



MEMORANDUM

To: Michael Davis, Parking Program Manager, Land Development Services
From: Nelson\Nygaard
Date: August 10, 2021
Subject: Task 3.3: Best Practices Survey

The following is a summary of innovative best practices in parking requirements for development, with a particular focus on practices from a range of innovative cities and counties across the country. The identified parking requirements effectively incorporate Transportation Demand Management (TDM) and other strategies to lower the amount of parking needed/required to support economic growth and economic development.

The summary includes parking code practices and code-complementary practices that impact the demand and management of off-street parking built into development projects.

Parking Code Practices

This section details the zoning code and site plan review-based opportunities to contribute to shared solutions for accommodating travel and parking demand generated by new development.

Removing Minimum Parking Requirements

Many cities require new developments to provide a minimum number of off-street parking spaces, varied by land use and based on outdated national standards, which tend to overstate demand and lead to an excessive supply of parking. The elimination of minimum parking requirements for developed parcels is a growing strategy in converting excess parking spaces into higher and better uses¹. Although no parking spaces may be required of developments to receive zoning approval without a variance, financiers may still require some off-street parking to deem the project rentable or sellable. Nevertheless, when given the opportunity to build less parking, many developers do so, relying instead on shared parking, active transportation, and transit investments². This strategy is being adopted across the country on smaller scales such as for specific districts—often transit-adjacent areas—within a municipality, as well as on a city-wide basis.

¹ <https://www.strongtowns.org/journal/2015/11/18/a-map-of-cities-that-got-rid-of-parking-minimums>

² <https://www.tandfonline.com/doi/full/10.1080/01944363.2020.1864225>

Case Study: Numerous and Growing

City of Buffalo, NY

The City of Buffalo was the first city to remove off-street parking minimums city-wide in April 2017, when city councilors unanimously adopted the Unified Development Ordinance (or better known as the Buffalo Green Code). The project spanned six-years, rewriting zoning and land use regulations to increase simplicity and clarity, and to focus on smart and sustainable growth³. The plan signaled a change to reverse the priorities from the 1977 ordinance which focused on heavy car-oriented land uses that catered to suburban commuting. The ordinance also promotes mixed-use developments, walkable neighborhoods, transit-orient development, active transportation options. A transportation demand management plan is also required for the construction of developments larger than 5,000 square feet, and permits will not be approved until they are submitted⁴.

City of Minneapolis, MN

In 2021, the Minneapolis City Council unanimously passed⁵ a new zoning ordinance that eliminated off-street parking requirements for new developments city-wide and adopted parking maximums. The text amendments implemented policies recommended by the Minneapolis 2040 Comprehensive Plan (adopted 2019) and Minneapolis Transportation Action Plan (adopted in 2020). These plans both prioritize a clean environment and high-quality physical environments that support multiple modes of transportation. Additionally, required bicycle parking and transportation demand management plan for new developments were adopted⁶.

City of Milwaukee, WI

The City of Milwaukee has removed off-street parking requirements located in select districts including most downtown zoning districts and redevelopment districts. In other districts, there are no parking minimums for many land uses, and parking maximums are also implemented⁷. Additionally, in 2017, bike parking requirements were added in alignment with the Milwaukee by Bike plan⁸.

City of Champagne, IL

³ <https://www.buffalogreencode.com/> and https://buffalonews.com/news/local/buffalos-zoning-code-steps-into-the-21st-century/article_a8b81e45-f6f3-526e-99fe-dde988ef9c78.html

⁴ <https://www.buffalony.gov/DocumentCenter/View/1785/Buffalo-Green-Code---Unified-Development-Ordinance-PDF?bidId=>

⁵ <https://www.minneapolismn.gov/news/2021/may/council-changes-off-street-parking-regulations/> and <https://www.planetizen.com/news/2021/05/113369-minneapolis-eliminates-parking-requirements-citywide>

⁶ https://library.municode.com/mn/minneapolis/codes/code_of_ordinances?nodId=MICOOR_TIT20ZOCO_CH541_OREPALOMO_ARTIIISPOREPARE_541.310VEPARE

⁷ <https://city.milwaukee.gov/ImageLibrary/Groups/ccClerk/Ordinances/Volume-2/CH295-sub4.pdf>

⁸ <https://urbanmilwaukee.com/2017/07/12/council-approves-more-parking-for-bikes/>

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In the City of Champagne, there are no off-street parking requirements for all land uses with the university and central business (CB-1 through -3) districts⁹. Additional parking requirements include the provision of bike parking across most land uses.

Establishing Parking Maximums

The opposite of parking minimums, parking maximums establish caps on off-street parking provision, intended to limit the oversupply of parking spaces created through new development. This can be implemented with or without parking minimums, other parking code practices, and non-code complementary practices.

Case Study: Knoxville, TN

The table below identifies parking ratios for both minimum requirements and maximum caps on “reserved” parking spaces, which the code defines as “those spaces designated for a specific unit or use.” This use of a parking maximum both reduces the risks of overbuilt parking in walkable-urban areas and incentivizes the provision of shared/public parking by developers who want more parking, or whose investors demand more parking, than a standard, fixed maximum would allow.

Land Use	Minimum Required (spaces)	Maximum Allowed as Reserved Parking (spaces)
Household Living		
0-1 Bedrooms	1 per unit	2 per unit
2 Bedrooms	1.5 per unit	
3 Bedrooms	2 per unit	
4+ Bedrooms	2.5 per unit	
Guest Parking (multifamily only)	0.125 per unit	0.25 per unit
Other Uses		
Commercial	None	3 per 1k SF of GFA
Industrial		
Other		

⁹ Sec. 37-358 in https://library.municode.com/il/champaign/codes/code_of_ordinances?nodeId=MUCO_CH37ZO_ARTVIIPALOAC_DR_DIV4RENUPASP_S37-358EXRERENUPASP

Case Study: Arlington County, VA

Within key growth districts, where there is a history of oversupplied accessory parking and undersupplied public parking, Arlington County uses a parking maximum to discourage the former and incentivize the latter. The following standards were developed for the Columbia Pike Form-Based Code, which has leveraged developers' tendency to desire "overflow" parking capacity beyond peak-hour needs to generate significant public parking capacity within private developments. The following standards have been key to this achievement:

- A maximum of one space per 1,000 square feet of non-residential GFA or two spaces per residential dwelling unit may be made available for reserved parking.
 - Reserved parking above the maximum may be provided upon payment to the County.
 - The County Manager shall establish the amount of payment annually based on the approximate cost to build structured parking.
- There are no maximums on Shared Parking.
 - Any limitations on the Shared Parking (time limits or hours of the day) shall be subject to approval by the Zoning Administrator.
 - At least 12 hours of public parking must be provided in any 24-hour period, and at least 8 of those hours must be provided during either business or nighttime hours depending on whether the Zoning Administrator determines that the primary public use will be for commercial or residential uses.

