



Sustaining Redmond's Shallow Alluvial Aquifer (in an Expanding Urban Environment)

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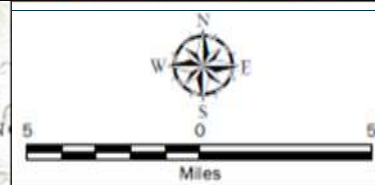
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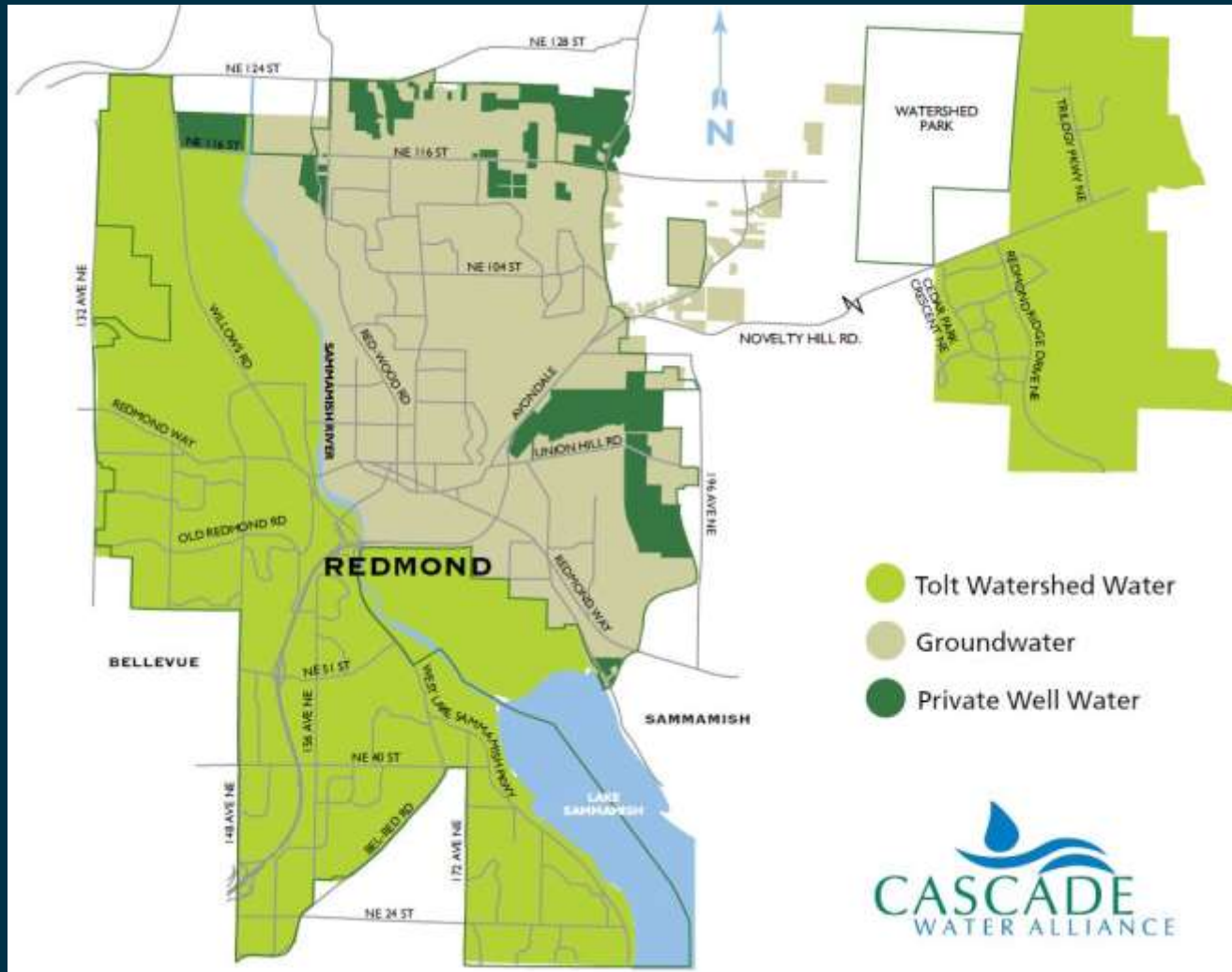
City of Redmond
WASHINGTON

