



Breaking the Code: Off-Street Parking Reform

LESSONS LEARNED



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COVER PHOTO

When space is reclaimed from parking cars, it can create a lot more space for people and activities.

SOURCE: imrankadir via Shutterstock.

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PREFACE

Space in cities is a valuable resource. There is only so much of it, and many important uses compete for it: housing, retail, services, utilities, public and private transportation, nature, recreation, and more. The way we choose to allocate space among these uses underscores what our cities look like and how it feels to live and move in them. It also impacts the quality of the air we breathe, how safe it is to move around without a vehicle, and how well our cities respond and adapt to crises from climate change to pandemics.

It is surprising to many that, in many cities, one-third or more of the land is allocated to storing parked vehicles. This leads to important questions: could the land be used more productively for hospitals, schools, and affordable housing? What uses should we prioritize? What are the impacts of these priorities? If we push back on the status quo of dedicating so much space to parking, can our cities become more livable, climate-friendly, and equitable?

Parking reform is gaining momentum around the world as a key lever to reallocate valuable space, reduce demand for driving, and unlock myriad related benefits including better air quality, more equitable access to destinations, less noise, fewer greenhouse gas emissions, and streets that prioritize people. Bringing the supply of parking —[especially off-street parking](#)— closer to demand is a linchpin to [achieving](#) more compact cities that are needed to limit warming to 1.5 degrees Celsius and avoid catastrophic climate events. In particular, cities (and higher level jurisdictions like national governments) are realizing that parking mandates (also known as parking minimums) are costly. Removing these mandates is a concerted first step towards the more efficient, productive use of valuable urban space. Doing so even tends to garner support from developers, whose costs can be reduced when requirements to provide a minimum amount of parking spaces are removed.

This report shines a light on off-street parking, a costly and often overlooked area of urban planning that seriously impacts cities [\[Section 2\]](#). It documents the stories of six cities and one country in their journey to reform off-street parking, with particular emphasis on removing parking minimums and adopting complementary reforms that reduce dependence on driving [\[Section 3\]](#). Finally, the report identifies and explores shared lessons across the case studies [\[Section 4\]](#).

Case Study Shared Lessons

- Remove (or reduce) parking minimums
 - Leverage political will at the right level of government
 - Communicate plans for reform using messaging that resonates with people
 - Collect and reference data to strengthen the “why” and “how”
 - Package parking reform alongside complementary policies
 - Link parking reform to specific, achievable outcomes
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SOURCE:
Shutterstock

1. INTRODUCTION

There are two types of parking spaces provided in cities: **on-street** and **off-street**. Off-street parking refers to all parking not located on public streets, such as parking garages and surface lots. Off-street parking spaces may be priced at market rates, subsidized rates, or may be free-of-charge.

Many city streets around the world are built for the convenient movement and parking of motor vehicles. Urban policies prioritize vehicles that spend 95% of the day parked, inefficiently using precious urban space.^{1,2,3} Public and private subsidies hide the real financial and social costs of parking, and, since the price of parking typically does not reflect its true cost, it is not only more convenient but relatively inexpensive for people to travel from one destination to the next in a car. This further entrenches the idea that cars are the preferred mode of travel and must be supported by governments.

Many cities have regulations which require new or modified developments to include a minimum number of off-street parking spaces. The number of required parking spaces is often based on the square area of residential, office, or commercial space (for example, one parking space per 200m²), but in some cases, a set number of parking spaces is required per “item”, such as per seat at a theater or per bed at a hospital. This means that parking minimums are not context-sensitive. Furthermore, off-street parking occupies space within buildings (garages) and at the street level (surface lots) which prevents other uses of that space. Requiring a minimum amount of parking spaces inflates development costs, which can result in less built space for housing, retail, and other non-parking uses.

While city residents may not even know parking minimums exist, these requirements directly contribute to the car-oriented, sprawling urban forms seen globally.⁴ Requiring ample off-street parking for private motor vehicles encourages vehicle ownership and use, creates sprawl, disincentivizes sustainable mobility, and threatens the health of people and the environment. Perversely, the negative impacts of parking minimums, such as congestion, often lead to calls for even more parking, generating a vicious circle that leads to greater dependency on cars, and higher costs.⁵



Source: ITDP 2014, adapted from Shoup 2005.

As cities struggle with issues such as congestion, pollution, and a lack of affordable housing, many are reevaluating their parking regulations to address these challenges.

1 Litman, T. (2021). [Parking Management: Comprehensive Implementation Guide](#).
2 ITDP México. (2020, November). [Presentación: Más ciudad, menos cajones - Evaluación 2020](#).
3 ITDP Brazil. (2019). [Políticas de estacionamento em edificações na cidade de São Paulo: Análise dos efeitos da legislação no desenvolvimento urbano](#).
4 Strong Towns. (2020, November 25). [Parking Minimums: From 101 to Taking Action](#).
5 ITDP México. (2020). [Más Ciudad, Menos Cajones: Evaluación de impacto del cambio a los requerimientos de estacionamiento en la Ciudad de México y recomendaciones de política pública](#).

1.1 HOW TO USE THIS REPORT TO CHAMPION BETTER PARKING MANAGEMENT

This report pulls together lessons learned from a review of literature and seven case studies around the world (see table below), to help cities implement off-street parking reforms that are practical and effective. This publication is intended for urban planners and decision-makers, as well as advocacy-oriented civil society, looking to develop or reform off-street parking regulations.

Case Study	Eliminated minimums	Adopted maximums
Atlanta, GA United States	✓ (select areas)	✓
Beijing, China	✓ (select areas)	✓
Mexico City, Mexico	✓	✓
Minneapolis, MN United States	✓	✓
New Zealand	✓	
San Pedro Garza García Mexico	✓	✓
São Paulo Brazil	✓	✓ (select areas)

For guidance on on-street parking pricing and management, see [On-Street Parking Pricing Guide](#)

The report highlights common challenges, opportunities, and lessons learned regarding off-street parking policies and management, with particular emphasis on removing off-street parking minimums and adopting complementary reforms aimed at reducing dependence on driving. (See Appendix for more on case study selection and experts interviewed). The report does not provide detailed guidance for implementing parking reforms, nor does it address on-street parking management, except for its relationship with off-street parking.



Pop-up tactical urbanism in São Paulo, Brazil, shows how streets can be more inclusive and safer for pedestrians.
SOURCE: Fábio Nazareth

2. HOW DOES PARKING IMPACT CITIES?

2.1 PARKING MINIMUMS CREATE CITIES FOR CARS

The challenge of urban parking is that cities must make decisions about how to use limited space. All else being equal, cities that build more parking store more cars, and have more driving and traffic. When more space is allocated to parking cars, there is less space for jobs, services, housing, and transport for people. When lots of space is used for cars, the remaining space becomes more expensive for everything else. **“Free parking” is not free: everyone in cities pays for parking through their time, higher costs of goods, poor air quality, and unsafe streets.**

Which City Would You Want to Live In?

One with high parking minimums where most space is used for driving and parking



SOURCE: Midjourney

- ✗ Parking represents the largest use of built floor area
- ✗ Traffic crashes are the leading cause of death for 5-29 year olds
- ✗ Car infrastructure is subsidized by individuals because it is bundled into the price of goods, services, and rent

One with demand-responsive parking where most space is used for people



- ✓ More public space for walking and cycling leads to healthier communities and less local air pollution
- ✓ Cities where people 50+ transit trips/year see about 50% fewer traffic fatalities than cities with low transit ridership
- ✓ Drivers pay the true cost of parking. Revenues are used to improve public spaces and transport, which benefits all residents
- ✓ Local business revenues increase as cyclists and pedestrians spend more on average than drivers

SOURCES: Litman, T. (2018) Safer Than You Think! Revising the Transit Safety Narrative., ITDP Mexico. (2014). Less Parking, More City: A Case Study in Mexico City., World Population Review. (2021). Median Income By Country 2021., United States Census Bureau. (2021). Income and Poverty in the United States: 2020., What Is The Number One Killer Of People Ages 5 to 29?

With more parking, driveways, and street space dedicated to vehicles, cities sprawl to accommodate all of this car infrastructure. This means that destinations are further apart and it is harder to choose anything but a car to complete the majority of trips. Constant curb cuts mean the environment for walking and cycling is frequently interrupted, uncomfortable, and increasingly dangerous. All of this pushes people to drive more, exacerbating this cycle.

Many cities actively require building parking through parking minimums attached to new or redeveloped construction projects. Importantly, parking minimums are not based on standardized methodologies.⁶ In other words, two identical buildings of the same type and size could have vastly different parking minimums from city to city.⁷ For example, a 400 seat church built in Memphis, Tennessee, USA must

have approximately 40 parking spaces, while the same sized church in Nashville, Tennessee, USA, a nearby city with a similar population, density, and transit coverage, would need to have approximately 100 spaces.⁸ These minimums frequently result in more parking than the market demands, and have been linked to other negative outcomes including:

Inefficient use of space

Off-street parking facilities take up large amounts of space and are often not highly occupied, spending the majority of the year largely empty.⁹ Furthermore, the average area of a car parking space is higher than average livable space in many cities and countries around the world. In the United States, every car has almost 1000 sq. ft for parking spots and driveways compared to about 800 sq. ft of housing per person.¹⁰ Research from ITDP Brazil shows that 42% of the built area in developments built between 2006-2015 in Rio de Janeiro was dedicated to vehicles, which could address more than half of the city's housing deficit with 60 square-meter housing units.¹¹ Continuing to dedicate all of this to car parking is an inefficient use of space for cities (where space is at a premium), and an unproductive use of space in terms of potential for tax revenue.



Parking space takes a large amount of space which could have other uses such as housing or green areas for the cities.
SOURCE: Evan Long via Flickr

Contribution to housing and service shortages

Parking minimums can lead to a large percentage (or even the majority) of a building being allocated to space for parking. In Mexico City, prior to adopting parking reforms, 42% of new construction was parking space--the fastest growing land use in the 21st century.¹² Not only do parking minimums often result in an oversupply of off-street parking, but they reduce developers' ability--especially on small and non-uniform plots--to provide housing and other critical services due to the high cost of parking construction. They also drive up the price of housing, goods, and services by increasing development costs, bundling parking costs into rents, goods and services, regardless of whether tenants will use the parking spaces. Parking minimums can make it difficult to adapt or repurpose existing buildings for different uses, because it would be too expensive to comply with different minimums attached to the new use type. Many governments are reforming off-street parking minimums specifically because of their impact on housing affordability, including case studies in this report such as Atlanta and New Zealand.

⁸ [Graphing Parking. \(2013\). Parking for Places of Worship.](#)
⁹ [Gebhart, K. \(2011\). Wasteful Parking Supply in East Harlem: An Analysis of Parking Occupancy and Mode Usage at East River Plaza in New York City.](#)
¹⁰ [Shoup, D. \(2019\). Parking Reform Will Save the City.](#)
¹¹ [ITDP Brazil. \(2019\). Rio de Janeiro Joins Other Latin American City Leaders in Parking Reform.](#)
¹² [ITDP Mexico. \(2020\). More City, Less Parking: Off-street Parking Regulation -- Case Studies Rio de Janeiro and Mexico City. \[Video\].](#)

Threat to urban fabric

Parking minimums can lead to the demolition of historic structures, either on-site or adjacent to a building site, to comply with parking regulations. Adaptive reuse of historic buildings can be extremely difficult when parking minimums must be met. This degrades the urban fabric and unique aesthetic of historic buildings and city centers in favor of new development. Parking minimums can also result in more surface lots and garages that are largely devoid of people and activity, which make them unpleasant, or even dangerous spaces to walk through or near.

Costs to build and maintain facilities

Requiring off-street parking carries the cost of land, building the surface lot or garage, and maintaining those facilities over time. Off-street parking is notoriously expensive to build. In Mexico City, the average cost of constructing an off-street parking space is \$175,500 Mexican Pesos (USD \$8,600). In the United States, the average cost of building an above-ground multi-level parking garage is \$9.75 million, which is \$19,500-\$42,000 per space depending on materials.¹³

2.2 WHAT PREVENTS OFF-STREET PARKING REFORM?

As the case studies in this report show, there can be vocal opposition to parking reform. Much of this opposition stems from fear of a change to the status quo, wherein drivers enjoy ample, inexpensive parking whenever they need it. People generally do not respond well to the perception that something is being taken away from them, and the language used by transport agencies and planners like “eliminating parking minimums” or “pricing parking” can trigger these perceptions. Similarly, residents may worry that developers will not build enough off-street spaces if parking minimums are removed, and they will have to compete for limited, less convenient on-street parking.¹⁴ Other barriers to parking reform include:

Strong car lobby

In most places, drivers represent a strong and vocal constituency - they are typically higher income, employed, involved in the political sphere, and they benefit from the status quo. Decision-makers looking to undertake parking reform will likely receive backlash from this well-resourced group, which may weaken political will.

Ineffective marketing

Many people do not understand what parking minimums or maximums are and what they do--nor should they. These are technical policies that can be difficult for residents to translate into their daily lives. Communication and messaging around parking reform and its role in achieving widely-accepted goals like better road safety or improved air quality, however, should resonate with people. For example, Edmonton, Canada, uses the phrase “Open Option Parking” to refer to its off-street parking reforms. This phrasing downplayed the removal of parking minimums (though the city did do this), and focused on how developers and businesses can now provide the amount of parking they think is necessary.¹⁵ This type of strategic messaging has not been used in most places, often resulting in residents pushing back against reforms out of fear that parking space will disappear.

Lengthy timelines

Parking reform can take a long time, particularly if multiple policies are planned and implemented at different scales. Even after new policies are in place, seeing the results can take even longer given that new developments can take years to construct. This raises challenges related to long-term political support across municipal administrations.

¹³ [2022 Cost to Build a Parking Garage.](#)

¹⁴ [Reinventing Parking. \(2019, August 28\). How to Not Worry About Abolishing Parking Minimums.](#)

¹⁵ [Parking Rules for New Homes and Businesses.](#)

3. THE BASICS OF OFF-STREET PARKING REFORM

3.1 ON- AND OFF-STREET PARKING NEED TO BE MANAGED TOGETHER

Why should cities address on- and off-street parking, both separately and together? More parking leads to more driving, and the more subsidized (and, thus, cheaper for drivers) parking is, the more it induces driving. The supply and use of on-street parking affects off-street parking use and management, and vice versa: Poorly managed on-street parking can directly lead to calls to provide additional off-street parking spaces, even when existing off-street parking spaces are underutilized. If off-street parking is well-managed, but on-street parking is free and abundant, the well-managed off-street parking has little to no impact as drivers will continue to circle and clog up streets searching for on-street parking.

In some cases, such as Mexico City and San Francisco, cities first improved the management of on-street parking and then moved to off-street parking. In others, such as New Zealand and Minneapolis, governments prioritized off-street parking reforms first. Both approaches have advantages and challenges, which we explore in the case studies in Section 3. One reason many cities have not aligned their on- and off-street parking reforms is that on- and off-street parking are often managed by different entities. On-street parking is often overseen by transport or public works departments, while off-street parking is more often managed by urban planning departments and/or private companies. This means that managing on- and off-street parking together tends to require inter-departmental coordination.

While this report does not focus on on-street parking, there are several comprehensive resources that do, namely [ITDP's On-Street Parking Pricing Guide](#) and [On-Street Parking Management: An International Toolkit](#). These provide guidance on management, enforcement, and evaluation of on-street parking.

To learn more about strategies to reduce demand for driving and prioritize sustainable transportation in cities, see ITDP's [Taming Traffic](#) report.

