Zoned Development Capacity

The Department of Planning and Development utilizes and maintains a development capacity model. This model estimates the amount of new development that could be built in the City by comparing existing land uses, housing units and non-residential square feet to what could be built under current or proposed land use zoning. The difference between potential and existing development yields the capacity for new development. This capacity is measured as the number of housing units, the amount of non-residential square feet and the number of potential jobs that could be added to the existing base numbers.

Information about capacity enables the City to determine the effects of proposed zoning changes, policy revisions and development trends. It also aids in setting and allocating the 20-year growth targets that must be accommodated by the City's Comprehensive Plan, and in understanding the spatial distribution of potential development and its impact on public infrastructure such as roads and utilities. The model is based on land parcels identified by the King county Department of Assessments but results are aggregated for different geographies, such as urban villages or zoning designation across the entire city.

Indefinite Time Period Covered by the Estimates

Development capacity is not a prediction that a certain amount of development will occur in some fixed time period. The capacity estimates do not include a time dimension because they do not incorporate any direct measurement of demand, which would help determine when parcels would be developed. Many parcels in the city today have zoning that allows for more development than currently exists on them, but not all of them are available or have a demand for development. Consider a single-family house in a commercial zone that is occupied by an owner who has no plans to sell. Some day that land will change hands and the new owner may be more willing to develop the parcel to its full development-potential, but that timing in unknown and impossible to predict.

Aside from the relatively small number of parcels that have either active or pending development permits, there is no way to know when actual redevelopment will happen. For the purposes of determining development capacity though, it is assumed within the model that development will eventually occur regardless of market forces. Therefore, development capacity is <u>not</u> a forecast and has no planning horizon. It is simply an estimate of the additional development that could occur under particular land use zoning regulations. This additional development could happen all in one year or not at all depending on the economy, attractiveness to development, or other market conditions. Capacity represents the amount of new growth that could be accommodated. The amount of growth that is expected to occur and that City policy intends to accommodate is established as the 20-year growth targets in the Comprehensive Plan.

The following chart demonstrates the relationships between existing and potential development, development capacity, and 20-year growth targets.
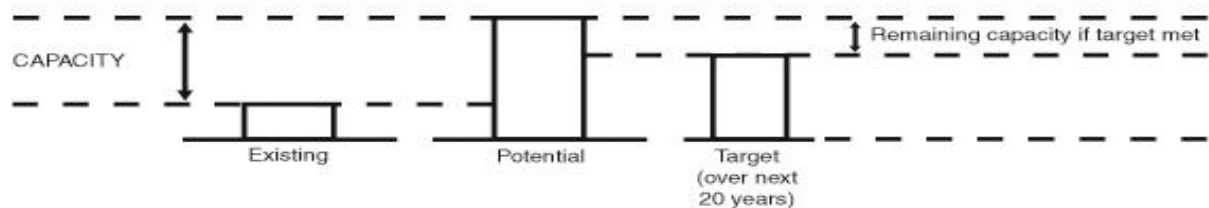
Development Capacity Analysis

The actual level of development activity that occurs is a function of a variety of future factors, many of which are beyond our ability to predict or influence. These factors include such things as the future demand for a particular type of development (such as for townhouses, high-amenity multifamily or small-unit multifamily), whether the owner of any particular land is willing to sell or redevelop it, the financial feasibility of developing the land, and the intensity of development when it does occur. Other factors, such as the relative attractiveness of certain areas for living and commerce, and the relative densities allowed by the existing land use zoning, can cause some areas to be developed earlier or later than others. No one can predict with certainty the total effect of all these factors on the choices made by land developers.

These limitations notwithstanding, the City has created a model that identifies parcels that have the potential to develop and to estimate the amount of development that could occur. The two key determinants in this model are:
1. Available land
2. Land use zoning and the development standards described in the land use code

Available land refers to land that is either vacant or developed sufficiently below the potential allowed by the land use zoning to allow a significant increase in density if it were redeveloped. Land use zoning represents the rules to which new development must adhere including the uses and densities that are allowed.

In its simplest form, an estimate of capacity is the product of:
1. Determining availability of land for development
2. Multiplying the area of that land by the future expected densities assumptions of development zoning allows
3. Determination of what land will redevelop
4. Subtracting the existing development from the potential development

The formulas below summarize the capacity calculations:

Potential Development =
Developable Land Area x Future Density Assumption

Development Capacity =
Potential Development - Existing Development

The City's development capacity estimate is the difference between the amount of development on the land today and the amount that could be built under the current zoning. On vacant land, we only need to estimate what the zoning would permit. For a parcel that already contains one or more buildings, the amount of development in those buildings is subtracted from the total that zoning would allow.

