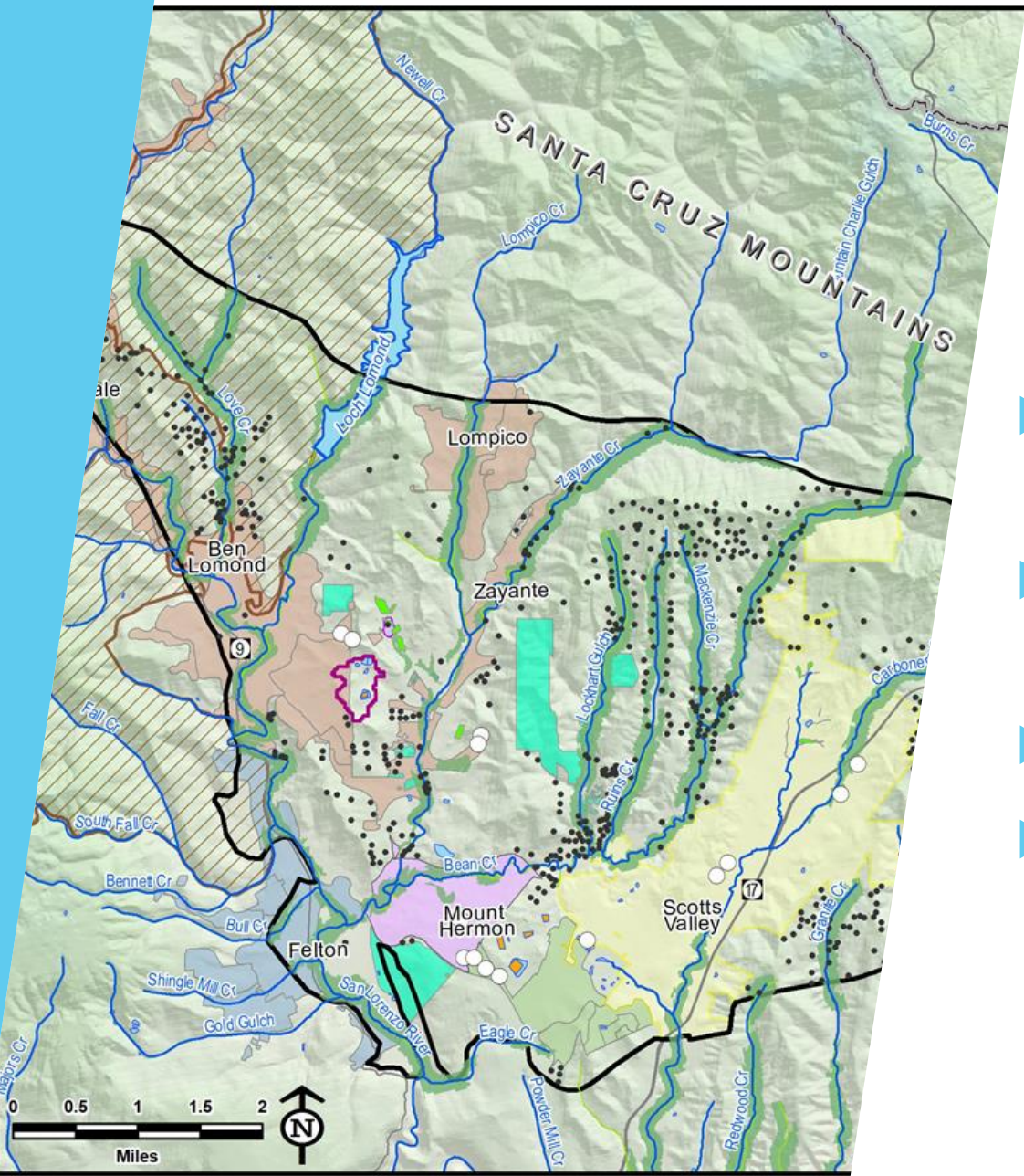


How do Private Wells and Small Water Systems Impact the Basin

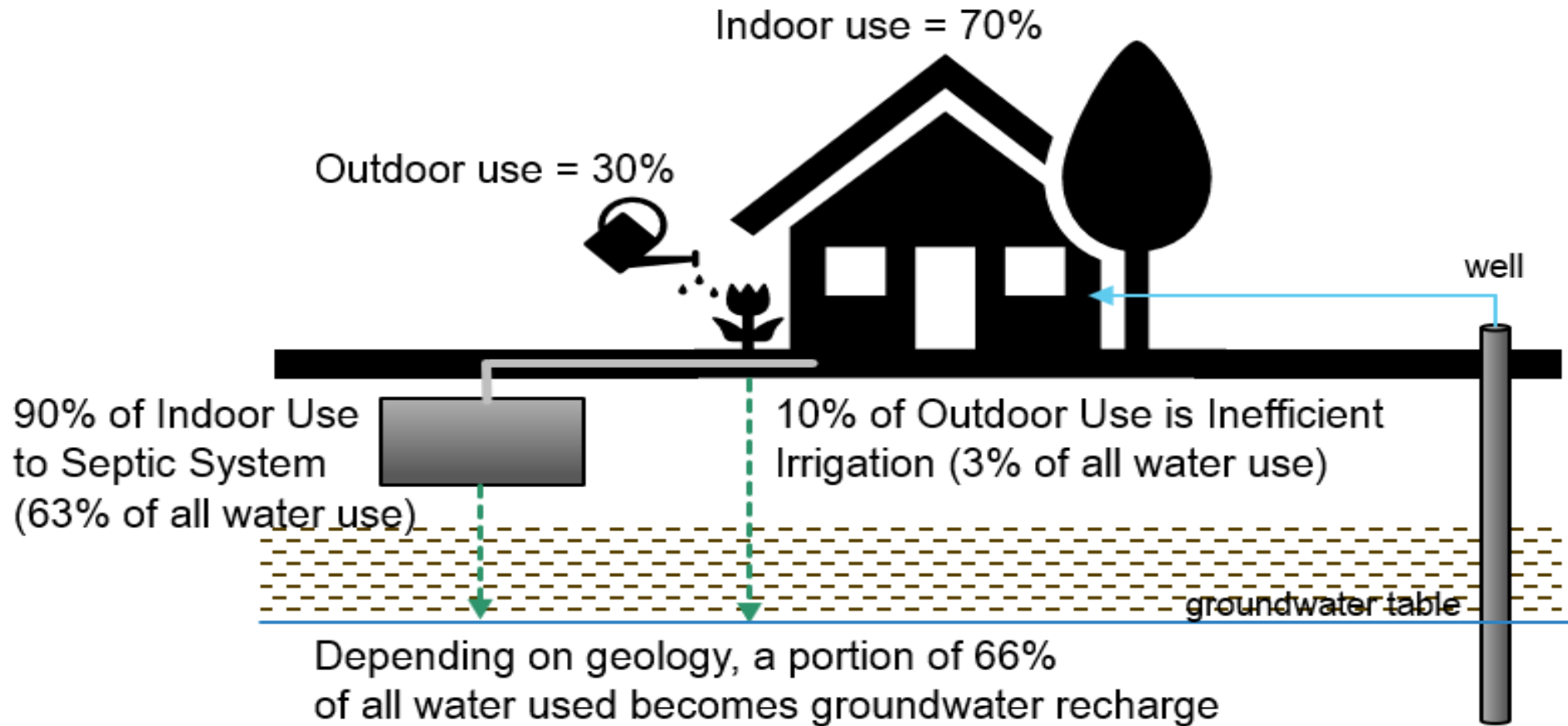
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Santa Margarita Groundwater Agency
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Ways that Private Wells Impact the Basin

- ▶ Private Well Pumping and Return Flow
- ▶ Private Well Proportion of Basin Pumping
- ▶ Groundwater Recharge
- ▶ Water Quality Impacts

Pumping and Return Flow



Depending on geology, a portion of 66% of all water used becomes groundwater recharge

- Purisima/Santa Cruz Mudstone: 5%
- Santa Margarita Sandstone: 60%
- Monterey Formation: 15%
- Lompico Sandstone: 40%
- Butano Sandstone: 40%

Impacts By the Numbers

- ▶ Average Water Use: 0.39 af/yr
- ▶ Average Return Flow: 0.24 af/yr
- ▶ Average Recharge: 0.15 af/yr
- ▶ Net Impact: 0.24 af/yr

- ▶ Average Natural Recharge (per acre): 1.75 af/yr
- ▶ Average Rural Developed (per acre): 1.47 af/yr
- ▶ Potential Loss of Recharge: 0.28 af/yr

Overall Basin Pumping

Groundwater User	Annual Pumped (2018)	
	Acre-feet/year	Percent
Large Water Systems	2,300	81%
Small Water Systems	80	3%
Private Domestic Wells	300	11%
Private Non-Domestic	170	6%
<u>Total</u>	2,850	

Potential Basin Impacts of Rural Development and Private Well Use

- ▶ Possible pumping effects on groundwater levels and/or streamflow
- ▶ Increased runoff and reduced recharge
- ▶ Erosion and sedimentation
- ▶ Water quality impacts of septic systems: pathogens, nitrate, constituents of emerging concern

What might we learn about the impacts of private pumping from groundwater modelling?

- ▶ Some concentrations of private pumping near a specific stream may be having a substantial impact on stream flow
- ▶ Without management actions, some private well locations may see the wells go dry under future climate scenario
- ▶ There may be no impact, or a very small impact to any of the sustainability management criteria
- ▶ There maybe little to no impact now, but an increasing impact under the future climate scenario
- ▶ Results may be inconclusive and it may take more time and monitoring to better understand the impacts
- ▶ The plan will get assessed and updated every five years

Potential Benefits to Private Well Users from Basin Management

- ▶ Stable or improved groundwater levels
- ▶ Stable or improved stream flows
- ▶ Thriving groundwater dependent ecosystems
- ▶ Technical assistance and well level monitoring
- ▶ No requirements or fees from the State

Questions?

- ▶ What impacts have you observed?