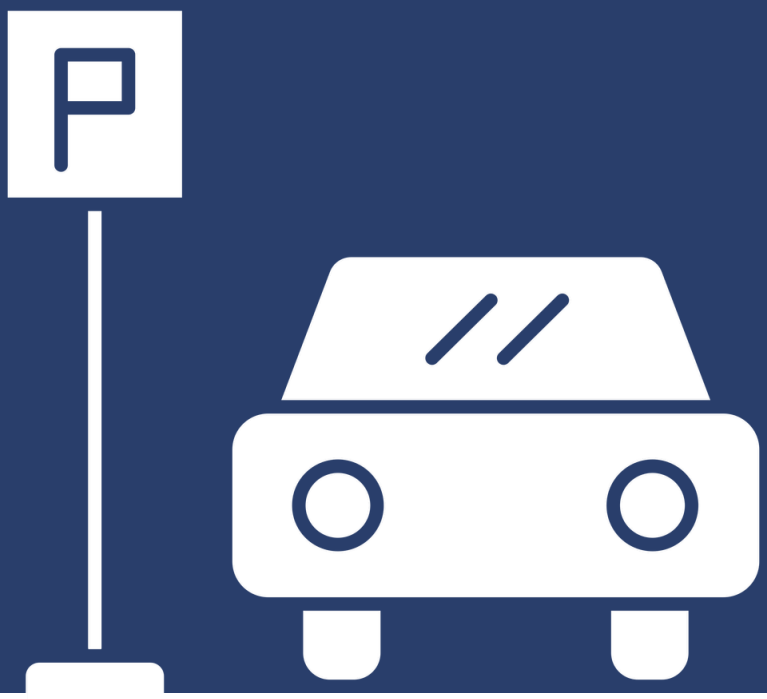
Parking Stress in DC

A Study of DC's Residential Parking Permit Program

SEPTEMBER 2026



District Department of Transportation

THE LAB @ DC

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16. Abstract When residents struggle to find street parking near their home, it can be frustrating. It can also increase neighborhood traffic, safety hazards, and make getting home hard for people with mobility challenges. We used data on permits, meters, and other sources of parking supply and demand information to identify the areas of DC that are under high parking stress. Stakeholders helped us understand potential policy solutions to ease demand in high-stress areas, and we modelled what putting some of those ideas into practice might look like. This project will inform how DC manages, and potentially updates, the residential parking permit (RPP) program.			
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The Lab @ DDOT

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Executive Summary

This study examines the current state of the District of Columbia's Residential Parking Permit (RPP) program and identifies opportunities to better serve residents while aligning it with the District Department of Transportation's goals.

More broadly, the study provides baseline information to support an informed discussion about applying transportation-focused principles to DC's parking policy.

The RPP program, introduced in 1974, was designed to prioritize resident parking near their homes. As the program has expanded to cover large portions of the District, DC's increased density has created new challenges for the program, especially in parking "hot spots."

Our analysis identifies priority areas, pain points, and opportunities for improving residential parking in the District.



Photo credit: The Lab @ DC

METHODS

The study draws on several methods:

1. "Parking stress analysis" of permit and geospatial data
2. Simulation analyses of possible policy changes to RPP
3. Sentiment analysis of parking complaints data
4. Qualitative interviews with DDOT community engagement specialists
5. Ecosystem mapping

FINDINGS

We distilled what we learned into three key findings:

1. In many "hot spots," we issue more residential permits than there is available curbside space. Because smaller zones would limit the available curb further and intra-ward demand only accounts for a small portion of residential parking, we find that **making zone boundaries smaller will not improve residents' ability to park**.
2. Not everywhere is a hot spot, though: **Parking stress varies significantly across the District**. For this reason, we recommend pursuing place-based policies to address parking stress.
3. Inconsistent eligibility policies between buildings in residential and mixed-use zones can foster a sense of competition among residents. **Making residential buildings in mixed use zones eligible would not dramatically increase parking stress in most places**, and transportation strategies may be able to offset future stress.

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1. Background



Curbside management in DC, including residential parking, is informed by the District's Multimodal Long-Range Transportation Plan, MoveDC (2021) and the Curbside Management Study (2014). The Residential Parking Permit (RPP) program, however, was introduced in 1974 and predates these documents. The RPP program was designed to help residents find parking near their homes where they faced competition from commuter traffic. The District Department of Transportation's (DDOT) Curbside Management Division manages the program, while the Department of Motor Vehicles (DMV) issues permits and the Department of Public Works (DPW) enforces parking rules. DDOT is also responsible for roughly 25,000 on-street signs that tell residents their parking regulations based on zone.

ELIGIBILITY

There are eight parking zones, mostly aligned with the District's eight wards.[1] Blocks are eligible for RPP if they are zoned "residential" in the most recent zoning rules, and eligible residents can request that their block be made eligible for RPP with a petition to DDOT. A small share of buildings received RPP before DDOT started applying RPP eligibility by land use zoning. Some blocks are also eligible for ROP, or Resident-Only Parking. Residents of RPP-eligible blocks, as well as all residents of Ward 1, may apply for RPP. Full information can be found on DMV's Residential Parking Program website.

1. Small changes to the ward boundaries were approved by DC Council in 2022, but the zone boundaries for certain areas that changed were "frozen" to match the old wards. This has created implementation challenges for enforcement.

COMPARISON TO PEER CITIES

Many other cities have residential parking programs—although not all; New York City, for example, does not. In most peer cities, RPP programs cover narrow areas immediately adjacent to commercial strips. DC is unusual because about one in three households[2] claim RPP permits, and because the zones cover very large geographic areas. Peer cities including Chicago, Seattle, Boston, Portland, and Minneapolis have a greater number of zones, covering smaller areas of the city. Appendix Table A1 summarizes peer policies.

RPP AND MOVEDC

Two MoveDC strategies are related to parking policy:

- #26 Adapt curbside uses to fit neighborhood type
- #27 Establish fairer parking pricing that is responsive to demand

Neither policy is particularly aligned with the current RPP approach, which charges a significantly under-market fixed fee for all eligible residents' on-street parking, regardless of location. An off-street parking space in DC is estimated to cost about $3,200 annually; yet most residents pay $55 for their on-street parking permit.[3] Perhaps more importantly, residents pay the same price for on-street parking, regardless of parking demand or land use in their neighborhood. Table 1 summarizes the price of permits.

Table 1: RPP Permit Prices

Number of vehicles	Cost
First vehicle	$55 ($35 for seniors)
Second vehicle	$80
Third vehicle	$115
Each additional vehicle beyond three	$175

PROPOSED CHANGES TO RPP

There is tension between meeting the demands of a changing urban environment and maintaining a legacy program that residents widely expect. This tension is apparent in the efforts to reshape the program that resurface every few years. In 2003, Mayor Anthony Williams commissioned a Parking Task Force to address parking challenges in the District. The task force's recommendations, although they predated MoveDC, are aligned with the principles described above. The report recommended dividing the District into 39 parking zones, which would be categorized among four groups: residential areas where demand is less than supply, residential areas where demand exceeds supply, mixed residential and commercial areas where demand exceeds supply, and commercial areas. These recommendations were not adopted. On the other hand, in 2010, DC Council significantly expanded RPP by establishing a "Ward 1 Enhanced Residential Parking Zone." This law was effectively an exception that allowed all Ward 1 residents to claim RPP permits, regardless of local zoning. More recently, in 2021 and 2023, DC Council introduced legislation to either change or study the possibility of changing the RPP zone boundaries, presumably to make it easier for residents to park in their neighborhoods.

