

A photograph of a snow-covered path, likely a pedestrian or bicycle trail, with trees and a fence on either side. The path is covered in a thick layer of snow, and there are footprints visible. The trees are also covered in snow, and a fence runs along the left side of the path. In the background, there are more trees and a utility pole.

BMTS Article Digest December 2023 – January 2024

BMTS Pedestrian & Bicycle Advisory Committee Members:

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How Oulu became the winter cycling capital of the world

20th December 2023, 09:00 EST

By **Laurel Ives**, Features correspondent



City of Oulu

Oulu, Finland has pioneered year-round cycling in high latitudes since the 1960s (Credit: City of Oulu)

Through a series of simple changes, the city of Oulu, bordering Lapland, encourages its residents to cycle through the long, dark, snowy winter. What can other cities learn from the pioneer of winter cycling?

It's a crisp winter morning in the Finnish coastal city of Oulu, the fourth most northerly city in the world, just 100km (60 miles) south of the Arctic Circle. Last night there was a snowstorm and today the temperature hovers around -5C (23F), but that is not deterring the city's hardy cyclists. Everywhere you go, people of all ages flurry by over the fresh snow, wrapped in winter clothes and seemingly enjoying the brief pale sunshine and biting cold air.

Oulu, which proudly calls itself "the winter cycling capital of the world" is blanketed in snow for five months of the year. During the depths of winter, temperatures can drop as low as -30C (-22F), with just four hours of daylight.

Despite these harsh conditions, 12% of winter journeys are made by bicycle in the city of Oulu. Compare that with the milder climate of England, where year-round the proportion of trips made by bike is just 2%.

So how did Oulu gain its reputation for keeping cyclists on the move even in the depths of winter?

When the Sun is shining and the snow reflects the light it's a lovely environment. Sometimes I even take the longer route across the frozen sea – Harri Vaarala

At first sight, the beautiful wintry surroundings look like they have something to do with it.

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"I cycle 27km [17 miles] every day to work, and when the Sun is shining and the snow reflects the light it's a lovely environment," says Harri Vaarala, a traffic engineer for the city of Oulu, who is responsible for promoting the benefits of cycling to its residents. "Sometimes I even take the longer route across the frozen sea. One time I realised I was late for a team meeting, so I stopped and joined it virtually in the middle of the frozen sea."

But without proper cycling infrastructure, the attraction could soon wear off. The city has also made a long-term commitment and investment in cycling, as part of the city's push towards sustainability and lowering car emissions, says Vaarala.



Paths for people using bicycles, mobility scooters or travelling on foot are cleared of snow as a priority in Oulu before roads (Credit: City of Oulu)

The city encourages cycling by clearing the paths every day during the winter, using a fleet of heavy-duty snow ploughs. One of the most impactful changes is also one of the simplest: clear the roads of snow only when the cycle paths are done.

"Three to four centimetres [1-2in] of fresh snow is no issue for cars, but it might be a problem for cyclists and prevent elderly people from going outside at all," says Vaarala. The cleared cycle paths also provides access around the city for people who use mobility scooters.

"The trick is that it doesn't cost a penny more, we use the same personnel and equipment as we use for the roads, it's just a question of the order in which we do it," says Vaarala.

The teams in charge of maintaining the cycle paths also have to use the paths themselves, so they experience first-hand the difference a well-maintained route can make. They also arrange "roadside events" with hot drinks to get feedback from cyclists.

"It's also about how we communicate to our residents," says Vaarala. "When there's a major snowstorm some other places might say: 'Leave your bike at home and take a bus or car.' We've decided in the city of Oulu to never send that kind of message. Instead, we say: 'There's a major snowstorm coming, please leave your car at home and take a bicycle because the paths will be cleared by 7am.'"

The popular choice

Elina Tähtelä, a 31-year-old freelance dancer and choreographer, cycles to daycare and then on to work each day with her two children, four and two years old, riding in a little trailer attached to her bike. She says it's the fastest and most reliable way to travel.

"You can see it's protected and cosy in [the trailer], and cycling is also a great warm-up for me," says Tähtelä. "I wear glasses when it's snowing and a long coat and trousers to protect against the wind, and if you don't stop you don't get too cold."

