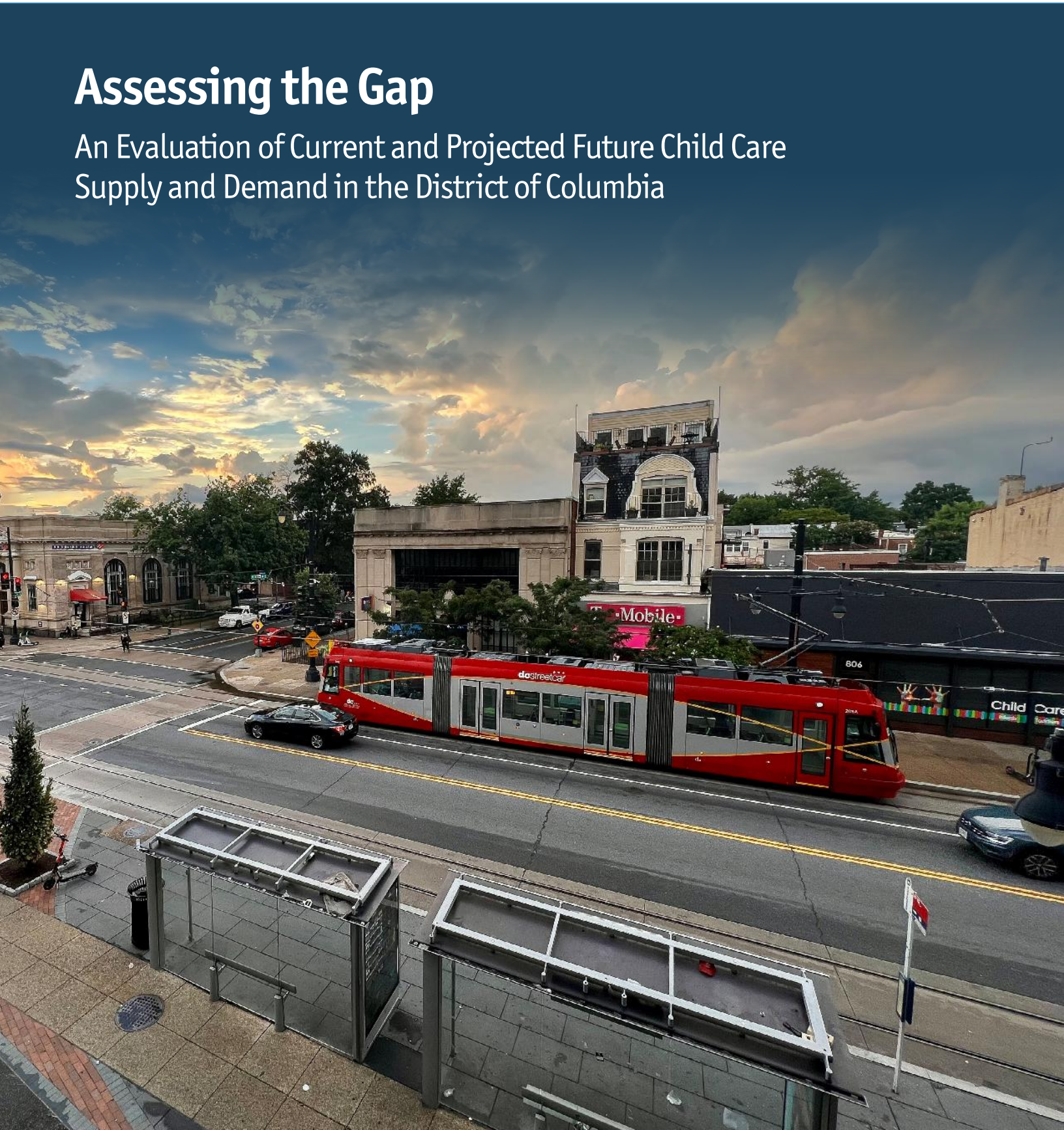
November **2024**

Assessing the Gap

An Evaluation of Current and Projected Future Child Care Supply and Demand in the District of Columbia



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The Low Income Investment Fund (LIIF) is a national nonprofit community development financial institution with $900 million in assets under management. LIIF's mission is to mobilize capital and partners to achieve opportunity, equity and well-being for people and communities. Since 1984, LIIF has deployed more than $3.2 billion to serve more than 2.4 million people in communities across the country from its five offices. An S&P-rated organization, LIIF innovates financial solutions that create more equitable outcomes for all by building affordable homes, quality educational opportunities from early childhood through higher education, health clinics, healthy food retail and community facilities.

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A child development center near the intersection of 8th and H St. NE.

Content

Introduction

The District of Columbia is committed to working to improve access to, quality and affordability of child care for District residents and workers. Over fifteen years ago, the District became the first jurisdiction in the United States to offer free, universal publicly funded pre-K to all 3- and 4-year-olds. Since then, and particularly in the past decade, the District has implemented multiple strategies to expand access, quality, and affordability of early learning for infants and toddlers. These strategies have included increases in child care subsidy reimbursement rates tied to the costs to deliver care and expansions in subsidy eligibility; investments in supporting child care facilities and infrastructure; investments in the early learning workforce; and distribution of multiple rounds of financial assistance to child development facilities during the COVID-19 pandemic and recovery.

Study Overview

Due in part to these efforts, the District has added child care capacity for infants and toddlers over the past five years, as opposed to most states and cities across the country that lost child care supply starting in 2020 and onward due to the COVID-19 pandemic.[i]

To support the District's and the child care sector's ongoing recovery from the impacts of the pandemic, the Office of the State Superintendent of Education (OSSE) and Hurley and Associates have, with support from federal American Rescue Plan funds for child care, commissioned a series of reports to better understand the current supply and demand for child care in the District, project future supply and needs, explore how infrastructure and other challenges affect supply and quality of child care, and surface opportunities for continuing to expand and enhance child care supply. This report is the first in a three-part series that seeks to align principles from planning, community development, and finance to the realities of the District's market for child care and early education. Each report is organized by a driving research question:

Report 1: Assessing the Gap: An Evaluation of Current and Projected Future Child Care Supply and Demand in the District of Columbia: What is the current supply of and demand for child care in the District, and how might need change in the future?

Report 2: Child Care Infrastructure in the District of Columbia: A Review of Physical Environments for Young Children: What is the physical state of child development facilities and what opportunities and barriers exist to improving existing infrastructure or building new supply?

Report 3: 'It's My School! Over There!': Assessing Mobility and Child Care Commute Experiences in the District of Columbia: How do parents, caregivers, and young children navigate streets and the public realm surrounding child development facilities?

This report addresses the first of these questions. It begins by establishing a baseline for current (2023) supply and demand for child care in the District of Columbia. To account for local differences in both need and supply across a racially and economically diverse city, supply and demand are estimated for each ward. Building on these estimates, the report includes projections of potential future demand for child care in the District through 2035 using long-range population, development, and job forecasting data from the District's Office of Planning (OP) as well as some initial considerations of the forces that would impact future supply. Findings in this report lay a foundation for the second and third series installments, which more deeply assess the physical conditions of child development facilities and their surrounding areas.

This series represents a new approach to assessing local and regional landscapes of early care and education by bringing together traditional analysis of supply and demand, projections of future demand based on population and economic forecasts, and qualitative assessments of the physical infrastructure for early learning in the District. The series attempts to account for the vast, multidimensional lives and experiences of young children – incorporating review of not just the formal, regulated places they go for child care, but also the ways in which those spaces intersect and connect with the neighborhoods in which they are located. In doing so, both traditional and new stakeholders are identified to show the ways nearly every function of local government influences the availability and conditions of a city or region's child care landscape. Taken together, the reports provide a broad base of information to enable decision makers in both government and the private and philanthropic sectors to plan for future investment in the child care sector and ensure that such investment meets the needs of the children and families living in the District.

Executive Summary

This report draws on analysis of multiple data sources to understand the current demand for and supply of child care in the District of Columbia, identify gaps between child care supply and demand, and track how supply, demand and gaps have changed over time. Building on this current and backward-looking analysis, it also uses population and economic forecasts to project future child care demand and supply scenarios.

Key findings include:

- In 2023, an estimated 35,400 children ages 0-5 living in the District had a need for licensed child care. This figure represents a slight decrease in demand (-1.3%) since 2017.

Introduction (cont´d)

- Including child care needs among families that live in other jurisdictions and commute into the District for work, 2023 estimated child care demand increases by about 10,000 additional children to a total cumulative need in the District for 45,298 licensed slots.
- The District had 35,280 licensed child care slots for children ages 0-5 as of October 2023, a 7.7% increase in total supply since the same month in 2017. Most growth occurred among capacity for toddler-age child care, and Wards 1 and 3 saw the most total growth in licensed supply during this window.
- In 2023, total supply of licensed child care fell just 122 slots short of resident demand, but total shortfall grows to 10,018 when demand is adjusted for the impacts of commuters. These shortfalls decreased between 2017 and 2023.
- The District's child care market is misaligned by capacity for specific age groups. There was a citywide surplus of 5,753 slots for preschool-aged children in 2023 despite a 5,875 slot shortfall in slots for infants and toddlers.
- Given long-range population and job forecast projections produced for the District, resident child care demand is projected to grow by 5.1% for infant and toddler care and 3.1% for preschool care by 2035. In order for the District to cut existing resident shortfalls in infant and toddler care in half by 2035, it would need to add between 483 and 842 slots per year through the projection window. This range grows to between 965 and 1,396 slots per year when considering projected additional needs of non-resident commuters.

Recent and Current Demand for Child Care

This section outlines current and historical projected need for licensed child care among both resident families and parents who live in neighboring jurisdictions but commute to the District for work.

Estimating Aggregate Demand

In 2023, the District of Columbia was home to 678,972 people, of whom an estimated 49,181 (7.2%) were children under the age of 6.[ii] Efforts to estimate demand for early care and education are complicated by the fact that, unlike K-12 education, which is mandatory, participation in early childhood programs is voluntary, and not all families choose to enroll their children in early care and education, for a variety of reasons. Since early care and education programs often play a dual role of supporting children's learning and enabling their parents to work, many studies, including this one, use U.S. Census data on the number of children under 6 with all available parents in the workforce as a starting point for estimating demand, of which an estimated 35,402 lived in the District in 2023.[iii,iv]

Although this measure of demand may not capture all children who need care, such as those with a parent who is in school or who participates in an informal economy, it may also include children who do not need licensed child care, such as those who are cared for by a grandparent or neighbor. Despite these limitations, this measure is the most reasonable readily available proxy for demand that is regularly updated, is available at regional and city levels, and identifies a subset of children whose primary caregivers have significant employment obligations.

The District of Columbia is the center of a much larger metropolitan area that includes portions of Maryland and Virginia and that was home to 6,304,975 people in 2023, many of whom commute into the District for work.[v] Although most families choose child care arrangements close to home, a subset of families choose arrangements closer to work. As a result, families who commute into the District for work increase demand for child care above the level needed solely to meet resident demand. Considering both in-commuters and the smaller number of District residents who commute outside the District for work results in a projected "commuter-adjusted demand" of 45,298 slots, which is 9,896 more than those required to meet resident demand only.