DDOT has created Performance Parking Zones (PPZs); special designated areas in which DDOT can set rates differently than the rest of the District. The code states that one goal of PPZs is to protect resident

2. About 86,000/310,000, or 27% (Based on permit analysis and Washington DC data)
3. https://ggwash.org/view/92010/ggwash-picks-of-2023-street-parking-in-dc-is-way-too-cheap

parking in residential zones; so far, though, they have primarily been implemented in commercial and mixed-use areas. The most recently established PPZ, along the U Street NW corridor, does include some residential blocks that are adjacent to the commercial strip, but does not change the features of the RPP program for residents.

FIGURE 1:

Residential Parking Permit Program Timeline

1974: RPP Program is established by DC Council.

2003: Mayor Anthony Williams's Parking Task Force issues parking report with recommendations. Few of these are adopted.

2010: All Ward 1 residents are granted RPP eligibility status.

2014: DDOT publishes first curbside management study, which introduces neighborhood typologies and curbside hierarchies

2021:

- DDOT publishes MoveDC, the District's Multimodal Long-Range Transportation Plan.
- District ward boundaries are redrawn (and parking zones are frozen to old boundaries).
- CM Henderson and Pinto introduce legislation to "right-size" zone boundaries (did not advance).

2022: DDOT publishes ANC 2B (Dupont) pilot study.

2023: CM Henderson and Nadeau introduce legislation requiring DDOT to study zone boundaries (did not advance).

2026: DDOT updated neighborhood typologies and curbside hierarchies (forthcoming).

2. Methods

To provide a more comprehensive picture of the current state of the RPP program, we combined several quantitative and qualitative analyses:

PARKING STRESS

We analyzed residential parking permit data from DMV and geospatial data of available parking space in DC to develop a measure of "residential permit stress." Our measure attempts to reflect how many neighbors compete to park on the same stretch of curb. For each block, we calculated how much on-street parking is available within a 5-10 minute walk (500m) of that block. We then calculated how many other residents with RPP permits are within a 5-10 minute walk of those parking spaces. While we know that not all residents park at the same time and some residents who claim RPP permits also have off-street parking, this measure gives us a rough approximation of how much demand there is for on-street parking in different areas. We then mapped this measure across the District to identify "hot spots," or areas where, as an agency, we issue more permits than there is available space.

SENTIMENT ANALYSIS

We made a similar "hot spot" map for parking-related 311 complaints. In the District, residents can file a 311 request to report a parking issue like a car that has overstayed the time-limit or is blocking a driveway. We mapped where these issues were occurring as another measure of where the pressures of parking are creating problems for residents.

We also interviewed DDOT's community engagement specialists (CES) about the parking problems that residents and other community members describe across the District. Each CES covers a ward or set of wards; as part of the interview, we presented each with a blank map of their area and asked them to draw for us where they had heard about parking concerns. We also discussed which actors (residents, ANCs, BIDS) were most likely to express frustration with parking, as well as the types of problems they described (e.g. enforcement, stadium zones, competition with non-residential sources of parking demand like restaurant-goers).

SIMULATIONS

We used the same data sources from the parking stress analysis along with the District's zoning map to analyze three possible scenarios for policy change:

1. We analyzed how parking stress would change if DC changed RPP zone boundaries to the Advisory Neighborhood Commission (ANC) level. To do this, we preserved the assumption that residents are looking for a parking space within a 5-10 minute walk but restricted the available spaces they could compete for to those within their ANC.
2. We estimated how many new permits the District would add if we changed the rules to allow residential buildings in mixed-use zones to apply.

for RPP. To do this, we calculated the average rates of permits claimed by ward and building type and projected this rate of permits onto the "new" buildings that would become eligible in mixed use zones. We then mapped where the District would add these new permits, aggregated to the ANC-level.

3. We calculated a hypothetical set of "target permits" that would align the number of RPP permits issued to neighborhood place types. Place types categorize parcels of land in DC by their housing density and access to different forms of transportation (see the Office of Planning's Place Types: A New Approach for the full typology). For this analysis, we identified the nearest place-type for each block of on-street parking and calculated roughly how many spaces should be "reserved" for long-term parking depending on the associated land use: 100% in small-scale residential neighborhoods, 80% in medium-scale residential neighborhoods and neighborhood centers, and 70% in other places with higher density or industrial, institutional, or commercial uses. The idea is not to literally restrict those areas to residents but to model how many permits DDOT should be aiming to issue to preserve a balance of resident and non-resident access to parking.

ECOSYSTEM MAPPING AND PEER RESEARCH

Finally, we worked with the Curbside Management Division and other partners at DDOT to map the ecosystem of actors involved in the policy design, administration, and enforcement of the RPP program. Through a series of workshops, we identified which actors are responsible for which policy decisions for the RPP program, as well as commonly held beliefs or "myths" about the program. We also conducted a ride-along with DPW to learn about enforcement and researched parking policies in peer cities.

LIMITATIONS

Our approach had two main limitations. First, we were missing data for two key outcomes: real-time occupancy and off-street parking. Real-time occupancy data, which would show us where cars are parked and when, is difficult to capture on an ongoing basis in residential areas. When measuring paid parking, many agencies use in-ground sensors, time-lapse cameras, and transaction data, but it is much harder to cover residential blocks, where no transactions take place, especially at the scale of the entire District. Digital license plate readers, or LPRs, are used for enforcement and can provide scans of individual blocks at different times of day. The Department of Public Works (DPW) only recently expanded use of LPRs for RPP enforcement. Without real-time occupancy data, we can say more about the "stock" of parking demand (permits) than the "flow" (actual demand that changes over the course of the day). We are especially uninformed about demand for parking from out-of-state vehicles visiting the District. Similarly, to our knowledge, there is no single source of data for the price and availability of the off-street parking offered in commercial garages, as part of residential apartment buildings, individual backyards and alleyways, and privately managed lots. This prevents us from characterizing the entire market for parking and may cause us to overestimate parking stress, since some residents who claim RPP permits also have access to off-street spaces.

Second, this study relied on indirect sources (311 data and the community engagement specialists) for community input. We also narrowly focus on residential parking and may be missing perspectives from other users on the curb, such as non-residents or businesses. Before making changes to the RPP program, more robust community engagement is needed.

3. Findings

Our findings show that **parking stress in the District is place-based** and shaped by density, land use, and program rules. We found that the core driver of parking difficulty for residents in high-stress areas is not the size of existing zones but the oversubscription of permits relative to curb space. If the zones were smaller, the same residents would compete for less space. This parking stress is concentrated in Ward 1 and other mixed-use corridors. At the same time, **not all places are hot spots**: in other residential areas, there is still more available curb than demand for parking. These observations suggest that it would be better to develop focused policies for high-stress areas than to change RPP uniformly for the whole District.

We also found that changes in the District have introduced **new pressures** for which the current RPP framework was not designed. In particular, there's been an increase in population and a shift away from single-family homes toward denser land uses, like apartment buildings and mixed-use zones. As such, we explored expanding the RPP program's eligibility to make it more consistent for residents of denser, multi-family neighborhoods. We found that **expanding RPP to "mixed-use" zones would add** about 5,000 (3.5%) **new permits to DC**, but mostly **in areas where parking stress is currently low**.