Redmond's Alluvial Aquifer

- 5 City supply wells
- 1 billion gallons annually
- 40% of City's supply

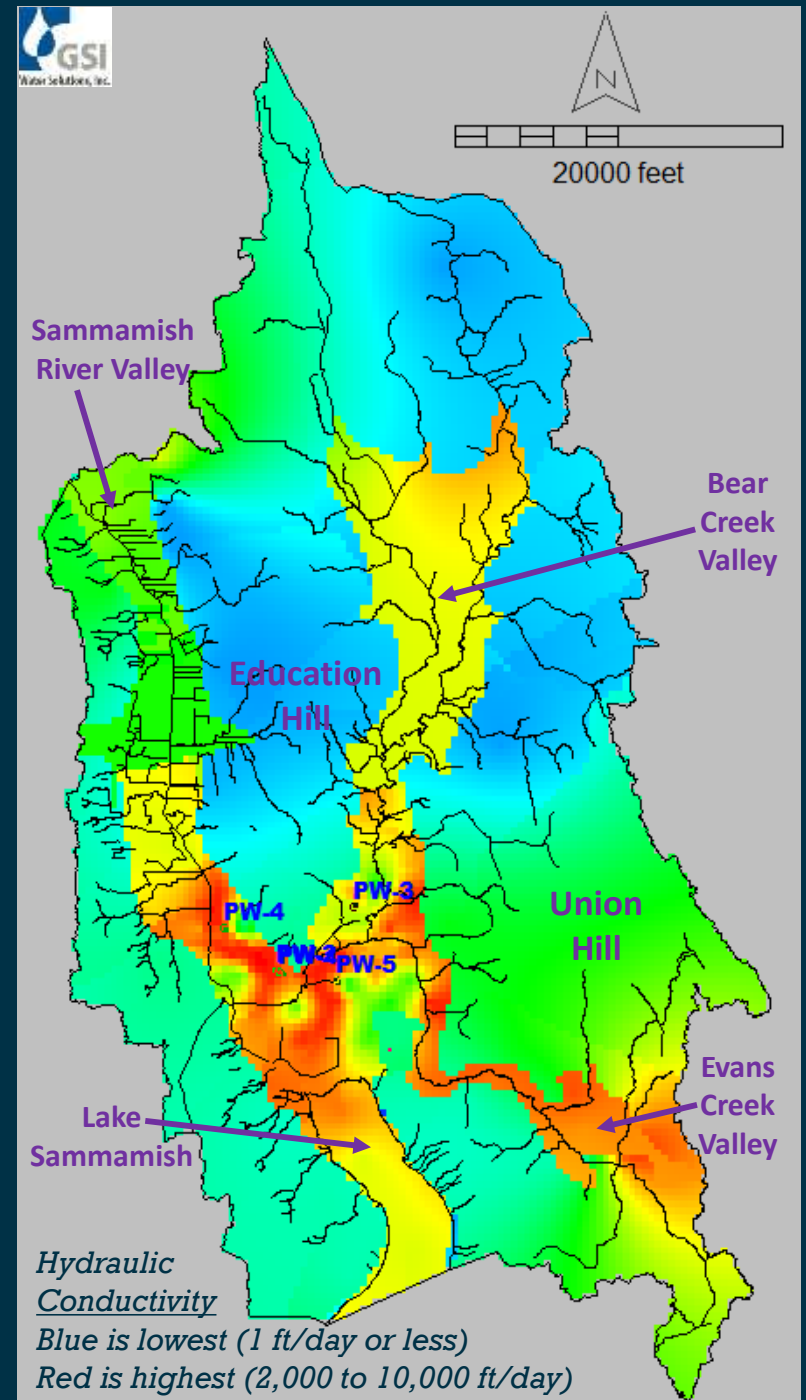


Groundwater: 40% of City Water Supply

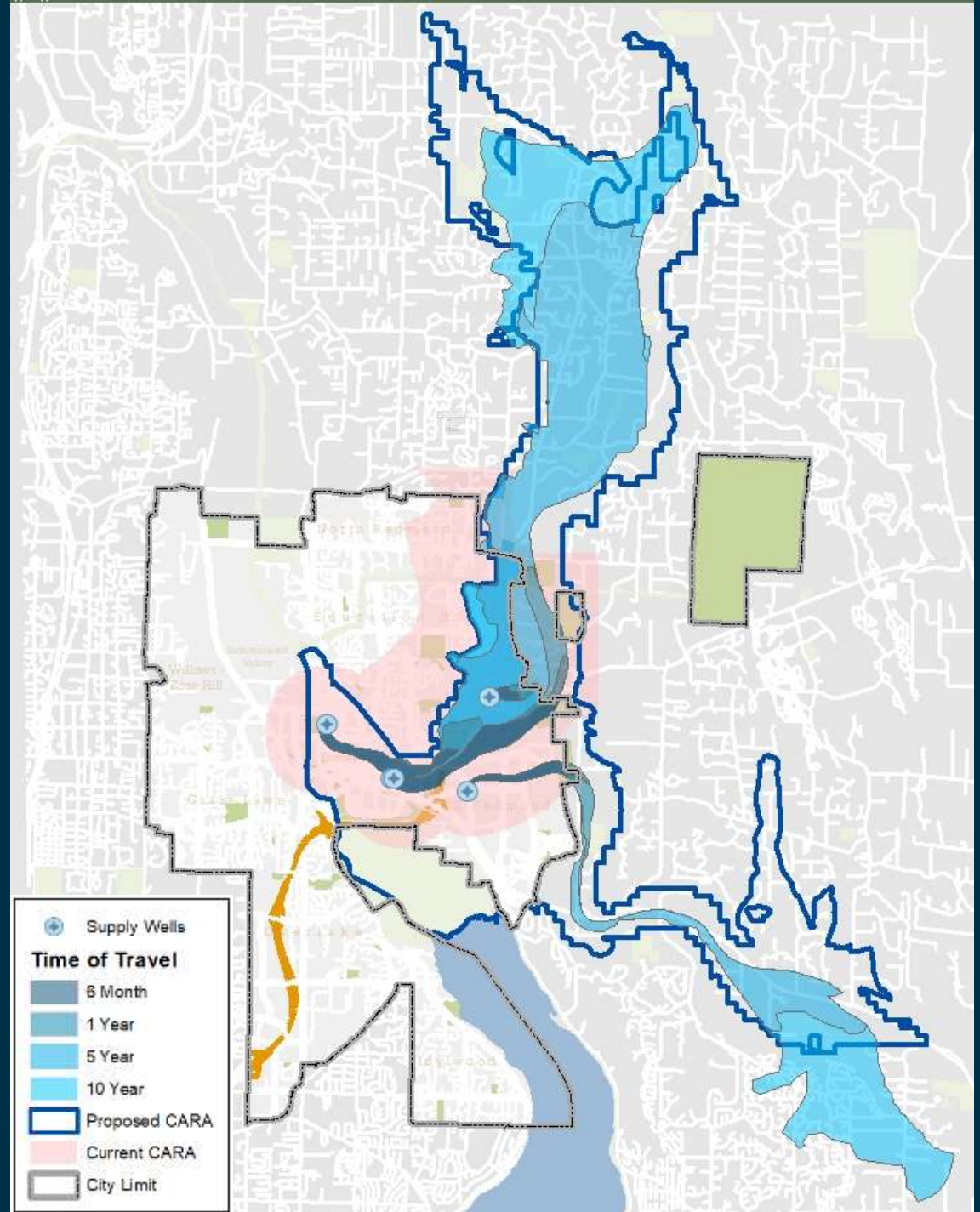


Groundwater Vulnerability

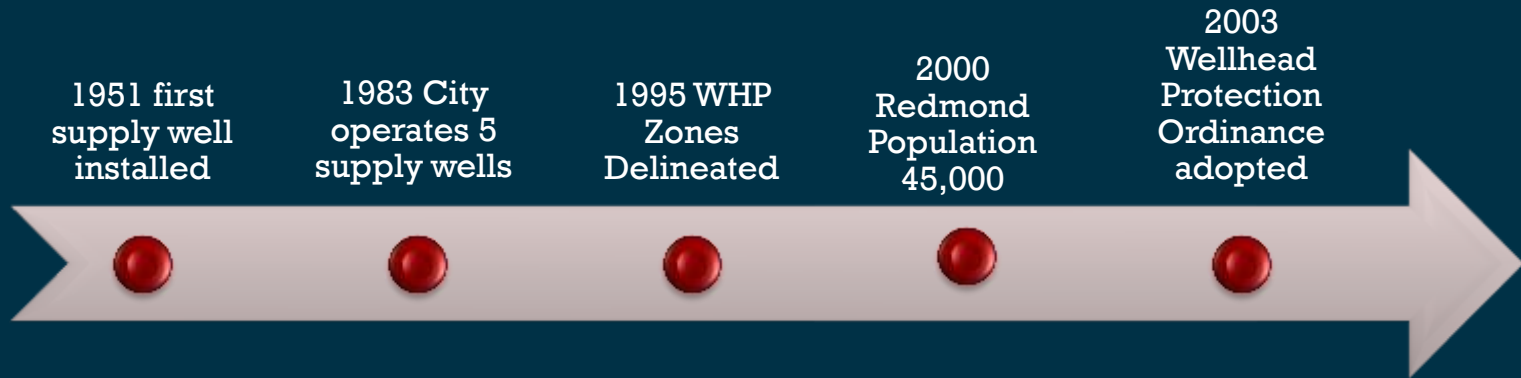
- Shallow (10 feet)
- Thin (50 to 70 feet)
- Heavily urbanized
- Affected by increasing density
 - Flow directions
 - Water levels in wells
 - Water quality
- Climate change