Estimated Demand by Ward

For planning and resource allocation purposes, it is important to know not only total demand for child care in the District, but where that demand is located. Variations in resident demographics across the District's eight wards, as well as commuter flows within the District, affect demand for child care by ward. Wards 7, 4, 5 and 8 have the largest projected "resident demand" for child care, with each home to more than 5,000 children under age 6 with all available parents in the workforce. In contrast, "commuter-adjusted" demand is highest in Wards 2, 6 and 5. Adjusting for commuting patterns increases demand in Wards 1, 2, 3, 5 and 6 and reduces demand in Wards 4, 7 and 8.[vi]

Figure 1. Percent of Population of Children Ages 0-5, 2022

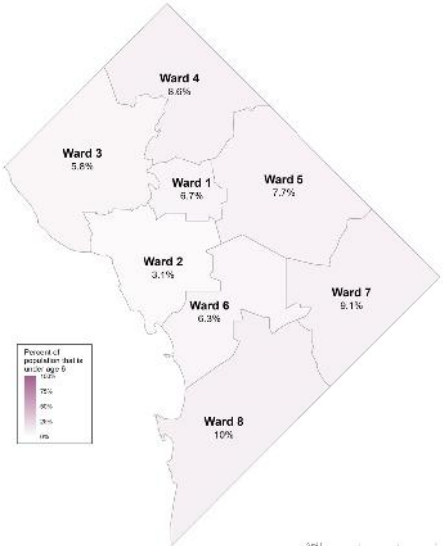


Figure 2. Percent of Population that is Nonwhite, 2022

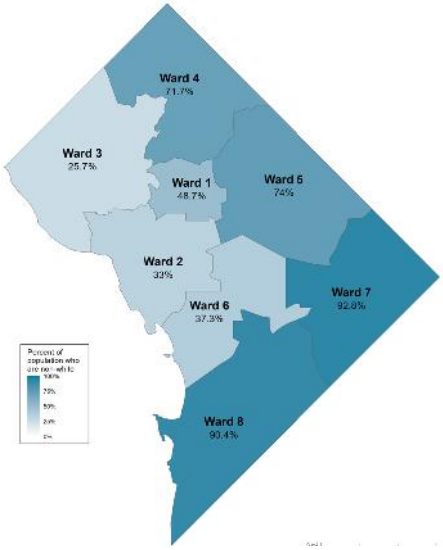
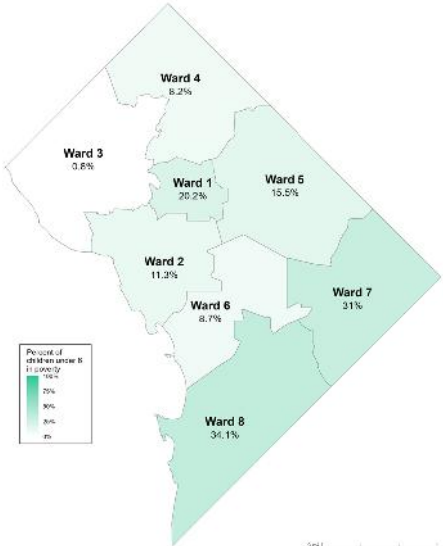


Figure 3. Percent of Children Ages 0-5 Living in Poverty, 2022



Changes in resident and commuter-adjusted demand over time

From 2017 to 2023, resident demand fell just slightly from 35,874 to 35,402, a decline of 1.3%. Resident demand increased in Wards 1, 3, 4, 5, and 7 and decreased in Wards 2, 6 and 8. Table 2 represents resident demand in 2017 and 2023 by ward as well the percentage change.

Changes in commuter-adjusted demand from 2017 to 2023 were greater than changes in resident demand, with aggregate commuter adjusted demand decreasing by 20.2% due in part to the growth of remote work and changing location preferences for child care. This trend was not consistent across wards, however. Commuter-adjusted demand for child care decreased in Wards 2, 3, 6 and 8 and increased in Wards 1, 4, 5 and 7. Table 3 shows the commuter-adjusted demand by ward over time.

For planning and resource allocation purposes, it is important to know not only aggregate demand for child care, but demand by child age. Programs serving infants and toddlers (those aged 0 through 35 months) require different facilities characteristics and staffing patterns than those serving preschool-aged children (those ages 36-71 months). Data from the US Census Bureau used in this analysis are not available in single-age bands, so demand is projected by age by dividing aggregated projected demand figures in two. This assumes that demand for licensed child care is equal across age groups.

Table 1. The Effect of Spatially Re-Allocating Demand from District Residents to Account for Commuting and Location Preferences, 2023

	Children under 6 with all parents in the workforce (by residence)	Resident demand (adjusted for commuting)	Commuter-adjusted demand (including non-District residents)	Effect of in-district commuter flows	Effect of total commuting patterns
Ward 1	4,419	4,088	4,273	-7.5%	7.0%
Ward 2	1,427	3,672	10,156	157.3%	612.0%
Ward 3	3,972	3,766	4,281	-5.2%	8.0%
Ward 4	5,517	4,914	4,954	-10.9%	-10.0%
Ward 5	5,408	5,064	5,811	-6.4%	7.0%
Ward 6	3,725	3,910	5,824	5.0%	56.0%
Ward 7	5,801	5,227	5,095	-9.9%	-12.0%
Ward 8	5,133	4,761	4,903	-7.2%	-4.0%

Table 2. Change in Resident Demand by Ward, 2017-2023

	2017	2023	% Change
Ward 1	3,026	4,088	35.1%
Ward 2	5,432	3,672	-32.4%
Ward 3	3,718	3,766	1.3%
Ward 4	4,318	4,914	13.8%
Ward 5	4,294	5,064	17.9%
Ward 6	4,096	3,910	-4.6%
Ward 7	4,926	5,227	6.1%
Ward 8	6,064	4,761	-21.5%

Table 3. Change in Commuter-Adjusted Demand by Ward, 2017-2023

	2017	2023	% Change
Ward 1	3,272	4,273	30.6%
Ward 2	14,423	10,156	-29.6%
Ward 3	4,371	4,281	-2.1%
Ward 4	4,338	4,954	14.2%
Ward 5	5,233	5,811	11.0%
Ward 6	6,572	5,824	-11.4%
Ward 7	4,662	5,095	9.3%
Ward 8	6,142	4,903	-20.2%

Remote work has impacted demand for child care in DC

Many factors affect locational preference for child care, such as differences in the cost or quality of child care between the District and surrounding areas, or the availability of public programs (subsidies or public pre-K, for example) in certain jurisdictions. A critical and emerging factor in assessing child care demand accounted for in this analysis is the proportion of parents working from home.

Increasingly accessible technology for remote work, the ability to hire the best talent independent of location, and stay-at-home orders during the COVID-19 pandemic have all influenced the rise in remote work over the last several years. Figure 4 shows a major jump in the share of individuals working remotely since the start of the COVID-19 pandemic.

Because this share has increased for the District and surrounding counties in the Metropolitan Statistical Area (MSA), estimated demand from residents commuting within the District and those commuting in or out of the District has decreased. For District residents, this means that there is less redistribution of residential demand, as parents who work from home may be more likely to use child care near their home. For non-resident commuters who would have commuted into the District for work, this means that they may be more likely to use child care in the city or county where they live, thus impacting the number of commuter children who could contribute to demand for child care in the District.

It is important to note that although remote work has increased since 2017, most workers still do work in person, and there are thousands of jobs for which remote work will never be possible. Often these jobs are lower-paying but necessary for the flourishing of a community – teachers, nurses, bus drivers, etc. Therefore, it will remain necessary to prioritize and plan for the inclusion of affordable, accessible child care facilities in the development or revitalization of economic corridors.

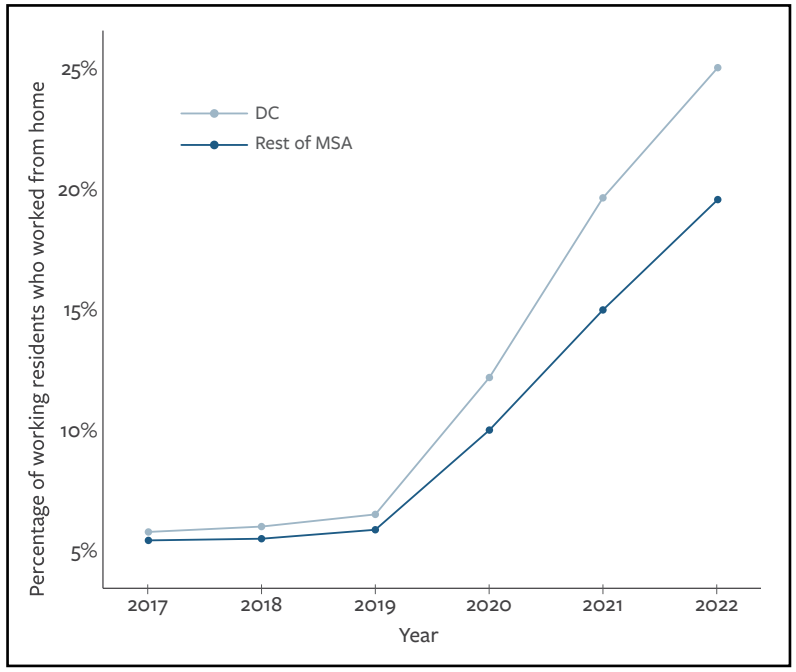


Figure 4. Percent of Workers Who Work Remotely in the District and the Wider Metropolitan Statistical Area (MSA), 2017-2023

Recent and Current Supply

To assess the health of the market for child care in the District, this section presents relevant information on existing licensed supply and the ways it has changed and evolved by geography, setting, and capacity by age over time.

Assessing Child Care Supply

To meet the care and education needs of families with young children, the District of Columbia relies on a mixed delivery system that includes child development facilities licensed by OSSE and pre-Kindergarten (pre-K) programs for 3- and 4-year-olds that are operated by District of Columbia Public Schools (DCPS) and charter schools. Although some families also use other care and education arrangements, such as in-home care (nannies), relative care, federally operated facilities under the legislative branch and Department of Defense that are not licensed by OSSE, or pre-kindergarten (pre-K) programs that are part of a private elementary school, this analysis focuses on supply in OSSE-licensed child care programs and pre-K programs in public schools. Figure 5 displays all OSSE-licensed child development facilities and pre-K programs as of October 2023 by type. Figure 6 shows these same facilities with the bubble representing each location scaled to represent its licensed capacity, which is an indicator of available supply. Capacity of OSSE-licensed facilities comes from OSSE data. Capacity for school-based pre-K programs was calculated from OSSE-reported enrollment and utilization rate data for these programs (see Appendix A for a more detailed methodology).