3.1 Distribution and Determinants of Residential Parking Stress

SPATIAL VARIATION IN PARKING STRESS

To assess the level of competition for on-street residential parking, we compared the number of active RPP permits to the estimated supply of curb spaces within a 500-meter (5-10 minute) walk of each block. The resulting "permit stress" measure shows that several neighborhoods experience a substantially higher ratio of permits to available curb space (Figure 2). High-stress "hot spots" include nearly all of Ward 1—particularly areas around 14th Street, Columbia Heights, Adams Morgan, and Kalorama—as well as segments of Connecticut Avenue, Waterfront, and Capitol Hill East. When we mapped RPP-related 311 complaints, we observed a similar spatial pattern: complaints are most common in the same areas with high permit demand relative to supply. Interviews with CES staff also identified many of the same locations as recurring sources of resident parking frustration. Together, these observations provide evidence of localized, not District-wide, parking stress.

Conversely, many neighborhoods exhibit relatively low permit stress. In these locations, few residents apply for permits, large portions of blocks remain unsigned for RPP, and the existing supply of curb space appears sufficient for current residential demand. While these areas are not presently experiencing high levels of stress, future increases in density could place additional pressure on the curb without policy modifications.

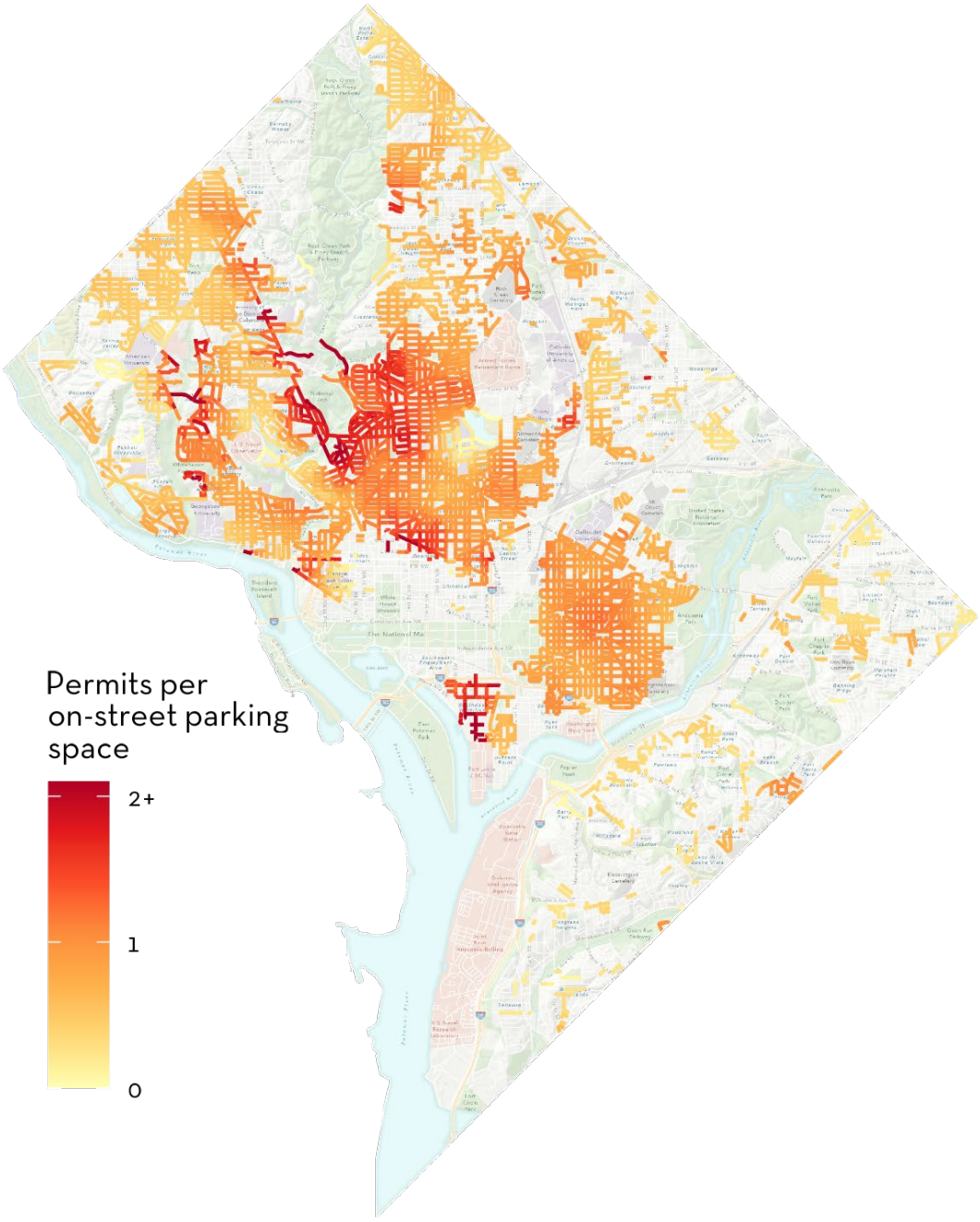
CORRELATES OF PARKING STRESS

The geographic distribution of permit stress appears closely linked to several structural and contextual factors:

- **Residential density:** Neighborhoods with a higher concentration of multifamily buildings typically exhibit higher permit demand. In some areas, six- or seven-story apartment buildings with limited off-street parking contribute to a high density of permit holders competing for comparatively little curb space.
- **Proximity to commerce, retail, or entertainment:** Mixed-use corridors tend to attract both resident and non-resident parking demand, likely increasing the number of people competing for the same spaces.
- **Physical constraints:** Natural barriers such as Rock Creek Park limit the dispersal of parking demand. In parts of Ward 1, for example, the park boundary concentrates vehicle parking back into the neighborhood.
- **Program rules and exceptions:** Ward 1's blanket eligibility policy significantly increases the number of eligible permit holders, contributing to stress levels that exceed the capacity of available curb space.

FIGURE 2:

Residential Parking Permit Stress



Map shows how many permit-holders are within 500m of the same on-street parking space on each block. Analysis is conducted at the block-level. Based on June 2025 permit data.

Example: ANC 1C (Lanier Heights)

ANC 1C typifies many of the challenges of residential parking in the District's medium and moderate density areas. ANC 1C issues 4,140 permits for 2,971 parking spaces on RPP-zoned blocks, or 1.4 permits per spot. Figure 3 shows the map of residential permit parking in this area. On the map, dot size corresponds to number of permits associated with a single address: the largest dot has 92 permits. The neighborhood is residential, with a mix of row homes and apartment buildings. There is minimal off-street parking, despite the presence of tall apartment buildings. Finally, Rock Creek Park creates a natural barrier which prevents parking demand from spreading evenly throughout the area.

