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TECHNICAL MEMORANDUM

To: City of Astoria

From: Julia Reisemann, Ian Maher, and Steve Faust, 3J Consulting

Date: May 12th, 2025

Project: **Clatsop County Housing Inventory**
RE: **Methodology for the Astoria Buildable Lands Inventory**

Introduction

This memorandum describes the methodology and results of the residential Buildable Lands Inventory (BLI) for the City of Astoria. This analysis supports the Clatsop County Housing Inventories project. The BLI analysis uses the most current Geographic Information Systems (GIS) data available for the City of Astoria. This project is funded by Oregon general fund dollars through the Department of Land Conservation and Development. The contents of this document do not necessarily reflect the views or policies of the State of Oregon.

Regulatory Basis

This inventory is consistent with Oregon's statewide requirements for Goal 10 and its administrative rule (OAR 660-008). In accordance with OAR 660-008-0005 (2), the BLI includes an estimate of residential buildable lands within Astoria's Urban Growth Boundary (UGB) to determine the supply of land available to meet housing needs.

Buildable Lands Inventory Methodology

The objective of the BLI is to determine the amount of developable land available for future housing within the UGB. The steps taken to perform this analysis are as follows:

1. Generate a residential land base using zoning and comprehensive plan designations.
2. Classify land into categories identifying their development status. Separate lands if they can be developed ("Vacant" and "Partially Vacant") or not ("Developed" and "Other").
3. Identify and calculate constraints that reduce the gross buildable acres of future development.
4. Inventory results and accounting for needed public facilities.

Step1: Generate Residential Land Base

The residential land base reflects Astoria's current zoning categories as approved by City of Astoria staff.

Properties within the residential land base include the following base zone classifications listed in order of decreasing density (see Figure 1):

- C4 - Central Commercial Zone
- C3 - General Commercial Zone
- C1 - Neighborhood Commercial Zone
- FA - Family Activities Zone
- HR - Hospitality/Recreation
- LS - Local Service
- AH-MP - Attached Housing/Mill Pond
- AH-HC - Attached Housing/Health Care Zone
- S2 - General Development Shorelands Zone
- S2A - Tourist-Oriented Shorelands Zone
- R3 - High Density Residential Zone
- R2 - Medium Density Residential Zone
- R1 - Low Density Residential Zone

The classifications have been kept consistent throughout the analysis. The city has multiple overlay zones that are not included within the GIS analysis. There are several overlays within different development zones throughout Astoria, including the Urban Core, Union Town, Civic Greenway, Gateway, and Bridge Vista overlays. Overlay zones in the City's municipal code include:

- Flood Hazard Overlay
- Tsunami Hazard Overlay
- High Risk Landslide Areas Overlay- identifies high risk areas utilizing DOGAMI data
- Sensitive Bird Habitat Overlay- intended to protect a small area of Blue Heron habitat in the southeastern part of the city
- Urban Core Overlay
- Union Town Overlay
- Civic Greenway Overlay
- Neighborhood Greenway Overlay
- Gateway Overlay
- Bridge Vista Overlay

Figure 1 shows all zones within the City of Astoria as identified by the GIS layer provided by City staff. The figure does not include the overlays mentioned above.

The perimeter of the city is mostly zoned as commercial and mixed use along US-101/30 in the north and US-202 in the south. Between these strips of commercial land is a core of residential land in the interior. A large portion in the southeast is hilly forest land. Tongue Point, a peninsula in

the northeast part of the UGB, is inside the UGB but outside the city limits and is protected by shoreland zoning. Areas of the city limits that extend into the Columbia River and other water bodies are designated as one of several aquatic zones. However, most of the areas on land themselves are zoned as either commercial or residential. The majority of commercial zones in Astoria allow for residential or mixed-use development.

