

**TECHNICAL ADVISORY COMMITTEE
TO TEXNET AND BUREAU OF ECONOMIC GEOLOGY**

Meeting Minutes

Thursday, October 9, 2025 – 11:00 a.m. to 3:00 p.m.

OPENING

The meeting of the TexNet Technical Advisory Committee was called to order at ~ 11:00 a.m. on Thursday, October 9, 2025.

PRESENT

Alexandros Savvaidis, Manager of TexNet
Brian Stump, Committee Chair (via Zoom)
Jeff Nunn, Committee Member
Chris Hillman, Committee Member
Aaron Velasco, Committee Member
Larry French, Committee Member
Dave Cannon, Committee Member
Mark Boyd, Committee Member
Stefan Hussenoder, Committee Member
Lorena Moscardelli, Director, Bureau of Economic Geology
Seyyed Hosseini, Program Director, Bureau of Economic Geology
Mark Blount, Assistant Director of External Affairs
Jenna Watts, Director for State Affairs, UT Governmental Affairs and Initiatives
Ryan Rutherford, Policy Coordinator, UT Governmental Affairs and Initiatives
Elizaveta Rybina, TexNet Admin Program Coordinator

ABSENT

Scott Mitchell, Committee Member
Amy Wanamaker, Director of Real Estate, CREO-Campus Real Estate Office
Eric Hammack, Associate Director of Real Estate, CREO-Campus Real Estate Office

AGENDA FOR OCTOBER 9th, 2025 MEETING

1. Approval of Previous Minutes (5 min)
2. Introductions (15 mins)
3. TexNet Presentation (45 min)
4. USGS Update (5 mins)
5. Budget Implications (20 min)
6. Lunch (from 12:25 to 13:15; 50 mins)
7. Annual Meeting and Next Meetings Plan (15 min)
8. CREO Presentation (15 min)
9. TexNet Operations Update (15 min)
10. Research Update: Eagle Ford New Earthquake Catalog (20 min)
11. Research Update: Permian Basin 3D Model (10 min)
12. Publications, Presentations, and Outreach (10 min)
13. Suggestions for the Subsequent Meeting (20 min)

APPROVAL OF June 10th, 2025 MEETING MINUTES

The TAC reviewed the June 10th, 2025 Meeting Minutes. Jeff Nunn and Brian Stump requested that the discussion of TexNet review be included in the minutes. With this addition, the TAC approved the June 10th, 2025 Meeting Minutes.

INTRODUCTIONS

The meeting began with introductions and agenda review.

Alexandros Savvaidis informed the meeting that Scott Mitchell, Committee Member, and the CREO representatives, Amy Wanamaker and Eric Hammack, were unable to join the meeting.

Alexandros suggested Mark Blount arrange a meeting with the CREO representatives at another time to discuss TexNet seismic stations and license agreements with landowners.

Alexandros Savvaidis thanked everyone for attending the meeting, introductions, and welcomed Stefan Hussenoder, the new TAC member with expertise in seismicity and water management.

TEXNET PRESENTATION

Alexandros presented an overview of seismic monitoring in Texas, noting a rise in seismicity since 2009. In response to public concerns, the State of Texas funded the seismic network and seismology research to support independent data collection and hazard mitigation efforts, leading to the expansion of the seismic network from 18 to 211 stations statewide.

Alexandros noted that the TAC members are appointed by the Governor, meeting minutes are approved at the following meeting and published on the TexNet website, which also hosts a biennial report.

Alexandros provided a historical overview of seismicity in Texas, distribution and patterns of seismicity, including tectonic and geological features affected by oil and gas operations.

The presentation also covered the technical aspects of station design and maintenance, including site selection process and timeline for deployment of a new station, noting that it typically takes 2-6 months, with faster deployment possible when industry partners or the Railroad Commission are involved.

Alexandros outlined the challenges in recording seismic data in high-noise areas and introduced the TexNet Earthquake Catalog – a website providing public earthquake data. He noted that TexNet is an authoritative network for the USGS, serving as the primary source of earthquake information for the State of Texas and responsible for reporting events of M3 and above in 20 minutes of occurrence. Catalog data are limited due to manual event review and the capacity of the earthquakes analysis group.

Alexandros highlighted the significant increase in detected events due to lower detection thresholds and the application of improved machine learning techniques. The team's research focuses include seismicity analysis, soil amplification, ground motion models, and seismic causal factors, with ongoing development of tools for injection well monitoring and machine learning-based event detection.

Injection data is made publicly available and used by other TexNet web tools, such as Geomechanical Injection Scenario Toolkit and Fault Slip Potential co-developed with ExxonMobil and Decision Geomechanics.

Alexandros shared that TexNet has an alert notification system.

Alexandros reported that TexNet currently reports events with M 0.5 for the Midland Basin, M 1 for the Eagle Ford, and M 1.5 for the Delaware Basin due to many earthquakes in that area.

