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DATE: June 21, 2019
TO: Christina Robertson-Gardner, City of Oregon City; Steve Faust, 3J Consulting
FROM: Bob Parker and Matt Craigie, ECONorthwest
SUBJECT: Beavercreek Road Concept Plan - Zoned Capacity Analysis - REVISED

The City of Oregon City contracted ECONorthwest to review and verify previous analyses conducted for the Beavercreek Road Concept Plan. The purpose of the project is to determine if the Beavercreek Road Planning Area—as planned—will have the future zoned capacity to accommodate the Plan's projected number of jobs. In its simplest terms, this analysis is about fit and capacity. The key question is whether the zoning regulations that are being put in place over the Planning Area will actually allow for the 5,000 estimated jobs to occupy future buildings in the area. This analysis does not account for current or projected future market trends; it is exclusively focused on the examination of land use regulations and their implications for job capacity.

Findings

Our analysis shows that the Beavercreek Road Planning Area will have sufficient zoned capacity to accommodate estimated future employment growth. Under current zoning standards, the Planning Area at full build-out will be able to accommodate between 5,700 and 11,700 jobs (Exhibit 1, Rounded). These capacity levels are 15% to 131% more than the targeted 5,000 jobs for the Planning Area. Economic conditions will determine how the area is eventually built out, but zoned capacity is adequate to allow for a range of future job numbers that are at or above desired employment levels as described in the Beavercreek Road Concept Plan.

Exhibit 1. Beavercreek Planning Area, Zoned Capacity.

Sub-District	Maximum Zoned Job Capacity	Zoned Job Capacity with Market Considerations
Main Street	727	352
Mixed Employment Village	2,827	1,399
North Employment Campus	8,169	3,983
Total	**11,723**	**5,734**

Source: ECONorthwest

Our zoned capacity model was built using Oregon City's current zoning standards. Here we present two capacity estimates:

- First, **the maximum job capacity** for the area shows the total number of jobs that could fit in the area under current regulations.

- Second, the lower estimate—**Job Capacity with Market Considerations**—illustrates another interpretation of Oregon City's zoning regulations. In this second scenario, we have further restricted the scale of allowable development by: (1) modeling an underbuilt of total development as a result of insufficient parking areas, and (2) dedicating a higher percentage of area on individual parcels to internal rights of way,

ingress/egress space, and private streets. This is intended to reflect potential market conditions that would reduce the amount of built space, and as a result, the number of employees.

The maximum zoned capacity scenario is a true maximum; meaning that this estimate is modeling the highest density of employment permissible by zoning regulations and standards, without any consideration for how employment areas generally get developed. For example, the maximum scenario assumes over 8,000 jobs in the North Employment Campus area. To accomplish this scale of development would require the development of acres upon acres of four-story office buildings that have relatively little parking area. Although permissible, this scenario is unlikely to occur and therefore is a poor estimate of the actual zoned capacity of the Planning Area.

The more restrictive scenario presents a situation where development scale is linked to our observations of the density of other similar industrial areas across the Portland region and therefore better reflects what one could expect to happen in the Beavercreek Planning Area. For this scenario, we have adapted parking ratios to those generally demanded in the marketplace and deducted some internal area of parcels for circulation space and other rights of way. The large size of some parcels, especially inside the North Employment Campus (NEC), would warrant these internal spaces dedicated to transportation flow and parking.

For example, many flex-industrial buildings—a desired development type for the NEC—are two story buildings with multiple tenants. These "flex" buildings are built to flexibly adapt to the needs of different tenants. They are built with adaptable internal build-outs (e.g. varying amounts of office and warehouse space) and feature enough parking for employees as well as truck loading/unloading, circulation, and outdoor storage. Therefore, it is common to see flex buildings with not just enough parking and circulation space for employees that are coming and going from work, but to accommodate a wider variety of truck space, outdoor storage space, and general circulation space. In our model, we reflect these common observations by both increasing the parking ratio and reducing the number of stories for buildings in the NEC. These changes bring the potential development scale for the NEC in line with the maximum build-out observed in other industrial areas of the region.