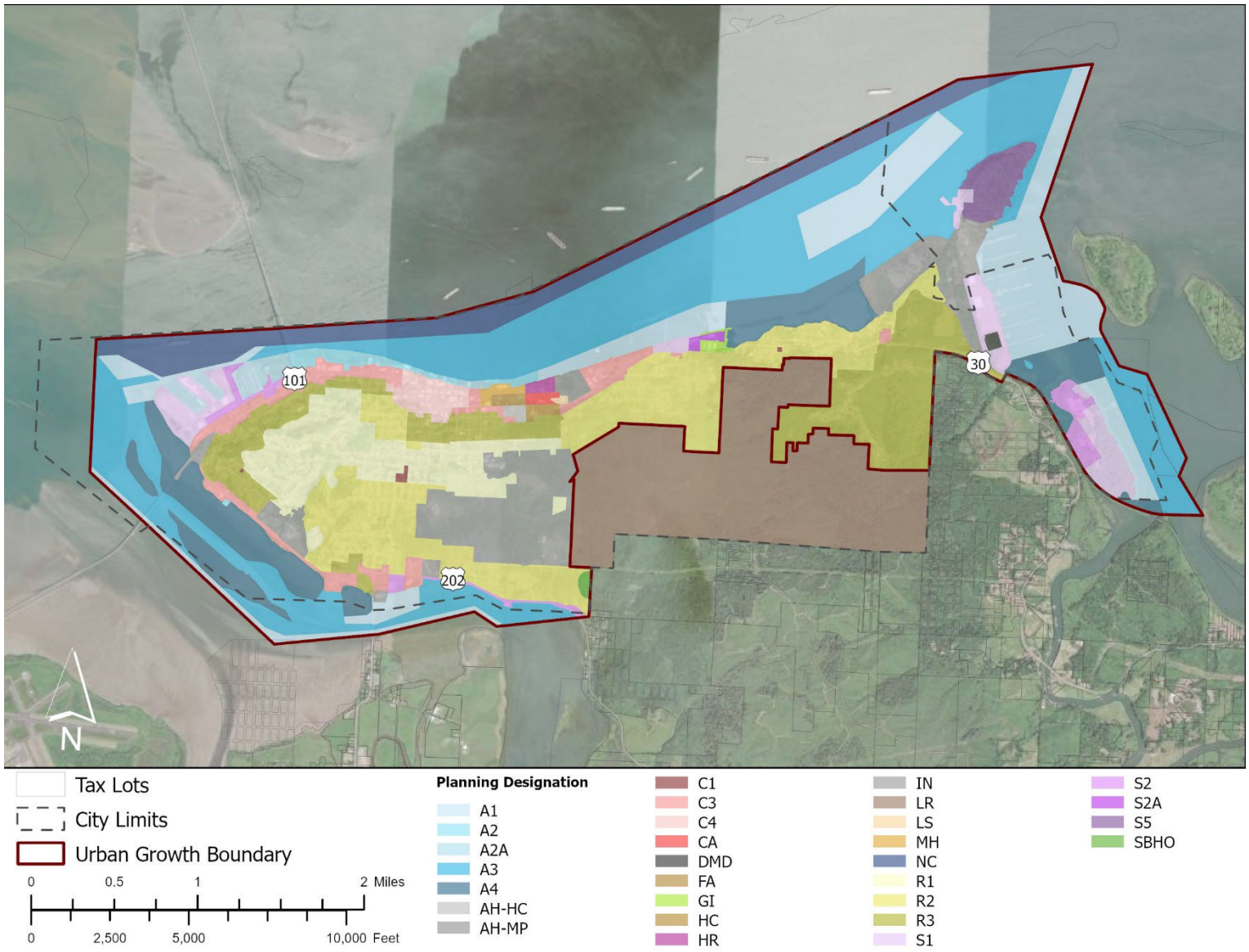
Inside the UGB of Astoria, there are over 5,800 lots with 3,592 total acres. The city has 1,632 acres of residential land dispersed over 5,346 lots. As shown in Table 1, the majority of the city's residential land falls into purely residential zoning, with R2 – Medium Density Residential being the most well represented (35.1%), followed by R3 – High Density Residential (29.8%) and R1 – Low Density Residential (17.2%), totaling 82.1% of the residential land base in the UGB. There are large lots zoned for medium and high density residential land in the southeast that are currently not heavily developed. Commercial and other mixed use type zoning, although allowing for residential development, accounts for only 17.9% of total residential land base, with the majority in this category being represented by C3 – General Commercial at 7.8% of the total.

Table 1 Gross Acreage by Designated Residential Plan Category

Plan Designation	Number of Tax Lots	Gross Acres	Percent of Acres
C4 - Central Commercial Zone	228	36	2.2%
C3 - General Commercial Zone	439	127	7.8%
C1 - Neighborhood Commercial Zone	22	3	0.2%
FA - Family Activities Zone	12	7	0.4%
HR - Hospitality/Recreation	12	8	0.5%
LS - Local Service	2	2	0.1%
AH-MP - Attached Housing/Mill Pond	88	14	0.8%
AH-HC - Attached Housing/Health Care Zone	9	6	0.4%
S2 - General Development Shorelands Zone	58	82	5.1%
S2A - Tourist-Oriented Shorelands Zone	88	7	0.5%
R3 - High Density Residential Zone	1,111	487	29.8%
R2 - Medium Density Residential Zone	2,041	573	35.1%
R1 - Low Density Residential Zone	1,236	280	17.2%
Total	**5,346**	**1,632**	**100%**

Source: Astoria Buildable Land Inventory; 3J Consulting

Figure 1: Astoria Zoning and Comprehensive Plan Designations



Step 2: Classify Lands

The next step in this BLI analysis includes classifying each tax lot (parcel) into one of the categories described below.

Vacant land: Properties with no structures or have buildings with very little value. For this BLI, residential lands with an improvement value of less than $10,000 and a size of at least 3,000 square feet (sf) are considered vacant. These lands are reviewed using aerial imagery and Google Streetview. If the land is in a committed use, such as a parking lot, home, shed or new/under construction, an assessment is made to classify it as vacant, part vacant or developed.

Partially vacant land: Properties that are occupied by a use (e.g., a home or building structure with value over $10,000) but have enough land to be subdivided without the need for rezoning. For single family lots, it is assumed that ¼ acre (10,890 sf) is retained by each existing home, and the remainder is included in the part vacant land inventory. For non-single family uses (e.g., multifamily, churches) aerial imagery is used to determine the size of the unused portion.

Developed: Properties unlikely to yield additional residential development for one of two reasons: 1) They possess existing structures at densities that are unlikely to redevelop over the planning period; or 2) They include parcels with zoning that do not permit housing development.

Other: Properties which are regarded as unlikely to be developed because they are restricted by existing uses such as:

- Public land, parks, state recreation and historic sites, schools, right-of-way, and utilities
- Property cannot be served with public facilities
- Property is constrained on more than 85% of its area[1]
- Property cannot be developed because of landslide restrictions
- Property zoning does not allow or conditionally allows residential development
- Properties owned and administered by the United States Coast Guard

In some cases, tax lots are split to accompany different plan classifications. Split tax lots are treated as individual lots and might go into any of the categories described above.

These classifications are validated using satellite imagery, Google Street View, and assessor records. Some larger vacant lots can be found in the eastern areas of the UGB. There are multiple smaller vacant lots spread throughout the existing residential neighborhoods, although many of these have been eliminated due to slope constraints.