Reducing Parking Requirements

Reducing the off-street parking requirements can be done within certain zoning districts or overlays and/or can be done based on conditional actions, such as commitments to support alternative access modes. The requirement reductions may apply across all uses, or for select uses.

For Mobility Context (Transit Proximity)

Some regions have adopted reduced or eliminated off-street parking requirements based on proximity to transit, prioritizing pedestrian and alternate modes of connectivity. By reducing parking requirements for these developments, parking supply better meets anticipated demands, reduces walking distances, promotes walking and transit, and allocates more space for other complementary land uses.

Case Study: City of Portland, OR

Ahead of the adoption of its 2035 Comprehensive Plan, the City of Portland voted to eliminate off-street parking requirements for residential and non-residential uses nearby transit areas in 2016. These developments had to be within 1,500 feet of a transit station or 500 feet from a transit street with 20-minute peak hour service in order to qualify for this exception. This amendment was a reversal of a controversial reinstatement of parking minimums from 2013, which sparked an increase from advocacy groups to

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repeal parking minimums¹⁰. In 2020, the city further waived parking requirements, this time for all multi-family residential uses. Today, there are no parking requirements for residences with 30 dwelling units or less on site. For all other land uses, no parking is required when falling within these transit proximity criteria¹¹.

Case Study: Sacramento, CA

Sacramento City Council passed a Transit-Oriented Development (TOD) Ordinance in December 2018 that reduced parking requirements within a half-mile of an existing or proposed light rail station¹². Other TOD policies adopted include no parking minimums for off-street vehicle parking within ¼-mile of a light rail station, and parking minimums were reduced by 50% within ½-mile of a light rail station¹³.

For Mobility Improvements

Some regions have reduced or given credit for off-street parking requirements based on the provision of multimodal mobility options and amenities. These include bike parking, end of trip facilities (like showers), shared mobility accommodations and provision (like carshare spaces or a bikeshare station).

Bike Parking

Reduce vehicle parking requirements when bike parking is provided in excess of minimum requirements. Typically, this is articulated as a ratio of 1 vehicle-space reduced per X number of bike parking spaces provided above the minimum. The maximum reduction is typically capped at a certain percentage of the vehicle parking requirement.

Case Study: City of Folsom, CA

The City of Folsom, a city of about 75,000, allows for the reduction in vehicle parking requirements if development provide additional secure bicycle parking over and above the minimum bike parking requirements. One vehicle space may be reduced for every three additional bicycle spaces provided up to a maximum of 2% of required parking. The provision of end of trip shower/locker facilities for developments one hundred plus employees reduces required spaces by 2% or five spaces, whichever is greater. Another provision is the provision of preferred parking spaces to employees participating in carpool or vanpool. The reduction for this measure is one required space per every carpool/vanpool space up to a maximum of 2%¹⁴.

¹⁰ <https://parkingreform.org/2020/09/03/portland-has-eliminated-residential-parking-requirements-your-city-should-be-next/>

¹¹ <https://www.portland.gov/sites/default/files/code/33.266-parking-and-loading.pdf>

¹² https://sacramento.granicus.com/Viewer.php?view_id=22&clip_id=4556&meta_id=575976

¹³ <https://www.munistandards.com/ca/sacramento/parking-requirements/>

¹⁴ <https://www.codepublishing.com/CA/Folsom/#!/Folsom17/Folsom1757.html#17.57>

Case Study: Salt Lake City, UT

The provision of “pedestrian friendly amenities” such as bike racks, stroller parking areas, benches, or other amenities within 100 feet of business entrances qualified the development to exclude the first two thousand five hundred (2500) square feet to be exempt from parking requirements. These amenities must be permanently installed and maintained. Other exemptions allowed by Salt Lake City include the reduced parking requirements in proximity to mass transit: new multi-family residential, commercial, office, or industrial developments within ¼ miles of a fixed transit station can benefit from minimum required parking spaces reduced by 50%¹⁵.

Case Study: City of Portland, OR

The City of Portland allows required motor vehicle parking spaces to be reduced by one space for every five non-required bicycle parking spaces that meet defined bike parking design standards. Bicycle parking may substitute for up to 25 percent of required parking and existing parking may be converted to take advantage of this provision.

End of Trip Facilities

These measures reduce vehicle parking requirements when showers, lockers, and changing facilities are provided to support active-mode commuting to non-residential uses located on-site. Typically, this is articulated as a ratio of 1 vehicle-space reduced per X number of showers and lockers provided. The maximum reduction is typically capped at a certain percentage of the vehicle parking requirement.

Case Study: City of Bend, OR

The City of Bend allows several exceptions that be utilized to reduce required parking. For industrial, commercial or office use not already a part of transportation and parking demand management plan, providing showers and lockers for employees who commute by bike can reduce parking requirements by 5 percent per development. Other provisions that could garner a 5% reduction include providing twice as many covered and secured bike racks as required, designating at least 10% of parking to carpool/vanpool parking and locating these spaces closer to the building, and providing a transit facility with related amenities. These strategies can be employed up to a maximum 10% reduction in total number of required vehicle spaces per development¹⁶.

Shared Mobility Accommodations and Provisions

Reduction in vehicle parking requirements can be given when spaces are provided for car shared spaces and further, by ensuring a car-sharing service has committed to occupying them. Typically, this is articulated as a ratio of 1 vehicle-space reduced per X number of designated car-share spaces which a recognized car-share provider has agreed to occupy. Because this reduction is based on stated commitment to occupy

¹⁵ https://codelibrary.amlegal.com/codes/saltlakecityut/latest/saltlakecity_ut/0-0-0-69027#JD_21A.44.040

¹⁶ <https://www.codepublishing.com/OR/Bend/html/BendDC03/BendDC0303.html>

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spaces with shared cars, and because the impact of car-share access on resident vehicle ownership rates has been well established¹⁷, it is not as common to cap how much the parking requirement may be reduced through this option, particularly for residential uses.

Case Study: City of Denver, CO

The City of Denver allows reductions in the minimum number of required vehicular parking spaces where is provision of either an on-site or off-site car sharing program¹⁸ or a bike share program¹⁹. For on-site car sharing, an active car-sharing program made available in the same building or primary use lot allows for a reduction of 5 required vehicle parking spaces for each 1 space provided. If the car-sharing program is off-site, it must be provided within walking distance (with 1500 feet of the primary use lot) and be constructed simultaneously or already exist as the proposed development. The reductions for this type of car share program is determined by the zoning administrator. The provision of a bike share program must be provided at the same building, same lot, or in the “public right-of-way abutting the subject zone lot” and would allow the reduction of 1 vehicle parking space for each 5 bike share parking space provided.

Case Study: City of Milwaukee, WI

The City of Milwaukee allows a reduction of required parking spaces for a number of strategies. A 25% reduction may be permitted if developers submit documentation of established and maintained “bike-and-shower” or carpool program in close proximity to the primary use of the development²⁰. A commissioner of neighborhood service must also determine these amenities are sufficient magnitude to warrant the reduction.

