotham Gazette, "Peaker Plants Harm Communities of Color; It's Time for New York City to Replace Them" (2020) by Rachel Spector (NYLPI), Elizabeth Yeampierre (UPROSE) & Dariella Rodriguez (The Point CDC)