Table 2 presents development status and gross acreage by residential zone. Of the 1,632 gross residential acres in Astoria around 50% are developed, and about 13% are too constrained, a non-residentially zoned vacant lot or in public use. 528 gross acres are vacant. The partially vacant lots add up to 81 gross acres. Some of the larger vacant and partially vacant lots located in the eastern portion of the city are heavily slope constrained, but do not meet the threshold of 85% for outright

[1] It is assumed that a lot this highly constrained is unbuildable as the constraints may not be concentrated but randomly dispersed throughout the site.

exclusion. This also applies to many of the lots located in interior regions, most of which are situated on steep slopes. Most of the vacant land and partially vacant land is of a medium or high density residential zone (R2 and R3). R2 and R3 are the two residential zones most common in Astoria. Less land in Astoria is of zone R1. This low density zone has 58 acres of vacant land with an additional small amount of partially vacant land of 2 acres.

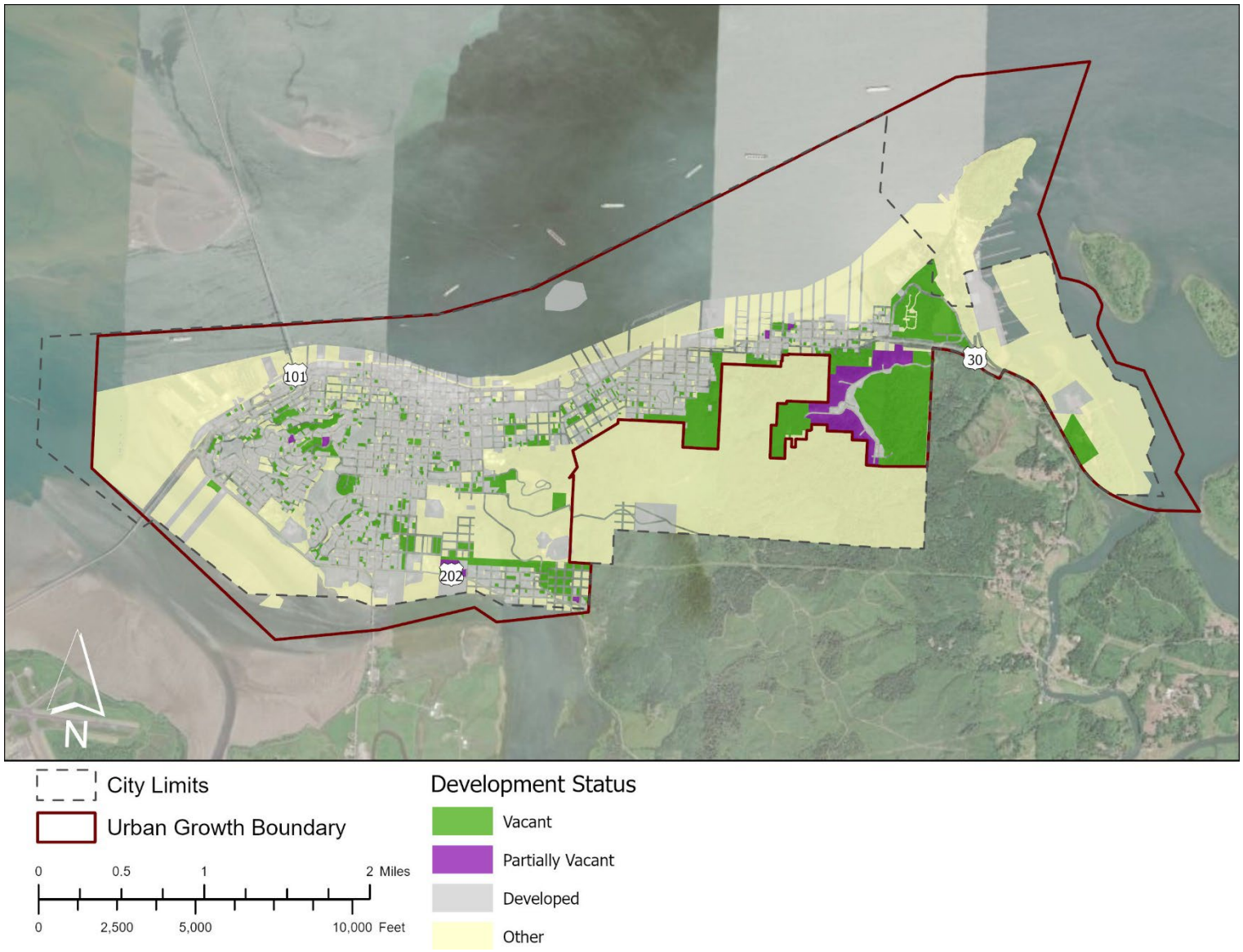
Table 2 Residential Land by Development Status (gross acres)

Plan Designation	Vacant Acres	Partially Vacant Acres	Developed Acres	Other Acres	Total
C4 - Central Commercial Zone	0.6	-	33.7	1.4	36
C3 - General Commercial Zone	7.2	-	101.8	15.1	124
C1 - Neighborhood Commercial Zone	0.3	-	2.4	-	3
FA - Family Activities Zone	0.2	-	2.8	3.6	7
HR - Hospitality/Recreation	-	-	2.3	6.1	8
LS - Local Service	-	-	1.7	-	2
AH-MP - Attached Housing/Mill Pond	0.2	-	5.8	7.6	14
AH-HC - Attached Housing/Health Care Zone	-	-	6.3	-	6
S2 - General Development Shorelands Zone	21.9	-	37.0	23.5	82
S2A - Tourist-Oriented Shorelands Zone	2.1	-	5.2	0.1	7
R3 - High Density Residential Zone	248.8	70.5	126.9	40.3	487
R2 - Medium Density Residential Zone	189.1	8.5	300.4	74.9	573
R1 - Low Density Residential Zone	57.6	2.4	184.9	35.2	280
Total	**527.9**	**81.4**	**811.2**	**207.8**	**1,628**