Case Study: City of Oakland, CA

In 2018, city councilors and planning commission approved sweeping amendments to Off-Street Parking to the zoning code that implemented reductions in parking requirements, unbundle parking, and parking maximums among other strategies. Under these new requirements, the provision of on-site public or private car share spaces reduces parking requirements by twenty percent if they meet the following standards:

¹⁷ Cervero R., Golub, A., & Nee, B. (2007). City carshare: Longer-term travel demand and car ownership impacts. *Transportation Research Record*, 1992, 70–80.

ter Schure, J., Napolitan, F., & Hutchinson, R. (2012). Cumulative impacts of carsharing and unbundled parking on vehicle ownership and mode choice. *Transportation Research Record*, 2319, 96–104.

¹⁸

https://www.denvergov.org/content/dam/denvergov/Portals/646/documents/Zoning/DZC/Interpretations_and_Use_Determinations/Car_Sharing_Program.pdf

¹⁹ https://denvergov.org/files/assets/public/community-planning-and-development/documents/zoning/denver-zoning-code/denver_zoning_code_article10_design_standards.pdf

²⁰ <https://city.milwaukee.gov/ImageLibrary/Groups/ccClerk/Ordinances/Volume-2/CH295-sub4.pdf>

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Number of Dwelling Units	Number of Required Car Share Parking Spaces
5—100 units.	One space.
101—300 units.	Two (2) spaces.
Each additional 200 units.	One additional space.

Case Study: Montgomery County, MD

Montgomery County allows reductions in required parking spaces for commercial and residential uses or in employment zones if bike-share facilities are provided. A facility approved as part of a comprehensive plan for bike-sharing and that provides a minimum of 10 spaces may be substituted for three vehicle parking spaces²¹.

Case Study: City of New Rochelle, NY

In New Rochelle, parking facilities of 50 or more spaces across all uses can receive credit for three required spaces per every shared car parked on site. The credit can count up to 15% of the total parking requirement and is subject to Planning Board Approval²².

Via In Lieu Fee Payment

In Lieu Fee programs allow developers to provide less parking than required by paying a fee, often per non-provided space. Programs that are successful in achieving their aims — usually focused on generating revenue to construct public parking expansions, in lieu of new, private parking facilities — tend to receive less attention than those that fail. The successes, however, can be significant and transformative to creating walkable downtowns and commercial centers, where efficient, accessible parking fades into the background of the physical, visual, and mobility context. Well-established and successful examples include Santa Monica, California and Montgomery County, Maryland

Case Study: Berkeley, California

Between 2012 and 2013 the City of Berkley, California, took steps to plan, approve and implement an in-lieu parking program as a means to provide developers with the opportunity to voluntarily opt out of parking requirements in downtown Berkley. The program provides an incentive for developers to reduce the number of parking spaces in downtown while simultaneously raising funds for transit and other mobility services.

The in-lieu program is entirely voluntary, and developers cannot be compelled to pay an in-lieu fee if they choose not to. Rather, developers are given the option to provide the

²¹ <https://www.montgomerycountymd.gov/DOT-Parking/Resources/Files/Article59-6.pdf>

²² <https://ecode360.com/6732369>

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amount of parking required of any particular development, or to simply seek to gain approval to pay the fee instead.

The fee schedule and proposed uses for the collected funds of the program were developed in a workshop with city staff and the Metropolitan Transportation Commission (MTC). After considering a variety of approaches and fee levels the fee schedule was set in the following graduated range:

- \$15,000 per space for spaces 1-5 waived or reduced,
- \$20,000 per space for spaces 6-15 waived or reduced,
- \$25,000 per space for spaces 16-25 waived or reduced, and
- \$30,000 per space for spaces 26 and greater waived or reduced.

The council approved the fee schedule recommendations following a public hearing in May of 2013. The funds raised from the parking are to be sequestered and used to provide for a variety of enhanced transit and transportation demand management programs, as well as bicycle and pedestrian projects, or even structured parking. The fee schedule is to be revisited two years after implementation by the city in consultation with the MTC to ensure its effectiveness in encouraging the reduction of downtown parking space installation, and in generating funds.

Reframing Requirements Beyond Parking

Reframing off-street parking requirements around the concept of access rather than parking spaces themselves allows requirements to be met via any one of the following strategies:

1. Providing parking
2. Providing mobility
3. Funding public/shared parking/mobility (via In Lieu Fee)

Case Study: Aspen, CO

The City of Aspen approved Ordinance 13 in 2019, which created an integrated strategy to shift travel behavior through land use applications²³. The approach combined the City's Transportation Impact Analysis (TIA) process with off-street parking requirements, addressing both on-site and mobility needs for any given development. Under this process, parking requirements can be met alone or in combination with a project's Mobility Plan by the following:

- Cash-in-lieu;
- Provision of off-street parking through on-site, off-site, and reserved and accessory spaces;

²³ <https://www.cityofaspen.com/DocumentCenter/View/4393/ord-13?bidId=>

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- Provision of shared parking spaces;
- Mobility Measures, defined as transportation demand management or multimodal level of service mitigation tools. These mobility measures may satisfy the parking requirements in circumstances where the project is TIA exempt. For projects that are subject to TIA, only surplus mobility measures (anything above the minimum TIA mitigation requirements) may be used to satisfy the parking requirements²⁴.

Table 26.515-2 - Parking Requirements by Zone District				
Location	Options for Meeting Parking Requirements			
	Additional TIA Credits (Projects Subject to TIA)	Mobility Commitments (Projects Exempt from TIA)	On-Site Parking Provision	Cash-In-Lieu of Parking Fee Payment
Commercial Core (CC) and Commercial-1 (C-1) zones	Up to 2 Additional TIA Credits	Up to 2 Mobility Commitments	* Up to 20% of the Requirement. Up to 100% of the requirement if subgrade.	Up to 100% of the Requirement
Remaining Commercial, Lodging, and Lodging Overlay Zones	1 Additional TIA Credit (equal to 1 Parking Unit)	1 Mobility Commitment (equal to 1 Parking Unit)	At least 60% and up to 100% of the Requirement	Up to 40% of the Requirement
Remaining Infill Area	1 Additional TIA Credit (equal to 1 Parking Unit)	1 Mobility Commitment (equal to 1 Parking Unit)	Up to 100% of the Requirement	Up to 100% of the Requirement
All other Areas	1 Additional TIA Credit (equal to 1 Parking Unit)	1 Mobility Commitment (equal to 1 Parking Unit)	At least 60% and up to 100% of the Requirement	Up to 40% of the Requirement

Condensing Land Use/Requirement Ratio Tables

Reducing the number of land use categories with distinct parking-requirement ratios can help facilitate the reuse and re-tenanting of existing developments, by reducing the likelihood that a change of use (especially between types of retail or commercial uses or from a retail use towards a service use) will trigger the need to add parking. Specifying ratios only for uses with meaningfully distinct demand-generation rates can thus reduce

²⁴

https://library.municode.com/co/aspden/codes/municipal_code?nodeId=TIT26LAUSRE_PT500SURE_CH26.515TR_PAMA_S26.515.050MEPARE

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this cost barrier to repurposing existing buildings and spaces, a vital need for keeping urban districts vibrant and active as market trends and use patterns evolve.

