



Apr 28th, 10:15 AM - 11:45 AM

On-site sewage system (OSS) and social vulnerability GIS dashboard: using data to inform approaches for equitable wastewater futures

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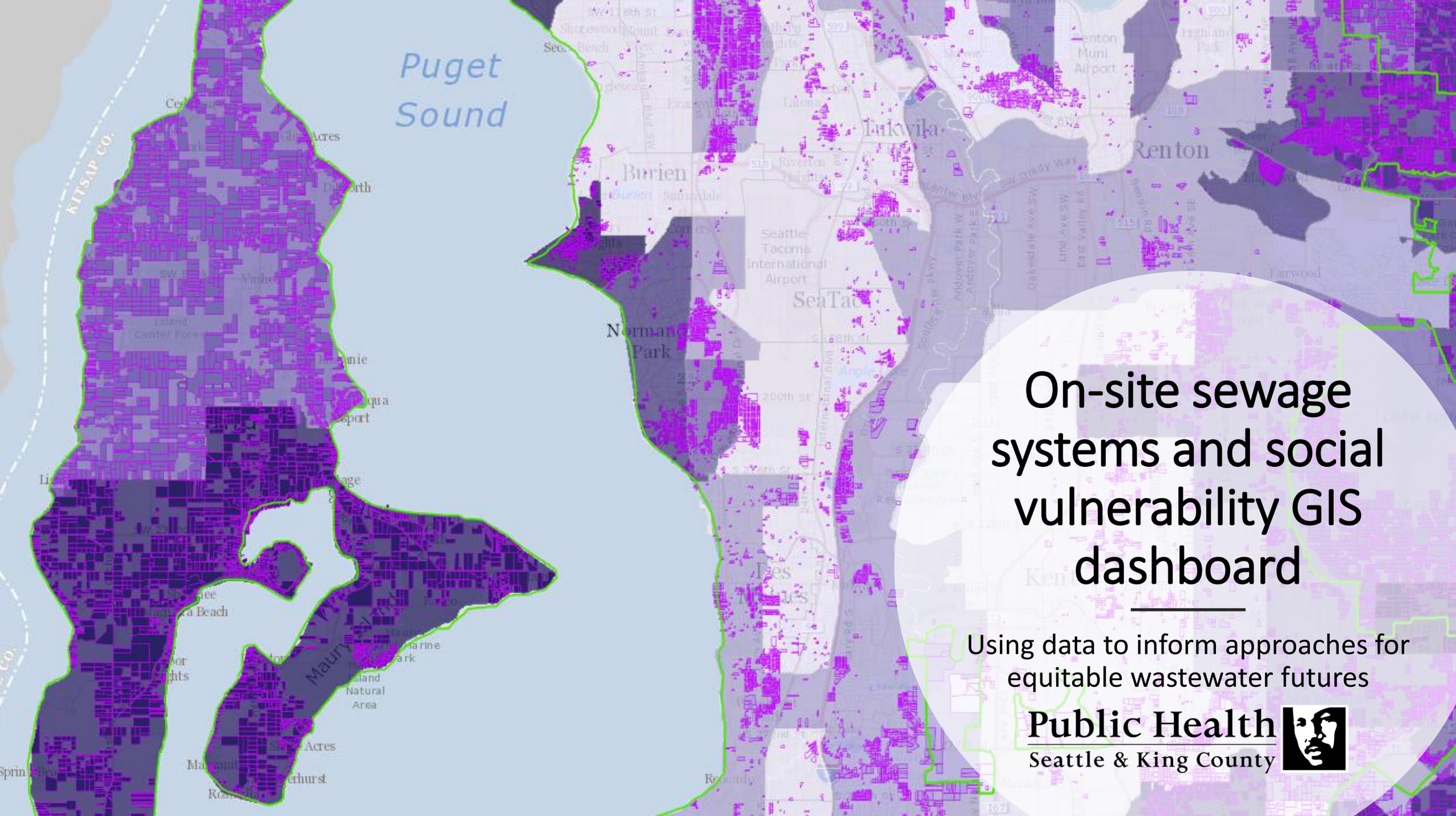


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Jackson, Meagan and Schneider, Lynn, "On-site sewage system (OSS) and social vulnerability GIS dashboard: using data to inform approaches for equitable wastewater futures" (2022). *Salish Sea Ecosystem Conference*. 353.

