

# 2020 Census Redistricting Study: Clackamas Education Service District

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*Meadow near Little Crater Lake, Clackamas County  
Gary Halvorson / Oregon State Archives*

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PRC's mission is to be a world-class center of training and knowledge for solutions to problems in applied demography, including population estimates, projections, geospatial analysis, and census-taking.



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## Background

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ORS 334.032 provides that Oregon Education Service Districts “shall divide the education service district into not more than 11 zones as nearly equal in census population as may be practicable, measured along common school district boundary lines except that zones may be established using voting precinct boundaries in order to achieve greater equality of population.” Clackamas Education Service District (CKESD) requested from the Population Research Center (PRC) a proposal for new boundaries for its board member electoral districts (“zones”) that meet these requirements (five of CKESD’s board members are elected by zone). This summary report describes the data and methodology used to conduct the redistricting analysis, along with final results.

## Data

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ORS requires use of the latest federal census data, which motivated the use of the Public Law 94-171 Redistricting Data File from the 2020 Census, released during August, 2021.<sup>[1]</sup> Digital boundaries of the current board member zones were obtained via correspondence from CKESD. The redistricting analysis was conducted during census tabulation block level geography, which is the smallest geographic unit at which population and housing counts are available. Block boundaries for the 2020 Census were obtained from the US Census Bureau.<sup>[2]</sup> Building footprints from the Oregon Department of Geology and Mineral Industries (DOGAMI) Statewide building footprints for Oregon (SFBO) dataset were also used to model spatial population distribution.<sup>[3]</sup>

## Methodology

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PRC developed a Geographic Information System (GIS) workflow to accomplish the following tasks:

- Determine the current population of each board member zone and the total population of the district;
- Adjust boundaries of the current districts so as to make zones as equal in population as feasible, and such that the spread between the lowest and highest population zones is under 10 percent.

These goals were accomplished by adjusting boundaries inside the perimeter of the district by following existing geographic and political boundaries such as major roads, parks or public spaces, city and UGB boundaries, and school districts.

In some cases, census blocks do not align with the boundaries of the CKESD district boundary. When this occurred, the total population of a census block was allocated into building footprints within the block, in proportion to the square footage of the building footprints. Then, the population on either side of a line drawn through a block was included with the population of the other blocks wholly contained on either side (Figure 1). This methodology yields more accurate estimates of population than simpler methods.<sup>[4]</sup>



**Figure 1:** Example population estimation per building footprint within a block. Red boundaries indicate a census block. Black boundaries indicate a building. Numbers indicate an actual (if known) or estimated population per building within the block (summing to the block population as reported from the 2020 Census). Figure adapted from [4].

## Results

In the current boundaries, the 2020 Census found that Zones 1,4,5 grew more quickly than average, and as a result would need to contract. Zones 2,3 grew less than average and would need to add population (Table 1).

**Table 1:** Populations of Current (Baseline) and Proposed Zones.

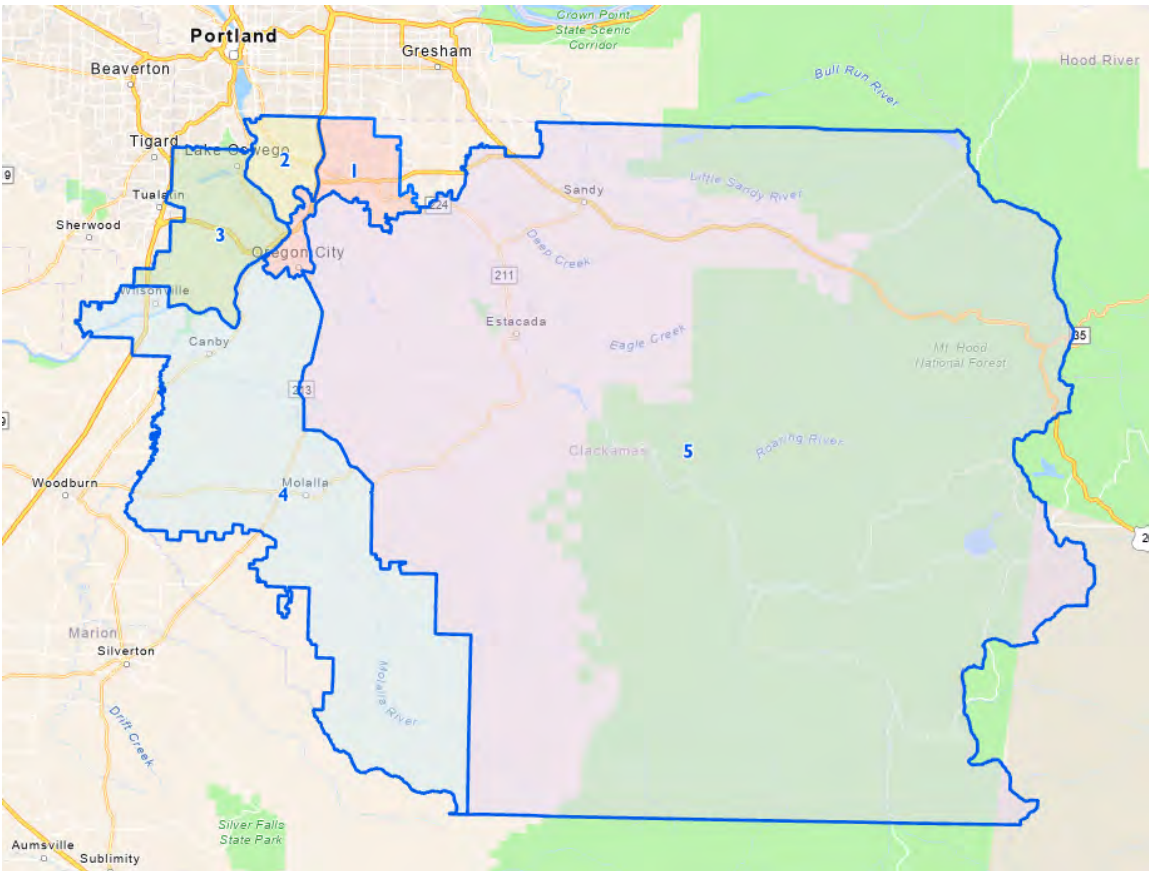
<b>Baseline (2020 Census)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>TOTAL</b>	<b>AVERAGE</b>
Population:	83,572	75,022	79,155	84,651	82,019	404,419	80,884
Deviation:	2,688	-5,862	-1,729	3,767	1,135		
Percent	3.3%	-7.2%	-2.1%	4.7%	1.4%		
<b>Proposed</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>TOTAL</b>	<b>AVERAGE</b>
Population:	80,962	81,217	80,690	80,895	80,655	404,419	80,884
Deviation:	78	333	-194	11	-229		
Percent	0.1%	0.4%	-0.2%	0.0%	-0.3%		