Case Study: Asheville, NC

The following table presents a simplified table of parking requirement ratios for land uses, as defined in the code for the River Arts District, a neighborhood/commercial district just outside of downtown that has attracted significant growth and investment by emphasizing its walkable built form and mix of street-activating retail, culture, and food/beverage destinations.

Figure 1 River Arts Form District Parking Requirements

Land Use	Vehicle Parking (spaces)
Residential	0.75 per unit
Place of Worship	greater of 1 per 4 seats or 1 per 40 sf
High School	0.5 per classroom + 1 per 5 students
Elementary/Middle School	0.5 per classroom
Other Public/Institutional	1 per 500 sf
Recreational	1 per 500 sf + 1 per 1k sf of outdoor use area
Food/Beverage/Entertainment	1 per 250 sf
Lodging	0.75 per guest room
All Retail	1 per 500 sf
Industrial	1 per 500 sf office space + 1 per 3k sf non-office sf
Other	None

Requiring or Incentivizing Unbundled Parking

Many residential and commercial leases in buildings that include off-street parking often assume that the lessee will want the provided parking spaces, and will therefore include the cost of those spaces in the total cost of the lease or the sale of the unit. Unbundling this means the cost of the facility and parking are separate, allowing lessees or purchasers to make an educated decision on how much parking is required. As a result, the off-street parking supply can be reduced, taking into account a percentage of occupants who may not need the parking space, based on location advantages or marketing to specific future tenants.

Case Study: City of Seattle, WA

In 2018, the City of Seattle passed a Neighborhood Parking Ordinance which mandated the unbundling of parking spaces from multi-family rental agreements, providing a choice

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to pay additionally for a parking space for tenants²⁵. This is required for all multifamily dwelling units except:

- single-family homes,
- rent/income-restricted housing,
- accessory dwelling units, and
- dwellings such as townhouses where garages are integrated into the dwelling unit.

This ordinance also applies to new commercial lease agreements for spaces 4,000 square feet or larger.

Case Study: Montgomery County, MD

As part of a larger effort to update the zoning code in 2013, Montgomery County updated parking requirements as part of their commitment to sustainability²⁶. One of these regulations was to reduce parking requirements for developments implementing and unbundled parking policy. For higher density developments in specific districts, baseline minimum parking requirements were reduced if parking was sold or rented separately from the purchase or lease of the dwelling unit. This only applied in areas that were designating Parking Lot or Reduced Parking Area districts, and only for Townhouse Living or Multi-Unit Living uses²⁷. The reductions would apply as follows, reducing parking 25-50%²⁸:

²⁵

<http://www.seattle.gov/Documents/Departments/SDCI/Codes/ChangesToCodes/NeighborhoodParking/SummaryNeighborhoodParkingOrdinance.pdf>

²⁶ <https://montgomeryplanning.org/development/zoning/about/>

²⁷ <https://www.montgomerycountymd.gov/DOT-Parking/Resources/Files/Article59-6.pdf>

²⁸ https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md_zone2014/0-0-0-4324

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Use	Baseline Minimum, Unbundled	Baseline Minimum
Townhouse Living	0.75	1.00
Multi-Unit Living		
Efficiency	0.50	1.00
1 Bedroom	0.50	1.00
2 Bedroom	0.75	1.00
3+ Bedroom	0.75	1.00

Crediting Shared Parking

Many development codes require that parking provided to meet minimum requirements must be reserved for the exclusive use of on-site residents, tenants, and/or guests. However, parking users are usually not all present at the same time, so these types of policies have consistently and significantly exceeded on-site needs. With shared parking, spaces can be maximized when business or uses with different peak hours share parking spaces. Rather than one type of user per day, spaces may service multiple users. Greater reductions are possible with mixed land uses because various activities have different peak demand times. —Crediting shared parking allows new developments to share required parking across land uses.

Case Study: Town of Stoneham, MA

The Town of Stoneham, MA, with a population of approximately 20,000, allows for shared parking by special permit and by approval of the Planning Board based on the following criteria:

- The capacity, location and current level of use of existing parking facilities, both public and private;
- The efficient and maximum use in terms of parking needs and services provided;
- The relief of traffic and parking congestion;
- The safety of pedestrians;
- The provision of reasonable access either by walking distance or shuttle vehicle arrangements;
- The maintenance of the character of the area

Up to 50% of parking spaces serving a development may be shared between uses, if these uses are complementary and do not operate during the same hours. A written agreement defining these joint uses must be recorded with the Planning Board and any changes in use requires a new special permit²⁹.

²⁹ <https://www.stoneham-ma.gov/DocumentCenter/View/1225/Ch15-Zoning-Part-3>

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Case Study: City of Waltham, MA

The City of Waltham has set a Parking Credit Schedule in their Off-Street Parking Requirements that defines the minimum parking requirements for mixed-use parcels. The zoning code also dictates that the requirements should be calculated in the following manner: “Multiply the minimum parking requirement for each individual use (as set forth in the applicable section of this chapter for each use) by the appropriate percentage (as set forth below in the Parking Credit Schedule Chart) for each of the five designated time periods and then add the resulting sums from each vertical column. The column total having the highest total value is the minimum shared parking space requirement for that combination of land uses.”³⁰

The Parking Credit Schedule Chart is as follows:

Parking Credit Schedule Chart					
Uses	Weekday			Weekend	
	Night Midnight to 7:00 a.m. (percent)	Day 7:00 a.m. to 5:00 p.m. (percent)	Evening 5:00 p.m. to Midnight (percent)	Day 6:00 a.m. to 6:00 p.m. (percent)	Evening 6:00 p.m. to Midnight (percent)
Residential	100	60	90	80	90
Office/industrial	5	100	10	10	5
Commercial retail [Amended 10- 26- 1992 by Ord. No. 27451]	5	80	90	100	70
Hotel	70	70	100	70	100
Restaurant	10	50	100	50	100
Restaurant associated with hotel	10	50	60	50	60
Entertainment/ recreation (theaters, bowling alleys, cocktail lounge and similar)	10	40	100	80	100
Day-care facilities	5	100	10	20	5
All other	100	100	100	100	100

³⁰ <https://ecode360.com/26938091>

Incentivizing Shared Parking

Zoning regulations that encourage the provision of shared parking rather than reserved parking may be combined with other parking code strategies, such as parking maximums or required TDM plans.

Case Study: City of Bend, OR

The City of Bend allows shared parking to satisfy parking requirements if owners or operators can show that the shared uses do not overlap and include a joint use agreement. Shared parking is encouraged. An incentive tied to shared parking is under Bend's maximum parking requirements, where shared parking spaces would not apply to the maximum number of allowable spaces³¹.

