


DC'S FORECAST METHODOLOGY

DISTRICT OF COLUMBIA OFFICE OF PLANNING

JANUARY 2019

OVERVIEW

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- The Office of Planning prepares a long-range forecast of jobs, households, and population growth approximately every two years for the Metropolitan Washington Council of Governments' (COG) regional transportation planning efforts. This information also serves as the foundation for the forecasts of growth used for the District's Comprehensive Plan.
 - The growth forecast starts with a base year (currently 2010) and proceeds in five-year intervals out through 2045. The forecast is sub-divided geographically into Transportation Analysis Zones (TAZ), which tend to be smaller than US Census tracts, but vary in size depending on the density of the land uses and the street grid.
 - The forecasts represent the Office of Planning (OP) best estimate of the most probable scenario of growth over a 30-year period. The forecast does not represent total demand, but the intersection between demand and the supply's ability to deliver built capacity that can absorb the demand.
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3 GENERAL METHODOLOGY

- OP uses a supply-side method, which relies on the construction of new square footage of non-residential space and residential units;
- New built space reflects the capacity to absorb net new jobs and households growth that result from migration to the District spurred by economic growth;
- To these estimates of growth from new jobs and migration, OP adds growth from natural increase (births minus deaths);
- The core assumption of a supply-side forecast is that by definition, growth cannot exceed built capacity. However, over time, trends in square feet per job and people per dwelling unit can affect job and population growth within the same built space.

4 ASSUMPTIONS (EXAMPLES) - HOUSEHOLDS

- Growth will be robust, but at a slower pace over the forecast period—following: a record absorption of multi-family rental units, decreasing vacancy, and a large pipeline of new units in recent years, all of which represented a period of potential peak production;
- There will be strong private sector job growth causing migration to DC and the region, even with the uncertainty of the federal budget and procurement process;
- The growing perception of the District as a world capital will continue to attract foreign labor;
- The District will experience an expanding number of neighborhoods where rising values allow for the use of more complicated and expensive high-rise construction methods that have the benefit of maximizing site capacity under zoning;

5 ASSUMPTIONS (EXAMPLES) - POPULATION

- There will be a significant net natural increase in population, as the birth rate remains relatively constant (based upon a larger population but gradually declining fertility rates), and the mortality rate declines;
- The District will have an abundance of choices for transportation, entertainment, leisure, education, health, housing, and food, which continue to attract and maintain more people;
- Improved public school performance and government initiatives such as universal pre-K will continue to attract and retain a greater percentage of families with children.

6 ASSUMPTIONS (EXAMPLES) - EMPLOYMENT

- The national economy will continue to grow slowly in the short run but will pick up speed after 2015;
- After the current Federal instability ends, the District will return to historic patterns of job growth, but with a greater emphasis on private sector jobs;
- Growth in sectors like professional and business services, retail, accommodations, education and health services will continue to dominate job growth in the District;
- Office vacancy will continue to decline, but shifts in telework and hoteling office spaces will reduce the number of gross square feet required per office job;
- Employment will disperse and grow throughout District neighborhoods as the trend toward retail and commercial ground and second floor uses within multi-family development continues.

7 FORECASTING - FIRST PERIOD

- The forecast for the first period through 2035 is created by tracking development projects of at least ten residential units, or 10,000 square feet of non-residential space that are in various stages of development including:
 - **Completed** since 2010 and occupied by 2015;
 - **Under Construction** with estimated delivery after 2015 with 100% occupied by 2020;
 - **Planned** projects that have received a pre-development approval such as a Planned Unit Development (PUD) or a funding commitment from a District agency. A portion of these projects is expected to be occupied by 2020, and the majority fully occupied by 2025;
 - **Conceptual** projects, which have applied for, but not yet received a pre-development approval or a funding commitment from a District agency, and projects where limited information is known. Some of these projects are expected to deliver by 2025, with the rest fully occupied by 2030;
 - **New Neighborhoods**, such as McMillan Reservoir, Walter Reed, and others, are large parcels of land that are currently vacant or underutilized/unoccupied that have substantial development capacity, but which also require significant infrastructure investment to reach full occupancy. Portions of these projects start delivery as early as 2020, but with the majority delivered and fully occupied by 2030 and 2035.

8 FORECASTING – FIRST PERIOD

- Using the pipeline of development activity as a source of data to forecast growth requires several basic assumptions including:
 - Net new supply represents net growth;
 - Any vacancy created elsewhere in DC is back filled within the five year increment;
 - Growth from smaller projects (that are not tracked by OP) is comparatively small and is canceled out by demolitions of existing buildings;
 - Projects within the pipeline that fail to reach completion during a forecast interval are replaced by previously unknown projects that did reach completion within the appropriate time interval. This has proven to be an accurate assumption at the citywide level.