FIGURE 3:

Residential Parking Permits in ANC 1C



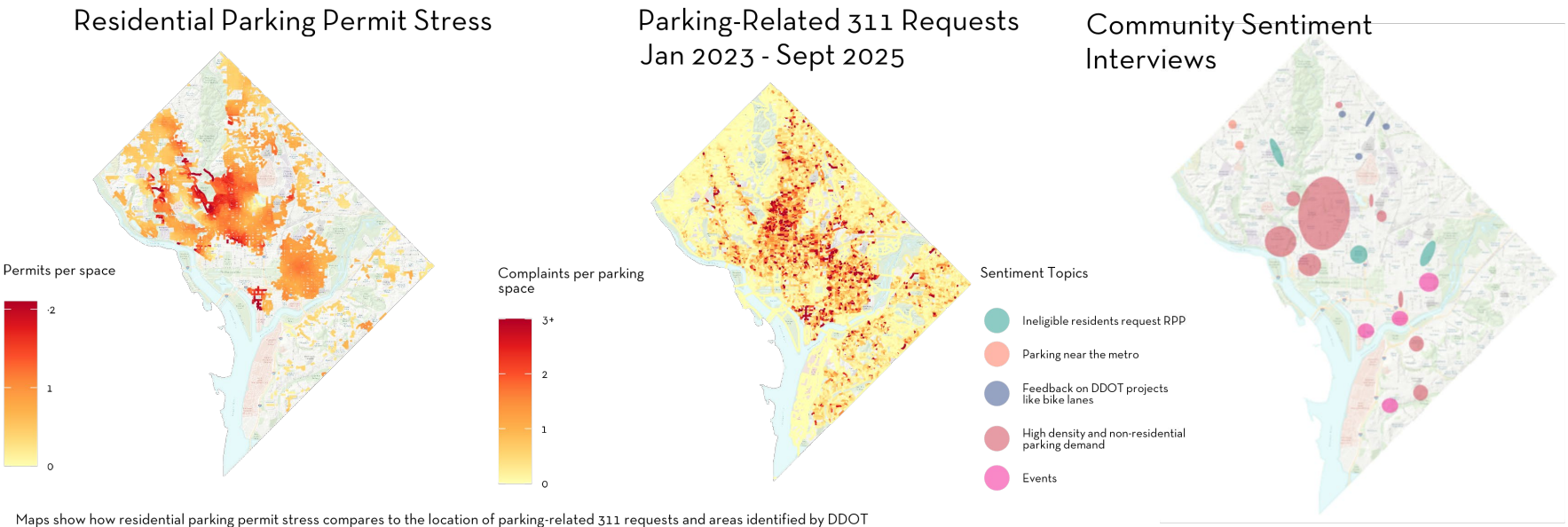
Map shows how many residential parking permits are associated with each address.

COMPARISON ACROSS DATA SOURCES

We observe consistent patterns for the locations of high-stress areas when comparing permit data, 311 complaints, and CES interview responses (Figure 4). Permit-based stress and complaint rates align spatially, suggesting that residents are reporting issues in the same locations where permit oversubscription is most acute. CES interviewees independently pointed to many of these areas based on community feedback. This triangulation provides confidence that the patterns observed in quantitative data are mirrored in lived experience, despite the absence of real-time occupancy data.

FIGURE 4:

Comparing Permit Stress to 311 Complaints and Community Sentiment



Maps show how residential parking permit stress compares to the location of parking-related 311 requests and areas identified by DDOT community engagement specialists as sources of community sentiment about parking.

3.2 Resident Demand, Built Environment, and Neighborhood Change

Residential parking conditions in the District are occurring amidst rapid demographic and physical change. The District has added 90,000 households since 2005, when there were just 253,500 households, and is forecasted to add close to another 100,000 between now and 2050. This growth in population has coincided with an increase in higher density housing types and mixed-use zones. As of 2022, more than 63% of total housing units are in multifamily buildings, including a large share in buildings with 20 or more units (Table 2). Detached single-family homes account for just 11.5% of the housing stock.

These changes have implications for residential parking demand: higher density buildings typically generate more potential vehicles per linear foot of curb space, especially when off-street parking is limited or costly.

The shift toward denser, mixed-use neighborhoods has created new parking challenges for both longtime residents and newcomers.

The RPP program, which originally targeted small residential pockets of the city with commuter parking demand, now serves a city where residential and commercial activities increasingly coexist on the same blocks, which can lead to tensions. Data from stakeholder mapping and CES input indicate that some longtime residents perceive newer buildings—and the residents who occupy them—as straining limited parking resources.

Longtime residents may have made investment decisions, like purchasing a home or a car, back when their neighborhood looked different, and feel that newer residents should not undermine their ability to park. Meanwhile, newcomers, who are more likely to live in mixed-use zones, feel they should receive the same treatment as other DC residents.

A recurring theme in CES interviews about community sentiment was concern about inconsistencies in RPP eligibility for similar buildings. Only buildings that are in locations zoned residential (R, RF, or RA) in the District's zoning map, are eligible for RPP. This means that two apartment buildings may be virtually identical, yet one is eligible for RPP and the other is not due to zoning classifications. For example, in the Woodley Park neighborhood, some large apartment buildings fall within the "mixed use" zone and as such are not eligible for RPP, while their neighbors in other high-rises just around the corner are zoned RA, and thus qualify. We found that these eligibility discrepancies can foster a sense of competition in areas experiencing rapid development.

Table 2: Housing Type by Size[4]

Housing Type	Percent of total housing units
Apartment Buildings	
20+ units	39.5%
5-19 units	16.1%
3-4 units	3.4%
2-unit buildings	22.4%
1-attached homes	11.5%
Detached homes	11.5%

4. https://storymaps.arcgis.com/stories/4c8a84bc5a3445e5bc174b88b3df93ad

3.3 Impact of Alternative Boundary and Eligibility Scenarios

EFFECTS OF REDUCING RPP ZONE SIZE

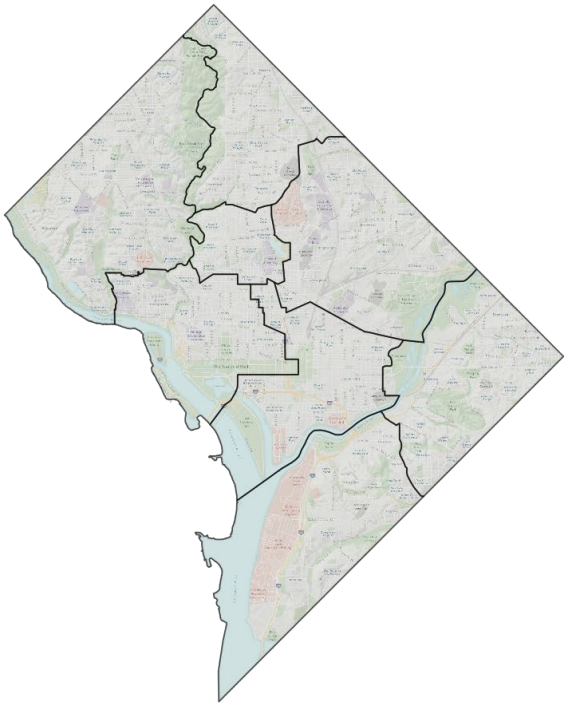
To evaluate whether smaller RPP zones might alleviate resident parking stress, we simulated a shift from the current ward-based system to ANC-based boundaries. Figure 5 shows the current (ward-level) and proposed (ANC-level) boundaries. We chose to focus on ANC (46 zones) boundaries as the DC Council has repeatedly suggested this as a possibility for re-zoning the program (Figure 5).

Our simulation restricted the supply of "available" parking spaces to those located within each ANC boundary, while preserving the assumption that residents typically search within a 500-meter walking distance (Figure 6). Results indicate that in most neighborhoods, changing boundaries would not meaningfully reduce permit stress. In areas where permit demand already exceeds available space, smaller boundaries would lead to the same neighbors competing for less space.

