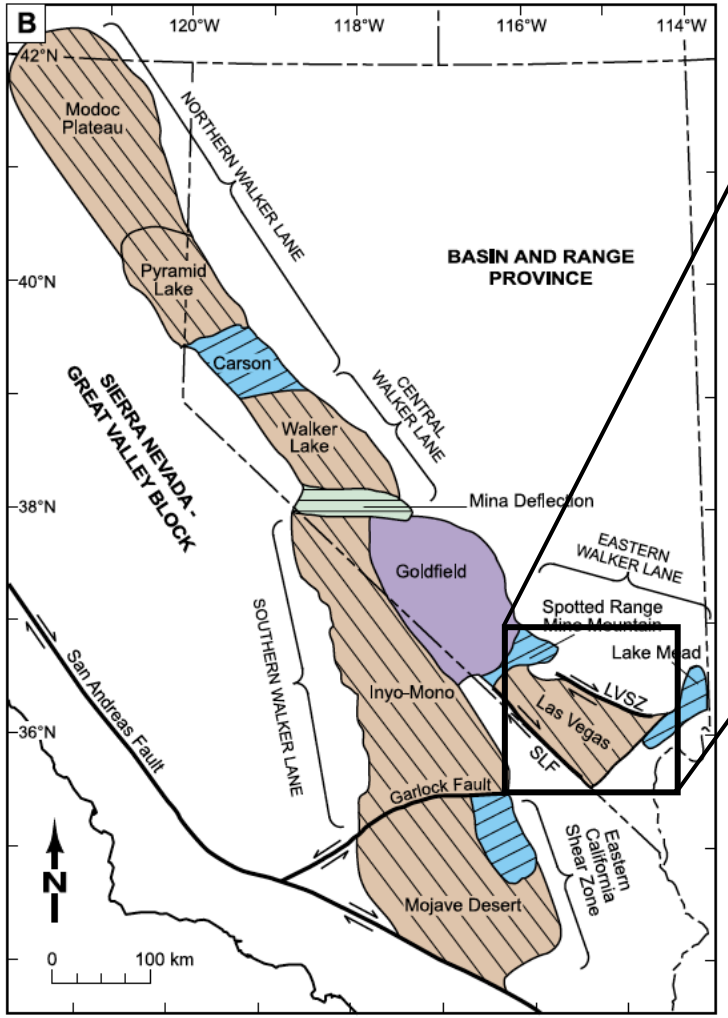
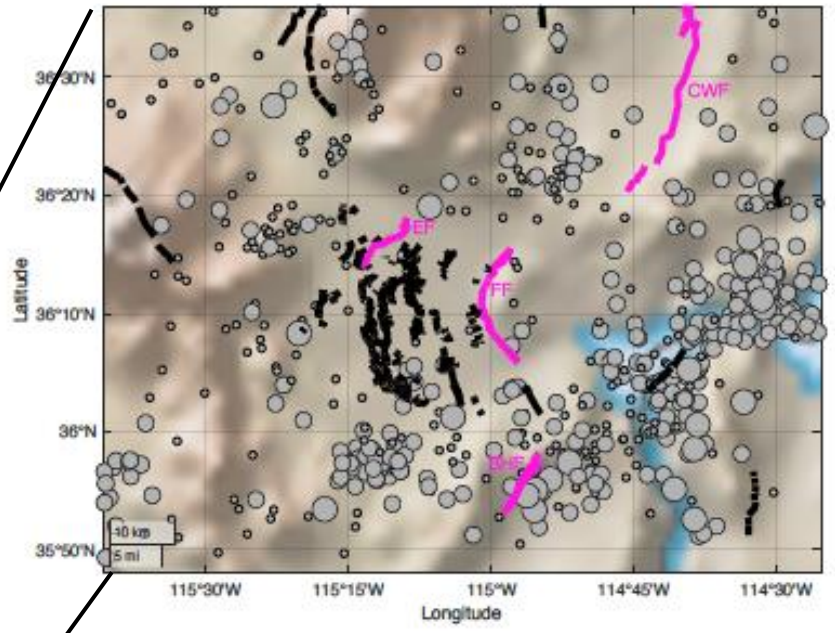
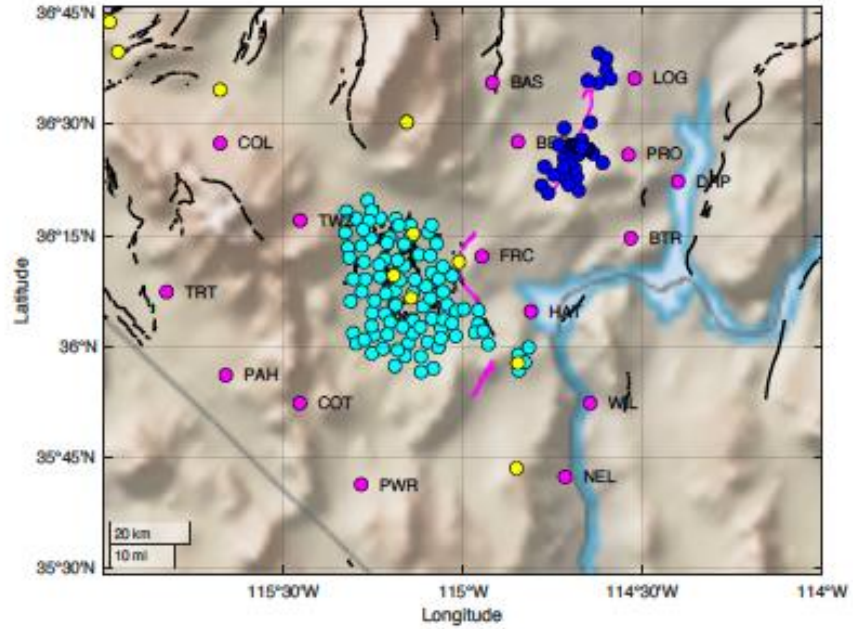
ELVIS: A dense seismic deployment across Las Vegas Valley