Tucked up in their trailer, her children wear the same warm clothes as they do to the playground, school and around town, says Tähtelä.



Clear signage projected onto the groomed paths helps keep them safe for bicycles and pedestrians alike (Credit: City of Oulu)

Tähtelä's family are in good company. In one of Oulu's biggest schools Metsokangas, more than 90% of the children get to school by bike or on foot, according to the school's headteacher, even during the coldest winter months. One reason is that traffic calming measures mean there is only one way to get to the school by car with no shortcuts, but there are multiple routes by bike. Across all of Oulu's schools, an average of 50% of children make the trip by bike, which is the highest in Finland.

"I don't think kids aged seven cycle to school alone in many other countries," says Vaarala, adding his four-year-old son loves cycling in the snow. "It's part of our history and our way of life and they grow up with it, so you don't hear kids complaining about it."

In Oulu, the cycling heritage goes back a long way as the network of cycle paths was first planned to sit alongside the roads by city planners in the 1960s. Since its inception, the network has grown extensively, and has more than 900km (559 miles) of pedestrian and cycle paths combined. And Oulu continues to expand its cycling network.

Switching to cycling can help reduce emissions from transport far more quickly than replacing internal combustion engine cars with electric vehicles. One study in European cities found that switching to cycling or using an e-bike just one day a week can reduce a typical city resident's carbon emissions from transport by half a tonne of CO2 a year, the equivalent of a round-trip flight from London to Rome. Cutting transport emissions will be a key part of Finland's national plan to reach net zero by 2035.

The Oulu model has been used as a case study for other northerly cities hoping to embrace winter cycling. In 2013, the Winter Cycling Federation was founded in Oulu to promote winter cycling internationally, and has since held conferences in cities around the world.

I think in Oulu, cycling is a state of mind – Claes Kruger

One key challenge for winter cycling is safety. Oulu uses several interventions to address this. The paths are well-lit during the dark winter months, and there are 320 underpasses so that children, in particular, don't have to cross roads, notes Vaarala. There is also a system of projector-based signs that are illuminated from lamp posts onto the snowy surfaces. Residents of Oulu were among the most satisfied in Finland with safety of city transport, including cycling infrastructure, according to a national survey.



The small city of Oulu is surrounded by nature, with cycle paths connecting the city to the countryside beyond (Credit: City of Oulu)

The city is now in the process of widening the cycle paths from 3.5m to 6.6m (11ft to 22ft) to build cycling "superhighways" for cyclists and pedestrians.

The health effect

Claes Kruger, 47, is a development manager for the city, and is one resident who has made the shift from four wheels to two.

"After a day of hard work, it's a great way to clear the mind, it's good exercise and it's relaxing," says Kruger. "I cycle in all weather, I've cycled in -25C [-13F], in snowstorms, and I don't have winter tyres on my bike because they grit the paths. Cycling is in our culture. I think in Oulu, cycling is a state of mind."

The mental and physical health benefits are another reason for the city's cycling push, says Vaarala. "We also want to make sure that all the citizens are able to go outside during the winter months," he says. "We do believe it keeps them healthier, happier and more active."

It's well known that cycling benefits our mental health, fitness and cardiovascular health as well as reducing our risk of diabetes and cancer. In Europe, encouraging healthy levels of physical activity could prevent 10,000 premature deaths a year.

In high-latitude regions like Oulu, winter cycling has the added advantage of increasing exposure to sunlight and vitamin D when the days are short. A study of more than 5,700 Finns found that physical activity was one factor linked to higher vitamin D serum levels, alongside others such as a healthy BMI, not smoking and a healthy diet. (*Read more about the effects of vitamin D on sleep, mental health, fatigue, immunity and strength.*) And though many are less active in the winter months, exercising in cold temperatures has particular benefits for health and mental health.

Carbon count

The emissions from travel it took to report this story were 0.5kg CO₂. The digital emissions from this story are an estimated 1.2g to 3.6g CO₂ per page view. Find out more about how we calculated this figure here.

