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Parking Best Practices:

A Review of Zoning Regulations and Policies in Select US and International Cities

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Introduction

Parking Best Practices is a compilation of parking regulations and policies used by various cities across the United States, Canada, and London as a way to manage on-street and off-street parking resources, as well as address traffic congestion. For decades parking regulations in city zoning codes made generous accommodations for cars. In recent years cities have started implementing new strategies with the goal of providing an appropriate amount of spaces for cars while promoting walkable communities and encouraging the use of alternative modes of transportation.

The study identified 21 policies implemented in 15 different cities. No city used all of these policies. While more than one city may use the same policy, how the policy is implemented differs city by city, and it is important to understand each policy in context. Cities vary by size, density, land use patterns, and available transportation options, all of which must be considered when creating new parking regulations. Additionally, each city has its own policy goals largely influenced by existing regulations, residents, as well as past and current administrations. Thus, there is no one-size fits all approach to managing on-street and off-street parking resources.

Methodology

Cities researched and interviewed for this report were selected using several criteria. Some cities were chosen based on their innovative approach to managing off-street parking, while others were selected due to their size, transit access, population, etc. This report includes a mix of small and large cities. Although some of the cities are significantly smaller than New York City, their approach to managing parking is innovative and informative.

Data for this report were gathered through telephone interviews, zoning resolutions available online, and internet research. Planners from each city government were contacted and interviewed for information about basic city statistics, zoning regulations, current parking policies and programs, and policies to be implemented in the future. Information gathered from these interviews can be found in the city case study section. Data from the 2010 Census and 2007-2009 American Community Survey were used to compare resident populations, journey to work data, and rates of car ownership among cities. In addition, definitions and case studies in the glossary section were found through internet research.

Parking Policies and New York City

In recent years, New York City has been updating its current parking regulations as well as researching innovations in other cities in order to improve the City's parking policies. As noted in the table below, New York already uses maximums, requires parking for bicycles and car share vehicles, and caps the amount of parking spaces in public parking facilities. However, many of New York City's parking regulations have been in place for decades and the Department of City Planning is currently reviewing parking regulations set forth in the Zoning Resolution. There is potential to do more. Moving forward, the City will reach out to communities and identify opportunities where current policies could be adjusted, or new strategies could be introduced to make neighborhoods even better.

Municipal governments are adopting mixed-use and transit oriented development strategies, among other sustainability initiatives, policies that have long been the mainstay of New York. In the last decade, New York City's land use policies have further refocused development in transit oriented, walkable communities. New York City's extensive transportation network promotes high-density development and enables residents, commuters, and visitors to get around the city by subway, train, bus, ferry, bike, or on foot in addition to traveling by car. Car ownership is lower in New York than most other places, in large part, because of the many transportation options. This allows New York to have lower parking requirements than most cities.

After reviewing parking policies and the way in which municipalities employ various parking regulations, it became clear that while New York City is one of the most progressive cities in the United States, there are

innovations that the City should explore further. Opportunities exist to improve current policies and explore new parking management strategies that can help the city grow in a sustainable manner.

Table 1: Parking Policies and New York City

Parking Policies	Currently Employed in New York City
Advanced Parking Management Systems	●
Bicycle Parking	●
Car-Free and Car-Capped Developments	
Car Sharing	●
In-Lieu Fee	
Land Banking	
Maximum Parking Requirements	●
Parking Caps	●
Parking Database	
Parking Freeze	
Parking Management Plan	
Residential Parking Permits	
Shared Parking	
Special Populations Provision	●
Transferable Parking Rights	
Transit-Oriented Development	●
Transit Overlay District	
Transportation Improvement or Benefit Districts	
Unbundled Parking	
Travel Demand Management Plan	
Variable Priced/Performance Based Pricing	●

Definitions and Examples of Parking Policies

This section includes definitions of terms and policies used to manage parking. Examples of cities that have implemented the particular policy are listed below each term for reference purposes only. The list of cities is not exhaustive; there are cities which have the same policy that are not included in this report.

Advanced Parking Management Systems
Bicycle Parking
Car-Free and Car-Capped Developments
Car Share Provision
In-Lieu Fee
Land Banking
Maximum Parking Requirement
Parking Database
Parking Cap
Parking Freeze
Parking Management Plan
Residential Parking Permits
Shared Parking
Special Populations Provision
Transferable Parking Rights
Transit Oriented Development
Transit-Overlay District
Transportation Improvement/Benefit District
Travel Demand Management Plan
Unbundled Parking
Variable Priced Parking/Performance Based Pricing

Advanced Parking Management Systems

Advanced Parking Management Systems (APMS) are designed to increase the efficiency and turnover of parking spots by using technologies to alert drivers towards open spaces and informing them of relevant information, such as delays. An APMS interface can be anything from a web-based format to a GPS navigation system. APMS combine various technologies to improve traffic congestion, including parking sensors, information monitors, video cameras, satellite radio, and web applications via mobile phone or internet.

- **New York, NY** – Spotswitch and Roadify are mobile phone-based programs that inform members of available on-street parking spaces using social networking websites and smart phone applications.
- **Chicago, IL** – Chicago constructed eight signs along a suburban highway to help promote park-and-ride usage at commuter rail stations. The city developed park-and-rides to encourage drivers to park at local stations and commute by rail instead of driving to a final destination. A field processor sends information obtained by exit/entry sensors to message signs, which are located on freeways and nearby arterials.
- **San Francisco, CA** – In summer 2010, the city launched the SFPark pilot program. Wireless sensors are being placed on the curb next to 8,300 parking spaces, which inform the public of open parking spaces in real-time via street signs or the internet. The sensors will also be used to adjust parking rates to meet demand and encourage turnover of parking spaces. Drivers will be able to pay by cell phone as well.
- **Seattle, WA** – e-Park, a parking guidance system, provides real-time short-term parking information. e-Park signs let people know how many spaces are available in six garages throughout the Downtown Retail Core and Pike Place Market while guiding people to them. e-Park is also making people more aware of existing, available off-street parking.

Bicycle Parking

This policy is designed to encourage mode shifts and bicycle use by requiring secure, indoor, long-term bicycle parking at residential, community facility, and/or commercial buildings.

- **New York, NY** – Secure bicycle parking is required for new residential, community facility, and commercial uses. The amount of spaces required is based on dwelling units, floor area, or vehicle spaces, depending on use.
- **Minneapolis, MA** – Enclosed parking is required for multi-family dwellings and non-residential uses are required to provide enclosed parking or a bicycle rack outdoors, depending on the use.
- **Portland, OR** – There are short-term and long-term bicycle parking requirements. Some districts require uses to provide shower and changing facilities for bicyclists.
- **San Francisco, CA** – Bicycle parking is required for residential, commercial, and city-owned buildings as well as in city-owned and public parking garages.

Car-Free and Car-Capped Residential Development

Car-free and car-capped developments restrict or limit the amount of parking spaces that may be provided for residential development in order to discourage automobile use. These developments need to be located in an area with an extensive public transportation system to be feasible.

- **London, UK** – This policy is in effect in some boroughs of London. Developers have embraced the strategy, especially in the City of London and the Borough of Camden. Potential residents are warned of the parking policy before moving into residential developments.

Car Share Provision

Car share programs provide short-term car rentals and are operated by a private company or not-for-profit organization. Several cities include zoning language that encourages or requires developers to dedicate spaces for car share vehicles. Some cities give developers incentives to provide spaces for car share vehicles through reduced parking requirements. Studies suggest that car sharing can reduce demand for accessory residential parking, overall vehicle miles traveled, vehicle ownership rates, and household transportation costs.

- **New York, NY** – Car share vehicle may locate in off-street parking public parking garages or in parking facilities accessory to residential, commercial, or other uses.
- **Philadelphia, PA** – The city designates on-street parking spaces for not-for-profit car share organizations, and requires the organizations to pay a \$150 annual fee per space. For-profit car share companies are not eligible for these spaces. The City Council can designate additional areas for use by car share organizations, and the Parking Authority can temporarily designate spaces for the same use for up to 6 months. These spaces are available to car share organizations on a first-come, first-served basis.
- **San Francisco, CA** – Several districts require developers to provide car share parking spaces in new residential buildings or in existing buildings converted to residential use. Buildings that provide parking must designate specific car share spaces based on total residential units. One care share space is required per 200 units, but buildings with 49 or fewer units are exempt. Some districts also require car sharing in developments with parking for non-residential uses.
- **Washington, DC** – The Office of Zoning is drafting text to include car share provisions in its new zoning code. The Zoning Commission is expected to adopt the new code by the end of 2011.
- **Vancouver, BC** – Parking requirements are reduced if the developer designates parking spaces for car share vehicles.

In-Lieu Fee

Developers can opt out of constructing required parking by paying a small fee to the government, which can then use those fees to construct and operate public parking facilities.

- **Pasadena, CA** – In Old Pasadena, developers may pay a fee to the city instead of providing required parking.

- **Arlington County, VA** – The county manager sets a one-time fee (based on the relative cost of building structured parking and adjusted annually) that developers can pay if they opt out of providing parking.
- **San Francisco, CA** – The Zoning Administrator may waive or reduce parking requirements for non-residential developments in any of the South of Market Mixed-Use Districts in exchange for a one-time fee per waived parking space, which is then used to build city parking facilities. This one-time fee is determined each year, adjusting for changes in the Building Cost Index.
- **Toronto, ON** – Instead of providing parking, developers may pay the city a fee that is half the cost of land and construction to build the parking spaces.
- **Vancouver, BC** – Developers pay an in-lieu fee which is equal to the cost of a space in a structure minus expected revenues, so that developers are only paying for the space without subsidizing the city.
- **Seattle, WA** – Developers can pay the city in lieu of providing parking. The payments may be used to pay for a long-term public parking structure in the designated area. If a structure is not constructed within 6 years of the date of issuance of a certificate of occupancy for the development which paid the fee, the City may use the payments to help reduce vehicle trips in the area through other methods.

