Agenda

- Stakeholder workshop summary
- Discuss potential updates to the buildable lands methodology
- Next steps
  - Subcommittee Meeting 4
  - SCT Briefing
Stakeholder workshop summary

- Held on November 25, 2019
- Attendees:
  - 23 stakeholder representatives
  - 11 County staff members
- Presentation and small-group discussion
Stakeholder workshop key concerns

- Market factor should account for different geographies, housing types, and proximity to jobs.
  - Consider lower market factors for some high demand areas and/or housing types.
- Infrastructure gaps are difficult to readily identify at this stage; however, existing gaps are usually resolved over 20-year planning period.
Stakeholder workshop key concerns [continued]

- Lack of coordination with other local GMA planning requirements and potentially conflicting timelines with the BLR.

- GMA and policy increasingly places demand in higher density areas and development types but much of Snohomish County’s market is for lower density, detached housing units.
Land Classification Analysis
Approach

- Review existing methodology for defining land classifications.
- Analyze alternative land classifications to better assign developable lots.
- Goal is to create methods/processes to better identify parcels that might develop.

- Two Approaches (more than one way to do this)
  - Conditional Logit Model (econometric)
  - Threshold Tests (brute force)
  - Approaches are complementary.
Existing land classification scheme reasonably reflects actual development

- Largest shares of development coming from lands classified as “developable”
- Potential improvement in limiting development on “constant” and “partially developed”
Results show potential to better assign land classification types

- Able to identify key parameters that predict development
- Use model parameters to understand trade-offs in threshold setting and land classification (developable or not-developable)
- Able to further refine tests for partially developed
Logit Model Approach

- A type of regression model
- Explains the relationship of individual characteristics to probability of development
- Model nicely fits the buildable lands methods and conditions
  - A parcel has many characteristics
  - Methods parameterize parcel characteristics and sets threshold determinations
  - Parameters and thresholds determine how land is classified (e.g. vacant, partially-used, redevelopable, constant)
Land Classification Tradeoffs

Logit model allows us to understand how the likelihood a parcel develops given:
- Unique characteristics
- Land use type

Possible to overstate capacity
Not likely to develop
Possible to understate capacity
More likely to develop

Parcel conditions

Probability that parcel develops
Findings (Single Family)

- Logistic regression variables:
  - Gross buildable acres
  - Land value
  - Improvement value
  - Improvement to land value ratio
  - Subdividable lot identification
  - Lots identified as constant

- All variables were statistically significant
- Gross buildable acres variable was strongest predictor, and more likely to develop as acres increased
- As improvement value and ILR increased, lots were less likely to develop
Findings (Single Family)

- Trade off: maximize constant percentage from “non-developed” while minimize constant percentage from “developed”
- “Sweet-spot” at conditions at 10\textsuperscript{th} percentile predictive of development

<table>
<thead>
<tr>
<th>Percent of Predicted Development</th>
<th>Impr. Value</th>
<th>Impr. Value/Land Value</th>
<th>Vacant Threshold</th>
<th>% of non-developed parcels labeled:</th>
<th>% of developed parcels labeled:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant</td>
<td>Partially Used</td>
<td>Redevelopable</td>
<td>Vacant</td>
<td>Constant</td>
</tr>
<tr>
<td>95</td>
<td>129,600</td>
<td>1.25</td>
<td>9,900</td>
<td>55% 16% 22% 7%</td>
<td>4% 66% 3% 27%</td>
</tr>
<tr>
<td>90</td>
<td>128,000</td>
<td>1.21</td>
<td>9,400</td>
<td>56% 16% 21% 7%</td>
<td>4% 66% 3% 27%</td>
</tr>
<tr>
<td>75</td>
<td>123,500</td>
<td>1.10</td>
<td>8,300</td>
<td>59% 16% 18% 7%</td>
<td>4% 66% 3% 27%</td>
</tr>
<tr>
<td>50</td>
<td>117,900</td>
<td>0.93</td>
<td>6,700</td>
<td>64% 16% 13% 7%</td>
<td>5% 66% 3% 27%</td>
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<tr>
<td>25</td>
<td>123,250</td>
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<td>7,900</td>
<td>61% 16% 16% 7%</td>
<td>4% 66% 3% 27%</td>
</tr>
<tr>
<td>10</td>
<td>94,900</td>
<td>0.56</td>
<td>2,100</td>
<td>75% 16% 2% 6%</td>
<td>7% 66% 1% 27%</td>
</tr>
<tr>
<td>5</td>
<td>68,800</td>
<td>0.29</td>
<td>600</td>
<td>77% 16% 0% 6%</td>
<td>7% 66% 0% 27%</td>
</tr>
</tbody>
</table>
Findings (Single Family) – illustration of the trade-off