OSSE licenses and monitors three types of child development facilities: centers, homes, and expanded homes. Child development centers (CDC) operate from commercial spaces where the maximum number of children the program is eligible to serve is primarily determined by the size of the building it uses. Child development homes (CDH) and expanded child development homes (CDX) operate from residential settings. A CDH may serve up to six children, while a CDX typically serves a maximum of twelve children. All three types of OSSE-regulated child development facilities are eligible to serve infants, toddlers, preschoolers, and school-age children, provided their building meets requirements for the age range. In contrast, early learning programs operated by DCPS or public charter schools serve only children three and older through the District's universal pre-Kindergarten program. These programs are a part of existing public school campuses and are managed by District of Columbia Public Schools and charter local education agencies (LEAs), the latter of

Figure 5. Supply by Facility Type, 2023

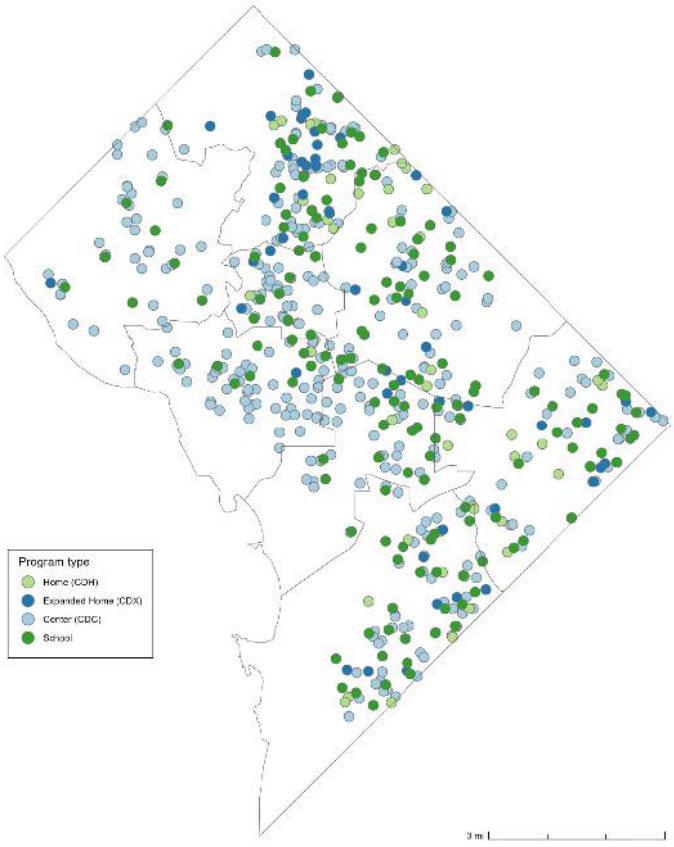
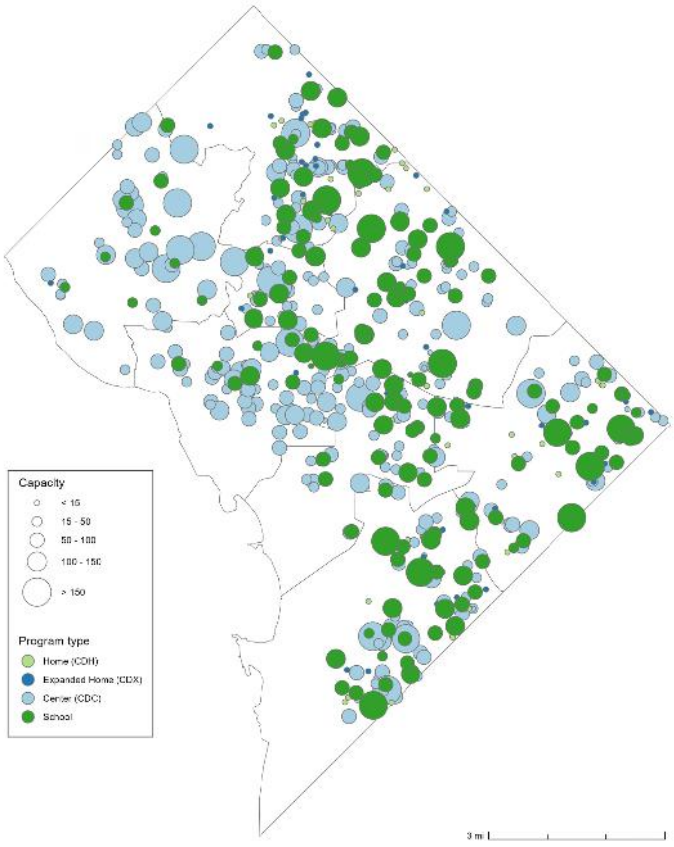


Figure 6. Supply by Facility Licensed Capacity, 2023



which operate under the oversight of the Public Charter School Board.

Though definitions vary from place to place, in this report, children under the age of 12 months are referred to as infants, those aged 12 through 35 months as toddlers, and those aged 36-71 months as preschoolers.

As of 2023, OSSE-licensed facilities and public school pre-K programs had a combined capacity to serve 35,280 children, with 62% of capacity in OSSE-licensed facilities and 38% in public school pre-K programs. There is considerably more capacity to serve preschoolers (23,454 slots, or 66% of total capacity) than infants (3,723 or 11%) or toddlers (8,103 or 23%). All infant and toddler capacity is in OSSE-licensed facilities, while pre-K capacity is distributed between public schools (57%) and OSSE-licensed facilities (43%).

Supply, and the composition of supply across infant, toddler and preschool capacity, as well as between OSSE licensed facilities and public school pre-K programs, also varies by ward. Table 4 includes key information on capacity by facility license type. In 2023, there were 21,966 total licensed slots available in facilities licensed and governed by OSSE. Child development centers (CDCs) represented the largest provider of supply for all age groups. 356 CDCs had the capacity to care for 3,437 infants, 7,826 toddlers, and 9,964 preschoolers. Comparatively, there were 99 home-based facilities in 2023 with an aggregate capacity to care for 739 children. An additional 13,314 preschool-age slots were available through school-based pre-K programs.

Changes in Supply, 2017-2023 by Age Group

The District of Columbia has made significant strides since 2018 in building licensed child care supply, adding more than 2,500 new slots for infants and toddlers, and reducing shortfalls in supply and demand for child care. This growth in supply occurred during a time when the child care sector in the District and nationally was enormously impacted by the COVID-19 pandemic and when the District made substantial investments in infrastructure and physical development of new and expanded facilities through the Access to Quality (A2Q), Child Care Stabilization, and Back to Work Child Care (B2W) grant programs, increases in child care subsidy reimbursement rates, and the creation of the Early Childhood Educator Pay Equity Fund to increase child care staff compensation, recruitment and retention.

Table 5 shows total child care supply for the District of Columbia, by setting and age, from 2017 through 2023. From 2017 through October 2023, the number of early care and education slots increased 7.7% and the number of program sites, or facilities, decreased 0.3%.

Capacity increased across both OSSE-licensed child development facilities and public school pre-K programs, but the growth in capacity of OSSE-licensed facilities was nearly twice that of public school pre-K programs. This is, in part, because the increase in slots was not distributed evenly by age group. Toddler-age care represented the largest source of growth between 2017 and 2023, with the District

Table 4. Number of Child Care Slots by Setting and Age, 2023

	OSSE-Licensed			DCPS and Charter School	
	Child Development Home (CDH)	Expanded Child Development Home (CDX)	Child Development Center (CDC)	School-based pre-K Facilities	Total
Number of Facilities	**47**	**52**	**356**	**147**	**602**
Infant Capacity	105	181	3,437	--	3,723
Toddler Capacity	105	172	7,826	--	8,103
Preschool (pre-K) Capacity	58	118	9,964	13,314	23,454
Total Capacity	**268**	**471**	**21,227**	**13,314**	**35,280**

adding 2,842 new slots, a 54% increase. Growth in the supply of toddler slots was actually greater than the increase in aggregate number of slots. Infant capacity also increased by 6.1% but remained the age group with the fewest available slots at just over 3,700 total in 2023. Pre-K capacity, in contrast, decreased by 2.2%. Changes in pre-K capacity varied across sectors, however, decreasing by 10.2% (1,149 slots) in OSSE-licensed facilities and increasing 4.9% (626 slots) in DCPS and charter pre-K programs.

The decline in pre-K slots in licensed facilities may be an ongoing response to the expansion of public pre-K in the District beginning in 2008 that aimed to make pre-K available to all children.[vii] As the next section shows, pre-K slots exceeded estimated demand in 2023 in seven of eight wards, and the District-wide oversupply was over 5,000 slots. In the face of the expansion of public pre-K, private-sector providers may be shifting to serve younger children, specifically toddlers.

Though District-wide capacity increased between 2017 and 2023, those gains were not evenly distributed in all wards. Capacity increased the most in Ward 3 (29.3%), increased by between 10-20% in Wards 1 and 7, and decreased slightly in Ward 8. Supply grew in all other wards by less than 10%.

Looking at capacity change by ward and age group (as shown in Table 5) highlights widespread growth in toddler capacity since 2017. Every single ward experienced growth in toddler supply, and six of eight wards added over 200 slots. Infant and toddler supply, by contrast, increased in only three wards each (Wards 1, 5, and 8 for infants and Wards 1, 3, and 7 for preschoolers). Preschool supply declined in all other Wards, as did infant supply, although the decrease in infant supply in Wards 4 and 7 was minimal.

Table 5. Total Annual Child Development Facilities and Capacity, 2017-2023

	2017	2018	2019	2020	2021	2022	2023	Change 2017-23	
								Num.	Pct.
OSSE Licensed Child Development Facilities (N)	**468**	**474**	**471**	**466**	**487**	**490**	**460**	**–8**	**–1.7%**
Infant Capacity	3,508	3,598	3,483	3,406	3,605	3,695	3,723	215	6.1%
Toddler Capacity	5,261	5,838	6,928	7,646	7,970	8,145	8,103	2,842	54.0%
Preschool (pre-K) Capacity	11,289	11,683	11,460	10,878	10,847	11,053	10,140	–1,149	–10.2%
Total OSSE Licensed Capacity	**20,058**	**21,119**	**21,871**	**21,930**	**22,422**	**22,893**	**21,966**	**1,908**	**9.5%**
DCPS and Charter School pre-K Facilities (N)	**136**	**138**	**140**	**138**	**142**	**146**	**146**	**10**	**7.4%**
Preschool (pre-K) Capacity*	12,688	12,701	12,915	12,937	13,419	12,856	13,314	626	4.9%
Total Facilities (N)	**604**	**612**	**611**	**604**	**629**	**636**	**606**	**2**	**0.3%**
Total Capacity	**32,746**	**33,820**	**34,786**	**34,867**	**35,841**	**35,749**	**35,280**	**2,534**	**7.7%**
Infant Capacity	3,508	3,598	3,483	3,406	3,605	3,695	3,723	215	6.1%
Toddler Capacity	5,261	5,838	6,928	7,646	7,970	8,145	8,103	2,842	54.0%
Preschool (pre-K) Capacity	23,977	24,384	24,375	23,815	24,266	23,909	23,454	–523	–2.2%