Land Banking

Land banking addresses the uncertainty of future parking demand. The strategy reserves unpaved space for anticipated future parking demands if they arise. Meanwhile, the space can be used for amenities such as playgrounds or parks. Land banking can be a useful tool for developments that occur in phases, since developers may be holding the land for future parking demand that will only be fulfilled when a project is complete. Land banking is best for low- to medium- density areas where land for future development is likely to remain fallow for some time.

- **Palo Alto, CA** – Developers may defer the construction of up to 50 percent of the required parking if the parking usage is uncertain. The reserved area must be landscaped according to a plan approved by the Architectural Review Board (ARB). After complete build-out, the landscaped area may remain in its secondary use and may not be converted to parking if the ARB chooses.
- **San Diego, CA** – The city approves requests to reduce the amount of required parking provided, but the developer must set aside land in case the omitted parking spaces will be needed in the future.

Maximum Parking Requirement

Maximum parking requirements limit the number of parking spaces that may be built and prevent the developer from building additional spaces. Many municipalities have adjusted their parking requirements by replacing minimums with maximums. Until the early 1980s, requiring a minimum number of parking spaces was the accepted policy for determining off-street parking requirements. Minimums require developers to provide a specified number of spaces on their property with no upper limit on the number of parking spaces built.

- **New York, NY** – In 1982, the city removed parking requirements for the Manhattan Core (Community Districts 1-8) and established maximums for the amount of parking that could be provided.
- **Chicago, IL** – Several districts in downtown Chicago have maximums for the amount of parking that may be provided for hotels, restaurants, retail, office space, theater, entertainment and sport facilities.
- **Minneapolis, MN** – Maximums are in place for all uses within the CBD and for all uses except residential uses outside the CBD.
- **Portland, OR** – Maximums are in place for all uses in the CBD.

Parking Database

Most cities have incomplete records of how many on-street or off-street parking spaces exist. An inventory of spaces enables municipalities to accurately review parking supplies in order to meet current and future demands.

- **Seattle, WA** – The City of Seattle is developing a database of on-street and off-street visitor parking spaces in the Central City area. The database will be used in coordination with transportation demand management technology to direct drivers to available parking spaces and reduce congestion.

Parking Cap

This policy limits the amount of parking that may be built and can apply as a district or citywide policy. Caps can also be applied to certain uses, such as parking garage facilities.

- **Portland, OR** – Portland’s parking “lid” policy capped the amount of parking in the CBD from 1975 to 1995.

Parking Freeze

A parking freeze mitigates the growth of parking by stopping or carefully managing future parking development. Cities may simply forbid the building or expansion of any parking lots, or they can only cap certain types of parking (e.g., commuter parking).

- **Boston, MA** – Boston has multiple zones that freeze parking, many of which were created after 1973 as a result of the Clean Air Act. Construction or expansion of any new lots must be approved by the Air Pollution Control Commission.

Parking Management Plan

Some cities require developers to submit a parking plan along with other development documents. The parking management plan often requires developers to outline measures to mitigate parking demand, for example, by demonstrating how the development will accommodate carpool vehicles and short-term parkers.

- **Baltimore, MD** – Developers must apply for permits to build surface parking lots or to replace an existing building with surface parking lots. The mayor and city council have the authority to approve permits after evaluating the potential impacts and design of the proposed parking lot.
- **Portland, OR** – Portland has a central city review process that requires developers to submit reports detailing specific parking plans.
- **San Francisco, CA** – Before receiving an occupancy permit, new buildings in the downtown core must have an approved parking plan.

Residential Parking Permits

Jurisdictions require a permit to park in designated areas in order to ensure on-street parking spaces for local residents. Parking permits are often used in mixed-use neighborhoods with high commercial activity and low availability of off-street parking for area residents. Most permit programs charge a fee and require vehicles to be registered to addresses within the permit area.

- **Arlington County, VA** – One permit is issued to each household free of charge; local residents may apply for additional permits. Vehicle-specific passes are available for a fee.
- **Boston, MA** – Residents can apply for a residential parking permit to park in restricted on-street spaces in respective neighborhoods. There is no fee for this permit, but it requires proof of registration and residence in the neighborhood where the resident seeks a permit. The April 2010 *Sparkling Boston’s Climate Revolution* report recommended instituting parking permit fees which would be modest for the first vehicle and steeply increase for each permit per address for additional vehicles.
- **Chicago, IL** – Annual and daily permits can be purchased by residents to allow parking in Residential Parking Permit Zones. A city vehicle sticker and proof of residence are required to purchase permits.
- **San Francisco, CA** – Residents and businesses may apply for a \$76 annual permit to park in certain areas.
- **Seattle, WA** – Residential parking permits can be purchased for restricted parking zones. Proof of city residence and Washington vehicle registration are required. The \$45 permit is good for 1 or 2 years, depending on the zone. Some institutions subsidize the cost of parking permits for area residents.
- **Los Angeles, CA** – Residents may apply for a \$34 annual preferential parking permit to park in districts where on-street parking is limited. Annual, visitor, and guest permits are available.
- **Milwaukee, WI** – Buildings constructed prior to 1970 usually do not provide off-street parking, and residents are eligible to apply for overnight and non-conforming residential parking permits.

- **Portland, OR** – Parking permits can be purchased by business owners and residents of non-metered areas. All other vehicles must abide by the visitor time limit.
- **Toronto, ON** – Permitted parking is available in some parts of the city, usually in areas where off-street parking is not commonplace. Fees vary according to the availability of off-street parking. Expansion of the program to the entire city is currently being considered.
- **Vancouver, BC** – “Permit parking” signs have been placed along major corridors and traffic generators to indicate streets that allow parking only to local residents during restricted hours.
- **Washington, DC** – Two-hour-residential restriction signs denote areas that have been zoned as residential parking areas, and allow only vehicles with Residential Parking Permits to park long term. Permits are issued by the District of Columbia DMV.

Shared Parking

Shared parking is a single facility shared among several sites or uses. This type of parking is intended for neighboring uses that have different peak parking demand periods. Shared parking must be approved by the city through a legally binding agreement.

- **Arlington County, VA** – Sites that are over 20,000 square feet in land area and located within 0.75 miles of each other may provide shared parking through a legally binding agreement.
- **Portland, OR** – Two or more uses on the same or separate sites can provide required parking as shared parking so long as the parking demand of each use occurs at different peak times. A legally binding agreement is required for shared parking.
- **San Diego, CA** – The city approves shared parking if uses are located within 600 feet of each other.
- **Seattle, WA** – Parking may be shared among uses located within 800 feet of each other.
- **Washington, DC** – New zoning regulations will include shared parking.

Special Populations Provision

Parking requirements are reduced for developments designed for special populations, such as low-income housing or elderly housing. Housing without parking can be more affordable for developers and tenants.

- **New York, NY** – Reduced parking requirements exist for public or publicly-assisted housing and non-profit housing for the elderly.
- **Los Angeles, CA** – Parking requirements have been reduced for deed-restricted affordable housing.
- **San Diego, CA** – Residential multiple dwellings in low-income areas have reduced parking requirements.
- **Seattle, WA** – Minimum parking requirements are reduced for elderly and disabled housing.

Transferable Parking Rights

Developers can choose between constructing required parking spaces or transferring parking spaces to another development. This works best in areas where parking maximums limit the amount of parking that can be built.

- **Portland, OR** – Developer may build additional parking spaces by transferring unbuilt parking spaces from surrounding buildings. The surrounding buildings provide fewer spaces than the parking maximums allow.

Transit Oriented Development

High-density, mixed-use development projects built adjacent to transit corridors or stations. These developments often provide fewer parking spaces than if the project was located in a low-density area. This strategy promotes transit use, bicycling and walking among residents of the development. Generally, density decreases as distance from transit increases.

- **New York, NY** – Since 1916, New York City has coordinated high-density development along transit corridors.
- **Arlington County, VA** – In the Rosslyn-Ballston corridor, commercial and retail parking requirements are reduced for areas near Metrorail transit stations.

- **Boston, MA** – The City of Boston and adjacent municipalities, the Boston Redevelopment Authority, the Massachusetts Bay Transportation Authority (MBTA), and other partners all have various roles fostering transit oriented development. The MBTA has a dedicated webpage about projects on its property.
- **Portland, OR** – The city increased density and reduced parking requirements for developments along the MAX light rail corridor.
- **Seattle, WA** – Parking requirements for non-residential uses are reduced by up to 20 percent if located within 800 feet of transit corridors with mid-day headways of 15 minutes or less in each direction.

Transit Overlay Districts

Minimum or maximum parking requirement ratios are reduced for uses located in special districts along a transit corridor. The geography the district covers is determined by the municipality. Because there are more transportation options, fewer parking spaces are needed. Transit-overlay districts are often a zoning regulation used to support transit oriented development.

- **Chicago, IL** – Minimum off-street parking requirements are reduced by 50 percent in areas within 600 feet of a Chicago Transit Authority or Metra rail station entrance.
- **Milwaukee, WI** – Parking requirements are reduced by 15 percent if the site is located near transit.
- **San Diego, CA** – Residential and commercial parking requirements are reduced if located within a transit area.

Transportation Improvement/Benefit Districts

Revenue generated from parking meters or parking permits within specified districts stays in the district where it was collected. The dedicated revenue stream funds local improvements.

- **Pasadena, CA** – The city used parking meter revenue to revitalize the downtown business district. Funds were used to purchase street furniture and trees, and to maintain the area.
- **Portland, OR** – In 1997, Portland installed 2,000 on-street meters in the Lloyd district. The revenue is dedicated to funding transportation improvements.
- **San Diego, CA** – San Diego operates several Community Parking Districts to address the parking needs of commercial areas and neighborhoods. Districts receive revenue from on-street meters, permits, valets, parking facilities and in-lieu fees.

