

DRAFT Buildable Lands Inventory

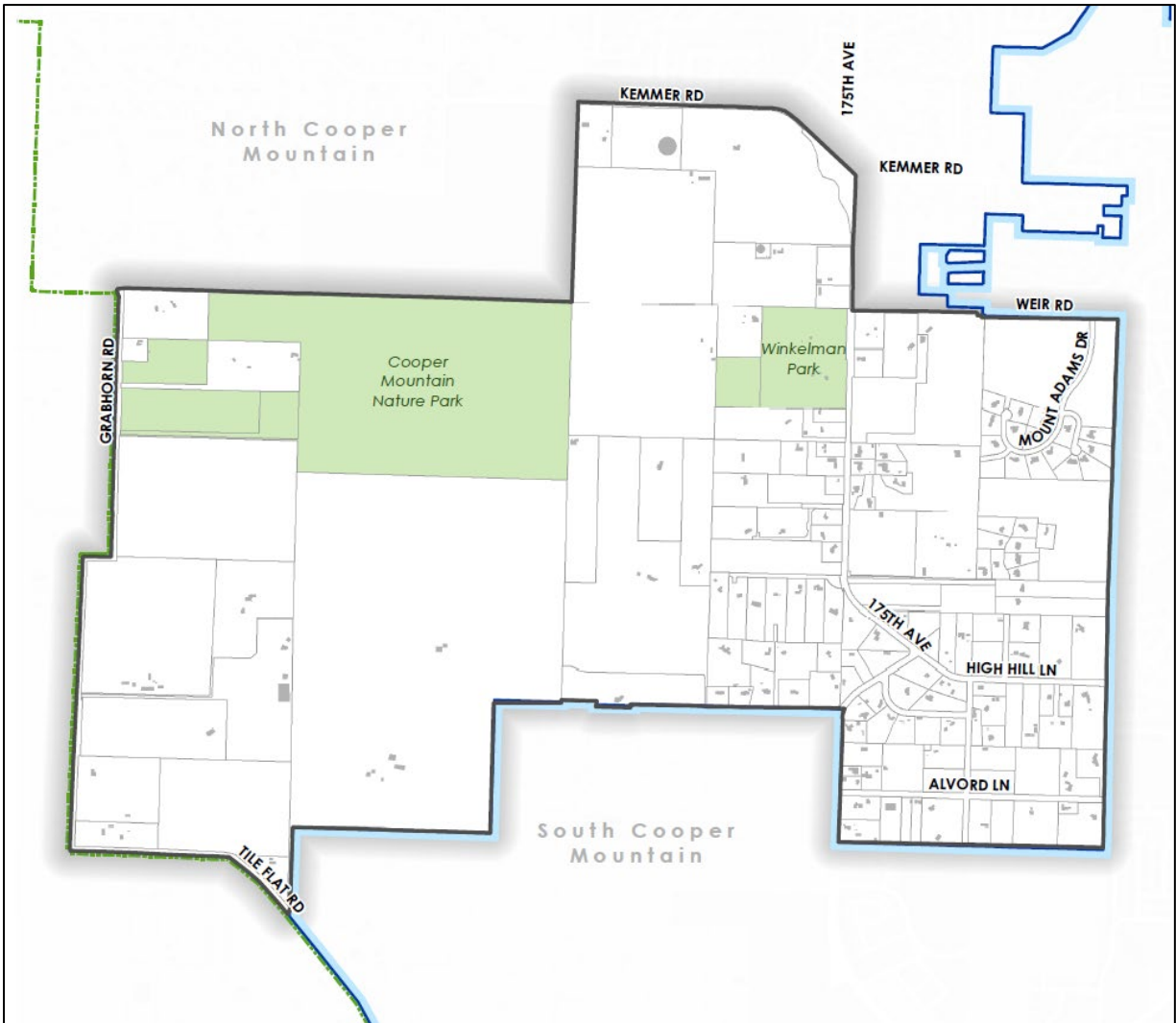
Introduction

Purpose

The purpose of this memorandum is to describe the proposed methodology and data sources for the Cooper Mountain Community Plan Buildable Lands Inventory (BLI). A BLI for the project area was prepared in 2013 as part of the South Cooper Mountain Concept Plan, which examined the developability of land considering the existing pattern of development and locations of protected natural features. This inventory will be updated for the Community Plan to reflect the 2020 local wetlands inventory (LWI), natural resources delineation, slope and natural hazards analysis, and the most recent data from the Washington County tax assessor. The updated BLI memorandum and Geographic Information System (GIS) dataset will provide a spatial and quantified understanding of the developability of the Cooper Mountain planning area (see Figure 1) and provide the basis for the development of plan alternatives.



Figure 1. Cooper Mountain Community Plan Study Area



-  Cooper Mountain Community Plan Boundary
-  City Limits
-  Metro UGB
-  Taxlots
-  Buildings
-  Parks



Legal Framework

This memorandum draws on rules and statutes related to analyzing buildable lands for Urban Growth Boundary (UGB) expansions in jurisdictions throughout Oregon¹. These statutes and rules provide the following guidance for assessment of buildable lands:

- Physical constraints on the developability of land include floodways and water bodies; land with greater than 25% slopes; lands subject to Goal 5, Goal 6, or Goal 7 lands;
- Land should be categorized as vacant, partially vacant, or developed.
- A BLI must consider lands for public facilities such as roads, stormwater facilities, schools, etc. Publicly owned land is not generally considered available for development.
- State law states that land is generally considered suitable and available unless it:
 - (a) Is severely constrained by natural hazards as determined under Statewide Planning Goal 7;
 - (b) Is subject to natural resource protection measures determined under Statewide Planning Goals 5, 6 or 15;
 - (c) Has slopes of 25 percent or greater;
 - (d) Is within the 100-year flood plain; or
 - (e) Cannot be provided with public facilities.