NEW Groundwater Model Results vs. Historic Model Results



Groundwater Protection: More To Consider than in the Past

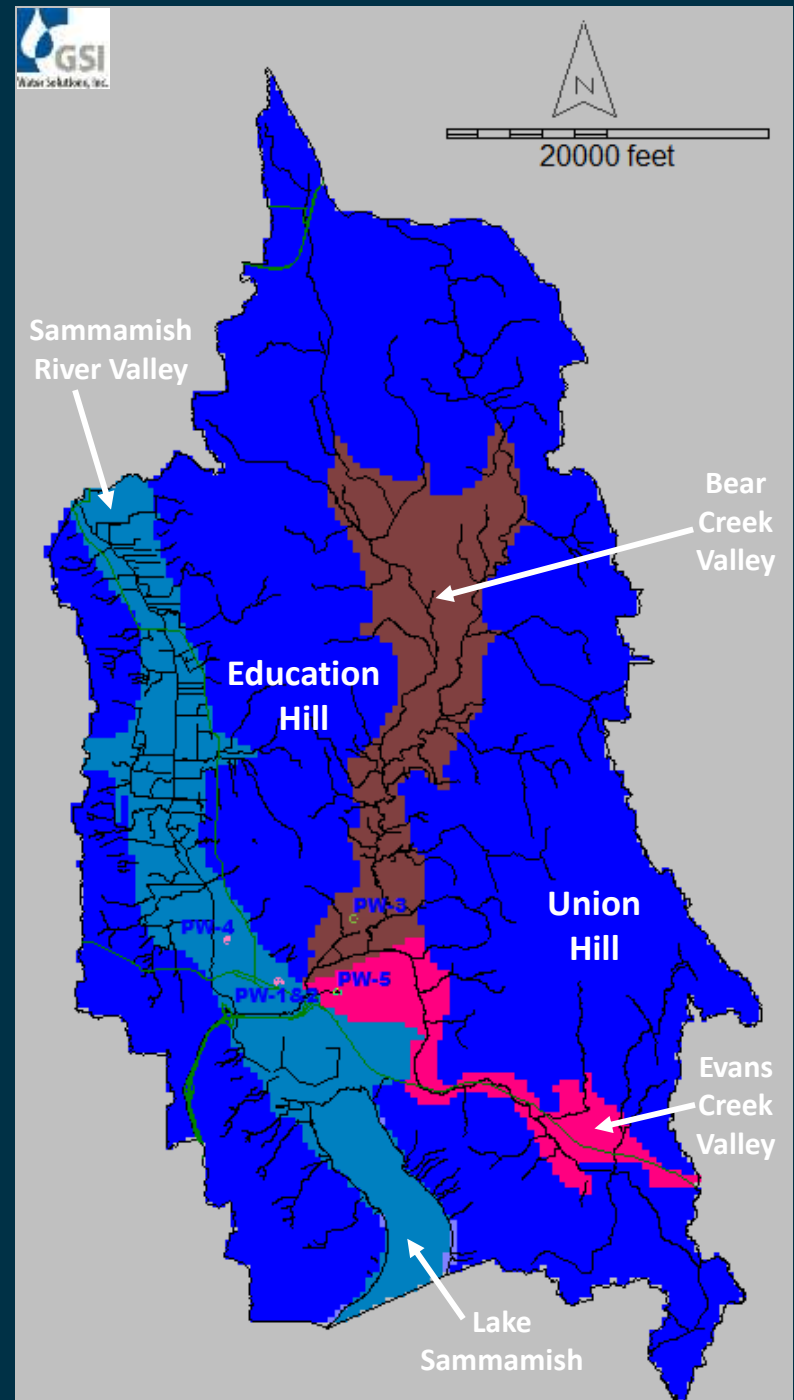


How Can We Maintain Balance?

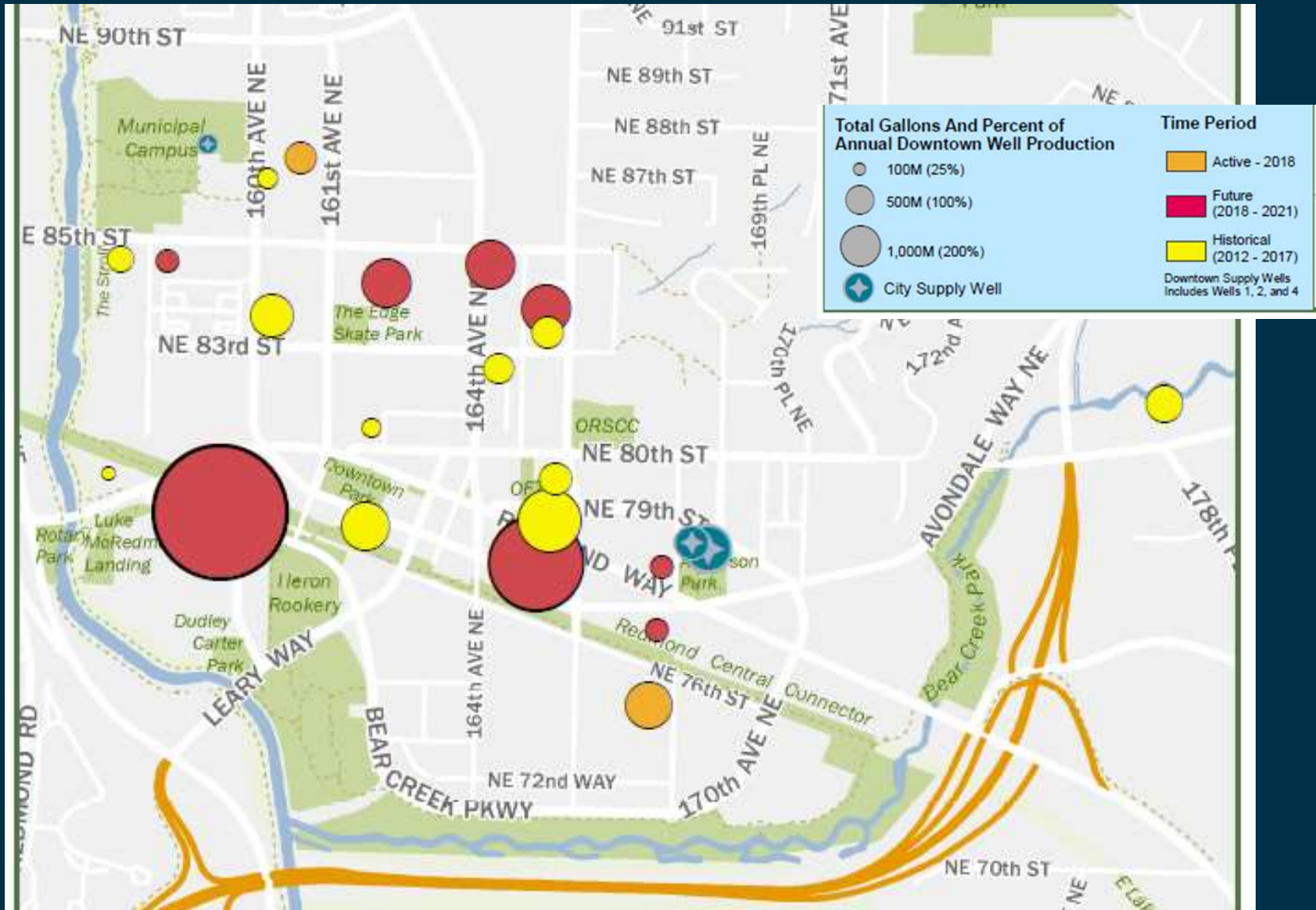


Groundwater Vulnerability Work

- Delineate new groundwater management area
- Develop policies addressing groundwater quantity impacts
- Assess climate change effects