Source: Astoria Buildable Land Inventory; 3J Consulting

The neighborhood along Blue Ridge Drive east of Old Highway 30 contributes 17.8 vacant acres to zone R1. The vacancy assumption for this area is different from the definitions above. City staff indicate that this area will undergo any future development as a whole. Therefore, this analysis assumes all lots are vacant unless the improvement value is $300,000 or more. This includes lots that fall below the 3,000sqft size limit.

Figure 2: Development Status



Step 3: Identify Constraints

The methodology for identifying and removing development constraints is consistent with state guidance per OAR 660-008-0005(2) and 660-038-0070. The BLI is intended to include land that is "suitable, available, and necessary for residential uses."

Public-owned land is generally not considered to be available for new growth unless the underlying zoning permits housing or the land is being made available by the jurisdiction for housing. It should be noted that "available" in the context of this analysis does not mean that the land is presently on the market or development ready. It is assumed that "available" land is expected to come on the market within the 20-year timeframe of this study.

Based on state guidelines and information provided by City staff, the following constraints have been deducted from the residential lands inventory.

- Open water at least one-half acre in size.
- Land within the 100-year floodplains (FEMA's Special Flood Hazard Area).
- Steep slopes of 25% and more.
- Utility easements to the Bonneville Power Administration.

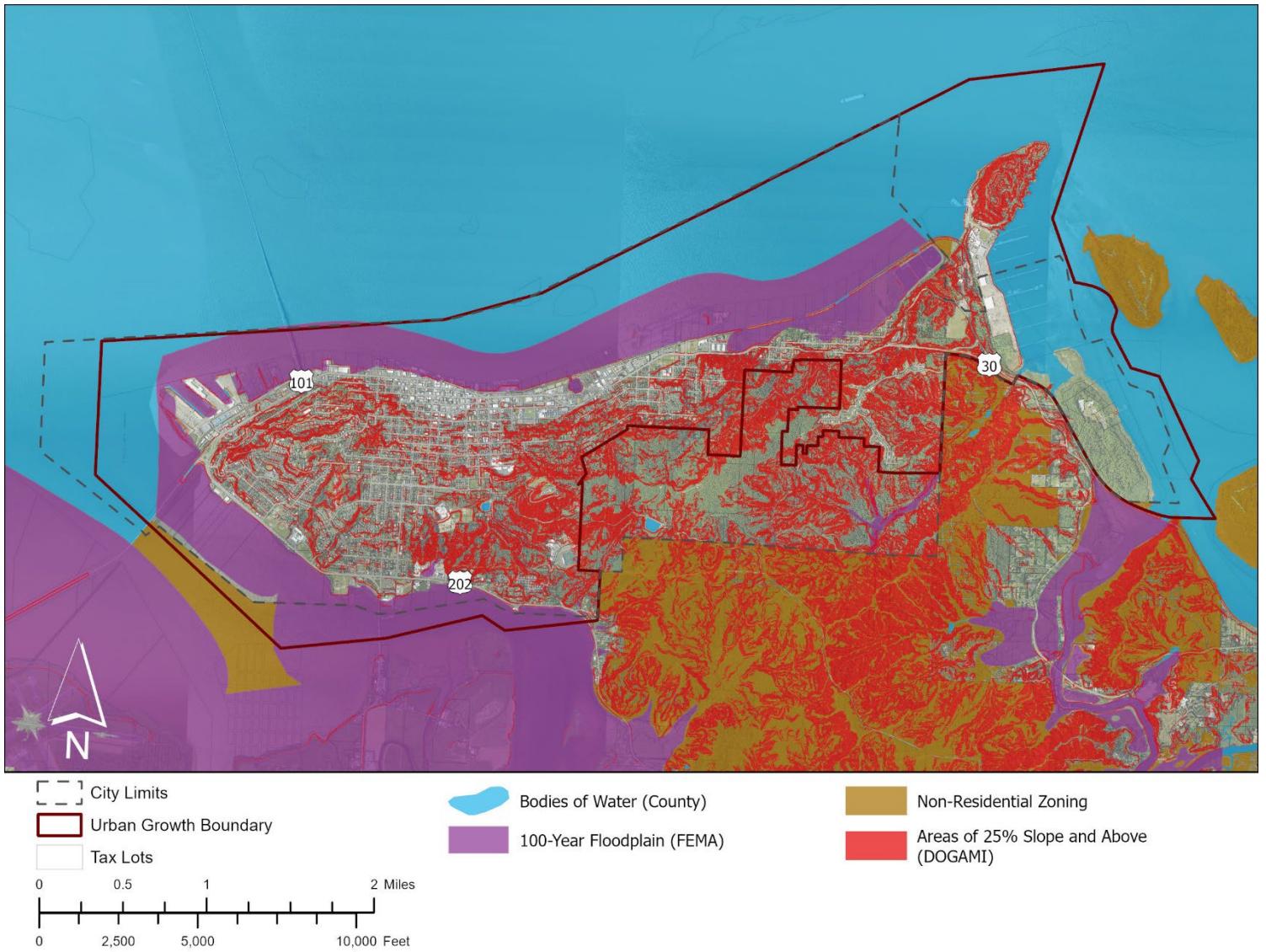
Astoria is located on a peninsula surrounded on three sides by open water. On the north and east sides, this consists of the main channel of the Columbia River, and the west side is enclosed by Youngs Bay. Excepting a strip of flat land running around the exterior of the peninsula, most of the city rises sharply above the surrounding water. This equates to Astoria's UGB containing far less floodplain or wetlands compared to other cities in Clatsop County. However, slope is a much more relevant concern in Astoria. Table 3 provides a summary of constrained land by zone. Around 38% of the residential lands in Astoria (either developed or not) are constrained. Purely residential lands situated in the central hills of the city are more heavily constrained; R3(48%), R2 (41%), and R1 (35%). Contrastingly, the commercial mixed use zoned land around the exterior is significantly less constrained, with an average constrainment of 14%.