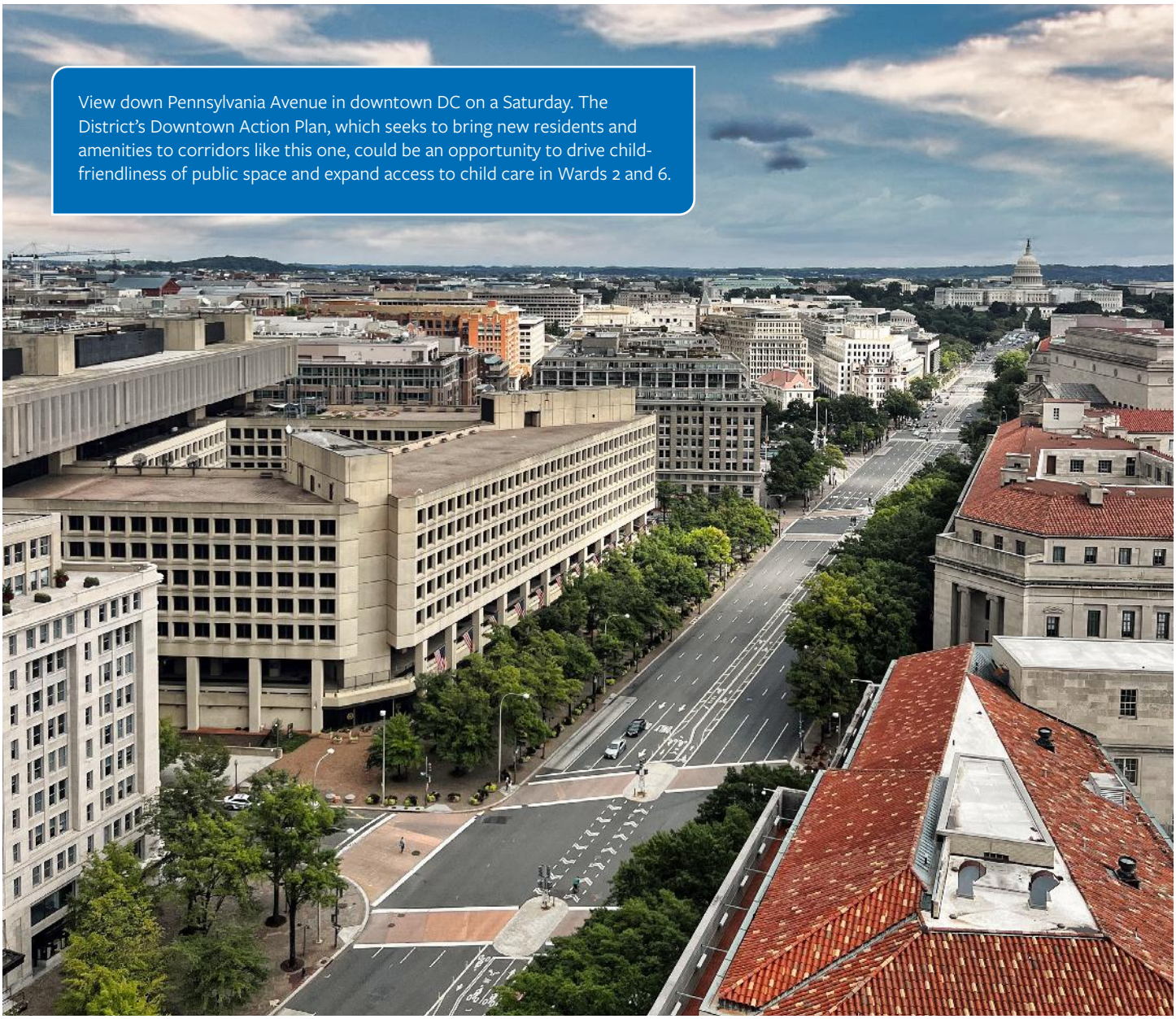
*Pre-K capacity is only pre-K enrollment at DCPS and charter schools, converted to capacity using utilization rates from the closest years of data calculated from OSSE reports (see Appendix A).

Market Turnover and Supply

Trends in growth or decrease in early care and education in the District result from two competing forces: creation of new or expansion of existing facilities, which adds to supply, and closure of existing facilities, which decreases supply. On average between 2017 and 2023, the former (creation and expansion) factors outweighed the latter (closure) leading to growth in total supply.

Because child care programs are private businesses and nonprofits, some degree of turnover among providers is to be expected every year. Business closures are natural part of markets in every sector, particularly sectors like child care that operate on razor-thin margins.[viii] Examining how rates of facility openings and closures, or "churn" have fluctuated from 2017-2023 can help policymakers and other stakeholders better understand the impacts of unique circumstances—including the COVID-19 pandemic, infusion of federal relief funds, and other local policies to support child care—on the child care market.[ix]

On average, 5.7% of the total number of child care slots in the District left the market due to churn yearly from 2017-2023.



View down Pennsylvania Avenue in downtown DC on a Saturday. The District's Downtown Action Plan, which seeks to bring new residents and amenities to corridors like this one, could be an opportunity to drive child-friendliness of public space and expand access to child care in Wards 2 and 6.

Comparing Supply and Demand

A comparison of the availability of child care supply to resident and commuter-adjusted demand shows that the total number of early care and education slots available (35,280) in the District nearly matches projected resident demand (35,402), but a gap between supply and demand of approximately 10,018 slots emerges when considering commuter-adjusted demand. These aggregated gaps, however, mask much larger differences between demand and supply by age group.

When breaking out resident shortfall by age group and ward, it is clear that the majority of the supply shortfall results from a lack of licensed slots for infants and toddlers (Tables 6 and 7). Supply of infant and toddler care is insufficient to meet resident demand in all wards except for Ward 2, which had a surplus of 427 slots in 2023. Across the District, the supply of infant and toddler care is sufficient to meet only 66.8% of resident demand and 52.2% of commuter-adjusted demand. Adjusting for commuting patterns results in larger projected supply-demand gaps in all wards except Ward 7, with the biggest change and largest overall projected gap in infant-toddler supply in Ward 2.

Figures 7 and 8 show the difference in shortfall between resident demand and commuter-adjusted demand for 2023. The biggest change is seen in Ward 2, where resident shortfall shows a surplus, but commuter-adjusted shortfall indicates a significant deficit. This is due to large job concentrations in Ward 2 that bring a significant amount of demand from in-commuters.

In contrast, there is a surplus supply of preschool slots, relative to projected resident demand, in all wards but Ward 1. District wide, supply for preschool aged children meets 132% of estimated resident demand in 2023 and there is a surplus of nearly 6,000 slots. While this surplus reflects the successful growth of pre-K capacity in the District following the adoption of universal pre-K, it may also highlight a need to reduce the supply of publicly funded pre-K slots in future years.

Publicly funded pre-K is available only to District residents, but non-residents do commute to the District to enroll in private preschool programs located in licensed child development facilities. Even after adjusting for demand from in-commuters,

Table 6. Infant and Toddler Resident Shortfall, 2017-2023
(Parentheses indicate a surplus)

	2017	2018	2019	2020	2021	2022	2023
Ward 1	611	578	710	730	886	865	987
Ward 2	1,049	748	393	(7)	(184)	(534)	(427)
Ward 3	1,277	1,239	833	971	763	650	630
Ward 4	789	1,222	1,316	903	958	1,070	761
Ward 5	1,089	1,096	1,013	1,344	935	1,165	1,202
Ward 6	1,255	1,348	1,297	1,065	835	954	734
Ward 7	1,482	1,722	1,633	1,682	1,506	1,265	1,267
Ward 8	1,616	1,293	1,643	1,674	1,212	925	722
Total	**9,168**	**9,248**	**8,837**	**8,364**	**6,911**	**6,362**	**5,875**

Table 7. Infant and Toddler Commuter-Adjusted Shortfall, 2017-2023
(Parentheses indicate a surplus)

	2017	2018	2019	2020	2021	2022	2023
Ward 1	734	712	836	832	977	958	1,080
Ward 2	5,545	5,017	4,591	3,874	3,199	2,709	2,815
Ward 3	1,604	1,669	1,265	1,291	1,035	908	888
Ward 4	799	1,254	1,345	935	970	1,090	781
Ward 5	1,559	1,534	1,444	1,732	1,329	1,539	1,576
Ward 6	2,493	2,529	2,538	2,216	1,830	1,912	1,691
Ward 7	1,350	1,601	1,521	1,614	1,443	1,199	1,201
Ward 8	1,655	1,366	1,708	1,750	1,285	997	793
Total	**15,738**	**15,681**	**15,246**	**14,243**	**12,066**	**11,310**	**10,823**

however, preschool-aged supply still meets 103% of demand in 2023, a slight surplus. Adjusting for commuting patterns has the biggest effect in Ward 2 and Ward 6, which have a surplus of several hundred slots for residents, but deficits of over 2,500 slots and 500 slots, respectively, when taking into account potential commuter demand.

Figures 9 and 10 show the difference between resident and commuter-adjusted shortfall for preschool-aged children. Similar to the infant and toddler shortfalls, Ward 2 sees the greatest change after accounting for commuters, going from a surplus of over 400 slots in 2023 to a deficit of over 2,500.

Shortfalls in supply for infants and toddlers decreased between 2017 and 2023 but remain high (5,875 short of resident demand and 10,823 less than consumer-adjusted demand).

While supply of toddler care has increased by over 50%, supply of infant care increased much less rapidly, contributing to the shortfall. This suggests that incentives and resources to serve infants remain insufficient to outweigh the costs of converting slots from preschool-age (where there is an oversupply) to infants (where there is a large shortage). Programs with underused or vacant preschool classrooms may not be able to easily convert them to serve infants, due to lack of funding for renovations needed to serve younger children, or the physical structures of their buildings, which may conflict with building codes that govern where non-ambulatory infants may be served. These codes may prevent programs from converting space to serve infants.