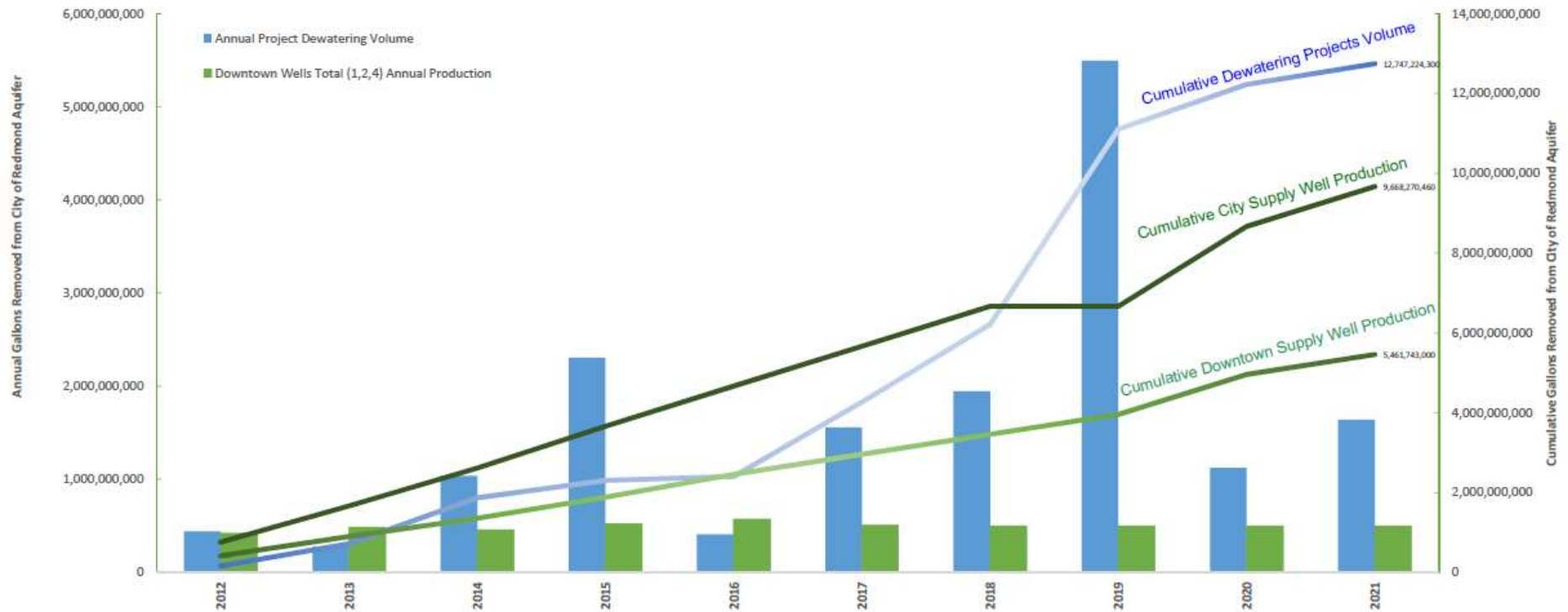


Dewatering vs. Well Production

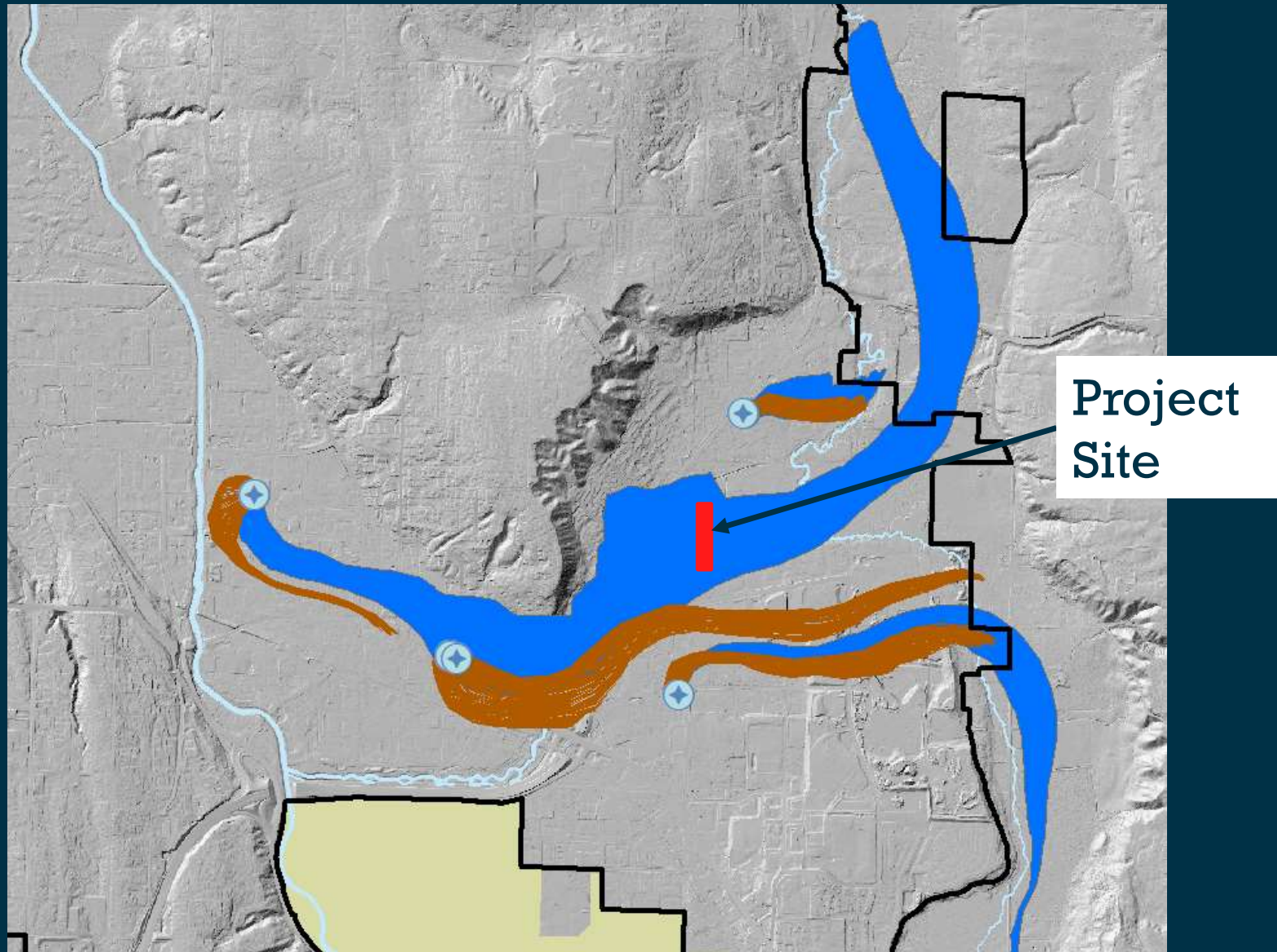


Dewatering vs. Well Production

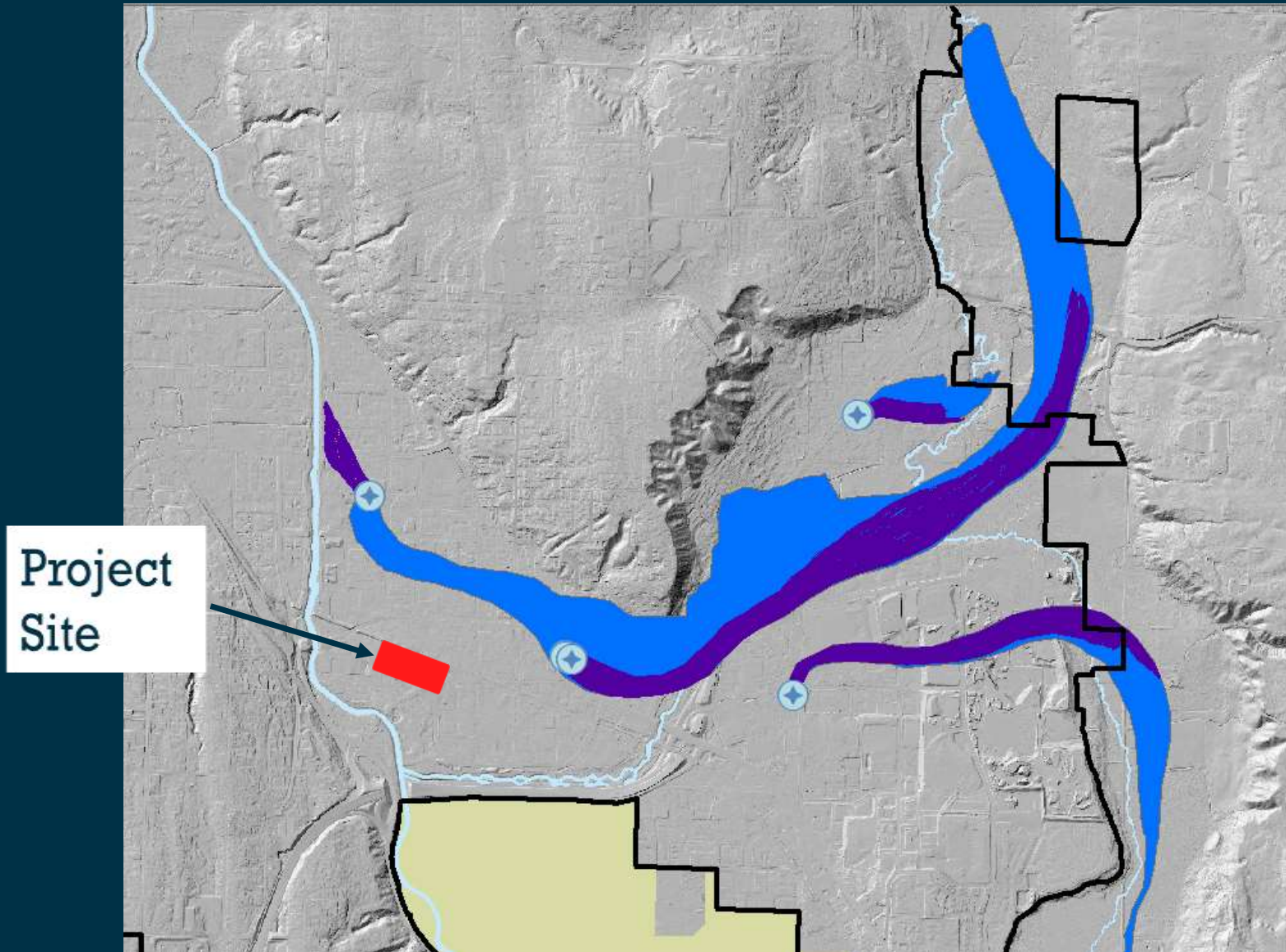
Project Dewatering Volumes vs. City Supply Well Production



