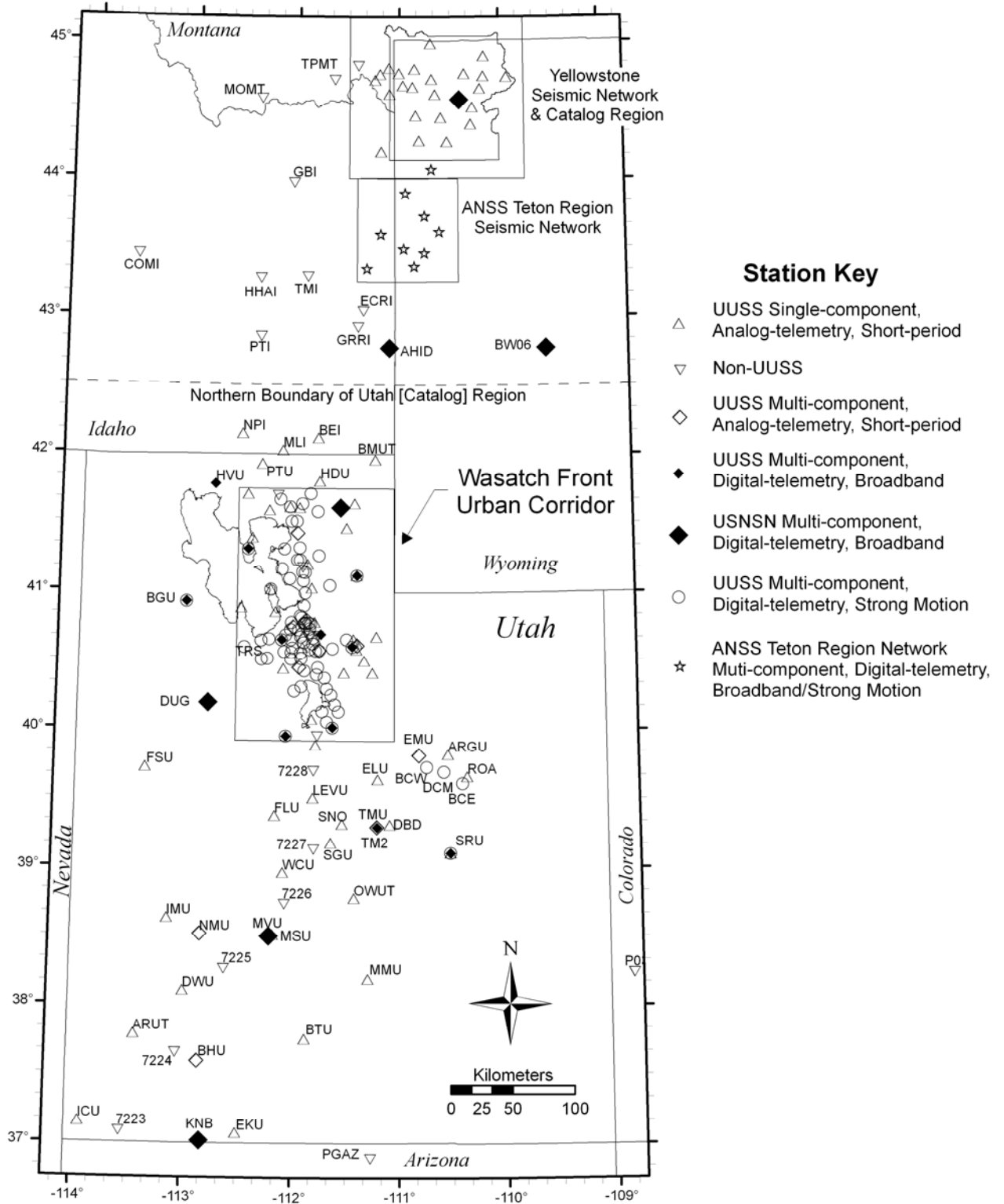


# University of Utah Regional Seismic Network

## September 30, 2005



**Table 1**  
**Summary Statistics for University of Utah's**  
**Regional/Urban Seismic Network**  
**(as of September 30, 2005)**