The Community Plan area was added to the Metro UGB in 2018 through a Metro ordinance that requires the area to provide at least 3,760 new units of housing. The BLI will be used to identify suitable locations for that housing, other land uses, transportation connections, and utility infrastructure based on the area's physical characteristics.

This BLI includes area-wide mapping and analysis of "constrained" lands, including environmentally sensitive areas, consistent with the legal requirements for a BLI. The BLI is intended as a general guide; future land use reviews will be more specific. The City of Beaverton regulates development in environmentally sensitive areas through the development review process, where code definitions (which may be different than BLI definitions) are applied and more site-specific information is typically available. Clean Water Services (CWS) and the Department of State Lands (DSL) also play key roles in regulating impacts of development on natural resources.

The remainder of this memorandum provides a discussion of the assumptions that were used to assess the developability of land in the study area and provides results of the analysis.

¹ OAR 660-009-0005 (Definitions); 660-007-0005 (Definitions); 660-024-0050 (Land Inventory and Response to Deficiency); 660-038 (Simplified Urban Growth Boundary Method)



Notes on City of Beaverton Land Use Regulations

The following code sections are in the Beaverton Development Code today. They are provided for context here, and inform the BLI. These provisions may be refined as part of the Community Plan or other efforts.

Chapter 90 – Acreage, Net The net acreage for a site is defined as the proposal size expressed in acreage minus any unbuildable area. The following areas are deemed undevelopable for the purposes of calculating net acreage:

...

4. Topographical features with a slope equal to or greater than:
 - a. 25 percent within a landslide hazard area may deduct 100 percent of the applicable area, or
 - b. 15-25 percent and within a landslide hazard area may deduct 50 percent of the applicable area. [ORD 4652; February 2015]

Chapter 90 - Undevelopable Area An area that cannot be used practicably for a habitable structure, because of natural conditions, such as slopes exceeding 20% in a direction greater than 45 degrees east and west of true south, severe topographic relief, water bodies, or conditions that isolate one portion of a property from another portion so that access is not practicable to the unbuildable portion; or manmade conditions, such as existing development which isolates a portion of the site and prevents its further development; setbacks or development restrictions that prohibit development of a given area of a lot by law or private agreement; or existence or absence of easements or access rights that prevent development of a given area.

Section 60.35.15 Open Space

3. Open Space Standards. Open space shall be land that is available for the creation of active and/or passive areas, or resource areas that provide visible and accessible open space to the proposed community. [ORD 4654; March 2015] A. The following resource areas may count towards passive open space requirements: Significant trees and/or groves, habitat benefit areas, view corridors, steep slopes, water quality facilities, environmentally sensitive areas including wetlands and any buffers required by Clean Water Services or other regulatory body, and other resources as deemed appropriate by the decision maker.



Methodology

The BLI analysis was completed using primarily Esri GIS mapping software and relied on data from local and regional sources, as well as natural resources fieldwork conducted for this project². **Step 1** of the BLI identifies development constraints and assesses their impacts on parcels within the project area. **Step 2** uses this information to categorize the developability of parcels within the project area and tallies the amount of buildable land available to future residential, employment, institutional, and other uses.

The Cooper Mountain Community Plan is a refinement of the Cooper Mountain Concept Plan and South Cooper Mountain Community Plan, adopted in 2015, which included its own BLI. The following table provides a brief comparison of the assumptions made for the 2013 South Cooper Mountain BLI, and the proposed assumptions for the current Cooper Mountain BLI.

² David Evans Associates will prepare a revised local wetland inventory for the area, which may affect natural constraints shown in this BLI.



Table 1. Comparison between SCM and CMCP BLI Methodology

South Cooper Mountain BLI		CMCP BLI
Step 1: Natural Resource Constraints		
Slopes	25+% - Unbuildable	25+% - Unbuildable
	15-25% - Buildable but challenging	15-25% - Buildable but challenging, mapped for informational purposes only*
Historical Landslide Areas	Not addressed	Mapped for informational purposes only*
Water Bodies (Streams)	Stream buffers identified by DEA. Unbuildable	Streams and stream buffers updated in 2020 Natural Resources Report. Considered unbuildable.
Wetlands	Wetlands identified by DEA are considered unbuildable.	Local Wetland Inventory updated in 2020 by DEA – wetlands and probable wetlands considered unbuildable.
Floodplains	No mapped floodplains within study area	No mapped floodplains within study area
Title 3 (Water Quality and Flood Management)	No Title 3 lands in study area	No Title 3 lands within study area
Title 13 (Nature in Neighborhoods)	Metro's Title 13 information was superseded by DEA's analysis.	Riparian Habitat and Upland Habitat information updated in 2020 Natural Resources Report.
	Class A upland – 10% buildable	Class 1 Riparian Habitat – Unbuildable
	Class B upland – 50% buildable	Class 2 & 3 Riparian Habitat – 10% Buildable
	Riparian Corridor - Unbuildable	Class A Upland – 10% buildable
		Class B Upland - 50% buildable
	Class C Upland Habitat - buildable	
Step 2: Development Status and Capacity		
Committed	Property held in common, HOA, private ROW.	Added reservoir sites
Developed	Metro identified developed area	Use tax assessor information and building value to determine development status. Developed lots are under 5 acres in unconstrained area and have a building value greater than \$200,000.
	Less than ½ acre identified as vacant. Cemeteries considered developed	



Partially Vacant	On lots under 5 acres, building value of \$100k used. Aerial photography used to identify developed area. Lots over 5 acres assumed to redevelop unless multiple structures exist	Building value of \$200k used as cutoff. ½ acre assumed to remain developed to account for the existing home, regardless of lot size.
Vacant	Other properties; identified in Metro inventory	Other properties.
Set-Asides	15-20% for ROW, 4-12% for stormwater, additional public facilities as needed and determined through consultation with service providers	25% assumption for set-asides

* As part of the Hillside Development Best Practices memorandum, the team will determine whether this assumption should be revised, in concert with ideas for low density/transfer of density for slopes 15-25% slopes or mapped landslide areas.