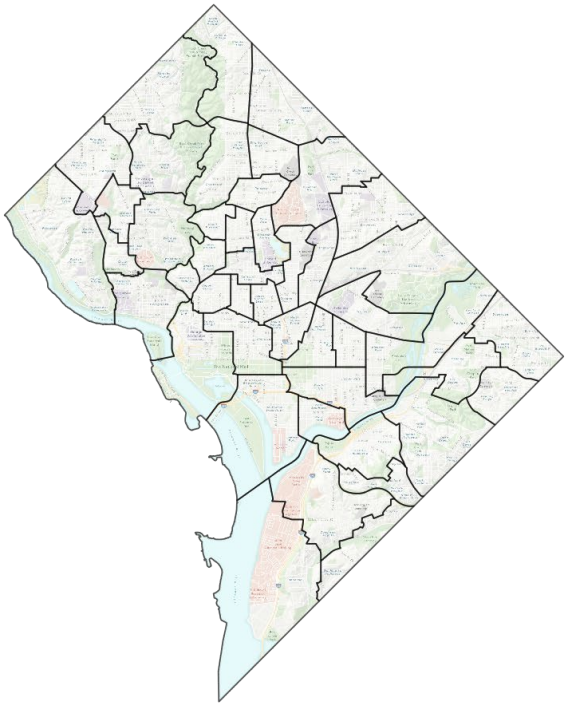
FIGURE 5:

Current and Proposed Boundaries

Ward-level RPP Zones
Current Boundaries



ANC-level RPP Zones
DC Council's Proposal

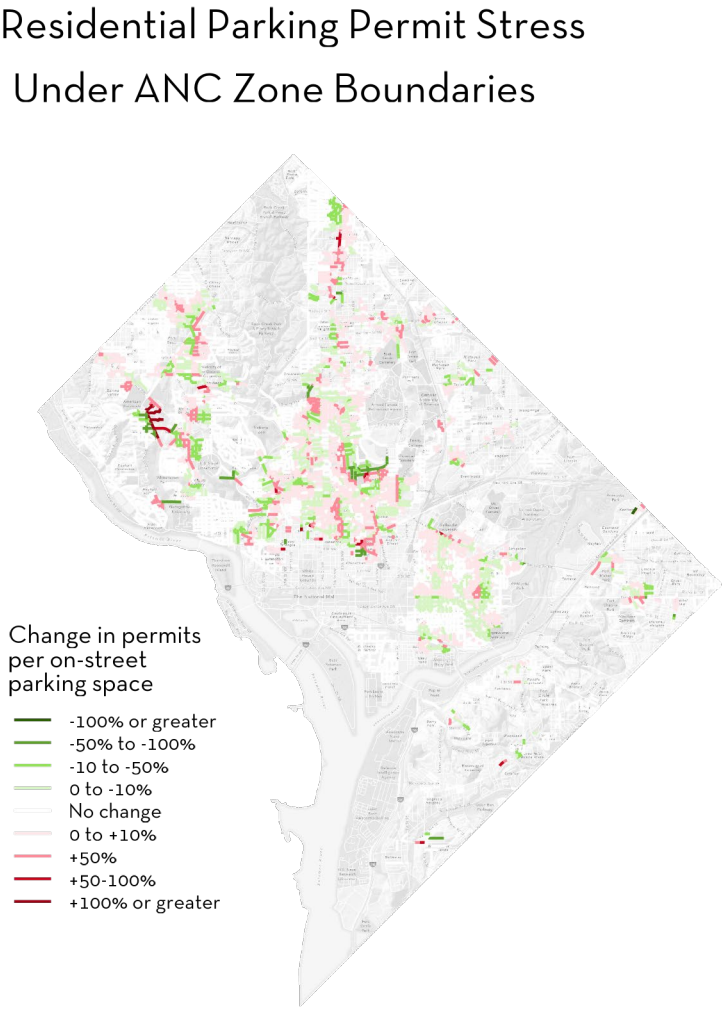


Maps show current and proposed boundaries for the RPP program. ANC boundaries are currently digitally enforced as Visitor Parking Permit (VPP) boundaries.

If a large share of parking demand comes from residents who live in other parts of the zone (i.e. intra-ward travel), smaller zones would make it easier for residents to find a spot near their home. The permit stress analysis does not include intra-ward travel, because it is only based on the availability of space around the addresses where permits are issued. However, observed data from the 2022 ANC 2B (Dupont) study concluded that intra-ward travel is not a primary driver of parking stress. In that neighborhood—often cited as a candidate for smaller boundaries—only 2.7% of parked vehicles were registered elsewhere within the same ward, suggesting that intra-ward parking makes up a small share of parking demand. By contrast, a much larger share of vehicles belonged to out-of-state drivers. Since boundary changes do not affect out-of-state demand, they are unlikely to resolve stress in such areas. Instead, they point to more structural sources of high parking demand that cannot be met with reform to the RPP boundaries alone.

FIGURE 6:

Residential Parking Permit Stress Under ANC Zone Boundaries



Map shows the change in how many permit-holders are within 500m of the same on-street parking space on each block if the zones were restricted to ANC boundaries. Based on June 2025 permit data.

EFFECTS OF EXTENDING ELIGIBILITY TO MIXED-USE BUILDINGS

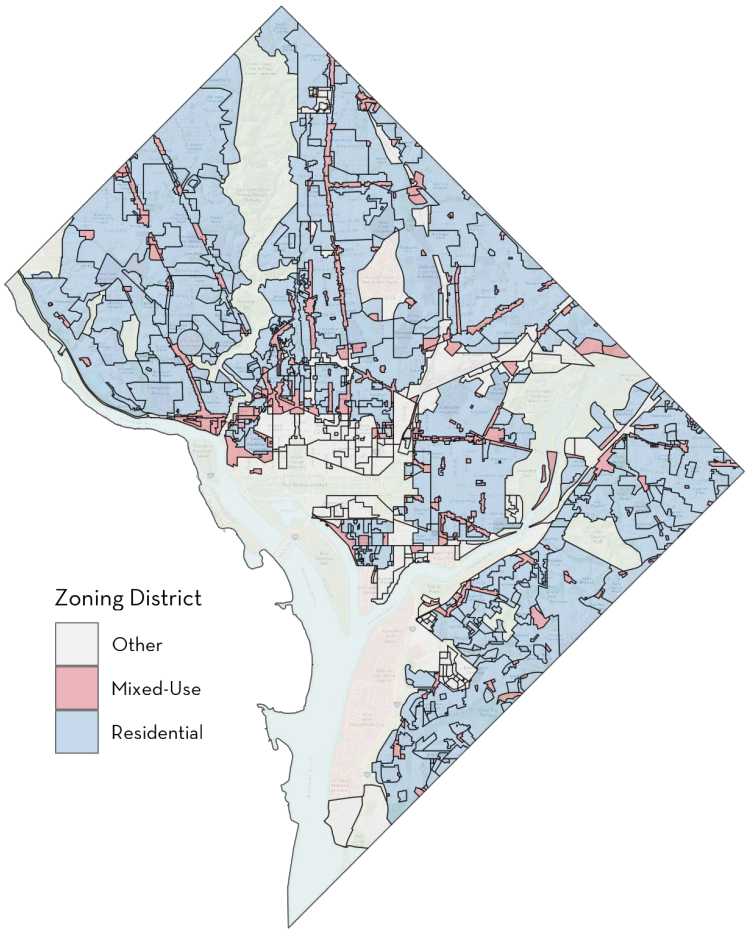
We also simulated the effects of extending RPP eligibility to residential buildings located in mixed-use zones. Figure 7 shows which sections of the District are zoned for residential versus mixed-use. Mixed-use zones are designed to accommodate a broad range of residential and non-residential uses (see the Zoning Handbook for details.)

Our analyses (Figure 8) show that if residents of these buildings claimed permits at the same rate as similar buildings in residential zones, the change would add an estimated 5,400 permits—approximately 3.5% more than the current total. The largest increases would occur in neighborhoods where parking stress is currently low, and there would be no effect in Ward 1 due to its existing universal eligibility.