Travel Demand Management Plan

Large developments such as institutions are required to submit a travel demand management plan during the development permit process. The developer or building owner must outline how they will mitigate adverse traffic impacts. Depending on the city, the plan may require specific strategies for reducing single-occupancy vehicle trips and promoting alternate modes of transportation.

- **Portland, OR** – Universities, hospitals and other large institutions are required to submit a transportation demand management plan if located outside the CBD.
- **Seattle, WA** – Seattle requires a transportation management program for major institutions such as hospitals or higher education facilities if their parking plan exceeds 135 percent of the minimum requirement, or if the developer applies for a master use permit requiring 20 or more spaces. Each program is subject to city council approval.

Unbundled Parking

Unbundled parking separates the cost of parking from the cost of housing, making parking a direct instead of indirect cost. Parking is still available, but for an additional fee. This approach can be used in high-density areas well served by transit. Housing can be made more affordable to purchasers if they do not need to pay for the cost of a parking space.

- **San Francisco, CA** – The zoning code mandates buildings with 10 or more residential units to separate the cost of parking from that of housing. This applies to new construction as well as new conversion developments.

Variable Priced Parking/Performance Based Pricing

The rate of metered parking adjusts to respond to market demand and the price of parking is set at a rate to ensure there is always at least one parking space available. Rates are higher during peak demand. In the past, metered parking was underpriced, resulting in a low turnover rate of spaces intended for short-term use. The policy sometimes referred to as demand-responsive pricing.

- **New York, NY** – New York City Department of Transportation started the PARK Smart pilot program to test performance-based pricing. It is currently in operation in Greenwich Village and the Upper East Side in Manhattan, and Park Slope in Brooklyn.
- **Boston, MA** – Muni-Meters with variable rate pricing were recently introduced. The *Sparkling Boston's Climate Revolution* report recommends expanding their use, with the goal of making all metered spaces in Boston controlled by Muni-Meters by 2020.
- **Chicago, IL** – In 2009, rates were increased for on-street parking meters, and the city signed a 75-year lease with a private company to maintain and operate the meters.
- **San Francisco, CA** – The city started the SFPark pilot program to test variable pricing for both off-street municipal and on-street metered parking.

City Case Studies

New York, NY	
Population	8.2 million
Land Area	305 sq mi
Population Density	26,557 per sq mi
Central Business District Land Area	9.3 sq mi (Manhattan CBD - Below 60 th Street) 13.2 mi (Manhattan Core)
Number of Metered On-Street Parking Spaces	85,930 spaces (citywide)
Number of Off-Street Public Parking Spaces	102,000 spaces (Manhattan CBD)
Means of Transportation to Work	23% Drove Alone 55% Public Transportation 10% Walked

Sources: NYC Department of City Planning; NYC Department of Transportation; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

The Manhattan Core refers to Manhattan below 110th Street west of Fifth Avenue and below 96th Street east of Fifth Avenue (Community Districts 1-8). The Manhattan Central Business District (CBD) is located within the Manhattan Core and refers to Manhattan below 60th Street. In 1982, New York City eliminated parking requirements and introduced parking maximums to limit the amount of off-street parking spaces constructed in the Manhattan Core. Maximum parking ratios range from 0.2-0.35 parking spaces per dwelling unit (DU) for residential development. Affordable housing projects are the exception; they are required to provide a minimum of 0.12-0.25 parking spaces per dwelling unit, depending on subsidy type, up to 200 spaces.

For commercial (office and retail) development, the maximum number of spaces allowed is one for every 4,000 square feet or 100 spaces, whichever is less. Special permits are required to build above the set maximums. Public parking garages are allowed only by special permit.

Outside the Manhattan Core

Outside the Manhattan Core, parking is regulated by set parking minimums according to zoning district and by use within each district. Parking requirements are largely determined by density, distance from the Manhattan Core, and access to public transportation. In medium- and higher-density districts (R6 or higher), which are usually mapped in neighborhoods closer to the CBD and to transit, parking is required for 0.40-0.50 spaces per dwelling unit, depending on the district. Waivers are available for residential developments requiring fewer than five or 15 spaces, depending on the zoning district. Long Island City is an exception, with maximums determining the amount of parking that may be built, similar to the Manhattan Core. In low-density districts (R5 or lower), parking is required for a minimum 0.66-1.0 spaces per dwelling unit, depending on the district. In addition, the City enacted Lower Density Growth Management Areas to provide more parking in neighborhoods with fewer transportation options, like Throgs Neck in the Bronx.

For commercial development, parking requirements are divided into five categories, with “-1” requiring the most parking (6.67/1,000 square feet) and “-5” requiring the least (none). Increasingly, “-4” (1/1,000 square feet)

districts are being mapped in portions of Brooklyn, northern Manhattan, the South Bronx and other neighborhoods closer to the Manhattan Core.

Current Policies and Programs

New York City was an early adopter of parking maximums instead of minimums within its CBD. Maximums were established in the Manhattan Core in 1982 and similar regulations were implemented in Long Island City in 1995. While minimums apply elsewhere (outside the Manhattan Core), the set minimums are much lower than those in other cities, and substantial reductions or waivers are available in medium- and higher-density districts. Minimums can be set lower than elsewhere because the city's extensive transit system provides more options to get around and fewer households own vehicles.

The City Council approved bicycle parking requirements and car share provisions through two different actions. As of 2009, new multi-family residential, community facility, and commercial developments citywide are required to provide secure and enclosed bicycle parking. The amount of parking spaces required is determined by the amount of dwelling units or square footage of the use. In 2010, the City Council adopted the car sharing text amendment enacting zoning regulations for car share vehicles in public parking facilities and accessory parking facilities. In public parking facilities, car share vehicles may occupy up to 40 percent of vehicle spaces. In accessory residential parking facilities in high- and medium-density districts, car share vehicles may occupy up to 20 percent of spaces or a total of 5 spaces, whichever is greater. The text amendment also determines the amount of car sharing vehicles that may occupy spaces in facilities in low-density districts.

The New York City Department of Transportation manages on-street parking regulations and established Park Smart, a variable-rate pricing program, in areas where on-street parking is in high demand. Parking rates are higher at peak periods to encourage turnover of on-street parking spaces and parking rates are lower during off-peak periods. Park Smart is currently operating in Greenwich Village and the Upper East Side in Manhattan, and Park Slope in Brooklyn.

Waivers and Variances

The cost of special permits and variances to exceed parking minimums or maximums is significant. ULURP and CEQR fees are based on the square footage of the total project with larger projects assessed higher fees than smaller projects. Therefore, the cost of special permits and variances are project and site specific. Developers may waive parking requirements for residential buildings on small lots if criteria are met.

Future Parking Policies

While parking requirements in New York are generally lower than other US cities, they can be improved to better balance the needs of residents, businesses, commuters, and visitors. Both the NYC Department of City Planning and the NYC Department of Transportation are exploring strategies to use our limited parking resources more efficiently. The NYC Department of City Planning is exploring revisions to parking regulations in the Manhattan Core and neighborhoods just outside of the Manhattan Core.

Zoning Code: <http://www.nyc.gov/html/dcp/html/zone/zonetext.shtml>

Boston, MA	
Population	617,00
Land Area	48.4 sq mi
Population Density	12,748 per sq mi
Central Business District Land Area	Not Available
Number of Metered On-Street Parking Spaces (CBD)	7,300 spaces*
Number of Off-Street Public Parking Spaces	134,000 spaces
Means of Transportation to Work	40% Drove Alone 33% Public Transportation 14% Walked
*Does not include spaces at municipal parking lots.	

Sources: City of Boston; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

There is a parking freeze in effect for new development in Downtown Boston, South Boston and East Boston. The freeze, established in 1976 and expanded in 2004, was designed to limit the amount of parking spaces in the Downtown Boston areas. Administered by the Boston Air Pollution Control Commission (APCC), the parking freeze aims to reduce vehicular traffic into the CBD, promote the use of public transit, and encourage transit oriented development by restricting the number of off-street parking spaces. Boston’s zoning code regulates parking requirements for uses exempt from the parking freeze.

The parking freeze policy is comprised of two components: the cap and parking bank. Each district has a cap on the number of parking spaces that may be built. The difference between the amount of existing parking spaces and what the parking cap allows is included in the parking bank. Developers must submit an application to the APCC in order to withdraw parking spaces from the parking bank for non-exempt uses. With limited resources, enforcement of the parking freeze is based mainly on the honor system. Periodically, some areas are re-inventoried to ensure developers are in compliance. If it is determined that property owners are not in compliance with the parking freeze, they are given sufficient time to bring the property into compliance without being fined.

The parking cap and parking bank are different for each parking freeze area. Downtown Boston has a cap of 35,000 parking spaces and 1,300 available in the parking bank. Currently, residential parking spaces and buildings that provide parking spaces to be used only by users of the building (comparable to New York City’s accessory parking policy) are exempt from the parking freeze. South Boston has a cap of 27,600 and 800 parking spaces available in the bank, which applies to all off-street parking except residential. The East Boston parking freeze is used to manage parking at Logan International Airport; there are 41,156 park and fly spaces and 2,906 rental vehicle spaces.

In general, parking requirements for residential uses cannot exceed a maximum of 0.75 spaces per dwelling unit. Permits are needed for the creation of new residential parking if developers exceed the parking requirement ratio. Parking requirements for commercial uses (office and retail) that are not subject to a freeze cannot exceed a maximum of 0.4 spaces per 1000 square feet.

Outside the Central Business District

Non-residential parking requirements are determined by the assigned FAR and the square footage of the proposed use. Parking requirements for commercial uses ranges from a minimum of 0.83 parking spaces per

1,000 square feet in high-density areas to 3.33 parking spaces per 1,000 square feet in low-density areas. Additionally, the city of Boston is subdivided into many neighborhood districts and each district can propose its own parking regulations. Residential parking requirements range between 0.4 spaces per dwelling unit in high-density areas to one space per dwelling unit in low-density areas.