Total no. of stations operated and/or recorded	216
Total no. of channels recorded	517
No. of short-period (SP) stations	100
No. of short-period (SP) stations with metadata (response information)	100
No. of broadband (BB) stations	31
No. of broadband (BB) stations with metadata	31
No. of strong-motion (SM) stations	85
No. of strong-motion (SM) stations with metadata	85
No. of stations maintained & operated by network	176
No. of stations maintained & operated by network with full metadata	176
No. of stations maintained & operated as part of ANSS	126*
No. of stations maintained & operated as part of ANSS with full metadata	126*
Total data volume (mbytes/day) [for all data we record]	~16,000

\* Excludes 50 ANSS contributing stations; includes stations that we maintain and operate as part of ANSS with USGS/ANSS funding, namely:

- 71 UUSS/ANSS urban SM stations funded since FY2000
- 5 UUSS/ANSS BB/SM stations funded since FY2000
- 38 pre-ANSS stations formerly supported under our "USGS-NEHRP base budget" and now supported under one ANSS O&M budget
- 8 ANSS cooperative stations (NSMP SM stations which we re-sited, upgraded, installed continuous telemetry, and integrated into our real-time system in FY2005 with ANSS funds)
- 4 ANSS cooperative stations (NSMP SM stations in the Wasatch Front area which are fully integrated into our real-time system and for which we help NSMP with maintenance and repair)

**Table 2  
Earthquake Data and Information Products**

<b>Network Products</b>		
	Does the network provide the following?	Comments/Explanation
<b>Primary EQ Parameters</b>		
Picks	Yes	Archived at UUSS*
Hypocenters	Yes	Posted at <a href="http://www.seis.utah.edu">www.seis.utah.edu</a>
Magnitudes (& Amplitudes)	Yes	Magnitudes posted at <a href="http://www.seis.utah.edu">www.seis.utah.edu</a> ; Amplitudes archived at UUSS*
Focal mechanisms	Yes	First-motion focal mechanisms are generated, if possible, for M>3.5 events in the Utah region and, depending on station coverage, for M>2.5 events in the Wasatch Front region. These are archived at UUSS.
Moment Tensor(s)	No	
<b>Other EQ Parameters/Products</b>		
ShakeMap	Yes	ShakeMaps are posted to our Web site and sent to three USGS machines. We are also running ShakeCast.
Finite Fault	No	
<b>Supplemental Information</b>		
Felt Reports	Yes	Reports are compiled based on telephone calls to UUSS, Community Internet Intensity Map data, and reports in the USGS Preliminary Determination of Epicenters.
Event Summary	Yes	Press releases issued for all M≥3.5 events and all felt earthquakes
Tectonic Summary	No	
Collated Maps	No	
Refined Hypocenters (e.g. double-difference)	No	Produced only as part of special research projects
<b>Web Content</b>		
Recent EQ Maps	Yes	
Station Helicorder	Yes	
Station noise PDFs	No	These are automatically produced and are available through IRIS. We also produce PDFs at UUSS, but we do not post them to the Web.
Station Performance Metrics	No	
Network Description	Yes	Some online info. needs updating
Station List	Yes	Included in the Quarterly Seismicity Summaries
Station Metadata	Yes	See Metadata Section below
Email Notification Services	Yes	Only on limited basis to key state-agency partners
Contact Info	Yes	
Region-specific FAQs	Yes	
Region-specific EQ info	Yes	

## Network Products

	Does the network provide the following?	Comments/Explanation
<b>Waveforms</b>		
Triggered	Yes	Archived at UUSS*
Continuous	Yes	Archived at IRIS DMC
Processed	Yes	Only on special request
<b>Summary Products</b>		
Catalogs	Yes	Posted on our Web site and incorporated into the ANSS catalog.
<b>Metadata</b>		
Instrument Response	Yes	Archived at the IRIS DMC and at UUSS
Site Info (e.g. surface geology, Vs30)	Yes	Posted on our Web site for strong-motion and broadband stations only

\*Information archived at UUSS available by request

## Table 2 (Attachment) Products and Services Provided by Our Network

- Recent Earthquakes (automatic maps and event information; including seven-day animation of recent earthquake maps)
- ShakeMap (automatic in near-real time; formerly produced only for Wasatch Front area, but at the request of the Utah Division of Emergency Services and Homeland Security, capability to produce ShakeMaps for the entire Utah region has been developed and is now live)
- ShakeMap Scenarios (<http://www.seis.utah.edu/shake/archive/scenario.html>)
- ShakeCast (linked to USGS ShakeCast server in southern California)
- Earthquake Notification (automated e-mail and pager notification to limited number of key state-agency partners; telephone/fax notification to emergency call-down list)
- Real-time Waveforms (Webicorder plots available online 24 hrs/day for 40 stations)
- Earthquake Catalogs and Data (downloadable catalog information on our Web site, but a search capability is not currently available; all earthquake locations automatically submitted to ANSS catalog, which does have a search capability; quarterly earthquake bulletins; continuous waveforms and station metadata available via IRIS DMC; additional metadata for our strong-motion stations available on our Web site)
- Did You Feel It? (linked to <http://pasadena.wr.usgs.gov/shake/imw/>)

