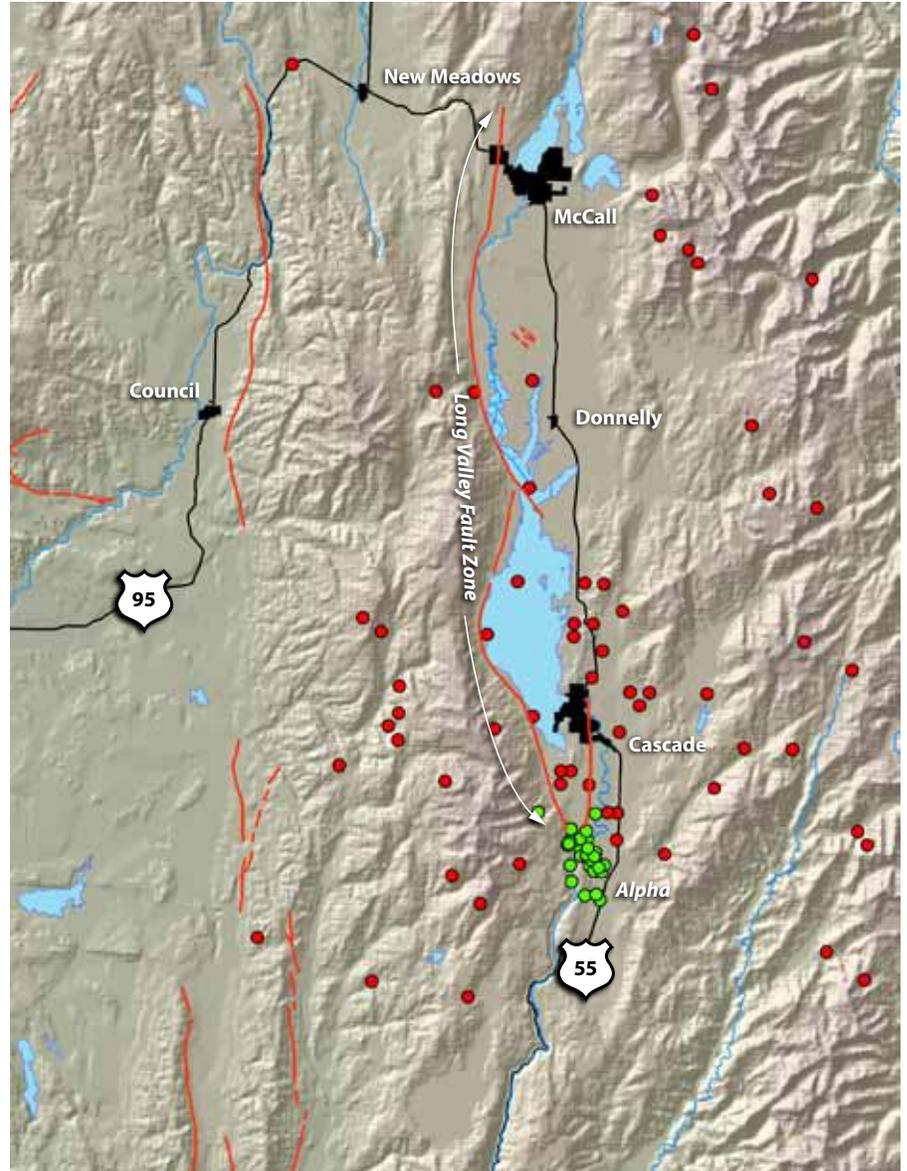


Western Idaho Seismic Zone

A geologically distinct region called the Western Idaho Seismic Zone lies between McCall and Boise. It is characterized by prominent N-S trending basins and ranges that contrast strikingly with surrounding regions. A complex suture zone between accreted terranes and the ancient North American tectonic plate underlies the region and may influence the orientation of faults. Major north-south trending active faults in the Western Idaho Seismic Zone include the Long Valley fault zone and the Squaw Creek fault. The Squaw Creek fault is about 25 miles north of Boise, Idaho's largest urban region (p. 12).

The Long Valley fault zone is notable for earthquake swarms. During a swarm, thousands of small shallow earthquakes occur over several weeks to months within a region of a few tens of square miles. The latest swarm began in September 2005 and continued for several months. The earthquakes, five with magnitudes as high as 4, were centered in Alpha, about 10 miles south of Cascade at the southern end of the Long Valley fault zone. The events were widely felt and caused concern in the local population as some swarms develop into stronger events capable of significant building damage. About 10 % of major earthquakes in the western United States are preceded by foreshock swarms.



Location of the 2005 Alpha earthquake swarm. The location of the largest earthquakes (magnitudes 2 to 4) are shown by green dots (IGS image).



View of Cascade Dam and West Mountain at Cascade, Idaho in the Western Idaho Seismic Zone. The Long Valley Fault extends along the far shore of the Cascade Reservoir. Normal faulting has dropped the floor of the valley several thousand feet. The area has experienced several swarms of thousands of small earthquakes, most recently in the fall of 2005 (U.S. Bureau of Reclamation photo).