Current Policies and Programs

New buildings exceeding 50,000 square feet of gross floor area are subject to Large Project Review and developers must submit a Transportation Access Plan Agreement (TAPA) to the Boston Transportation Department as part of the public review process. The TAPA outlines how the developer will mitigate traffic impacts to the area, similar to a transportation management plan. This binding agreement is site specific and may require the developer to include transportation demand management strategies such as allocating parking spaces for car share vehicles or bicycles.

The Zoning Board of Appeal may require a developer to provide parking spaces for bicycles for a project using guidelines from the Boston Transportation Department. Residential buildings with nine or more dwelling units need to provide space for one bicycle for every three dwelling units. Non-Residential uses must provide a bicycle rack near the entrance or include space for bicycles if the development has a public parking garage. In some instances, bicycle parking may be required in the TAPA for a specific development.

Residential Parking Permits

The Resident Parking Permit Program is widely used throughout Boston to secure on-street spaces where parking is at a premium. In many areas, on-street parking is only available to permit holders. There are a limited number of on-street visitor parking spaces for those who are visiting the area short term.

Future Policies

Boston is currently evaluating the Downtown parking freeze to determine whether it is producing the desired results. The city is also reviewing congestion and parking management policies in other cities to see what policies would be appropriate for Boston. In April 2010 the City of Boston released *Sparking Boston's Climate Revolution*, the city's sustainability plan, which recommended several actions such as instituting parking permit fees, expanding the use of multi-space parking meters, and introducing variable-rate pricing for on-street metered parking spaces.

Zoning Code: <http://www.bostonredevelopmentauthority.org/zoning/zoning.asp#1>

Chicago, IL	
Population	2.7 million
Land Area	237 sq mi
Population Density	11,392 per sq mi
Central Business District Land Area	1.6 sq mi
Metered On-Street Parking Spaces	4,500 spaces
Number of Off-Street Public Parking Spaces	unknown
Means of Transportation to Work	51% Drove Alone 27% Public Transportation 6% Walked

Sources: City of Chicago; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

Residential parking requirements are determined by minimum and maximum parking requirement ratios. Parking is required for a minimum of 0.55 spaces per dwelling unit but no more than 1.1 spaces per dwelling unit in high-density districts. Parking is required for a minimum of one parking space per dwelling unit but no more than two spaces per dwelling unit in low-density districts. Commercial uses such as office buildings may provide a maximum of 0.35 spaces per 1,000 square feet but no minimum amount of parking spaces is required. Non-accessory parking is subject to planned development procedures in the Central Area parking district and must be approved. Parking outside the Central Parking district is subject to special use procedures if 250 or fewer spaces are proposed or planned development procedures if more than 250 spaces are proposed.

Outside the Central Business District

Minimum parking requirements determine the amount of parking provided for residential and commercial uses outside the Central Business District. In general, parking requirements for residential development must provide a minimum number of parking spaces ranging from one to two spaces per dwelling unit. Commercial office development is required to provide a minimum number of parking spaces ranging from 1.33 to 2 spaces per 1,000 square feet.

Current Policies and Programs

In 2004, Chicago updated its parking requirements and made several changes to the zoning code. Now there are provisions for shared parking between uses. In addition, minimum parking requirements were reduced for older buildings, landmark buildings, and for developments within 600 feet of transit stations.

Bicycle parking is required for multi-family residential, commercial, institutional, and various other uses based on use and the number of vehicle spaces required. Residential buildings with eight or more dwelling units are required to provide indoor storage for one bicycle for every two parking spaces required. Most non-residential uses are required to provide a bicycle rack indoors or outdoors for bicycle parking and one bicycle parking space is required for every five or ten vehicle parking spaces, depending on the use.

The City of Chicago leased its on-street parking meters to a private company in exchange for a lump sum up front in 2009. In addition to privatizing the city's parking meters, Chicago approved variable rate pricing for on-street parking meters within the Loop (i.e. the downtown core). Loop rates are \$5.00 per hour from 8:00am to 9:00pm and \$2.50 per hour from 9:00pm to 8:00am.

Residential Parking Permits

Residential parking zones are in effect for certain times of the day to ensure on-street parking. Residents who store their vehicle in the city for more than 30 days are required to purchase an annual parking permit which must be displayed in their vehicle. Annual parking permits cost \$25 and guest passes may be purchased as well. Permits do not guarantee a parking space and are intended to give residents priority for on-street parking spaces.

Waivers and Variances

Developers may apply for a variance to reduce required parking by filing with the Zoning Board. The filing fees are \$250 for variances and \$1,000 for re-zonings. The Zoning Board receives several requests per month for parking variances.

Future Policies

The City of Chicago reviewed and modified zoning regulations extensively in 2004. No changes in parking requirements or congestion management are expected in the near future.

Zoning Code: <http://www.cityofchicago.org/city/en/depts/dcd/provdrs/admin.html>

Milwaukee, WI	
Population	595,000
Land Area	96 sq mi
Population Density	6,198 per sq mi
Central Business District Land Area	1.5 sq mi
Number of Metered On-Street Parking Spaces	6,400 spaces
Number of Off-Street Public Parking Spaces	25,000 spaces
Means of Transportation to Work	72% Drove Alone 8% Public Transportation 5% Walked

Sources: City of Milwaukee; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

Milwaukee’s Central Business District is mostly mixed-use. Approximately 50 percent of the area is used for commercial purposes while a combination of civic and residential uses make up the remaining area. There are no parking requirements for non-residential uses because parking needs are met by the 25,000 off-street parking spaces and over 6,000 on-street metered spaces. There is no minimum amount of parking that must be provided for residential developments, but there are maximum parking requirement ratios which limit the amount of parking that can be built. Multi-family buildings may provide no more than one space per dwelling unit. Single- and two-family dwellings may provide no more than four parking spaces per dwelling.

Outside the Central Business District

Parking requirements are specific to the use of the property and do not change from one zoning district to another. Parking requirements are determined by both minimum and maximum parking ratios. Residential uses are required to provide a minimum of one parking space per dwelling unit, but no more than four parking spaces per dwelling unit. Non-residential uses are required to provide a minimum number of parking spaces and there are maximums limiting the amount of parking for uses such as retail. In contrast, commercial office development is required to provide two parking spaces for every 1,000 square feet, but there is no maximum ratio to limit the amount of parking that may be built.

Current Parking Policies and Programs

Milwaukee’s zoning code gives credit for on-street parking adjacent to the facility and for shared parking. In addition, there is a 25 percent reduction in parking requirements for properties located within 1,000 feet of a regularly scheduled bus route in a special district. Milwaukee’s Zoning code requires new developments to provide one bicycle parking space for every 2,000 square feet of floor area.

The city owns and operates five parking garages. Four are open to the public and together provide over 4,000 off-street parking spaces. The fifth is privately leased to a local company for use by their employees; it has 500 parking spaces.

Most surface parking lots require a special use permit from the Board of Zoning Appeals. Parking structures are usually permitted, provided they have retail or other commercial activity on the first floor. Additional parking spaces (exceeding the maximum) are subject to approval by the Zoning Commissioner. The additional spaces must be located in a parking structure and the developer or property owner must have a mitigation plan outlined.

Residential Parking Permits

There are several different parking permit programs in operation. Residential parking permits are issued to ensure on-street parking for residents living in commuter impacted areas or in housing without off-street parking. Permits are also available for night employees if off-street parking is not provided at their place of employment.

Waivers and Variances

Developers may also apply for a variance from the Board of Zoning Appeals. The fees for variance and special permits are determined by square footage and range from \$325-\$925 and \$275-\$475 respectively.

Future Parking Policy

According to the Milwaukee Department of City Development, traffic congestion is not a major problem in Milwaukee. Parking policies are designed to encourage higher-density development.

Zoning Code: <http://www.mkedcd.org/czo/>

Minneapolis, MN	
Population	383,000
Land Area	58 square miles
Population Density	6,603 per sq mi
Central Business District Land Area	1 sq mi
Number of Metered On-Street Parking Spaces	6,611 spaces (4,704 spaces downtown)
Number of Off-Street Public Parking Spaces	16,102 spaces
Means of Transportation to Work	62% Drove Alone 14% Public Transportation 6% Walked

Sources: City of Minneapolis; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

Minneapolis does not require off-street parking, but if parking is provided, there are maximums in place to limit the number of spaces. For all uses except residential, parking maximums are based on square feet and a maximum of one space per 1,000 square feet may be provided for commercial office use. Parking is not required for residential development and no more than 1.5 spaces per dwelling unit or no more than two spaces per dwelling unit may be provided, depending on the district.

In addition, there are more stringent parking requirements in the Downtown Parking Overlay and Pedestrian Oriented Overlay special districts. The Downtown Parking Overlay district restricts building or expanding surface parking lots and there are specific minimum and maximum off-street parking standards to preserve the character of the downtown area. To promote street life and preserve the pedestrian character of the Pedestrian Oriented Overlay district, off-street parking is limited and auto-oriented facilities, such as drive-thru establishments, are prohibited. Additionally, there are regulations restricting the location of on-site accessory parking facilities.

Outside the Central Business District

Minimum and maximum parking regulations are used to control off-street parking in neighborhoods outside the CBD. A minimum of one parking space for every dwelling unit is required for residential uses and maximums limiting the amount of parking apply to specific districts. Parking requirements for non-residential uses are governed by both minimum and maximum parking requirements. For example, office and retail uses are required to provide a minimum of two parking spaces for every 1,000 square feet, in excess of 4,000 square feet but can provide no more than five parking spaces for every 1,000 square feet. Non-residential uses with less than 1,000 square feet are exempt from minimum off-street parking requirements.

Current Parking Policies and Programs

Developers can reduce the total number of required parking spaces through a shared parking provision in the Zoning Ordinance. Two or more uses may jointly provide off-street parking if their hours of operation do not overlap and they meet set criteria. In addition, parking minimums may be reduced if a combination of the following is provided: reserved space for shared vehicles, valet parking, bicycle parking, and proximity to public transit. Minneapolis requires a Travel Demand Management (TDM) plan for any development project exceeding 100,000 square feet of non-residential floor area.