With these changes, the restrictive—and more realistic—scenario shows a zoned capacity of the Planning Area to be reduced from the maximum scenario (11,723 down to 5,734). Despite the reduction, there still is adequate space to accommodate the 5,000 projected jobs.

Economic and market trends will inform the type, scale, and demands of future development of the Beavercreek Planning Area. Whatever development does eventually get built in the area, our analysis shows that zoning regulations and standards will allow for enough developable space for the desired amount of employment.

Background

In 2008, Oregon City contracted the consulting firm Otak, in collaboration with several consultants (including ECONorthwest), to develop a concept plan[1] for a 453-acre site in the southeast area Oregon City. The Plan envisioned a diverse mix of uses, organized by five sub-districts (see Exhibit 2).

Exhibit 2. Land Use Sub-Districts for Beavercreek Road Concept Plan
Source: Beavercreek Road Concept Plan, Envision a Complete and Sustainable Community, 2008.
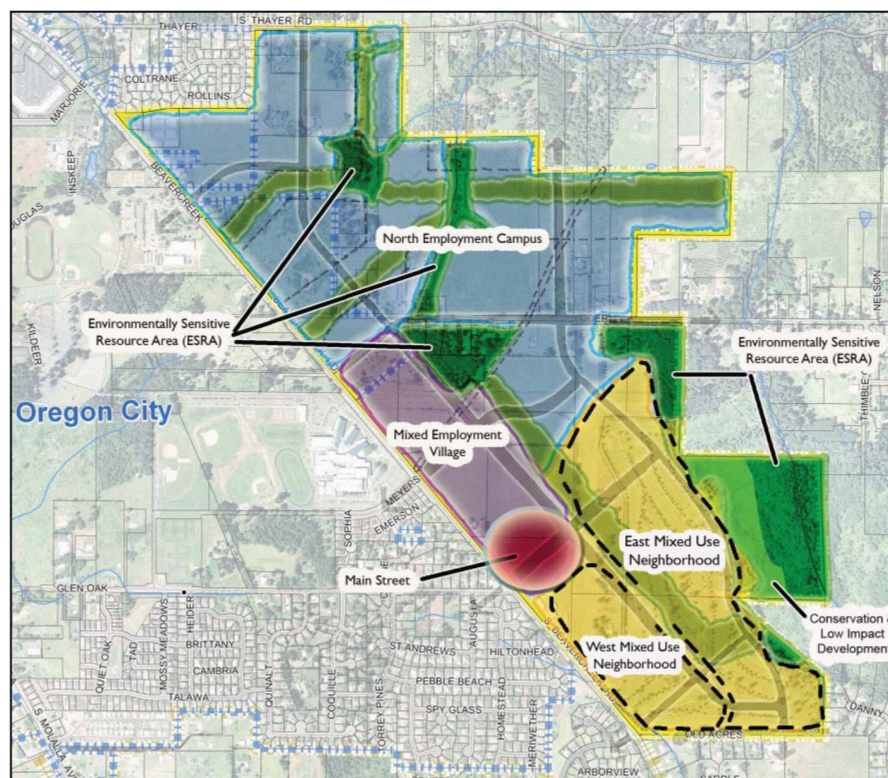
The five subareas are summarized as follows:

1. **North Employment Campus (NEC)** allows clean industries, offices servicing industrial needs, light industrial uses, research and development, and large corporate headquarters.

2. **Mixed Employment Village (MEV)** allows retail and offices (including civic and residential uses).

3. **Main Street (MS)** allows small scale commercial and mixed-use services.

4. **West Mixed-Use Neighborhood (WMU)** allows live/work units, mixed use buildings, limited commercial uses, and—to a larger extent—housing.

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[1] Beavercreek Road Concept Plan, Envision a Complete and Sustainable Community, 2008.

5. **East Mixed-Use Neighborhood (EMU)** primarily allows housing.