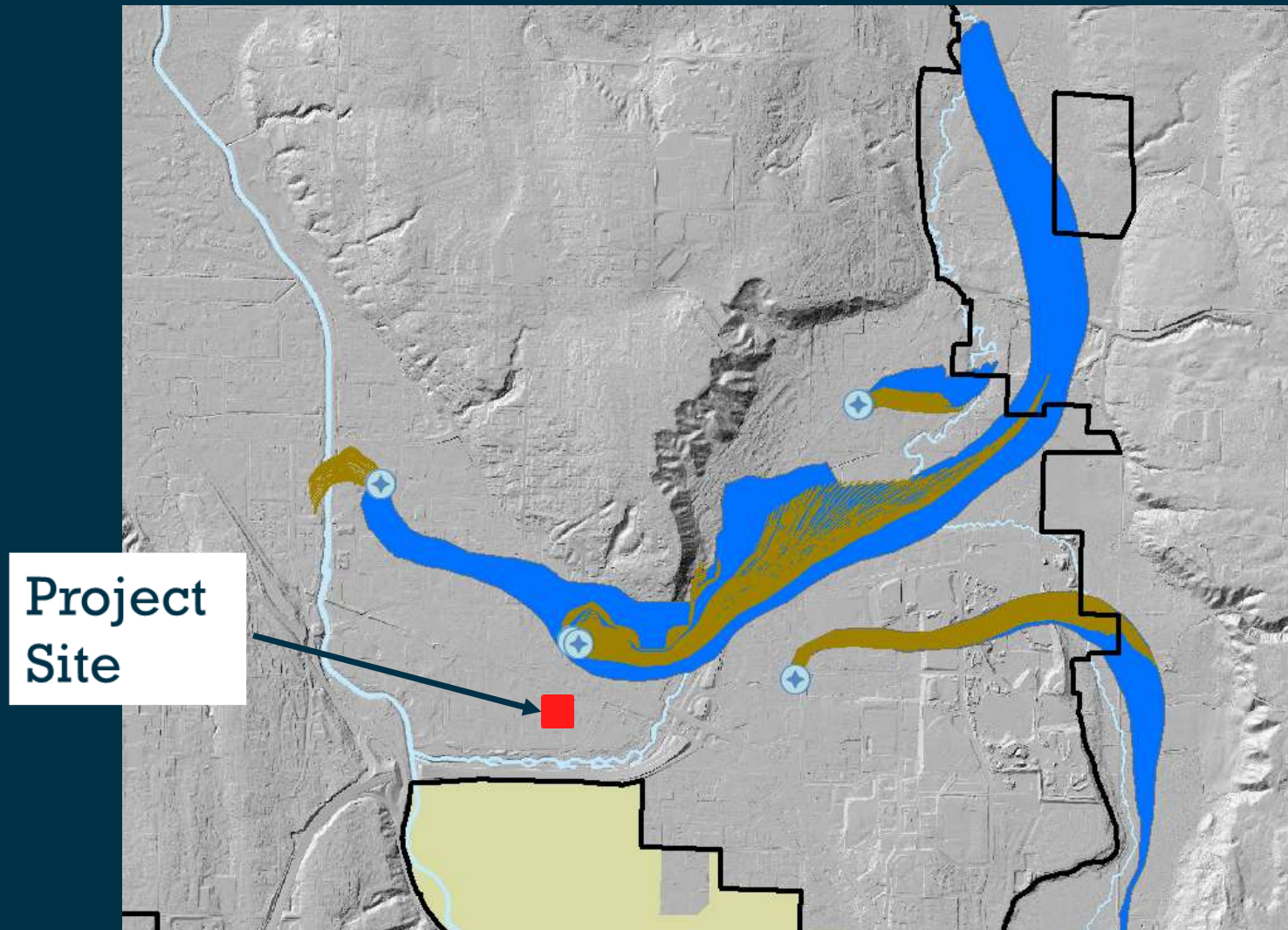
Dewatering Impact on Source Area



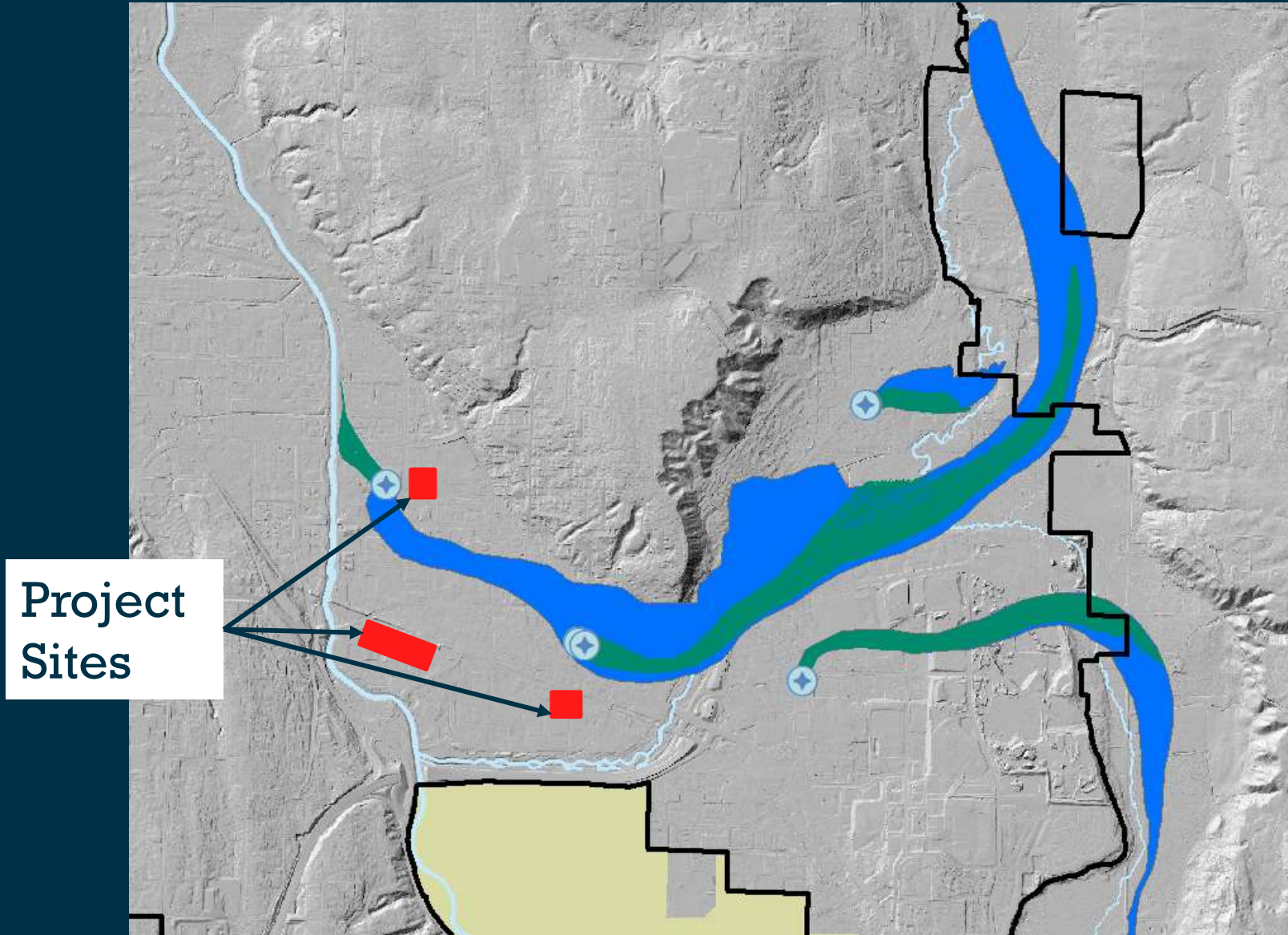