Wherever you go in Oulu, whose urban region is home to 250,000 citizens, nature is never far away. Many of the city's cycle paths go through parks or by the sea. Many Finns have pointed out that even though the temperatures can dip very low, it is a dry cold, which is easier to cope with than a wet, humid cold.

When I get on a bike to try some winter cycling myself, I notice that the snow on the ground and in the trees lends a lovely peace and quiet to the whole experience. As long as you're wearing thermals and gloves.

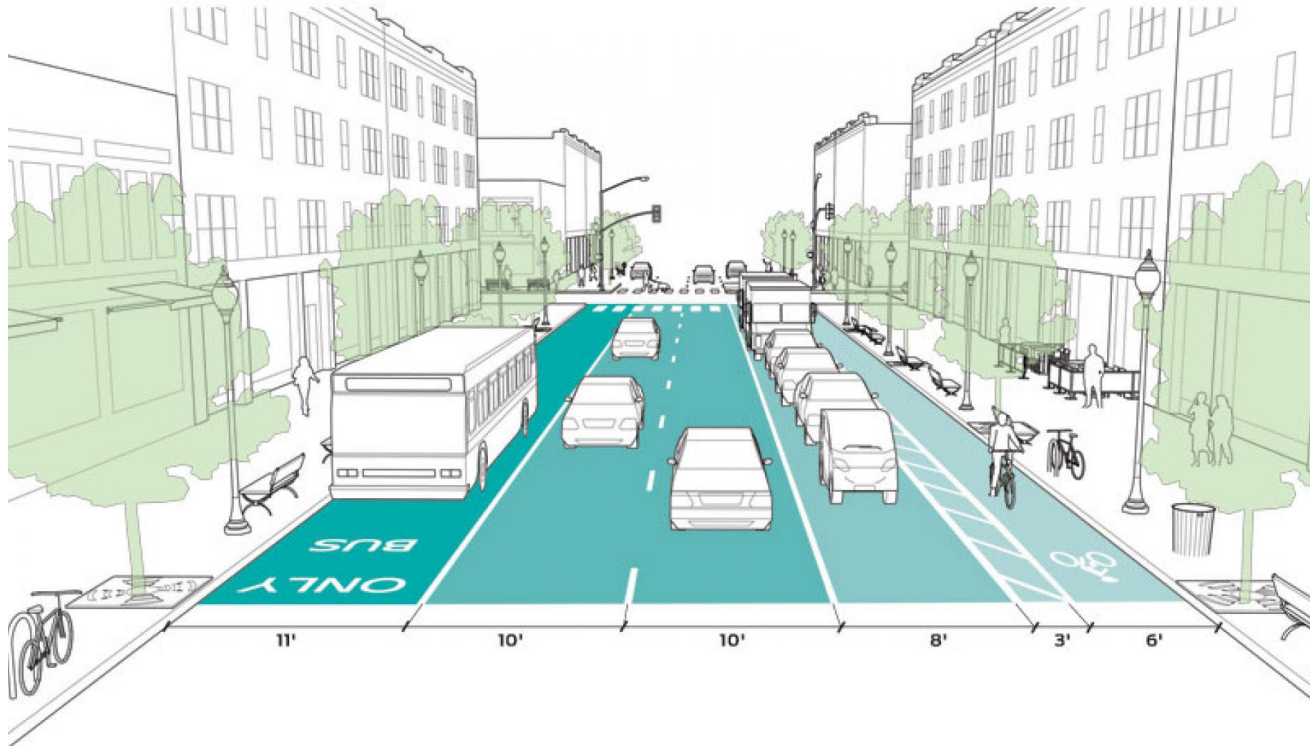
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Correction: This article has been amended to clarify that Oulu has 250,000 citizens in its urban region, rather than the city proper alone. It has also been corrected to say that Oulu is considered to border Lapland, not lie within it.

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PUBLIC SQUARE

A CNU Journal



10-foot lanes in a street section endorsed by NACTO (National Association of City Transportation Officials).

[STREETS](#)

Engineers resist narrow lanes, but change is coming

An American Society of Civil Engineers survey shows the challenges to creating more walkable streets, yet the way forward is to enable more context-based design.

