



**Municipality of Anchorage
Geotechnical Advisory Commission**

A G E N D A

Tuesday, September 24, 2024

12:00 Noon – 1:30 p.m.

**Regular Meeting
(Hybrid format)**

In-Person Physical Location

Planning Conference Room 170
Planning and Development Center
4700 Elmore Road
Anchorage, Alaska

via Microsoft Teams

[Click here to join the meeting](#)

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Meeting ID: 238 552 937 650, Passcode: rSL6pw

Or call in (audio only): +1 907-519-0237

Conference ID: 309 649 142#

I. CALL TO ORDER

- A. Establishment of Quorum
- B. Disclosures
- C. Recognizing Staff and Guests

II. MEETING SUMMARIES

- A. August 27, 2024 Regular Meeting

III. OLD BUSINESS

- A. Letter of Support for Strong Motion Instrumentation at Port of Alaska Terminal 1
- B. Update on Academic Research from University of Colorado and University of Notre Dame on Building Code (*Daniel King*)
- C. GAC Letter regarding NOAA National Tsunami Hazard Mitigation Program

IV. NEW BUSINESS

- A. GAC Resolution No. 2024-02 Recommending Minimum On-site Testing for Geotechnical Reports

V. PERSONS TO BE HEARD (3-minute limit)

VI. COMMITTEE REPORTS

- A. Communications Committee
- B. Hazard Mitigation Committee
- C. Seismic Hazard Committee

VII. OTHER BUSINESS

VIII. STAFF REPORTS

- A. Reminder about terms expiring 10/14/2024

IX. ADJOURNMENT

Next Regular Meeting – October 22, 2024



Municipality of Anchorage
Geotechnical Advisory Commission

ACTION SUMMARY

Tuesday, August 27, 2024

12:00 Noon – 1:30 p.m.

Regular Meeting

(Hybrid format)

Planning Conference Room 170
Planning and Development Center

Commissioners	MOA Staff	Guests
<ul style="list-style-type: none">• Dennis Berry (<i>excused</i>)• Kyle Brennan• Steven Halcomb, Vice Chair• Dave Hemstreet (<i>excused</i>)• Cody Kreitel• Keri Nutter• Brian O’Dowd• Amy Steiner (<i>excused</i>)• John Thornley, Chair	<ul style="list-style-type: none">• Daniel Mckenna-Foster, Long-Range Planning• Susan Perry, Long-Range Planning• Ben Russell, Office of Emergency Management• Wayne Bolen, Development Services• Daniel King, Development Services• Tim Huntting, Project Management & Engineering	<ul style="list-style-type: none">• Colin Maynard, Alaska Seismic Hazard Safety Commission• Yogesh Prashar, Geopier

I. CALL TO ORDER

- A. **Establishment of Quorum**
- B. **Disclosures.** Chair Thornley will recuse on Port of Alaska Terminal 1 if necessary.
- C. **Recognizing Staff and Guests**

II. MEETING SUMMARIES

- A. **July 23, 2024 Regular Meeting.** Commissioner Brennan moved to approve, Commissioner Nutter seconded. Passed unanimously with one minor edit adding “Acting” before Chair on second page.
- B. **July 30, 2024 Work Session.** Notes provided on South Addition Neighborhood Plan Hazard Mitigation.

III. OLD BUSINESS

- A. **Geopier Update.** Yogesh Prashar provided an overview of the Geopier project.
- B. **Letter of Support for Strong Motion Instrumentation at Port of Alaska Terminal 1** Commissioner Brennan discussed the draft letter and the pros and cons of strong motion instrumentation.
- C. **Update on Academic Research from University of Colorado and University of Notre Dame on Building Code.** Nothing to report yet.

- D. Review of Geopier Site Visit.** Commissioners discussed the site visit on 8/7/2024. **Yogesh Prashar** of Geopier discussed some of the lessons learned from the process and materials used so far.

IV. NEW BUSINESS

- A. Recommendations for Minimum On-site Testing for Geotechnical Reports.** **Daniel King** provided an overview of past proposals and reports. He asked for minimum standards for what will be acceptable for geotechnical reports.

Chair Thornley mentioned the importance of the original intent of AG 18, which was to provide for some type of verification that new construction was not placed on bad fill. Currently, there are very few firms doing this type of work for residential construction for a variety of reasons. General concern about using certain types of data for residential projects.