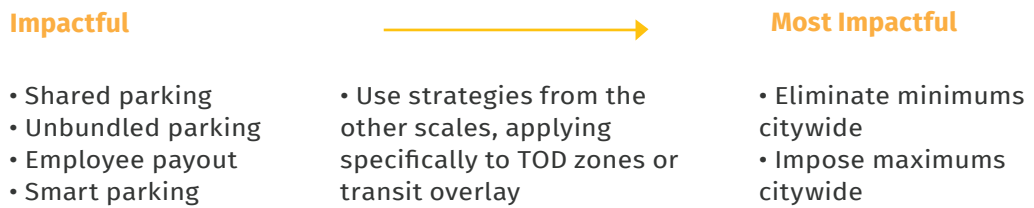


Better regulated parking allows more street space for pedestrians.
SOURCE: ITDP China

3.2 TOOLS FOR REFORMING OFF-STREET PARKING

There are many different tools that can improve off-street parking, and parking management more broadly. These vary by scale (from individual building to citywide regulations), type (policy, management tool, or communications effort), and impact. **Cities looking to pursue off-street parking reform should start by removing parking minimums.** Other tools, like parking maximums, smart parking programs, unbundling, etc., described in this section, further strengthen and improve off-street parking management.

Off-street Parking Reform: Start small, then scale up



Eliminate parking minimums

One of the most common off-street parking reform strategies is to reduce or eliminate parking minimums (also referred to as “minimum parking requirements” or “parking mandates”). This allows developers to build parking spaces for new and redeveloped buildings according to market demand. Following the removal of minimum requirements, cities have seen parking construction reduced by 20-40%.^{16,17} However, the impact of eliminating minimums can vary significantly. **This policy will be more impactful in cities where previous minimums were excessive and rigid, and less impactful if previous minimums were low or more flexible. Impacts will be larger in cities or zones with high rates of new construction and smaller in cities (or zones) that are growing more slowly.**

Strategy	Scale	Type	Potential Impact Level
Eliminate parking minimums	Zones, Citywide	Policy	● ● ●
Lower parking minimums	Zones, Citywide	Policy	● ●

Parking minimums can be eliminated in certain areas of the city (e.g. around transit stations, in central business districts), for certain development sizes or use types (e.g. residential buildings with less than 50 housing units, alcohol-serving establishments, shops less than a given number of square meters), or for the whole city.¹⁸ Of course, the more land uses or zones covered by a policy, the greater its impacts. **In some cases, cities have lowered their parking minimums, as opposed to fully eliminating them, which can be attractive where political will is limited.** However, eliminating minimums will have a larger impact than lowering them because the former enables zero-parking developments to be built, while the latter maintains some (though small) parking requirements.

¹⁶ Guo, Z. & Ren, S. (2012). *From Minimum to Maximum: Impact of the London Parking Reform on Residential Parking Supply from 2004 to 2010?* *Urban Studies*.
¹⁷ Rolheiser, L. (2021). *When it comes to parking minimums, less is more.*
¹⁸ Strong Towns. (2021). *A New Way to Look at Minimum Parking Requirements.*

Set parking maximums

Parking maximums enable market-driven parking construction up to a set point. Adding maximums or caps for parking is a key policy change. Like removing parking minimums, it can be implemented at multiple scales: per land use, per district or neighborhood, in transit catchment areas, or citywide. In London and Seattle, the removal of minimums and introduction of parking maximums resulted in approximately 40% less parking in new construction,¹⁹ and in Mexico City replacing minimums with maximums reduced the construction of parking spaces by 21% within a few years. However, the impact of adopting parking maximums and caps can vary significantly--while eliminating parking minimums has broad support among parking policy experts, there is less consensus around setting maximums. Success depends on the existing level of unconstrained demand and how low maximums are set, as well as whether public parking is already plentiful. Parking maximums set too high will be largely ineffective.

Strategy	Scale	Type	Potential Impact Level
Set maximums or supply caps	Zones, Citywide	Policy	● ● ●
Set maximums with fee for provision beyond the cap	Zones, Citywide	Policy	● ●

Limiting “frontage parking”

A zoning lot’s “frontage” is the area between the front (or side) of a building and the right of way. Setting limits on frontage parking makes it difficult to locate large surface parking lots adjacent to the street. Similar efforts, like requiring the ground-level of multi-level parking garages to be activated, improves the pedestrian environment by enabling safe walking, business development, and community interaction. This design makes streets more engaging and stimulating and, by helping people inside buildings pay attention to the street, it also makes the neighborhood safer.²⁰

Strategy	Scale	Type	Potential Impact Level
Restrict frontage and ground-level garage parking	Zones, Citywide	Policy	● ●

Unbundling parking

Separates the cost of living space from the cost of parking so that people can see and understand how much of their rent is actually paying for parking.²¹ It can be valuable to frame parking space as leasable floor space rather than infrastructure.²²

Strategy	Scale	Type	Potential Impact Level
Unbundle parking (i.e. from cost of housing)	Buildings	Management	● ●

19 Guo & Ren (2013). *From Minimum to Maximum: Impact of the London Parking Reform on Residential Parking Supply from 2004 to 2010?*
 20 ITDP. (2020). *Pedestrians First - Neighborhood Tool.*
 21 ITDP. (2015). *Parking Basics.*
 22 Barter, P. (2011). *Parking Policy in Asian Cities.*

Coordination between on- and off-street parking,

Including inter-departmental coordination, branding and payment.^{23 24}

Strategy	Scale	Type	Potential Impact Level
Coordinate on- and off-street parking management and fees	Citywide	Management	●●
Set maximums with fee for provision beyond the cap	Citywide	Management	●●

Smart parking management programs

For publicly-owned off-street parking facilities provide real-time information to cities and drivers on parking availability, costs, and other operational data points.²⁵ These technologies can also help to enhance enforcement by making it more efficient and unbiased.²⁶

Strategy	Scale	Type	Potential Impact Level
Strengthen data collection and enforcement with smart systems	Buildings, Zones, Citywide	Management	●●
Make the cost of parking more obvious	Buildings, Zones,	Communications	●

Shared parking

Can help improve the efficiency of off-street parking spaces by enabling parking owners to “rent out” spaces (either directly or using a mobile app or platform) during off-peak times. For example, parking may be shared between businesses with different hours, such as a cafe and a bar.²⁷ In recent years, mobile applications have enabled parking owners to list and rent out available spaces to drivers for short- or long-term stays in real time.

Strategy	Scale	Type	Potential Impact Level
Shared parking	Buildings, Zones,	Policy	●

Off-street parking design standards

Set design requirements so that parking is well integrated into buildings. Surface lots and garages should not be permitted to create “dead zones” or block pedestrian areas or walkways.²⁸ This can also be a mechanism to reduce provision of off-street parking without implementing a full reform.stays in real time.

Strategy	Scale	Type	Potential Impact Level
Design standards for off-street parking	Citywide	Policy	●

²³ ITDP. (2010). U.S. Parking Policies: An Overview of Management Strategies.

²⁴ ITDP. (2020). Más Ciudad, Menos Cajones.

²⁵ ITDP Brazil. (2018). Proibido estacionar - Área De Pedestres E Ciclistas: Políticas de estacionamento em edificações na cidade de São Paulo: Análise dos efeitos da legislação no desenvolvimento urbano.

²⁶ ITDP. (2014). Parking Guidebook for Chinese Cities.

²⁷ ITDP. (2014). Shared Parking.

²⁸ Inter-American Development Bank. (2013). Parking And Travel Demand Management Policies In Latin America, Prepared by Despacio and ITDP.

Taxing off-street parking,

Including workplace levies, earmarking/ring fencing, in-lieu fees, and smart growth taxes.^{29 30} Commercial parking taxes can also be effective, ensuring that surface lot and garage owners are required to pay taxes, incentivizing them to charge a market price for parking.

Strategy	Scale	Type	Potential Impact Level
Adopt policies that disincentivize provision of free or under-priced off-street parking	Buildings	Policy	●

Incentives for parking/driving alternatives,

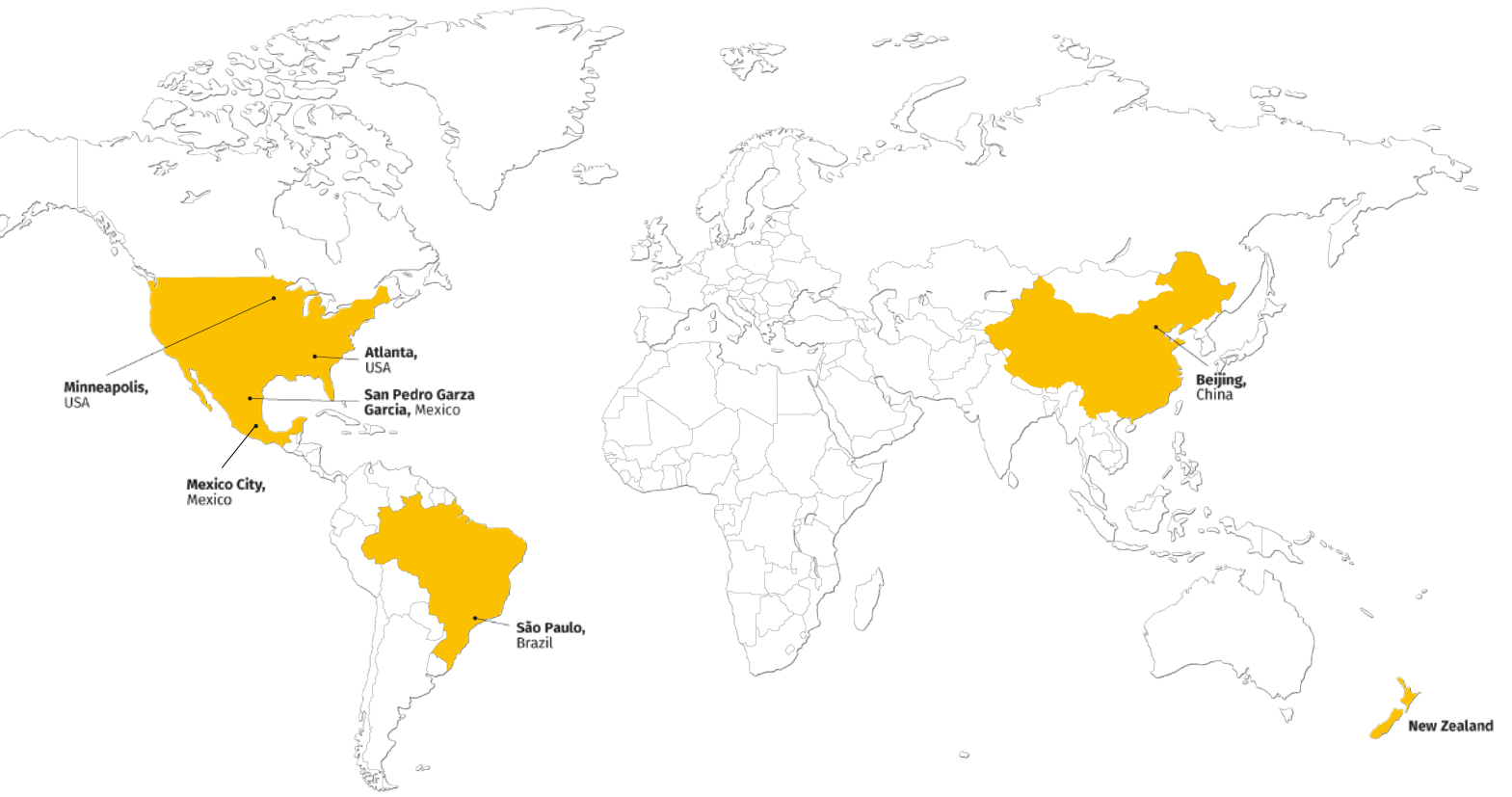
Including payouts to employees who forgo a parking space at their place of employment and instead travel to work by walking, cycling, or public transport. Similar “commuter benefits” programs provide the cash value of parking to the employee to use for public transport or cycling to work. Tax credits or discounts for not owning a vehicle can reduce demand for parking. California introduced a bill in 2022 that would provide a \$1,000 tax credit to state residents who do not own a car; however, it was vetoed by the governor.

Strategy	Scale	Type	Potential Impact Level
Financial incentives for commuters, such as parking cash out programs	Buildings (employers)	Management Communications	●
Financial incentives for not owning a vehicle, purchasing a bicycle/e-bike	Citywide	Policy	●

Importantly, these tools are much more effective when paired with strategies to improve on-street parking management, public transport coverage, and walking and cycling conditions including:

- Defining parking space (and no-parking zones) to **protect sidewalks, plazas, cycle lanes, and other public spaces from encroachment.**
- Regulating on-street parking using **time limits and/or pricing, and enforcing these.**
- Defining and enforcing space for **essential parking** (pick-up and drop-off, loading and unloading, emergency vehicles, etc.).
- Using revenue from on- and off-street parking management to **fund public transport, walking, and cycling networks.**
- Reducing demand for driving through **congestion pricing and low emission zones.**
- Prioritizing compact, mixed land uses where destinations are easy to access by foot, bicycle, and public transport.

There are a wealth of resources available for guidance on these strategies, including ITDP’s [On-Street Parking Pricing guide](#) and [TOD Standard](#), and the Victoria Transport Policy Institute’s [Parking Management Comprehensive Implementation Guide](#) and [Online TDM Encyclopedia](#), among many others.



4. GLOBAL CASES OF OFF-STREET PARKING REFORM

4.1 SAN PEDRO GARZA GARCIA, MEXICO

The San Pedro Garza Garcia case demonstrates that off-street parking reform can happen even in smaller municipalities that are highly car dominant and with limited public transport options. Collaboration between the government and civil society organizations was key to the success of the reforms and demonstrated how identifying the needs of local stakeholders can be important for winning both government and public support.



SOURCE: Monica Garza 73
via Shutterstock

Overview

San Pedro Garza Garcia (SPGG) is one of ten municipalities in the greater Monterrey metropolitan area. It is the most urbanized and wealthy of these municipalities. SPGG is a hub for goods, services, and jobs, and thus attracts a high non-resident population that commutes in daily. According to the Municipal Urban Development Plan, by 2014 there were approximately 130,000 residents and 120,000 cars registered in SPGG-- almost as many cars as people.³¹ However, 28% of trips by people in the lowest socioeconomic bracket were made by private car, while approximately 84% of trips by people in the highest socioeconomic were by private car, highlighting the inequitable distribution of vehicle use.³²

In 2020, ITDP Mexico assisted the government of San Pedro Garza Garcia in a comprehensive evaluation of existing off-street parking policies and management, including the impact of off-street parking minimums on land use patterns and city goals. At the time, the Zoning and Land Use Regulation set minimum off-street parking requirements by use through a 'parking matrix'. These minimum requirements were found to be high compared to other municipalities in the region and the country.³³ For example, for a 100m² residential unit in a multi-family building, the SPGG regulations required five parking spaces compared to Mexico City's regulation which required two spaces at the time.^{34 35} The combined area of five parking spaces per unit would result in more parking space than

31 [Instituto Municipal De Planeación Urbana San Pedro Garza García. \(2014\). Plan De Desarrollo Urbano Municipal de San Pedro Garza García, N.L. 2030.](#)
32 [Ibid.](#)
33 [ITDP México. \(2021\). Estacionamiento fuera de vía en el municipio de San Pedro Garza García. Diagnostico preliminar: Centro urbano 'Centrito Valle'.](#)
34 [ITDP México. \(2014\). Menos cajones, más ciudad: El estacionamiento en la Ciudad de México.](#)
35 [Gobierno Municipal de San Pedro Garza García. \(2014\). Reglamento de Zonificación y Usos del Suelo de San Pedro Garza García, Nuevo León.](#)

housing space in these complexes. Furthermore, for many uses, especially mixed use and commercial, the number of parking spaces constructed exceeded the already excessively high parking minimums.³⁶ Data on real estate developments built in the Centrito Valle (city center) from 2015 to 2020 shows that 64% of developments built up to five spaces above the minimum and 16% built 20 or more spaces above the minimum.³⁷ Despite providing a gross excess of parking beyond the minimums, many buildings were not fully occupied. This implied a need to more explicitly limit developers from providing excessive parking. However, in this case, simply removing parking minimums would likely have little effect on parking supply.