Bicycle parking is required for residential and non-residential uses throughout the city. One enclosed bicycle space for every two dwelling units is required for residential buildings with five or more units. Non-residential uses can satisfy the requirement by providing a bicycle rack outside with room for at least three bicycles. In

downtown districts, new developments or projects adding 500,000 square feet of additional of new floor area are required to provide bicycle parking and locker room facilities.

Residential Parking Permits

The City of Minneapolis manages on-street parking in areas with limited off-street parking through its Critical Parking Zones program. Residents and businesses located in critical parking areas may apply for a \$25 annual parking permit. Critical parking zones were established in areas where access to available parking is affected by the local university, residents, and businesses. There are over 25 critical parking zones.

Waivers and Variances

In the past, the city granted most parking variances. Today, Minneapolis receives fewer applications for parking variances because the city reduced the minimum off-street parking requirements. Fees for variance application depend on the size of the property and range from \$550-\$950.

Future Parking Policies and Programs

The city plans on reducing parking requirements for areas near transit, and require development to include more TDM strategies such as carpooling, on-site bicycle amenities, flexible work schedules, and telecommuting incentives. Off-street parking requirements were recently evaluated.

Zoning Code: <http://www.ci.minneapolis.mn.us/zoning/code/>

Philadelphia, PA	
Population	1.5 million
Land Area	135 sq mi
Population Density	11,111 per sq mi
Central Business District Land Area	1.5 sq mi
Number of Metered On-Street Parking Spaces	6,500 spaces
Number of Off-Street Public Parking Spaces	Not Available
Means of Transportation to Work	51% Drove Alone 26% Public Transportation 8% Walked

Sources: City of Philadelphia; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

Off-street parking regulations are governed by the city’s complex zoning code and vary by district. Non-residential uses in some districts follow the parking regulations of the adjacent residential district while non-residential uses in the Office Commercial District are required to provide a minimum of 1.60 parking spaces for every 1,000 square feet. The parking requirements for residential buildings ranges from a minimum of 0.33 spaces per dwelling unit to a minimum of one space per dwelling unit, depending on the number of units in the building.

Outside the Central Business District

Minimum parking requirement ratios for non-residential uses are largely determined by square footage and by zoning district. Parking requirements for non-residential uses ranges from a minimum of 0.33 spaces to 1.66 spaces per 1,000 square feet. For residential uses in low-density districts a minimum of one parking space must be provided for every dwelling unit.

Current Policies and Programs

Philadelphia designates on-street parking spaces for not-for-profit car share organization vehicles. For profit car share companies, such as Zipcar, do not have access to the reserved spaces. The car share not-for-profit organization must pay a \$150 annual permit fee per parking space to the City of Philadelphia.

Residential Parking Permits

The Philadelphia Parking Authority administers the city’s residential parking permits program. On-street parking is available by permit only in select districts for a \$35 annual fee per vehicle. Permit holders are exempt from metered and time restricted on-street parking regulations in select areas.

Waivers and Variances

Many districts require a certificate from the Zoning Board of Adjustment. As a result of this policy, approximately 45 percent of all zoning permit applications require an appeal to the zoning board. The city charges a \$250 fee for most applications or \$125 for one- and two-family dwellings. However, the applicant may pay an additional \$625 to accelerate the process.

Future Parking Policies and Programs

In 2007, city residents voted to create a new Zoning Code Commission with the purpose of simplifying and rewriting the zoning code to promote economic development and environmental sustainability. The current zoning code dates back to 1963 and has been updated periodically.

Zoning Code: <http://www.amlegal.com/library/pa/philadelphia.shtml> & <http://www.zoningmatters.org>

Portland, OR	
Population	584,000
Land Area	145 sq mi
Population Density	4,028 per sq mi
Central Business District Land Area	4.6 sq mi
Number of Metered On-Street Parking Spaces	7,800 spaces
Number of Off-Street Public Parking Spaces	58,130 spaces
Means of Transportation to Work	62% Drove Alone 12% Public Transportation 5% Walked

Sources: City of Portland; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

Portland’s parking lid policy regulated on-street and off-street parking from 1975 to 1995. The parking lid policy was eliminated in 1995 when Portland adopted the Central City Transportation Management Plan and its current parking regulations. More information about the parking lid is included below.

Central City is made up of seven different districts, including the Downtown District. The Portland Zoning Code regulates off-street parking in the Central City through the use of parking maximums and specified parking categories. Residential developments may provide up to 1.35 parking spaces per dwelling unit. Portland removed the term accessory parking. Instead, off-street parking is divided into the categories described below. The City of Portland tries to “pinch” the supply of parking using this strategy. Most parking needs are satisfied under the “growth” category and may be built as-of-right. In this category, office and retail development may provide up to 0.7-1 parking space per 1,000 square feet.

Each category has different requirements. One garage can contain multiple types of spaces. All additional parking is subject to Central City Parking Review (CCPR) and requires a substantial fee.

Growth Parking is associated with all new development that is not residential or for hotel development. Developers may build parking as-of-right up to the set parking maximums. Most parking demands are met through growth parking.

Preservation Parking is associated with existing non-residential/hotel development. This category is intended to augment parking needs for uses which did not provide enough parking at the time the structure was built. For example, a developer could approach a nearby owner of a 60-year-old building and offer to provide parking. Preservation parking is subject to CCPR and the developer must present arguments for extra parking. Historic buildings must follow Growth Parking ratios and non-historic buildings are limited to 0.7 spaces per 1,000 square feet.

Visitor Parking is designed for short-term parking (less than 4 hours) and it is not associated with specific development. Visitor parking is subject to CCPR and prohibited for some uses. This type of parking is rarely approved.

Residential/Hotel Parking is associated with dwelling units or hotel rooms and is allowed as-of-right up to the set maximum. Adjustments are subject to CCPR.

RX Zone Parking is associated with pre-existing surface parking lots for high density residential zones. This type of parking may not be used for commercial purposes.

Surface Area Redevelopment encourages development of existing surface parking lots. Developers are granted 1.5 spaces per 1,000 square feet for constructing a new building with enclosed parking on the surface lot. The Portland code does not allow new surface parking in the Central City area.

The South Waterfront district is also located within the Central City, but has slightly different parking regulations. Parking maximums in this district are slightly higher, and developers are allowed to provide parking on temporary surface lots. The former industrial area is being developed into a high-density mixed-use neighborhood, and Portland Streetcar service was extended to this district in August 2007.

Outside the Central Business District

Beyond the Central City, parking minimums generally dictate how much parking is required. Residential development is required to provide one space per dwelling unit and office developments are required to provide at least two spaces per 1,000 square feet. Maximums are in place for certain uses located in specified zones. Surface lots are allowed, but there are maximums in place to prevent an excess of surface parking. If 75 percent of the required parking is enclosed in a garage structure, there is no maximum on the number of spaces that may be built.

Parking requirements are reduced in areas that are well served by public transportation. The city assigns special transit street designations in its transportation plan. Transit streets have bus, streetcar, or light rail routes in their rights-of-way, with frequent (at least every 20 minutes) peak hour transit service. There is no minimum parking requirement for sites located within 500 feet of a transit street with frequent service. Developers may also reduce parking requirements by providing a transit plaza if the site is located on a transit street. The plaza must be at least 300 square feet, landscaped, and provide a shelter and sitting area.

Parking Lid History

In 1975, the City of Portland adopted its well-known parking lid policy in order to meet federal clean air standards. At that time, the City of Portland inventoried both public and private on-street and off-street parking spaces in the Portland CBD, the “Central City.” Parking was divided into two categories: exempt and non-exempt. Exempt parking included hotel and residential uses. Non-exempt parking included parking for all other uses.

The city developed a parking reserve to account for the difference between what the parking maximums allowed and the amount of spaces inventoried. When on-street parking or surface parking was eliminated it was added to the reserve. Any new parking constructed came out of the reserve after being approved by the city. Developers had to apply for spaces from the parking reserve during the development review process to build parking. The amount of parking allowed was based on set maximums; however, the city had to approve the use and number of parking spaces taken from the parking reserve for each application.

Current Policies and Programs

The City of Portland gives developers the option to reduce parking requirements if joint-use parking, bicycle parking or motorcycle parking is provided. Building owners may apply for joint-use parking to share parking between neighboring uses through the City’s Bureau of Development Services as long as the parking demand of each use does not conflict. However, residential and commercial are prevented from sharing parking due to Oregon state air quality regulations.

Bike parking is required for certain uses and is determined by square footage, residents or required vehicle parking. Portland makes the distinction between short-term and long-term parking in order to provide adequate parking for cyclists. Some districts require certain uses to provide shower and changing facilities, while uses in other districts receive a floor area bonus if they opt to provide the facility.

A Transportation Management Plan (TMP) is required for large developments like institutions or universities outside the Central City. The company or institution submits documents to the city detailing how employees are encouraged to take alternative modes of transportation. State law requires companies with more than 50 employees to promote commuting by alternative modes of transportation.

Waivers and Variances

Within the Central City, developers are subject to Central City Parking Review if they want to provide more parking than allowed as-of-right. The process is quite onerous – requiring the developer to hire a lawyer, traffic engineer and economist -- and costs between \$50,000 and \$100,000. Outside the Central City, adjustments are less expensive, but there are very few adjustments because meeting the approval criteria is difficult.

The Bureau of Development Services administers the CCPR. Developers must submit an application to build more parking spaces than what is allowed as-of-right. Once the application is received, the Bureau of Development Services sends the parking application to the Bureau of Transportation for review and recommendations. If approved, the amount of parking spaces allowed under each category is outlined in a parking management plan. Building owners are required to demonstrate how they are meeting the parking management plan by submitting documentation to the city every 6 months; however, this policy is rarely enforced.