Daniel King asked for specific guidance or a resolution from the Commission on the use of public data and whether the MOA GIS site can be used for planning or design purposes.

Chair Thornley instructed the Commission to think about a resolution and bring it back to the next meeting on September 24, 2024.

V. PERSONS TO BE HEARD (*none*)

VI. COMMITTEE REPORTS

- A. Communications Committee.** **Commissioner Nutter** reported on recent activity.
- B. Hazard Mitigation Committee.** Nothing to report.
- C. Seismic Hazard Committee.** USGS is getting ready to construct a liquefaction array in Anchorage.

VII. OTHER BUSINESS

VIII. STAFF REPORTS

- IX. ADJOURNMENT.** **Commissioner Nutter** moved; **Commissioner Brennan** seconded. Unanimous approval at 1:27 pm.

9/24/2024 GAC Meeting info for “GAC Resolution No. 2024-02 Recommending Minimum On-site Testing for Geotechnical Reports”

COMMENTER: I have several concerns about the recommendation to prohibit use of historical data in favor of new, site-specific data. Depending on the project type, age of historic boreholes, and their proximity to a project it's not unreasonable to conduct a desktop study and rely on adjacent historic data for design (even more reasonable if you have the full geotechnical data report from the historic investigation). The purpose of the desktop study, which should be the initial step of any geotechnical investigation and a part of every design process, you should be able to identify previous use of the site including potential for old landfills and buried debris. The desktop study also helps identify geohazards and quantify seismic risks. It's fairly common for geotechnical engineers to utilize adjacent geotechnical information for a design if they have reason to believe the soil conditions in the area are similar.

A qualified and experienced geotechnical engineer who conducts a desktop study can identify the need for supplementary information for design. At a minimum, assumed soil conditions should be verified during construction by the geotech or their representative. But ultimately, if the geotechnical engineer of record does their due diligence and determines no additional information is required, that falls under their engineering judgement and their PE license. Requiring a new site investigation for all projects, especially small residential ones, is a big and comparatively expensive ask. New commercial projects or multi-family housing (aka bigger projects) should be held to a higher standard and I could be convinced that requiring some level of new site investigation is appropriate.

COMMENTER: In the discussion at the last meeting, I offered that there are jurisdictions that have developed rules for geotechnical investigations on sites with possible geohazards. Attached is the City of Seattle rule governing geotechnical investigative work in Environmentally Critical Areas (ECA) for reference. Seattle Director's Rule 5-2016 should be considered as being at the most restrictive and conservative end of the regulation spectrum. I am not advocating that the MOA's rules/regulations be anywhere near this detailed, but the Rule could serve as a guide to crafting the GAC resolution and eventually revising or replacing Handout AG.18. I leave it to you to pass it on to the GAC or not.

You will note that Rule 5-2016 does not include any quantifiable information as to the nature and extent of the subsurface exploration program because the City and their geotechnical engineering community recognize that the geology and topography in Seattle are too varied to establish any minimum number and depth of explorations. Instead, the Rule includes minimum qualifications to be a geotechnical engineer, and expects that the report will be prepared “in accordance with generally accepted geotechnical practices and the General Geotechnical Report Guidelines”. The

9/24/2024 GAC Meeting info for “GAC Resolution No. 2024-02 Recommending Minimum On-site Testing for Geotechnical Reports”

closest Seattle comes to specific requirements is the second paragraph under Contents of the Geotechnical Report on page 2:

*The opinions and recommendations contained in the report **shall be supported** by field observations and testing, e.g. site reconnaissance, appropriate explorations such as borings or test pits, literature review, and laboratory testing of soil characteristics conducted by or under the supervision of the geotechnical engineer in accordance with the American Society of Testing and Materials or other applicable standards. (emphasis added)*

The typical geotechnical engineering work product is mostly narrative with graphical representations of site conditions, and little to no calculation sheets provided. This is different from most other engineering disciplines where numeric data and extensive calculations are a predominate component of the work product. For work in an ECA, the geotechnical engineer can't just provide recommendations without tying them to site-specific soils information and without showing the work behind the recommendations. I also direct your attention to Section VII – Plan Review and Minimum Risk Statements on page 6 in the General Geotechnical Report Guidelines where the Geotechnical Engineer must state that “the risk of damage to the proposed development and from the development to adjacent properties from soil instability will be minimal.” It's not much help to a property owner suffering a loss due to soil movement, but it will go a long way towards revoking the license of the engineer in charge.