Table 8. Resident Shortfall for Preschool-Aged Children, 2017-2023
(Parentheses indicate a surplus)

	2017	2018	2019	2020	2021	2022	2023
Ward 1	(79)	(276)	(341)	(62)	39	82	155
Ward 2	(52)	(178)	(131)	(236)	(464)	(641)	(454)
Ward 3	(350)	(400)	(268)	(90)	(181)	(403)	(474)
Ward 4	(1,548)	(1,036)	(739)	(953)	(873)	(740)	(1,074)
Ward 5	(1,403)	(1,445)	(1,466)	(1,203)	(1,516)	(1,170)	(962)
Ward 6	(452)	(391)	(100)	(14)	(421)	(248)	(390)
Ward 7	(558)	(435)	(794)	(433)	(588)	(688)	(574)
Ward 8	(1,598)	(1,541)	(1,287)	(1,410)	(1,776)	(1,901)	(1,979)
Total	**(6,040)**	**(5,700)**	**(5,127)**	**(4,400)**	**(5,780)**	**(5,707)**	**(5,753)**

Table 9. Commuter-Adjusted Shortfall for Preschoolers, 2017-2023
(Parentheses indicate a surplus)

	2017	2018	2019	2020	2021	2022	2023
Ward 1	44	(143)	(215)	40	130	175	248
Ward 2	4,444	4,091	4,067	3,645	2,919	2,602	2,788
Ward 3	(24)	30	164	230	91	(145)	(217)
Ward 4	(1,538)	(1,004)	(711)	(921)	(861)	(720)	(1,054)
Ward 5	(934)	(1,008)	(1,036)	(816)	(1,122)	(797)	(589)
Ward 6	786	790	1,141	1,137	574	710	567
Ward 7	(690)	(557)	(907)	(501)	(652)	(754)	(641)
Ward 8	(1,559)	(1,468)	(1,222)	(1,335)	(1,704)	(1,830)	(1,909)
Total	**530**	**733**	**1,282**	**1,480**	**(625)**	**(759)**	**(806)**

Figure 7. 2023 Resident Shortfall for Infants and Toddlers

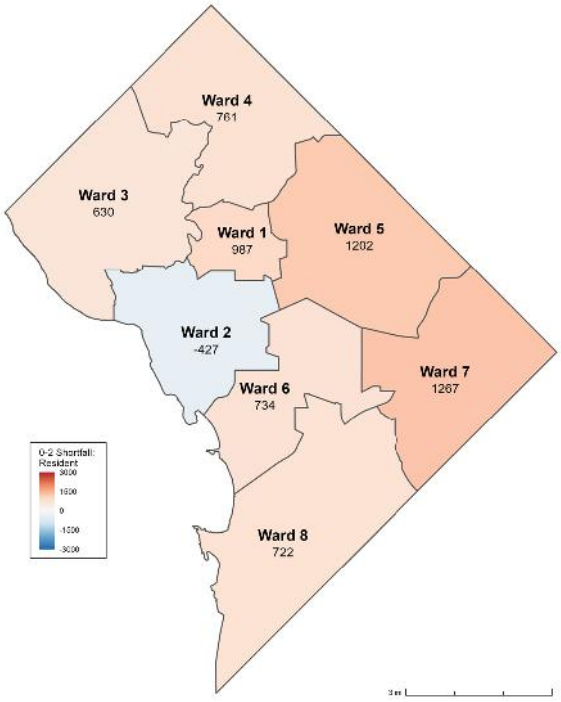


Figure 8. 2023 Commuter-Adjusted Shortfall for Infants and Toddlers

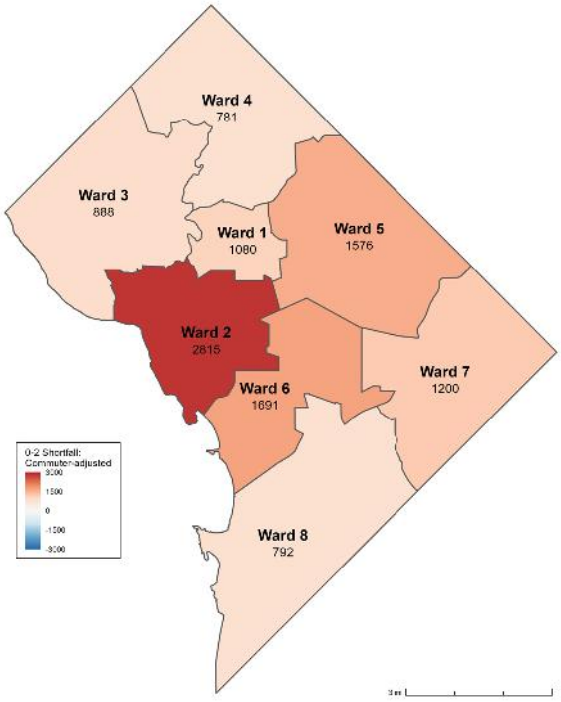


Figure 9. 2023 Resident Shortfall for Preschool-Aged Children

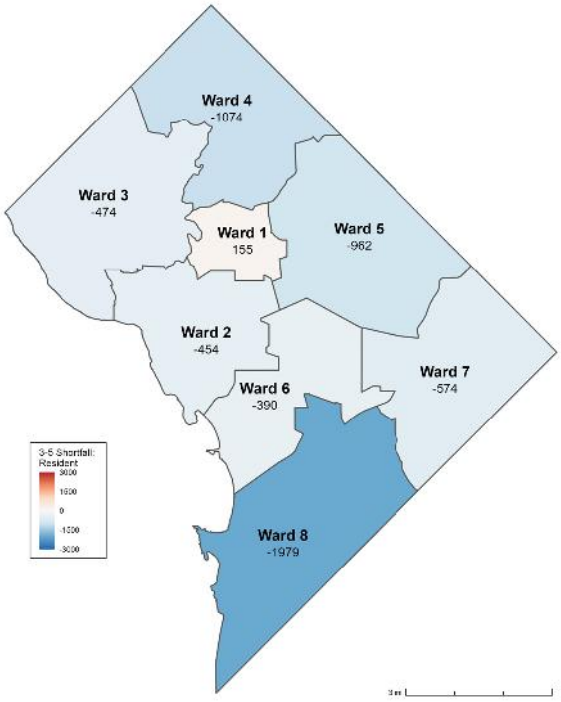
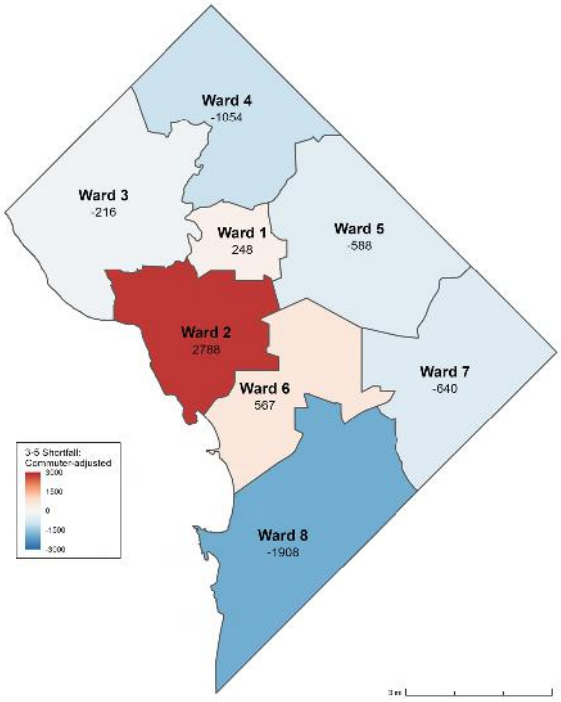


Figure 10. 2023 Commuter-Adjusted Shortfall for Preschool-Aged Children



Future Demand & Supply Scenarios

This final section of the report builds on past and current child care supply and demand estimates and trends to project future demand for child care for the years 2025, 2030, and 2035. It includes projections of both resident demand and commuter-adjusted demand and estimates changes in supply needed to reduce gaps in supply identified in the previous section.[x,xii]

Projected Resident Demand

Future resident demand for child care is projected to grow to 36,848 (a 4.1% increase) for ages 0-5 by 2035, as displayed in Table 10. Projected growth rates are not consistent across this timeframe. Demand for 0-5 care and education is projected to grow between 2023 to 2030 and then decrease slightly between 2030 to 2035. That translates to a compound annualized growth rate of 0.69% from 2023 to 2030 and -0.17% from 2030 to 2035.

Table 10 projects growth separately for children ages 0-2 and 3-5. Although trends across age groups are similar to overall demand, demand from infants and toddlers is projected to grow faster than demand from preschool-aged children.

Resident demand is not projected to grow evenly across wards. As shown in Table 11, the most growth in infants and toddlers (19.7% and 29.0%) is projected in Wards 2 and 8, while Wards 1 and 5 will experience a decrease (-14.9% and -9.1%). Growth of 9.0% or less is projected for all other wards. Demand from preschoolers is projected to increase the most in Wards 2 and 8 (17.3% and 26.5%), while Wards 1, 3, and 5 are projected to experience decreases (-16.0%, -0.3% and -10.9%).

Commuter-adjusted demand is projected to grow by 8,949 children (a 20% increase) by 2035 for all children ages 0 to 5. In contrast to resident demand projections, commuter-adjusted demand for both age groups is projected to increase continuously through 2035, rather than slightly decreasing between 2030 and 2035.

Similar to the resident demand projections, commuter adjusted demand is projected to grow the most in Wards 2, 6, and 8 for both the infant and toddler and preschool age groups by 2035. Ward 1 is the only geography in the District where demand is projected to decline even after adjusting for commuting flows.

Table 10. Projected Resident Demand, 2025-2035

	Current	Projected			Projected Total Increase	Projected % Increase
Age	2023	2025	2030	2035	2023–2035	2022–2035
0 to 2	17,701	18,339	18,729	18,606	905	5.1%
3 to 5	17,701	18,435	18,426	18,242	541	3.1%
Total 0–5	**35,402**	**36,774**	**37,155**	**36,848**	**1,446**	**4.1%**

Table 11. Projected Resident Demand by Age Group & Ward

	Infants & Toddlers			Preschool–Aged		
	2035 Resident Demand	Change in Slots 2023–2035	% of Change 2023–2035	2035 Resident Demand	Change in Slots 2023–2035	% Change 2023–2035
Ward 1	1,948	(304)	–14.9%	1,706	(338)	–16.5%
Ward 2	6,484	361	19.7%	2,154	318	17.3%
Ward 3	2,453	33	1.8%	1,878	(5)	–0.3%
Ward 4	2,738	135	5.5%	2,541	84	3.4%
Ward 5	2,951	(230)	–9.1%	2,257	(275)	–10.9%
Ward 6	3,998	176	9.0%	2,090	135	6.9%
Ward 7	2,756	44	1.7%	2,605	(9)	–0.3%
Ward 8	3,958	691	29.0%	3,011	631	26.5%

Table 12. Projected Commuter-Adjusted Demand, 2025-2035

	Current	Projected			Projected Total Increase	Projected % Increase
Age	2023*	2025	2030	2035	2023–2035	2023–2035
0 to 2	22,649	26,225	27,009	27,286	4,637	20.5%
3 to 5	22,649	26,334	26,742	26,961	4,312	19.0%
Total 0 to 5	**45,297**	**54,137**	**55,537**	**56,314**	**8,949**	**20.0%**

Table 13. Projected Commuter-Adjusted Demand by Age Group & Ward

	Infants & Toddlers			Preschool-Aged		
	2035 Commuter-Adjusted Demand	Change in Slots 2023–2035	% of Change 2023–2035	2035 Commuter-Adjusted Demand	Change in Slots 2023–2035	% Change 2023–2035
Ward 1	1,948	(189)	–8.8%	1,941	(196)	–9.2%
Ward 2	6,484	1,406	27.7%	6,475	1,397	27.5%
Ward 3	2,453	312	14.6%	2,385	244	11.4%
Ward 4	2,738	261	10.5%	2,681	204	8.2%
Ward 5	2,951	45	1.5%	2,918	12	0.4%
Ward 6	3,998	1,086	37.3%	3,999	1,087	37.3%
Ward 7	2,756	208	8.2%	2,690	142	5.6%
Ward 8	3,958	1,506	61.4%	3,872	1,420	57.9%

DC Office of Planning Population Projections

Future resident and commuter-adjusted demand is projected using data from detailed, long-range population and employment projections produced by the DC Office of Planning (OP) and Metropolitan Washington Council of Governments (COG) along with current and historical data from the U.S. Census Bureau.[xii,xiii]

Every two years, OP prepares a long-range forecast of jobs, households, and population in 5-year intervals for the COG to conduct regional transportation planning for the area and for the District of Columbia to conduct economic forecasts for its comprehensive plan. The current forecast for this analysis was finished in 2023 and projects growth in 5-year intervals to 2050. Growth is anticipated from both births and in-migration to the District even as the rate of growth slows.