Future Parking Policies

In August 2010, Portland's Bureau of Planning and Sustainability launched Central City 2035 (CC2035), an initiative to update the Central City Plan. Portland plans to reduce parking requirements for more districts in the city and create incentives to encourage use of bicycling, walking, transit and carpooling. Shared parking would also be expanded and Portland would like to address the Oregon state regulation that prevents commercial uses from sharing parking with residential uses.

Zoning Code: <http://www.portlandonline.com/bps/index.cfm?c=31612>

San Diego, CA	
Population	1.3 million
Land Area	342.5 sq mi
Population Density	3,796 per sq mi
Central Business District Land Area	2.27 sq mi
Number of Metered On-Street Parking Spaces	Unknown
Number of Off-Street Public Parking Spaces	Unknown
Means of Transportation to Work	76% Drove Alone 4% Public Transportation 3% Walked

Sources: City of San Diego; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

Commercial parking requirements are determined by the level of commercial use and proximity to transit. The amount of spaces required varies between four different districts: basic, low-income, transit area, and parking impact areas. Fewer parking spaces are required in transit area overlay zones, where there is a reduced demand for parking. A commercial use outside a transit area is required to provide a minimum of 2.5 spaces for every 1,000 square feet and a maximum of 6.5 spaces per 1,000 square feet. A commercial use in a transit area is required to provide a minimum of 2.1 spaces per 1,000 square feet and a maximum of 6.5 spaces per 1,000 square feet. A parking impact area is a zone with high parking demand, such as college campuses or areas along the beach or coast and parking requirements are higher in these areas.

Outside the Central Business District

San Diego's residential parking requirements are based on the land use district and number of bedrooms per dwelling unit. For single-family homes, a minimum of two parking spaces is required. For multi-family residential buildings, the ratio ranges from 1.25 to 2.25 spaces per dwelling unit. Areas near transit or low-income developments have reduced parking requirements. In general, uses in low-density commercial areas are required to provide a minimum of 2.5 parking spaces for every 1,000 square feet, but no more than 6.5 spaces for every 1,000 square feet.

Current Policies and Programs

Although San Diego has high parking requirements in place, the city also has zoning regulations to reduce parking requirements and support alternative modes. Shared parking is possible in all zones, except in single-family home areas, through a building permit approval process. For shared parking approval, two or more different land uses must be located within 600 feet of the parking facility, and the parties involved must submit a legally binding agreement. The City of San Diego also requires bicycle parking in multi-family, commercial and manufacturing buildings.

Waiver and Variances

Developers generally do not waive out of parking requirements because to do so requires a lengthy and expensive review process. Except for properties located in parking assessment districts, developers must submit a Transportation Demand Management program which outlines strategies to reduce the amount of vehicle trips if they want to provide fewer parking spaces than required.

Developers may request to provide more parking spaces than allowed by submitting an application. To be approved, the developer must demonstrate that the additional parking spaces are needed to meet expected

demand, and that the extra spaces will not contribute to traffic congestion. Additional parking spaces cannot exceed 125 percent of the maximum amount of spaces permitted. The developer cannot provide below 85 percent of the required parking minimum. In addition, the developer must set aside space on the property to provide the omitted spaces, should the need arise.

Future Parking Policies

Minimum parking requirements will remain set at current ratios. The public is opposed to reducing parking requirements and would rather have more parking spaces than fewer parking spaces. To address parking demand and congestion, the City of San Diego is looking to add regulations for car share vehicles and increase density in transit areas. The city is also exploring variable-rate pricing schemes.

Zoning Code: <http://www.sandiego.gov/city-clerk/officialdocs/legisdocs/muni.shtml>

San Francisco, CA	
Population	805,000
Land Area	47.6 sq mi
Population Density	16,912 per sq mi
Central Business District Land Area	0.53 sq mi
Number of Metered On-Street Parking Spaces	25,600 spaces
Number of Off-Street Public Parking Spaces	15,000 spaces
Means of Transportation to Work	38% Drove Alone 33% Public Transportation 10% Walked

Sources: City of San Francisco; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

San Francisco is the second most densely populated major city in the U.S. Like New York City, San Francisco uses parking maximums in the Central Business District and downtown areas. Developments may not provide more parking spaces than the maximum allowed in the following districts: C-3, Neighborhood Commercial Transit (NCT) or Residential Transit Oriented (RTO). These districts are well- served by mass transit and residential parking is limited. Residential development may provide no more than 0.25-1 parking space per dwelling unit, depending on the building type and district. Non-residential uses such as retail may provide no more than 0.5-1 parking spaces per 1,000 square feet.

Outside the Central Business District

There are minimum parking requirements for all uses outside the Central Business District. For residential uses, one parking space is required for every dwelling unit in low-density districts and 0.25 parking spaces is required per dwelling unit in high-density districts. For office, retail, restaurants and industrial uses, the required minimum parking ratio is determined by the gross floor area, regardless of district. Office use is required to provide a minimum of 0.5-1 parking spaces per 1,000 square feet, depending on the district. Parking requirements can vary in districts that are well-served by public transportation.

Current Policies and Programs

The City of San Francisco has many programs in place to reduce parking demand, encourage alternative modes of transportation and manage congestion. A summary of each is included below.

Transportation Demand Management Program (TDM)

To mitigate congestion in downtown mixed-use districts, a TDM program must be submitted to the Planning Department and approved by the planning director for all new buildings and conversions of existing buildings equal to or greater than 100,000 square feet of floor area. Developers are required to come up with a strategy for minimizing adverse transportation impacts in the area. This is often accomplished by discouraging single-occupancy vehicle commuter trips and creating incentives to encourage people to commute by public transportation, carpool or bicycle.

Bicycle Parking and Commuter Facilities

Under San Francisco zoning, bicycle parking must be provided in residential, commercial and city-owned buildings as well as city-owned and public parking garages. The amount of parking spaces required is determined by the amount of employees on-site at office buildings and by dwelling units for residential developments. Parking garages are required to provide six bicycle parking spaces. Additionally, all new commercial and industrial

buildings (and existing buildings undergoing major renovation) exceeding 10,000 square feet in gross floor area must provide shower and locker facilities on-site or through an agreement with a health club located within a four-block radius.

Car Share

In newly constructed residential buildings or conversions, spaces reserved for car share vehicles must be provided if parking is provided. Residential buildings with 50 to 200 units require one car share space. Residential buildings with over 200 spaces require one additional car share space for every additional 200 dwelling units. In general, non-residential uses and parking facilities must provide one space every 50 vehicles. However, facilities with 24 or fewer spaces are not required to reserve a space for car-share vehicles.

Unbundled Parking

San Francisco zoning regulations require all off-street accessory parking spaces for residential buildings with 10 or more dwelling units to sell or lease parking spaces separately from the rental or sale of dwelling units. Affordable housing developments which require that the cost of housing and parking be bundled together for financing reasons must be approved the Planning Commission.

Residential Parking Permits

San Francisco has had a residential parking permit program in effect since 1976 which seeks to provide spaces for residents by discouraging long-term parking by those who do not live in the area. There are 27 residential permit areas throughout San Francisco. Permits are available for a \$76 annual fee.

SF Park

Using federal funds, the San Francisco Municipal Transportation Agency (SFMTA) is testing variable-rate or demand-responsive pricing and new technologies to better manage parking resources through the SF Park program. Sensors were placed on the street surface of on-street parking spaces in select districts and record occupancy data of each space. The price of on-street parking varies block by block and is set at a rate that ensures there is at least one parking space available to drivers, thus reducing the need to cruise for parking. Hourly rates range from 25 cents to \$18 per hour and are highest during peak demand. In addition, the sensors can alert drivers of available parking spaces in real-time via text message. SFMTA will also test demand-responsive pricing at city-owned garages.

Waivers and Variances

Outside the CBD, developers may waive minimum off-street parking requirements for non-residential uses if approved by the Zoning Administrator. The applicant must pay a one-time fee of \$15,000 (adjusted annually according to the Building Cost Index). In other cases, fees for variances range from \$782 to \$3,476, depending on the estimated cost of construction.

Future Parking Policies

The Department of City Planning would like to eliminate minimum parking requirements across the city. As more neighborhood plans are completed, it is likely the existing minimums will be replaced by maximum parking requirements. The city is also exploring the possibility of requiring parking spaces to be stacked or vaulted in new parking facilities.

The San Francisco Municipal Transportation Agency (SFMTA) recently released the "San Francisco Transportation Fact Sheet," a fourteen-page document which includes parking data as well as other statistics. SFMTA inventoried parking spaces in public parking and municipally owned garages and a sample of private and on-street spaces. The city will use data from the parking census to inform future parking policies.

Zoning Code: <http://library.municode.com/index.aspx?clientId=14139&stateId=5&stateName=California>

Seattle, WA	
Population	609,000
Land Area	142.6 sq mi
Population Density	4,271 sq mi
Central Business District Land Area	1.48 sq mi
Number of Metered On-Street Parking Spaces	13,500 spaces
Number Off-Street Public Parking Spaces	50,000 spaces
Means of Transportation to Work	53% Drove Alone 19% Public Transportation 9% Walked

Sources: City of Seattle; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

Parking is not required for non-residential uses, but developers may provide parking spaces as long they do not exceed the maximum of one parking space per 1,000 square feet. The Chinatown/International District is the only area where a minimum number of parking spaces are required, specifically for restaurant and entertainment uses. There are no minimum or maximum parking requirements for residential buildings in the CBD. Bicycle parking is required for residential and non-residential uses.

Outside the Central Business District

In general, minimum parking requirements determine parking regulations outside the CBD with a minimum of one space per dwelling unit required for residential buildings and one space per 1,000 square feet for office use. The number of parking spaces required is based on use and gross square footage. In special districts, such as commercial and higher-density multi-family zones in urban centers or station overlay districts, off-street parking is not required. Station overlay districts were developed to encourage transit-oriented development along light rail corridors. No parking is required for businesses in multi-family zones.