[ROBERT STEUTEVILLE](#) DEC. 20, 2023

A little over a month ago, Johns Hopkins University [released](#) the largest-ever research on travel lane width and safety, providing conclusive evidence that 9-

and 10-foot lanes do not contribute to greater automobile crashes and, in some cases, reduce collisions. Traffic engineers have long shunned narrower lanes—which benefit walkable cities by providing more room for pedestrians, bicyclists, and landscaping—citing safety concerns.

New urbanists have been making the case for narrow streets as a necessary component of walkable neighborhoods for 30 years, and the message has largely gone unheeded by the civil engineering profession. (There have been signs of progress, such as when the Institute of Transportation Engineers worked with CNU on the 2010 [Designing Walkable Urban Thoroughfares](#), a recommended practice). And yet as a rule, engineers have continued to design overly wide streets in places that could be more walkable. But engineers could not ignore research from such a prestigious and health-focused institution—especially since the study was widely reported.

Soon after the study hit social media and the airwaves in November, the American Society of Civil Engineers (ASCE) surveyed their members on narrow travel lanes and the results are revealing. Poll results were shared on the Pro-Urb listserv by civil engineer Paul Crabtree. See below for the answers and the comments.

Poll Results

Should many lower-speed traffic lanes be made narrower (9-foot or 10-foot wide), either by retrofit or from the planning stage?



SmartTake: The [study](#) that spurred this poll suggests making narrow streets the norm, but allowing agencies to argue for wider streets as needed. Right now, the opposite is true. Based on this poll, I doubt we'll have agreement soon. Here are some readers' opinions on the issue:

Albert: Narrow traffic lanes would be great, provided that the transition from a straight road to a curve is a spiral transition, like railroads are designed, as opposed to a straight road coming in tangent to a curve of a uniform radius.

Andy: Other challenges are created with the narrow streets. The mirror on my truck smacked the mirror on an opposing vehicle that was inside the lane except for its overhanging mirror. Also consider garbage removal, transit buses, and fire trucks in addition to the delivery trucks. Most of these vehicles require equal or greater space to turn corners than semi-tractor trailer rigs. The city I am working with in South Florida is trying to get rid of many of its alleys to create spaces for changing development patterns/needs by businesses, so that is not a universal solution.

Ed: I wonder if you could leave the lanes the same size, but widen the paint stripes to narrow the lanes virtually. That way the big vehicles would still be able to traverse and the drivers of the smaller vehicles would subconsciously be staying in the center of the lane. As a frequent bicyclist (at least during the warmer months in Iowa!), I think I would feel a bit safer with cars being encouraged to move over a bit.

Proponents of walkable places may think the results depressing. Less than a third of civil engineers accept that “yes, narrow lanes are safer” and, therefore, “many lower-speed traffic lanes should be made narrower (9-foot or 10-foot wide), either by retrofit or from the planning stage.” Most engineers either deny the safety benefits of narrow lanes or they find other reasons to support wide lanes.

And yet, there are more optimistic interpretations. There is no older survey to compare to, but I would estimate the support for narrower lanes was very low in the past—probably single digits—judging by the pervasive preference for wide lanes over the last 50 years. That would be good news if we can get narrow lanes on nearly a third of new streets or retrofits.

Granted, we need a wide application of skinny streets to change the nationwide problem of automobile-dominated communities. A new mindset among street designers would improve most Americans' lives and help cities adapt to and mitigate climate change by allowing for more nonautomotive mobility. In that respect, too many engineers think “narrow lanes aren't the answer to safety issues.”