Table 3 Constrained Acres by Assigned Plan Categories within Astoria's UGB

Planning Designations	Gross Acreage	Constrained Acres	Percent Constrained
C4 - Central Commercial Zone	35.7	2.4	6.7%
C3 - General Commercial Zone	124.0	21.0	16.9%
C1 - Neighborhood Commercial Zone	2.6	0.3	10.4%
FA - Family Activities Zone	6.6	0.5	7.9%
HR - Hospitality/Recreation	8.4	0.5	5.8%
LS - Local Service	1.7	0.0	0.3%
AH-MP - Attached Housing/Mill Pond	13.6	5.0	36.7%
AH-HC - Attached Housing/Health Care Zone	6.3	0.1	2.3%
S2 - General Development Shorelands Zone	82.4	17.5	21.2%
S2A - Tourist-Oriented Shorelands Zone	7.3	1.6	21.7%
R3 - High Density Residential Zone	486.6	234.8	48.3%
R2 - Medium Density Residential Zone	573.0	237.1	41.4%
R1 - Low Density Residential Zone	280.1	97.3	34.8%
Total	**1,628.3**	**618.1**	**38.0%**

Source: Astoria Buildable Land Inventory; 3J Consulting

Figure 3 Constraints



Step 4: Inventory

There are a total of 301 acres of buildable land zoned for residential development in the City of Astoria's UGB, as shown in Table 4. Around 96% of the buildable land is vacant, and the other 4% is partially vacant, allowing for additional development. High Density Residential (R3) has the highest amount of buildable land with 121 acres (44%). R3 zoned lots contain the largest share of the partially vacant (5 acres) and vacant (116 acres) land. Over 90 acres (33%) of buildable land is located in the R2 zone. There is no developable land located on land zoned HR – Hospitality/Recreation or LS – Local Service- these zones are only represented by small areas and are fully developed.

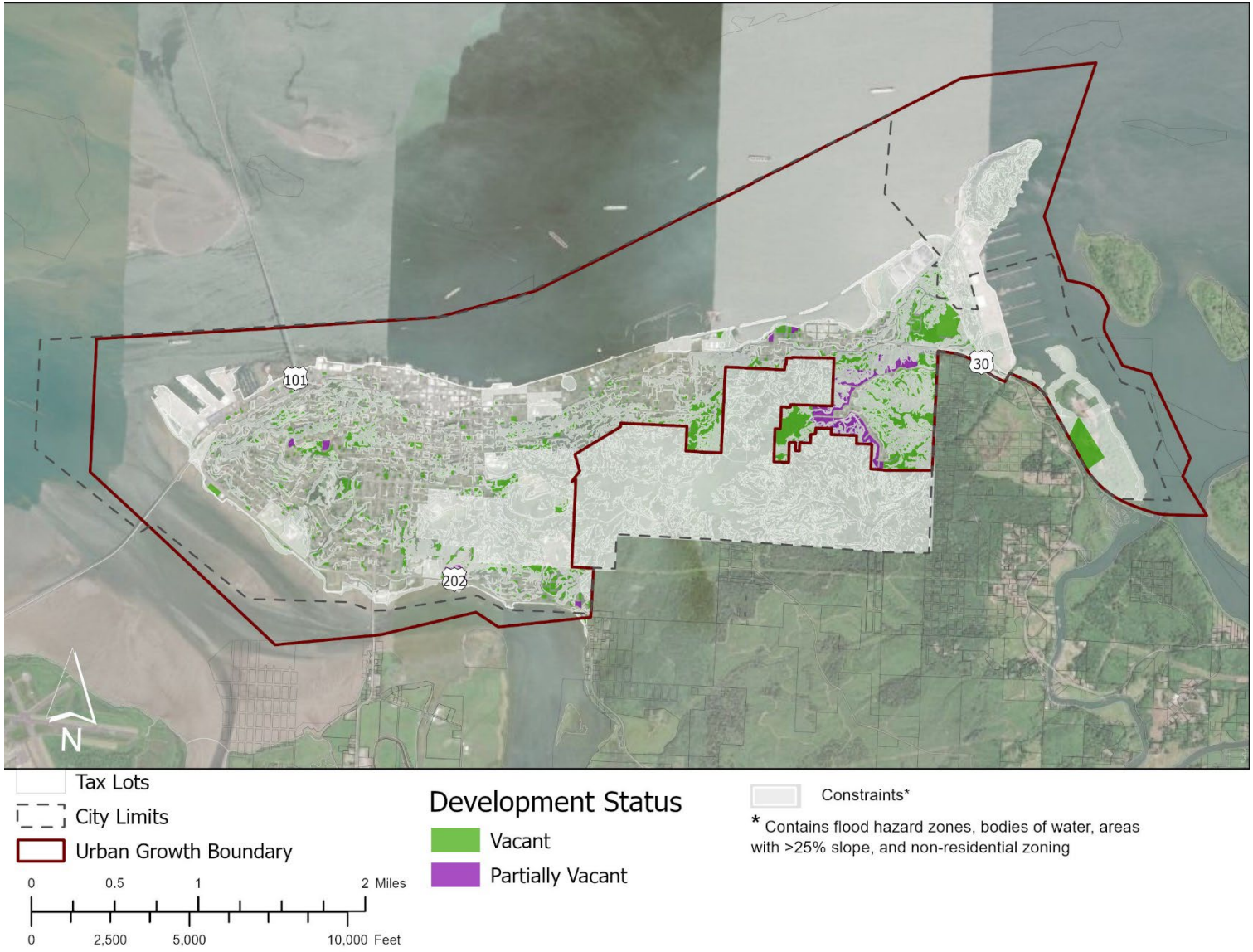
Table 4 Residential Acres by Planning Designation[2]