The 2020 evaluation also found consensus that eliminating minimums would be beneficial, especially if the conditions for public and non-motorized transport improved and were more visible. Interviews with residents suggested that many were strongly attached to their cars and driving, which could generate pushback if they felt actions were being taken to limit their ability to drive.

Based on the evaluation and interviews, SPGG reformed its parking policy by replacing parking minimums with maximums. For most land uses, maximums were set at the same level as the previous minimums. Any provision of parking spaces above the maximums requires developers to contribute to a district-level trust where funds support local public space and infrastructure improvements. The new regulations also set new bicycle parking requirements for certain land uses, as shown in the table below.

Land use	Size	Max Spaces Permitted (Previous minimums)	Bicycle Parking Requirement
Commercial (wholesale)	Every 100m ²	1 space	1 rack/1,000m ² (up to 5,000) 1 rack/2,000m ² (up to 30,000) 1 rack/3,000m ² (over 30,000)
Commercial (retail under 300m ²)	Every 20m ²	1 space	1 rack/1,000m ² (up to 5,000) 1 rack/2,000m ² (up to 30,000) 1 rack/3,000m ² (over 30,000)
Commercial (retail 300m ² –8,500m ²)	Every 22m ²		
Commercial (retail over 8,500m ²)	Every 24m ²		
Multi-family residential	Units up to 100m ²	1.5 spaces	1 rack/4 units
	Units 100 - 250 m ²	2 spaces	
	Units 250 - 400 m ²	3 spaces	
	Units 400+ m ²	4 spaces	
Restaurants + bars	Every 10m ²	1 space	1 rack/1,000m ² (up to 5,000) 1 rack/2,000m ² (up to 30,000) 1 rack/3,000m ² (over 30,000)

Clear communication about the potential benefits of reform to decision-makers within the government enabled the city to pass the updated policy in December 2021 with little pushback.

Process & Timeline

- 2014** The Zoning and Land Use Regulation for SPGG is published, which dictates high minimum requirements for off-street parking.

 - 2014** The Zoning and Land Use Regulation is updated.

 - 2020** SPGG analyzed the impact of parking minimums, among other factors, on land use in the municipality.

 - 2021** A modification to the parking minimums in the 2014 Land Use Regulation is proposed.

 - Dec. 2021** The modification to the Land Use Regulation is approved, which included replacing parking minimums with maximums.

 - 2022** SPGG conducted a review of the regulation in July, and another in December, to analyze how the new parking regulation is impacting the municipality and if it is aligning with goals such as reducing development costs and improving access.
-

Challenges

- **Lack of public transport services and poor infrastructure for walking and cycling**
The current state of public transportation and facilities for walking and cycling is not very advanced. Concerns arose that reducing the number of parking spaces provided without improving conditions and viability of alternative modes would present challenges.³⁸
- **Car culture**
SPGG is a wealthy municipality in which families own multiple cars. Cars play an important role in daily life in the city. The government is working to reduce the dominance of cars, but this will take time. The city aims to reach younger generations to get them interested in walking, cycling, and public transport instead of adopting a car-dominant lifestyle.
- **Technical consensus on the reform**
While there was consensus within the government that reform was needed, technical experts were not aligned on exactly what the reform should include. Technical experts also faced challenges communicating the reforms clearly and effectively.

Results

SPGG's parking reforms were adopted in December 2021, so results were not available to analyze at the time of publication. The SPGG team plans to conduct an analysis in mid-2022 and end of 2022 reviewing how the regulation is working, and whether this aligns with their current goals. For future actions, the city is looking into adding fees for additional parking construction as well as alternative parking arrangements, such as locating park-and-rides outside the city center.

Lessons Learned:

- **Empower technical experts to communicate with politicians**

There was strong internal agreement in SPGG which was helpful for the government to move this reform forward. It was important for technical experts to reach consensus on which parking strategies to move forward, and frame the reforms and supporting data such that proposed changes did not come across as drastic even in a relatively car-oriented city.

- **Identify a clear “why” and “how”, supported by local data and information**

Political will and consensus was an important success factor in the case of San Pedro Garza Garcia, as there was little to no internal resistance to reform. Taking steps to make the goal happen that are well coordinated, communicated, and reasonable for the public was important for avoiding public concerns or backlash.

- **Draw from relevant reform examples**

The SPGG government created its new parking regulations based on the experiences of other cities in Mexico, including Mexico City and Jalisco, as well as examples from around the world. It was helpful to understand, from looking at case studies, how the reform might influence the city and to draw on the most useful strategies, as SPGG used strategies employed in Mexico City.

4.2 BEIJING, CHINA

Beijing has passed many parking policy changes within the last decade, and is pursuing a multi-strategy approach to reform. The city is employing smart parking management systems, shared parking across uses, and flexible parking pricing. Parking maximums cover the majority of the city (Zones 1-3) as of 2020, and are expected to have an important impact. This multi-strategy approach has allowed the city to move faster on smaller initiatives, while also working on larger policy changes to “peak” Beijing’s carbon dioxide emissions before 2030.



SOURCE: Matyas Rehak
via Shutterstock

Overview

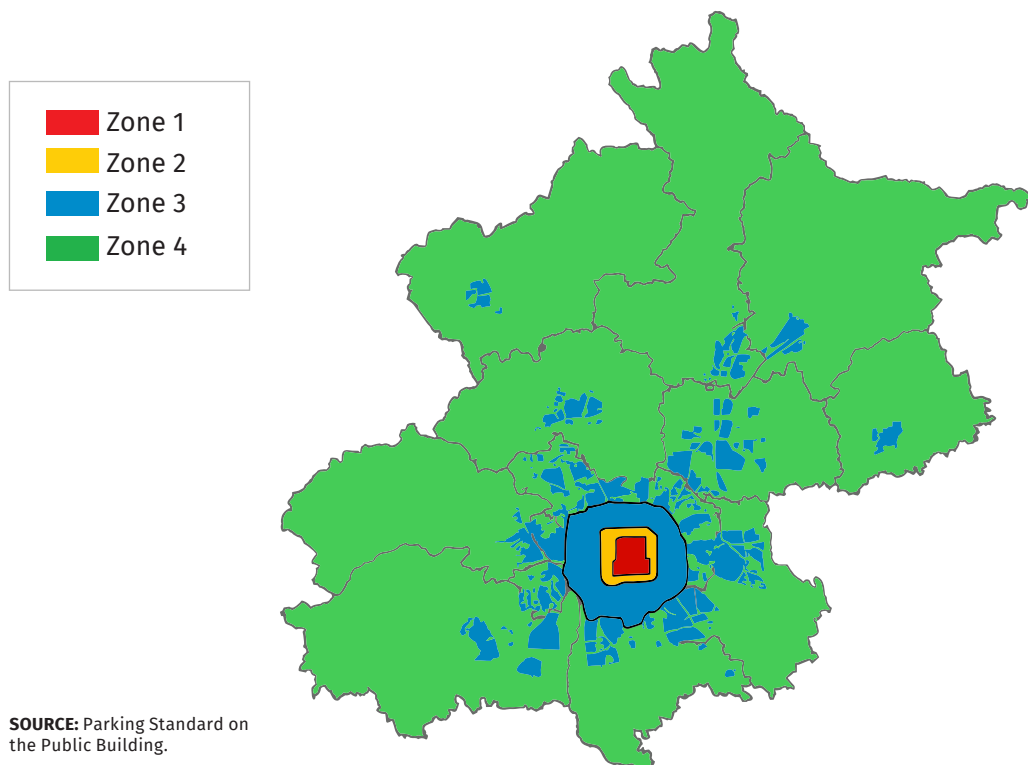
Vehicle ownership and the total number of cars in Beijing has significantly increased since the turn of the century. This sharp increase in vehicles, along with a lack of management and enforcement of parking, began to pose issues.³⁹ Illegal parking was rampant, especially in the city center where car ownership rates are highest. Despite a “deficit” of 850,000 parking spaces in Beijing central city (including the Dongcheng District and Xicheng District), there were 630,000 vacant spaces in public parking lots at night. A 2015 study by ITDP China showed that the more parking spaces were provided in the city, the more demand there was for parking.

These studies and many others, alongside growing concern with parking demand, encouraged the government of Beijing to improve parking management through strategies such as smart parking management and shared parking. Notably, Beijing has operated a vehicle license plate quota since 2011, where only a certain number of plates (around 100,000) are available per year, to control the number of cars in the city center. In 2021, Beijing limited license plates to one per person.⁴⁰ In the ten years since it was first implemented, the quota has been linked to a 14% reduction in vehicles in the city, as well as reductions in car travel and peak period congestion.⁴¹

39 Liu, S. (2021). Beijing Parking Reform. ITDP China.
40 Each Beijinger to Get Only One Car Tag From 2021.
41 The effect of vehicle ownership restrictions on travel behavior: Evidence from the Beijing license plate lottery.

In 2017, the City of Beijing approved its most recent master plan which prioritizes curbing sprawl, minimizing overcrowding downtown, and reducing air pollution, all of which intersect with improved management of parking.⁴² Two years later, in July 2019, the Commission of Transport issued an “Implementation Opinion on Residential Parking Management”, which guided the city’s immediate strategies for residential parking management, including shared parking, parking space replanning, and new construction of residential parking lots.⁴³ This was followed in 2020 with the government-approved “Parking Standard on the Public Building”, which guided the implementation of parking management in public buildings, and similarly included shared parking, parking space replanning, new parking lot construction, and on-street residential parking in Beijing. That year, the Beijing Static Traffic Investment Operation Co. built a parking management mobility as a service (MaaS) platform to assist with real-time monitoring and management, in line with the newly released Standard. This management system is now in use at over 500 parking lots, representing over 100,000 parking spaces and these management technologies are set to expand as the city works to curb parking imbalances.

Most importantly, the Beijing government adopted parking maximums, alongside existing minimums, across four different zones, as shown in the table below. Zone 1, the most central part of the city has parking maximums only and no minimum requirements. Zones 2 and 3 also have maximums, however these zones maintain (moderate) minimum requirements. The minimums have been lowered, in some cases, compared to earlier standards; for example, the requirement for offices was lowered from 0.65 spaces/100m² of floor area to 0.4 spaces in Zone 2 and 0.6 spaces in Zone 3. Zone 4, which is furthest from the city center and much less urban, only features minimum requirements and no maximums. These reforms are expected to have an important impact on parking construction planned through 2030, at which point the government intends to achieve a greater balance between parking supply and demand.



⁴² Bo, T. (2017, September 28). Beijing's New Master Plan Approved. CGTN.

⁴³ The new construction of parking is for select areas in the city where there is little to no parking, and illegal parking on sidewalks and on the road hinders traffic flow and pedestrian mobility. While the long term vision is to cap parking demand and supply of the entire city, Beijing must first resolve these illegal parking challenges through a varied strategy of limiting demand and improving legal public parking supply.

LAND USE		UNIT	Zone 1	Zone 2		Zone 3		Zone 4	
			MAX	MIN	MAX	MIN	MAX	MIN	
Commerce	Hotel	room	0.3	0.3	0.4	0.4	0.6	0.4	
	Catering, entertainment		100m ² floor area	1.5	1.5	1.8	1.7	2.2	2
	Shopping mall	10000m ²	100m ² floor area	0.5	0.5	0.7	0.6	0.8	0.7
		10000m ²	100m ² floor area	0.6	0.6	0.8	0.7	0.9	0.8
	Supermarket, warehouse		100m ² floor area	0.6	0.6	0.9	1.25	1.75	1.3
	General, farmer's or wholesale market		100m ² floor area	-	-	-	1.1	1.5	1.3
Administrative office		100m ² floor area	0.45	0.4	0.60	0.6	0.85	0.65	
Business		100m ² floor area	0.35	0.35	0.5	0.50	0.7	0.65	
Hospital	General or specialized		100m ² floor area	1.2	1.2	-	1.3	-	1.4
	Community medical center		100m ² floor area	0.6	0.6	-	0.7	-	0.8
School	Primary or secondary		100 staff	5	5	6	10	15	15
	Universities, colleges		100 staff	10	10	15	20	25	30
Cultural facility	Cinema, opera house		100 seats	4	4	5	8	10	12
	Museum, library		100 seats	0.4	0.4	0.6	0.6	0.8	0.8
	Conference center		100 seats	0.6	0.6	0.8	0.6	0.9	0.8
	Exhibition hall		100 seats	0.3	0.3	0.5	0.7	0.9	1
Sports facility/ stadium	Outdoor (15000 seats) Indoor (3000 seats)		100 seats	1	1	2	2	3	3
	Outdoor(<15000 seats) Indoor (<3000 seats)		100 seats	4	4	5	8	10	12

SOURCE: Local Standard for Motor Vehicle Parking in Beijing (2020)

Finally in 2021, the State Council published Implementation Opinions on Development of Urban Parking Facilities, clearly defining off-street parking as the preferred parking option in the city. This was intended to shift priority away from informal and illegal parking, as well as parking lots and on-street parking. In other words, if off-street parking is available within a certain service radius, no on-street parking shall be permitted. Given the imbalance in parking availability, this reflects the central goal of the Beijing city government to shift people from using on-street to off-street parking, and to prioritize street space for walking, cycling, and public transportation.

Private Car Ownership in Districts of Beijing

According to the annual report on Beijing's traffic development, each administrative district in Beijing -from the center to the country-side - can be classified into four areas to show the spatial distribution of private car ownership. Car ownership in central Beijing is much higher than in the suburbs.