More than a third of engineers picked answer number three, which at least acknowledges the safety potential of narrow travel lanes. They may be safer, the engineers say, but they “cause too many other problems.” I would flip that around and look at the problems caused by wide travel lanes on streets in cities and towns. Wide lanes restrict space for any other activity besides automotive travel within the right of way. Generous sidewalks? Protected bike lanes? Better landscaping? Forget about it, in most cases, with overwide travel lanes. Moreover, wide lanes encourage higher speeds, which make the social functions of streets difficult. Few will walk, let alone linger and socialize, on a street where cars are moving at a deadly speed. The sense of danger is palpable; the noise unpleasant. No one will sit at cafe tables a few feet away from traffic moving faster than 40 miles per hour. Wide lanes discourage active living, which is why Johns Hopkins did the study. Wide lanes and fast traffic reduce steps, creating health impacts. Routinely designing wide lanes reduces the function of streets, which have historically

served as the heart of communities, to moving automobiles. The third answer could have been reworded given the Johns Hopkins research results: “We know that wide travel lanes *do not* improve safety, *and* they cause too many other problems.”

In [Confessions of a Recovering Engineer](#), Charles Marohn wrote that the civil engineering profession values higher speeds on thoroughfares. Recognizing the problems of narrower lanes, but not of wider lanes, is consistent with that value. In other words, the issue is not a rational analysis of safety, but of a desire to design streets so cars can go fast—even through neighborhoods and downtowns.

To be sure, narrow lanes raise issues—such as the risk to truck and bus mirrors. City buses are only 8.5 feet wide, but with side mirrors they are 10.5 feet wide. Despite that, the [damage reported](#) to truck and bus mirrors is less than one would imagine, according to a study conducted by the Florida DOT of 9- and 10-foot lanes statewide over five years. It turns out that bus and truck drivers proceed carefully with narrow lanes. That care saves lives, not just mirrors. Yearly mirror damage in the Miami-Dade County system on narrow lane thoroughfares was reported at \$35,000.

There are other valid reasons to support wider lanes in particular circumstances—on more heavily traveled streets that serve as bus routes, for example. Higher speed roads through rural or natural areas often benefit from wider lanes.

Although the Johns Hopkins study affirmed narrow travel lanes' safety, the researchers generally promote context-sensitive design. They conducted extensive interviews with state departments of transportation, and were most impressed with the [Context Classification System](#) being implemented in Florida, created by new urbanist traffic engineers.

This Florida system allows thoroughfares to be designed according to the rural-to-urban Transect, which justifies different designs for downtowns and walkable

neighborhoods as opposed to rural highways. “Perhaps the most important takeaway from our interview with FDOT was their innovative context classification system that helps traffic engineers to differentiate between an arterial (or other road classes) in a low-speed (such as downtown) versus high-speed context,” the Johns Hopkins researchers explained.

In places planned to be walkable, narrow (10-foot) travel lanes are now the default standard in Florida. Wider lanes must be justified for a specific reason. That's a big departure from conventional practice, which typically uses 12-foot lanes for streets in cities, towns, and suburbs. Twelve-foot lanes are also used on Interstates and facilitate higher speeds. State engineers in Florida are reportedly comfortable with the new system, because it provides a rational way to differentiate context and justify narrow lanes under specific circumstances.

The ASCE survey shows the challenges to reforming street design to accommodate walking, cycling, and mixed-use neighborhoods. Nevertheless, there are silver linings. Sixty-two percent of engineers recognize the potential safety benefits of narrow lanes, including 28 percent that clearly want more of them. That's progress, but we need more. Providing engineers with a better way to design streets according to context may be the key to allowing more of them to feel comfortable with narrow lanes.



[NATIONAL](#)

