

## **ANZA BROADBAND SEISMIC NETWORK**

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**Final Technical Report**

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### ***Abstract***

The ANZA Seismic Network (<http://epicenter.ucsd.edu/ANZA/home.html>) utilizes state-of-the-art broadband sensors and 24-bit dataloggers combined with real-time telemetry to monitor local and regional seismicity in southernmost California. The goal of this project is to provide on-scale digital recording of high-resolution three component seismic data for all earthquakes, provide real-time data to other regional networks and the USNSN, and provide near real-time information to the greater San Diego community.

The ANZA network has been a leader in developing techniques for real-time data delivery over the Internet. To effect rapid data transfer to TriNet, we routinely transfer all the ANZA data within ten seconds of real-time. In this way, the broadband data is seamlessly integrated in the Caltech/USGS real-time data processing system. The ANZA network exports data in real-time to the IRIS Data Management Center where it is automatically archived and is immediately available to the seismological community. Real-time data exchanges between UCSD - UC Berkeley and UCSD - University of Nevada-Reno have been operational since late 1998.

The ANZA network enhances the broadband coverage provided by the TriNet in southernmost California. ANZA stations are designed to operate in remote areas without any supporting infrastructure such as AC power, telephone or computer communications. Each station can operate using solar power and all communications between stations and the IGPP are dedicated spread spectrum radio links. The current configuration of the ANZA network will allow for on-scale recording of local events with magnitudes less than  $M \sim 5$ . At present, over 32,000 events have been recorded during the 18 years of continuous operation. The median station data return rate is 99.22%.

To provide better coverage in the metropolitan San Diego area, we operate a station on Mt. Soledad in La Jolla. This station provides extended broadband coverage to San Diego county and the offshore region complementing the nearest TriNet stations at Barrett Junction (BAR), Julian Camp Stevens (JCS), and Mt. Palomar (PLM), all located in rural San Diego county. In the UC CLC project, a set of borehole accelerometers have been installed next to the Thornton Hospital on the UCSD campus. The Thornton station provides the *only* real-time strong motion data from urban or suburban San Diego.

In keeping with the spirit of cooperation which has characterized seismological research at Anza, and consistent with the scientific motivations of the ANZA network since its establishment, we will coordinate our research and operations effort with the work conducted by TriNet and with SCEC. We continue to provide real-time data to the regional networks: TriNet, the University of Nevada-Reno, UC Berkeley, CICESE; to the USNSN, IRIS DMC; and to any other end user who requests data.