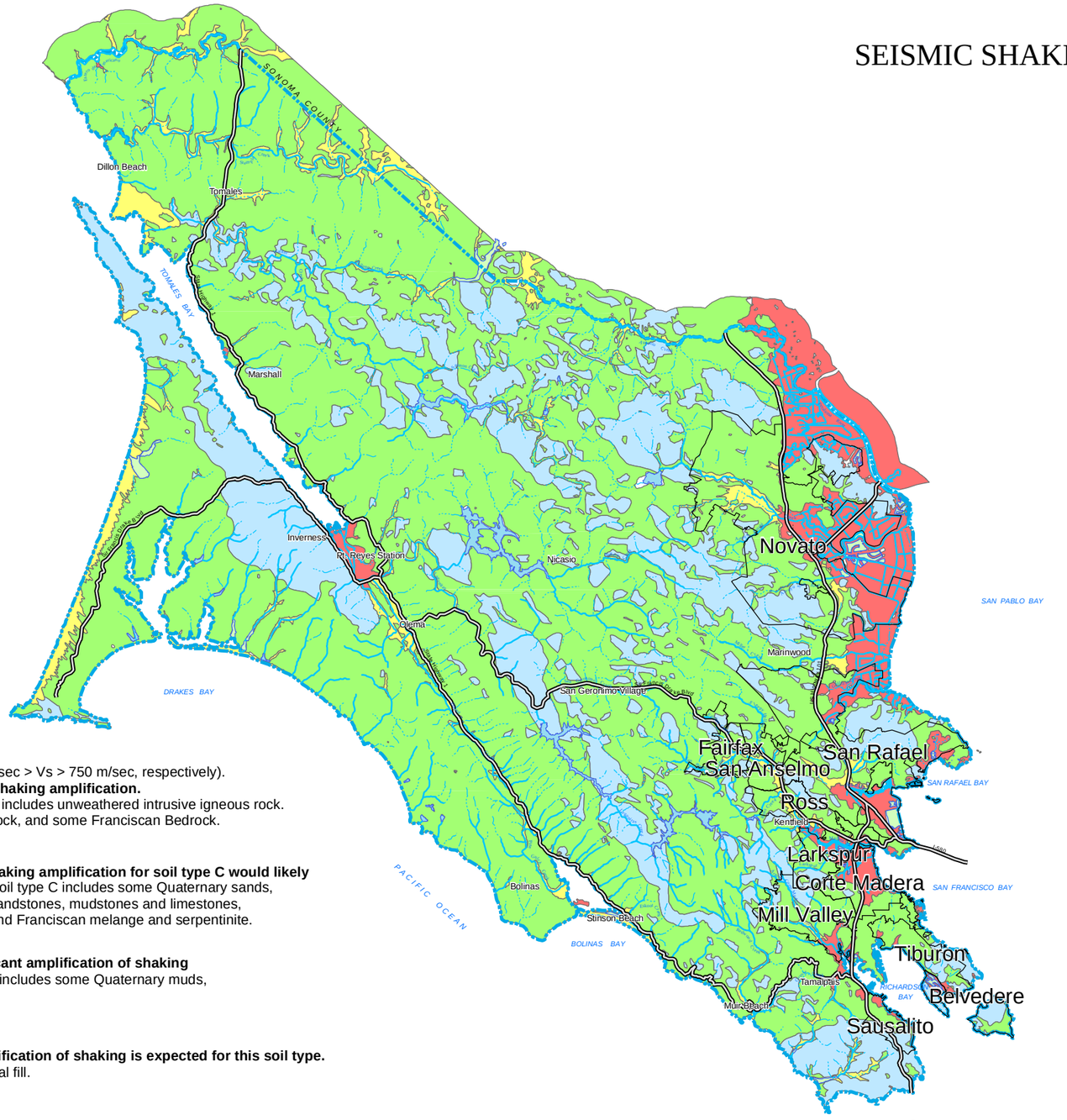
# MAP 2-9
# SEISMIC SHAKING AMPLIFICATION HAZARDS

SOURCE: 2000, Seekins, Linda C.,Boatwright, Jack, and Fumal, Tom,
Soil Type and Shaking Hazard in the San Francisco Bay Area,
http://quake.wr.usgs.gov/prepare/soil_type/index.html,
Earthquake Hazards Program-Northern California,
U.S. Geological Survey, 2000.




## Legend

- County Boundary
- City Boundary
- Highways and Major Roads

**Streams**

- Perennial
- Intermittent
- Ephemeral

**Water Bodies**

- Lakes
- Lagoons

## Soil Type

Soil Types A and B (Vs* > 1500 m/sec and 1500 m/sec > Vs > 750 m/sec, respectively).
**Soil types A and B do not contribute greatly to shaking amplification.**
Soil type A occurs infrequently in the bay areas and includes unweathered intrusive igneous rock.
Soil type B includes volcanics, most Mesozoic bedrock, and some Franciscan Bedrock.

Soil Type C (750 m/sec > Vs > 350 m/sec). **The shaking amplification for soil type C would likely be not as significant as for soil types D and E.** Soil type C includes some Quaternary sands, sandstones and mudstones, some Upper Tertiary sandstones, mudstones and limestones, some Lower Tertiary mudstones and sandstones, and Franciscan melange and serpentinite.

Soil Type D (350 m/sec > Vs> 200 m/sec). **Significant amplification of shaking by these soils is generally expected.** Soil type D includes some Quaternary muds, sands, gravels, silts and muds.

Soil Type E (200 m/sec > Vs). **The strongest amplification of shaking is expected for this soil type.**
Soil type E includes water-saturated mud and artificial fill.

* Site amplification is the velocity at which the rock or soil transmit shear waves (Vs). Shaking is stronger where the shear wave velocity is lower.
Source: (Seekins et al., 2000)

0 1 2 4 6 8 Miles



Date: June 14, 2005 File: Shake 2-9.mxd