At present, Oregon City is revisiting the concept plan as a step toward the Plan's implementation. The City has asked several consultants to review and analyze select parts of the concept plan to verify the veracity of its underlying analyses. A key aspect of this effort is to understand whether the Planning Area will have the zoned capacity to accommodate the Plan's stated number of future jobs. ECONorthwest was assigned this task. To answer this key question of zoned capacity, we reviewed the findings of the 2008 work and conducted additional analyses. Our approach and a description of our analysis is outlined in the next section.

Approach

Our approach to this analysis had a few steps. These included:

- **Collecting and verifying data.** The first step involved gathering applicable data from the Plan, from the City, and other sources. Employment projections come directly from The Plan. The Plan identified an estimated capacity for approximately 5,000 jobs (for reference, the output table from the Plan is presented in Appendix A).

  We also compiled an organized list of Oregon City's development codes, standards, and regulations from the City's current municipal code. These regulatory standards were used to create our zoned capacity model.

- **Developing a zoned capacity model.** Using Oregon City's development code and standards, we generated a catalogue of zoning requirements and limitations for each zoning designation that comprises the five sub-districts of the Planning Area. With this information, we developed a model that calculates the maximum job capacity for each sub-district. To calibrate the model to likely future outcomes, we relied on planning and development assumptions taken from our observations of similar fully built-out areas around the Portland Metropolitan region.[2]

- **Reconciling zoned capacity model output with future employment projections**. This step formed the central part of our analysis. In this step, we used the output of the zoned capacity model—the job capacity for each subarea of the Planning Area—and matched those outputs to future employment projections.

  A more detailed description of our analysis is presented in the next section.

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[2] Key assumptions for this analysis, include: actual parking ratios, percent of parcels that achieve full build-out, common building to land ratios, among others.
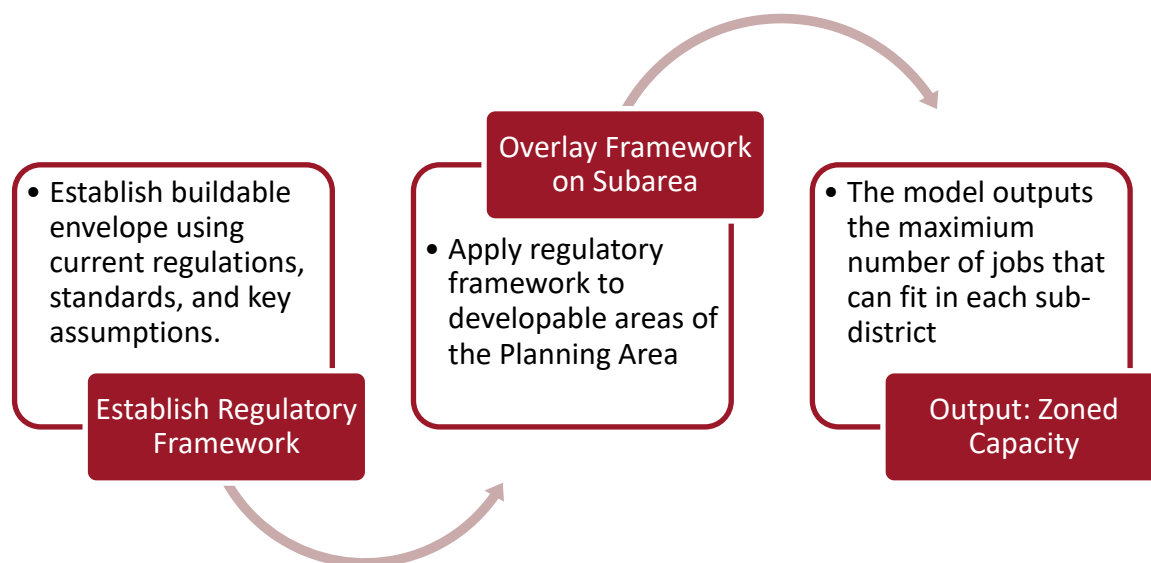
Description of Zoned Capacity Analysis

The Model

To understand the future capacity of jobs in the Beavercreek Road Planning Area, we built a model that mimics zoning regulations and standards for the expected land use zones to be applied to the Planning Area sub-districts. The model works by taking key inputs and assumptions about the regulatory framework that will govern land uses in the Planning Area and overlaying them across the developable land of the area. The output of the model is the maximum zoned capacity for jobs within the Planning Area (See Exhibit 3).