To generate the redistricting proposal, the following adjustments were made:

- Zone 1 was extended SE to include Carver area (which is also in the North Clackamas SD).
- The Oregon City portion of Zone 1 was also reorganized slightly so that it includes areas west of OR-213 (e.g., Clackamas Heights and Echo-Dell move to Zone 4, as they are east of OR-213).
- Zone 2 includes more of the Gladstone SD, including the Glen Echo neighborhood.
- The boundary between Zone 1 and Zone 2 is better aligned to the Gladstone SD boundary.

- Zone 3 expands to include several blocks north of Wilsonville.
- Zone 4 expands to include the Colton SD; the western border between Zone 4 and Zone 5 becomes S Union Mills Rd and OR-213/Cascade Hwy.

In addition, CKESD provided the locations of current board zone members, and PRC determined that the proposed zones did not cause any current board member to be moved into a different zone from that which they currently reside within. A map of the proposed zones is provided below (Figure 2).



**Figure 2:** Proposed CKESD Board Member Zones (see attachments for further detail).

The map in Figure 2 and additional maps are included as attachments in higher resolution.

### **Boundary Description**

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A description of the features representing zone boundaries is included below for reference.\*

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\* Although every effort has been made to provide complete and accurate information, PRC relies on the accuracy of data on hand and makes no warranties or representations as to the legal sufficiency or accuracy of the materials provided. If misleading, inaccurate or otherwise inappropriate information is discovered and brought to our attention, we will make a reasonable effort to correct it. Where census block boundaries are referenced, they refer to 2020 census tabulation blocks as published in the 2020 vintage Tiger/Line database.

## Zone 1

- Begin at the Clackamas/Multnomah County line at I-205.
- S along I-205 to the easterly extension of Ohlson Rd.
- W along Ohlson Rd to Cason Rd, thereafter from Cason Rd following the outer border of the Gladstone SD counter-clockwise until reaching the intersection of Caldwell Rd and Scott Ln.
- NE along Caldwell Rd to Oatfield Rd.
- SE along Oatfield Rd to the extension of SE Hull Ave.
- SW along SE Hull Ave and its extension to the intersection of Oregon City SD and Gladstone SD.
- SE along the intersection of Oregon City SD and Gladstone SD to Caldwell Rd.
- NE along Caldwell Rd to Oatfield Rd.
- SE along Oatfield Rd to E Kenmore St.
- SW along E Kenmore St to Donna Lynn Way.
- SE along Donna Lynn Way to E Hereford St.
- SW along E Hereford St to Cornell Ave.
- NW along Cornell Ave to Landon St.
- SW along Landon St to High St.
- NW along High St. to Patricia Dr.
- SW along Patricia Dr to Harvard Ave.
- SE along Harvard Ave to Jersey St.
- SW along Jersey St to Portland Ave.
- SE along Portland Ave to W Gloucester St.
- SW along W Gloucester St to McLoughlin Blvd/99E.
- SE along McLoughlin Blvd/99E to the Clackamas River.
- SW along the Clackamas River to the northwesternmost point of Clackamette Park and the confluence with the Willamette River (westernmost intersection between Gladstone SD and Oregon City SD).
- S along the Willamette River, following the city limits of Oregon City counterclockwise until the intersection of Rose Rd at South End Rd.
- NE along South End Rd to Partlow Rd.
- SE along Partlow Rd to Central Point Rd.
- NE along Central Point Rd to Warner Parrott Rd.
- E along Warner Parrott Rd to Leland Rd.
- S along Leland Rd to Clairmont Wy.
- E and SE along Clairmont Way to Wassail Ln.
- N and NE along Wassail Ln to Rosebery Ave.
- N, then NE, then ESE along Rosebery Ave to Clairmont Way.
- SE, then E, then NE along Clairmont Way to Molalla Ave.
- NW along Molalla Ave to Beavercreek Rd.
- E along Beavercreek Rd to Trails End Hwy/213.
- N, then NE, then NW along Trails End Hwy/213/Cascade Hwy S. to Veterans Memorial Hwy/I-205.
- NE along Veterans Memorial Hwy/I-205 to Clackamas River.
- E, then N, then NE, then SE, along the Clackamas River, following the boundary of the North Clackamas School District, then along the southern boundary of the North Clackamas School District to the intersection with the Estacada School District.
- North along the boundary between the North Clackamas School District to the intersection with the Gresham-Barlow School District.