Availability of Land for Development

The first task is to determine the land that is available for development. Seattle's capacity model excludes a number of parcels from the calculations based on ownership, use or land use zoning.   All parcels owned by a public entity—federal, state, county, city, school district, port district—are excluded from the calculations. Parcels used for cemeteries, public and private schools, churches, nursing homes, military bases, public utilities, railroads, hospitals, libraries, law enforcement and that contain landmark

structures are also excluded. All of the land within the major institution overlay (MIO) is excluded; the jobs and housing units that institutions may provide are determined by each institution's master plan and are counted over and above the capacity. In addition, some parcels are excluded based on specific knowledge of unique circumstances.

No land is excluded to represent additional rights-of-way or other public purposes because Seattle's street system is nearly completely laid out, and most facilities to satisfy public purposes are already in place to the point that no significant quantity of land now within private parcels will be needed for these uses. Nor was land excluded from the calculations because of critical area designations (except for parcels that are shown as creeks or streams) since the City's critical areas ordinance does not prohibit development on critical areas and allows clustering to enable the property developer to achieve the same densities on the developable portion of the parcel as would be allowed on the entire parcel.

Parcels not in the categories listed above are considered available for development. Subsequently their redevelopment status is determined through a comparison of existing development to potential future development and classified as developed, vacant, or redevelopable.

Future Density Assumptions
To determine the number of potential housing units or amount of non-residential floor area that could be developed on each parcel, two assumptions are made:
1. Density of housing units to be built
2. Floor Area Ratio (FAR) to determine the non-residential floor area that could be built

Table 1 below shows the equations for calculating potential housing and floor area using the density assumptions.

Residential	Non-Residential
Potential Housing Units = **(Developable Land Area x Expected Floor Area Ratio) ÷ Expected Square Feet per Unit** (mid/high-rise multifamily) **Developable Land Area ÷ Expected Parcel Square Feet per Unit** (single family/low-rise multifamily)	**Potential Building Floor Area =** **Developable Land Area x Expected Floor Area Ratio**

Table 1.

For those zones where the Land Use Code defines maximum density limits, the capacity estimates have, in past practice, assumed that those maximums would be achieved on the parcels that developed. However, examination of historical permitting data has shown that those maximums are not always achieved in all zones. Moreover, not all of Seattle's zones have prescribed minimum or maximum density limits, requiring an analysis to make an assumption of what densities could be achieved.

An analysis of the actual densities that have resulted from development in each different zone from 1996-2005 has led to the creation of a set of "observed" density assumptions. These density assumptions are revised periodically as part of the City's reporting under the Buildable Lands program mandated by the Growth Management Act and are used in capacity analysis related to the Comprehensive Plan. Alternatively, maximum density assumptions, or the maximum densities a zoning category allows, can be used to examine "build-out" scenarios where appropriate.

Determination of What Land Will Redevelop

In a built city such as Seattle, where nearly every parcel already has some building or improvement or use on it, new buildings often come as redevelopment i.e., expansion or replacement of existing buildings. A developer's decision to demolish and replace an existing building - one that may be generating revenue for its owner - involves many considerations, such as whether the land is owned outright, how much revenue the current building brings in, how much it would cost to demolish and replace it, and how much revenue a new structure could generate. There is no way to know about these considerations for all the parcels in the city today, let alone for five, ten, or twenty years into the future.

In place of such detailed knowledge, the City uses three different measures to identify parcels likely to redevelop depending on the type of land use zone:
1. Residential Development Ratio - the existing residential units compared to potential residential units
2. Non-residential Development Ratio - existing building floor area compared to potential floor area
3. Improvement to Land Value Ratio - the value of buildings and other improvements on a parcel compared to its land value

The assumption for assessing developability is that the value of the ratio measure is inversely proportional to the tendency to develop - that is the lower the ratio the higher the probability that the parcel will redevelop. In practice for capacity determination, developability of a parcel is determined by comparison of the appropriate ratios with a predetermined threshold value.