Case Study: Arlington County, VA

Within the Columbia Pike Form-Based Code that institutes parking maximums and a fee for additional spaces to reduce accessory parking, there are no maximums on shared parking. This incentivizes the use of shared parking.

- Any limitations on the Shared Parking (time limits or hours of the day) shall be subject to approval by the Zoning Administrator.
- At least 12 hours of public parking must be provided in any 24-hour period, and at least 8 of those hours must be provided during either business or nighttime hours depending on whether the Zoning Administrator determines that the primary public use will be for commercial or residential uses.

Crediting Off-Site Parking

Many codes allow developers to leverage existing parking located off-site, whether controlled by the developer or through an agreement with a separate owner, to accommodate some or all of the parking needs of new development. This can reduce the amount of new parking that must be constructed as part of the development and make use of excess supplies provided at previous developments, and/or public parking investments in the area.

Case Study: Chattanooga, TN

The City of Chattanooga provides the following option for this.

- Off-site parking less than 300 feet from the site can be counted towards the parking minimum.
- Off-site parking between 300 and 900 feet of the site can be counted towards 25% of the parking minimum.

³¹ <https://www.codepublishing.com/OR/Bend/html/BendDC03/BendDC0303.html>

Case Study: Salt Lake City, UT

In Salt Lake City, the provision of off-site valet parking can satisfy off-street parking requirements if the following criteria is met:

- “Adequate assurances are provided attesting to the continued operation of the valet parking, such as a long term contract with a provider or a contract for lease of off site parking spaces;
- The design of the valet parking does not cause customers who do not use the valet services to park off the premises or cause queuing in the right of way; and
- The valet parking service is conspicuously posted outside the establishment and near the main entrance.”

Allowing Shared Parking at Established Uses

Parking code updates can include provisions that allow existing oversupplied capacities to be used as shared parking. Such provisions should allow required parking spaces to be shared, applicable to existing properties and the parking spaces provided to meet on-site parking requirements.

Case Study: Arlington County, VA

A 2005 update of the County’s parking code included the following provision:

“Parking spaces in C, C-O, M, RA-H or R-C districts which are required by this zoning ordinance may be used by persons other than persons engaging in uses on the site, provided that said spaces shall be made available at all times to persons engaging in uses on the site at least at the same rates as to persons not engaging in uses on the site, and provided that there is no demand for said spaces by persons engaging in uses on the site.”

Defining Bike Parking Capacity and Design Standards

Case Study: Cambridge, MA

The City of Cambridge was one of the first cities to codify bike parking requirements that articulate distinct requirements for short-term and long-term parking facilities, as well as specific design standards for both. Following are some key concepts included in its current requirements:

- Bicycle parking for both short and long-term parking have minimum requirements for primary uses.
- Long-term bicycle parking must be enclosed and within 200 feet of a pedestrian entrance. Parking may also be shared between nearby uses or buildings.
- Short-term parking must be reasonably located within 50 feet of a pedestrian entrance, but if not feasible, an in-lieu fee may be paid towards a public facility.
- Bicycle racks and lockers must meet certain design guidelines including size and number of bicycles for each type of parking facility.

Task 3.3: Best Practices Survey
Fairfax County

- Bicycle parking access must meet standards such as minimum width, maximum grade change, and be lighted in addition to the parking spaces

Case Study: Chattanooga, TN

Required bike parking in the City's downtown³² must meet the following criteria:

- Located on-site and publicly accessible in a convenient and visible area
- Located no more than 100 feet from the primary entrance of the building the bicycle parking space is intended to serve.
- Each space is given at least 1.5 feet by 6 feet.
- Surfaces must be paved or of dust-free pervious material, with a slope no greater than 3%.
- Surfaces cannot be gravel, landscape stone or wood chips.
- All spaces must be provided in a well-lit area.
- Racks must provide clear and maneuverable access.
- All facilities must be able to accommodate cable locks and "U" locks, including removing the front wheel and locking it to the rear fork and frame and must be able to support a bicycle in a stable position, giving two points of contact with the bicycle frame.

Requiring TDM Plans

Arlington County's incorporation of TDM into its development code set a precedent for this approach to aligning off-street parking policies with sustainable growth goals. In 2020, Atlanta adopted a zoning ordinance that puts TDM at the center of development review and approval.

City of Atlanta, Georgia

In 2020, the City of Atlanta adopted its Transportation Demand Management strategy and associated ordinance which requires multi-family residential, office, or hotel development greater than 25,000 square feet to submit a transportation demand management plan prior to permit approval³³. The ongoing implementation of strategies under a submitted TDM plan must be summarized and submitted to the City annually.

Depending on the type of land use, there are a number of required strategies that must be met by each TDM plan and then additional strategies chosen under Level A, Level B, and Level C (Level A being more effective and Level C being less effective). These measures aim to reduce single occupancy trips and improve access to sustainable travel modes such as transit, walk, biking, and other active mobility measures.

³² https://library.municode.com/tn/chattanooga/codes/code_of_ordinances?nodeId=DC

³³ <https://atlantacityga.iqm2.com/Citizens/FileOpen.aspx?Type=4&ID=43043&MeetingID=3353>

Design Standards

The regulating of design standards for parking lots and spaces improves parking access, parking flow, increase safety, reduce impediments in the right-of-way and encourages enjoyable pedestrian movement.

Case Study: Seattle, WA

The city of Seattle, WA has an extensive chapter on parking regulations that cover the amount of parking needed in specific zones as well as the design of parking spaces, structures, and access. The following are some examples of the designs specified in the zoning code.

- To provide enough access into and out of a property, driveways must meet certain minimum and maximum design standards to allow vehicles safely enter and exit. If driveways intersect streets at more than 35 degrees from perpendicular, they must follow certain radius requirements.
- Curb cuts are regulated by number, size, location, and design. Depending on the type of road, curb cuts may be allowed or must have a special permit. Attached buildings may have shared curb cuts and driveways.
- Curb cuts must provide a clear line of site to points 10 feet from both sides of driveways. Driveway curb cuts must also provide minimums amount of space for sidewalks beside the driveway and between the lot line and the road.
- Parking space types are regulated depending on the use and the type of parking structure. Angles for types of parking spaces are provided to allow for adequate entrance and exit of parking space.
- Depending on type of parking space, landscaping of parking areas is permitted or may be required. A minimum amount of landscaped area may be needed to buffer sounds, sight, or provide water run-off.

Code-Complementary Practices

Replacing Accessory with Public Parking via Public-Private Joint Development

Public Parking programs are increasingly using use joint-development to ensure that the parking facilities they build are part of mixed-use buildings designed to enhance their surrounding contexts, with prominent and active, street-oriented businesses along their perimeters. A primary advantage of a joint-development project is that both parties gain, through shared-use efficiencies, more parking capacity per construction dollar than would be financially feasible for a stand-alone public facility or a private, accessory parking garage. Each gains significant access to “overflow” capacity by allowing demand to flow freely toward space availability, rather than according to an assortment of parking restrictions.