Applicant: City of Seattle Department of Construction and Inspections	Page: 1 of 6	Supersedes: 18-2011
	Publication: April 4, 2016	Effective: May 2, 2016
Subject: General Duties And Responsibilities Of Geotechnical Engineers	Code and Section Reference: SMC 22.170 and 25.09; Seattle Building Code	
	Type of Rule: Code Interpretation	
	Ordinance Authority: SMC 3.06.040	
Index: Building/Grading - Technical	Approved (signature on file)	Date 5/2/2016
	_____ Nathan Torgelson, Director, SDCI	

PURPOSE

The purpose of this rule is to define the Department's requirements for geotechnical engineers who are hired by permit applicants to analyze surface and subsurface conditions on a site.

Whenever development is proposed in a landslide-prone area as defined in the Regulations for Environmentally Critical Areas (Seattle Municipal Code Chapter 25.09) or when the Director determines that additional soils analysis is appropriate on a particular site, the applicant is required to submit a geotechnical report that evaluates the surface and subsurface conditions on the site. The geotechnical engineer hired to perform this work must comply with the duties and responsibilities included in this rule.

RULE

GENERAL REQUIREMENTS

A geotechnical engineer who is a licensed Professional Engineer (Civil) in the state of Washington shall prepare the geotechnical report in accordance with generally accepted geotechnical practices and the General Geotechnical Report Guidelines contained in this rule. The geotechnical engineer must have at least four years of professional experience under the direction of a licensed Professional Engineer (Civil) with demonstrated expertise in geotechnical engineering. The report must be signed and stamped by the geotechnical engineer.

The geotechnical engineer shall attend a pre-construction conference when requested by the Director. The geotechnical engineer is also responsible for developing a program for monitoring the site during construction (to ensure compliance with the recommendations in the geotechnical report and conditions of the permit) and for performing such monitoring.

EXPLORATIONS

The geotechnical engineer shall conduct or direct all subsurface explorations. Explorations conducted in Environmentally Critical Areas shall meet the requirements of Director's Rule 20-90: Regulation and Enforcement of Investigative Field Work Performed in Environmentally Sensitive Areas and Shorelines or subsequent rules.

CONTENTS OF GEOTECHNICAL REPORT

The geotechnical report shall discuss all applicable items listed in the General Geotechnical Report Guidelines contained in this rule. Specific recommendations concerning stability of the site shall be made, if applicable.

The opinions and recommendations contained in the report shall be supported by field observations and testing, e.g. site reconnaissance, appropriate explorations such as borings or test pits, literature review, and laboratory testing of soil characteristics conducted by or under the supervision of the geotechnical engineer in accordance with the American Society of Testing and Materials or other applicable standards.

If required by the Director, evaluation involving significant geologic issues shall be reviewed and approved by a Washington State licensed geologist.

The geotechnical engineer shall submit a statement that in the engineer's judgment all portions of the site and adjacent properties that are disturbed or impacted by the proposed development will be stable or stabilized during construction and will continue to be stable after construction.

POTENTIALLY CONTAMINATED SOILS

In cases where the Director determines or the geotechnical engineer recognizes that a site has been used for manufacturing or industrial purposes or is otherwise potentially contaminated, the geotechnical report shall contain information regarding past treatment, disposal or storage of hazardous materials on the site. Analytical test results of site soils to determine concentration of pollutants shall be presented when required by the Director or when the geotechnical engineer encounters or suspects the presence of ground contamination by hazardous materials. The geotechnical engineer shall provide information concerning the level of contamination, direction of contamination migration, and the approximate extent of the plume. If contamination by hazardous materials is detected, the report shall indicate that the appropriate regulatory agencies have been contacted and provide appropriate discussion concerning reporting obligations of the property owner(s).

ADDITIONAL REQUIREMENTS FOR A GEOTECHNICAL REPORT IN LANDSLIDE-PRONE AREAS

When a report is required for a site located within a landslide-prone area, it shall comply with the following additional submittal requirements.