The *residential development ratio* is a straightforward indication of whether a parcel will redevelop. The basic assumption is that over time property owners will attempt to maximize the value of their property by maximizing the number of residential units that can be rented or sold on that property. However, if the number of units currently on-site is close to the total number of potential units that could be developed on the site, the cost of building additional units would exceed the revenue that can be generated by building new units. Therefore in residential zones, a ratio of existing units to total potential units is used to determine if a site is likely to be redeveloped at some point in the future. This measure is called the Development Ratio using Units (DR:UNITS in the model) and is used for single-family and multi-family zones.

The number of potential units on a site is based on the assumed densities. See the discussion labeled "Future Density Assumptions" above for a description of how these densities are selected.

**Development Ratio:Units =
Existing Units / Potential Housing Units**

The *non-residential development ratio* is similar to residential except that it compares the above-ground building square footage of the existing buildings to the potential floor area square footage. This ratio is called the Development Ratio using Square Feet (DR:SQFT) and is used for commercial, neighborhood commercial and Seattle-mixed zones.

**Development Ratio:Sqft =
Existing Building Square Feet / Potential Building Square Feet**

To determine the *improvement to land value ratio* (ILR), the City relies on data from the King County Assessor. Appraisers in the Assessor's office assign two monetary values to a given parcel – one for the land and one for the improvement (structures) on the site. The value of land is an indication of the demand for that land in its "highest and best" use. For vacant land, different values may be assigned to different parcels for a variety of reasons, including that those parcels are inherently more desirable because of location or physical features, or because they are zoned for higher development potential. Similarly, in the case of developed parcels, a land value that is higher than the structure value often indicates that more intense use of the land is possible. This measure is used for downtown and industrial zones.

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Improvement to Land Value Ratio =
Existing Improvement Values / Parcel Land Value

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Again, one cannot know precisely at what point a particular parcel is likely to redevelop, but an analysis of parcels that have been redeveloped in Seattle over the past ten years has provided guidance for the development of thresholds of existing development compared to potential development below which parcels are more likely to redevelop. These thresholds are outlined in the Assumptions section below. The development ratios are compared to the appropriate thresholds (depending on the zone), and a development status is determined for each parcel - developed, redevelopable, or vacant.

<u>**Residential/Non-Residential Split in Mixed-Use Zones**</u>
Seattle's mixed-use zones provide locations for non-residential uses, e.g., retail shops, offices and restaurants as well as space for residential uses, e.g., apartments. Analysis of permitting data has informed assumptions about the "split" between residential and non-residential development in these mixed-use zones. This mix of development can either occur within a single development or as an aggregate of each type of development for a particular zone. These splits are represented in the capacity analysis as percentages of the type of use that, in aggregate for a zone, actually occurred. For example, in a C2-40 zone about 80% of development is non-residential and 20% is residential, as opposed to an NC3-40 zone where development is about 80% residential.

It is important to note that the split between residential and non-residential space applies across a broad area, and may not be relevant on a site-by-site basis. Any particular site or small area may be developed with only residential units, only non-residential uses, or a mix, depending on the market. For the capacity estimates, results derived from the following three assumptions are provided to present a range of potential development in these zones:
1. All development is non-residential
2. All development is residential
3. All development is mixed according to observed proportions expressed as the following:

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Total Development in Mixed-Use Zones =
(Potential Housing Units x Percent Residential) +
(Potential Building Floor Area x Percent Non-residential)

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This mix of residential and non-residential is what is reported as the capacity for parcels in the mixed-use zones.

Appendix

The development capacity model follows the basic steps and assumptions below. Each step is applied at the individual parcel level and the resulting capacity is reported for larger planning areas or other areas of interest as aggregations of the individual parcel information.

Process:

1. Determine developable land area (excluding water and shoreline protected areas of the parcel), primary existing land use, and primary zone (zone covering largest land area of a parcel)
2. Determine total existing residential units, above-ground building square feet, land and improvement value from most recent King County Assessor data
3. Determine potential development, i.e., total residential units and above-ground building square feet allowed for each zone on a parcel based on future expected density assumptions
4. Calculate the Improvement to Land Value Ratio (ILR) as the ratio of improvement value to land value
5. Calculate the Development Ratio (DR) as the ratio of residential units or above-ground building square feet that exist to what could be developed
6. Determine the development status for residential and non-residential development based on existing uses, ownership, and comparison of the DR or ILR to predetermined thresholds; of the different status values listed below, only those determined to be VACANT and REDEV contribute to the capacity estimates
   - DEVELOPED – existing development meets or exceeds the potential development
   - HISTORIC – historic contributing structures in the National Historic Districts
   - LANDMARK – a designated landmark structure is present
   - LUC – existing land use is considered unlikely to develop; listed below in Assumptions section
   - MIO - Major Institution Overlay; development is guided by approved master plans
   - MISSING – no assessor data is available
   - MPC – Master Planned Community zone; development is guided by approved master plans
   - PUBLIC – owned by a public agency
   - RAILROAD – property owned by various railroad companies
   - REDEV - likely to redevelop based on the existing development relative to the potential development
   - TDR – buildings that have transferred development rights
   - UNAVAIL – development type not allowed in a zone; e.g., commercial development in single-family zones
   - UNKNOWN – model is unable to determine a status based on conflicting or non-existing data
   - VACANT – no significant development exists
7. Calculate the adjusted capacity for residential units, non-residential floor area and employment by applying non-residential and residential splits for mixed-use zones and subtracting all existing development
8. For VACANT and REDEV parcels sum up development capacity by zoning category

Assumptions:

1. ILR used in industrial and downtown zones (I, D, IDM, IDR)
   - For D/IDM/IDR zones, If ILR <= .5 , then set development status to REDEV
   - For I zones, If ILR<=.001, then set development status to REDEV
2. DR:UNITS used in single-family and multi-family zones (SF, RSL, L, MR, HR)
   - For SF/RSL zones, If DR < 1, then set development status to REDEV
   - For LR1 zones, If DR <= .67, then set development status to REDEV
   - For LR2/LR3/MR/HR zones, If DR <= .4, then set development status to REDEV
3. DR:SQFT used in commercial and neighborhood commercial zones (C, NC, SM)
   - For C/NC/SM zone, If DR <= .4, then set development status to REDEV
4. Capacity is determined for each zone within a parcel
5. Method to determine if redevelopable, ILR, DR:UNITS or DR:SQFT is determined by the majority zone
6. Round up to nearest unit or square foot in all zones except SF, which is rounded down
7. Allow at least one unit of development on all SF zoned parcels > 1,000 square feet regardless of parcel size
8. DH1, PMM, PSM-245, IDM-65-150, zones are considered built to capacity, excluded from capacity calculations
9. IG1, IG2, IB, IC zones only develop if ILR<=.001
10. Explicit setting of development status for a parcel for reasons related to data errors, local knowledge, one building on multiple parcels, etc.
11. Status set to VACANT if King County Assessor land use codes indicates vacant (LUC=300,301,309,316) and number of units, building gross square feet and building value are all 0
12. Status set to MISSING if there is no geographic (GIS) or attribute (KC Assessor) data available
13. No development allowed:
    - When no zone was assigned
    - Within the shoreline overlay (200' from shoreline) except in IC zones
    - On parcels (or parcel parts) where the developable area < 1,000 sqft
    - On publicly-owned land; includes federal, state, local, public facilities districts, housing authority, community colleges, public universities (identified through taxpayer name)
    - On designated landmarks, historic contributing structures in the National Historic Districts, structures that have transferred development rights (TDR)
    - On property owned by railroad companies (identified through taxpayer name)
    - In MIO zones (major institution overlay) and MPC zones (major planned development); can be separately determined by master plans
    - On developed downtown plats
    - Of condominium buildings
    - Of buildings constructed within the previous 15 years
    - Of nonconforming land uses in SF, LR1, LR2 zones
    - Of certain land uses as determined by King County Assessor land use codes
      - Retirement facilities (49)
      - Residence halls, dorms (56)
      - Nursing homes (59)
      - Driving ranges (142)
      - Marinas (146)

- Golf courses (143)
- Park, public (149)
- Church, welfare or religious services (165)
- Hospitals (173)
- Cemeteries, mortuaries (179)
- Public schools (184)
- Private schools (185)
- Post office (189)
- Utilities- public, garbage, electric (266)
- Historical district, park, billboards (277)
- Open space - current use (326)
- Open space - agriculture use (327)
- Open space - greenbelt - timber use (328)
- Reserve or wilderness area (331)
- Row, utility, road (332)
- Rivers, creek, stream (333)
- Tidelands 1st class (334)
- Tidelands 2nd class (335)
- Lakes fresh water (337)
- Rooming houses (341)
- Fraternity and sorority houses (342)