Furthermore, when built in lieu of accessory parking, joint-development helps to emphasize the municipal parking system, and the inherent efficiencies and shared-benefits it offers, to support area growth. When the municipal system is coordinated with TDM programs, parking customers also benefit from increased awareness of benefits, programs, and events that can make non-driving alternatives cheaper, more appealing, and easier to use. Combined, these benefits suggest joint-development as the ideal model of supply expansion for shared parking districts.

Case Study: The Flats at Bethesda Avenue, Montgomery County

The Flats at Bethesda Avenue, located in Bethesda, Maryland, is a mixed use development on 1.4 acres of land, completed as a joint-development between a private developer and Montgomery County, through its Parking Lot District program. The project includes 162 residential units, including 38 affordable workforce-housing units. It also includes 28,000 square feet of retail on the ground floor, primarily occupied by restaurants and food and beverage retailers.

Flats at Bethesda Avenue, Bethesda, MD



Source: <http://www.flatsatbethesdaavenue.com/gallery/>

The County's primary goal for the development was to increase the public parking supply without creating stand-alone parking facilities. The County requested private developers to propose plans to purchase two PLD lots, which contained 279 public spaces, and build 980+ public parking spaces underground as part of a mixed-use development. The request stipulated the development of private residences and retail above the parking facility, as well as a requirement for 15% of housing to be offered as affordable units. The four-level underground garage that was part of the winning Bethesda Flats proposal is owned and managed by the County, while everything above it is owned and managed privately.

The Bethesda Flats project realized these minimum criteria, and brought benefits beyond these efficiencies, using location, programming, and design to emphasize non-driving mobility and access which allows the project to extract even greater value from each of its 980 parking spaces.

Curb Management Programs

Resident Permit Programs

Los Angeles, CA

To manage demand for on-street parking, Los Angeles has designated zones within the city that require parking permits. The program has three permitted zones with the following regulations³⁴:

- Preferential Parking District (PPD): areas that limits parking for vehicles without permits. This district focuses on the impact of non-resident parking.
- Overnight Parking District: areas that limits parking for vehicles without permits between 2:00 AM and 6:00 AM. The stated purpose for this district is to reduce “the impact of criminal and public nuisance activities”
- Oversize Vehicle Restricted Area: areas that limit parking by oversized vehicles between 2:00 AM and 6:00 AM.

The table below presents the various permit options by residents³⁵:

Permits/ Aspects	Preferential	Overnight	Oversize
Cost for Resident Permit	\$34/year, limit 3 per household	\$15/year	\$10/daily
Costs for Visitors/Guest Permit	\$22.50 Visitor (up to 4 months) \$2.50 Guest (1 day)	\$10 Visitor (up to 4 months) \$1 Guest (1 day)	N/A

Commercial Loading and Unloading

Curbside zones for commercial loading and unloading activity facilitate efficient delivery of goods and services in urban areas lacking consistent provision of off-street loading facilities. With the increased reliance on household package, parcel, and food delivery, such zones – always essential for supporting the businesses that help create walkable, mixed-use, urban districts -- have become even more essential in recent years. Street design in these areas often presents challenges for accommodating the diversity of functions and uses vying for space along the curb. Several practices have emerged for ensuring that goods and services deliveries are adequately accommodated, while also finding balance to accommodate other uses along the same stretches of curb.

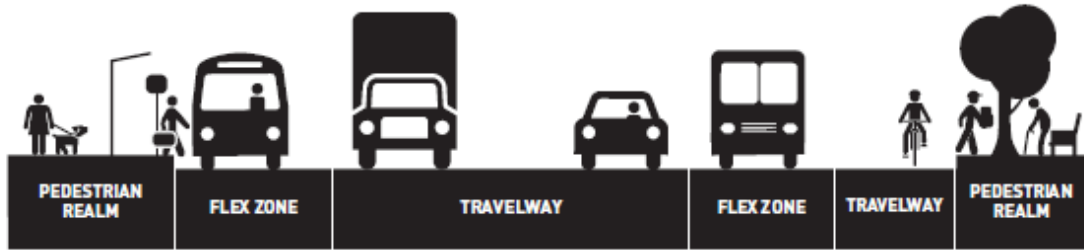
³⁴ <https://ladot.lacity.org/projects/parking-la#residential-parking-permits>

³⁵ <https://www.ladotparking.org/permits/ppd-permits/#preferential-permit>

Case Study: City of Seattle, WA

The City of Seattle adopted their Comprehensive Plan, which prioritized the use of road right-of-ways to accommodate multimodal mobility functions³⁶. The implementation of a new “flex zone” located between the vehicular travelways and active transit travelways and sidewalk.

HOW WE USE THE STREET



The uses for the flex zone span are prioritized based on the surround land use according to the chart below. While support for Modal Plan Priorities (i.e., sidewalk, bus/streetcar lanes, bike lanes) is a baseline priority, access for commerce ranks high under commercial, mixed use, and industrial land uses. Access for commerce supports using right-of-way flex spaces to be commercial vehicle load zones or truck load zones³⁷.

Flex zone functions are prioritized based on surrounding land use

	Residential	Commercial & Mixed Use	Industrial
1	Support for Modal Plan Priorities	Support for Modal Plan Priorities	Support for Modal Plan Priorities
2	Access for People	Access for Commerce	Access for Commerce
3	Access for Commerce	Access for People	Access for People
4	Greening	Activation	Storage
5	Storage	Greening	Activation
6	Activation	Storage	Greening

Additionally, the City of Seattle has designated load zones for either people or goods and dedicated passenger load zones which are time limited³⁸. There are also truck-only load zones

³⁶

https://www.seattle.gov/Documents/Departments/OPCD/OngoingInitiatives/SeattlesComprehensivePlan/CouncilAdopted2016_CitywidePlanning.pdf

³⁷ <https://www.seattle.gov/transportation/projects-and-programs/programs/parking-program/parking-regulations/flex-zone/curb-use-priorities-in-seattle>

³⁸ <https://www.seattle.gov/transportation/projects-and-programs/programs/parking-program/parking-regulations/load-zones>

which are restricted to licensed vehicles and commercial vehicle load zones which are restricted to those with commercial vehicle permits. Without a permit, commercial vehicles in these zone are required to pay.

Passenger Loading and Dropoff

Case Study: City of Portland. OR

The City of Portland currently has a number of passenger loading/unloading zones under its curbside management policies. No parking is allowed at these zones unless stated, and they are designated for the purposes of drop-off and pick-up by specific users³⁹.