- West, then north, along the outer perimeter of the Clackamas ESD, to the point of beginning.

#### Zone 2

- Begin at the Clackamas/Multnomah County line at I-205.
- W along the outer perimeter of the Clackamas ESD, to the southernmost point of intersection of Multnomah and Clackamas county boundaries in the Willamette River (the southwesternmost point of Milwaukie city limits).
- S and then SE along the Willamette River to the northwesternmost point of Clackamette Park and the confluence with the Willamette River (westernmost intersection between Gladstone SD and Oregon City SD).
- E and NE along the Clackamas River to McLoughlin Blvd/99E.
- N along McLoughlin Blvd/99E to W Gloucester St.
- NE along W Gloucester St to Portland Ave.
- NW along Portland Ave to E Jersey St.
- NE along E Jersey St to Harvard Ave.
- NW along Harvard Ave to Patricia Dr.
- NE along Patricia Dr to High St.
- SE along High St to Landon St.
- NE along Landon St to Cornell Ave.
- SE along Cornell Ave to E Hereford St.
- NE along E Hereford St to Donna Lynn Way.
- NW along Donna Lynn Way to E Kenmore St.
- NE along E Kenmore St to Oatfield Rd.
- NE along Oatfield Rd to Caldwell Rd.
- SW along Caldwell Rd to the intersection of Oregon City SD and Gladstone SD.
- NW along the intersection of Oregon City SD and Gladstone SD to SE Hull Ave.
- NE along SE Hull Ave and its extension to Oatfield Rd.
- NW along Oatfield Rd to the intersection of Oregon City SD and Gladstone SD and North Clackamas SD.
- N, then NE, then SE, then NE, in clockwise fashion, following the boundary of the North Clackamas SD and the Gladstone SD, to Veterans Memorial Hwy/213/I-205.
- NE, then NW, then NE, then NW, along Veterans Memorial Hwy/213/I-205 to the point of beginning.

#### Zone 3

- Begin at the intersection of the Clackamas/Multnomah/Washington County lines at northwesternmost corner of the Clackamas ESD boundary.
- S along the outer perimeter of the Clackamas ESD boundary/SW 65<sup>th</sup> Ave and the extension thereof to Lower Boones Ferry Rd.
- W along Lower Boones Ferry Rd to I-5 S/Pacific Hwy/290.
- SW along I-5 S/Pacific Hwy/290 to the Tualatin River
- SE along the Tualatin River to the extension of SW 50<sup>th</sup> Ave.
- S along SW 50<sup>th</sup> Ave and its extension to SW Prosperity Park Rd, along the outer perimeter of the Clackamas ESD boundary.
- W along the outer perimeter of the Clackamas ESD boundary to the Washington/Clackamas County line/SW 65<sup>th</sup> Ave.
- S along the Washington/Clackamas County line/SW 65<sup>th</sup> Ave, then W, then S, in alternating order, following the outer perimeter of the Clackamas ESD boundary to SW Elligsen Rd.

- W, then S, along the outer perimeter of the Clackamas ESD boundary/SW Parkway Center Dr, to the Washington/Clackamas county line.
- W along the Washington/Clackamas county line/outer perimeter of the Clackamas ESD/Tigard-Tualatin SD boundary to the extension of SW Garden Acres Rd.
- S along the extension of SW Garden Acres Rd along the outer perimeter of the Clackamas ESD to Coffee Lake Creek.
- W along the outer perimeter of the Clackamas ESD to SW Tooze Rd.
- SE and then E and then NE and then E along SW Tooze Rd/SW Boeckman Rd to the Wilsonville city limits (SW Advance Rd E of SW Wilsonville Rd).
- S, then W along the Wilsonville City limits to the extension of SW Stafford Rd.
- S along the extension of SW Stafford Rd to the Willamette River.
- E and then SE and then N along the Willamette River and boundary of the West Linn SD and Lake Oswego SD to the Multnomah/Clackamas county line and point of intersection between the Lake Oswego and Riverdale SD.
- W along the outer perimeter of the Clackamas ESD to the point of beginning.