These findings suggest that extending eligibility could address inconsistencies in access without substantially worsening stress in currently constrained neighborhoods. However, as dense mixed-use areas continue to grow, without complimentary measures to offset increased demand for permits, new eligibility could eventually replicate the oversubscription dynamics observed in Ward 1.

FIGURE 7:

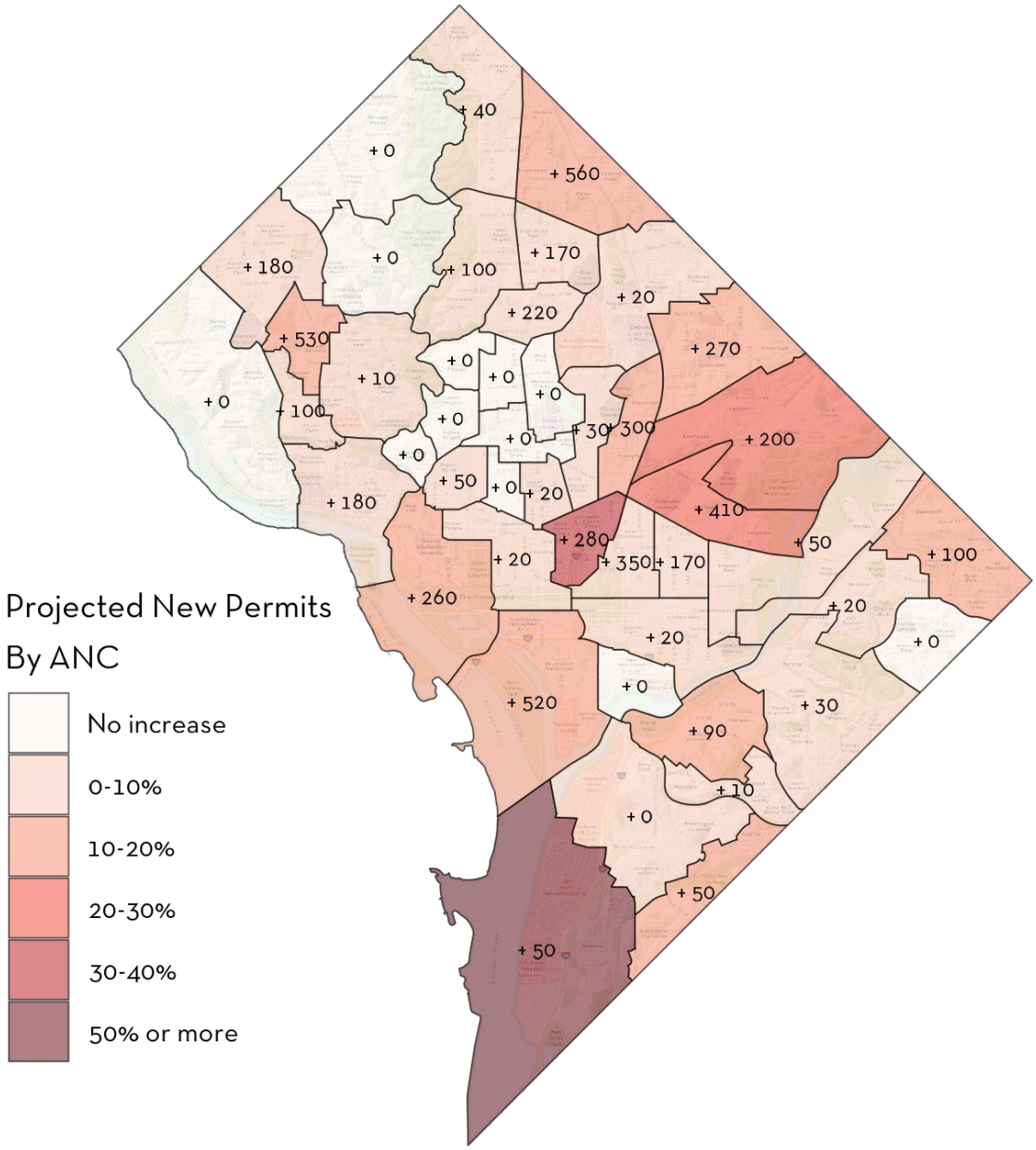
Residential and Mixed-Use Zones



Based on Zoning Regulations of 2016

FIGURE 8:

Projected Increase in Permits from Extending RPP Eligibility to Mixed-Use Zones



Map numbers reflect the number of additional permits; colors reflect the percentage change. Data assumes that households would claim permits at the same rate as similarly-sized buildings in their ward. Based on June 2025 permit data.

3.4 Modeling Place-Based Permit Targets

The RPP program is currently misaligned with MoveDC's recommendation #26: "Adapt curbside uses to fit neighborhood type." Specifically, the "one size fits all" flat rate model does not allow the District to price curb access based on demand or to allocate curb space based on land uses more complex than the "residential/mixed use" divide. In this section, we use place types—defined by the Office of Planning according to building form, density, and connectivity—to develop a framework for aligning permitted parking demand with the characteristics of different neighborhood types. For each neighborhood (represented here by ANCs, but the same approach could be applied to any geographical unit), we developed a target for the number of permits that different parking policy strategies could be measured against.

Using place types, we estimated the share of curb space that should be allocated to RPP holders under varying neighborhood conditions:

- 100% of non-metered curb space in small-scale residential areas and neighborhood centers
- 80% in moderate-scale residential neighborhoods and urban centers
- 70% in denser or mixed-use environments

To our knowledge, no peer city has developed a similar set of targets, but most planners recommend aiming for 60-80% occupancy of the curb. Thus, these numbers are designed to reflect the increasing demand for curb space from both residents and non-residents in denser place types, while acknowledging that not all permit-holders will occupy the curb at the same time. In the future, with license plate reader data, these numbers could be updated and refined using real occupancy data.