Exhibit 3: Zoned Capacity Model Process
Source: ECONorthwest.

- Establish buildable envelope using current regulations, standards, and key assumptions.

Establish Regulatory Framework

Overlay Framework on Subarea

- Apply regulatory framework to developable areas of the Planning Area

- The model outputs the maximium number of jobs that can fit in each sub-district

Output: Zoned Capacity

Key Model Inputs and Assumptions

To arrive at an accurate understanding of the zoned capacity for jobs of any to-be-developed area requires a large set of inputs and assumptions. For this type of analysis, the type of inputs and assumptions are related to regulations and standards that will guide the development of new buildings and their supportive elements (e.g. parking). Some inputs are rigid and unlikely to change, such as maximum building heights or setbacks. Assumptions are more qualitative and require specialized knowledge about aspects of how real estate gets developed. Inputs and assumptions also have a varied impact on the output of the model. Some, like parking ratios, have a strong influence on the model's output. Others have less of an impact. Below we describe inputs and assumptions that have a major impact on the model's output.

- **Dimensional standards.** Dimensional standards define the maximum "box" that a building can fill on a parcel. These standards are determined through setbacks, maximum building heights, landscaping requirements, and other restrictions.

  Source: City of Oregon City Development Code.

- **Employment density.** This assumption describes the relationship between build-area (area inside buildings) and the number of jobs that fill those spaces. This assumption is typically described as jobs per square feet of building area. This is a key metric for this analysis. The smaller the number, the higher the job density. Larger numbers mean fewer jobs per building area, and therefore fewer jobs overall.

  Source: Metro Employment Density Study, ECONorthwest.

- **Parking ratios.** The amount of automobile parking that is available for a new development is a key factor in determining its viability. Whether capped by regulations or demanded by the market, new developments need a certain amount of parking to attract funding and become economically successful land uses. Most cities, Oregon City included, provide regulations about the minimum and maximum amount of parking for new developments. Sometimes these regulations are perceived to be out of sync with what the real estate market demands. This can happen when urban, transit served developments are required to have "too much" parking. Or when suburban areas with little accessibility do not have sufficient land for necessary parking to support new development.

  In our observations of real estate development, one of the primary reasons that development projects get "under-built", or do not achieve the building height or scale otherwise permissible by development regulations, is too little provision of on-site parking. For this analysis, we have used Oregon City's parking regulations as a general guide for the amount of parking that will be required to accompany new developments in the Planning Area.

  Source: City of Oregon City, ECONorthwest.

- **Parcel size and building to land ratios.** The Beavercreek Planning Area of tomorrow is expected to look remarkably different than it does today. As it develops, property owners will sell to developers who, in many cases, will aggregate several parcels of land to create a "developable parcel" for their specific desired land use. To understand what size these future parcels may be and to what extent they will be covered with a building footprint, we observed several areas of the Portland region that contain similar land uses to those proposed for the Planning Area. These observations, combined with our knowledge of specific types of development elsewhere, formed our assumptions for future parcels sizes and building to land ratios.

  Source: ECONorthwest.

- **Maximum build-out and "under-build".** Each developable piece of land has an invisible envelope or "box" that forms the vertical area in space that a building can

occupy. This box is determined by the zoning regulations and standards that govern the land use of that property. Building to full capacity would mean that this box is entirely filled with building area. Many times, developers "under-build" or chose to not fully take advantage of all of the vertical buildable space available to them. In an economic sense, it would be advantageous for a developer to build as much building area as she could lease or sell. If some of this building area does not contribute economically to her pro forma or if it is hard to lease or sell, she may choose to build a smaller building. As stated in the parking ratios description, we commonly observe that developers chose to under-build their properties when they are unable to secure access to a sufficient level of parking.

For this analysis, we have assumed that many of the future developable parcels will under-build for lack of parking or other reasons. This is in-line with our observations of developed areas that are similar to the Planning Area in other parts of the Portland region.