Alexandros explained the criteria for declaring an event and highlighted the importance of monitoring for understanding spatial demographics and risk distribution. Alexandros also presented a physics-based model applied to seismicity data, showing its effectiveness in predicting earthquake rates, and emphasized the significance of local hazard and risk models for economic impact assessments. He highlighted the role of monitoring data in ground motion modeling and the importance of public earthquake reporting, even for distant locations. Alexandros demonstrated the effectiveness of local models for economic impact assessment.

STATE FUNDED STUDY PROJECT

Alexandros Savvaidis introduced a new project recently funded by the State entitled “Pilot Study on Vibrational Impact of Aggregate Production Operations to Semiconductor Manufacturing in Grayson County, Texas.”

The project involves planning and deploying instruments outside and inside semiconductor manufacturing buildings to quantify vibration levels from blasting, with a budget of \$1.2 million for the current physical year. Brian Stump inquired about the sensitivity of the manufacturing structure compared to nuclear power plants, and Alexandros explained the differences in foundation and systems used. The team discussed challenges in identifying quarry blasts and the potential impact of acoustic energy on the buildings as well.

Alexandros also shared that TexNet identifies quarry blasts in the catalog as quarry blasts and explained the process.

TAC members emphasized the importance of the mandate and raised concerns about resource allocation and its potential impact on TexNet's core mission, and stressed the need for planning additional funding and staffing to ensure base responsibilities are maintained. Alexandros Savvaidis and Lorena Moscardelli expressed confidence that TexNet staffing would remain unaffected for the short term, noting that the project will last for only a few months and is a high priority mandate for the state (S.B. 1758).

If there is a request to continue or expand the work, the Bureau will need to further discuss it, seek additional funding, and develop a mid-to-long-term plan.

TAC also asked Alexandros and Lorena to keep them informed in early 2026 regarding long-term plans to ensure statewide seismic monitoring remains unaffected.

Alexandros discussed the TexNet organogram describing the roles and expertise of the TexNet team and introduced new staff member, Constantinos Skevofilax, who is a part of the TexNet IT group.

USGS UPDATE

Alexandros shared results from his meeting with USGS in Colorado on June 24, 2025, where the catalog and funding were discussed. The USGS confirmed the initiation and testing of a new catalog contribution for the Eagle Ford area. For the Permian Basin, the USGS believes it will be challenging to lower the catalog threshold, especially if the goal is to manually review all events. USGS will accept the new earthquake locations, once TexNet starts using in daily earthquake location that incorporates a 3D velocity model as planned for the Permian Basin. However, TexNet should be responsible to update past events using the new model. For past events, Alexandros stated that a decision was needed whether TexNet should manually review all past events or not. Alexandros confirmed with Aaron Velasco that the RRC is requesting information both from USGS and TexNet with TexNet catalog having precedence over the USGS catalog. Alexandros stated that starting a new catalog is simple, but updating past locations is challenging.

Alexandros reported on his attempt to discuss financial support for TexNet from the USGS. They indicated that funding can be obtained through a collaborative agreement for equipment (new and maintenance) and software development, though no funding is currently available for new cooperative agreements. They added that this limitation could change in the future.

TAC agreed to review how past seismic events might be updated with new location models, potentially using a magnitude cutoff to determine events for manual review. TAC and BEG Directorate decided to keep options open for a cooperative agreement, as TexNet shares data with USGS, and continue discussions about funding opportunities. Alexandros will follow up on the application process for a cooperative agreement.

BUDGET IMPLICATIONS

Alexandros presented the Budget distribution and details for 2025-2027.

The group discussed budget concerns for the upcoming physical year, with a shortfall of \$200,000 needed to maintain human resources and salaries, including a planned UT 3-4% annual salary increase. Alexandros shared that TexNet is capable of covering all personnel salaries for the current fiscal year, but if overall funding does not increase by next spring, TexNet will need to reduce the number of employees.

The group discussed additional potential funding sources, including engagement with the Railroad Commission, industry, connecting with a legislative appropriator, and seeking additional funding from the Governor's office, and agreed to draft a letter to the Governor's office requesting emergency funding.

Additionally, Alexandros emphasized that the biggest concern is that TexNet does not currently have a collocated IT system and suggested utilizing the UT infrastructure in Round Rock, when funds become available.

He also shared that TexNet would prioritize minimizing the number of stations in areas with low seismic activity while focusing on covering areas with significant seismic activity.

Chris Hillman requested that Alexandros provide information about the number of stations in Irving and their associated costs.

The TAC agreed to focus on securing funding for the next biennium, aiming to have budget estimates to cover operations and an interim report ready by March-April 2026. This timing will allow a legislative advocacy process to begin. Alexandros agreed to present preliminary budget estimates while highlighting TexNet needs and shortfalls to the TAC and BEG Directorate for their review at the Q1 2026 meeting.