#### Zone 4

- Begin at the intersection of SW Grahams Ferry Rd and SW Tooze Rd
- Proceed S along SW Grahams Ferry Rd, and then W along the outer perimeter of the Clackamas ESD, to SW Bell Rd.
- Proceed in counterclockwise fashion along SW Bell Rd and the outer perimeter of the Clackamas ESD, to the Clackamas/Marion county line in the Willamette River.
- E and then S along the Clackamas/Marion county line and outer perimeter of the Clackamas ESD/Canby SD to Arndt Rd NE.
- E along Arndt Rd NE to the Pudding River/Clackamas/Marion county line and outer perimeter of the Clackamas ESD/Canby SD.
- S along Pudding River/Clackamas/Marion county line and then E along the outer perimeter of the Clackamas ESD/Canby SD to the intersection of the Canby SD and Molalla River SD.
- E and then S then E along the outer perimeter of the Clackamas ESD to the southwesternmost point of the Colton SD.
- N along the western perimeter of the Colton SD to the Woodburn-Estacada Hwy/S OR-211
- NW along Woodburn-Estacada Hwy/S OR-211 to intersection with S Union Mills Rd.
- NW and then W along S Union Mills Rd to Cascade Hwy S/213.
- N along Cascade Hwy S/Trails End Hwy/213 to intersection with Molalla Ave/S Douglas Loop.
- NW along Molalla Ave to Clairmont Way.
- SW along Clairmont Way to Rosebery Ave.
- N then NW then W then SW then S then SE along Rosebery Ave to Wassail Ln.
- SW along Wassail Ln to Clairmont Way.
- NW then W then SW along Clairmont Way to Leland Rd.
- N/NW along Leland Rd to Warner Parrott Rd.
- W along Warner Parrott Rd to Central Point Rd.
- SW along Central Point Rd to Partlow Rd.
- NW along Partlow Rd to South End Rd.
- SW along South End Rd to S Rose Rd.
- NW along S Rose Rd/Rose Rd to S Deer Ln.
- NE and NW along the extension of S Deer Ln and the perimeter of census block 410050226022021 to the intersection with census block 410050226022016.

- NE along the outer perimeter of census blocks 410050226022016 and 410050226022017 to the point of intersection with census block 410050226022019 and Oregon City city limits.
- NW then NE along Oregon City city limits to the Willamette River and intersection with census block 410050206021004 and the West Linn SD.
- SW and then W along the Willamette River/outer border of the West Linn SD to the Wilsonville city limits/extension of SW Stafford Rd.
- N along the extension of SW Stafford Rd and then E and N along the Wilsonville City Limits to SW Advance Rd.
- W along SW Advance Rd/SW Boeckman Rd to SW Tooze Rd.
- W along SW Tooze Rd to the point of beginning

#### Zone 5

- Begin at the Multnomah/Clackamas county line at the intersection with Hood River County.
- W and then SW along the outer perimeter of the Clackamas ESD/Oregon Trail SD to the intersection with the Estacada SD.
- W along the outer perimeter of the Clackamas ESD/Estacada SD to the intersection with the North Clackamas SD.
- S and W along the outer perimeter of the North Clackamas SD/Clackamas River to Veterans Memorial Hwy/213/I-205.
- SW along Veterans Memorial Hwy/213/I-205 to Cascade Hwy S/213.
- S along Cascade Hwy S/213/Trails End Hwy to Beaver Creek Rd.
- W along Beaver Creek Rd to Molalla Ave.
- SE along Molalla Ave/Cascade Hwy S/213/Trails End Hwy to S Union Mills Rd.
- E and then SE along S Union Mills Rd to S OR-211/Woodburn-Estacada Hwy.
- SE along Woodburn-Estacada Hwy/S OR-211 to the point of intersection with the Colton SD boundary.
- S along the western perimeter of the Colton SD boundary to the Clackamas/Marion county line.
- E along the Clackamas/Marion county line/perimeter of the Clackamas ESD to the point of intersection with the Wasco county line.
- N along the eastern outermost perimeter of the Clackamas ESD to the point of beginning.

#### Enclosures

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1. GIS format (shp) boundaries
2. PDF format maps
3. 2020 Census PL94-171 data for census blocks in the State of Oregon are available in repackaged form at <https://pdx.edu/prc/census-data-oregon>

#### References

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[1] U.S. Census Bureau. 2020 Census: P.L. 94-171 Redistricting Data File. August 16, 2021. URL: <https://www.census.gov/programs-surveys/decennial-census/about/rdo/summary-files.html>