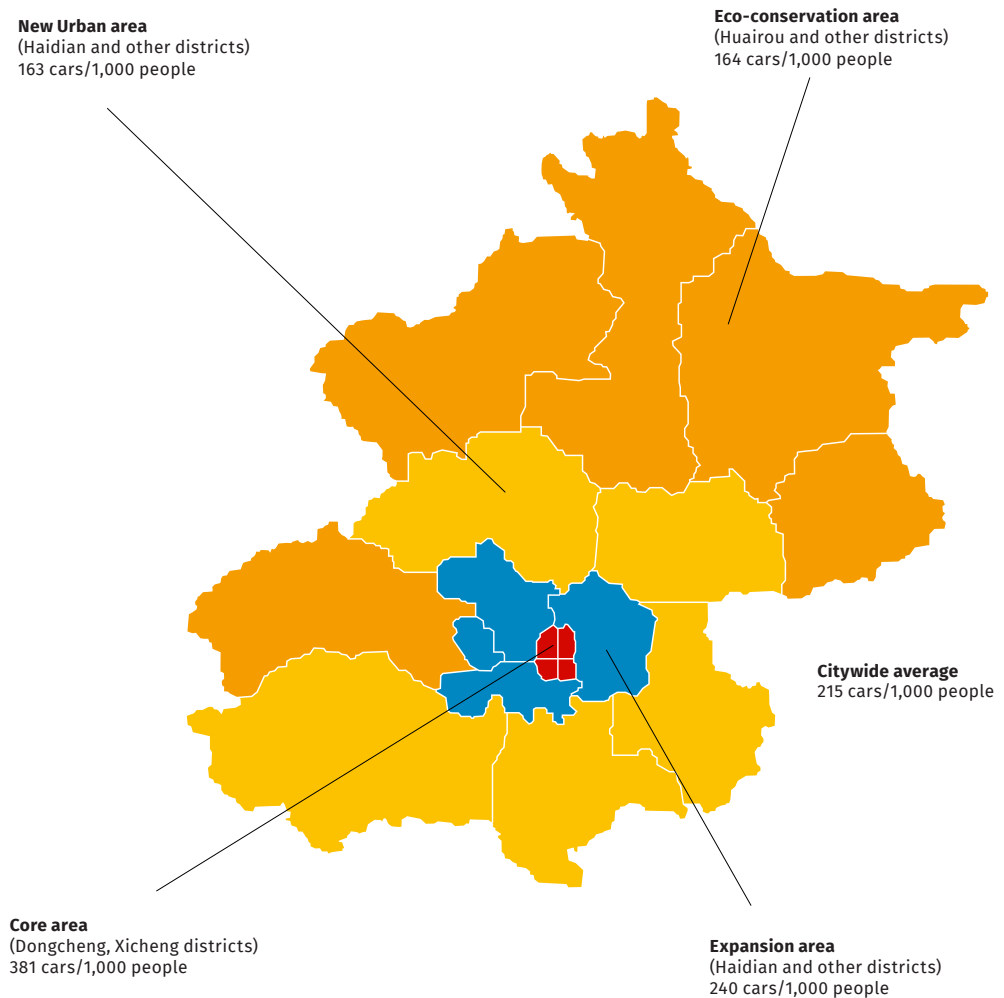
SOURCE: Sean Pavone via Shutterstock

Process & Timeline

- 1990s** The Beijing government continually increases parking minimums in an attempt to provide more parking spaces to meet demand (as a result of rising vehicle ownership rates) and reduce congestion.
-
- 2000s** The government realizes that increasing minimums will not balance the supply-demand gap, and providing more parking has not successfully reduced traffic congestion.
-
- 2013** The 'Measures of Beijing Municipality for Administration of Motor Vehicle Parking' is published.
-
- 2016-2017** The Beijing Municipal Commission of Transport begins a general investigation on vehicle parking resources. "Regulations of Beijing Municipality on Motor Vehicle Parking" is adopted and published.
-
- 2018** The Beijing Motor Vehicle Parking Regulations are approved, the Regulations of Beijing Municipality on Motor Vehicle Parking are implemented, and a new Beijing parking management system is adopted.
-
- 2019** The Implementation Opinion on Residential Parking Management is issued.
-
- 2020** The Commission of Transport advocates for shared parking during off-peak hours. The Beijing city government publishes the local standard of "public facility parking standard" for any expansion, renewal, and new-build parking facility. Parking maximums are adopted across most of the city.
-
- 2021** The State Council publishes the Implementation Opinions on Development of Urban Parking Facilities, clearly defining off-street parking as the preferred parking method.
-

Beijing Wangfujing Street is a famous shopping pedestrianized area which was open to traffic until the late 1990s.
SOURCE: Rodrigolab via dreamstime





Challenges

- **Illegal parking.**

In Beijing, car ownership is highest in the downtown core, and lower in outer zones. This is the opposite of most cities outside of China, where car ownership tends to be low in older, dense city centers even if those areas are wealthy. The influx of cars to the city center overwhelmed the available on-street spaces and resulted in rampant illegal parking. The 2018 Beijing parking plan aims to eliminate illegal parking by defining (and in many cases, pricing) residential and on-street parking spaces. While the city is taking great efforts to improve the management of vehicles, encourage legal parking and payment, and support shifts to sustainable mobility, it is also constructing more parking. It will be important to track how this approach to reducing demand for driving (and parking) impacts how people choose to travel. The city hopes that as it is better able to control illegal parking and “right-size” parking availability, more people will shift away from using private vehicles and towards walking, cycling, and public transportation.

Results

Illegal parking has been reduced in targeted areas of the city due to outlawing illegal parking and implementing physical impediments such as bollards along pedestrian pathways and bicycle lanes. There is little data available to evaluate the impacts of other parking reforms such as shared parking, increased parking enforcement, and the recently adopted parking maximums.

Lessons Learned

- **Employ multiple, varied strategies to reform off-street parking**
By taking an approach with three different strategies, the city of Beijing has seen an improvement in the management and demand for parking. These strategies were based on analyses in the city, and were prescribed specific to local context and local needs. They also aligned with other policies like the vehicle license plate quota meant to curb vehicle ownership and encourage use of other transport modes.
- **Make plans for reform clear and inform residents through multiple communication channels**
The Beijing Commission of Transport and the Beijing Municipal Commission of Planning and Natural Resources both put concerted effort into providing ample opportunity for experts as well as the general public to provide feedback on preliminary policy drafts. They also maintained communication with these groups throughout the implementation process. In particular, mass media (television, radio), social media (WeChat), and posters and community billboards all helped to educate the public about the newly-implemented strategies.
- **Connect policies and management with city goals**
The Beijing government's approach utilizes more management strategies than other case studies in this document. In particular, this is aimed at addressing the issue of illegal parking. The connection between policy changes and improved management has already proven useful for better regulating vehicle use and legal parking in the city, toward the broader goal of peaking carbon dioxide emissions by 2030.

4.3 NEW ZEALAND

New Zealand is one of the few countries in the world to eliminate parking minimums in urban areas nationwide. The national government took up parking reform as a way to address the country's severe housing affordability crisis, and cities are already seeing less parking being built-- and more space for housing and other productive uses--as a result.



SOURCE: trabantos via Shutterstock

Overview

Momentum for citywide and national parking reforms in New Zealand gathered in the late 2000s, especially following a land use study commissioned by the New Zealand Transport Agency in 2008. A few years later, elected officials in cities began more seriously considering eliminating off-street parking minimums. Auckland, the country's most populated city, started removing parking minimums in certain areas of its city center in the 1990s, and continued to remove minimums in more areas through 2011. There was also growing interest from elected officials in the national government to remove off-street parking requirements, stemming from the need to address the country's housing crisis and environmental concerns.

The housing affordability crisis was one of the major motivations for the national government to consider off-street parking reform. In Auckland, which is home to about 1.6 million people, average housing prices were nine times higher than average incomes in 2019.⁴⁴ Housing is generally considered affordable when the average cost of housing divided by average household income is 3.0 or below; it is considered to be unaffordable when that ratio is between 3.1-5.0, and severely unaffordable above 5.1.⁴⁵ In 2021, the ratio of housing cost to household income in Auckland was 11.2, compared to New York City at 7.1 and London at 8.0.⁴⁶

Unaffordable housing is considered one of the most significant urban challenges in New Zealand, and eliminating parking minimums was a lever the national government could pull to address this crisis.

In 2019, the national government proposed a change to the National Policy Statement on Urban Development, which aimed at removing policy barriers to allow cities and towns in New Zealand to build more dense, mixed-use, and transport-accessible urban environments.⁴⁷ The following year, the government commissioned, paid for, and published a cost-benefit analysis which included a review of parking minimums among other urban development policies. Elimination of parking minimums nationwide presented overwhelming benefits: benefits outweighed costs by a factor of at least 2, ranging all the way up to 13. By the end of 2020, the national government eliminated parking minimums for all urban environments (e.g. towns and cities with more than 10,000 people). These jurisdictions were given until February 2022 (18 months) to remove their parking minimums. As of early 2023, parking minimums have been removed from all urban environments in New Zealand.

Process & Timeline

2008	The New Zealand Transport Agency commissions a group of researchers (including future Member of Parliament, Julie Anne Genter) to analyze parking and land use in the country. The group creates a report recommending nationwide removal of parking minimums.
2010s	Multiple cities in New Zealand remove or reduce parking
2011-2015	Parking minimums are eliminated from most commercial centers and high density residential zones in Auckland, a major city. At the national level, motivated elected officials bring the issue of off-street parking minimums and their negative impacts to light.
2019	The national government proposes a change to the National Policy Statement on Urban Development.
2020	A cost-benefit analysis of parking minimums and other urban development changes finds significant positive impacts from removing minimum requirements. The national government eliminates parking minimums for all urban environments (e.g. towns and cities with more than 10,000 people).
2022	All urban environments in New Zealand successfully eliminate parking minimums.

Sources for timeline: [MRCagney. \(2020\). Why We Don't Need Minimum Parking Requirements. Cairns, L. \(2012, March 25\). Too Much Free Parking. Says MP. PWC. \(2020\). Cost - benefit analysis for a National Policy Statement on Urban Development Final report for the Ministry for the Environment. Parking Reform Atlas. \(2021, April 27\). Urban Parking Minimums Banned by New Zealand's National Government. Herriges, D. \(2022, January 6\). What Can We Learn From What New Zealand Just Did?. Strong Towns, Litman, T. \(2020, July 28\). Well Done, Kiwis! New Zealand Delivers Big Planning Policy Reforms. Planetizen.](#)

Challenges

- Concern about impacts to on-street parking**
 Interviewed experts proposed that a parking strategy at the city level which would have tools, such as pricing or permits, could help manage pressure on on-street parking if such pressure occurred. Some jurisdictions, such as Auckland, were more resistant to eliminating parking minimums due to concerns with lack of parking. There was a proposal in the city to have an exception to eliminating parking minimums if there was electric vehicle charging available, but this was defeated. Ultimately, off-street parking minimums were eliminated regardless of these concerns.

- **Limited local understanding of parking reform impacts**

An interviewee noted that many local-level politicians' lacked knowledge about the impacts and importance of eliminating off-street parking minimums on land use and development in urban areas. To address this issue, the national government is working to build local officials' knowledge so they can more effectively communicate and promote these policies to their constituents.



SOURCE:
GagliardiPhotography via
shutterstock

Results

Early data shows that several jurisdictions have seen a decrease in parking space provision. One council in Wellington, Hutt City (population about 150,000), removed minimums in late 2020. Hutt City is particularly well connected to public transit, a key factor in the city's ability to reduce excess parking space provision after removing parking minimums. By early 2022, researchers observed that buildings that would have previously had one parking space per unit, now have 0.4 to 0.5 spaces per unit due to the removal of parking minimums. In Taita, a suburb of Hutt City, 14 new developments (totaling 280 new housing units) to be completed in 2023 will have only 0.21 parking spaces per unit. While the parking-space-per-unit ratio varies across Hutt City, the decline demonstrates how the parking minimums had previously led to excess parking provision in new developments. As developers start to understand the true market for parking, the ratio has increased slightly to 0.6 spaces per unit.

Lessons Learned

- **Consider options for parking reform at the state or federal level**

There was very little resistance to the reform in New Zealand, which was due, in part, to the reforms being taken up at the national level. This type of preemption by a higher-than-local government body is also being pursued by states in the United States, and was also utilized in England.
- **Build momentum around parking reform as soon as possible**

There was a nearly 15 year gap between the 2008 report commissioned by the NZ Transport Agency that proposed removing parking minimums nationwide, and the full removal of minimums in 2022. Experts interviewed emphasized that the reform took much longer than anticipated, and recommended that cities start immediately, no matter how small that first step may be.
- **Build a strong argument using data and case studies**

Elected leaders and technical experts, such as MP Julie Anne Genter, spent years advocating for the removal of parking minimums, which included discussing potential changes and benefits with other experts, elected officials across party lines, and civil society members, among others. Julie Anne Genter intentionally made these discussions and presentations as interactive as possible, used aerial photos for demonstration, and emphasized thinking about policy reform with a systems framework, rather than focusing on individual impact. A national-level cost-benefit analysis undertaken for the proposed National Policy Statement in 2019 was essential for building trust in the reform, especially because it demonstrated benefits for both large and small urban areas. This was instrumental in winning widespread support for the removal of parking minimums within the Ministry for the Environment and other Government Ministers. The government further strengthened its case for removing minimums by pointing to examples from New Zealand, such as the successful removal of minimums in Auckland's city center.
- **Use motivated politicians to help build momentum**

Educated public and elected officials that have a deep understanding of parking and its impact on land use, housing availability, and environmental issues, are key to building and maintaining internal support. Collaboration across political parties, given the wide-ranging benefits of off-street policy reform, was a clear strength. In addition, because the parking policy was more technical, and part of a national policy package to address housing affordability, it was met with limited public backlash.
- **Build city staff capacity for parking reform**

Interviewees identified that staff need to be able to propose and implement changes to parking policies. This includes making sure that staff understand the rationale behind the changes, and that they have the right tools to communicate with the public, advocate for the reform, enforce these changes, and collect data to demonstrate the impacts of the reform.
- **Position parking as a solution to a specific problem**

New Zealand connected parking reform to housing affordability, a challenge that the New Zealand public was already highly aware of and educated on. Interviewees emphasized the need to tell a coherent, focused story—in New Zealand's case, about land use and parking—and use this to help people envision the city they want to live in. Officials did not broaden or cloud the message by tying parking reform to other sustainable mobility goals like reducing demand for driving.

4.4 MEXICO CITY, MEXICO

The Mexico City case shows that demonstrating local impacts of policy reform is crucial to building public support. Despite taking many years to implement, the city provides a global best practice for eliminating parking minimums and adopting maximums, as well as for simultaneously tackling on-street parking reform.



Source:
Shutterstock

Overview

Mexico City is consistently ranked one of the world's most congested cities, with traffic contributing to declines in physical and mental health, economic vitality, and community connectivity.⁴⁹ To tackle this challenge, Mexico City has pursued a series of actions to better manage on-street and off-street parking and improve street conditions for all users. The city implemented ecoParq, a new on-street management program in 2012, and then moved to address off-street parking reform the following year. With this, Mexico City became the first Latin American city and largest North American city to eliminate parking minimums, and impose parking maximums.⁵⁰ These achievements are the result of over a decade of support and advocacy from civil society, which saw parking reform as an opportunity to reclaim public space for people.

Mexico City's 2004 off-street parking regulations demanded a minimum number of parking spaces be built regardless of the property's proximity to public transportation. There was no possibility of constructing fewer spaces than the minimum, which contributed to high development costs, parking excess, a sprawling urban form, and a lack of affordable housing, among other issues.⁵¹ In response to these issues, ITDP Mexico evaluated potential on-street parking management solutions for the Condesa and Polanco neighborhoods. In 2008, findings from the study were shared with the Secretariat of Transport and Roadways (SETRAVI) and the Mexico City traffic police.

⁴⁹ [Mexico City still No. 1 in the world for traffic congestion.](#)

⁵⁰ [ITDP México. \(2020\). Más Ciudad, Menos Cajones: Evaluación de Impacto del Cambio a los Requerimientos de Estacionamiento en la Ciudad de México y Recomendaciones de Política Pública.](#)

⁵¹ [ITDP México. \(2020, November 18\). Presentación: Más Ciudad, Menos Cajones - Evaluación 2020.](#)

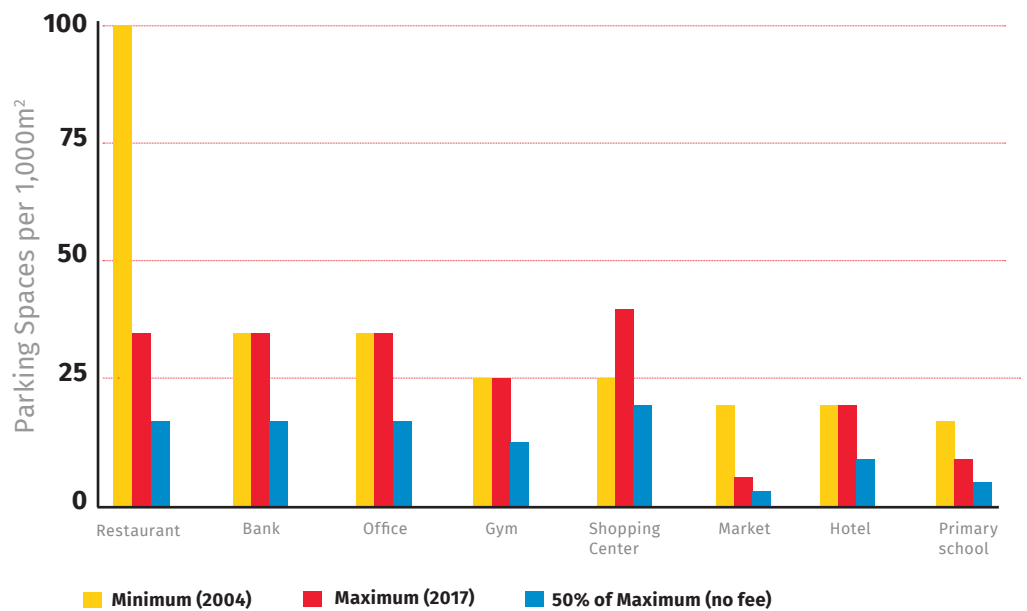
In 2011, Mexico City released Plan Verde (the ‘Green Plan’) outlining a 15 year sustainable development strategy that included parking reform. In 2012, the government launched the ecoParq priced parking program in the Polanco neighborhood, and the success of this program demonstrated that parking management can help the city reach its mobility goals. In the same year, ITDP and the Ministry of Housing and Urban Development (SEDUVI) analyzed over 250 large real estate projects in Mexico City between 2009-2013, and found that 250,000 parking spaces were constructed. Over 40% of built floor area in the 250 development projects was dedicated to parking--the highest use of space, even above housing.⁵² The following year, ITDP Mexico developed a parking reform proposal and submitted it to SEDUVI. Mexico City signed an off-street parking reform into law in 2017.