Brian Stump and Mark Blount discussed the idea of creating an interim report for the Governor and agreed that it would be beneficial.

Brian thanked UT Governmental Affairs, and BEG Directorate for joining the Q3 TAC Meeting, and Lorena Moscardelli, Mark Blount, Jenna Watts, and Ryan Rutherford left the meeting at 2:10 PM.

The TAC decided to hold the Q2 2026 meeting in downtown Austin in order to engage with regulators and industry stakeholders, representatives from the Governor's office aimed at securing additional funding through both UT and legislative channels. They also discussed the importance of aligning with the UT administration and strengthening relationships with key stakeholders and legislature to support funding requests.

Alexandros reviewed the upcoming meetings in November 2025, including the TexNet Annual Review and User Group Meeting where web tool updates will be discussed.

At the Q4 TAC meeting Alexandros proposed addressing options to increase funding by supporting the idea of the interim report and a letter to the Governor's office. The TAC plans to finalize the letter and budget numbers at Q1 2026 meeting.

OPERATIONS UPDATE

Alexandros presented an operations update on seismic station deployments, noting that Q3 2025 saw limited activity with only a few stations being deployed, including two stations from operators with data provided to TexNet (VW02, WW02), two stations deployed using TexNet funds (ET04, EF10), one station transitioned from broadband to geophone installation (PB32 -> DG11), and a new private array deployed through the DOE CarbonSafe Program in collaboration with the Gulf Coast Carbon Center for CO2 storage and Occidental in northeast Houston.

He discussed seismicity patterns, indicating that there have been no earthquakes of $M \geq 4$ in 2025 Q3 and highlighting two new clusters in the Midland Basin and one in the Eagle Ford area.

Alexandros presented seismicity update as of October 6, 2025 showing a decrease in earthquakes above magnitude 4.5 since October 6th 2025. Alexandros also reviewed changes in magnitude thresholds for different regions, with some areas lowering thresholds due to improve seismic detection. Statistics on the accuracy of automatic earthquake picks compared to manual picks document promising results with time differences generally below 0.2 seconds in the Delaware Basin.

RESEARCH UPDATE: EAGLE FORD NEW EARTHQUAKE CATALOG AND PERMIAN BASIN 3D MODEL

Alexandros presented updates on the Eagle Ford earthquake catalog, including a new velocity model (EF1D-CS-170S). He compared different location solutions for a 3.6 magnitude earthquake that happened in July 2025, noting discrepancies between the TexNet earth model and USGS's model.

The group also discussed earthquake location methods and the implementation of a new 3D velocity model for the Permian Basin. The discussion highlighted challenges with using the new 3D model, including computational requirements and the need for a distance cutoff. Alexandros and TAC will discuss the catalog relocation process using the new 3D model and present more details on the 3D model at the upcoming Annual Review meeting.

OUTREACH UPDATE

Alexandros shared that TexNet participated in the Energy Elevated Technology Showcase hosted by the Texas Oil & Gas Association (TXOGA) on September 3, 2025 in Houston, where TexNet team presented the TexNet Software Portal and web tools for risk mitigation highlighting their applications for risk mitigation to industry leaders. Alexandros also highlighted other outreach initiatives, including the 2025 Great ShakeOut Earthquake Preparedness Drill, an international initiative promoting earthquake safety awareness and readiness, and the Conference for the Advancement of Science Teaching (CAST), where TexNet will present the online TexNet Earthquake Catalog, share history of seismicity in Texas, and discuss the current distribution of seismic activity across the state.

Additionally, TAC discussed possible topics for the Q4 TAC Meeting and subsequent meetings, including: (1) Developing an operation plan in case needed additional funding is not approved; (2) Addressing network optimization during next meetings as part of network maintenance; and (3) An external review process for TexNet.

SUGGESTIONS FOR THE SUBSEQUENT MEETING Q4-2025

1. Updated numbers for the next biennium funding request
2. Options to increase funding for the next fiscal year
3. Interim report for March 2026
4. Letter to the Governor's office about funding needs

5. Plan in case additional funding is not authorized
6. 3D velocity model implementation and the catalog relocation process using the new 3D model
7. Network optimization as a standing agenda item for future meetings
8. Suggestions for the subsequent meetings

ADJOURNMENT

Meeting was adjourned at ~ 3:00 p.m. by Brian Stump, Committee Chair

Minutes submitted by: Elizaveta Rybina, TexNet

Minutes reviewed by: Alexandros Savvaidis, TexNet and Brian Stump, Committee Chair

Minutes approved on November 18, 2025, by:

Brian Stump, Committee Chair (via Zoom)

Mark Boyd, Committee Member

Chris Hillman, Committee Member

Jeff Nunn, Committee Member

Aaron Velasco, Committee Member

Dave Cannon, Committee Member

Larry French, Committee Member

Stefan Hussenoeder, Committee Member