Plan Designation	Developed Land	Buildable Vacant	Constrained Vacant	Buildable Part Vacant	Total Buildable	Total
C4 - Central Commercial Zone	35.1	0.4	0.1	-	0.4	35.7
C3 - General Commercial Zone	116.9	5.7	1.5	-	5.7	124.0
C1 - Neighborhood Commercial Zone	2.4	0.2	0.1	-	0.2	2.6
FA - Family Activities Zone	6.4	0.1	0.1	-	0.1	6.6
HR - Hospitality/Recreation	8.4	-	-	-	-	8.4
LS - Local Service	1.7	-	-	-	-	1.7
AH-MP - Attached Housing/Mill Pond	13.4	0.2	-	-	0.2	13.6
AH-HC - Attached Housing/Health Care Zone	6.3	-	-	-	-	6.3
S2 - General Development Shorelands Zone	60.5	21.6	0.3	-	21.6	82.4
S2A - Tourist-Oriented Shorelands Zone	5.3	0.7	1.3	-	0.7	7.3
R3 - High Density Residential Zone	232.6	115.7	133.1	5.2	120.9	486.6
R2 - Medium Density Residential Zone	380.9	87.5	101.6	3.0	90.5	573.0
R1 - Low Density Residential Zone	220.7	30.7	26.9	1.8	32.5	280.1
Total	**1,090.4**	**263.0**	**264.9**	**10.0**	**273.0**	**1,628.3**

Source: Astoria Buildable Land Inventory; 3J Consulting

[2] Developed Land refers to the development status of 'Developed' and 'Other' excluding acreage that falls into part vacant.

Figure 4 Development Status with Constraints



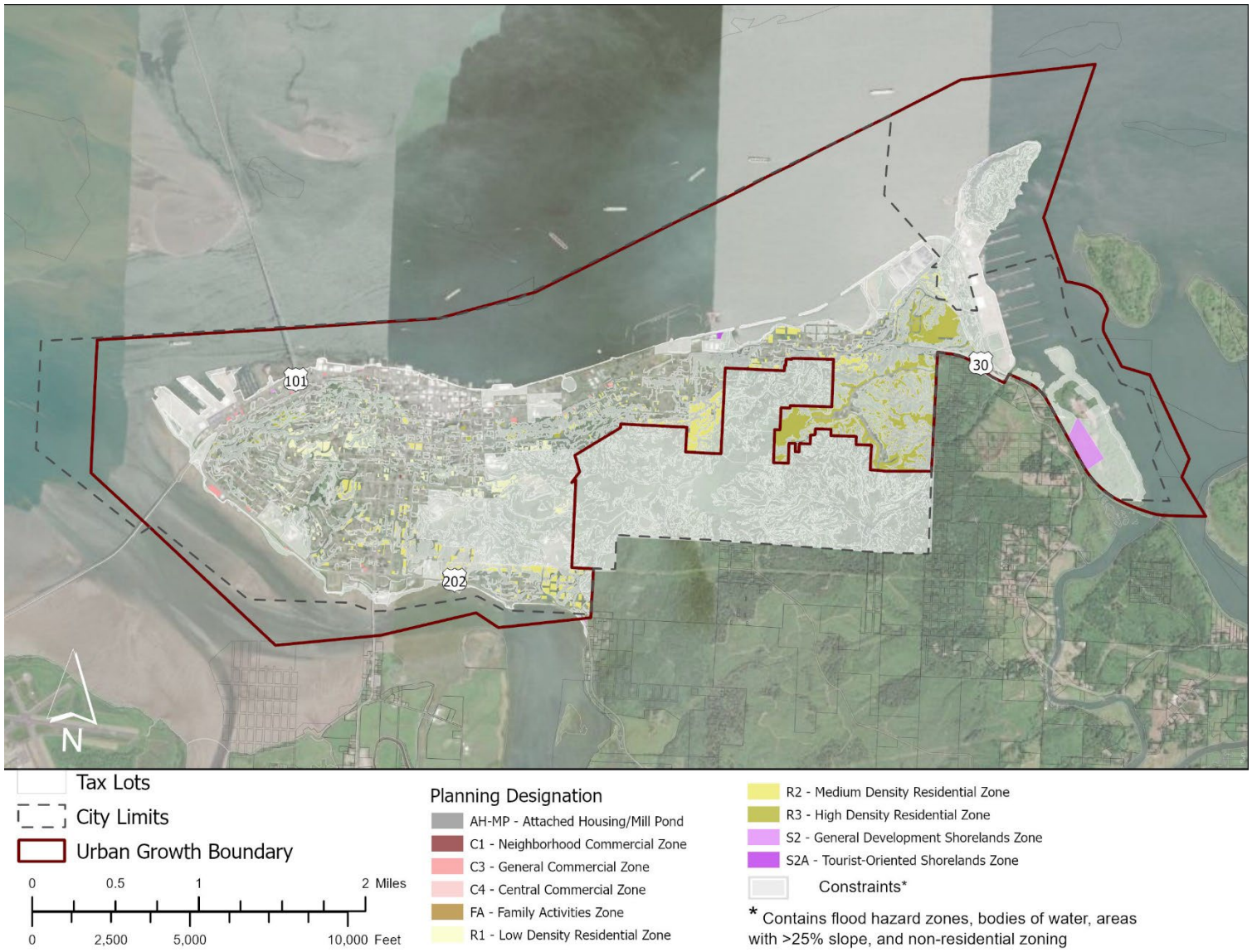
Most of Astoria's buildable land is located on purely residentially zoned land, which comes in a variety of parcel sizes from under an acre up to over 70 acres. A large amount of this buildable land is located in the southeast on undeveloped or partially developed large residential lots. Lots larger than 5 acres make up 58% of buildable land overall, 15 of which are more than 10 acres totaling up to 143 acres (52%) of buildable land. Several of these lots are owned by families interested in development as indicated by the City, including the Emerald Heights Development. Small lots of less than one acre make up an additional 77 acres (28%) of buildable land. Figure 5 shows all vacant or partially vacant lots by planning designation with constraints.