The 2017 reform has three key elements:

1. Elimination of parking minimums and adoption of parking maximums

For most uses (aside from restaurants and shopping centers), the 2017 policy set parking maximums at or below the level of the previous parking minimums, as shown in the graph below. The 2017 policy also established that for developments built in downtown Mexico City (Zone 1) any parking built beyond 50% of the new maximums (up to the maximum) will trigger a fee to the developer.

Parking Spaces by Land Use in Mexico City



2. Establishment of a mobility and road safety fund

Fees assessed on developers who build parking beyond 50% of the parking maximum are to be diverted to a mobility fund meant to support sustainable mobility and road safety improvement projects in the city. Whether a developer must pay a fee for building beyond 50% of the maximum depends on the location of the development. If the development is located in Zone 1, the central part of the city which is well-served by public transportation, the developer must contribute to the Mobility Fund. If the development is in Zone 2, it does not trigger a contribution to the Mobility Fund. While these fees are meant to further disincentivize over-provision of parking in the central business district, developer contributions to the fund have been opaque and it is unclear whether the fee amounts are set high enough to influence developers' decision making. It is also unclear whether fees are still being directed to the Mobility Fund (as opposed to the general operating budget), and if collected fees have been applied to projects.

3. Bicycle parking requirements

New buildings are required to provide bicycle parking, with the amount varying by building size and location. Buildings in Zone 1 must include 100% of the required spaces, while buildings in Zone 2 must include at least 25% of the requirement. For commercial and service land uses, bicycle parking requirements include rates for residents and visitors, as shown in the table below, while other land uses like multi-family buildings are only required to provide bicycle parking for residents.

	Size	Bicycle Parking Requirement (Residents)	Bicycle Parking Requirement (Visitors)
Commercial	100 - 5,000 m ²	1 space per 1,000m ²	1 space per 250m ²
	5,000 - 30,000 m ²	1 space per 2,000m ²	1 space per 500m ²
	30,000+ m ²	1 space per 3,000m ²	1 space per 1,000m ²
Multi-family residential	Any size	1 space per 4 units	No additional requirement

Process & Timeline

- 2007** Initial work on on-street parking management in Condesa and Polanco neighborhoods.
-
- 2008** ITDP Mexico conducts first studies on parking management and presents them to SETRAVI and the traffic police. ITDP and SETRAVI collaborate to create a communications campaign, and conduct additional curb use studies.
-
- 2011** Mexico City releases Plan Verde, which mentions parking reform.
-
- 2012** Mexico City launches ecoParq, its on-street priced parking management program, in the Condesa and Polanco neighborhoods.
-
- 2013** Success of ecoParq leads to conversations about improving off-street parking.
-
- 2014** Less Parking, More City is released, showing that 40% of floor area in 250 buildings analyzed in CDMX is dedicated to parking, which gets more people involved in the conversation.
-
- 2015** ITDP presents a Parking Reform Proposal to SEDUVI.
-
- 2016** ITDP launches a competition with the Mexican Institute for Competitiveness (IMCO) for rethinking large parking garages in the city center, which brings together an array of experts from diverse sectors and begins a public conversation about the best use of city space.
-
- 2017** Mexico City passes North America's most groundbreaking parking reform. The new rules require developers to pay a fee if they build more than 50% of the newly-established parking maximums. These fees are meant to improve public transport in the city.
-
- 2018** Parking minimums are abolished, and parking maximums continue to be implemented.
-
- 2020** ITDP conducts research on success and needs of the 2017 reforms, and releases the More City, Less Parking 2020 report.
-

Challenges

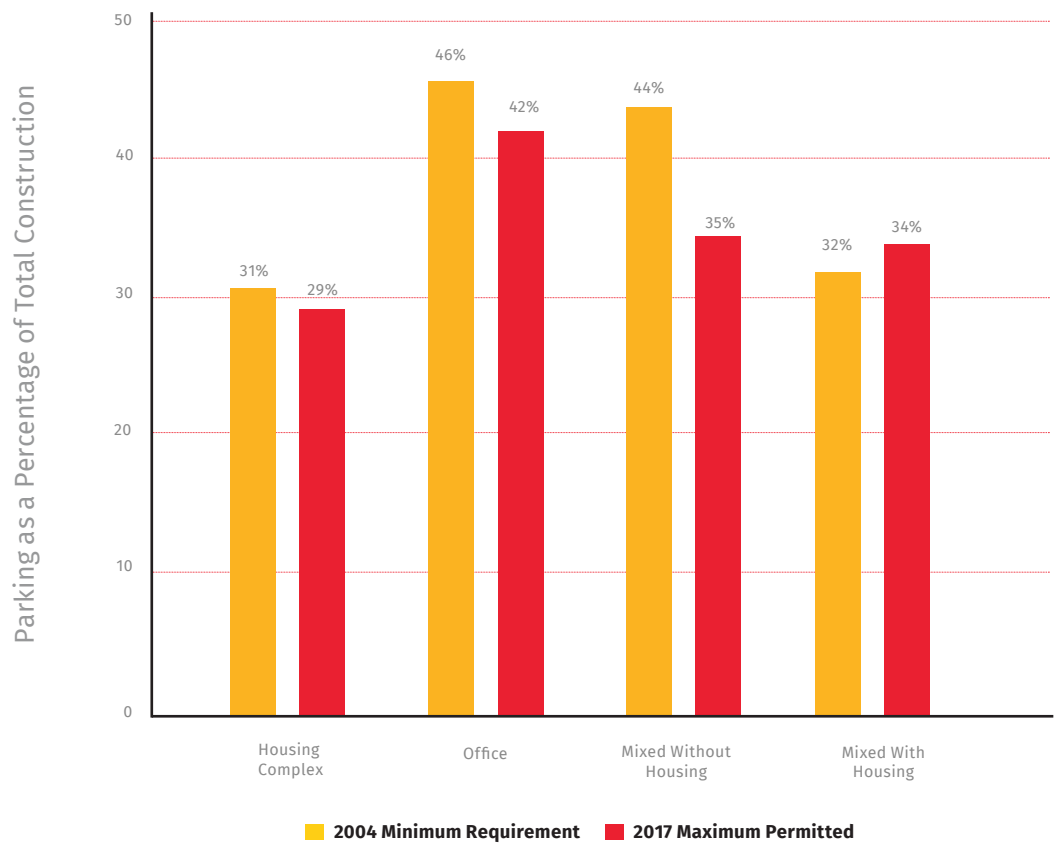
While there have been many successes on parking reform in Mexico City, there are also some ongoing issues. In 2020, ITDP conducted an analysis of off-street parking policy implementation, and identified the following challenges:

- **Management of surface parking lots**
Mexico City has not yet strictly controlled the location, quantity, and quality of public parking lots. Current policy allows almost any type of land to become a parking lot, which means developers can convert land that is functioning as green space or as other productive uses into surface parking. The city needs to evaluate its process for permitting construction of parking lots to keep this in check.
- **Disconnected and stalled growth of on- and off-street parking management**
The operating area of the on-street pricing program, ecoParq, has not been expanded since 2014. Off-street parking management has not developed beyond the adoption of the 2017 policy. It is also necessary to harmonize the on-street and off-street parking policies to more effectively manage the supply and demand of parking in the city.
- **Lack of transparency around the Mobility Fund**
It is not clear how much fees are for building parking above 50% of the parking maximum or how these fees are collected. The contribution mechanism to the Public Fund for Mobility and Road Security for Mexico City needs improvement, and the wording of the Mexico City Fiscal Code should be clarified so that each additional parking space carries a fee, rather than a flat fee for exceeding 50% of the maximum regardless of by how much. In addition, it is not clear how the revenue from these fees is used.
- **Some maximums are set too high**
For some uses, parking maximums exceed the previous minimums and are too high to create significant impact.⁵³ Exceptions for building parking beyond the maximum should also be revisited. For example, developers of residential properties can construct parking beyond the maximum if they pay a fee, however this may not adequately offset the negative impact of the additional parking.
- **Communication and transparency with the public**
Engagement with the public on parking issues needs improvement. This should include coordinating the different parking policies in a coherent and comprehensive manner, especially as new policies are implemented or existing ones are changed.

Results

Mexico City's 2017 parking policy has had a positive impact on the balance between livable space and parking in newly-constructed developments in Mexico City. Compared to buildings constructed under the 2004 policy, built floor area dedicated to parking fell by almost 10% —from 42% to 33%— in buildings constructed after the 2017 policy was adopted.⁵⁴

Looking more granularly at the percentage of total constructed area dedicated to parking by property type, housing complexes and offices showed slight reductions in parking area (31% to 29%, and 46% to 42%, respectively). Mixed use developments without housing had almost 10% more built area usable for commercial or retail activity - in other words, not dedicated to parking.

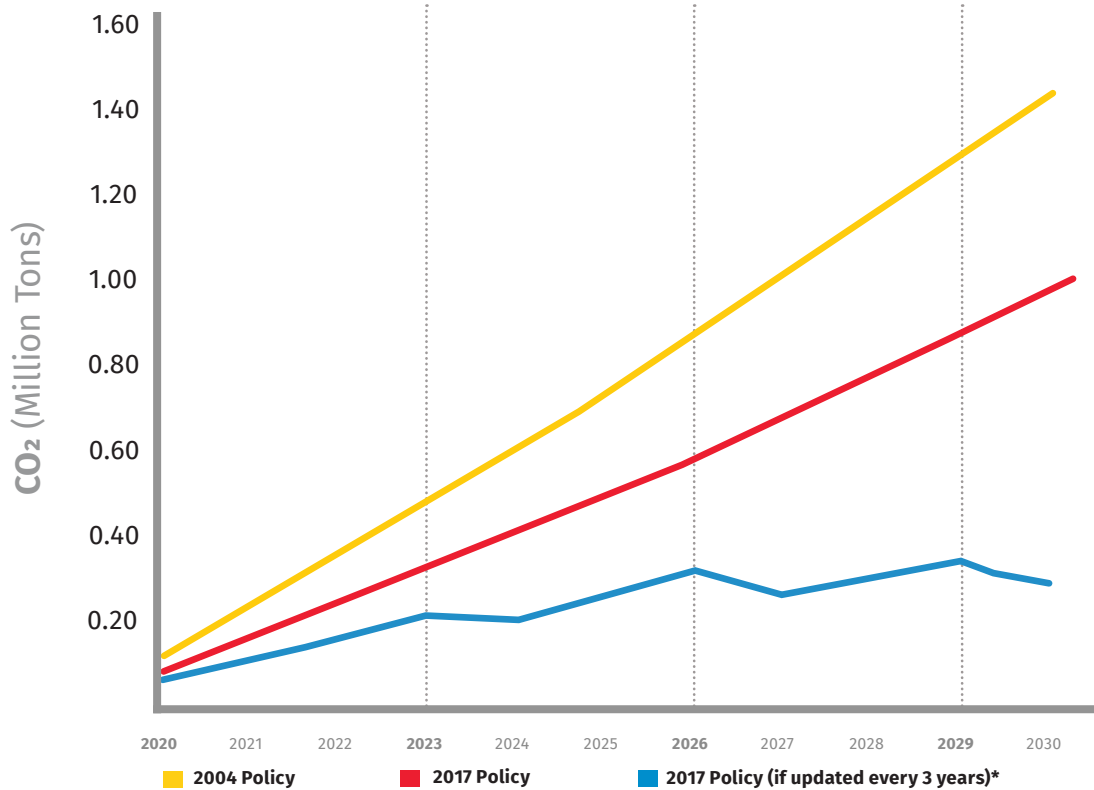


An evaluation of 42 developments built after the 2017 policy was implemented showed they had 16% fewer parking spaces than the maximum permitted. For most uses, this meant there was less parking constructed than the 2004 minimums (since most maximums were set at the level of the previous minimums).⁵⁵

Mexico City's 2017 policy not only resulted in more built area available for productive uses like living space, commercial, and retail space, but reductions in off-street parking requirements have also been linked to significant greenhouse gas emissions reductions. Shown in the graph below, the 2017 policy is estimated to avoid 584,000-638,000 metric tons of carbon dioxide equivalent (CO₂e) annually from off-street parking construction, equivalent to the amount of carbon sequestered by planting between nine and ten million trees every year.^{56 57} Emissions avoided from a more aggressive (hypothetical) scenario than the current policy, wherein the parking standard is reviewed and made more strict every three years, would achieve neutral growth in carbon, mitigating 2.6-5.6 million metric tons of CO₂e from parking construction by 2030.⁵⁸

55 [ITDP México. \(2020, November 18\). Presentación: Más Ciudad, Menos Cajones - Evaluación 2020.](#)
 56 [ITDP México. \(2020, November 18\). Presentación: Más Ciudad, Menos Cajones - Evaluación 2020.](#)
 57 [Greenhouse Gas Equivalencies Calculator](#)
 58 [ITDP México. \(2020\). Más Ciudad, Menos Cajones: Evaluación de Impacto del Cambio a los Requerimientos de Estacionamiento en la Ciudad de México y Recomendaciones de Política Pública.](#)

Reduction of Metric Tons of CO₂ through Parking Policy Changes



*Assuming an impact of -21% each year with the 3 year updates

Lessons Learned

- **Adopt low parking maximums to speed up impacts**

Mexico City has not yet strictly controlled the location, quantity, and quality of public The Mexico City case study exemplifies how imposing parking maximums can enact real change within a few years at both individual building and citywide levels. The reduction in built floor area dedicated to parking as well as the potential for significant carbon mitigation are encouraging outcomes that can provide support for maintaining the policy (and even tightening restrictions). Additionally, eliminating minimums and adopting maximums did not make parking scarce, as developers continued to provide parking space in new developments albeit at more modest rates.

- **Demonstrate local impacts of policy reform with local data and modeling**

Government bodies, international funds, civil society organizations, and elected officials all eventually supported parking reforms thanks, in part, to evidence-based research. The series of studies produced by ITDP Mexico and partners from 2007 through the 2017 reform analyzed existing on- and off-street parking conditions and their negative impacts on the city. ITDP Mexico collaborated with SEDUVI to acquire real estate and parking data for Mexico City, which enabled them to highlight the sheer percentage of built floor area dedicated to parking, a powerful data point that underscored the need for reform.

- **Revisit and reinforce the policy over time**

Mexico City successfully adapted to the implementation of maximums, and the city has found some opportunities to expand these policy changes in line with urban goals.