Dewatering Impact on Source Area



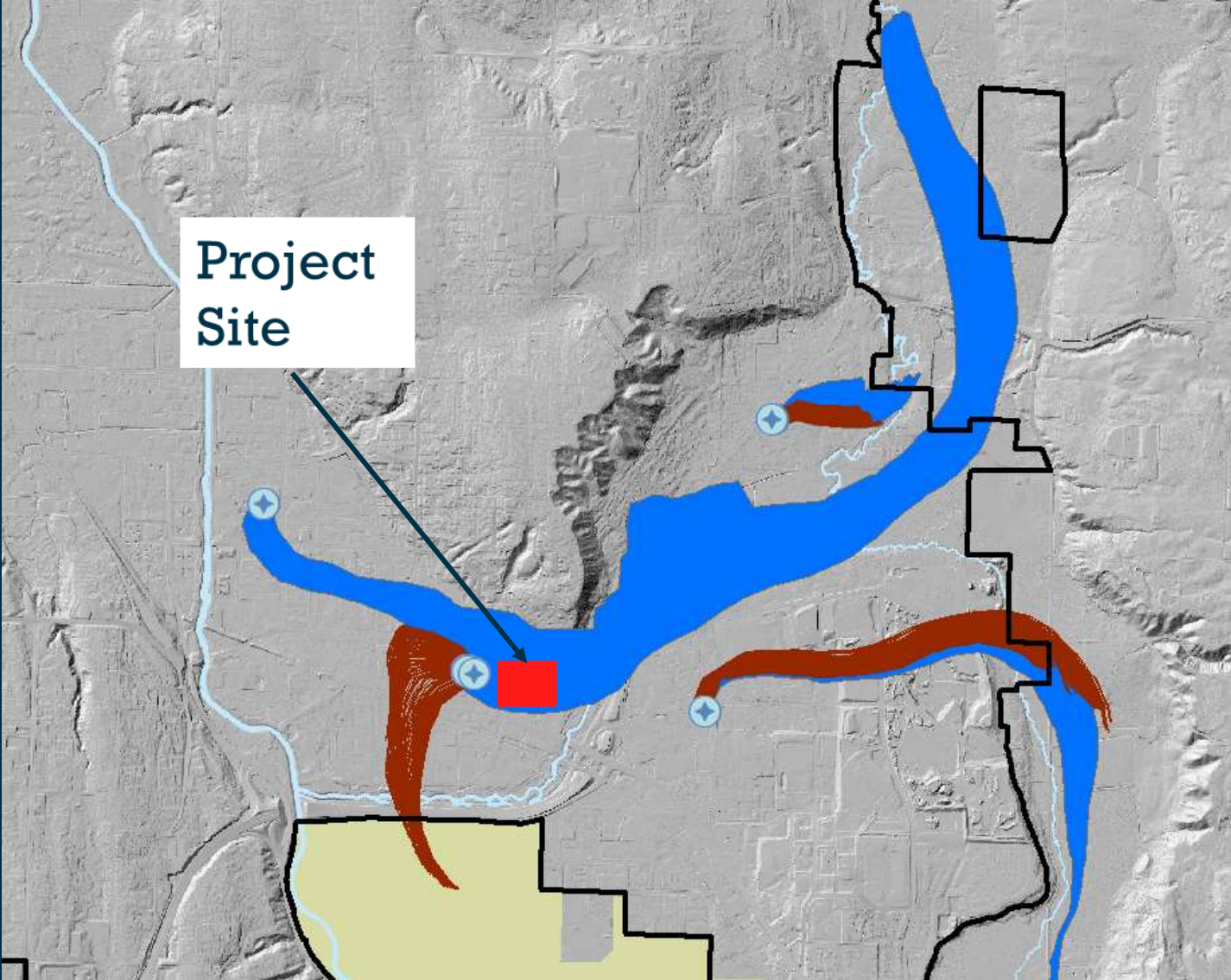
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