To view more details about the OP population projection process, significant factors and assumptions made in predicting growth, and population-wide trends gathered from the OP's latest projections, please see OP's Methodology and other related documents here.

Child Care Supply Scenarios to Maintain or Reduce Shortfall

Barring major new public programs and initiatives, economic forces and population change are the main factors affecting demand for child care. In contrast, decisions made by policymakers and other actors across a variety of sectors, ranging from real estate investment firms to government agencies to advocacy organizations, can affect child care supply. Factors outside of the District also affect both supply and demand. For example, expansions or cuts to existing child care programs in Virginia or Maryland could affect the demand from in-commuters. Not all of these forces can be planned for or mitigated, but the supply scenarios presented in this section are designed to inform decisionmakers about the variety of possibilities for the future state of child care, given different levels of investment and regulatory support.

Scenarios for the Infant and Toddler Age Group

Scenario 1 - Shrinking the Gap

Table 14 includes estimated growth needed by ward to shrink the current infant and toddler shortfall by half by 2035. Columns labeled Slots to Replace and Slots by Year acknowledge potential variation in the number slots lost due to market churn each year and the uncertainty around how many of those slots will need to be replaced to meet the scenario goal. Therefore, aggregate growth totals at the ward and District level are presented as a range, not as a single number. A range of 2,150 - 6,447 slots (483-842 slots per year) are needed to cut existing shortfalls in resident demand by half in 2035. When demand is adjusted for the impact of commuters, this range increases to 2,595 - 7,784 slots needed to shrink commuter-adjusted shortfall by half, or almost 1,400 new slots per year on the high end of the estimate.

Scenario 2 - Maintaining the Gap

Table 15 presents capacity growth estimates needed to maintain the current shortfall ratio for licensed infant and toddler care in the District. To maintain the resident shortfall ratio, we estimate no new needed growth in Wards 1, 2, and 5, but that there will still be anywhere from 627 - 1,879 slots lost to market churn in these wards that will need to be replaced by 2035. When incorporating commuters, all geographies but Ward 1 will need to add new slots. Even in Ward 1, though, we estimate that there are still an anticipated 138-413 slots lost due to market churn.

Assumptions made for future supply scenarios

There are two primary considerations when creating supply scenarios. First, the scenarios do not consider potential growth scenarios for supply from public and charter school pre-K programs. These programs made up a little over half of available supply for children aged three to five between 2017 and 2022 and are assumed to stay the same through 2035 in the absence of granular data on planned increases in capacity.[1]

Second, these scenarios account for a certain number of child care slots disappearing from the child care market every year due to child care facilities closing, or market churn. This analysis relies on a historical rate of churn to apply to future supply, and assumes that between 25%-75% of slots lost due to churn will need to be replaced to maintain or reduce the current shortfall in slots.

[1]The pre-K sector of the child care market is more highly regulated and has remained more stable over time. The DC Master Facilities Plan includes planned increases in pre-K enrollment, including sites marked for new pre-K construction such as the Amidon-Bowden and LaSalle-Backus campuses. It is difficult to translate these projected enrollment numbers to overall capacity increases without an understanding of how present and projected utilization rates are used by DCPS. Between 2020 and 2040, the projected enrollment increase is fairly low and would affect a market (3-5 year olds) that may already be oversaturated.

Scenarios for the Preschool Age Group

Scenario 1 - Shrinking the Gap

Because there is not an aggregate shortfall of supply for the preschool age group, no new growth is needed to cut the resident shortfall ratio. However, estimates suggest that there will be anywhere between 597 - 1,794 slots that will need to be replaced to maintain sufficient preschool supply through 2035 due to churn. When accounting for commuters, estimates increase to show that the District would need to add 3,744 new licensed preschool slots to reduce shortfalls by 2035, and between 1,356 - 4,065 would need to be replaced due to churn. Wards 2 and 6, where most major employers are located in the District, are the primary drivers of these preschool growth estimates.

Table 14. Shrinking the Gap, Infants & Toddlers

	DC Residents			Residents + MSA Commuters		
	New Slots by 2035	Slots to Replace by 2035	Total Slots Needed per Year through 2035	New Slots by 2035	Slots to Replace by 2035	Total Slots Needed per Year through 2035
Ward 1	263	189 – 566	38 – 69	399	200 – 600	50 – 83
Ward 2	–	338 – 1,014	28 – 85	2,424	553 – 1,658	248 – 340
Ward 3	342	227 – 680	47 – 85	692	254 – 763	79 – 121
Ward 4	495	309 – 927	67 – 119	610	318 – 954	77 – 130
Ward 5	425	246 – 737	56 – 97	821	277 – 830	92 – 138
Ward 6	510	235 – 704	62 – 101	1,616	323 – 968	162 – 215
Ward 7	666	267 – 802	78 – 122	759	274 – 823	86 – 132
Ward 8	947	339 – 1,017	107 – 164	1,659	396 – 1,188	171 – 237
Total	**3,648**	**2,150 – 6,447**	**483 – 842**	**8,980**	**2,595 – 7,784**	**965 – 1,396**

Table 15. Maintaining the Gap, Infants and Toddlers

	DC Residents			Residents + MSA Commuters		
	New Slots by 2035	Slots to Replace by 2035	Total Slots Needed per Year through 2035	New Slots by 2035	Slots to Replace by 2035	Total Slots Needed per Year through 2035
Ward 1	–	117 – 350	10 – 29	–	138 – 413	12 – 34
Ward 2	–	338 – 1,014	28 – 85	626	410 – 1,229	86 – 155
Ward 3	22	201 – 603	19 – 52	183	214 – 641	33 – 69
Ward 4	93	277 – 832	31 – 77	179	284 – 851	39 – 86
Ward 5	–	172 – 515	14 – 43	21	213 – 640	20 – 55
Ward 6	110	203 – 609	26 – 60	455	230 – 691	57 – 96
Ward 7	22	216 – 648	20 – 56	110	223 – 669	28 – 65
Ward 8	481	302 – 906	65 – 116	1,020	345 – 1,035	114 – 171
Total	**728**	**1,826 – 5,477**	**213 – 518**	**2,594**	**2,057 – 6,169**	**389 – 731**

Scenario 2 - Maintaining the Gap

The estimates presented in Table 16 to maintain resident shortfall ratios for preschoolers are similar to the estimates presented in the Shrinking the Gap scenario, as demand is expected to grow by about 700 children until 2030 but then level off and even decrease slightly by 2035. Given current oversupply, no new preschool slots are needed but up to 1,728 may need to be replaced over the next decade. To maintain the commuter-adjusted shortfall ratio, 1,561 new slots are needed – almost exclusively in Wards 2 and 6.

Table 16. Shrinking the Gap, Preschoolers

	DC Residents			Residents + MSA Commuters		
	New Slots by 2035	Slots to Replace by 2035	Total Slots Needed per Year through 2035	New Slots by 2035	Slots to Replace by 2035	Total Slots Needed per Year through 2035
Ward 1	–	102 – 307	9 – 26	16	161 – 483	15 – 42
Ward 2	–	221 – 664	18 – 55	2,415	471 – 1,413	241 – 319
Ward 3	–	188 – 565	16 – 47	60	344 – 1,031	34 – 91
Ward 4	–	24 – 71	2 – 6	–	30 – 89	3 – 7
Ward 5	–	–	–	–	–	–
Ward 6	–	59 – 178	5 – 15	1,253	256 – 769	126 – 169
Ward 7	–	3 – 9	0 – 1	–	7 – 20	1 – 2
Ward 8	–	–	–	–	87 – 260	7 – 22
Total	**–**	**597 – 1,794**	**50 – 150**	**3,744**	**1,356 – 4,065**	**427 – 652**

Table 17. Maintaining the Gap, Preschoolers

	DC Residents			Residents + MSA Commuters		
	New Slots by 2035	Slots to Replace by 2035	Total Slots Needed per Year through 2035	New Slots by 2035	Slots to Replace by 2035	Total Slots Needed per Year through 2035
Ward 1	–	80 – 241	7 – 20	–	127 – 381	11 – 32
Ward 2	–	221 – 664	18 – 55	638	319 – 957	80 – 133
Ward 3	–	188 – 565	16 – 47	60	344 – 1,031	34 – 91
Ward 4	–	24 – 71	2 – 6	–	30 – 89	3 – 7
Ward 5	–	–	–	–	–	–
Ward 6	–	59 – 178	5 – 15	863	223 – 668	91 – 128
Ward 7	–	3 – 9	0 – 1	–	7 – 20	1 – 2
Ward 8	–	–	–	–	87 – 260	7 – 22
Total	**–**	**575 – 1,728**	**48 – 144**	**1,561**	**1,137 – 3,406**	**227 – 415**

Conclusion

The market for licensed child care in the District of Columbia is complex and evolving as the city continues to recover and recalibrate from the disruptions of the COVID-19 pandemic. Unlike many jurisdictions across the United States that have big aggregate deficits in licensed child care supply, estimates in this study indicate that the District has marginal oversupply of early care and education for preschool-age children that masks large deficits in supply for infants and toddlers. These deficits for younger children are shrinking. Targeted District investments in infant-toddler supply building over the last five years have helped steward a 36% decrease in the shortfall of resident demand for licensed child care for infants and toddlers.

Despite progress, additional efforts are needed to ensure that all District residents and workers are able to access the early care and education they need—particularly for infants and toddlers. This analysis can help inform child care business operators in making decisions about where or whether to grow or expand, as well as policy, philanthropic and community investments and strategies to promote access, quality and affordability of early care and education.

Appendix A. Report Methodology

Demand

Definition

We define our initial measure of demand as the number of children under the age of 6 in families with all available parents in the labor force. This measure is a commonly used proxy in child care studies. We call this measure "local demand."

Each year, we calculated local demand by adding the following variables from table B23008 of the ACS:[xiv]

- Living with two parents: Both parents in labor force
- Living with one parent: Living with father: In labor force
- Living with one parent: Living with mother: In labor force

Geographic Scope

We calculated our measure of local demand at the ward level, using a population-weighted crosswalk from IPUMS NHGIS to aggregate to 2020 Census tracts if applicable, and then another custom-developed population-weighted crosswalk to aggregate the most recent ward boundaries.[xv,xvi,xvii] Aggregating to the ward level gave us the size of local demand in each ward.