<https://cedar.wwu.edu/ssec/2022ssec/allsessions/353>

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Puget Sound

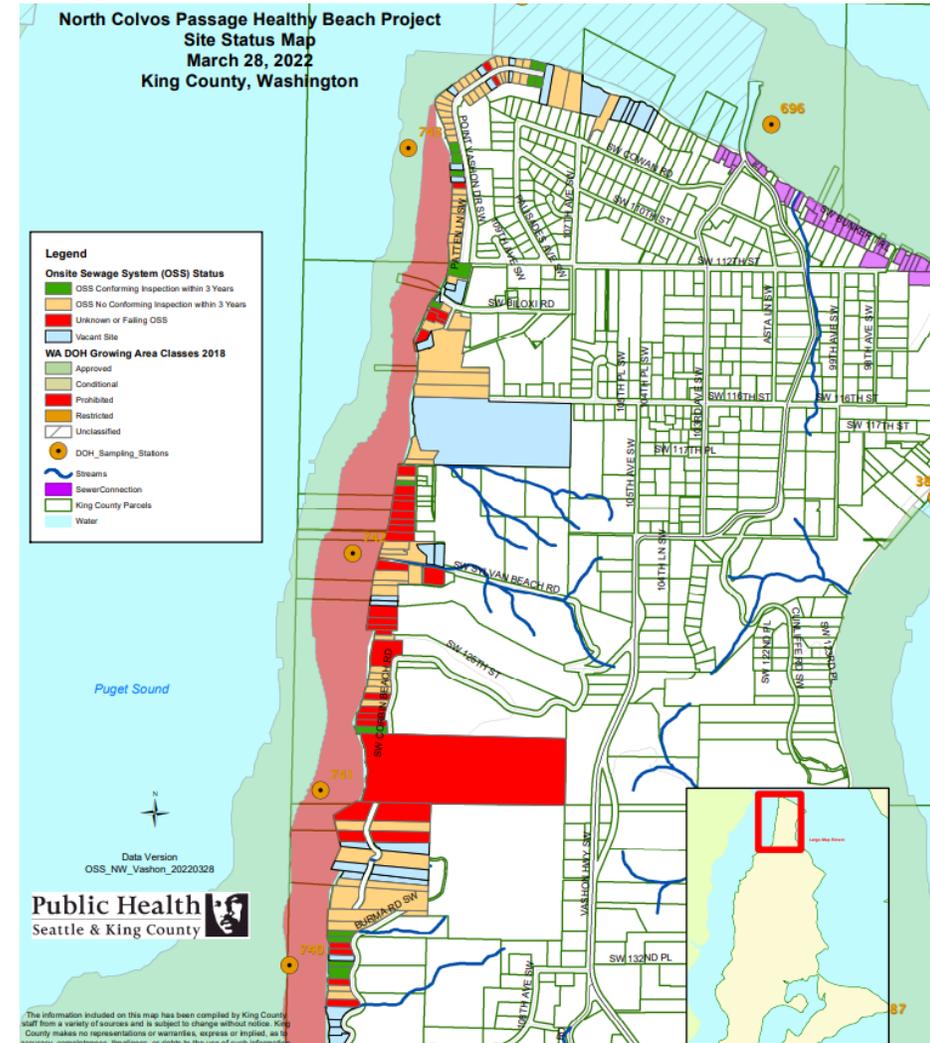
On-site sewage systems and social vulnerability GIS dashboard