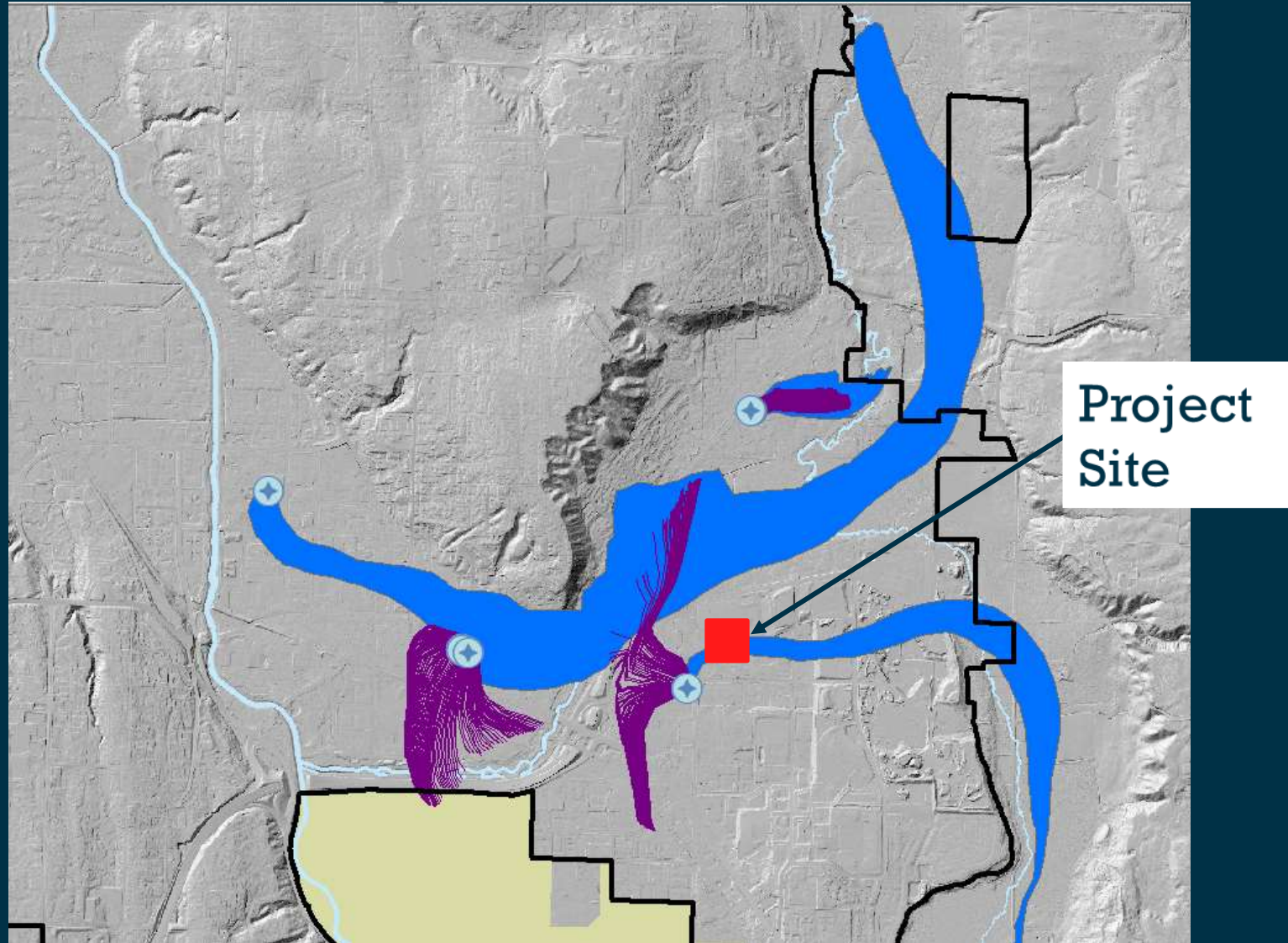
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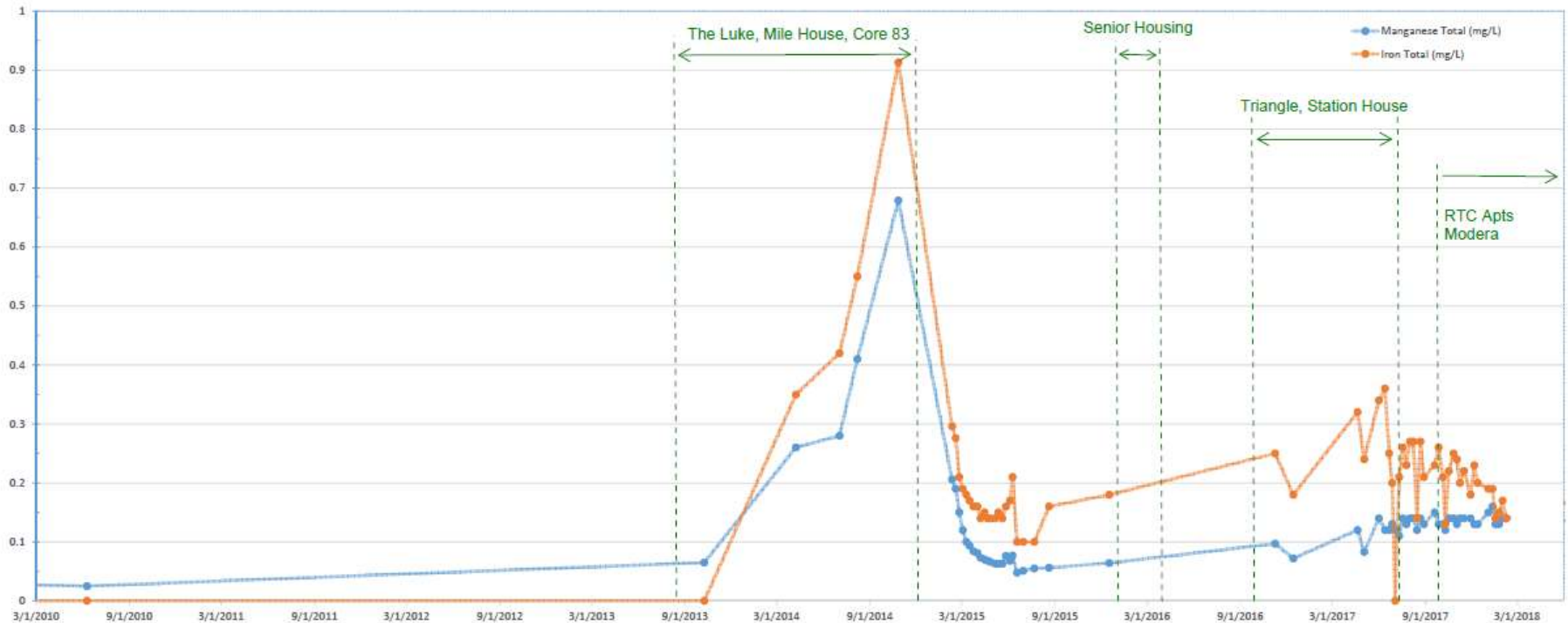