Land Classification: Logit Model

Want to keep the level of “developable” and developed high

Want to keep the level of constant and not developed high

Same results as table in previous slide
Similar findings for multifamily, commercial, and industrial

Ability to include additional variables – most likely candidate is gross buildable acres (results not shown for this model)

All results would need to be inflation adjusted for nominal 2012 values (logit and threshold approaches)
Threshold Test Approach

- Use the existing methodology for land classification and see if there are better thresholds to change how parcels are binned.

Each filter is a threshold which can change the way a parcel is classified.
Eight Different Thresholds in Baseline Test (existing methods)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Threshold</th>
<th>Classification</th>
<th>Count (example)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacant Improvement Value</td>
<td></td>
<td>Constant</td>
<td>10</td>
</tr>
<tr>
<td>Single Family Improvement Value</td>
<td></td>
<td>Redevelopable</td>
<td>23</td>
</tr>
<tr>
<td>Single Family Improvement to Land Value</td>
<td></td>
<td>Partially-Used</td>
<td>17</td>
</tr>
<tr>
<td>Multi-family Improvement to Land Value</td>
<td></td>
<td>Vacant</td>
<td>30</td>
</tr>
<tr>
<td>Multifamily Building Footprint</td>
<td></td>
<td>Special</td>
<td>40</td>
</tr>
<tr>
<td>Other Improvement to Land Value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Low Parcel Utilization Rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Normal Parcel Utilization Rate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A Test will test all 8 thresholds, compare the results to Baseline for performance
Tests are scored on their ability to better “sort” parcels into land classification bins

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Threshold</th>
<th>Classification</th>
<th>Count (example)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacant Improvement Value</td>
<td><img src="image1" alt="Threshold" /></td>
<td>Constant</td>
<td>2</td>
</tr>
<tr>
<td>Single Family Improvement Value</td>
<td><img src="image2" alt="Threshold" /></td>
<td>Redevelopable</td>
<td>33</td>
</tr>
<tr>
<td>Single Family Improvement to Land Value</td>
<td><img src="image3" alt="Threshold" /></td>
<td>Partially-Used</td>
<td>12</td>
</tr>
<tr>
<td>Multi-family Improvement to Land Value</td>
<td><img src="image4" alt="Threshold" /></td>
<td>Vacant</td>
<td>36</td>
</tr>
<tr>
<td>Multifamily Building Footprint</td>
<td><img src="image5" alt="Threshold" /></td>
<td>Special</td>
<td>41</td>
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<tr>
<td>Other Improvement to Land Value</td>
<td><img src="image6" alt="Threshold" /></td>
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<tr>
<td>Other Low Parcel Utilization Rate</td>
<td><img src="image7" alt="Threshold" /></td>
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<tr>
<td>Other Normal Parcel Utilization Rate</td>
<td><img src="image8" alt="Threshold" /></td>
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<td></td>
</tr>
</tbody>
</table>

*Note: The diagram shows the classification of parcels based on parameter thresholds with examples of count and reclassification.*
We generate 4 million “tests” with different combinations of thresholds across the parameters.

Compare results to Baseline counts (current BLI scheme), resample and test again.

Snohomish County Validation Study

Too many to do without more computing power

Sample and find clusters of “good” tests

Sample again within “good” tests

Highlighted Test

Next slides show one test as an example
Land Classification: Threshold Tests

Findings:

- We find tests that have parameters that better sort parcels into land classifications
  - They reduce the number of constant parcels experiencing development
- Results for parameters and thresholds are shown in the table below.