Step 1: Natural Resource Constraints

The first step of the BLI process addresses land constrained by natural resources, removing acreage total area within study area taxlots. Some types of natural resource constraints are assumed to be entirely unbuildable and removed fully, while others are assumed to be partially buildable and removed to a lesser degree. A given piece of land can have multiple, overlapping constraints. Constraints analyzed by the BLI include the following:

- **Steep Slopes** (Data source: City of Beaverton)
 - Slopes greater than 25% are considered unbuildable
 - Slopes between 15-25% are buildable but challenging.
- **Landslide Hazard Areas** (Data source: Department of Geology and Mineral Industries (DOGAMI) Statewide Landslide Information Database (SLIDO))
 - Historic Landslides (Scarps, Flanks, and Deposits)
- **Water Bodies** (Data Source: David Evans & Associates (DEA))
 - Stream mapping in the study area has been updated by DEA in the Natural Resources Report.
- **Wetlands** (Data Source: DEA)
 - Wetland mapping in the study area has been updated by DEA in the Natural Resources Report, and are considered unbuildable.
- **Floodplains**
 - There are no floodplains in the study area.
- **Title 3 Land (Water Quality and Flood Management)**
 - There is no Title 3 land in the study area.
- **Title 13 Land** (Nature in Neighborhoods) (Data Source: Metro, DEA)

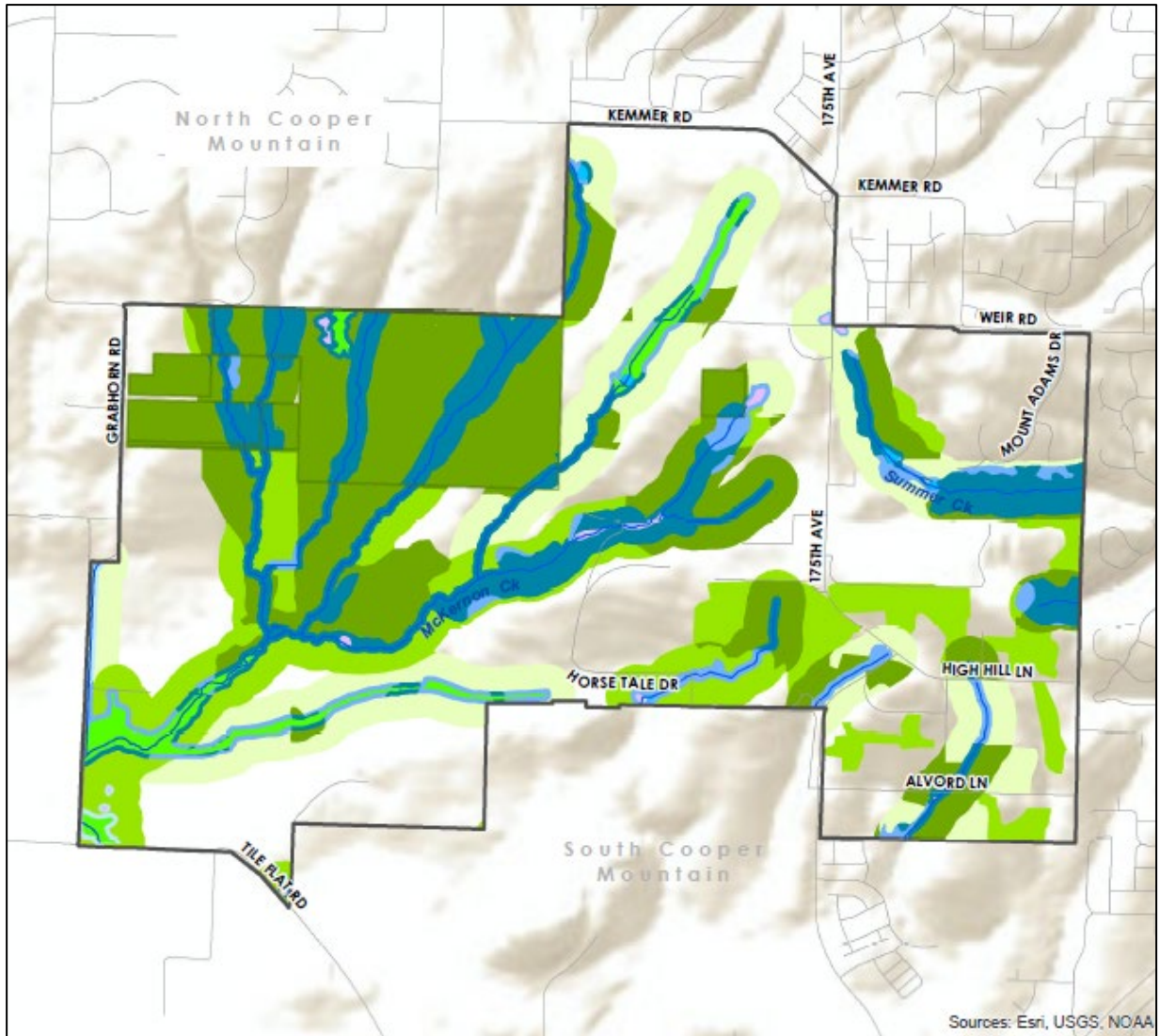


- Metro Title 13 land includes riparian and upland habitat areas in various classifications. DEA updated this resource mapping with additional LiDAR imagery and on-the-ground fieldwork in spring 2020. For the purposes of this BLI, Class 1 riparian habitat is considered unbuildable. Class 2 and 3 riparian habitat and Class A upland habitat are considered 10% buildable, while upland Class B is considered 50% buildable.