Using data to inform approaches for equitable wastewater futures

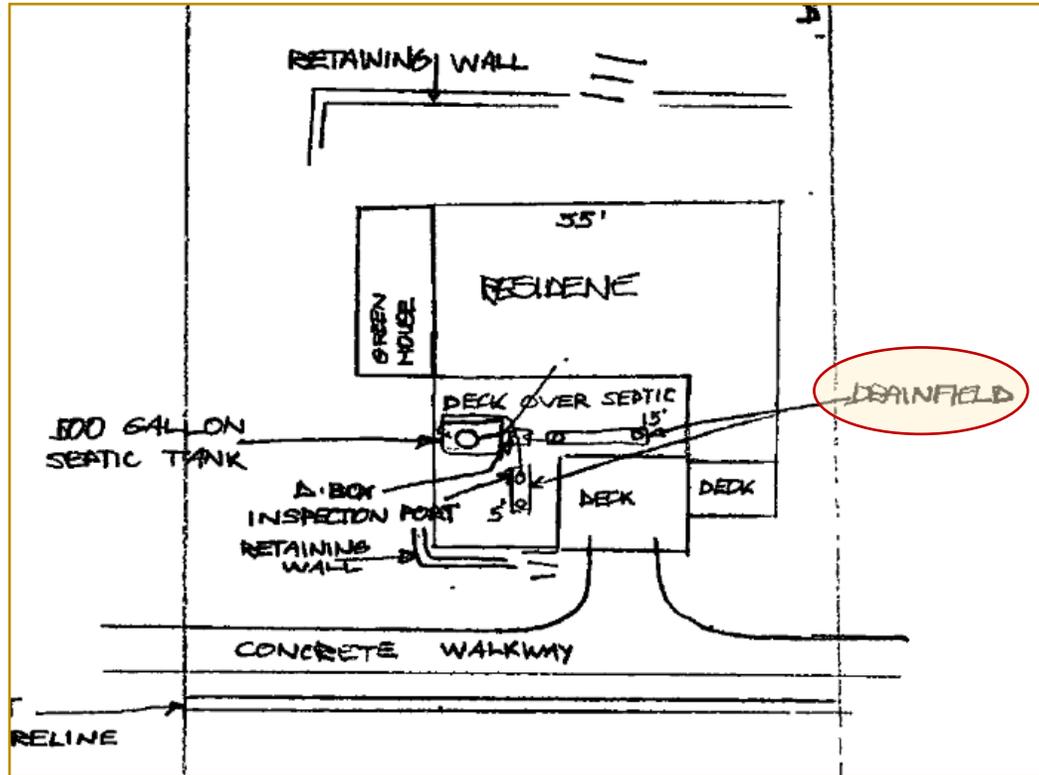
Public Health
Seattle & King County



On-site sewage systems & Salish Sea



Addressing failing on-site sewage systems – Vashon Island



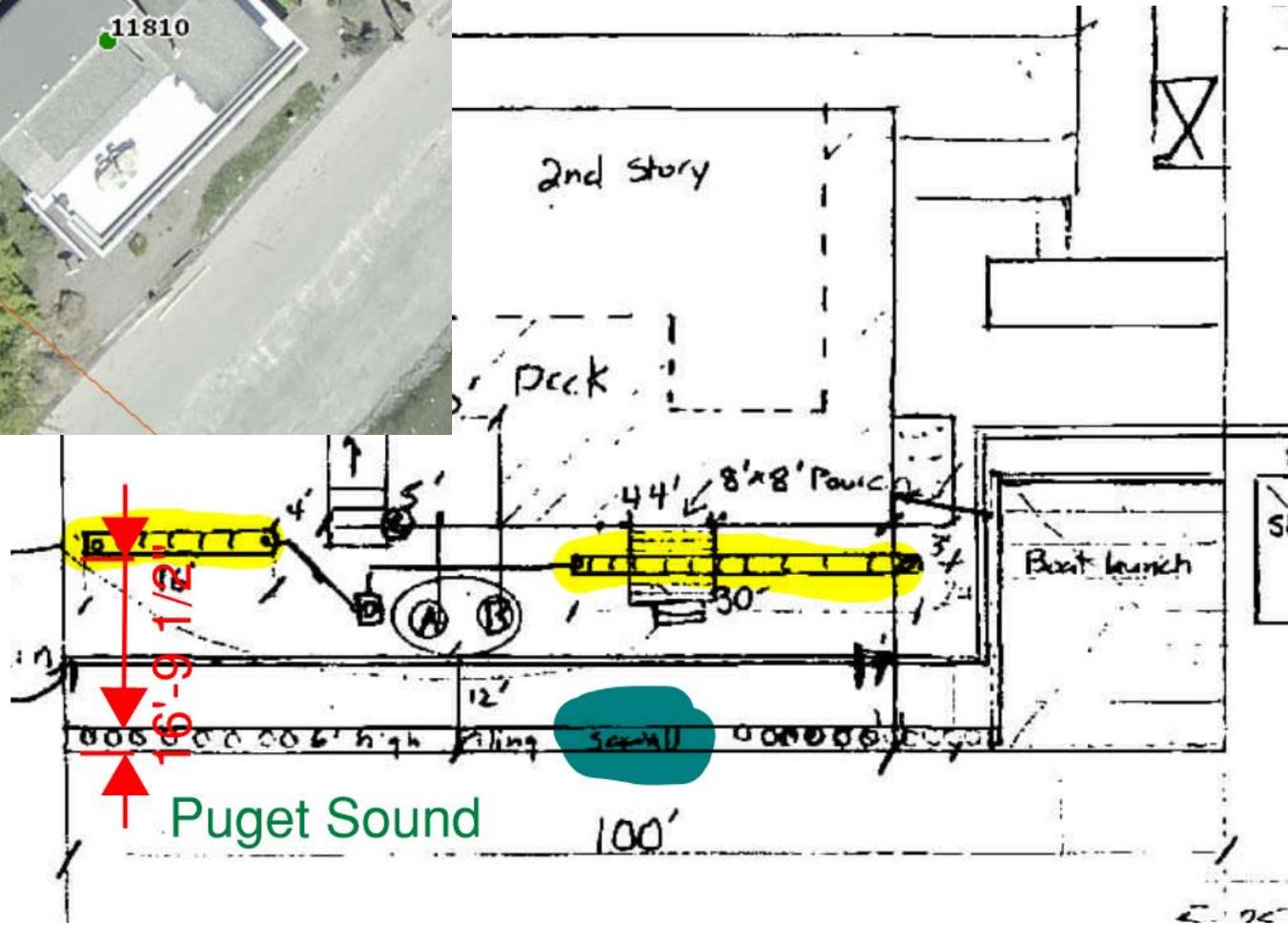
Location: **Vashon Island**

Urban Growth Area: **No**
Home damaged by slide – New
OSS required to rebuild the
home.

Treatment Plant does not
accept septage.

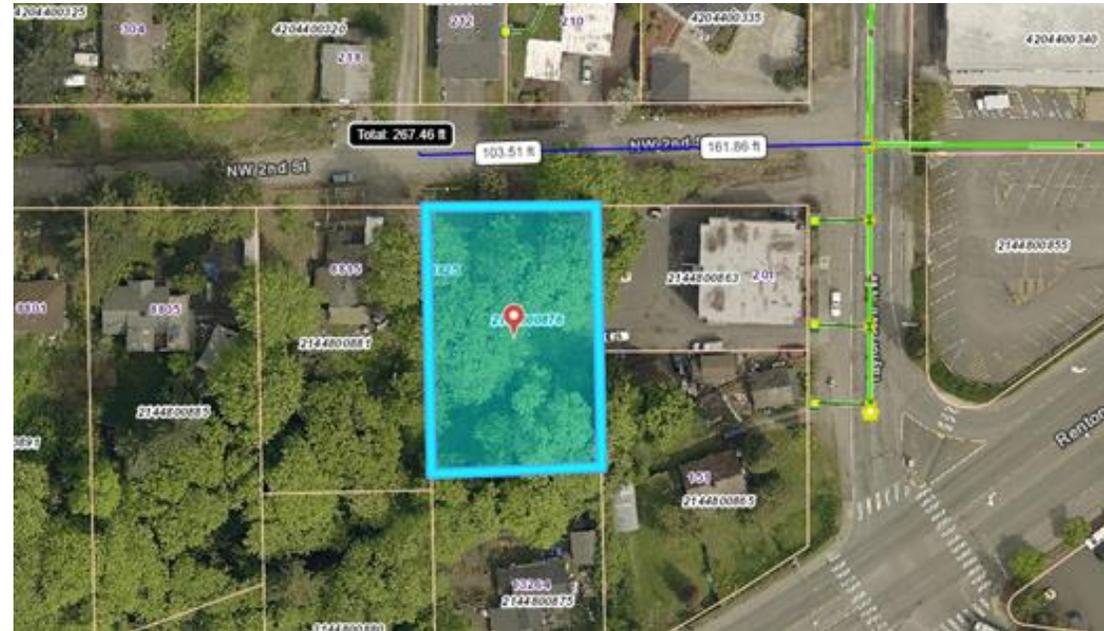
**Pumping service is very
expensive due to Ferry Fees**
**No replacement area for an
OSS, best solution is a Holding
Tank System, but the cost is
way too high!**

Addressing failing on-site sewage systems – Vashon Island



Location: **Vashon Island**
Urban Growth Area: **No**
Home is for sale; a Time of Sale Inspection determined the septic tank is leaking.
Treatment Plant does not accept septage.
Pumping service is expensive due to Ferry Fees
No replacement area for an OSS, best solution is a Holding Tank System, but the cost is way too high!