4.5 MINNEAPOLIS, USA

The Minneapolis case demonstrates how an incremental approach can be a successful way to build support for parking reform. After adopting a parking reform package in 2015, the city used data that demonstrated those policy changes were effective to advocate for continued improvements. It also shows how supportive stakeholders – particularly developers and civil society – can help build a foundation of public support for reform.



SOURCE: CK Photo via Shutterstock

Overview

Minneapolis' parking reform can be generally categorized into two phases: (1) the reduction or elimination of parking minimums within specific geographic areas and based on project size, as well as the addition of parking maximums, and (2) the elimination of parking minimums citywide.

The first phase began in 1999, when the City of Minneapolis enacted policy on overlay districts which effectively limited the ability to build surface parking lots in the downtown area. This led to the first parking reform package in 2009, which included: (1) reduced parking requirements for commercial uses – notably with a zero space minimum for small establishments, (2) adoption of parking maximums citywide, (3) minimum bike parking requirements, and (4) removal of parking minimums in the downtown zoning districts. The success of this package led to follow-on reforms in 2015, which removed parking requirements for small residential buildings (3–50 units) near high-frequency transit; reduced parking minimums for larger residential buildings by 50%; and reduced parking minimums for residential buildings located near standard (non-rapid) transit by 10%. The following year, the city designated additional corridors to remove parking minimums for nonresidential uses. In 2017, the City worked to limit the amount of parking frontage allowed on any floor-facing public streets. This applied primarily to parking garages in larger buildings to ensure that street blocks are not dominated by inactive, unfriendly frontages for pedestrians and cyclists.

All of these actions from 1999-2017 laid the groundwork for the full elimination of off-street parking minimums in 2019, when the city adopted its Minneapolis 2040 comprehensive plan. The plan demonstrated the City's interest in continued off-street parking reform, including the complete elimination of minimums and strengthening of maximums citywide. Expert interviewees indicated that the city worked hard to solicit buy-in from stakeholders around the 14 goals listed in the 2040 plan, which made it easier to stay grounded, make proposals, and agree on actions that were clearly aimed at achieving those goals. Efforts on behalf of the public and private sectors, as well as civil society and interested stakeholders from 2019 to 2021 resulted in the City council unanimously approving a new parking reform ordinance in May of 2021. This new ordinance: (1) fully eliminated parking minimums across the city, (2) incrementally lowered maximums, and (3) increased requirements for bicycle parking, showers, and locker facilities, among other measures, including improving travel demand management (TDM) strategies.^{59 60} Parking maximums are lower in districts well-served by public transport, and lowest in places served by high frequency transit or adjacent to metro stations.⁶¹ Looking to the future, the City plans to continue their incremental approach and strategically lower parking maximums over the long term.

Civil society organizations played an important role in the adoption of Minneapolis' parking reforms. Organizations like Neighbors for More Neighbors helped residents to educate themselves, attend events, and write to their representatives supporting the reform, and Move Minnesota, compiled research on the positive impacts of the reform to support the City's decision-making process.⁶² ⁶³ In addition, many in the Minneapolis development community had requested lower parking minimums on individual projects for years prior to the 2021 elimination of parking minimums citywide. These calls from developers served as proof of interest for decision-makers to ease minimums and let the market dictate how much parking was needed.

Process & Timeline

- 1999** The city implements the Downtown Parking Overlay District prohibiting new commercial parking lots and restricting new surface lots in the downtown area.
- 2004** Minneapolis adopts Transit Station Area Pedestrian Oriented Overlay Districts, which prohibits new commercial parking lots near light rail stations.
- 2009** A new parking reform package is adopted, which (1) reduces parking requirements for commercial uses, (2) adopts parking maximums citywide, (3) implements minimum bicycle parking requirements, and (4) removes parking minimums in the downtown zoning districts.
- 2015** Impact data from the 2009 reforms informs another parking reform package that: (1) eliminated parking requirements for residential buildings with less than 50 units near high frequency transit, (2) reduced parking minimums for larger residential buildings by 50%, and (3) reduced parking minimums for residential buildings located near non-rapid transport by 10%.
- 2016** The Minneapolis government identifies select corridors where parking minimums for nonresidential uses will no longer be required.

⁵⁹ [City of Minneapolis. \(n.d.\). Minneapolis 2040: Parking, Loading, and Mobility Regulations.](#)
⁶⁰ [City of Minneapolis. \(n.d.\). Minneapolis 2040: Parking, Loading, and Mobility Regulations.](#)
⁶¹ [City of Minneapolis. \(2022\). Code of ordinances. Article III. - Specific Off-Street Parking Requirements.](#)
⁶² [Neighbors for More Neighbors. \(2021\). ACTION: Support Parking Reform in Minneapolis.](#)
⁶³ [Move Minnesota. \(2021\). The Hidden Impacts of Vehicle Parking and Parking Policy.](#)

- 2017** The city sets new limits on the amount of parking frontage allowed on any floor facing public streets, which applies primarily to parking garages in larger buildings.

- 2019** Minneapolis 2040, a long-range comprehensive plan for the city, is adopted.

- 2021** A new parking reform ordinance is approved, which eliminates parking minimums across the city, lowers parking maximums incrementally, and increases requirements for bicycle parking, showers, and locker facilities.

SOURCE: Adapted from the Minneapolis government timeline for parking reform.⁶⁴

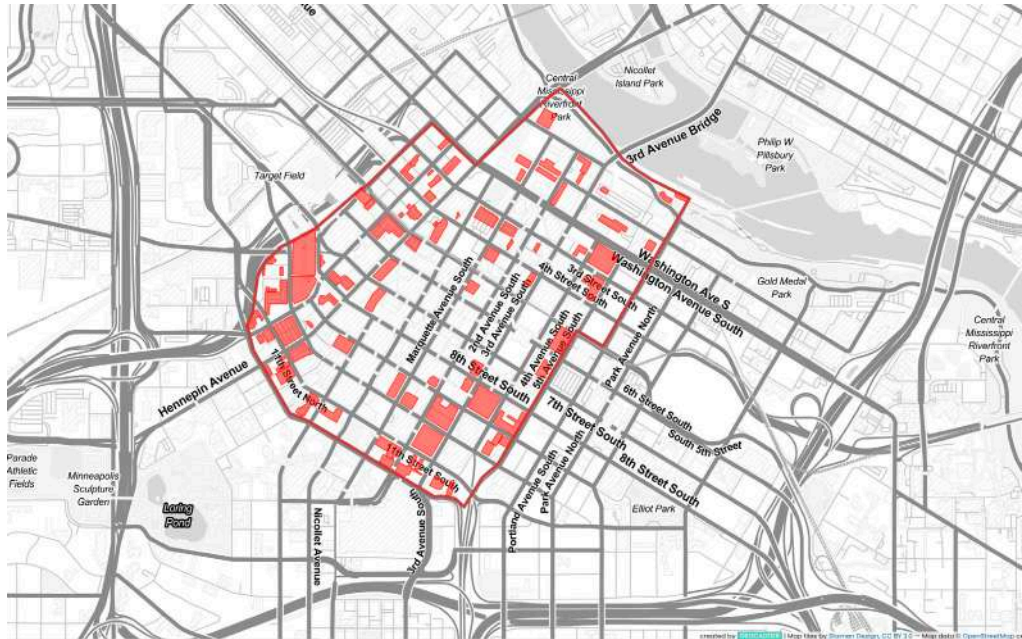
Challenges

- **Impacts to people with disabilities**

The Advisory Committee on People with Disabilities voiced concern about the elimination of parking minimums and how this could impact access, particularly for people with limited mobility. Experts interviewed noted that this was in part due to the arguments coming from a more car-centric solution perspective, but that these concerns will likely arise and should be understood and addressed in other cities' contexts. In particular, it is important that the disability community is brought to the table to find strategies that do not create inaccessible environments for individuals with disabilities or people with limited mobility.

- **Changes in demand for on-street parking**

Encouraging people to use off-street parking has been challenging, despite there being fewer on-street and ample off-street spaces. One reason for this is that on-street parking is much less expensive than parking in off-street facilities, and can be perceived as more convenient with mobile payment rather than machine-based payment in garages. The Covid-19 pandemic has played a role as well – people have come back to on-street parking (for errands and other short trips) much faster than to off-street parking. Planners and decision-makers are working to find solutions, including collaborating with building management to share parking around streets with high demand, particularly as the waitlists to get a parking space in some places in the city can be 6-9 months. The government is also working to expand priced on-street parking for better management, as well as investigate raising the cost of residential parking permits, graduating pricing, or incorporating permit programs with priced parking (as other cities in the US such as Seattle, WA and Columbus, OH have done). Finally, planners are working to address the shift from business day demands for parking to nighttime and weekend demands as more people move into the city and in response to different traffic patterns as a result of COVID-19.

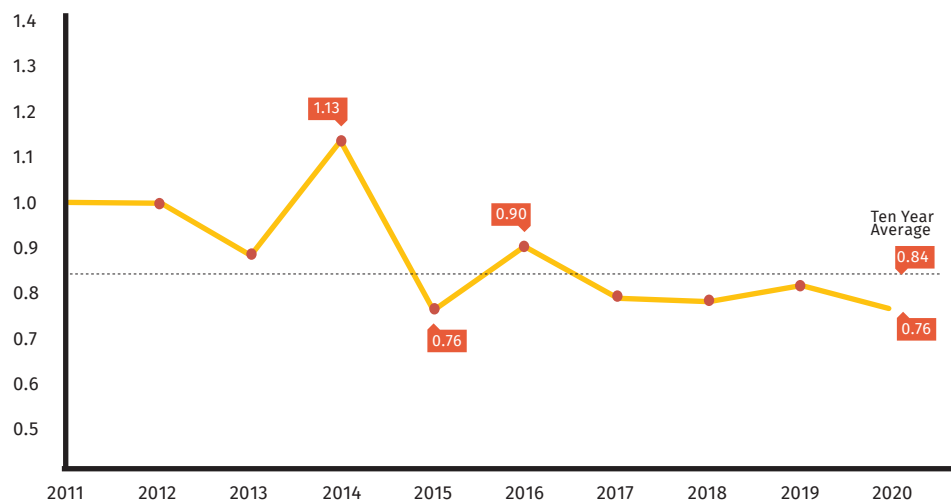


In Minneapolis, 17% of land in the city center is taken up by surface parking, shown in red on this map. **Source:** Parking Reform Network

Results

While there is limited data on the newest package of reforms adopted in 2021 which includes removal of minimums citywide, it appears that the reforms since 2009 have resulted in a decrease in total parking spaces constructed in the city year-to-year. An analysis of parking built from 2011 to 2020 in Minneapolis shows that parking spaces per residential unit was highest in 2014 (1.13 spaces per unit) and lowest in 2015 and 2020, when it dropped well below once space per unit.⁶⁵

Number of Parking Spaces per Residential Unit in Minneapolis (2011-2020)



SOURCE: Five Takeaways From Ten Years Of Minneapolis Planning Commission Approvals.

This analysis also found that smaller developments average a lower parking to resident unit ratio while larger developments are less predictable. Importantly, this study and others generally show a trend of parking construction decreasing over time.⁶⁶

Early data collected after the elimination of parking minimums and implementation of maximums in 2021 shows similar trends. Of the 19 developments and 2,419 residential units approved by the city, there are 0.55 parking spaces per residential unit, a massive drop and record low for the city (as shown in the graph above). An average of 0.42 spaces per unit was observed for all developments, and an average of about 0.26 spaces per unit for developments with 10-50 units.⁶⁷

Lessons Learned

- **Build long term support for parking reform by adopting policies incrementally**
Moving from high parking minimums to no parking requirements can feel jarring to residents and raise concerns about parking supply. To combat this perception, Minneapolis eliminated parking minimums in two phases – focusing first on target areas, then expanding to the entire city. The city also identified and highlighted specific developments that were built in the last couple of years without minimum parking requirements. These examples helped the community see that buildings can still provide parking (just less of it), which reduced pushback.
- **Utilize design requirements to minimize surface parking lots**
The city of Minneapolis requires 70% of the street frontage for all parking structures to be active uses such as storefronts, and surface parking lots must be less than 40 feet of frontage along the street. Though these requirements are not necessarily reforms, they limit the space that parking garages and lots can use. These requirements also provided some foundation for the expansion of off-street parking reforms citywide, as stakeholders were already accustomed to the frontage limitations.
- **Remove parking minimums to encourage development of smaller buildings**
The city of Minneapolis has seen an increase in small and medium-sized developments now that parking minimums have been eliminated. This is illustrated both through data and through engagement with developers in the city, who have reported that the financial feasibility of these projects depended on a parking stall to residential unit ratio of less than one.⁶⁸
- **Position off-street parking reform as a mechanism to achieve broader city goals**
The off-street reforms were well-aligned with the Minneapolis 2040 plan. The city conducted extensive community engagement efforts for Minneapolis 2040, which included a Civic Engagement Plan that specifically detailed core principles and how to engage historically underrepresented groups. This helped to create a shared language and familiarity among residents with broader city goals.⁶⁹ Developers were also on board - for years before the parking reform, many developers had requested lower parking minimums because constructing parking is costly. Furthermore, Minneapolis successfully demonstrated that previous parking reforms helped the city to reach multiple goals including lowering housing costs, reducing the need to drive and associated environmental impacts, improving walkability, and using land more efficiently, among others.

⁶⁷ Data reported by the City of Minneapolis. Personal communication, April 2022.

⁶⁸ Personal communication, Minneapolis City Government with Hall Sweeney Properties, February 2022.

⁶⁹ You can read more about the planning process and civil engagement in: [City of Minneapolis.\(n.d.\). Planning Process: Civic Engagement. Minneapolis 2040.](#)

4.6 ATLANTA, USA

The Atlanta case study is an example of how working with the community to understand local interests and motivations is critical to reforming off-street parking. Similar to Minneapolis, Atlanta also exemplifies how an incremental approach to reform can be particularly useful in highly car-dominated cities.



SOURCE: Felix Mizioznikov via Shutterstock

Overview

Atlanta is well known for being a car-centric city. However, the government has taken important steps towards off-street parking reform and has a long term vision for change. In the 2000s and beginning of the 2010s, Atlanta saw growing interest in parking management as a method to improve issues relating to sprawl, lack of housing, and urban access. With this, the city looked closer at urban planning ‘pinch points’ and specifically how to improve the city’s zoning, culminating in a Zoning Diagnostic in 2016.⁷⁰ This report led to Quick Fixes 1 and 2, two groups of zoning actions for the city to take in the short and medium-longer terms.⁷¹ At a high level, the recommendations from the Diagnostic included to: (1) improve urban design - including new building typologies, (2) protect neighborhood character, (3) create vibrant corridors and districts, (4) expand transport options, (5) ensure housing diversity, (6) support jobs and innovations, and (7) create user-friendly regulations and processes.