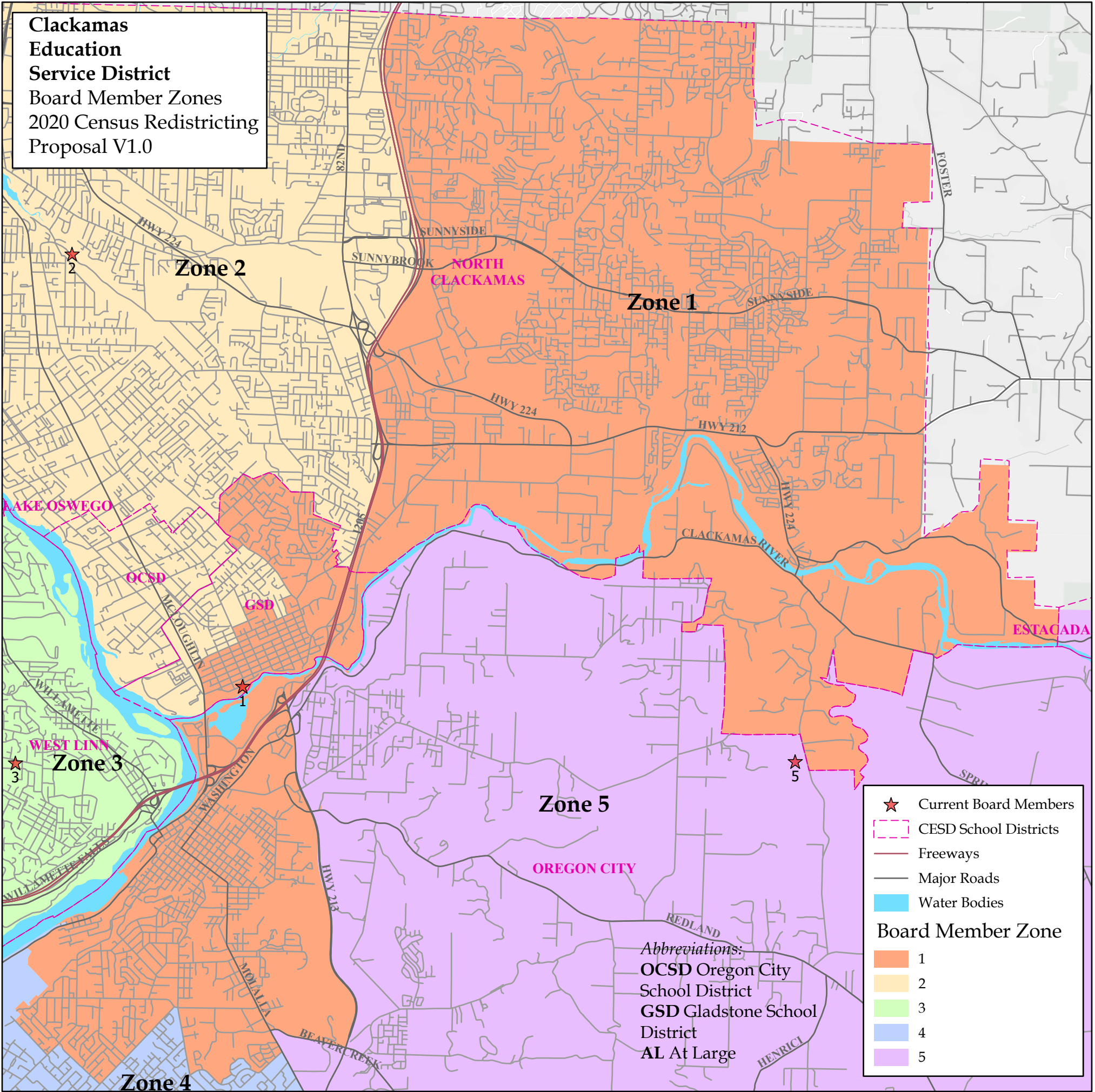
[2] U.S. Census Bureau. 2020 Census: P.L. 94-171 Redistricting Data Shapefiles. January 25, 2021. URL: <https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.2020.html>



[3] Williams, M. "Statewide building footprints for Oregon: Release 1.0 (SFBO-1)". Oregon Department of Geology and Mineral Industries (DOGAMI), 2021. URL: <https://www.oregongeology.org/pubs/dds/p-SBFO-1.htm>

[4] Lwin, K and Murayama, Y. "A GIS Approach to Estimation of Building Population for Micro-spatial Analysis". *Transactions in GIS*, 2009, 13(4): 401-414. doi: 10.1111/j.1467-9671.2009.01171.x