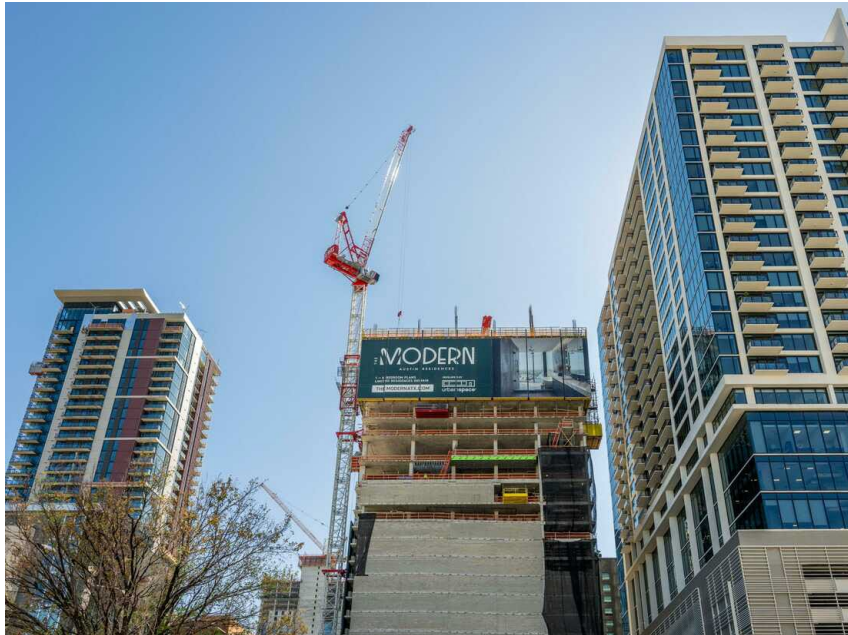
From Austin to Anchorage, U.S. cities opt to ditch their off-street parking minimums

JANUARY 2, 2024 5:01 AM ET

HEARD ON [ALL THINGS CONSIDERED](#)



Laurel Wamsley



Austin, Texas, is the country's largest city to toss out its requirements for off-street car parking. The city hopes removing the mandates will encourage other modes of transportation and help housing affordability.

Brandon Bell/Getty Images

The city council in Austin, Texas recently proposed something that could seem like political Kryptonite: getting rid of parking minimums.

Those are the rules that dictate how much off-street parking developers must provide — as in, a certain number of spaces for every apartment and business.

Around the country, cities are throwing out their own [parking requirements](#) — hoping to end up with less parking, more affordable housing, better transit, and walkable neighborhoods. Some Austinites were against tossing the rules.

"Austin has developed as a low density city without adequate mass transportation system," said resident Malcolm Yeatts. "Austin citizens cannot give up their cars. Eliminating adequate parking for residents will only increase the flight of the middle class and businesses to the suburbs."

But much more numerous were voices in support of eliminating the minimums and the impact they've had on housing costs, congestion, and walkability.

"I think our country has used its land wastefully, like a drunk lottery winner that's squandered their newfound wealth," said resident Tai Hovanky. "We literally paved paradise and put up a parking lot."

The amendment sailed through the council — making Austin the biggest city in the country to eliminate its parking mandates citywide.

Dozens of cities have ditched parking minimums

But it's not just Austin. More than 50 other cities and towns have thrown out their minimums, from [Anchorage, Alaska](#), and [San Jose, Calif.](#), to [Gainesville, Fla.](#)

"They're all just dead weight," says Tony Jordan, the president of the [Parking Reform Network](#), of parking minimums. One issue is just how arbitrary they can be.

Take bowling alleys. Jordan says the number of required parking spots per bowling lane could vary anywhere from two to five, in cities right next to each other.

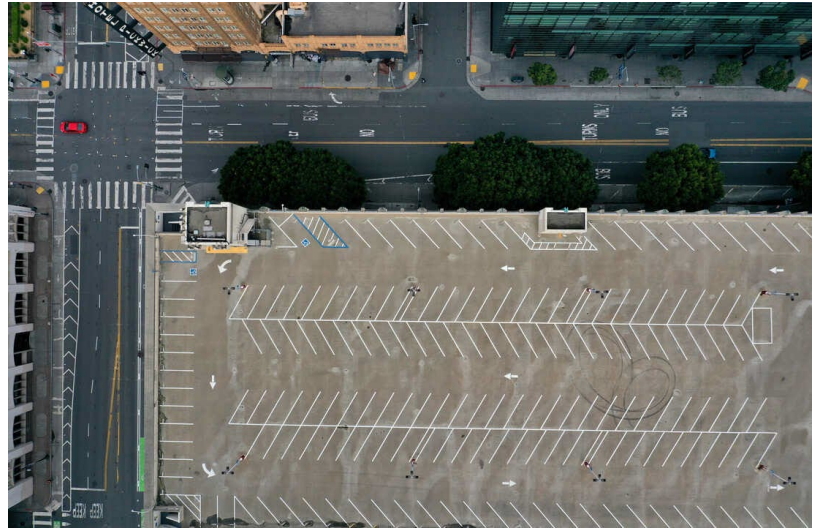
"What's the difference between a bowler in city A and city B? Nothing. It's just these codes were put in ... very arbitrarily back 30 or 40 years ago and they're very hard to change because anytime the city wants to change them, there's a whole big hoopla," he says.