Dewatering Impact on Source Area

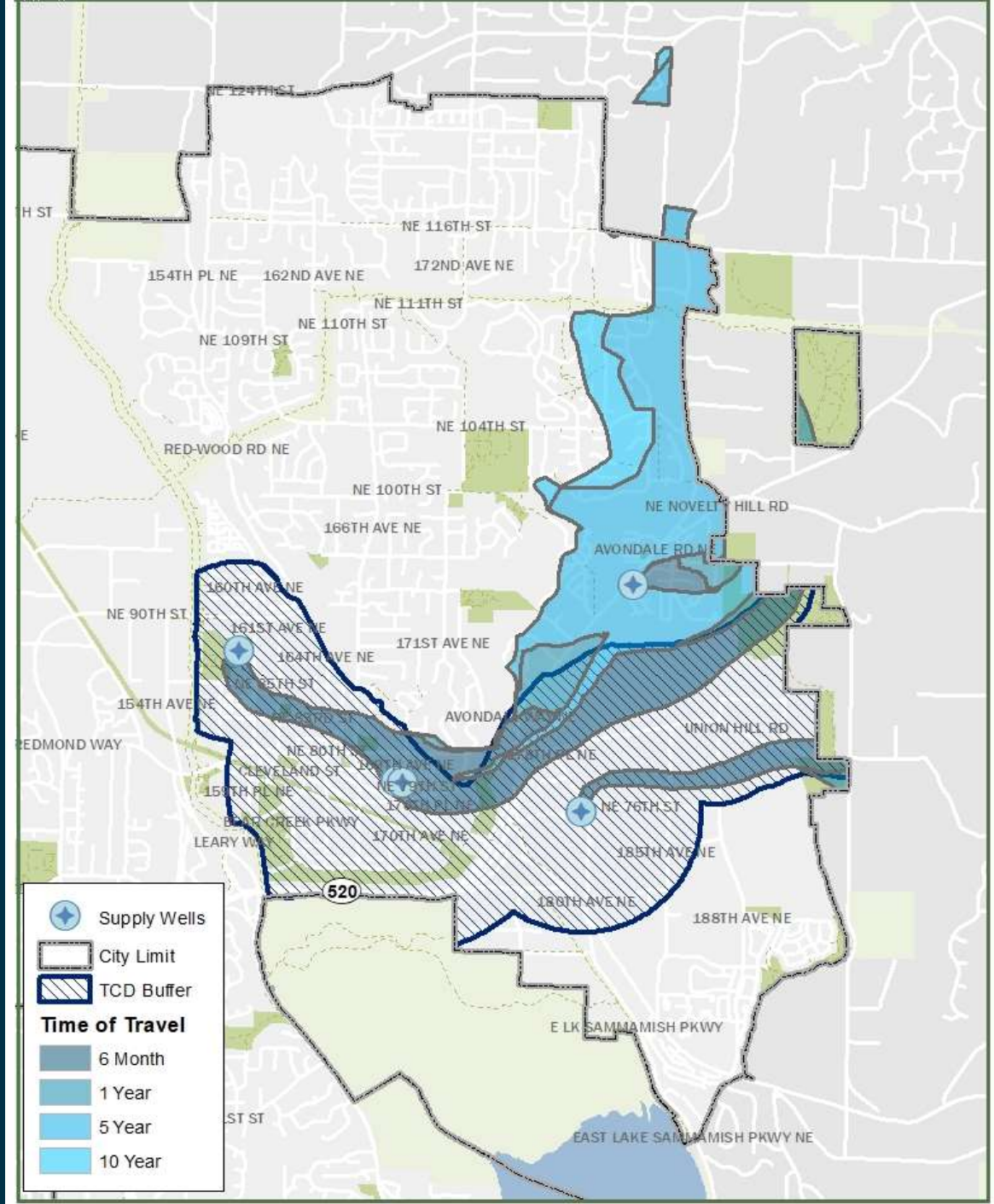


Source Area Impact on Water Quality

Total Iron and Manganese Concentrations at Well 4 and TCD Project Timing



Dewatering Impact on Groundwater Management Area



Where do we go from here?

- Use data to drive decision making and build a symbiotic relationship with Planners and Development Community.





City of Redmond

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