Addressing failing on-site sewage systems



Example of Sewer Connection Costs when an OSS Fails

Location: **Renton**

Urban Growth Area: **Yes**

Estimated OSS age: **96 years**

Water and Sewer District: **City of Renton**

Distance to Public Sewer: **162 ft**

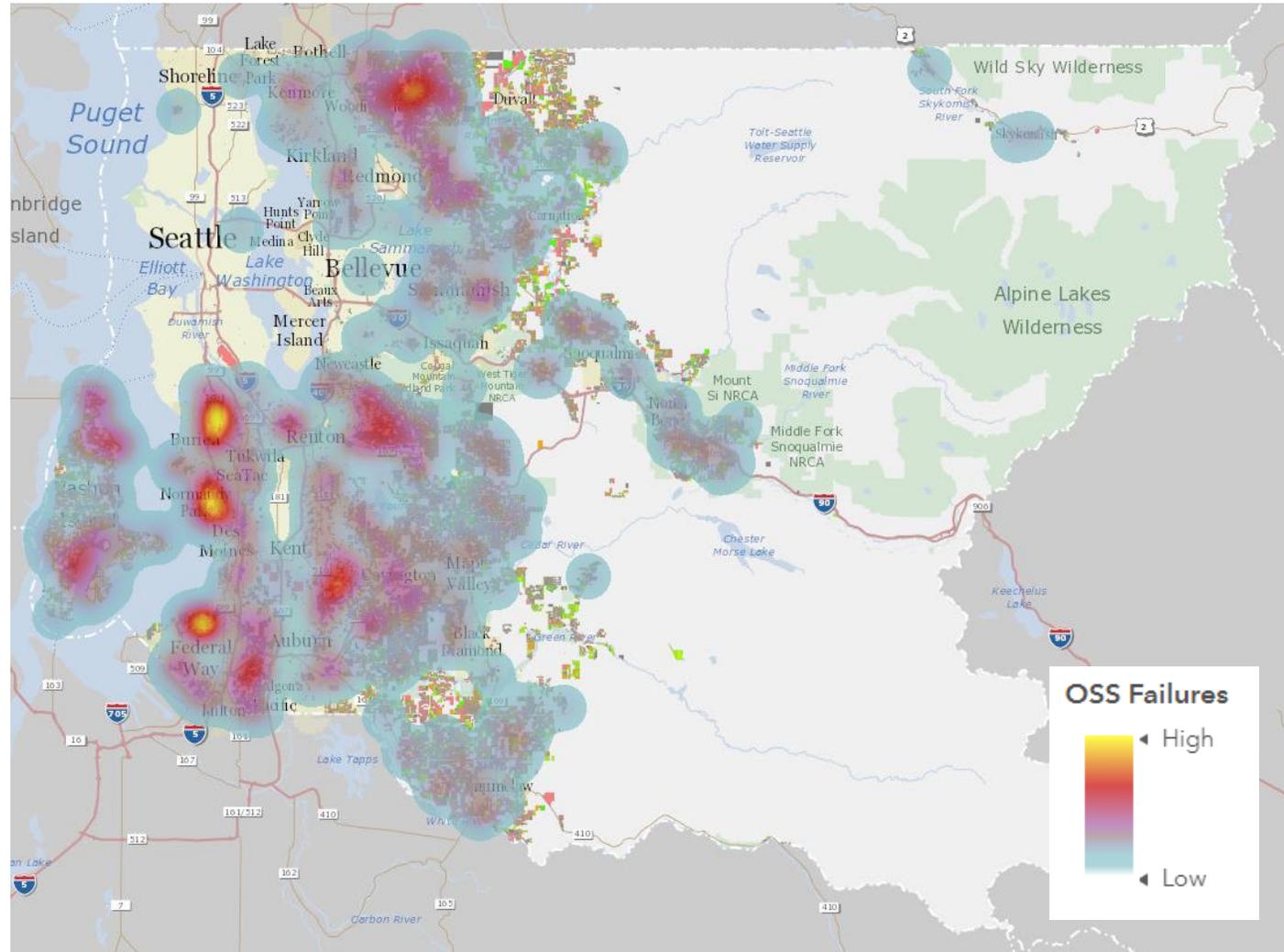
Required Extension: **260 ft**

One-time Sewer Connection Estimate: **\$220,000**

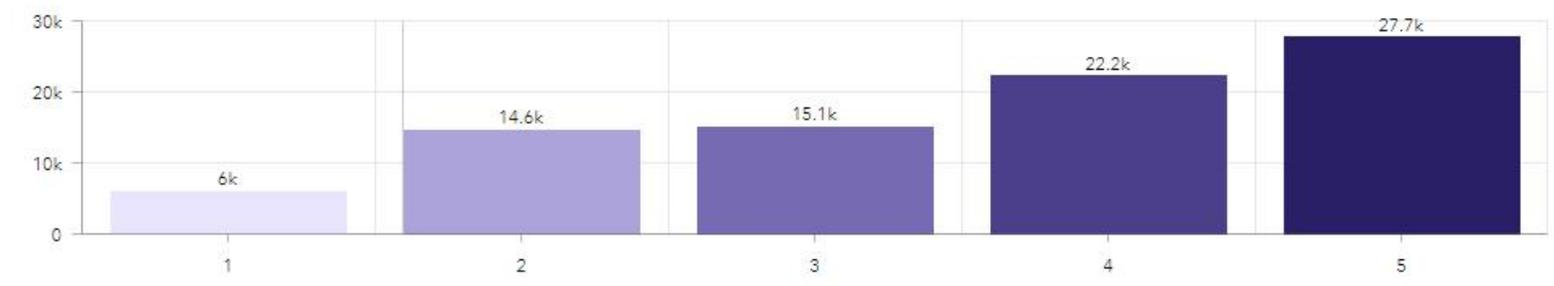
Estimated Total Connection Cost (includes monthly charges):
\$233,734.75

“Either I pay to connect the property to sewer, or I send my son to college.”

Where are failures occurring?