By 2019, Atlanta adopted several strategic amendments to their existing zoning ordinance that reduced off-street parking minimums and expanded opportunities for ‘missing middle’ housing. The new ordinance introduced a host of parking policy reforms, including eliminating parking minimums for buildings within a half mile (0.8 km) of MARTA (Metropolitan Atlanta Rapid Transit Authority) stations, Atlanta Streetcar stops, and future bus rapid transit (BRT) stations, as well as Special Public Interest Districts as designated by the city. Parking minimums were maintained, however, for establishments that serve alcohol, a decision that was meant to curb the growth and dominance of restaurants and bars over other local retail and services in Atlanta.^{72 73} Additionally, the reform instituted that on-street parking can “count” towards parking minimums where they remained, which enabled smaller businesses to partially or fully avoid building additional off-street parking. The reform also eliminated parking minimums for buildings built before 1965, making the re-use and renovation of older buildings easier without needing to factor parking into the equation.⁷⁴ Parking maximums were implemented within the Beltline Overlay District (a roughly one half mile/0.8 km area around the Beltline, a 22 mile/35 km trail loop for active mobility that connects 45 neighborhoods) and within a half mile (0.8 km) of public transit stations (including Atlanta Streetcar and future BRT stations).^{75 76 77}

In an effort to tackle rising concerns with housing affordability, Atlanta’s Department of City Planning started a Housing and Community Development project in 2019 exploring the role of design in improving affordable housing. One of the main themes focused on parking minimums and how they make housing less affordable. The government considered new regulations for this project, including eliminating parking minimums for Atlanta’s primary zoning districts, except for low density residential zones. Functionally, this would have eliminated minimums in most residential areas throughout the city. In December 2021, the proposal was withdrawn and focus shifted to a rewrite of the ordinance to be completed in 2025. With this effort, the city plans to push for reform by coordinating zoning code updates with a robust update to the Comprehensive Development Plan which began in 2022.⁷⁸



In Atlanta, 25% of land in the city center is taken up by surface parking, shown in red on this map. **Source:** Parking Reform Network

72 [Parking Reform Network. \(2022\). Parking Mandates Map.](#)
73 [Parking Reform Network. \(n.d.\). Atlanta, GA.](#)
74 [Steuteville, R. \(2019, February 11\). Atlanta Zoning Update Addresses Parking, ADUs, Missing Middle. Public Square - A CNU Journal.](#)
75 [Ward, F. \(2019, April 25\). Parking Updates and Why They Matter. Kronberg Urbanists Architects.](#)
76 [E-laws US. \(n.d.\). Atlanta Code of Ordinances: § 16-18R.021. Off-street Parking Requirements.](#)
77 [Atlanta BeltLine. \(2022\). Beltline Explained: The Fundamentals \[Video\]. Welcome to the Atlanta Beltline Explainer Series.](#)
78 [2021 CDP – Atlanta Department of City Planning](#)

Process & Timeline

1982	The current Atlanta city zoning ordinance comes into effect.
2000-2010s	Growing interest in an assessment and rewrite of the zoning ordinance, given growth of the city and new land use needs.
2015-2016	The city completes the 'diagnostic test' of urban planning 'pinch points', and how to improve its zoning. This results in the Quick Fixes 1 and 2 – two groups of actions to take in the short and long terms.
2019	Atlanta adopts a new zoning ordinance that reduces off-street parking minimums.
2020	The Office of Housing and Community Development starts a project to improve affordable housing, focusing on design and links between off-street parking minimums and unaffordability.
2021	The City considers eliminating parking minimums for residential zoning districts citywide, but the proposal is withdrawn.
2022-future	Atlanta is working to gather information for a comprehensive zoning update, estimated to be published around 2025.

Sources for timeline: [TSW, Canvas Planning Group, and The Zoeckler Firm. \(2016\). Zoning Ordinance Diagnostic for the City of Atlanta, Steuteville, R. \(2019, February 11\). Atlanta Zoning Update Addresses Parking, ADUs, Missing Middle, Public Square. TSW. \(n.d.\). Atlanta Zoning Diagnostic & Amendments, Department of City Planning. \(n.d.\). Remove Residential Parking Minimums: A Proposed Policy to Reduce Housing Production Costs and Car Dependency.](#)

Challenges

- **Current parking maximums may be too high**

Some experts indicated that the current maximums are too generous and need to be lowered to have real impacts on individual developments and urban form.

- **Expanding reforms to the whole city**

A proposal to eliminate parking minimums citywide was tabled in 2021, with public feedback that the proposal (which also included changes for housing) was too much and too soon. More communication and community engagement will be needed to help residents understand the benefits of eliminating parking minimums, especially for expanding housing affordability.

- **Atlanta's robust restaurant industry**

The restaurant industry in Atlanta is extensive, and decision-makers wanted to find a way to curb restaurant expansion and displacement of smaller, locally-based retail, housing, and other uses. This was the motivation for maintaining parking minimums specifically for establishments that serve alcohol. This attempt at using parking minimums as 'pretextual planning' should be avoided. In Atlanta's case, restaurants and bars should be regulated directly rather than using parking minimums to regulate them indirectly. One interviewee acknowledged that this was not an ideal solution, but that tradeoffs needed to be made due to local context and political realities.

Results

The reform is still relatively new, and there has not been much data collected since it was adopted in 2019. Of the developments that have been built since the reform, it seems the legislation enables constructing less parking, but overall it could be strengthened. The small business community has had a particularly positive response, since they are no longer required to provide costly parking spaces at the expense of retail or other productive space. As noted previously, developers have also been supportive, given the cost savings of reducing the amount of parking they must construct per development.

While quantitative data is limited, anecdotal evidence hints at improvement, and an increasing number of applications for projects with little or no new parking in the downtown Atlanta area have been submitted.^{79 80} In older neighborhoods, such as the West End, the ability to "count" on-street parking spaces to satisfy off-street parking requirements has led to fewer parking spaces built in new construction, including several single-family homes. "Car-light" communities with an emphasis on walkability have been proposed near the West End and Oakland City MARTA stations.⁸¹

79 [Archambeau, A. \(2022, 1 February\). Latest Centennial Yards Mixed-Use Project Seeking Permit Approval. What Now Atlanta.](#)
80 [Green, J. \(2022, 10 May\). Fresh Images, Details Emerge for Teachers Village Tower Proposal. Urbanize Atlanta.](#)
81 [Murphy Crossing by Culdesac](#)

Lessons Learned

- **Build long term support for parking reform by adopting policies incrementally**

A key to success in Atlanta has been adopting reforms in incremental stages, which allows the public to acclimate to the changes, and minimizes feelings of distrust. Short to medium-long term changes as part of the Quick Fixes phases allowed for progress over the past six years, which are now generating results as the city undertakes a more comprehensive zoning update in the coming years.⁸²
- **Engage with the public**

It is essential to listen to the people that the city is serving, and this means gathering and integrating community feedback. The City of Atlanta conducted ample public outreach, including workshops, question and answer sessions, and other events to gather public opinions.⁸³ The engagement was citywide, and in the process of diagnosing the city and creating the Quick Fix plans, researchers and planners sat down with residents in each quadrant of the city. It was important not to go into the process with an agenda and solutions fully formed, so that the final plans could be responsive to residents' feedback and needs. One interviewee noted that the parking reform, though informed by best practices in other cities, was designed with a deep understanding of the nuances of Atlanta.
- **Document and maintain transparency throughout the process**

Parking and zoning reforms affect people's property and as such they can be hotly contested topics. To avoid challenges during and after the process (such as legal actions taken against the reforms), document all engagements, processes, and decisions well, and make these publicly available to encourage transparency.
- **Demonstrate local impacts of parking reform**

Atlanta's diagnostic test and subsequent recommendations intentionally focus on the outcomes of parking and zoning reform rather than the process. This helps to make the impacts of reform personal to residents. For example, parking reforms were framed around protecting small businesses and expanding affordable housing, rather than less obvious impacts like emissions reductions as a result of reducing demand for driving.
- **Position parking reform as a solution to a specific problem**

In Atlanta, off-street parking reform was packaged with other zoning changes as a way to expand affordable housing. There was very little resistance to the reform, which could be because recommendations in the Quick Fix phases, such as changes to accessory dwelling units (ADUs) and single family zoning, positioned parking as a mechanism to deliver on the housing affordability goal.

4.7 SÃO PAULO, BRAZIL

The São Paulo case provides an example of reforming on- and off-street parking at the same time, rather than a one-after-the-other approach taken by other cities like Mexico City or New Zealand. São Paulo set a real example early on for off-street parking reform, demonstrating that such changes are realistic, necessary, and possible, even within the context of a very large and sprawling metropolitan city.



SOURCE: Alison Nunes Calazans via Shutterstock

Overview

In the 21st century, growth in vehicle use has caused increasing environmental, social, and economic challenges in São Paulo. Between 2001 and 2015 the rate of motorization in São Paulo grew 68%, reaching 607 vehicles per 1,000 inhabitants. Between 2007 and 2012, CO₂ emissions per capita grew by 20%, and the mortality rate from vehicle crashes rose by 18%.⁸⁴ Concerned by these trends, the city took action to reform off-street parking.

Efforts to address parking issues began in the early 2000s, with the first pilot for parking reform in 2003. This was followed by a new zoning act in 2004, but this did not significantly change parking minimums throughout the city. Efforts made by the public sector and civil society to renew the strategic master plan failed in the late 2000s. Yet with a new mayor in 2013, along with renewed momentum, civil society organizations and the government pushed again for significant off-street parking reforms. A review of the overall strategic urban plan for São Paulo in 2013-2014 provided an opportunity to reevaluate parking policy and management in the city.

The adoption of the 2014 Strategic Master Plan included multiple off-street parking reforms:

1. Elimination of off-street parking minimums citywide.

São Paulo’s parking minimums had been high prior to the reform, as shown in the table below.

	Unit Size	Parking Minimum (Removed in 2014)
Residential	Under 200 m ²	1 space
	200-500 m ²	2 spaces
	500+ m ²	3 spaces
Non-residential	Every 50 m ² of computable area (ñR1)	1 space
	Every 35 m ² of computable area (ñR2)	1 space

Between 1985-2013, 13,248 residential developments were built, with a total of 755,716 units and more than 1.1 million parking spaces. An estimated 27% of the total built area during this period was space for parking.⁸⁵ The 2014 Strategic Master Plan removed parking minimums for all land uses across the city.

2. Restrictions on how much off-street parking could be built in rapid transit catchment areas.

These restrictions are not exactly maximums, but function similarly. Before the reform, if developers built parking beyond the minimum, those spaces would not count towards the building’s floor area (nor the calculation of floor area ratio). The reform now limits how much parking can be excluded from the floor area total, and imposes the same fee that developers must pay to build beyond the established floor area ratio for parking space built beyond the limit.⁸⁶ This is meant to force developers to more carefully consider the opportunity cost of providing more space for parking as opposed to providing more space for leasable uses like residential or commercial. If developers want to provide more parking, they can, but it counts towards the building’s floor area and will incur development fees.

85 ITDP Brazil. (2018). *Proibido Estacionar: Área De Pedestres E Ciclistas. Políticas de estacionamento em edificações na cidade de São Paulo: Análise dos efeitos da legislação no desenvolvimento urbano.*

86 Barter, P. (2014, October 27). São Paulo's parking "maximums" ain't maximums.

3. Elimination of “frontage parking”.

This removed the ability to provide parking in the “frontage area” between a building and the front of a surface parking lot.

Two years later, the city approved the Land Installment, Use and Occupancy Law (LPUOS), which consolidated the strategies presented in the 2014 Strategic Plan, regulated some key premises in the plan, and defined objective parameters for real estate production in São Paulo. In 2016, São Paulo also introduced the Zona Azul Digital on-street parking management system, which replaced the previous ticket-based system. Zona Azul Digital enabled better management and parking compliance through its use of digital applications. A new zoning code adopted in 2016 also required bicycle parking in new developments, another strategy to bolster non-motorized transportation use and access in the city.

Process & Timeline

1972	Parking minimums are implemented through the Basic Urban Plan (PUB) and the Master Plan of Integrated.
2003	Parking reforms are piloted in some areas of the city.
2004	A new zoning act is passed, but parking minimums were not significantly changed.
2008	Attempts to renew the strategic master plan, and further address parking issues, fail.
2013	Fernando Haddad is elected mayor, renewing interest in revising the strategic master plan.
2014	A new Strategic Master Plan is approved, which included three major off-street parking reforms: (1) elimination of parking minimums citywide, (2) restrictions on off-street parking provision near rapid transit, (3) elimination of frontage parking.
2015	A Mobility Plan for São Paulo is published (from the 2012 PNMU requirement).
2016	The Land Installment, Use and Occupancy Law (LPUOS) is approved. The Zona Azul Digital on-street parking program replaces the previous system, and a new zoning code includes bicycle parking requirements for new construction.
2017	After 1 year of operation, Zona Azul Digital increases parking compliance, resulting in a 60% growth in on-street parking revenue.

Sources for timeline: [ITDP Brazil. \(2018\). Proibido Estacionar: Área De Pedestres E Ciclistas. Políticas de estacionamento em edificações na cidade de São Paulo: Análise dos efeitos da legislação no desenvolvimento urbano. Barter, P. \(2014, August 23\). São Paulo's parking U-turn. Scruggs, G. \(2014, July 16\). Can São Paulo's New Master Plan Pry Fingers Off Steering Wheels? Next City, ITDP. \(2014, July 7\). New São Paulo Master Plan Promotes Sustainable Growth. Eliminates Parking Minimums Citywide. Transport Matters, Parking Reform Atlas. \(n.d.\). Digital Blue Zone on-street parking payments in São Paulo. Pojani, D., Corcoran, J., Sipe, N., Mateo-Babiano, L., & Stead, D. \(Eds.\). \(2019\). Parking: An International Perspective. Elsevier.](#)

Challenges

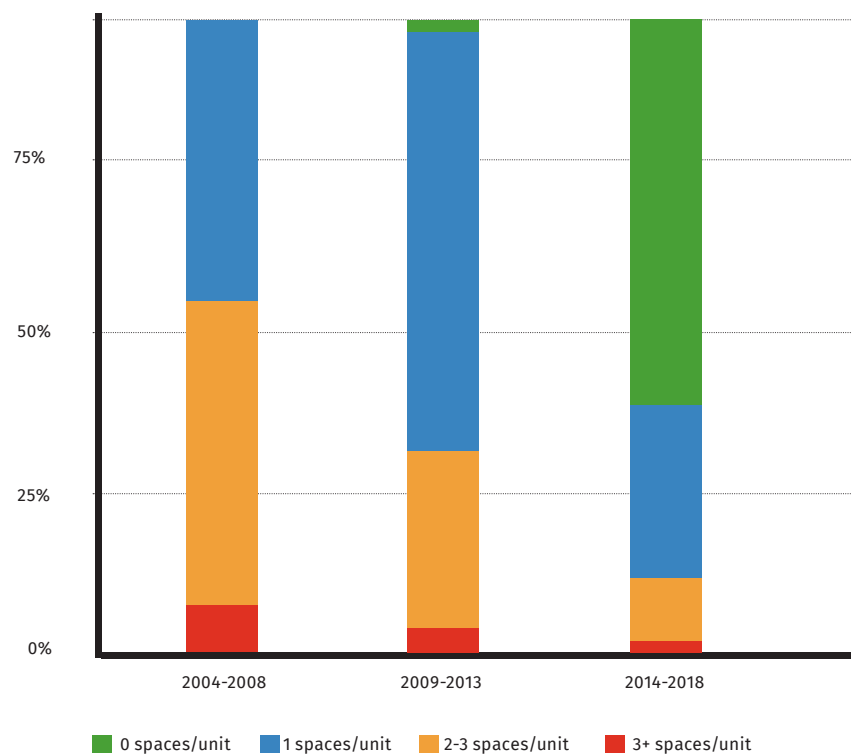
- **Developer pushback**

Developers pushed back against the new fee the 2014 Strategic Master Plan placed on building parking beyond set limits. This made it difficult for developers who were building in areas where demand for parking was still high. In some cases, developers tried to circumvent paying the fee by dividing large units into two smaller units, building parking for those, and then listing the unit as it was originally designed. Ultimately, the 2016 Land Installment, Use, and Occupancy Law modified the 2014 requirements, changing the amount of parking that can be excluded from the total floor area from one space per residential unit to one space per 60m². This enabled developers to build more than one parking space for larger residential units.

Results

The 2014 Strategic Master Plan reforms have impacted developers' calculus when considering where and what size building to construct. In the years following the adoption of parking restrictions in transit adjacent zones (and the elimination of parking requirements for social housing projects), developers reported being able to build public housing closer to the city center (and, thus, closer to jobs and public transport) because they do not have to include parking in development costs.⁸⁷ From 2014 onwards, there has been a growth in residential units with fewer or no parking spaces built. Nearly 60% of housing units constructed in rapid transit adjacent zones from 2014-2018 had zero parking spaces built.⁸⁸ The following chart demonstrates this decrease for the period of 2004-2018.