**Clackamas  
Education  
Service District  
Board Member Zones  
2020 Census Redistricting  
Proposal V1.0**



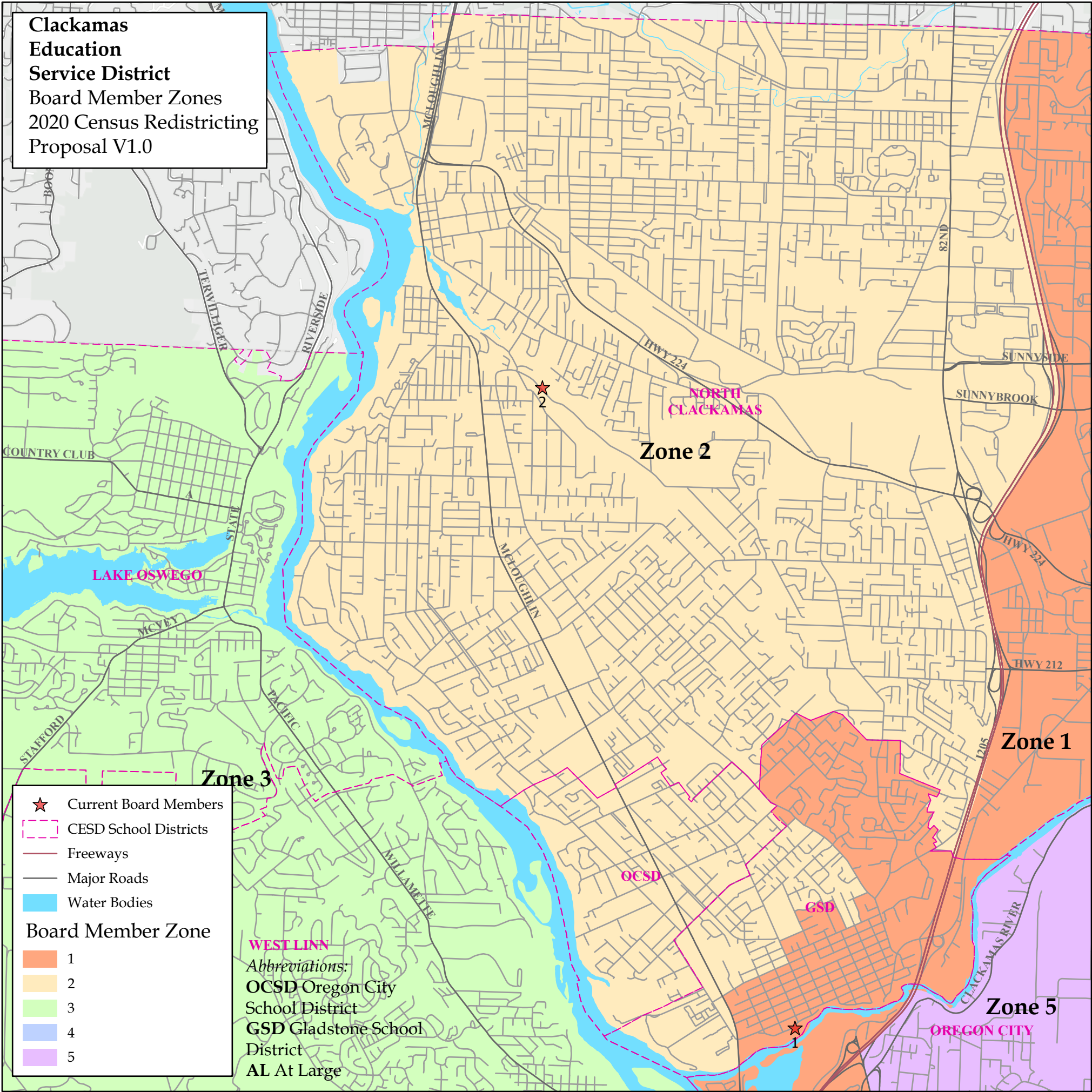
- ★ Current Board Members
- CESD School Districts
- Freeways
- Major Roads
- Water Bodies

**Board Member Zone**

- 1
- 2
- 3
- 4
- 5

*Abbreviations:*  
**OCSD** Oregon City  
 School District  
**GSD** Gladstone School  
 District  
**AL** At Large