San Francisco is one of many U.S. cities that has thrown out its parking minimums in recent years.

Justin Sullivan/Getty Images

Random as these rules can be, they have major consequences: Parking creates sprawl and makes neighborhoods less walkable. Asphalt traps heat and creates runoff. And parking minimums can add *major* costs to building new housing: a single space in a parking structure can cost \$50,000 or more.

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[One 2017 study](#) found that including garage parking increased the rent of a housing unit by about 17 percent.

The real problem, says Jordan, is what *doesn't* get built: "The housing that could have gone in that space or the housing that wasn't built because the developer couldn't put enough parking. ... So we just lose housing in exchange for having convenient places to store cars."

A move to let the market decide

Austin City Council member Zo Qadri was the lead sponsor on the resolution to remove parking mandates there. He emphasizes that getting rid of parking mandates isn't the same thing as getting rid of parking: "It simply lets the market and individual property owners decide what levels of parking are appropriate or needed."

Austin removed parking requirements for its downtown area a decade ago, "and the market has still provided plenty of parking in the vast majority of the projects since then," says Qadri.

A new survey from Pew Charitable Trusts [found that 62% of Americans](#) support property owners and builders to make decisions about the number of off-street parking spaces, instead of local governments.

Angela Greco, a 36-year-old musician and copywriter in Austin, is one of them. She drives, but prefers to walk or take transit. She's not worried that doing away with the old rules will make it too hard to find a place to park.

"I've lived in like cities where it's way more difficult, like New York and L.A.," Greco says. "Parking just isn't that difficult in Austin to me to begin with, even in really dense areas."



Many cities hope that ditching their parking requirements will make their neighborhoods more amenable to biking and walking. People are seen biking and walking along Park Avenue near Grand Central Station during the Summer Streets initiative in New York City in August 2022.

Ed Jones/AFP via Getty Images

She says the question of whether the city invests in transit and walkability, or doubles down on cars, is decisive in whether she'll live in Austin long-term.

"Like if it doesn't seem like the public transit's going to get better, and if it seems like [the highway expansion](#) is going to happen, then

I'm probably going to start looking for where else I can live. ... It's a major factor in my life and my happiness. Like sometimes I'm driving on the road and I'll be in traffic or something or even just on the highway, and it's such an ugly landscape," Greco says. "And then I'll think: this isn't really how I want to spend my adult life."

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Too much parking can hinder effective transit

What about the idea that cities without good transit can't cut back on parking?

Jonathan Levine, a professor of urban and regional planning at the University of Michigan who studies transportation policy reform, says cities' parking minimums can make good transit nearly impossible to develop.

"An area that has a lot of parking is transit-hostile territory," he says.

He explains why: When people take transit, they complete their journey by walking to their destination. A sea of parking at the destination makes that walk longer, and it makes the physical environment less appealing to those on foot.

"Who wants to walk by a bunch of parking lots to get to your destination?" Levine notes.

And having tons of parking encourages driving. "If you have parking everywhere that you're going, that parking essentially is calling to the drivers, drive here! Park here! ... So if you keep on designing those areas by governmental mandate, you're creating areas that transit can't serve effectively," says Levine.

Many more U.S. cities – including [New York City](#), [Milwaukee](#), and [Dallas](#) — are exploring getting rid of their parking minimums too. Duluth, Minn., lifted its parking mandates [in December](#).

Levine says getting rid of these rules is good news for cities.

"It's a huge drag on housing affordability. And it's a huge impediment for cities fulfilling their destiny, which is enabling human interaction. Because what parking does is it separates land uses, separates people. It makes cities have a much more sprawling physical profile than they otherwise would have."