Table 5 Developable Residential Acres by Planning Designation and Lot Size

Planning Designations	Number of Lots	Buildable Acres	Percent of Area
Mixed-Use			
C4 - Central Commercial Zone			
0-1 acres	4	0.4	0.2%
1-5 acres	-	-	0.0%
>5 acres	-	-	0.0%
C3 - General Commercial Zone			
0-1 acres	27	4.0	1.5%
1-5 acres	1	1.7	0.6%
>5 acres	-	-	0.0%
C1 - Neighborhood Commercial Zone			
0-1 acres	2	0.2	0.1%
1-5 acres	-	-	0.0%
>5 acres	-	-	0.0%
FA - Family Activities Zone			
0-1 acres	2	0.1	0.0%
1-5 acres	-	-	0.0%
>5 acres	-	-	0.0%
HR - Hospitality/Recreation			
0-1 acres	-	-	0.0%
1-5 acres	-	-	0.0%
>5 acres	-	-	0.0%
LS - Local Service			
0-1 acres	-	-	0.0%
1-5 acres	-	-	0.0%
>5 acres	-	-	0.0%
AH-MP - Attached Housing/Mill Pond			
0-1 acres	1	0.2	0.1%
1-5 acres	-	-	0.0%
>5 acres	-	-	0.0%
AH-HC - Attached Housing/Health Care Zone			
0-1 acres	-	-	0.0%
1-5 acres	-	-	0.0%
>5 acres	-	-	0.0%
Subtotal	**37**	**6.6**	**2.4%**