Zones	Purpose	Fees	Time Limit	Users
Passenger Load/Unload	Installed at discretion of the city in areas with high passenger loading needs. Some may be timed and require that drivers remain at the wheel.	No fees	None or 5 minutes	All users including taxis and TNCs
Hotel	Three hotel zone stalls for any new hotel and installed for guest loading / check in.	No fees	15 minutes	Hotel patrons or visitors
Valet	Installed by valet request for operations of their services.	Valet permit at \$100/year plus sign installation (one-time fee) plus meter revenue offset (\$320 - \$815/year per stall)	None	All users
Taxi	Installed in areas that would otherwise be no parking zones for taxis to wait for passengers.	No fees	None; taxis may leave vehicle unattended for 15 minutes.	Taxis with taxicab permits.

³⁹ https://www.portland.gov/sites/default/files/2020-06/pzt-task-force-3-options-for-consideration_0.pdf

Performance-Based Pricing

Demand-responsive pricing charges the lowest possible rate that achieves parking space availability targets. This involves moving from a static pricing system to a demand-based one in which rates are adjusted over time based on utilization data. To achieve ideal occupancy rates, cities decrease hourly rates where utilization is consistently lower than the target and increase hourly rates in areas where utilization is consistently higher than the target. By routinely adjusting based on consistently evaluating utilization data, demand and pricing are better aligned to ensure there is always an open space at an optimal price. The result is that parking is easier to find, search times are reduced, and turnover is encouraged.

For Short-term Parking

Case Study: Washington DC

The District of Columbia currently employs designated Performance Parking Zones to manage curbside parking, encourage parking turnover, promote alternate transportation modes, and decrease congestion⁴⁰. This program was first piloted in the Penn Quarter and Chinatown Parking Pricing program between September 2014 to November 2017 and is planned to continue as of 2019⁴¹. The purpose of demand-based pricing is to reduce the amount of time to find available parking space, improves safety, and creates a parking management solution that was asset-lite. Utilizing the parkDC app and new parking signage, parking costs are varied in prices for different time blocks throughout the day, by block, by side of the street, by weekday versus Saturdays, and by time of day. The same mechanism is applied to commercial loading zones. The pricing may change between months or seasons, as well as temporarily in anticipation of special events. Except for in loading zones, fees can no be increased more than 2 times within a month and no more than \$5 in any 3-month period⁴².

Case Study: Santa Rosa, CA

In June 2017, the City Council approved several strategies to improve availability of parking in the downtown core, including zone-based demand-responsive pricing. This new approach to pricing includes the following components:

- **Establishment of two metered parking rate areas.** The Premium Rate Area includes the core of downtown where demand for on-street parking exceeded 85% at peak demand. Hourly rates for parking increased to \$1.50/hour in the Premium Rate Area. The Value Rate Area remained at the existing rate of \$1.00/hour.
- **Rate adjustments.** Metered parking rates may be adjusted (up or down) over time to achieve the desired goal of 85% occupancy. Metered rates may be adjusted no

⁴⁰ https://www.parkdc.com/pages/resources#further_resources

⁴¹ https://www.parkdc.com/pages/meters#performance_parking_zones

⁴² <https://code.dccouncil.us/dc/council/code/titles/50/chapters/25A/>

more frequently than once every six months, by not more than \$0.25/hour, and with rates limitations in place that parking rates can be no lower than \$0.25/hour and no higher than \$3.00/hour.

- **Time Limits.** Time limits in the Premium Rate Area increased from 1 or 2 hours to 3 hours. Time limits in the Value Rate Area were set between 4 and 8 hours.
- **Hours of enforcement.** The hours of enforcement changed from 8 am to 6 pm Monday – Saturday to 10 am – 8 pm in the Premium Rate Area, and 10 am – 6 pm in the Value Rate Area, Monday - Saturday. The hours of operation reflect the times when businesses are open and parking is in highest demand. The hours of operation were later reduced to 9 am to 6 pm in December 2019 due to concerns from local businesses that charging for parking past 6 pm negatively impacted business.
- **Garage hourly rate changes.** The first hour of parking is free at two underutilized garages to make them a more attractive option among city parking assets. Rates were also reduced from \$0.75/hour to \$0.50/hour, after the first hour free. The rate at a high-demand garage increased to \$1.00/hour.

The City benefited from a strong municipal champion that oversaw the study from start to implementation, provided rigorous information that garnered political support, and conducted extensive outreach that included stakeholder interviews, online and intercept surveys, public outreach meetings, and flyering.

For Commercial Truck Parking

Case Study: New York City, NY

In 2000, New York City piloted a parking program replacing all unpaid commercial parking with hourly metered rates on an escalating pricing scale⁴³. The program is supported by the commercial delivery industry, as it encouraged higher commercial parking turnover and reduced double parking which improved mobility on streets. In 2020, metered spaces are limited to three-hour total parking with a higher rate for each additional hour after the first hour. For commercial vehicles, hourly parking rates depend on the zone you are in and ranges between \$5.00 and \$8.00⁴⁴.

In 2019, New York City conducted a 6-month pilot for Commercial Cargo Bicycles to reduce commercial delivery congestion and greenhouse gas emissions. As part of the pilot, commercial cargo bicycles were allowed to park wherever commercial loading zones could without payment⁴⁵.

Case Study: City of Aspen, NE

The City of Aspen is piloting a curb management program in their downtown to reduce commercial loading congestion and impediments in the roadway and increase coordination. This pilot is being conduct with COORD, a curb management software company that uses real-time

⁴³ <https://ops.fhwa.dot.gov/publications/fhwahop12026/fhwahop12026.pdf>

⁴⁴ <https://www1.nyc.gov/html/dot/html/motorist/parking-rates.shtml#rates>

⁴⁵ <https://www1.nyc.gov/html/dot/downloads/pdf/commercial-cargo-bicycle-pilot-evaluation-report.pdf>

data to provide parking information for commercial delivery drivers. Delivery drivers are able to reserve parking spots up to 10 minutes prior to arrival. The pilot has been able to collect data in order to show popular load times during the day, popular loading days during the week, most common loading areas, and approximate how long loading takes. This data can then be utilized to inform the city's commercial parking pricing and curb management policies⁴⁶.

Constraining Driveway Impacts

The quantity, frequency, width, design, and location of driveways directly affects safety and walkability on adjacent sidewalks, while also impacting multimodal circulation conditions along abutting streets. Standards limiting these impacts, particularly on streets with high pedestrian circulation, can mitigate these impacts toward maintaining or improving pedestrian and multimodal circulation along key commercial and mixed-use corridors.

Case Study: Raleigh, NC

The City's Unified Development Ordinance⁴⁷ identifies the following standards for the design and placement of driveways when provided at residential, non-residential, and mixed-use developments.

Driveways for Residential Uses

- When an improved alley with a width of at least 20 feet is provided, all vehicular access shall take place from the alley. Access may be taken from the side street on corner lots.
- Except for townhouse lots, all lots 40 feet or less in width platted after the effective date of this UDO are required to take vehicular access from an alley.
- No residential lot may have more than 2 driveways on the same street. Multiple driveways that service 1 lot may be no closer than 40 feet to each other.
- Non-alley loaded driveways may intersect a street no closer than 20 feet from the intersection of 2 street rights-of-way.
- Driveways must be located a minimum of 3.5 feet from the side lot line. However, a driveway may be located on the lot line closer than 3.5 feet if permitted.
- Parking and driveway areas shall not constitute more than 40% of the area between the front building line and the front property line.