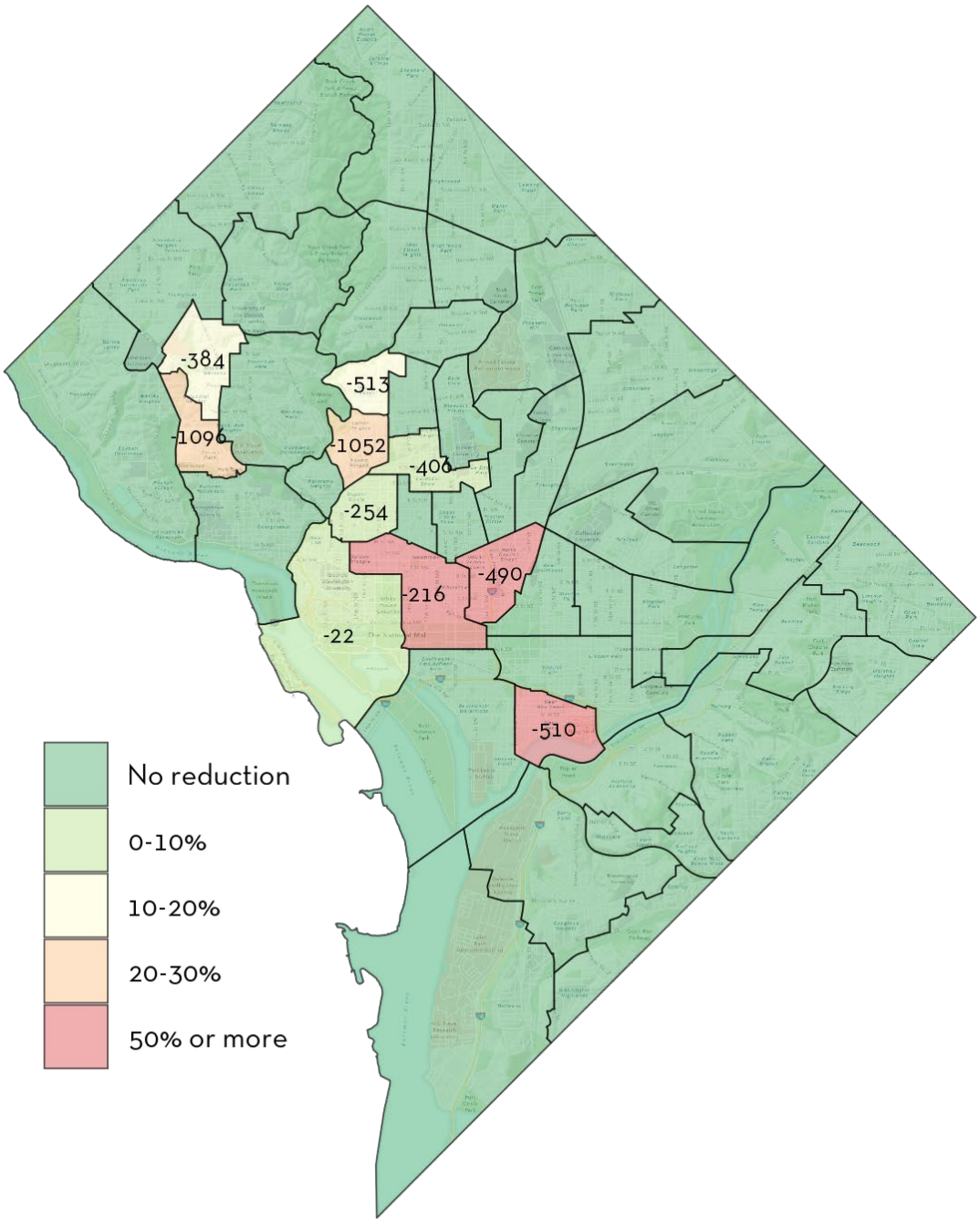
Setting targets will not inherently change the number of permits issued but can help to guide policy decisions, such as where to target expanded carshare, RPP trade-in incentives, or performance parking demonstrations (See Appendix B for a more thorough description of possible parking demand management strategies). Given the substantial variation in density and curb availability across the District, aligning permits with place types enables a more context-sensitive approach than a single District-wide standard.

SPATIAL VARIATION IN TARGET GAPS

Figure 9 shows how many fewer permits each area would need to issue to meet these target numbers. Mapping these hypothetical targets reveals that most areas requiring significant reductions in permit issuance are located downtown and in neighborhoods in Northwest DC where density has outpaced available curb capacity. In contrast, neighborhoods depicted in green either align with or fall below their target permit thresholds.

FIGURE 9:

How Many Fewer Permits Would Be Issued to Align Land Use and Space?



Map numbers reflect the number of permits; colors reflect the percentage change. Based on 'target' permit numbers that allocate residential permits based on place type composition. Analysis aggregated to the ANC-level, but targets could be assigned at smaller or larger levels of aggregation.

3.5 Administrative, Institutional, and Enforcement Constraints

Across interviews and internal workshops, we identified four key themes that have presented challenges for the management of RPP policy.

DATA LIMITATIONS AND INTERAGENCY COORDINATION

The absence of real-time occupancy data limits what we know about how parking demand fluctuates by time of day and how out-of-state parking affects residential blocks. In the near future, the expanding use of license plate readers for RPP enforcement will create opportunities to integrate data more directly into enforcement planning and policy development, helping ensure that new parking approaches can be implemented and evaluated effectively.

REGULATORY AND ADMINISTRATIVE CONSTRAINTS

Many policy changes related to RPP—especially those involving eligibility, boundaries, or pricing—require formal rulemaking or legislation. These processes can take more than a year, which complicates the ability to pilot or rapidly iterate on policy approaches. Fee changes require additional public review periods, further slowing implementation.

ENFORCEMENT AND OPERATIONAL CAPACITY

Effective RPP management depends heavily on enforcement, and future policies will require tools capable of handling more complex curbside environments. As residential and commercial parking needs continue to overlap, enforcement systems may need to verify multiple parking conditions at once.

PHYSICAL INFRASTRUCTURE CONSTRAINTS

Finally, the District maintains roughly 25,000 RPP and ROP signs. Any redesign of zone boundaries or major program changes would require significant physical updates to existing signage at a cost. While digital permitting is technically feasible, curbside signs remain the primary way residents interpret rules, meaning large-scale physical changes would still be necessary, even if we moved toward a digital permitting system.

4. Opportunities

The findings from this study indicate that residential parking pressures in the District are relatively **localized** and shaped primarily by **permit oversubscription**, **density**, and inconsistent **eligibility rules**, rather than by the size of RPP zones. Across data sources, the same "hot spots" emerge: dense neighborhoods with limited off-street parking, strong mixed-use activity, and physical constraints that limit parking dispersal. By contrast, large portions of the city exhibit relatively low demand for on-street residential parking and have not opted into RPP restrictions.

Taken together, the evidence suggests several core opportunities for updating the RPP program.

1. **Targeting** interventions.
2. Clarifying and **modernizing eligibility rules**.
3. Benchmarking with **place-type informed targets**.
4. Leveraging **off-street capacity**.

Opportunity 1: Targeting interventions

Because oversubscription is the main driver of parking difficulty, changes to zone boundaries are unlikely to materially improve conditions in high-stress neighborhoods. Instead, targeted interventions in parking demand "hot spots" could adjust pricing, enforcement, or curbside allocation to the specific neighborhoods where stress is particularly high.

Opportunity 2: Clarifying and modernizing eligibility rules

Interviews and spatial analysis show that current zoning-based eligibility leads to inconsistent outcomes: nearly identical buildings may be treated differently simply because one lies in a mixed-use zone. Extending eligibility to residential buildings in mixed-use areas would add roughly 5,400 permits (a 3.5% increase), mostly in low-stress neighborhoods, and would not worsen conditions in Ward 1, where all residents are already eligible. Pairing an update to eligibility rules in dense mixed-use neighborhoods with new policies could offset the impact and prevent oversubscription in the future.

Opportunity 3: Benchmarking with place-type-informed targets

The place-type modeling illustrates the idea that different neighborhoods can sustainably support different shares of RPP permits based on density and transit access. These targets help us identify areas where the number of permits has grown out of alignment with conditions on the ground. DDOT has other tools beyond permit eligibility to shape demand for private car ownership, and ultimately, the curb. For example, if car-sharing or micromobility expansion can reduce some residents' need to own a car, it can free up on-street parking for residents who do need one. Targets can use data to guide where such transportation strategies would be most effective.

Opportunity 4: Leveraging off-street capacity

Research indicates that some buildings and private garages in DC have underutilized off-street spaces. In neighborhoods with severe curb competition, shifting some portion of resident parking demand off-street—through public-private partnerships, District-owned garage access, or RPP restrictions for households with private parking—may help reduce oversubscription without restricting vehicle ownership outright. Exploring targeted off-street partnerships or access programs in high-stress neighborhoods could be paired with protections to avoid incentivizing new car ownership.