1. An evaluation of the erosion potential on the site during and after construction shall be submitted. It shall include recommendations for mitigation including retention of vegetation buffers and a revegetation program (see SMC 25.09.320). The geotechnical engineer shall provide a statement identifying buffer areas at the top or toe of a slope based on geotechnical site constraints and the impacts of proposed construction methods on the stability of the slope. SMC 25.09.180C outlines minimum buffers required in steep slope areas.
2. The geotechnical engineer shall submit a statement in the soils report that the geotechnical elements of seismic design have been evaluated in accordance with the criteria and ground motions prescribed by the current version of the Seattle Building Code for new structures or ASCE-31/41 for existing buildings.

Slope stability analyses for landslide prone areas shall be evaluated in accordance with Chapter 18 of the Seattle Building Code.

The plan set for the project shall be reviewed by the geotechnical engineer for consistency with these design criteria.

3. The geotechnical engineer shall make a recommendation as to which portion of the site is the most naturally stable and the preferred location of the structure. The limits of the area of grading activity shall be identified in the recommendations.
4. In general, no excavation will be permitted in landslide-prone areas during the typically wet winter months. When excavation is proposed, including the maintenance of open temporary slopes between November 1 and March 31, technical analysis shall be provided to assure that no environmental harm or safety issues would result. The technical analysis shall be submitted for approval by the Director and shall, at a minimum, consist of plans showing mitigation techniques and a letter from the geotechnical engineer. See Director's Rule 26-2015 [Grading Season Extension] or subsequent rules.

A Plan Review and Minimum Risk Statement as described in the General Geotechnical Report Guidelines contained in this rule shall be included.

Reports prepared for master use permit applications and projects in landslide-prone areas shall address comments received from the public and governmental agencies concerning the geotechnical aspects of the proposed development.

The Director may require supplements or amendments to the report when needed to develop a reasonably comprehensive understanding of the soil conditions on the site.

PRE-CONSTRUCTION CONFERENCE

The geotechnical engineer shall attend a pre-construction conference with the applicant, the lead design professional, the contractor, and SDCI representatives when requested by the Director. The purpose of this conference is to discuss the most difficult, challenging, or important aspects of the construction that may pose particular risks or need special attention. The conference may include discussions of excavation and shoring plans, phasing of work, monitoring requirements, geotechnical recommendations, stability risks, weather considerations, disposal of excavated soils, surface and groundwater conditions,

fill materials, erosion control, non-disturbance areas, and other matters the Director deems relevant. The geotechnical engineer shall highlight the most critical geotechnical issues during the pre-construction conference.

CONSTRUCTION MONITORING

The geotechnical engineer shall monitor the site and provide special inspection as required by the Director during the construction phase to ensure compliance with the recommendations of the geotechnical report and the geotechnical aspects of the SDCI-approved plans. The construction monitoring shall meet the general requirements for special inspections as found in Director's Rule 6-2016 or subsequent rules.

Unless otherwise approved by the Director, the specific recommendations contained in the geotechnical report shall be implemented by the owner. When site visits are made, the geotechnical engineer shall provide a daily field report on the progress of the construction. The daily field reports shall be provided to the SDCI Geotechnical Engineering Section on a weekly basis at a minimum or at such timely intervals as shall be specified by the Director. Written reports may be submitted to SDCI via e-mail to: SDCI_geo@seattle.gov. Written reports on the progress of the construction with Seattle Department of Transportation (SDOT) as well as SDCI approvals shall be submitted by the geotechnical engineer to both SDOT and SDCI.

Omissions or deviations from the approved plans and specifications and significant geotechnical construction issues shall be immediately reported to the Geotechnical Section of SDCI at 206-684-8860 or via e-mail to the SDCI geotechnical reviewer. The geotechnical reviewer will discuss the issues with the geotechnical engineer and provide additional SDCI requirements, if necessary. It is not sufficient to notify only the SDCI Building Inspector and/or Site Inspector or to provide notification of significant geotechnical issues only via field report.

The final construction monitoring report shall contain a statement from the geotechnical engineer that based upon his or her professional opinion, site observations, and testing during the monitoring of the construction, the completed development substantially complies with the recommendations in the geotechnical report, SDCI-approved plans, and all permit requirements. The final report shall be stamped by the geotechnical engineer and emailed to scigeofinalletter@seattle.gov. Occupancy of the project will not be approved until the final report has been reviewed and accepted by the Director.