Driveways for Mixed Use and Nonresidential Uses

- If on-site parking areas can be accessed from an improved alley with a right-of-way of at least 24 feet in width, access from the alley is required and new curb cuts along the public right-of-way are not allowed.

⁴⁶ <https://www.coord.com/blog/aspens-smart-zones-one-month-update>

⁴⁷ <https://raleighnc.gov/services/zoning-planning-and-development/unified-development-ordinance-udo>

- Driveways are allowed based on the property frontage of any street. Additional driveways require approval from the Public Works Director.
- Driveways accessing up to 80-foot wide street rights-of-way must be spaced 200 feet apart centerline to centerline and driveways accessing more than an 80-foot wide street right-of-way must be spaced 300 feet apart centerline to centerline.
- On lots abutting multiple streets, not including an alley, vehicular access shall be taken from the street with the lower roadway classification. New curb cuts are not allowed along the roadway with higher classification.
- Driveways may intersect a street no closer than 50 feet from the intersection of 2 street rights-of-way, not including an alley.

Cross-Access to minimize driveway redundancy

All lots abutting a street other than a local street must comply with the following standards:

- Internal vehicular circulation areas shall be designed and installed to allow for cross-access between abutting lots
- When an abutting owner refuses in writing to allow construction of the internal vehicular circulation on their property, a stub for future cross-access shall be provided as close as possible to the common property line.
- Rights of vehicular and pedestrian access shall be granted to all abutting properties contemporaneously with the recording of the final subdivision plat or prior to issuance of a building permit for an approved site plan.

Variable Regulations

Variable regulations create flexibility in curb usage during the day or certain days of the week, allowing curb space priorities to change in order to reduce congestion and optimize traffic flow.

Case Study: Philadelphia, PA

The City of Philadelphia has taken several measures to address parking and congestion problems related to commercial vehicle deliveries. The City's Parking Authority (PPA) created block-long commercial loading zones on key commercial streets from 6AM to 10AM. This provides a uniquely high level of access and convenience for deliveries at times when short-term parking demand is modest and can be accommodated on side streets. After 10 AM, when short-term parking demand begins to peak, these regulations are reversed — the high-capacity/high-convenience blocks are reserved for short-term parking, and loading zones are shifted to side streets.

Figure 2 Variable Regulations Incentivize AM Loading in Philadelphia

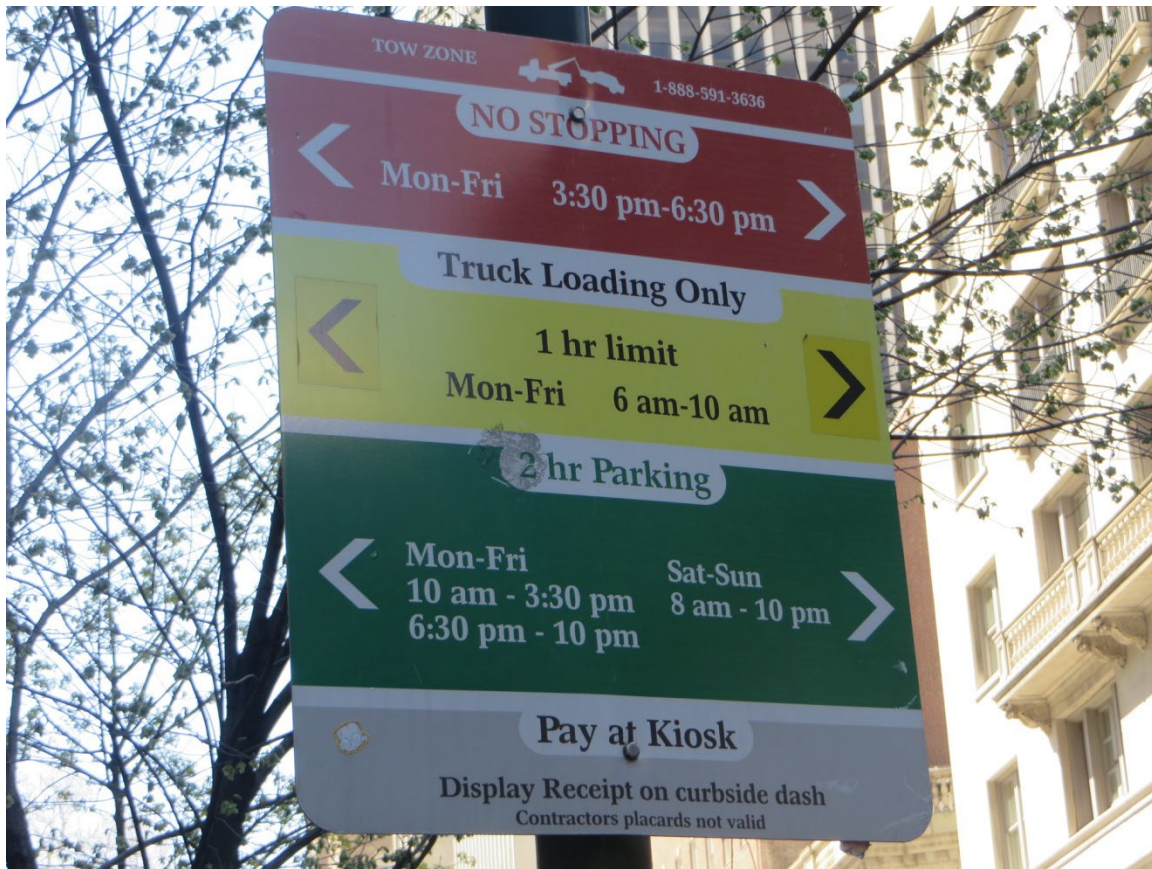


Photo: <http://thephiladelphiacitizen.com/>

The primary objective of this strategy was to decrease congestion by encouraging more deliveries to be made before the midday traffic peak. According to PPA representatives, the program has achieved significant success in this. The City's implementation strategy including significant outreach to stakeholders to identify the benefit of sacrificing some hours of short-term parking for much more efficient and timely goods delivery.

Case Study: New York City

New York City's Neighborhood Loading Zone program addresses the increase of e-commerce deliveries on city streets by providing curb space for delivery service, car service, and private loading and unloading from vehicles. Neighborhood loading zones are implemented in specific locations and allow for delivery during daytime and evening hours to help reduce double parking and other traffic standing behavior. Variable regulations will improve best travel time, reduce conflicts between trucks and cyclists, while retaining residential parking availability in the evenings⁴⁸.

⁴⁸ <https://www1.nyc.gov/html/dot/html/motorist/nlz.shtml>

Document
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