Seattle caps parking, or specifies maximums, for certain uses: no more than 145 surface parking spaces for commercial uses and no more than 10 parking spaces for businesses in multi-family zones. When a major institution proposes parking in excess of 135 percent of the minimum, or increases parking capacity by 20 spaces, a transportation management program is required

Current Policies and Programs

Seattle employs various strategies to reduce parking requirements such as shared parking, reserved spaces for carpool/vanpool vehicles, and the option to pay the city in lieu of providing parking. Fees from pay in lieu parking go towards building a public parking structure for long-term parking in the designated area. If a public parking structure is not constructed within 6 years of the issuance of a certificate of occupancy for a development which made a payment in lieu, the city may use the payments to help reduce vehicle trips in the area through other methods.

Institutions are required to provide guaranteed parking spaces for carpool/vanpool vehicles. Shared parking is allowed between two or more different uses if they are within 800 feet of one another to satisfy all or part of the minimum off-street parking requirements.

The Seattle Department of Transportation (SDOT) launched the Community Parking Program in 2008 to engage neighborhoods in improving on-street parking management in business districts and adjacent residential areas.

To date, SDOT has completed 13 community parking plans, including five light rail station areas. These plans combined 2-hour, 4-hour and 10-hour paid on-street parking schemes, new or expanded time-limit areas, and restricted parking zones. In 2011, two additional neighborhood plans are in progress and two more will be launched.

Advanced Parking Management Systems

E-Park, a parking guidance system, provides real-time short-term parking information. E-Park signs let people know how many spaces are available in six garages throughout the Downtown Retail Core and Pike Place Market while guiding people to them. An additional goal of e-Park is to reduce the impacts and demands of on-street parking loss by construction.

Residential Parking Permits

Restricted Parking Zones (RPZ) help protect on-street parking for residents and local businesses by establishing time limits and allowing only permitted vehicles to park beyond posted time limits. There are over 30 RPZs for which the city issues 20,000 permits annually. Parking permits cost \$45; a guest permit is \$15 (\$10 for low-income residents) for a 2-year permit. Households are limited to four decals. As part of the 2011 proposed budget, permit fees could rise to \$65. SDOT will be collecting and analyzing neighborhood and business feedback in light rail station areas to see how the RPZs are working. In October and November 2010, parking data was collected to understand how parking is being used and what percent of vehicles have business or resident permits.

Bicycle Parking

Bicycle parking is required even if there is no vehicle parking spaces required or if the vehicle parking requirement is reduced. Building owners may pay city in lieu of providing on-site bicycle parking or provide bicycle parking off-site within 100 feet. Owners must provide bicycle parking protected from the weather. Building owners with office space exceeding 250,000 square feet of floor area are required to provide shower and changing facilities for bicycle commuters. Bicycle parking requirements inside the CBD are different from bicycle parking requirements outside the CBD.

Transportation Management Plan (TMP)

Owners of non-residential-use buildings in the CBD are encouraged to submit a TMP. These plans are required if a building owner or developer submits an application to reduce parking requirements. TMPs outline strategies for reducing single-occupancy vehicle trips and encourage the use of mass transit or carpooling. In addition to TMPs, Washington State has a Commute Trip Reduction (CTR) Law. The program, which began in 1991 as part of the Washington Clean Air Act, mandates employer-based trip reduction programs for employers with over 100 employees, and to limited extent for all employers located within Growth and Transportation Efficiency Centers (GTECs). To that end, building owners must designate a transportation coordinator to promote carpooling, mass transit, or commuting by biking or walking as a means of reducing single-occupancy vehicle commuter trips.

Waivers and Variances

Requests for accessory parking in the CBD are reviewed on a case-by-case basis. Additional parking must meet criteria including minimizing pedestrian and vehicular conflicts. In the Chinatown/International District within the Downtown urban center, the director of the Department of Neighborhoods (which oversees historic district regulations) may waive or reduce parking requirements and loading standards if the required parking provision would negatively affect desirable characteristics of the neighborhood, or if a TMP was submitted and approved. Seattle charges a \$156 fee for code alternates or variances, plus labor costs exceeding one hour.

Future Parking Policies

The City of Seattle is working towards making their downtown more transit friendly instead of car dependent. To that end, the Seattle Department of Planning and Development (DPD) is exploring strategies to limit curb cuts,

discourage street level parking, and promote urban design elements (e.g. green streets) that serve pedestrians and transit users. DPD is trying to encourage planning at the neighborhood level, so that neighborhoods will be complete, compact, and offer basic amenities and services, thereby reducing the need to drive.

SDOT is working to make parking management improvements that balance competing parking needs and support transit, biking, walking, and other alternatives. Other initiatives underway include: a downtown short-term parking guidance system pilot project; a Seattle parking map featuring both on-street and off-street parking information, including parking restrictions, rates and garage management; and other efforts to improve enforcement, parking information access, and revenue collections using new technology.

Zoning Code: <http://clerk.ci.seattle.wa.us/~public/toc/t23.htm>

Washington, DC	
Population	602,000
Land Area	64 sq mi
Population Density	9,406 per sq mi
Central Business District Land Area	Not Available
Number of Metered On-Street Parking Spaces	6,700 spaces
Number of Off-Street Public Parking Spaces	150,000 spaces
Means of Transportation to Work	38% Drove Alone 36% Public Transportation 11% Walked

Sources: District of Columbia; U.S. Census, 2010; American Community Survey, 2007-2009

Within the Central Business District

Each day 450,000 people enter Washington DC; nearly 200,000 of those visitors travel by car. Current zoning is organized by use and district. Minimum parking requirements are lower in high-density commercial areas of the CBD. In general, office uses are required to provide one space for every 1,800 square feet or 0.55 spaces for every 1,000 square feet. Residential parking requirements are based on dwelling units and range from 0.25 spaces to one space per dwelling unit, depending on the location.

Outside the Central Business District

Minimum parking requirements are based on square footage and apply to all uses outside the CBD. Parking requirements for commercial office use are slightly higher than inside the CBD, with 0.66 parking spaces required for every 1,000 square feet. Residential parking requirements vary, with a minimum 0.5 spaces per dwelling unit required for multi-family dwellings and one space required for single-family dwellings.

Federal Properties

Federal government properties in the Washington, DC Capital region are subject to the policies of the National Capital Planning Commission (NCPC), not the local planning agency. All federal properties are required to submit a Transportation Management Plan to the Commission every two years. These plans include the amount of parking spaces allowed and strategies for discouraging single-occupancy vehicle trips by promoting alternative modes of transportation.

Parking requirement ratios differ across the region and are based on proximity to Metrorail stations. Federal properties within the District of Columbia fall into two NPCC geographic areas: the Central Employment Area (CEA) and the Historic District of Columbia Boundaries. The CEA, located in the District of Columbia, encompasses all federal agencies that are located less than one quarter mile from a Metrorail station. Parking requirements for federal properties in the CEA allow a maximum of one space for every five employees. The Historic District of Columbia geographic area includes the entire District of Columbia outside of the CEA; Arlington County, VA; and parts of Alexandria, VA. Federal properties within this area are generally located between one-quarter mile and one-half mile from a Metrorail station. Parking requirements for these regions allow for a maximum of one space for every four employees. The parking ratios are used as guides and all parking must be approved by the Commission.

Current Policies and Programs

Parking requirements may be reduced in areas near public transit. Non-residential uses may provide 75% of the set parking requirement ratio if the development is located within a radius of 800 feet from a Metrorail Station entrance. In addition, the development must be located more than 800 feet from a residential district.

Waivers and Variances

Washington, DC does not get a lot of requests for parking waivers because existing parking requirements are low. Additionally, it is difficult for the applicant to waive out of the required parking spaces. Once new zoning regulations take effect, the Office of Zoning will require developers to apply for a variance to waive out of the new maximum requirements.

Future Parking Policies

Washington, DC is in the process of updating its zoning regulations to reflect new zoning trends and mitigate traffic congestion through new zoning requirements. The Zoning Commission approved the following parking regulations to be included in the updated zoning code: replace minimums with maximums, reserve parking spaces for car share vehicles, shared parking, and bicycle parking. New regulations will take effect once the new code is adopted in its entirety, which is expected to occur at the end of 2011.

Zoning Code: <http://dcoz.dc.gov/info/reg.shtm> & <http://www.dczoningupdate.org/>

London, UK	
Population	7.8 million
Land Area	620 sq mi
Population Density	12,581 per sq mi
Central Business District Land Area	10 sq mi
Number of Boroughs	32 Boroughs and City of London

Sources: Greater London Authority; UK Office for National Statistics

Greater London covers over 600 square miles, nearly twice the area of New York City. In 1999, legislation passed creating the Greater London Authority and granting the mayor of Greater London jurisdiction over the City of London and 32 London boroughs. Greater London is divided into three areas: Central London, Inner London, and Outer London. Central and Inner London are urban, dense, and transit rich. The boroughs of Outer London are suburban in nature. The City of London is a 1.2 square mile area located within Central London and is home to financial and business services much like the financial district in Manhattan.

London's off-street parking policies are categorized by stringent limitations on new parking development. Parking requirements are maximums based on a scoring system that considers land use and transit accessibility, with higher requirements in Outer London than in Inner and Central London. In addition to parking maximums as a means to manage traffic, London introduced congestion charging in 2003 to discourage driving into Central London.

Congestion Pricing Zone

Greater London introduced the congestion pricing zone in 2003 and expanded its boundaries westward in 2007. By January 2011, the Western Extension had been removed from the charging zone. The zone is in effect Monday through Friday from 7am to 6pm except for certain bank holidays and religious holidays. Drivers are charged £10 (\$16) if the fee is paid before midnight the day traveled or £12 (\$19) if paid the next day before midnight and £9 (\$13) if registered for Congestion Charging Auto Pay. Failure to pay the fee results in a fine of £120 (\$192).