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Vacant Improvement Value</th>
<th>Single Family Improvement Value</th>
<th>Multi Family Improvement to Land Value</th>
<th>Building Footprint</th>
<th>Commercial/Industrial/Mixed Use Improvement to Land Value</th>
<th>Parcel Utilization (low use)</th>
<th>Parcel Utilization (moderate use)</th>
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<tbody>
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<td>BASELINE</td>
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<tr>
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<td>0.25</td>
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<td>1.0</td>
<td>0.25</td>
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<tr>
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<td>0.4</td>
<td>0.5</td>
<td>0.25</td>
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<tr>
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<td>0.5</td>
<td>0.25</td>
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<tr>
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<td>0.25</td>
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<td>1.25</td>
<td>0.4</td>
<td>1.0</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Results for next slides compare this test to baseline
How do these parameters re-sort parcels from the county’s ad-hoc true-up process?
Performance compared to current land classification (single family results)

- Large proportion of partially used reclassified as redevelopable
- Of the parcels that developed, 87 were constant. They are matched or reclassified by the distribution in the chart.

Classifications if Pending were not used. Mostly developable types
Land Classification: Threshold Tests

- How do these parameters re-sort parcels from the county’s final land classifications?
- Performance Compared to current land classification (single family results)

Large proportion of partially used reclassified as redevelopable

Classifications if Pending were not used. Mostly developable types

Of the parcels that developed, 87 were constant. They are matched or reclassified by the distribution in the chart.
Alternative analytic approaches show incremental performance gains relative to the 2012 BLI baseline

Ability to make performance gains in all land classifications types

Work with the county on using logit model results to complement threshold test schemes
Market Factors
Approach

- Identify study areas in different geographies in the County that largely built out over the past nearly 20 years (during the 2001-2019 period)
- Analyze remaining unused capacity to test market factor assumptions based on land status classifications in the 2002 BLR.
- Determine percent of additional capacity identified in the 2002 BLR that did not develop.
- Compare to existing market factor methodology.
Market Study Area #1 (SWUGA)
Market Study Area #1 (SWUGA)
Findings: Market Study Area #1 (SWUGA)

- Vacant parcels: 6% of estimated additional housing unit capacity did not develop.
- Under-utilized parcels (partially-used or redevelopable): 10% of estimated additional housing unit capacity did not develop.
- Both results were lower than the market factor assumptions (15% and 30%, respectively).
Market Study Area #2
(Stanwood UGA, Cedarhome Area)
Findings: Market Study Area #2
(Stanwood UGA, Cedarhome Area)

- Vacant parcels: 12% of estimated additional housing unit capacity did not develop.
- Under-utilized parcels (partially-used or redevelopable): 16% of estimated additional housing unit capacity did not develop.
- Both results were lower than the market factor assumptions (15% and 30%, respectively).
- Results were higher than the study area in the SWUGA.
Infrastructure Gaps
Approach

- Completed case studies for areas with potential infrastructure gaps.
- Drafted potential updates to the current methodology to address new guidance for addressing infrastructure gaps.
Findings

- Most infrastructure gaps are likely to resolve in the planning period.
- Assuming reduced capacity or reasonable measures due to infrastructure gaps requires adequate rationale.
- Jurisdictions may identify infrastructure gaps at different parts of the BLR process.
**Infrastructure Gaps**

<table>
<thead>
<tr>
<th>1. Identify potential infrastructure gap</th>
<th>2. Assess factors</th>
<th>3. Provide rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Draft map review with local jurisdictions</td>
<td>• Length of lack of urban development</td>
<td>• Infrastructure gap will (or will not) be addressed in planning period</td>
</tr>
<tr>
<td>• Results of BLR show unmet capacity or growth target</td>
<td>• Information in recent comprehensive plan or facilities plans</td>
<td>• Infrastructure gap is not the factor affecting capacity or growth patterns (e.g., market or other factor)</td>
</tr>
<tr>
<td></td>
<td>• Likelihood of development within the planning period</td>
<td>• Sufficient evidence for reduced capacity or application of reasonable measure to address the infrastructure gap</td>
</tr>
</tbody>
</table>
Reasonable Measures
Approach

- Review Guidance recommendations on updates to reasonable measures program.
- Modify existing matrix to identify scale of impact of each measure and categorize measures by issue.
- Suggest additional measures.
Findings

- Scale of impact helps determine whether more than one reasonable measure is necessary.
- Jurisdictions shall implement reasonable measures that are potentially sufficient to remedy the identified issue.
- Implementation of reasonable measures may consider regional coordination and partnership, to better align with Regional Growth Strategy.
Evaluative criteria to help determine recommended updates to the methodology, the existing method and alternatives include:

- Ease of implementation
- Availability of data
- Alignment with DOC Guidance
- Empirical evidence
- Draft recommended methodology updates
- Subcommittee meeting 4
  - Currently scheduled for January 28, 2020
- SCT Briefing (February)