Constraints are shown on Figure 2 through Figure 5 and summarized in Table 2. Constraints were intersected with the February 2020 taxlot layer from the Metro RLIS (Regional Land Information System) database, and each taxlot received a number of “unconstrained acres” based on the amount and type of constraints on the property. Unconstrained acreage is a key input for Step 2 of the BLI process.



Figure 2. Natural Resources (Wetlands, Riparian, and Upland)



Sources: Esri, USGS, NOAA

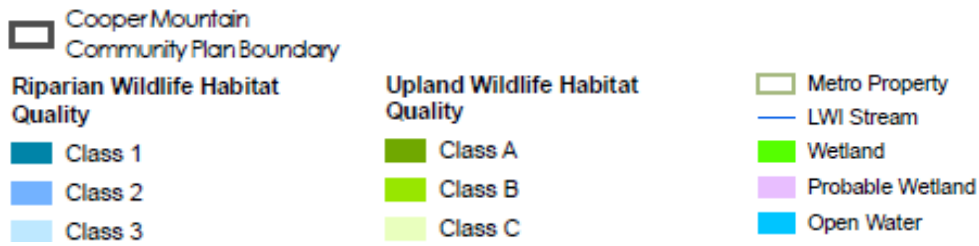
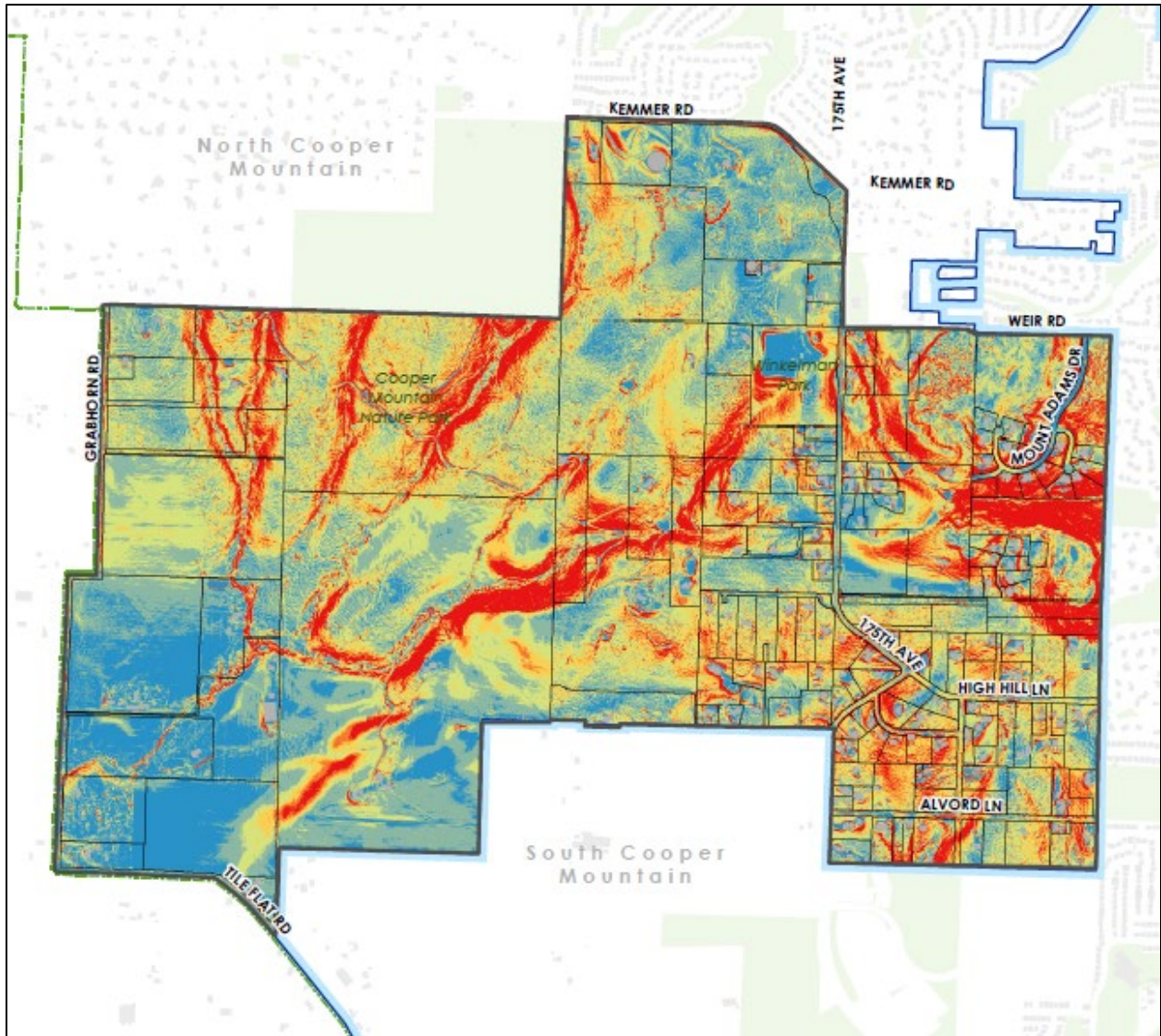