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★ Current Board Members

--- CESD School Districts

— Freeways

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Water Bodies

**Board Member Zone**

1

2

3

4

5

**WEST LINN**

*Abbreviations:*

**OCSD** Oregon City

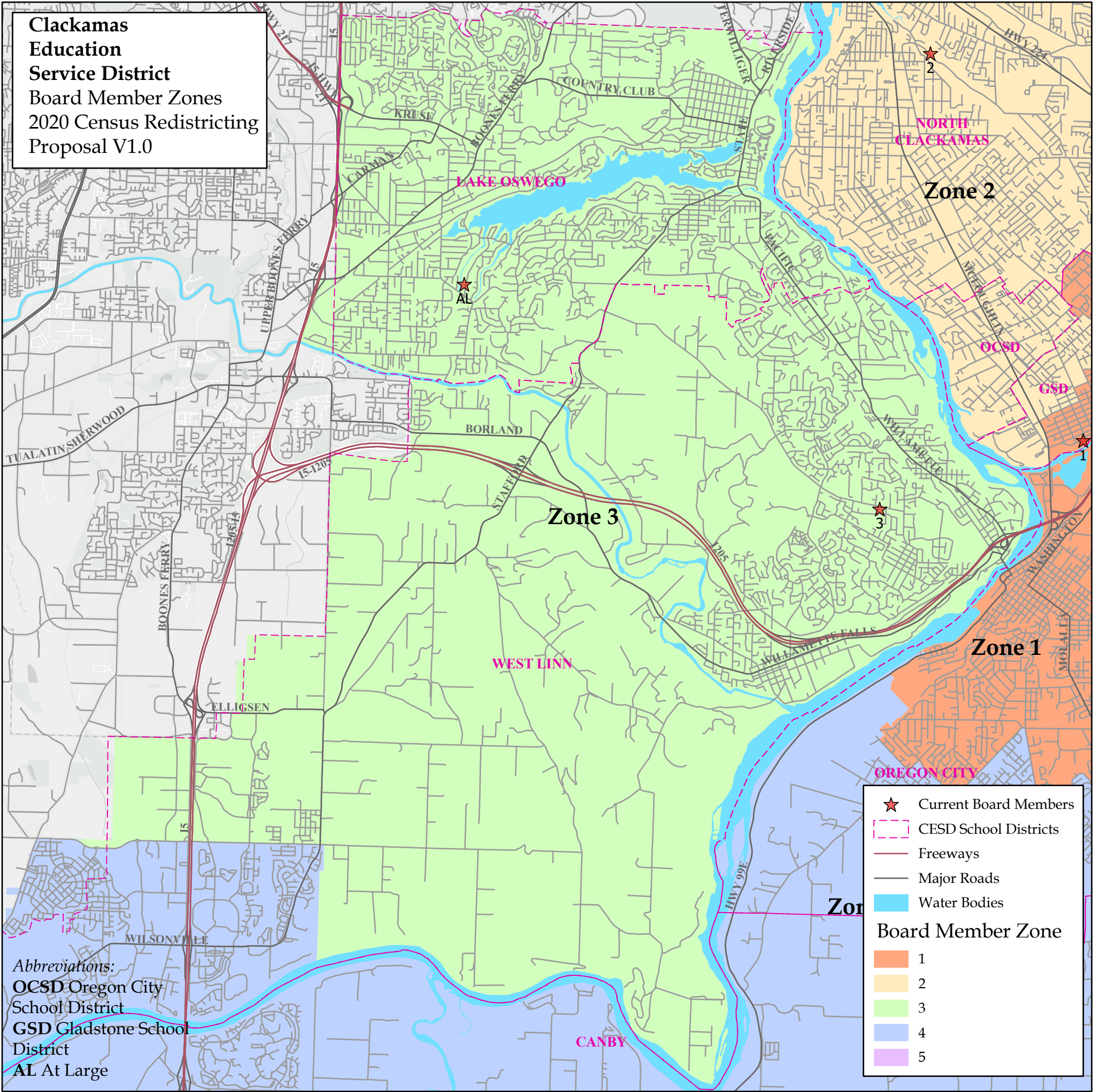
School District

**GSD** Gladstone School

District

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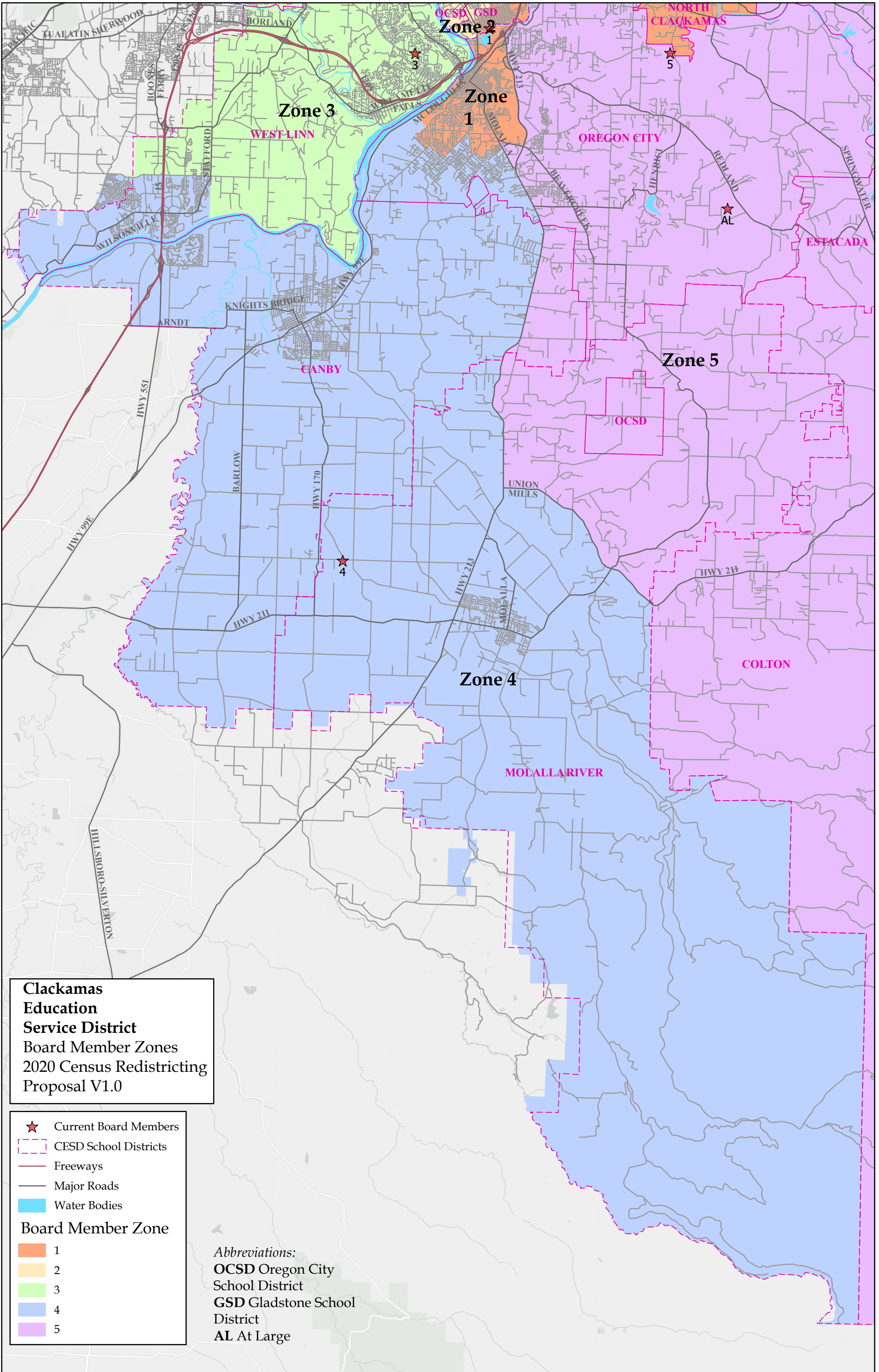