- **Source**: ECONorthwest

Key Data

This analysis is focused on one key question: Will the future regulatory environment of the Beavercreek Planning Area allow enough buildable area to accommodate the projected number of future jobs for this area. To answer this question, we relied upon data from the several sources. Key data to this analysis are as follows:

- **Projected Jobs for the Planning Area.** We have relied on the projected number of jobs for the Beavercreek Planning Area as stated in The Plan. The Plan identified an estimated capacity for approximately 5,000 jobs (for reference, the output table from the Plan is presented in Appendix A).

  This number of jobs—5,000—is a key data point for this work. It is the number of jobs that we are trying to fit into the Beavercreek Planning Area.

- **Planning Area Size and Developable Acres.** The Planning Area is approximately 449 acres in total size (gross size). Per the Plan, of this 449, there are 241 net developable acres. The difference between 449 and 241 includes roads, easements, wetlands, and other undevelopable lands.

Together the (1) projected job numbers, and (2) the developable area within the Planning Area form the two key data points for this analysis. These data can be further divided by sub-district of the Planning Area (See Exhibit 4). This is an important point; each sub-district has its own employment projections and will have its own zoning regulations.

Exhibit 4. Beavercreek Planning Area Sub-Districts: Estimated Jobs and Net Areas (Acres)[34]
Source: City of Oregon City, ECONorthwest.

Planning Area Sub-District	Estimated Jobs	Net Developable Acres
North Employment Campus (NEC)	3,678	132
Mixed Employment Village (MEV)	1,139	26
Main Street	219	7
West Mixed-Use Neighborhood	15	12
East Mixed-use Neighborhood	21	65
Totals	**5,073**	**241**

Findings

See the first page of this report for a discussion of our findings.

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[3] Rounding of numbers may result in approximate totals. *Note: The acreage estimates do not exactly align with those in Exhibit 6. Acreages in Exhibit 6 have been reevaluated since the time of The Plan. In our analysis, we are using the latest size estimates provided by the City of Oregon City.*

[4] We concentrated our analyses on the three sub-districts with significant employment projections. The mixed-use neighborhoods have been excluded from our analyses.

Appendix A. Employment Estimates, 2008

The Beavercreek Road Concept plan estimated employment capacity at approximately 5,000 jobs (33 jobs per net acre).

Exhibit 5. Employment Estimates, Beavercreek Road Planning Area
Source: Beavercreek Road Concept Plan, Envision a Complete and Sustainable Community (pg. 42), 2008.

Land Use Category	Hybrid Gross Acres	Hybrid Net Acres*	FAR/Acre**	SF/Job**	# of Jobs***	Avg. Units/Acre	# of Units+
North Employment Campus (adjusted gross acreage)	149	127	0.3	450	3,678		
Mixed Employment Village	26	21	0.44	350	1,139		
Main Street****	10	8	0.44	350	219	25	100
West Mixed Use Neighborhood	22	18			15	22	387
East Mixed Use Neighborhood	77	62			21	8.7	536
Total # of Jobs					5,073		
Total # of Housing Units							1,023
Total Acres of Developed Land++	284	235					

*For Hybrid - Net acres equals gross acres minus 15% for local roads and easements in Employment. Mixed Employment, Mixed Use, and residential areas assume 20% for local roads and easements

* *Based on Metro 2002-2022 Urban Growth Report: An Employment Land Need Analysis. Includes total on site employment (full and part time). Mixed Employment FAR and job density reflects a mix of office, tech/flex, and ground floor retail.

***Number of Jobs in Employment, Mixed Employment, Mixed Use calculated by multiplying total acres by the FAR; Converting to square feet; and dividing by number of jobs/square foot. Jobs in residential areas (Work at Home Jobs) estimated at 4% (potential could be as high as 15%).

**** Mixed Use land use assumes 50% of acreage devoted to commercial uses and the remaining 50% devoted to vertical mixed use.

+Number of units calculated by multiplying total net acres of residential land use by average units per acre

++Includes 50% of useable power line corridor (26 acres total) as part of developed land (included in Employment land area)

+++Does not include powerline corridor acreage as part of developed land