Figure 3. Slopes

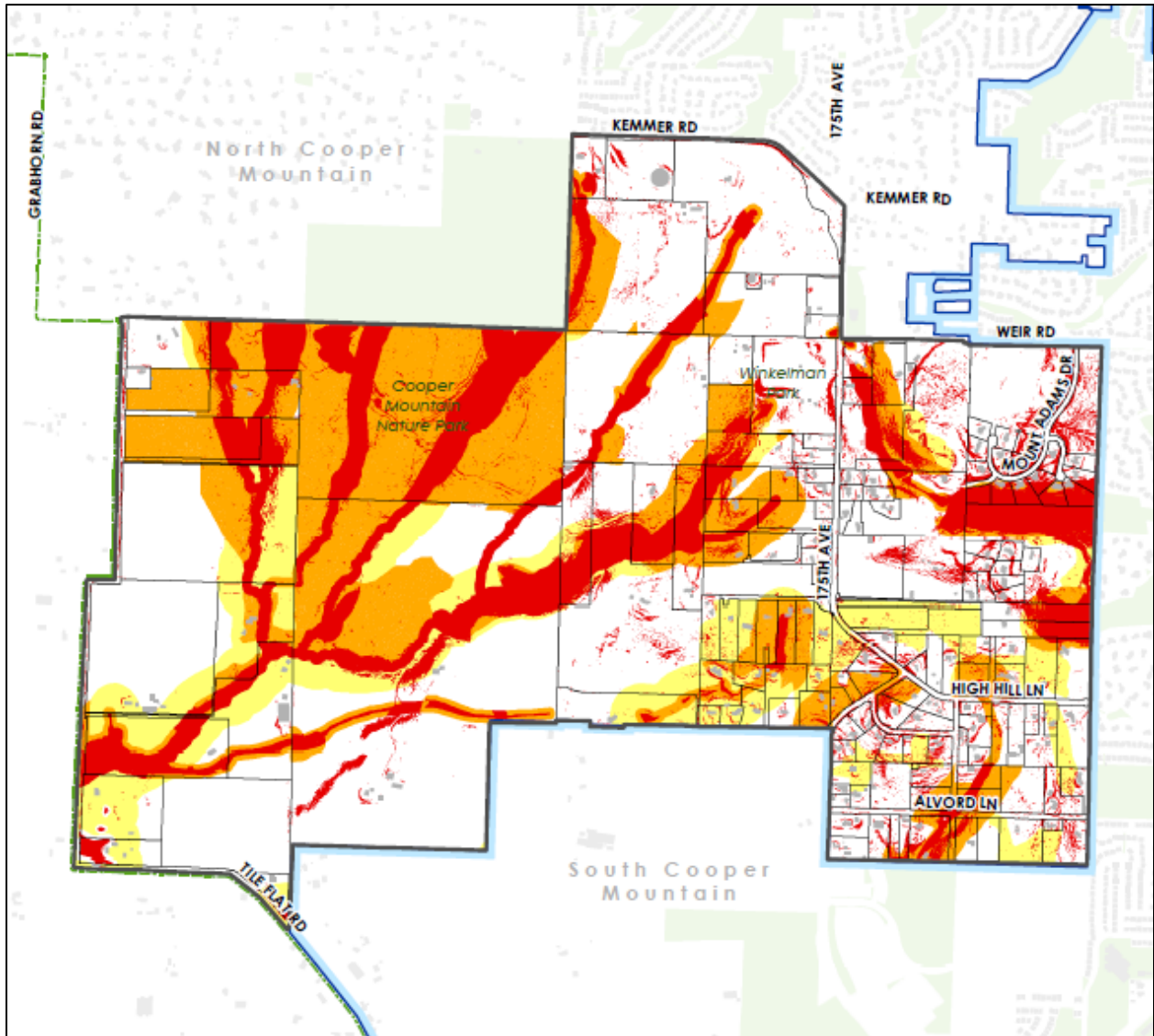


Slope Categories

- | | |
|--------|---|
| 0-5% | Cooper Mountain Community Plan Boundary |
| 5-10% | City Limits |
| 10-15% | Metro UGB |
| 15-20% | Taxlots |
| 20-25% | Buildings |
| 25+% | |



Figure 5. Constraints Combined



- Cooper Mountain Community Plan Boundary
- City Limits
- Metro UGB
- Taxlots
- Buildings

Natural Resource Constraints

- Percent Constrained
- 50
 - 90
 - 100

Land with 100% Constraints (0% Buildable): Slopes greater than 25%, Class 1 Riparian Habitat, Wetlands

Land with 90% Constraints (10% buildable): Class A Upland Habitat and Class 2 & 3 Riparian Habitat

Land with 50% Constraints (50% Buildable): Class B Upland Habitat



Table 2. Summary of Natural Constraints

Constraint Percentage	Total Acres
Unconstrained Land (100% Buildable)	607.7 Acres
Land with 50% Constraints (50% Buildable) Upland Class B designation	135.4 Acres
Land with 90% Constraints (10% Buildable) Class A upland and Class II riparian land	251.7 Acres
Land with 100% Constraints (0% Buildable) Slopes greater than 25%, Stream Corridors and Class I riparian land, Wetlands	245.7 Acres
Total Land in Study Area	1,240.5 Acres

Step 2: Development Status and Set-Asides

A series of screening measures and calculations were performed to establish the development status and assumed capacity of a given taxlot. Development status is assigned as follows:

- **Vacant properties** – The unconstrained acreage of these taxlots is assumed to be fully developable.
- **Developed properties** – These taxlots are assumed to be fully developed and unavailable for additional uses.
- **Partially Vacant properties** – These taxlots contain both developed area and vacant area, calculated as follows.
 - “Partially Vacant” defined as taxlots with existing development valued greater than \$200,000 in building value (using RLIS taxlot data)
 - ½ acre is deducted from the unconstrained acreage of the taxlot to account for the existing home and any remaining unconstrained acreage is considered available for future development.
- **Committed** – These properties include parcels in common ownership (i.e., a homeowners’ association), private and public rights-of-way, existing cemeteries, and public facilities, and are assumed to be unavailable for additional uses.