Faulds and Henry (2008)

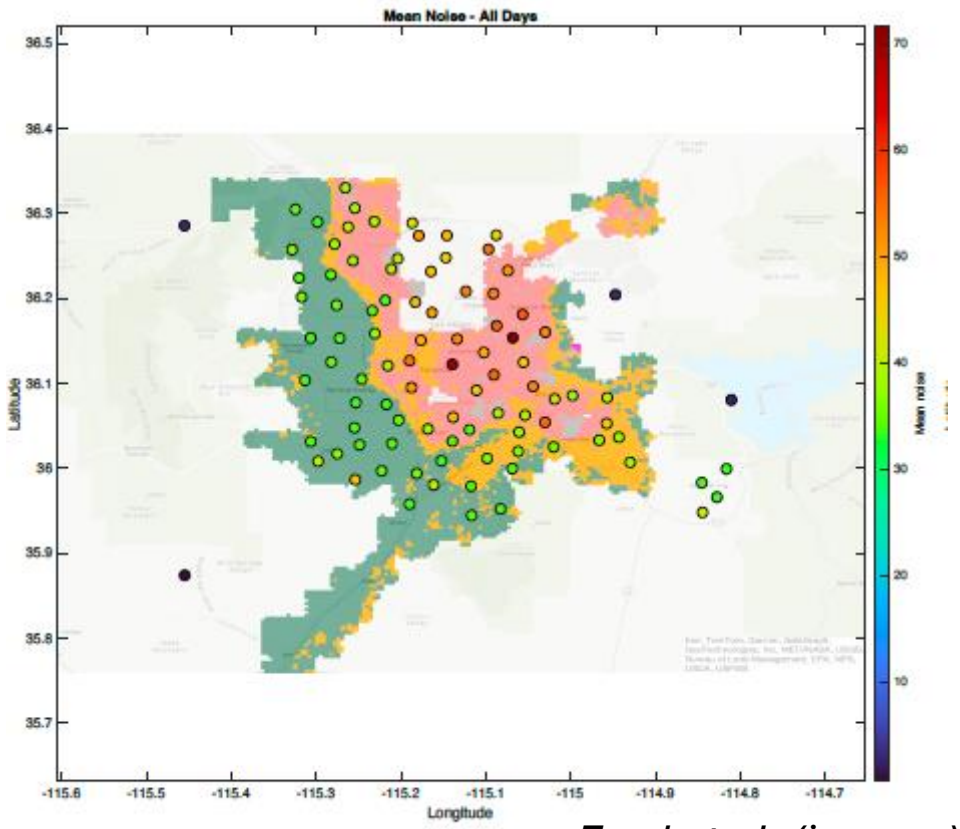




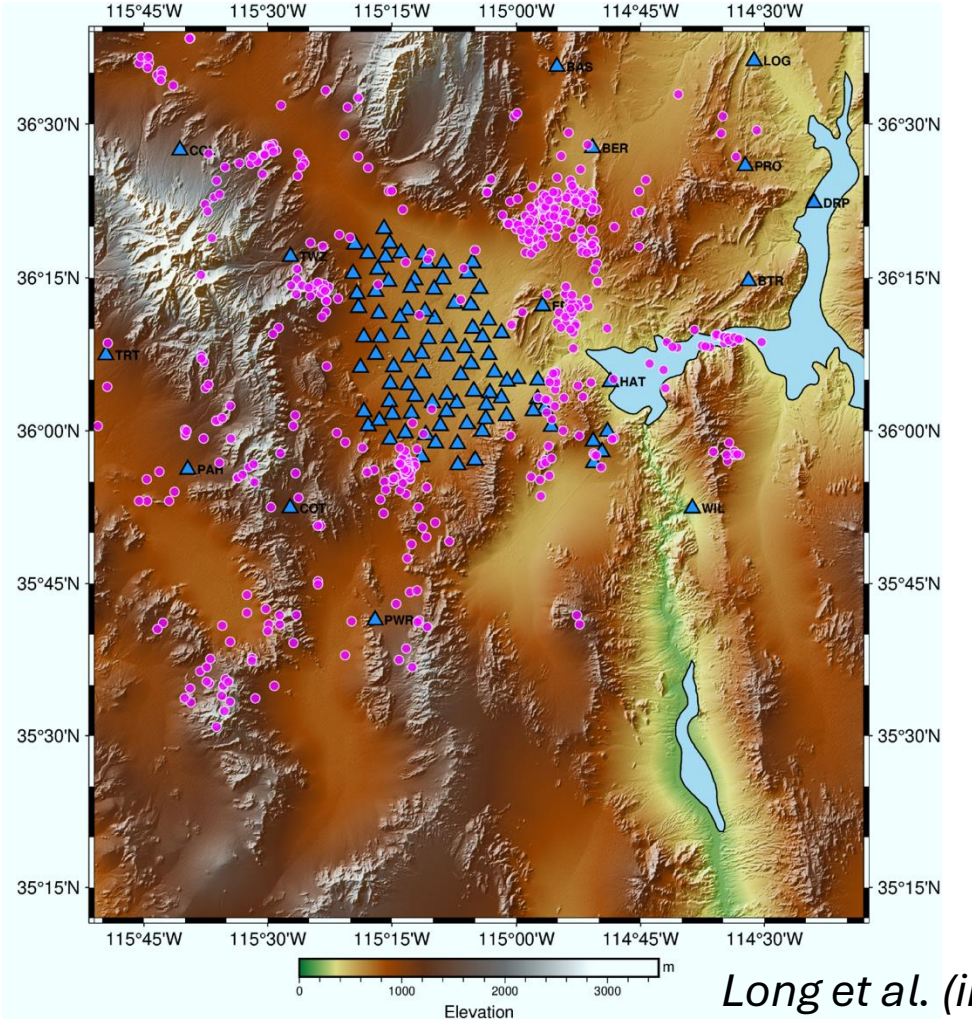
Ford et al. (in prep)

- A mixed mode approach: combined short period sensors (91 + 50) with broadbands (16)
- Primary science targets included basin structure and local seismicity
- Goal is to better characterize seismic hazard in a region where overall hazard is thought to be low, but potential impact could still be significant

ELVIS Results: A sneak peek



Ford et al. (in prep)



Long et al. (in prep)

Work ongoing:

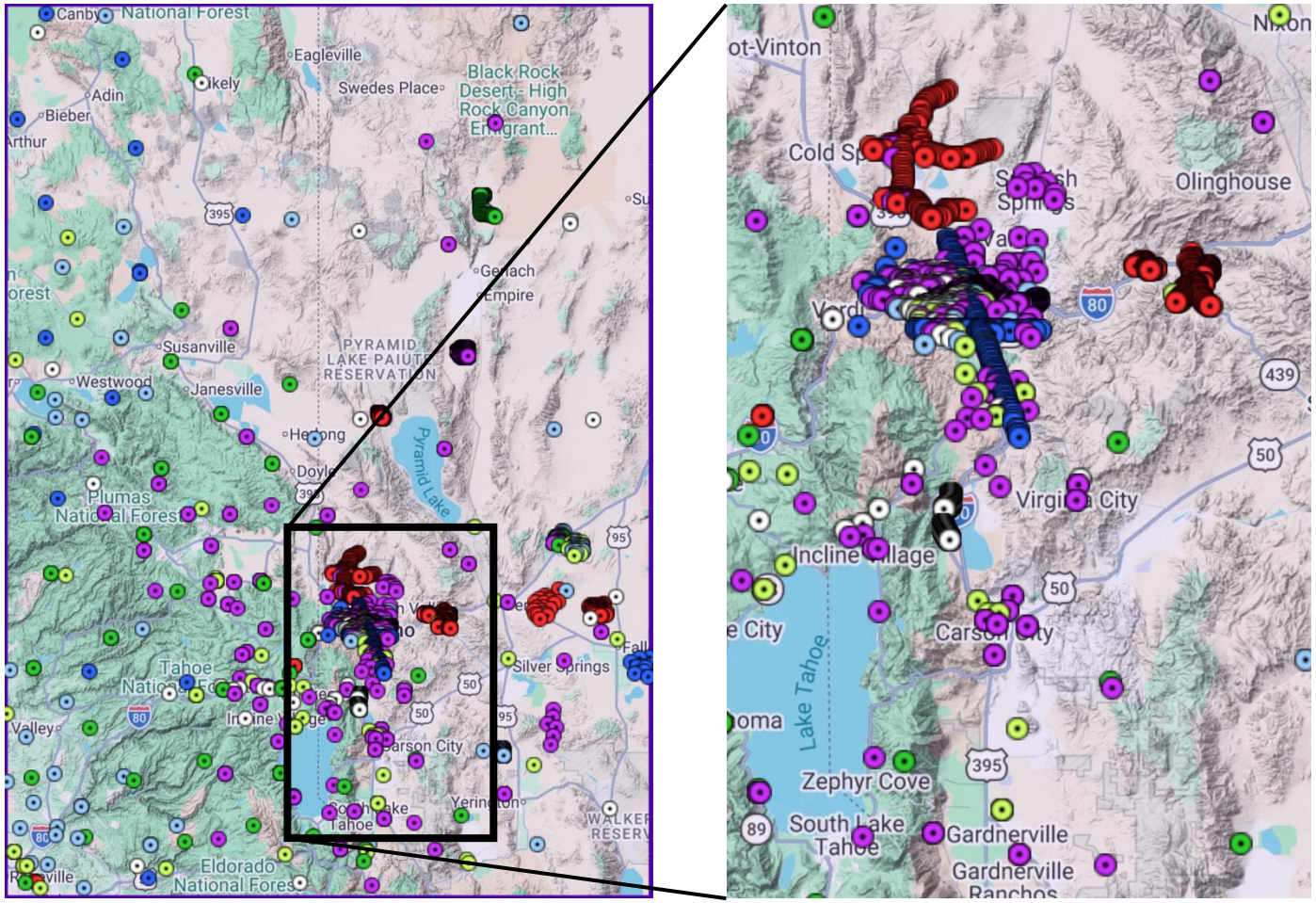
HVSR – local structure and basin thickness

Ambient noise tomography – basin & crustal structure

Training a denoiser to improve event catalog – event detection; fault location

Receiver function analysis – basin & crustal structure

From Las Vegas to northern Walker Lane



Courtesy of EarthScope

Where might a dense array make a difference?

Improve resolution of basin architectures and fault-related structures

Generate improved understanding of crustal velocities

Compliment regional monitoring with targeted earthquake detection