- Earthquake Information Center (responses to public inquiries, guided tours, media interviews, maintenance and development of network Web site, educational support to University of Utah teaching, frequent public speaking engagements on earthquake topics)
- Expert Advice for Public Policy Making (extensive involvement in assessment of earthquake hazards and risk in Utah and in hazard mitigation, notably through leadership in Utah's state earthquake program—in partnership with the Utah Geological Survey and the Utah Division of Emergency Services and Homeland Security, advisory guidance to public officials and state agencies, participation in the Utah Seismic Safety Commission and associated committees and working groups, involvement in state earthquake preparedness exercises)
- Data and Information for Utah's Earthquake Engineering Community (development of an urban strong-motion network in Utah's Wasatch Front urban corridor has galvanized interactions between earth scientists and earthquake engineers in Utah; 10 engineers participate in a 12-member *Utah Advisory Committee for Urban Strong-Motion Monitoring in Utah*; data from ANSS free-field stations strategically supplement structural monitoring and an adjacent downhole array installed to study the performance of a major interstate bridge structure in Salt Lake City; analysis of ambient vibrations using accelerographs occasionally performed to help engineers)
- Data and Information on Mining-Induced Seismicity (MIS) (ongoing help to mining engineers, mine operators, and regulatory agencies concerned with mine safety and potential ground-shaking hazard of MIS associated with underground coal mining in central Utah; cooperative projects completed with USGS and U.S. Bureau of Reclamation to develop ground-motion prediction equations for shallow MIS; current partnerships with three coal mines at which UUSS operates a 4-component seismograph [3-component accelerometer plus a vertical short-period sensor] providing mine operators with continuous Webicorders online, improved locations of MIS at the mine sites, and ground-motion data for larger events)
- Earthquake Education Services (a program of the University of Utah Seismograph Stations and the University of Utah's College of Mines and Earth Sciences providing teachers with professional development opportunities and classroom activities in accordance with core curriculum and national guidelines  
[<http://www.seis.utah.edu/edservices/edservices.shtml>])
- Educational Tool: Traveling Photographic Exhibit (an award-winning exhibit, "Earthquakes in the Intermountain West" [<http://www.seis.utah.edu/lqthreat/exhibit.shtml>] is routinely circulated for display free of charge to schools, public institutions, and groups interested in earthquake preparedness)
- Educational Tool: Personalizing the Earthquake Threat (extensive online compilation of photographs, newspaper articles, and personal accounts of 48 historic earthquakes in Utah, Montana, Wyoming, and Idaho [<http://www.seis.utah.edu/lqthreat/perseq.shtml>] to increase public understanding of the earthquake threat in the Intermountain Seismic Belt)
- Technical Help to Other Seismic Networks (examples during FY2005: (1) help to Puerto Rico seismic network in setting up a Windows PPP server to communicate with REF TEK 130 seismic recorders and providing GIS guidance and software to help generate geology and Vs30 files for ShakeMap; (2) remote maintenance and troubleshooting of the Northern Arizona University (NAU) Earthworm system and relaying of NAU's data streams to the IRIS DMC; (3) help to Montana's regional seismic network with response files and UUSS software to enable use of digital data from a simulated Wood-Anderson seismograph for computing local magnitude,  $M_L$ ; (4) help to Brigham Young University-Idaho to troubleshoot firewall-related difficulties in exporting seismic data to other networks; (5) providing Webicorder displays for the USGS's Teton Region ANSS seismic network in northwestern Wyoming; and (6) providing scripts to the University of Memphis for automating ShakeMap using Earthworm)

Beta Testing ANSS Strong-Motion Instruments (during the past three years, we've spent great time and effort remedying, in cooperation with the manufacturer, major shortcomings of

government-furnished REF TEK 130-ANSS accelerographs that make up a large part of our inventory of strong-motion instruments and which we received during 2002–2005 as “beta-status” rather than “production” instruments)