Finally, set-asides for right-of-way (ROW) and other public facilities are removed from the land inventory. For this initial BLI, an assumption of 25% for road rights-of-way, stormwater facilities, and other public lands is assumed.



Results

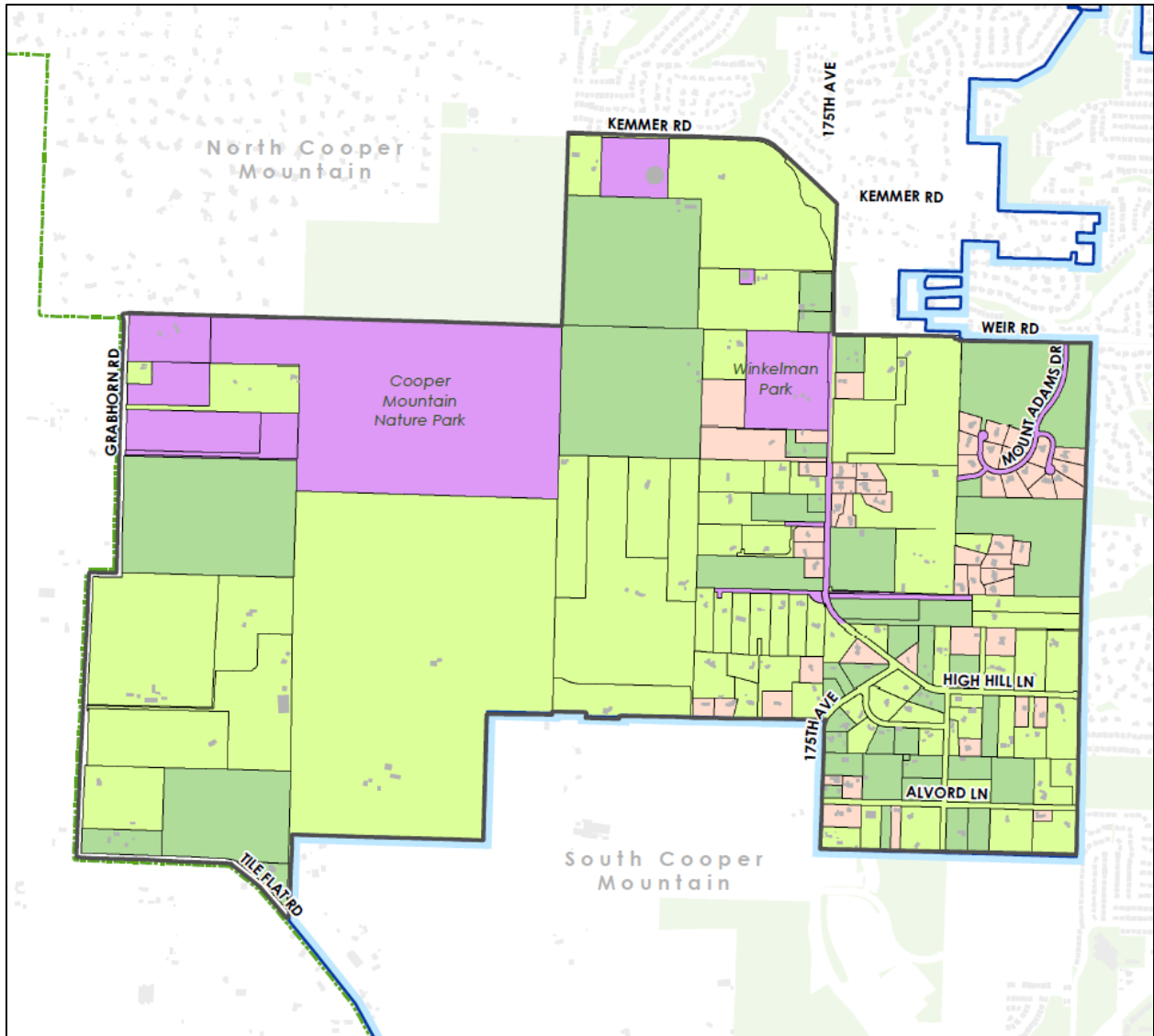
The map of development status is shown in Figure 6 and additional detail provided in Table 3. Figure 7 shows the study area with development status and areas of natural resource constraints as hatch markings.

Table 3. BLI Summary

Development Status	# of Taxlots	Total Acres	Constrained Acres (Natural Resources and Committed Land)	Acres for Existing Homes	Set-asides for Public Facilities (25% of unconstrained acres)	Developable Acres
Committed	12	186.9	186.9	0	0	0.0
Developed	62	88.9	88.9	0	0	0.0
Partially Vacant	62	627.2	247.6	31	87.2	261.5
Vacant	43	300.8	93.2	0	51.9	155.7
Public ROW	-	36.6	36.6	-	-	0.0
Total	179	1240.5	653.2	31	139.1	417.2