9 NON-RESIDENTIAL

Figure 1: Non-Residential Land Uses, Job Density and Occupancy Rates

| Land Use | Space Multiplier | SqFt per Employee | Occupancy |
|--------------------|------------------|-------------------|-----------|
| Office | | 300 | 92% |
| Hotel Rooms | 450ft/room | 1,000 | 100% |
| Retail | | 400 | 89% |
| Industrial | | 500 | 80% |
| Public/Institution | | 830 | 100% |
| Hospitality | | 500 | 100% |
| Mixed-Use | | 500 | 95% |

Source: DC Office of Planning

10 RESIDENTIAL

Figure 2: Residential Occupancy Rates and Persons per Household

| | | Persons per occupied unit | | |
|---------------|-----------|---------------------------|---------|--------|
| | Occupancy | Ownership | Unknown | Rental |
| Single Family | 97% | 2.580 | 2.663 | 2.746 |
| Multi-Family | 95% | 1.468 | 1.651 | 1.833 |

Source: U.S. Census Bureau and DC Office of Planning

II NATURAL INCREASE

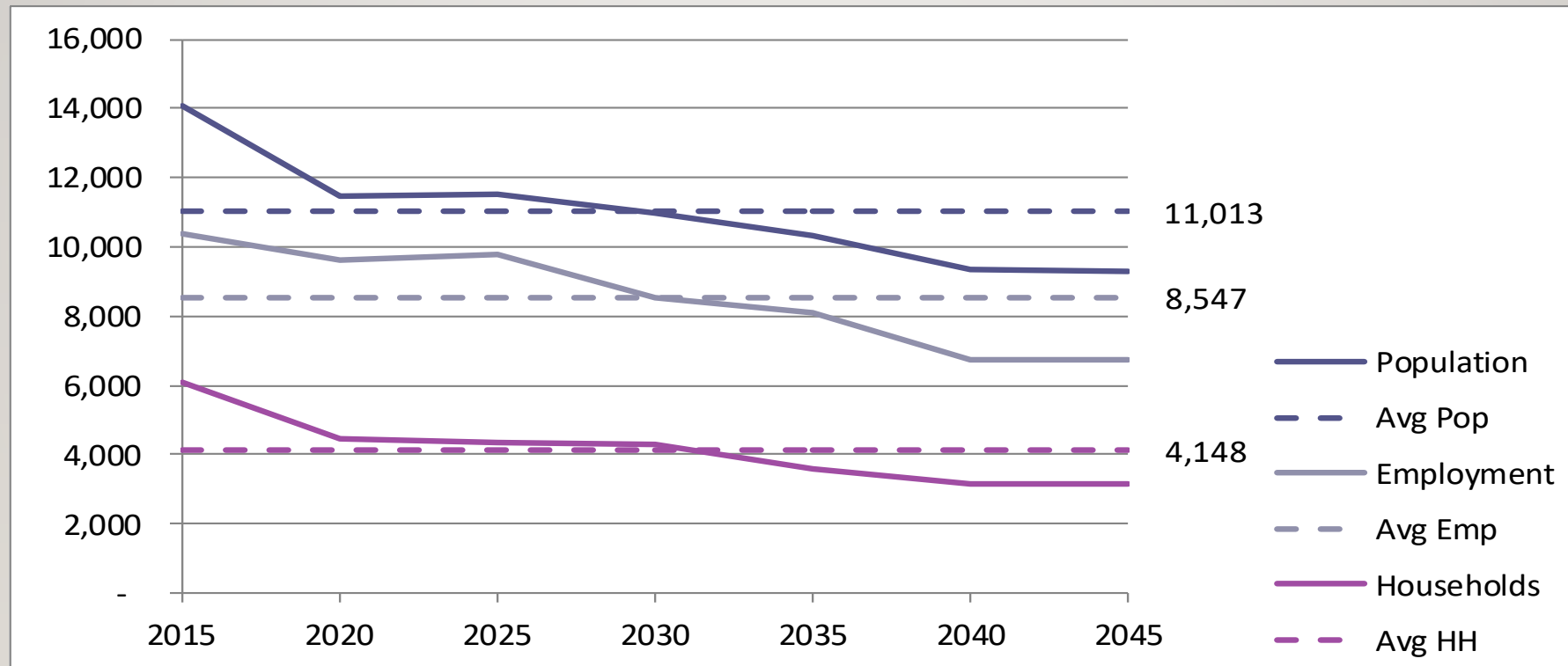
- An estimate of the impact of natural increase (births minus deaths) on the District's population is added to the forecast;
- Natural increase District-wide and for each transportation analysis zone (TAZ) is projected forward to 2045 by applying the actual proportion of the natural increase by area that occurred during the 2010-2014 period for the earlier forecast years and at a reduced rate for the later years.

12 FORECASTING – SECOND PERIOD

- The second major stage of the forecast starts with the 2035 interval and runs to 2045. This stage relies on a land use capacity analysis that identifies vacant and underutilized parcels throughout the District that do not have proposed development activity tracked as part of the forecast's first stage;
- Potential jobs and households are estimated based on the tables in Figures 1 & 2 and assigned to each vacant/underutilized parcel identified, based on the parcel's split of zoning constraints between permitted residential and non-residential uses;
- To allocate the underutilized capacity between the remaining forecast intervals, OP applies a decreasing marginal trend over the forecast period;
- The decreasing marginal trend results in a portion of growth allocated to New Neighborhoods and vacant/underutilized capacity during the 2025-2035 period and the remainder evenly split over the 2035-2040 and 2040-2045 intervals.

13 GROWTH RATES

Figure 3. Average Annual Household, Population, and Job Growth Rates: 2015 - 2045



Source: DC Office of Planning

14 REVIEW AND VALIDATION

- The decreasing marginal trend mentioned above and shown in Figure 3 is reviewed and compared to historic growth patterns;
- OP undertakes reviews and discussions with the DC Office of Revenue Analysis;
- OP reviews national factors and competitive regional supply to validate that the proposed growth is not likely to be either significantly slower or faster;
- OP works with COG to review the forecast and how it fits into their regional econometric growth model.

15 CONTACT INFO

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