Parking Spaces Constructed Per Housing Unit in Sao Paulo's Adjacent Zones



SOURCE: Created using data from São Paulo, SMUL/PLANURB (2021).

After the first year of operation of São Paulo’s on-street parking program, Zona Azul Digital, revenue increased by 60% which raised R\$89 million (approximately \$27 million USD). The automated system helped to improve parking compliance by reducing fraud and reselling, which was common with the previous paper coupon system, and enabling digital parking space occupancy tracking. This success led to replication of the program in other Brazilian cities.

Overall, São Paulo’s parking reforms, alongside public transportation improvements and other urban development efforts,⁸⁹ have contributed to lower CO₂ emissions per capita (from 875 kg per person in 2012 down to 679 kg in 2018), as well as a reduction in the motorization rate and mortality rate from traffic crashes.⁹⁰

Lessons Learned

- **Make plans for reform clear, and inform and engage residents through multiple communication channels**
Communication with residents is critical to building support and ensuring people understand that parking reform does not mean the immediate elimination of parking spaces. As summarized by one interviewee, a more robust communications strategy, possibly including campaigns or journal articles, would have been helpful support for the reform in São Paulo. While São Paulo did undertake a participatory process, it is important to diversify the ways in which people can attend and contribute to these processes.
- **Capitalize on (and build) political will**
São Paulo’s success with off-street parking reform was dependent on the strong political will of decision-makers in office at the time. The swift execution of the reform in the 2014 Strategic Master Plan followed the election of a willing mayor in 2013. This demonstrates how parking reform can be implemented quickly, especially when key elected officials are willing to support it. If political will is not there, build capacity among existing public officials to cultivate a deeper understanding of parking and its impacts on land use, housing availability, and environmental issues. Relatedly, developing clear internal alignment can broaden the base of support. In São Paulo, a pact between the secretariats of urban development and transport established a common focus and joint work related to parking. This alignment generated a helpful, streamlined flow for decision making.
- **Galvanize and leverage civil society advocacy**
Civil society organizations advocating for reform and action on urban transportation issues more broadly were welcomed by the government, and integrated into the agenda. Mayor Haddad’s administration skillfully channeled momentum building around a grassroots movement in response to public transport fares into political will for broader urban transport reform and investment, including for parking reform, as part of the strategic plan development process.
- **Position parking reform as a solution to a problem, not a silver bullet**
While the parking reforms in São Paulo were important for the promotion and expansion of affordable housing in the city, adopting the reforms alone were never going to be sufficient to “solve” the complex challenge of housing affordability. About 300,000 housing units have been licensed in the city since the Strategic Master Plan was adopted in 2014, but the index for housing deficit has only shifted by 35,000 units, indicating that the production of housing is not keeping pace with residents’ needs. In other words, a package of equitable, accessible transportation and development policies—alongside and beyond parking reform—is needed to meaningfully tackle affordable housing deficits and other complex land use challenges.

89 Active mobility (walking and cycling) and public transportation infrastructure were expanded in the 2010s in Sao Paulo which significantly contributed to these trends. [Pojani, D., Corcoran, J., Sipe, N., Mateo-Babiano, J., & Stead, D. \(Eds.\). \(2019\). *Parking: An International Perspective*. Elsevier.](#)

90 [ITDP Brazil. \(n.d.\). *Mobilidade*. Historic Serie: São Paulo.](#)



5. SHARED LESSONS

Removing parking minimums is an important first step toward improving off-street parking. Related tools like adopting parking maximums and limiting the street frontage of surface lots and garages help deliver even greater impact.

The case studies in this report demonstrate that removing parking minimums (and adopting maximums) does not mean removing existing parking or preventing all future parking construction. Instead, new buildings emerge with less on-site parking and some existing buildings repurpose some of their parking space, bringing the supply of parking space closer to demand. Coordination between on- and off-street parking management optimizes availability, meaning if managed well, parking should be available to those who need it. In other words, removing parking minimums means that parking does not need to be provided on-site at every single building, but it can still be provided.

Cities can successfully remove parking minimums even if car use (and demand for parking) is high, so long as they plan for parking that is public, priced (ideally), and well-managed. Such a transition is compatible with walkability and the potential to improve alternatives to driving. Off-site parking, especially open-to-the-public parking, can still be widely available if that is what a city wants or needs.

As more and more cities around the world eliminate parking minimums, impose maximums, and otherwise improve parking management, there is more evidence of the success of these efforts, as well as evidence of public acceptance when executed well.⁹¹ There are also lessons cities around the world can learn from early-adopters, including those highlighted in this report:

Remove (or reduce) parking minimums

As we saw in every case study, parking reform can take a long time, so it is critical to take action--for example, by removing or reducing parking minimums--as soon as possible. Though it may seem bold, removing parking minimums entirely, as was done in Mexico City and São Paulo, is inherently incremental in the sense that parking supply (and demand) changes slowly. Another type of incremental approach--using phases to eventually scale the policy citywide, like what was done in Minneapolis and Atlanta--can reduce pushback due to fear of change, and help cities build the courage for more bold reforms. Keeping the policy relatively simple to implement, enforce, and understand is also advantageous; complex floor area equations and fees tied to parking maximums can bog down the process and may not yield much in the way of added impact.

Enabling Action: Draw on other cities' parking reforms

It is not necessary to develop parking regulations completely from scratch. Drawing on the experience of peer cities (in the same country, of a similar size/density, etc.) can jumpstart the reform process and provide “proof of concept” evidence. [\[See San Pedro Garza Garcia and New Zealand case studies\]](#)

Leverage political will at the right level of government

In many cases, political will at the top (mayor, head of state) lays the foundation for movement on parking reform. In New Zealand, taking up parking reform at the national level reduced the need to build political will in many individual cities, which meant widespread adoption of the policy could happen more quickly. In São Paulo, key city-level decision-makers and a supportive mayor led to the efficient adoption of parking reforms as part of the city's Strategic Master Plan. Furthermore, a pact between the urban development and transport secretariats aligned the work of both agencies related to parking, which led to more streamlined decision making. If political will is not there, it is important to build capacity among existing public officials to cultivate a deeper understanding of parking and its impacts on land use, housing availability, and environmental issues.

OPPOSITE PAGE
Regina, a
pedestrianized
Street in Mexico City
Downtown
SOURCE: ITDP Mexico

Enabling Factor: Build staff capacity

In many cases, transportation, planning, or related agency staff are not technical experts on parking. Cities (and national governments) that ensure staff understand the need for parking reform, and have the necessary resources and capacity to implement, operate, promote, enforce, and evaluate the reform will be more successful. [\[See New Zealand case study\]](#)

Similarly, staff capacity should be considered during the policy design phase; complex calculations to determine whether and how much developers must pay in impact fees, for example, places additional burdens on staff time. If staff capacity is limited, prioritize simple, straightforward reforms. Parking reform and management does not end once new regulations are in place. It is important to have systems in place to evaluate and adapt the reforms over time, including collecting data on key performance indicators. If regulations have been piloted in certain zones or districts, evaluation can help to scale the changes to other parts of the city. [\[See Mexico City case study\]](#)

Communicate plans for reform using messaging that resonates with people

Parking reforms can be very technical and difficult for most people to understand. Therefore, it is important to consistently engage with residents, businesses, employers, and other key stakeholders throughout the planning, design, and implementation process, and to focus on the story of how parking impacts their daily lives. Where possible, use language that links parking reform to opportunities for more usable, activated spaces as opposed to “removing” or “eliminating” parking minimums, which can result in pushback from those who perceive this phrasing to mean all of their parking options will disappear.

It is also important to document these engagement efforts and make all decisions and changes publicly available to maintain transparency and trust in the system. [Atlanta](#) conducted workshops, question and answer sessions, and other events to gather feedback from stakeholders across the city about potential parking changes. The city made sure that the agenda and solutions for these sessions were not fully formed, so that final decisions could be responsive to residents’ feedback and needs. [São Paulo](#) also used a participatory process, however civil society advocacy played a more significant role in building momentum for the parking reforms there. In [Beijing](#), multiple communication channels, including mass media, social media, and posters and billboards, were used to educate the public about newly-adopted parking reforms. Mexico City did a lot of engagement with journalists and other influencers to communicate the benefits of parking reform.

Collect and reference data to strengthen the “why” and “how”

Data is an important tool to communicate the local impacts of parking reform. In Atlanta, data on expected outcomes of parking reforms, like protecting small businesses and expanding affordable housing, helped make these changes personal to residents. In Mexico City, key data points like the huge percentage of floor area dedicated to parking in the city underscored why it was necessary to take action on the issue of parking. In New Zealand, a cost-benefit analysis of removing parking minimums demonstrated benefits for both large and small urban areas, which helped to build wider support for this reform within the Ministry for the Environment. Data also supports cities as they revisit their off-street parking policies, demonstrating how the reforms are functioning in the context of predetermined city goals. In Mexico City, data demonstrating the success of the *ecoparc* on-street parking program motivated the government to pursue off-street parking management to continue to advance toward its ambitious mobility goals.

Enabling Factor: Revise and adapt reforms over time

Parking reform and management does not end once new regulations are in place. It is important to have systems in place to evaluate and adapt the reforms over time, including collecting data on key performance indicators. If regulations have been piloted in certain zones or districts, evaluation can help to scale the changes to other parts of the city. [\[See Mexico City case study\]](#)

Package parking reform alongside complementary policies

It may be advantageous to package parking reforms with complementary policies, such as adjustments to zoning codes to build housing density (e.g. limiting single-family zoning or permitting accessory dwelling units). Packaging these more technical policies together may help to limit public backlash because it makes a more clear association between parking and related issues like housing affordability. In Atlanta, Minneapolis, and New Zealand, the packaging of multiple policy reforms shielded off-street parking reforms from generating public concern and backlash.

Enabling Factor: Adopt design standards

Design standards for building and street frontage can be an effective way to regulate parking supply before (or in addition to) moving forward with more comprehensive parking reforms like removing parking minimums. [\[See Minneapolis case study\]](#)

Link parking reform to specific, achievable outcomes

Parking reform can be positioned as a solution to a specific local problem, like a lack of affordable housing in [New Zealand](#) and [Atlanta](#), or rampant encroachment of vehicles in public space in [Beijing](#). This link should be integrated into messaging and promotion for the reform so that people understand the motivation behind the changes and can envision a different future for their city. Parking reform can also be used as a mechanism to achieve broader city goals. For example, in [Minneapolis](#), off-street parking reforms aligned with goals set out in the city's comprehensive plan, such as eliminating disparities, designing complete neighborhoods, and minimizing the impacts of climate change.



Space for cars or space for people? What do our cities need more of?
SOURCE: ITDP Africa

APPENDIX

HOW DID WE DEVELOP THIS REPORT?

ITDP created this report utilizing a qualitative methodology, based on a comprehensive review of academic and gray literature and data from external expert interviews. In addition, ITDP experts provided guidance on the state of off-street parking management in different geographic regions as well as their expertise supporting off-street parking reforms.

We selected the seven case studies with the intention of capturing a variety of different jurisdictions and population sizes, regions, and off-street parking context factors (including timeline of implementation and reform strategies). The case study selection process was also influenced by the availability of data - information for cities in North and South America was more readily available. This is in part due to ITDP's experience and engagement in North and South America, as well as the huge uptake in off-street parking reforms in these regions in recent years. However, there are many cities in other regions, especially Europe and East and Southeast Asia, that have undertaken off-street parking reforms, such as Singapore, Berlin, and London, which all provide best practices. Notably, Japan and Seoul, South Korea have taken a different approach to off-street parking reform by significantly reducing (but not eliminating) off-street parking minimums.⁹² While these measures have been successful, we focus on the elimination of minimum parking requirements and therefore do not include these examples. The case studies chosen also reflect more recent reforms and those where ITDP has worked, supplementing the strong body of existing literature on international parking reform case studies.^{93 94}

Interviews with external experts in six cities and New Zealand, including urban planners, technical experts, politicians and civil society members, were conducted in early 2022. These interviews provided on-the-ground expertise for each case study. Information for the Mexico City case study was derived from interviews conducted in 2020 and supplemented with existing research led by ITDP Mexico.⁹⁵ A list of internal and external experts consulted is provided below.

92 Japan has exceptions for small to medium buildings and Seoul pairs their low minimums with maximum requirements in central transit-oriented development (TOD) districts. [Barter, P. \(2022, April 5\). Are Parking Minimums an Endangered Species Internationally?](#)

93 [Reinventing Parking \(Paul Barter\). \(n.d.\) Parking Reform Atlas.](#)

94 [Parking Reform Network. \(n.d.\). Parking Mandates Map.](#)

95 ITDP México. (2020). [. Más ciudad, menos cajones: Evaluación de impacto del cambio a los requerimientos de estacionamiento en la Ciudad de México y recomendaciones de política pública.](#)

Case Study	Interviewed Experts
<p>Atlanta, GA United States</p>	<ul style="list-style-type: none"> • Aaron Fortner, Canvas Planning Group, Principal and Founder • Bakari Height, MARTA Army • Caleb Racicot, TSW, Principal, Planning Studio Manager • Chanel Zeisel, Assistant Director of Housing and Community Development • Joshua Humphries, Director of Housing and Community Development • Keyetta M. Holmes, Director of Zoning & Development
<p>Beijing China</p>	<p>Experts not listed to protect their privacy.</p>
<p>Mexico City Mexico</p>	<p>Several experts involved in the Más Ciudad Menos Cajones 2020 update were interviewed for this report:</p> <ul style="list-style-type: none"> • Andrés Lajous (Secretario de Movilidad de la Ciudad de México) • Andrés Sañudo (former Parking Policy Lead at ITDP Mexico) • Olivia Ortiz (Subdirectora de Relaciones Públicas, Banco Inmobiliario Mexicano) • Daniel Gonzalez • David Hoffs • Enrique Soto • Homero Garza • Isaac Lozada • Pablo Benlliure • Additional coordination and information provided by the Secretaría de Desarrollo Urbano y Vivienda (SEDUVI), CoRe, and IMCO.
<p>Minneapolis, MN United States</p>	<ul style="list-style-type: none"> • Allan Klugman, Principal Professional Engineer, City of Minneapolis Department of Public Works • Dillon Fried, Assistant Parking Systems Manager, City of Minneapolis • Jason Wittenberg, Minneapolis, MN, USA • Jon Wertjes, Minneapolis, MN, USA • Joseph Bernard, Minneapolis, MN, USA • Kathleen Mayell • Lisa Austin, MnDOT Transit & Active Transportation • Nicole Campbell, ABC Ramps Coordinator, Minneapolis • Sam Rockwell, Move Minnesota Executive Director • Tim Drew, Minneapolis
<p>New Zealand</p>	<ul style="list-style-type: none"> • Ben Wauchop, Ministry of Housing and Urban Development, Government of New Zealand, Principal Policy Advisor • Hon Julie Anne Genter, Minister of Parliament, Government of New Zealand • Jym Clark, Ministry for the Environment, Government of New Zealand, Senior Advisor, Urban and Infrastructure Policy • Hon Phil Twyford, Associate Environment Minister, Government of New Zealand • Scott Ebbett, MRCagney, Principal Consultant
<p>San Pedro Garza García Mexico</p>	<ul style="list-style-type: none"> • Katia Cuevas Sanchez, Director of Urban Planning
<p>São Paulo Brazil</p>	<ul style="list-style-type: none"> • Fernando Mello Franco, Sr. Urban Development Consultant, World Bank; Professor, Mackenzie Presbyterian University • Hannah Machado, Vital Strategies, Senior Programs Manager



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