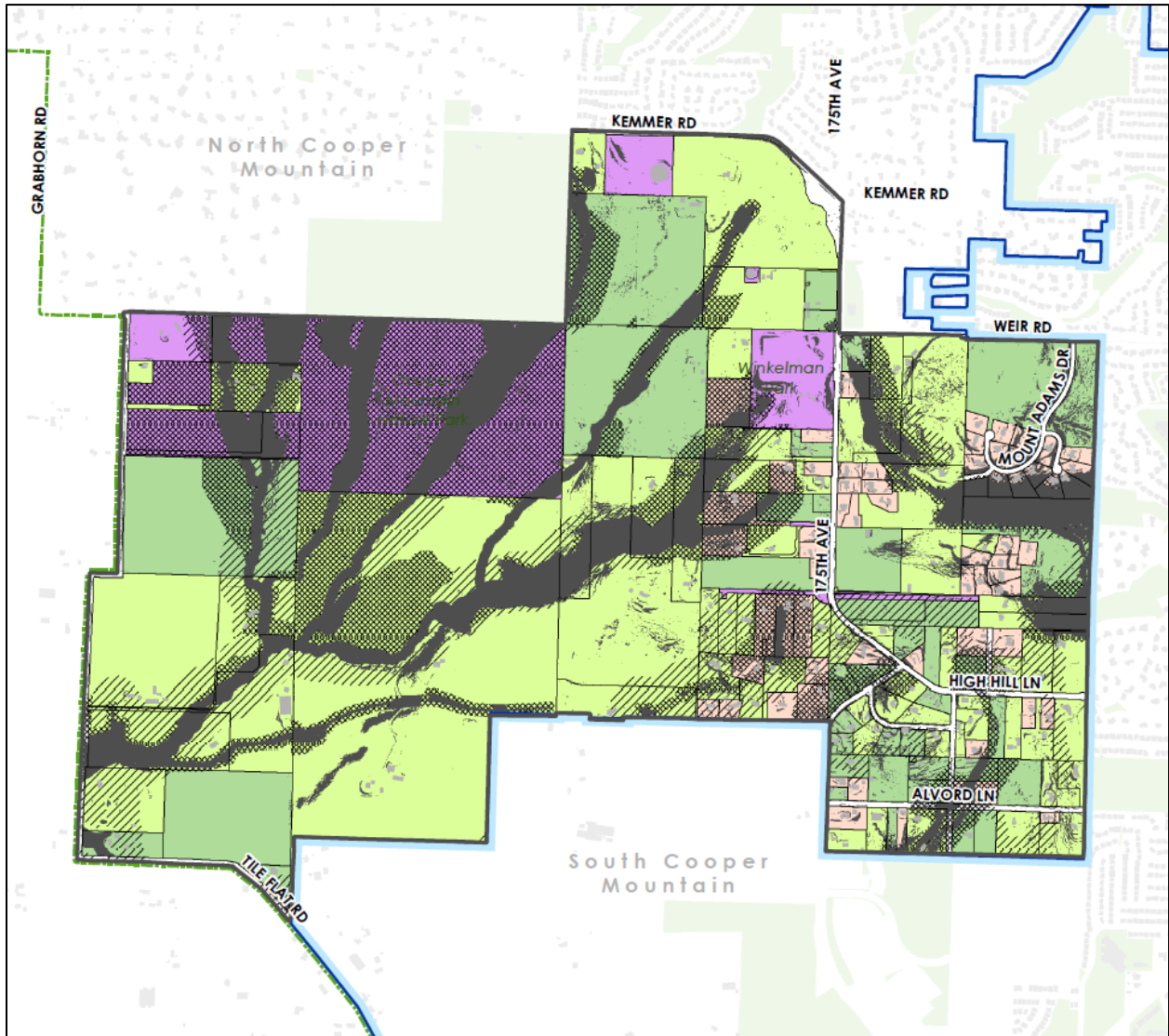
Figure 6. Development Status



- | | |
|---|------------------|
| Cooper Mountain Community Plan Boundary | Committed |
| City Limits | Developed |
| Metro UGB | Partially Vacant |
| Taxlots | Vacant |
| Buildings | |



Figure 7. Development Status with Constraints



- Cooper Mountain Community Plan Boundary
- City Limits
- Metro UGB
- Taxlots
- Buildings

- Development Status**
- Committed
 - Developed
 - Partially Vacant
 - Vacant

- Constraints**
- Percent Constrained**
- 100
 - 90
 - 50



Next Steps

This memorandum and the underlying data will inform several additional Community Plan tasks, including:

- An Existing Conditions Summary Report (Task B.1.g)
- Public engagement in Task B.2, including stakeholder listening sessions and an online open house.
- Best practices research in natural features and hillside development (Task B.3.b)
- Draft street and trail planning (Task B.3.e)
- Alternatives development for transportation/land use plans in Task C.3

The methodology and results of this BLI may be refined further as a result of additional technical review and public engagement.



COOPER MOUNTAIN BUILDABLE LANDS INVENTORY

2024 BLI addendum and housing estimate

Prepared by Brian Martin, Long Range Planning Manager
Aug. 12, 2024

BLI addendum

A draft Cooper Mountain Buildable Land Inventory was completed in July 2020 based on information available at the time. The Buildable Land Inventory found that the Cooper Mountain Community Plan area had 261.5 acres of partially vacant land and 155.7 acres of vacant land available, for a total of 417.2 developable acres. See Table 3 in the draft Buildable Land Inventory dated July 11, 2020.

The 2020 BLI found that the study area, with about 1,240.5 acres, had 653.2 acres constrained by natural resources and committed land and 31 acres committed for existing homes. It also assumed 25 percent of unconstrained land, a total of 139.1 acres, was set aside for public facilities such as roads.

In March 2024, city staff updated the Buildable Land Inventory based on updated information, largely updated information regarding natural resources.

The updated BLI using the same methodological steps found that there are 373.8 developable acres distributed among the proposed zoning districts:

Table 1: Developable Acres in Cooper Mountain Zoning Districts

Cooper Mountain Zoning District	Developable Acres
Cooper Mountain – Community Service (CM-CS):	11 acres
Cooper Mountain – High Density Residential (CM-HDR)	13.5 acres
Cooper Mountain – Multi-Unit Residential (CM-MR)	20.6 acres
Cooper Mountain – Residential Mixed (CM-RM)	328.7 acres

The 2024 effort used the same steps described in the 2020 BLI with some minor changes in methodology, which included:

- Removing slopes of 25 percent or more.