5. Conclusion

This study examined the current state of the District of Columbia's Residential Parking Permit (RPP) program and identified opportunities to relieve parking stress and align policy with the principles of MoveDC. Across data sources and analytic methods, several clear themes emerge about how the RPP program functions today:

- **Parking stress is place-based and linked to housing density and land use.** Permit oversubscription, rather than zone size, drives parking difficulty across neighborhoods.
- **Hot spots are predictable and consistent across sources.** Interviews, complaint data, and permit space ratios all identify the same high-stress areas, lending confidence to the patterns we observed.
- **Zone changes have limited potential to reduce stress.** While DC's zone boundaries are admittedly larger than our peers, they are unlikely to be the root cause of parking stress. In areas where permit demand already exceeds available space, smaller boundaries would simply redistribute the same level of competition across a smaller geographic area. Operationally, changing the zones across the entire District presents logistical and budget challenges.
- **Inconsistent eligibility rules and zoning classifications can heighten conflict between residents.** Similar residential buildings may face different RPP access depending on location.
- **Future reforms will require aligning institutional and operational realities.** Data sharing constraints, enforcement challenges, and physical infrastructure limitations all shape what changes are feasible in the short to medium term.

Together, these findings suggest that place-based approaches, rather than Districtwide structural changes such as zone resizing, offer the clearest path for aligning the RPP program with today's curbside needs.

Appendices

Appendix A: Peer Programs

TABLE A1: RPP PEER PROGRAMS

Peer City	Permit price for first vehicle	Allows multiple permits?	Zones
Washington, DC	$55 annually	Yes, with tiered pricing	8 zones that cover the full city (Map)
San Francisco, CA	$215 annually	Up to 4, except in 3 zones where limit is 1 permit per driver (2 per household)	32 zones that do not cover the full city (Map)
Seattle, WA	Fees vary by zone ($0-$95 for two years)	Up to 4	43 areas that do not cover the full city (Map)
Boston, MA	No fee	No limits	22 neighborhoods that fully cover the city (Correspond to Map)
Philadelphia, PA	$75 annually	Up to 3	40 districts that cover most, but not all, of the city (Map)
New York City, NY	No permits except for those with disabilities		
Chicago, IL	$35 annually		72 zones that do not cover the whole city (Data)
Portland, OR	$100 annually, up to $135 in special zones	Some zones restrict number of permits or building types that are eligible.	19 zones that do not cover the whole city (Map)
Denver, CO	$20-25 annually	Up to 2 if off-street parking is available, 3 if not	Zones determined through curbside action plans.
Minneapolis, MN	$25 annually	2 per licensed resident, restricted in some areas	27 zones that do not cover the whole city (Data)
Austin, TX	$60 annually	Up to 4	8 zones that do not cover the whole city (Map)

Appendix B: Peer City Parking Strategies

Strategies that restrict access to parking



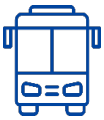
- Cap the number of permits that any individual can apply for (Example: Wandsworth, London; Philadelphia).
- Make eligibility criteria (either block or building type) more restrictive
- Increase the price of RPP permits (example: in San Francisco, an RPP permit costs $215 annually), or make the increases for additional vehicles steeper.
- Cap the total number of permits and auction them off.
- Cap the total number of permits and offer them via lottery.

Strategies to relocate parking off the curb



- Offer residents the option to use their residential parking permit (or a new, similar product) in District-owned garages.
- Engage in contracts with private garages to offer the same benefit. (A 2015 DC study found that private garages in multi-family buildings were only 60% occupied).
- Restrict on-street permits for households with garages/driveways (example: Baltimore; Arlington).
- Require proof of an off-street parking space to be able to register a car (example: Japan)

Strategies that encourage alternatives to parking



- Offer residents the option to trade in their parking permit in exchange for discounted transit and/or micromobility benefits (example: Portland Transportation Wallet).
- Further invest in car-share options as part of the planning process and/or provide additional car sharing parking spaces on the curb (examples: DC on-street carsharing program, Montgomery County, Arlington).

Strategies to target specific problem areas



- Create performance parking zones around metro stations to make intra-ward travel less attractive, using more restrictive time-limited parking, resident-only parking (ROP) and/or residential metered parking (RMP).
- Create residential performance parking zones in high-demand hot spots, with restricted access and accompanying higher fees. (example: NW Portland – combination of many strategies).
- Use RMP (pay-to-park, RPP excepted) in places where out-of-state vehicles are a large share of parked vehicles.
- Use parking space sensors that allow drivers and enforcers to view real-time occupancy data. For metered spaces, pricing can be staggered to reflect actual demand (example: Arlington, San Francisco).
- Use smart, real-time enforcement to identify hot-spots and increase turnover.

Appendix C: Methodologies

PERMIT STRESS ANALYSIS

To calculate **permit stress,** we divided the number of competing permits by the amount of available space within 500m.

- To calculate **available space**, we:
  - Created an index of available space by removing intersections (using a 10 meter buffer), 20% of space for driveways and other curb cuts, fire hydrants (20 ft buffer) and bus stops (100 ft buffer).
  - Divided the available space by 6 meters per space (estimated minimum distance needed to park a standard car).

  The equation is:

  *Num Spaces = ((Block Length * # Parkable Sides of the Street* 0.8) - (# Bus Stops * 100ft) - (# Fire Hydrants * 20ft)) / 6 meters*
- For each block, we calculated the **number of RPP permits** associated with addresses within a 500-meter radius of that block's center point. We conducted these analyses in ArcGIS

BLOCK ELIGIBILITY ANALYSIS

We calculated **projected new permits** by multiplying the number of units in mixed-use buildings by the expected permits per unit rate for that building type in that ward. We added these projected values to the existing totals of permits per ANC and mapped the percentage increase.

- We calculated the **units in multi-use buildings** by summing units across all buildings with at least one housing unit which are a) in mixed use ("mixed use" or "neighborhood mixed use") and b) not on an RPP block.
- We calculated the **expected "permits per unit"** rate for each combination of ward and building type (1 unit, 2-5 units, 6-9 units, 10-49 units, 50+ units). To calculate this rate, we used only buildings on RPP blocks, except in Ward 1, where any building can already receive an RPP permit.

TARGET PERMITS ANALYSIS

We calculated target permit totals by multiplying the amount of available RPP or ROP parking space by a "target ratio" based on the block's place-type.

- We calculated the **RPP or ROP share of each block** using the Parking Zones dataset.
- We assigned each block a **"target ratio" based on its place type**. We determined the block's place type by intersecting the Office of Planning's "FLUM to Place Types Map" with the Parking Zones dataset and assigning the nearest place type to each block.
  - In *small-scale residential neighborhoods* and/or *neighborhood centers*, we assumed 100%* of the curb should be allocated to RPP permit-holders.
  - In *moderate-scale residential neighborhoods* and/or *urban centers*, we assumed 80% of the non-metered curb allocation should go RPP permit-holders.
  - In *medium-scale residential neighborhoods, large-scale residential neighborhoods, regional centers, parks and open space, institutional,* and *industrial areas* we assume that 70% of the non-metered curb space should be allocated for residential permit-holders.

These target ratios are meant as a starting point for more research and conversation. With better occupancy data, these assumptions could be validated and changed.

* Despite 60-80% occupancy being a best practice for parking occupancy, we set the target number of permits above 80% in the purely residential zones because we do not anticipate that all vehicles with permits will be parking at once when RPP policy is in place (before 6PM). In other words, we don't expect allocating 100% of permits to residents to result in 100% curb occupancy at most times.