Incorporating Commuters

In-Commuters

For each ward, we also estimated the additional demand brought in each year from children who do not live in the ward but whose parents commute to the ward for work. We used data on commuter flows from LEHD to find the number of people who work in each DC ward but do not live in that ward.[xviii] We call these "in-commuters." We then applied a series of multipliers, indicative of commuter characteristics and behaviors, to estimate the corresponding number of children of commuters seeking child care in each ward who live elsewhere – we refer to this number as "in-commuter demand." In-commuter demand is calculated using the following equation:

$$ICD_a = \sum_r I_{a,r} * (1 - R_r) * W_r * C_r * P_r * L$$

Where:

ICD_a = In-commuter demand for Ward a
$I_{a,r}$ = In-commuters from residence area r to Ward a[xxvi]
R_r = Share of all workers living in residence area r who work remotely
W_r = Share of all workers living in residence r who have children under age 6
C_r = Estimated number of children under age 6 per worker with children under age 6 living in residence area r
P_r = Share of children under age 6 living in residence area r with all available parents in the labor force[xxii]
L = Share of parents who use child care near their workplace

These multipliers are calculated using resident area characteristics. The initial residence area is defined as the Census Tract from which the worker commutes using LEHD data. Residence area characteristics are then quantified using that Census Tract or the Public Use Microdata Area (PUMA) in which it is located, depending upon the data source for the variable in question.

Out-Commuters

We used a similar approach to estimate the number of children who live in a ward whose parents seek child care outside the ward in which they live. We call these "out-commuters." We again used LEHD data to find the number of people living in each ward who work elsewhere, using the same set of multipliers for out-commuters to estimate the corresponding number of children living in a ward who seek child care elsewhere. We refer to this number as out-commuter demand.

$$OCD_a = \sum_r O_{a,r} * (1 - R_r) * W_r * C_r * P_r * L$$

Where:

OCD_a = Out-commuter demand for Ward a
$O_{a,r}$ = Out-commuters from residence area r within Ward a to an area outside of Ward a[xxvi]
R_r = Share of all workers living in residence area r who work remotely
W_r = Share of all workers living in residence r who have children under age 6
C_r = Estimated number of children under age 6 per worker with children under age 6 living in residence area r
P_r = Share of children under age 6 living in residence area r with all available parents in the labor force[xxii]
L = Share of parents who use child care near their workplace

Total Demand

We brought both local demand and the effects of commuters together in our total demand measure, which is calculated as:

Total Demand = Local Demand + In-commuter Demand – Out-commuter demand

Types of Demand

Because the Office of the State Superintendent of Education (OSSE) has a mandate to serve all DC children as well as support child care businesses, we identify two types of demand that speak to both mandates: resident demand and commuter-adjusted demand.

Resident demand accounts for local demand and commuting patterns within DC, capturing all people who both live and work in DC, as well as people who live in DC but work outside of the District. Commuters in this model are people whose home ward is different from the ward in which they work. As nobody leaves or enters the District in this model, all DC parents who commute outside of the District for work are presumed to find care within the ward in which they live. As a result, resident demand is just a spatial reallocation of local demand. In aggregate across DC, these two numbers are the same each year.

Commuter-adjusted demand accounts for local demand and commuting patterns within the DC Metropolitan Statistical Area, capturing all people living in the MSA who either live OR work in DC.[xix] Commuters in this model include people commuting to a ward different than the one they live in within DC, but also accounts for both those who work in DC and live elsewhere in the MSA, and those who work elsewhere in the MSA and live in DC. In this approach, children can enter and leave the District to find care.

Data Limitations

The most recent available ACS data are from 2022, and the last LEHD release includes data up until 2021. In both 2022 and 2023, we used the LEHD data from 2021. Furthermore, to estimate demand in 2023 using our defined approach, we had to 1) project the population under six years old in each ward in 2023 using straight-line population trends in each ward from 2019 to 2022 and 2) use 2022 ACS data for residence area characteristics. Though it was driven by a lack of available data, our solution implicitly assumes the following:

- a constant share of children under six have all available parents in the labor force between 2022 and 2023;
- commuter flows in 2022 and 2023 were identical to commuter flows in 2021;
- commuter characteristics and behaviors in 2023 were identical to commuter characteristics and behaviors in 2022.

Supply

Definition

We define supply for child care as the available child care capacity for children under 6 in a child care facility.

Supply Sources

We estimated supply from two sources: **licensed facilities,** which are regulated by OSSE, and **pre-K programs**, operated by DC Public Schools and Public Charter Schools (DCPS & PCS). Pre-K programs only serve preschool-aged children. We estimated supply at the ward level as the sum of the capacity in all licensed facilities and public preschool programs located in each ward.

Calculating Supply

Supply from Licensed Facilities

Historical data on licensed facilities was provided by OSSE for October of each year in our sample (2017 to 2023).[xx] These datasets describe licensed capacity in aggregate and broken out by the following age groups: infants, toddlers, preschool-aged children, and school-aged children. We removed licensed capacity for school-aged children from total capacity to estimate supply for children under six from licensed facilities.

Supply from DCPS & PCS

Because OSSE does not publish public estimates of school-level capacity, we needed to estimate this from existing data.

To estimate capacity in DCPS and PCS preschool programs, we began with school-level PK3 and PK4 enrollment for each school year from pre-K programs from OSSE enrollment audit data, standardizing the year of analysis as the year the school term ends (ex. 2018-2019 school year is standardized as 2019).[xxi]

OSSE publicly reports pre-K capacity and utilization rates each year at the ward level via classroom observations and site visits in their Enrollment Audit Reports.[xxix] With some minor adjustments to account for changing ward boundaries, which resulted in slightly amended ward level utilization rates, we used these ward level utilization rates together with the school-level enrollment data to calculate school level capacity.[xxv]

Capacity data was not available for three of the years we studied. In 2020 and 2021, site visits were disrupted by the COVID-19 pandemic, and the Enrollment Audit Report for the 2023 school year was not yet released at the time of this analysis. For these years, we used utilization rates from the closest available report. 2020 capacity estimates use 2019 utilization rates, and 2021 and 2023 capacity estimates use 2022 utilization rates.

Age group analysis

Because data on supply from both sources is broken out by age group, we frequently conducted our analysis separately for two age-specific markets. Supply for children ages 0 to 2 is calculated as the sum of infant slots and toddler slots in licensed facilities. Supply for children ages 3 to 5 is estimated as the sum of preschool-aged slots in licensed facilities, plus the estimated PK3 and PK4 capacity in DCPS and PCS preschool programs.

We define infants and toddlers as any child who is between 0-35 months old (0-2 years old), and preschooler aged children as any child who is between 36-71 months old (3-5 years old).

Shortfall

Definition

We define shortfall as the difference between demand and supply at the ward level. To find District-level shortfall, we aggregated ward-level shortfalls.

Calculating shortfall

Shortfalls were calculated using the following equation:

$$Shortfall = Demand - Supply$$

A surplus for child care (where supply exceeds demand) is represented as a negative shortfall. Because we worked with two definitions of demand (resident demand and commuter-adjusted demand) we also have two types of shortfall: shortfall from resident demand, and shortfall from commuter-adjusted demand.

Future Demand Projections

To project future child care demand in the District, we used population and employment forecasts from the DC Office of Planning (OP) along with historical trends from our previous analysis.[xxii,xxiii] We projected future demand in 5-year intervals to 2035 (2025, 2030, 2035).

We projected two types of demand – projected resident demand and projected commuter-adjusted demand, which are defined the same way as they are in the Demand section of this methodology. We also conducted all future analysis separately for the two age-specific markets: infants & toddlers and preschool-aged children.

Projecting resident demand

Resident demand accounts for DC residents and for the movement of commuters within DC. As no children enter or leave to seek care, it is a spatial reallocation of local demand, i.e. all children under six with all available parents in the labor force. As a result, we projected future resident demand as a spatial reallocation of projected local demand.

Projecting resident demand started with first projecting local demand. To project local demand, we began with the OP middle range population forecasts by age cohort, which are available at the neighborhood cluster level.[xxiv] To isolate our two age groups, which are children ages 0-2 and children ages 3-5, we used OP's District-wide middle range single-age forecast to estimate the proportion of the 3–10-year cohort that are 3-5 years old for each projection year.[xxiv] We created and used a population-weighted crosswalk to aggregate totals for each ward from the neighborhood cluster-level forecasts.[xxv]

Using these population forecasts by age group, we then needed to determine which of these children contributed to demand. We did this by assuming that a constant share of children aged 0-5 had all available parents in the labor force. This constant share was estimated as the historical average between 2019 and 2022 of children under 6 with all available parents in the labor force divided by all children under 6 as measured in ACS table B23008.[xxii] This share was multiplied by under 6 population forecasts to project local demand.

Aggregating local demand across the District gave us aggregate resident demand as well, but we then had to spatially reallocate this by ward to find resident demand by ward. We distributed resident demand into each ward using the historical spatial distribution of resident demand between 2019 and 2022. This assumes that changes to in-commuting and out-commuting within the District are driven only by changes in population.

Projecting Commuter-Adjusted Demand

Commuter-adjusted demand builds on resident demand, but in this type of demand the definition of a commuter is broadened to include people entering or leaving the District. To project commuter-adjusted demand, we started with projected resident demand. Then we projected commuter data based on employment forecasts to find any increases or decreases in demand from:

1. projected in-commuters – children living outside DC whose parents commute into the District and would seek child care close to work
2. projected out-commuters - children living in DC whose parents work outside of the District and would seek child care near their place of work.

Below is the equation we used to find Projected Commuter-Adjusted demand, and below are detailed descriptions of how we projected in-commuter and out-commuter demand.

$$\begin{aligned} &Projected\ Commuter-Adjusted\ Demand \\ &\quad = Projected\ Resident\ demand + projected\ in-commuter\ demand\ from\ non \\ &\quad - residents - projected\ out \\ &\quad - commuter\ demand\ from\ residents\ working\ elsewhere \end{aligned}$$

Calculating Projected In-Commuter Demand

We projected in-commuter demand as being driven by jobs in DC. To create ward-level job forecasts, we used OP's COG 10.0 employment forecasts, which are calculated at the spatial area of traffic analysis zones (TAZ) and use a custom developed job-weighted crosswalk to aggregate jobs in each ward.[xxxi,xxvi] To get from the number of jobs to the number of in-commuters, we found the average historical ratio between in-commuter demand from our historical analysis[2] and area jobs (from LEHD data) between 2019 and 2021 (2021 being the latest year available). This ratio was multiplied by the number of forecasted jobs to project in-commuter demand.

Calculating projected in-commuter demand in this way assumes the following:

- Commuter characteristics and preferences remain the same in each 5-year cohort (see demand equation above for more detail on commuter characteristics and preferences)
- Changes in in-commuter demand are driven only by changes in job patterns

Calculated Projected Out-Commuter Demand

We projected out-commuter demand as being driven by local demand and historical out-commuting patterns in DC. This means that for each ward, we estimated that a constant share of DC residents, or local demand, leave DC each year. This share was calculated using the historical ratio between out-commuter demand and local demand between 2019 and 2022.