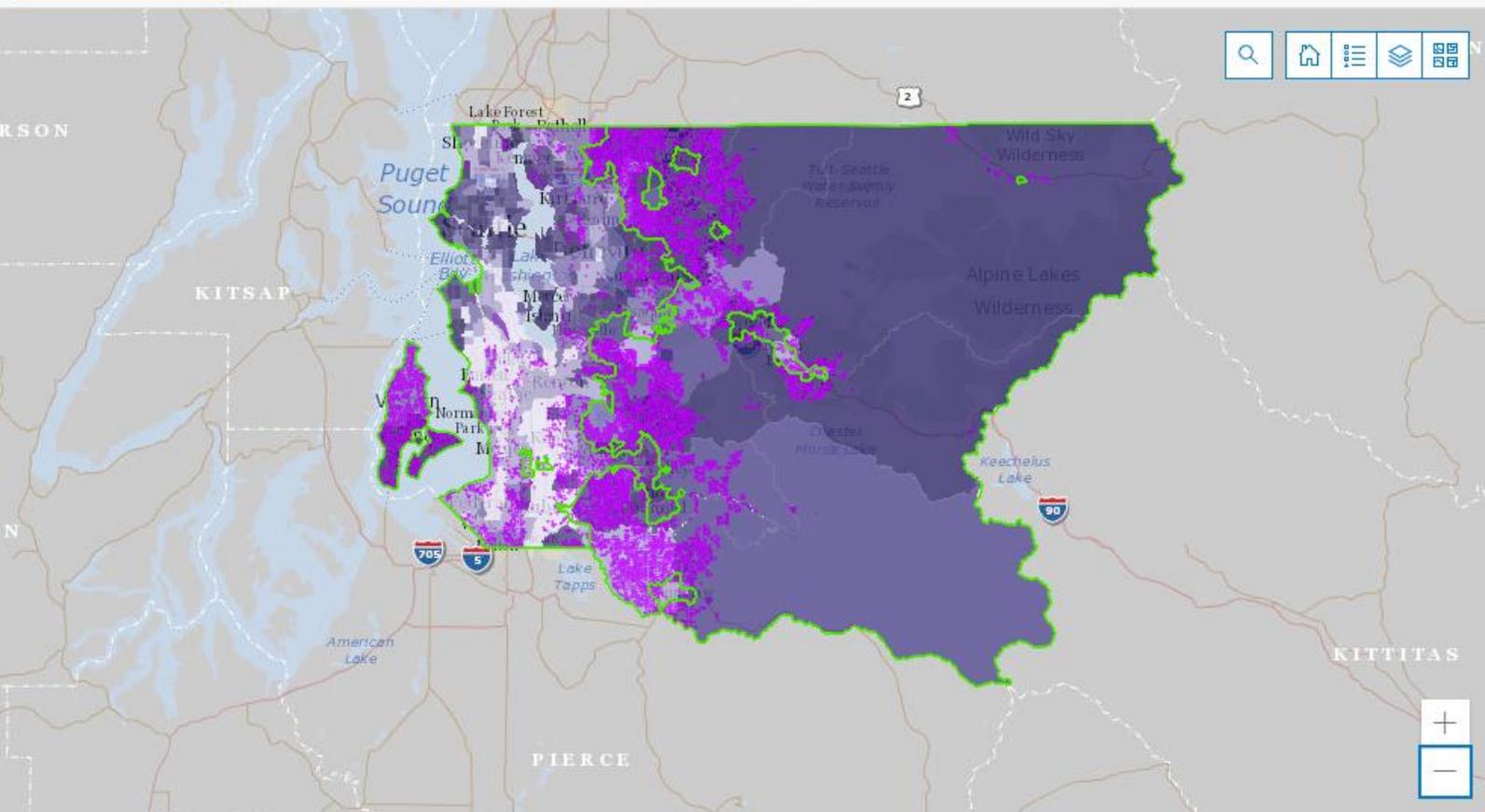


On-site Sewage Systems by CDC Social Vulnerability Quintile



Quintile 1 indicates parcels in the most vulnerable tracts, Quintile 5 indicates parcels in the least vulnerable tracts.

[CDC SVI Quintiles](#) [Learn more about the CDC SVI index](#)



King County | U.S. Census Bureau's American Community Survey (ACS) 2016-2020 5-year estimates, Table(s) B01001, B08201, B09021, B16003, B16004, B17020... Powered by Esri

[OSS Parcels](#) [OSS by Age Range](#) [OSS Failures from 2016 Study](#)

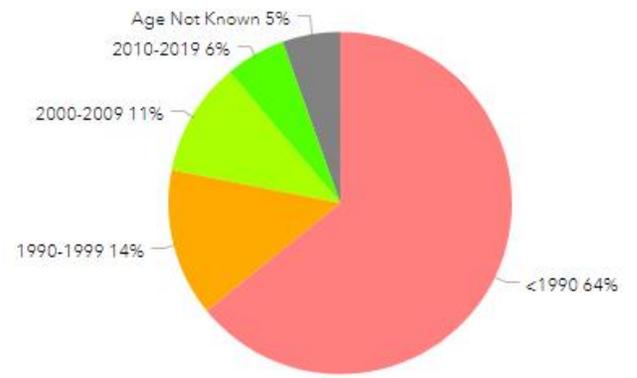
Systems 30 years or older

56,588

Total Systems

85,566

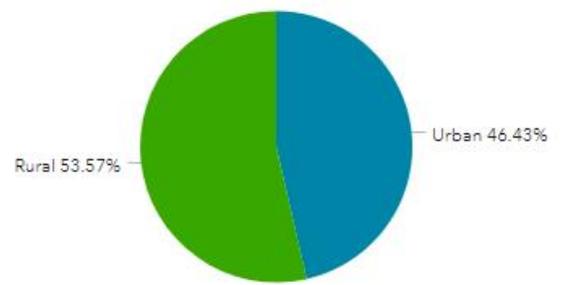
Sewage System Age Range



For OSS without any records, age estimated from age of structure.

[By Percent](#) [By Quantity](#)

Growth Area



[By Percent](#) [By Quantity](#)

What now?

- Street and community-level planning for sewer expansions, incorporating anti-displacement and community-centered approaches
- Funding for wastewater treatment
- Policy changes to support this work



Thank you!

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