CHANGE OF GEOTECHNICAL ENGINEER/SPECIAL INSPECTION AGENCY

If a new geotechnical engineer/special inspection agency is retained by the owner, the owner shall notify the Geotechnical Section of SDCI of the change in writing. The notification shall be accompanied by a letter to the Geotechnical Section of SDCI, signed and sealed by the new geotechnical engineer, expressing his or her agreement or disagreement with the recommendations of the original geotechnical engineer and stating whether existing plans and specifications conform to his or her recommendations. The letter shall also contain any further recommendations, as well as additional exploration, analysis and testing as applicable, should there be additions or exceptions to the original recommendations. Work relating to the further recommendations shall not proceed until the SDCI Geotechnical Section has approved them; in some cases, revised plans may be required. Review and approval of any further recommendations will not be granted during the pre-construction conference. SDCI will mail a revised special inspection authorization letter to the owner and the new special inspector.

GENERAL GEOTECHNICAL REPORT GUIDELINES

The following are general geotechnical report guidelines¹. These guidelines are not intended to be all-inclusive. Depending on the scope and scale of the project, some of the information below may not be required. It is the responsibility of the geotechnical engineer to address all factors, which in their opinion, are relevant to the site.

¹ Based upon "Geotechnical Report Guidelines," prepared by ASCE Seattle Section Geotechnical Group and City of Seattle DPD, November 2007.

I. PROJECT INFORMATION AND REPORT PURPOSE

- A. Site Address
- B. Vicinity map
- C. DPD Project Number, if known
- D. Purpose (e.g., feasibility, permit application, ECA exemption, final design)

II. SITE AND PROJECT DESCRIPTION

- A. Site plan showing existing and proposed structures and site improvements, property lines, and existing contour lines if available
- B. Surface conditions, including adjacent properties, structures, and rights-of-way
- C. Description of existing and/or proposed sewer drainage facilities (sanitary and stormwater) on or adjacent to site when these facilities affect or are affected by the proposed work
- D. Description of proposed structural and site improvements
- E. Floor and foundation grades
- F. Anticipated excavation depths

III. GEOLOGY AND GEOLOGIC HAZARDS

- A. Review of available literature, geologic maps
- B. Preliminary geologic hazard assessment (e.g. landslide-prone areas, peat settlement prone areas, liquefaction hazard areas)
- C. Landslide history, including review of GeoMap NW or City files and the Seattle Landslide Study

IV. FIELD EXPLORATIONS AND LABORATORY TESTING

- A. Exploration logs
- B. Field and laboratory testing results

V. SUBSURFACE DESCRIPTION

- A. Subsurface conditions
- B. Geologic profile and site development cross-sections
- C. Groundwater evaluation and levels

VI. ANALYSES

- A. Include soil properties, layering, and geometry

- B. Describe assumptions, analysis methods, results and interpretation.

VII. CONCLUSIONS AND RECOMMENDATIONS

- A. Conceptual siting of structures and general recommendations
- B. Earthquake engineering (e.g. Seattle Building Code seismic parameters)
- C. Slope stability assessment including (1) existing conditions, construction phase, and post-construction phase and (2) global and local stability
- D. Foundation support recommendations (e.g. type, allowable bearing pressures, deep foundation capacities, settlement estimates)
- E. Temporary excavation and/or shoring recommendations, impacts on adjacent properties including utilities and ROW
- F. Lateral earth pressure and resistance recommendations
- G. Grading and earthwork including site preparation, compaction requirements, fill specifications, sequencing of earthwork operations, wet weather considerations
- H. Temporary and permanent surface and subsurface drainage requirements, temporary and permanent dewatering, off site effects
- I. Temporary and permanent erosion control as required by the 2016 Seattle Stormwater Code and Manual.
- J. Other recommendations as needed

VII. PLAN REVIEW AND MINIMUM RISK STATEMENTS

- A. In landslide-prone critical areas, the following will be **required** with all permit applications:

A statement that the most recent plans and specifications submitted to SDCI have been reviewed and conform to the recommendations of the analysis and report and, provided that those conditions and recommendations are satisfied during the construction and use, the areas disturbed by construction will be stabilized and remain stable and will not increase the potential for soil movement; and the risk of damage to the proposed development and from the development to adjacent properties from soil instability will be minimal.
- B. In other areas designated by the Director as having high risk potential, the following shall be submitted:

A statement that the most recent plans and specifications submitted to SDCI have been reviewed and conform to the recommendations of the analysis and report, and provided that the conditions and recommendations are satisfied, the construction and development will not increase the potential for soil movement; and the risk of damage to the proposed development and from the development to adjacent properties from soil instability will be minimal.
- C. In liquefaction-prone critical areas, the statement required under section B will be required when the Director determines the risks are still sufficiently high after consideration of any proposed mitigation.