- Assuming reduced development potential on Title 13 lands (as identified in the updated Natural Resources Report from December 2023):
 - Class 1 riparian habitat were considered 100 percent constrained (unbuildable).
 - Class 2 and 3 riparian habitat and Class A upland habitat were considered 90 percent constrained (10 percent buildable)
 - Upland Class B was considered 50 percent buildable.
 - Upland Class C habitat was considered 100 percent buildable.
- Wetlands were considered unbuildable.
- Determining development status, which included identifying whether property was committed, developed, partially vacant, or vacant. The 2024 BLI used the same designations for property as the 2020 BLI. Only partially vacant and vacant land was considered to have development potential.
- Determining development capacity. The 2024 BLI used a slightly different methodology.
 - In 2020, the methodology (see results in Table 3 of the 2020 Draft Buildable Lands Inventory):
 1. Determined a total number of unconstrained partially vacant acres and unconstrained totally vacant acres for the study area; and
 2. Subtracted existing home sites for partially vacant areas; and then
 3. Subtracted 25 percent from each of those numbers to determined developable acres.
 - In 2024, the methodology:
 1. Determined a total number of unconstrained partially vacant acres and unconstrained totally vacant acres for each lot; and
 2. Subtracted existing home sites for partially vacant areas by removing one-half acre from those sites; and
 3. Subtracted Parks Overlay geographies for each lot; and
 4. Subtracted 25 percent of each lot for “public facilities,” which would include elements like future streets and stormwater facilities; and then
 5. Calculated total developable acres for the entire Cooper Mountain Community Plan as well as each zoning district.

This methodology provided a potentially more accurate estimate because the methodology considers how the need to provide public or private infrastructure (streets and stormwater) affects each site rather than subtracting the 25 percent assumed reduction from the entire

study area. The methodology also subtracts Parks Overlay acreage from sites where the Parks Overlay is present because open space rules require property owners to locate their open space within the Parks Overlay, meaning it is unlikely to see significant housing or commercial development.

Housing estimate

Based on the developable land identified in the BLI, city staff developed an estimate of the number of homes that could be produced, at minimum, within each zoning district by multiplying the developable acres by the minimum density within that district.

For the mixed-use districts (CM-CS and CM-HDR), the calculations assume 70 percent of the land is available for residential units because the other 30 percent is assumed to be taken up by commercial uses. The housing estimate total in Table 2 might vary a few units from the exact calculation because of rounding.

Table 2: Cooper Mountain Housing Estimate

Cooper Mountain Zoning District	Developable Acres	Minimum density (units per net acre)	Housing Estimate
Cooper Mountain – Community Service (CM-CS):	11	34	258
Cooper Mountain – High Density Residential (CM-HDR)	13.5	34	317
Cooper Mountain – Multi-Unit Residential (CM-MR)	20.6	34	696
Cooper Mountain – Residential Mixed (CM-RM)	328.7	10	3,198
Total	373.7¹		4,469

To estimate the housing types generated through Cooper Mountain development, the calculations in Table 3 assume the following mix of uses:

- CM-RM: 60 percent single-detached housing units and 40 percent middle housing units.
- CM-CS, CM-HDR, and CM-MR: 85 percent multi-dwelling units and 15 percent middle housing.

¹ Developable acres for each district might not add up to total because of rounding.

Table 3: Cooper Mountain Housing Types Estimate

Cooper Mountain Zoning District	Total units	Single-detached homes	Middle Housing	Multi-dwellings
Cooper Mountain – Community Service (CM-CS):	258	0	38	220
Cooper Mountain – High Density Residential (CM-HDR)	317	0	47	270
Cooper Mountain – Multi-Unit Residential (CM-MR)	696	0	104	592
Cooper Mountain – Residential Mixed (CM-RM)	3,198	1,919	1,279	0
Total	4,469	1,919	1,468	1082
Percentage ²		42.9	32.8	24.2

Recent regulatory approach changes

Since the BLI revised and housing estimate was calculated in early 2024, the regulatory approach has changed in the following ways:

1. The parks/open space approach was revised.
 - a. Rather than required dedication of land within the Parks Overlay to THPRD, the city shifted the approach to require about 15 percent of gross acreage³ on a site for open space. No dedication is required. Properties with Parks Overlay on their site must provide the open space within that geography first. This means that the land inside the Parks Overlay still is largely expected to not be developed with housing.
 - b. The Parks Overlay boundaries have changed to focus Parks Overlay area on portions of sites that are most developable for parks amenities. The Parks Overlay was reduced 3 acres for the Community Park.
2. The Resource Overlay was adjusted to correct some mapping errors and respond to Department of State Lands-required revisions to the Local Wetland Inventory.

Taken together, the Parks Overlay and open space requirement changes are expected to reduce open space acreage within the Parks Overlay geographies to 24.8 acres from 32.8 acres. That could theoretically open up 8 acres of CM-RM land for development, which

² Percentages might not add up to 100 percent because of rounding.

³ See the proposed Development Code text amendment for full details on how the open space approach applies to properties withing Cooper Mountain.

could produce a minimum of 80 units (because the minimum units per acre is 10 units per acre), although not all of that 8 acres is unconstrained. Some portion is within the Resource Overlay.

The Resource Overlay changes affect an even smaller geography. They could generate additional housing, but given that the acreage also is in CM-RM, the change is not expected to make a significant difference to the housing estimate.

The City Council provided staff with direction that the Cooper Mountain Community Plan should generate somewhere between 4,500 and 5,200 housing units, well above the about 3,700 housing units required by the Metro Conditions of Approval. The Cooper Mountain Transportation Analysis assumed 5,200 housing units, so the housing estimate is consistent with that assumption.

The BLI and housing estimate from early 2024 remain an accurate estimate of the buildable land and estimated minimum housing production within the Cooper Mountain Community Plan area.