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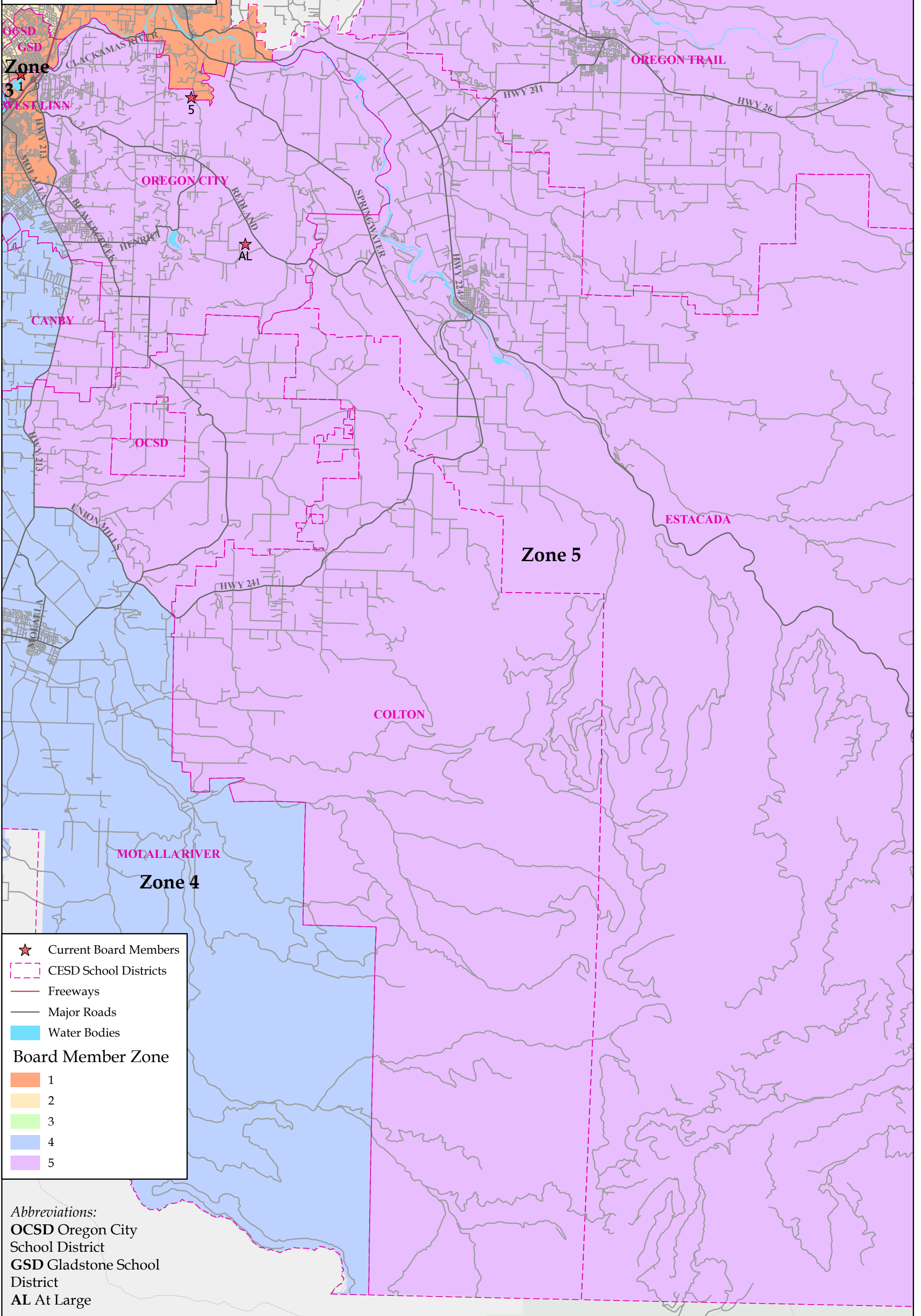
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**Clackamas  
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Service District  
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Proposal V1.0**



**Zone  
3**

**Westlinn**

**Zone 5**

**AL**

**Zone 4**

**Canby**

**OCSD**

**Union Mills**

**Zone 5**

**Colton**

**Estacada**

**Zone 4**

**Molalla River**

**Zone 5**

**OCSD**

**Zone 5**

**Zone 5**

**Zone 5**

**Zone 5**

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