Cars that emit 100g/km or less of CO₂ are registered for the Greener Vehicle Discount (GVD), and are allowed a 100 percent discount from the Congestion Charge. Registration for the vehicle in the GVD Program costs £10 GBP (\$16 USD). Developments in greener vehicles with lower emissions will be monitored and congestion pricing for these vehicles will be reviewed in 2012.

Planning Framework

In 2004, the Greater London Authority published the London Plan outlining a strategic vision for the Greater London region. Updated in 2009, the London Plan mandates strategic planning policies, but it is up to each individual borough to develop and implement their own regulations. Each borough must publish a Unitary Development Plan (UDF) or Local Development Framework (LDF) outlining its unique policies. As a result there are 33 different planning documents. The policies set forth in either of these documents, developed and enforced by each borough, must be consistent with the regulations in the London Plan.

Parking Policies

The London Plan emphasizes reducing the amount of parking allowed for private development through the use of parking maximums. In general, the amount of off-street parking allowed is determined by availability and access to mass transit. To that end, Greater London uses a scoring system – Parking Standards, Transportation Assessments, and Public Transport Accessibility Levels—to evaluate and rate access to public transit for any given area.

Parking Standards, Transportation Assessments, and Public Transport Accessibility Levels (PTALs)

Developed by the borough of Hammersmith and Fulham in 1992, each address or point in Greater London is assigned a PTAL level. The PTAL levels range from one to six, where one represents a low level of transit accessibility and six represents a high level of transit accessibility. The PTAL level is determined by a variety of factors, but essentially considers the walking distance to station stops and the level of service of transit in a pre-defined catchment area. Transit modes analyzed include: bus, tram, and underground service. The methodology does not account for the speed of service or available capacity of transit mode analyzed.

Off-street parking requirements for a location are determined by the assigned PTAL designation. Locations assigned a high PTAL level have low off-street parking requirements. Locations assigned a low PTAL level have less stringent parking requirements since transit access is limited. Boroughs well-served by transit discourage developers from providing off-street parking and various boroughs are finding that many developers do not want to provide parking -- they would rather use the space in a more productive way.

Within the Central Business District

For policy purposes, Central London is referred to as the Central Activities Zone (CAZ). Approximately 10 square miles, the CAZ serves as the Central Business District for Greater London and the zone is not defined by borough boundaries. The CAZ includes the City of London as well as portions or the entire boroughs of Westminster, Wandsworth, Lambeth, Southwark, Tower Hamlets, Hackney, Islington, Camden and the royal boroughs of Chelsea and Kensington. Each borough must comply with the parking requirements listed below. In general, parking requirements for office buildings are determined by maximum ratio of 0.06-0.09 parking spaces per 1,000 square feet. Depending on bedrooms per unit, residential development may provide no more than 0.5 -1 spaces per dwelling unit. However, each borough may enforce stricter requirements through their own policies outlined in their UDP or LDF. For example, car free developments - where no off-street parking is provided and on-street parking permits are unavailable- are increasing in popularity in the City of London and the Borough of Camden.

Outside the Central Business District

Most of Greater London is outside the CAZ and parking requirements are higher in these areas. According to the London Plan, the maximum parking requirement ratio for office development is 0.09-0.15 spaces per 1,000 square feet in Inner London and 0.15-0.93 spaces per 1,000 square feet in Outer London. Residential development may provide a maximum of 1-2 spaces per dwelling unit and the requirement is determined by bedrooms per unit.

Borough of Camden, Greater London	
Population	231,000
Land Area	8.5 sq mi
Population Density	27,176 per sq mi
Central Business District Land Area	1.35 sq mi
Metered On-Street Parking Spaces in CBD	1,663

Sources: Borough of Camden; UK Office for National Statistics

The Borough of Camden is an example of unique planning policies in Greater London because part of the borough is within the CAZ. Parking regulations differ between the areas of the borough that fall within and beyond the CAZ. In general, the area within the CAZ is well-served by public transportation. Transit accessibility in Camden varies outside the CAZ and parking requirements are sensitive to transit offerings and land use.

In compliance with the London plan, parking requirements govern the maximum number of off-street spaces a development may have. In general, office development may provide a maximum of 0.06 spaces per 1,000 square feet within the CAZ and 0.09 spaces per 1,000 square feet outside the CAZ. Residential development may provide a maximum of 0.5 parking spaces per dwelling unit within the CAZ and one space per dwelling unit beyond.

Camden promotes car-free and car-capped housing developments in areas well served by public transportation. A car-free development is housing where on-street and off-street parking is unavailable. Car-capped housing restricts the number of on-street parking permits issued and limits off-street parking in the development. To support these policies, the Camden council will not issue additional on-street residential permits; residents are informed of this policy. In addition, the Council will not approve developments that aim to provide more parking than the maximum allowed. In instances where off-street parking is allowed but new vehicular access would take away an on-street parking space, the Camden Council can impose more stringent requirements. Parking zones are mapped over the entire borough and permits are required for parking at certain times of day.

Waivers and Variances

Developers can apply for a parking variance to develop parking that exceeds maximum allowances, but these are rarely granted. An example of a project for which a parking variance was granted is a commercial development where employees work at night and do not have good access to public transportation.

London Plan: <http://www.london.gov.uk/shaping-london/london-plan/>

Table 2: City Geographic and Parking Information

City	Population	Land Area square miles	Population Density per square mile	Central Business District square miles	Metered On-Street Parking Spaces	Off-Street Public Parking Spaces	Daily Parking Rate (median)	Monthly Unreserved Rate (median)
New York, New York	8.1 million	305	26,557	9.3	85,930	102,000 (CBD)	\$44.00 (Midtown)	\$550.00 (Midtown)
Boston, Massachusetts	617,000	48.4	12,748	N/A	7,300	134,000	\$34.00	\$402.50
Chicago, Illinois	2.7 million	237	11,392	1.6	4,500	unknown	\$31.00	\$325.00
Milwaukee, Wisconsin	595,000	96	6,198	1.5	6,400	25,000 (CBD)	\$12.00	\$110.00
Minneapolis, Minnesota	383,000	58	6,603	1	6,611	16,102	\$17.25	\$187.00
Philadelphia, Pennsylvania	1.5 million	135	11,111	1.5	N/A	N/A	\$26.00	\$314.00
Portland, Oregon	584,000	145	4,028	4.6	7,800	58,130	\$9.00	\$185.00
San Diego, California	1.3 million	342.5	3,796	2.27	N/A	N/A	\$26.00	\$180.00
San Francisco, California	805,000	47.6	16,912	0.53	25,000	15,000	\$25.00	\$350.00
Seattle, Washington	609,000	142.6	4,271	1.48	13,500	50,000	\$28.00	\$290.00
Washington, Dist. Of Columbia	602,000	64	9,406	N/A	6,700	150,000	\$14.00	\$215.00
London, United Kingdom	7.8 million	620	12,581	N/A	N/A	N/A	\$56.68 (city)	\$1,020.29 (city)

Sources: US Census, 2010; Colliers International Global CBD Parking Rate Survey, 2009.
Interviews with planners in each city. See Acknowledgments and Special Thanks section. Parking rates in \$USD.

Table 3: Means of Transportation to Work

City	Total Workers 16 years and Over	Drove Alone	Carpooled	Public Transportation	Walked	Worked at Home	All Other
New York, New York	3.8 million	23%	5%	55%	10%	4%	2%
Boston, Massachusetts	332,000	40%	7%	33%	14%	3%	3%
Chicago, Illinois	1.3 million	51%	10%	27%	6%	4%	3%
Milwaukee, Wisconsin	268,000	72%	12%	8%	5%	2%	2%
Minneapolis, Minnesota	208,000	62%	9%	14%	6%	5%	5%
Philadelphia, Pennsylvania	620,000	51%	9%	26%	8%	3%	3%
Portland, Oregon	290,000	62%	9%	12%	5%	6%	6%
San Diego, California	635,000	76%	9%	4%	3%	6%	2%
San Francisco, California	442,000	38%	8%	33%	10%	7%	5%
Seattle, Washington	348,000	53%	10%	19%	9%	5%	4%
Washington, Dist. Of Columbia	293,000	38%	7%	36%	11%	5%	3%

Source: American Community Survey, 2007-2009

Table 4: Rates of Household Car-Ownership

City	Total Household Population	Households with No Vehicle	Households with 1 Vehicle	Households with 2 or More Vehicles
New York, New York	3 million	54%	32%	14%
Boston, Massachusetts	238,000	35%	43%	22%
Chicago, Illinois	1 million	26%	44%	30%
Milwaukee, Wisconsin	227,000	17%	45%	38%
Minneapolis, Minnesota	168,000	18%	44%	38%
Philadelphia, Pennsylvania	570,000	33%	43%	24%
Portland, Oregon	237,000	14%	40%	46%
San Diego, California	480,000	7%	37%	56%
San Francisco, California	323,000	30%	42%	28%
Seattle, Washington	281,000	15%	43%	42%
Washington, Dist. Of Columbia	250,000	35%	44%	21%

Source: American Community Survey, 2007-2009

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Zoning Questionnaire

Planners from each city featured in the City Case Study section were asked the following questions via telephone or email correspondence.

ZONING QUESTIONS

1. What are your city's zoning rules in regards to parking (off-street accessory) in commercial and residential zones?
 - a. What is required? (Low density res.? High density res.? Commercial?)
 - b. How many spaces etc.?
 - c. Are there special rules in the CBD?
2. How easy/common is it for developers to waive out of those parking requirements?
 - a. What is the cost of a variance/waiver/zoning change?
3. Where do you see your city in 5-10 years in terms of parking requirements? In terms of congestion management?
4. What parking demand management strategies do you see on the horizon that you are interested in exploring further?

CITY SUMMARY QUESTIONS

5. How many off-street accessory parking spaces do you currently have?
6. How many licensed off-street public parking spaces do you have?
7. How many metered on-street parking spaces do you currently have in your CBD?
8. What % of land is commercial? Residential?
9. How big is your city? (Sq. miles? Population?)
10. How big is your CBD? (Sq. Miles? Workers?)

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