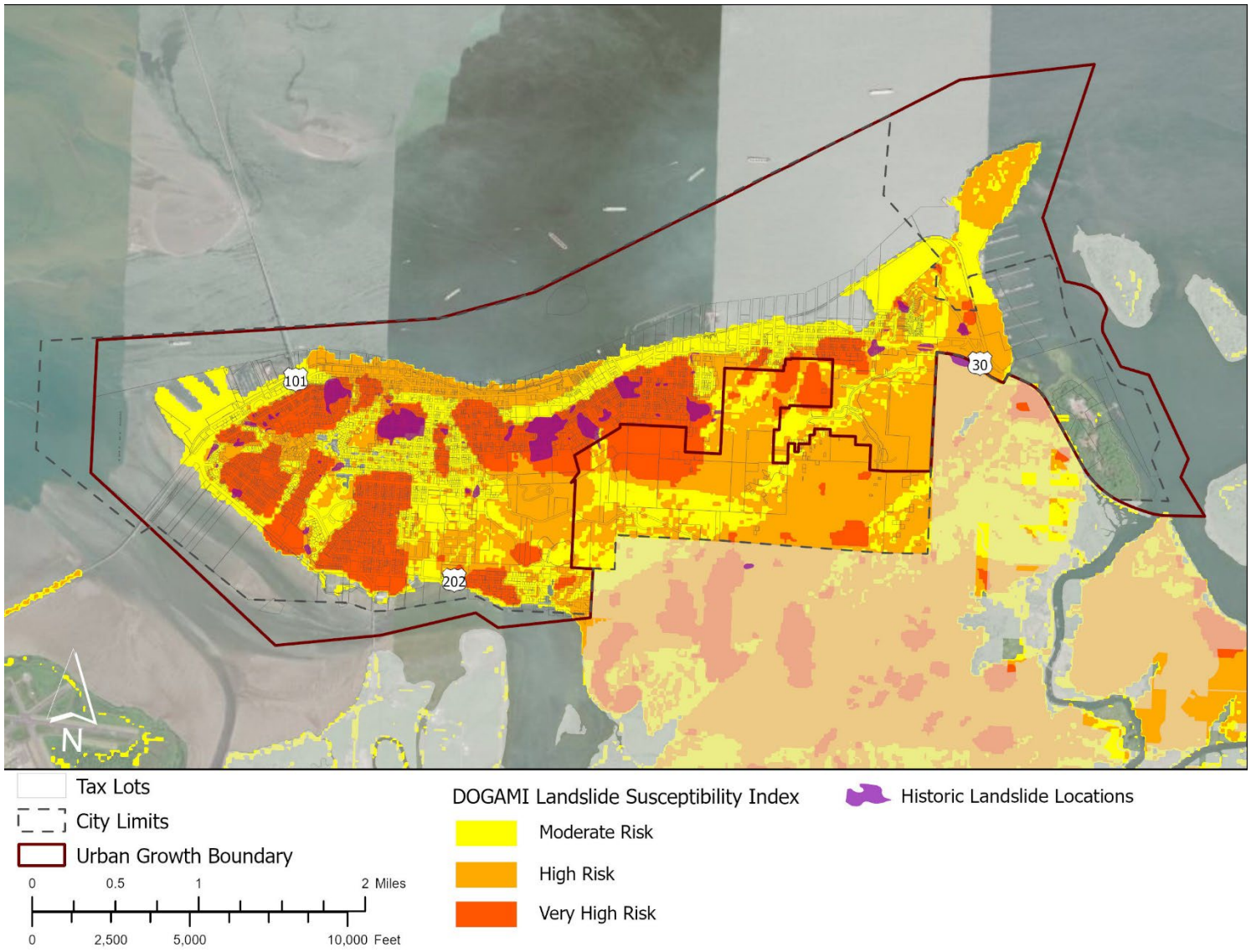
Planning Designations	Number of Lots	Buildable Acres	Percent of Area
Shoreland			
S2 - General Development Shorelands Zone			
0-1 acres	4	0.7	0.3%
1-5 acres	-	-	0.0%
>5 acres	1	20.9	7.7%
S2A - Tourist-Oriented Shorelands Zone			
0-1 acres	-	-	0.0%
1-5 acres	1	0.7	0.3%
>5 acres	-	-	0.0%
Subtotal	**6**	**22.4**	**8.2%**
Residential Only			
R3 - High Density Residential Zone			
0-1 acres	143	13.4	4.9%
1-5 acres	13	12.0	4.4%
>5 acres	10	95.5	35.0%
R2 - Medium Density Residential Zone			
0-1 acres	202	37.8	13.8%
1-5 acres	21	13.1	4.8%
>5 acres	9	39.7	14.5%
R1 - Low Density Residential Zone			
0-1 acres	120	19.9	7.3%
1-5 acres	9	11.6	4.3%
>5 acres	1	1.1	0.4%
Subtotal	**528**	**244.0**	**89.4%**
0-1 acres	505	76.7	28.1%
1-5 acres	45	39.2	14.4%
>5 acres	21	157.1	57.5%
Total	**571**	**273.0**	**100.0%**

Figure 5 Developable Residential Lands by Planning Designation with Constraints



Due to various geological factors, landslides are a concern for development within Astoria. Nearly all of the developable land in the city is located on areas of at least moderate landslide risk. In addition, around 11% of buildable land is located on the sites of former recorded landslides. The location and distribution of areas at different levels of landslide risk can be seen in Figure 6.

Figure 6 Landslide Susceptibility and Historic Landslides in Astoria



If the City decides to conduct a Housing Capacity Analysis to determine whether or not the City has an adequate supply of residential land to meet their 20-year housing needs, OAR 660-038-0050(4) allows a reduction of 25% of buildable land to account for public facility needs that come with residential development. This reduction can be for rights-of-way, parks, or other public needs. The deduction of 25% is only applied to unconstrainted vacant land. This would reduce the buildable land by 66 acres, resulting in a total of 207 net buildable acres (Table 6).

Table 6 Net Buildable Acreage by Planning Designation with Public Facility Reduction

Plan Designation	Buildable Vacant	Net Vacant Reduction	Buildable Part Vacant	Total Net Buildable
C4 - Central Commercial Zone	0.4	0.1	-	0.3
C3 - General Commercial Zone	5.7	1.4	-	4.3
C1 - Neighborhood Commercial Zone	0.2	0.0	-	0.1
FA - Family Activities Zone	0.1	0.0	-	0.1
HR - Hospitality/Recreation	-	-	-	-
LS - Local Service	-	-	-	-
AH-MP - Attached Housing/Mill Pond	0.2	0.1	-	0.2
AH-HC - Attached Housing/Health Care Zone	-	-	-	-
S2 - General Development Shorelands Zone	21.6	5.4	-	16.2
S2A - Tourist-Oriented Shorelands Zone	0.7	0.2	-	0.6
R3 - High Density Residential Zone	115.7	28.9	5.2	92.0
R2 - Medium Density Residential Zone	87.5	21.9	3.0	68.6
R1 - Low Density Residential Zone	30.7	7.7	1.8	24.9
Total	**263.0**	**65.8**	**10.0**	**207.3**

Source: Astoria Buildable Land Inventory; 3J Consulting

Data Sources

The following data sets were used for this analysis:

- Boundaries
  - City – provided by the City
  - UGB – provided by the City
- Planning
  - Tax lots
    - provided by Clatsop County
    - development status based on 2023 certified values
  - Zoning – provided by City
- Environmental
  - FEMA[3] Floodplain – via Oregon Spatial Library
  - Slopes derived from DOGAMI[4] lidar
  - Parks – via County
  - Open Water – via National Wetland Inventory/USGS[5]
  - Landslide Susceptibility- via DOGAMI

[3] FEMA – Federal Emergency Management Agency publishes floodplain data sets.
[4] DOGAMI - Oregon Department of Geology and Mining Industries offers a 3foot statewide lidar data set.
[5] USGS – United States Geological Survey offers a National Wetland Inventory that includes open waterbodies.

- Historic Landslide Locations- provided by the City