Jones, Barbara A.

From: Kubitz, Grace (Murkowski) <Grace_Kubitz@murkowski.senate.gov>
Sent: Friday, September 13, 2024 8:25 AM
To: Jones, Barbara A.
Cc: Eckl, Lauren (Murkowski)
Subject: Letter from MOA Geotechnical Advisory Committee
Attachments: Thornley_MOA_GAC.pdf

RECEIVED
SEP 13 2024
Office of the Mayor

[EXTERNAL EMAIL]

Good morning!

In the spring, our office received a letter from John Thornley, the chair of the Municipality's Geotechnical Advisory Committee. I couldn't find a good contact for John and it's unclear to me whether he is still serving in this role, but I wanted to offer a conversation with our office about the Commission's concerns. I cover hazards and emergency response for Senator Murkowski and am available to discuss the NOAA National Tsunami Hazard Mitigation Program or other related policy issues at any time.

Thank you,
Grace

Grace Kubitz
Legislative Assistant
Office of U.S. Senator Lisa Murkowski
522 HART Senate Building
Washington DC 20510
o: (202) 224-3794
c: (202) 709-0784



MUNICIPALITY OF ANCHORAGE



Planning Department
Long-Range Planning Division

Phone: (907) 343-7921
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Mayor Dave Bronson

GEOTECHNICAL ADVISORY COMMISSION

April 26, 2024

The Honorable Lisa Murkowski
United States Senate
522 Hart Senate Office Building
Washington, DC 20510

The Honorable Dan Sullivan
United States Senate
702 Hart Senate Office Building
Washington, DC 20510

The Honorable Mary Sattler Peltola
United States House of Representatives
153 Cannon House Office Building
Washington, DC 20515

Dear Senators Murkowski and Sullivan and Representative Peltola:

The Municipality of Anchorage's Geotechnical Advisory Commission (GAC) supports maintaining funding for the NOAA National Tsunami Hazard Mitigation Program (NTHMP).

The current proposal (Exhibit 13, NWS-45, page 565) to terminate funding for grants that support local infrastructure and critical response is concerning, specifically for a community like Anchorage that is located in a seismically active region and only now is undergoing studies to understand the complex risks of tsunamis to the Upper Cook Inlet Region that were until recently thought to be insignificant.

By terminating funding for education and awareness, as well as for inundation mapping and evacuation planning, NOAA is removing essential tools to address life-safety issues in coastal Alaska communities. The NOAA 2024-2029 NTHMP strategic plan¹ identifies hazard and risk assessment as primary goals, recognizing that gaps in inundation mapping and source characterization modeling exist. The NTHMP is effective at informing and protecting the public during local-source tsunami events that provide public education, promote preparedness, and improve response. The proactive nature of the NTHMP and its associated programs is essential to community awareness and preventing the loss of life during tsunamis. Reliance on Impact-Based Decision Support Services is episodic, and warnings after a seismic event across the Pacific Rim are not effective without understanding the full potential impact of an event to a community.

The GAC, formed in 1976, is the oldest government entity in the United States focused solely on mitigating the detrimental effects of natural geologic hazards, in particular earthquakes and associated hazards like tsunamis. The GAC's role includes supporting and advising the Municipality of Anchorage leadership with respect to natural hazards and the use of resilient engineering to protect life-safety in a high hazard region.

The GAC believes the funds supporting the NTHMP should continue, and we press the Alaska delegation to reject the proposal to terminate the Tsunami Grant Program in NOAA's Fiscal Year 2025 Budget Justification.

Sincerely,

John Thornley, Ph.D., P.E.
Chair

¹ <https://vlab.noaa.gov/web/national-tsunami-hazard-mitigation-program/nthmp-strategic-plan-2024-2029>