Calculating projected out-commuter demand in this way assumes the following:

- Each ward has a fixed balance between residents who work within DC and those who work elsewhere. (need to explain this or give an example)
- Commuter characteristics and preferences remain the same (see demand equation above for more detail on commuter characteristics and preferences)

Future Supply Scenarios

Scenarios Overview

We created supply scenarios for all wards in each year of our projections – 2025, 2030, and 2035. The scenarios are based off of our demand projections and child care shortfalls from 2023.

We developed two scenarios for each age group:

1. Maintaining the Gap – Supply increases enough to maintain the 2023 shortfall ratio (supply divided by demand) relative to projected demand through 2035.
2. Shrinking the Gap – Supply increases enough to cut the existing shortfall ratio in half by 2035.

Shortfall Ratio by Age Group

We calculated the shortfall ratio separately by age group in each ward. For example, if infant and toddler supply in Ward 2 meets half of demand, there is a shortfall ratio of 0.5. Any ward that had a surplus of supply when compared to demand was standardized to a shortfall ratio of 1, to avoid modeling a scenario where capacity bolsters an existing oversupply.

[2] See the equation in the In-Commuter Demand section to see how we calculated historical shares

Scenario Assumptions

We assume the following in developing these scenarios:

- Capacity from preschool programs in DCPS and PCS remain the same through to 2035[3]
- A certain number of facilities will leave the market each year, which we call market churn. Some of this churn will need to be replaced to meet supply scenario targets. For a detailed description of how we calculated for churn, see the *Accounting for Churn* section below.

Accounting for churn

As historical data demonstrate, in a child care market there is almost a guarantee that some facilities will exit the market each year due to various market factors (including financial instability, retirement, staff turnover, etc.). If no new facilities, and therefore new child care slots, enter the market, then supply would decrease over time.

Therefore, because of anticipated churn in the market, meeting a supply target requires both new growth[4] and replacement growth[5] to replace slots lost to market churn.

Calculating Churn

We used historical OSSE data on licensed facility enrollment to estimate the rate of churn in the infant and toddler (ages 0-2) and preschool (ages 3-5) markets.[xxviii] To find the average churn rate, we took the average number of slots leaving the market each year between 2017 and 2022.

We define a slot leaving the market by identifying whether a licensed facility served a non-zero number of children in DC one year and zero children the next year. We used OSSE's child care licensing data from 2017-2022 to identify which facilities left the market from year to year.

This method of identifying slots leaving the market captures facility closures. However, we acknowledge that it has its imperfections. For example, it is possible that a facility could change their license type from one year to the next (almost always by expanding from a home to an expanded home). According to our churn method, that change would have been recorded as a facility "leaving the market" or closure. This happens to a small but non-zero number of facilities every year.

Once we found the rate of churn, we applied it to supply to calculate maximum churn, which is the maximum number of slots that would need to be replaced to meet our supply scenario targets of maintaining or shrinking the shortfall ratio. We calculated the number of slots lost to churn over each projection period (2025-2030, 2030-2035) as a share of the midpoint of supply at the beginning and end of that period. This accounts for churn in any added growth as well. For example, if a facility enters the market in 2028, we account for the fact that it may also leave the market between 2025 and 2030 by using the projected midpoint supply and not just projected 2025 supply to calculate slots lost to churn.

[3] The pre-K sector of the child care market is more highly regulated and has remained more stable over time. The DC Master Facilities Plan includes planned increases in pre-K enrollment, including sites marked for new pre-K construction such as the Amidon-Bowden and LaSalle-Backus campuses. It is difficult to translate these projected enrollment numbers to overall capacity increases without an understanding of how present and projected utilization rates are used by DCPS. Between 2020 and 2040, the projected enrollment increase is fairly low and would affect a market (3-5yo) that we believe to already be oversaturated.

[4] *New Growth = Target Supply – Existing Supply*

[5] *Replacement Growth = Existing Supply – (Existing Supply depreciated by churn)*

Limitations of Churn

Churn between 2022 and 2023 was higher than in previous years. This is likely because many facilities closed between those years that had been kept open throughout the COVID-19 pandemic after receiving significant government assistance and benefiting from relaxed or suspended licensing requirements. After conversation with stakeholder groups, we left this year out of the average churn that we used in projections, because we feel that this spike in closures captures the anomalous effects of COVID-19 on facilities and is unlikely to reoccur in the future.

Calculating New & Replacement Growth in Supply to meet Scenario Targets

New Growth

We calculated the supply required to meet our scenario targets by 2035 and assumed a straight-line trend between 2023 and 2035 to calculate our 2025 and 2030 supply targets. To represent each scenario in growth terms between 2023 and 2035, we calculated new growth needed as the aggregate of the difference in supply targets from 2023 to 2025, 2025 to 2030, and 2030 to 2035.

The aggregation across periods is particularly relevant in areas of surplus. Where there is a surplus in the market, we modeled a decline in supply towards market equilibrium – allowing churn to take its course, or only replacing the number of the slots lost to churn sufficient to meet demand. As mentioned, this avoids building excess capacity to maintain the present oversupply. By projecting need across 5 year periods and then aggregating, instead of across the entire 15 year period, we slow the decline. This means that there are sometimes a small number of projected replacement slots in areas of high surplus. This accounts for market integration between wards – if a shortfall in Ward 7 leads residents to use child care where there is a surplus in Ward 8, we wanted to allow people to continue using the oversupply in Ward 8 while capacity is built in Ward 7.

Replacement Growth

Growth needed to replace churn is calculated as a range of 25% to 75% of maximum churn. We calculated replacement growth needed in this way to account for the potential impact of policy and sector investment on rates of churn over time. Greater investment in child care facilities can be expected to eventually decrease the number of facility closures, and facilities may often reopen in buildings already retrofitted for child care, which drastically reduces the costs of creating those replacement slots. To capture the range of unknowns in calculating needed churn replacement, we expressed both our estimates for churn replacement and slots per year as ranges.

Appendix B. Endnotes

i Lin, Y. C. & McDoniel, M. (2023). Understanding Child Care and Early Education Program Closures and Enrollment During the First Year of the COVID-19 Pandemic. United States Department of Health and Human Services Administration for Children and Families [HHS-ACF]. Available here: https://www.acf.hhs.gov/sites/default/files/documents/opre/2023-237%20COVID%20Highlight.pdf.

ii U.S. Census Bureau, Population Division. (2024). Annual Estimates of the Resident Population for Counties in District of Columbia: April 1, 2020 to July 1, 2023 (CO-EST2023-POP-11). Estimate of the population under 6 comes from multiplying the relevant percent from the most recent ACS 5-year estimates (2022), calculated from Table B01001 (for total population) and Table B09001 (for population under age 6), by the 2023 total.

iii Smith, L. K. et al. (2021). Child Care in 35 States: What we know and don't know. Bipartisan Policy Center. Available here: https://childcaregap.org/assets/Child%20Care%20in%2035%20States.pdf

iv U.S. Census Bureau. "Age of Own Children Under 18 Years in Families and Subfamilies by Living Arrangements by Employment Status of Parents." *American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B23008*, 2022. The most recent year for which these data were available is 2022 so we use the 2022 number as a starting point and projected them to 2023.

v U.S. Census Bureau, Population Division. (2024). Annual Estimates of the Resident Population for Metropolitan Statistical Areas in the United States and Puerto Rico: April 1, 2020 to July 1, 2023 (CBSA-MET-EST2023-POP)

vi In our measure of "resident demand," parents needing care who live in the district but commute to jobs outside of it are all assumed to find child care within the District, specifically the ward in which they live. This assumption is dropped in our measure of "commuter-adjusted demand" that assumes some portion of these out-commuters will find care near their jobs.

vii Zhang, S. (2014). *A portrait of universal pre-kindergarten in DC*. Urban Institute. Available here: https://www.urban.org/urban-wire/portrait-universal-pre-kindergarten-dc

viii US Department of Treasury. (2021). The Economics of Child Care Supply in the United States. Available here: https://home.treasury.gov/system/files/136/The-Economics-of-Childcare-Supply-09-14-final.pdf.

ix For a description of how we determined facilities which left the market, please reference the methodology.

x Resident Demand includes all DC residents and redistributes demand based on intra-district commuting by residents

xi Commuter-Adjusted Demand represents demand from DC residents as well as demand from commuters entering and leaving the district altogether for work.

xii District of Columbia Office of Planning [OP]. (n.d.). *Single-age Population Forecast Methodology and Assumptions*. Available here: https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/Single%20Age%20Population%20Forecast%20Methodology%202023.pdf

xiii OP. (2023). *Forecasting the District's Growth: Results and Methodology*. Available here: https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/Forecasting%20Growth%202020-2050%20-%20Results%20and%20Methodology.pdf.

xiv U.S. Census Bureau. (2024). Table B23008: Age of Own Children in Families and Subfamilies by Living Arrangements by Employment Status of Parents. American Community Survey 5-Year Estimates for years 2017 (2013-2017) through 2022 (2018-2022)

xv Steven Manson, Jonathan Schroeder, David Van Riper, Tracy Kugler, and Steven Ruggles. (2022). IPUMS National Historical Geographic Information System: Version 17.0 2010 Block Group to 2020 Tract Crosswalk. Minneapolis, MN: IPUMS. Available here: http://doi.org/10.18128/D050.V17.0

xvi U.S. Census Bureau. (2020). Decennial Census, DEC Redistricting Data (PL 94-171), Table P1, 2020. Available here: https://data.census.gov/table/DECENNIALPL2020.P1?g=010XX00US

xvii Open Data DC. (2022). *DC GIS Ward from 2022 Shapefile*. Available here: https://opendata.dc.gov/datasets/DCGIS::wards-from-2022/about.

xviii U.S. Census Bureau. (2024). LEHD Origin-Destination Employment Statistics Data (2002-2021) [od-main and od-aux files for DC, MD, VA, WV]. Washington, DC: U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program. Available here: https://lehd.ces.census.gov/data/#lodes. LODES version 8.1

xix Office of Management and Budget. (2023). Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on Uses of the Delineations of These Areas. Available here: https://www.whitehouse.gov/wp-content/uploads/2023/07/OMB-Bulletin-23-01.pdf

xx Licensed Facility Data provided by OSSE (2017 to 2023).

xxi Office of the State Superintendent of Education for the District of Columbia [OSSE]. (n.d.). *Enrollment Audit Data*, FY 2017 through FY 2023. Available here: https://osse.dc.gov/enrollment.

xxii OP. (2020). *Population Forecast by Age Groups by Neighborhood Cluster*. Available here: Population Forecast by Age Groups by Neighborhood Cluster.

xxiii Metropolitan Washington Council of Governments. (2023). *Round 10.0 Cooperative Forecasting Data*, provided by Metropolitan Washington COG.

xxiv OP. (2020). Population Forecast by Single Age Groups by Neighborhood Cluster. Available here: Population Forecast by Single Age Groups by Neighborhood Cluster

xxv Open Data DC. (2021). *Neighborhood Clusters*. Available here: https://opendata.dc.gov/datasets/DCGIS::neighborhood-clusters/about

xxvi Open Data DC. (2018). *Traffic Analysis Zones*. Available here: https://opendata.dc.gov/datasets/DCGIS::traffic-analysis-zones/about