

## TRIENNIAL STRATEGIC PLAN (TSP)

**Evaluation Period: February 1, 2015 to January 31, 2018**

*Please note that rows and boxes below expand as you enter the information*

### PART 1: Committee Name and Scope

*This is an opportunity to review the officially approved name and scope that are posted on the TRB website and consider any necessary changes. If changes are needed, include the proposed scope statement and/or name and justification for the changes.*

**NOTE: A proposed committee name and/or scope change must have the approval of 2/3 of the official members of the committee. The balloting done at a committee meeting that has less than 2/3 of the members in attendance must be augmented with e-mail balloting of the members not in attendance.**

Committee Code *	AFP10
Committee Name *	Standing Committee on Engineering Geology
- Date(s) reviewed	2016
- Change, if proposed***	Not Applicable
- No. of official members approving change/total number of members **	Committee Name reviewed as part of the 2015-2016 DCG Strategic Review. No change was proposed.
Committee Scope *	This committee is concerned with the application of geological sciences and engineering principles to the assessment/management of geologic features/geomaterials and the mitigation of natural/human-induced geologic hazards.
- Date(s) reviewed	3/15/2015 and 2016
- Change, if proposed ***	Not Applicable
- No. of official members approving change/total number of members **	Committee Scope reviewed, changed and approved in 2016 as part of the DCG Strategic Review.

\* Show current, as it currently appears in the [TRB Online Directory](#)

\*\* Includes Chair, Standing Committee Members, Emeritus Members, and Young Members

\*\*\* Show proposed, or Not Applicable

**PART 2: Committee Accomplishments**

NOTE: We have provided much of the information you need for boxes 2.2, 2.4, and 2.7 below and in attachments A, B, and C. We ask that you provide the remaining information.

**2.1**

Year	2015	2016	2017	2018
Number of Members in Attendance at Annual Meeting		18	18	16
Number of Visitors in Attendance at Annual Meeting		29	33	37
Number of Papers Reviewed		4	1	7
Total Number in Attendance at Mid-Year Meeting	UNK*	35	34	

\* Attendance was typical, nominally 30-some but exact number was not reflected in not reflected in meeting minutes

**2.2**

Sessions and workshops sponsored/cosponsored at the Mid-Year meeting, including name of co-sponsoring committee(s) if applicable (by year):

2015 – Session – “Geotechnical Risk: Assessment and Performance Management” cosponsored with AFP20, Standing Committee on Geotechnical Site Characterization, on September 14, 2015 at the Highway Geology Symposium (HGS) held in Sturbridge, Massachusetts.

2016 – Session – “Geological Modeling: Methods and Methodologies” cosponsored with AFP20, Standing Committee on Geotechnical Site Characterization, on July 11, 2016 at the HGS held in Colorado Springs, Colorado.

2017 – Session – “State of Art Practices in Subsurface Investigations” cosponsored with AFP20, Standing Committee on Geotechnical Site Characterization, on May 1, 2017 at the HGS held in Marietta, Georgia.

**2.3**

**Provide** title(s) and presenter(s) for informal presentations made at Annual Meeting and Mid-Year Committee meetings (by year):

**2015**

**Annual Meeting**

1. “Deep Drilling on the Oso Landslide – Oso, Washington” – Tom Badger, Washington DOT
2. “Things I’ve never seen on a landslide before (Oso Landslide)” – Scott Anderson, FHWA
3. “Full-scale testing of anchored mesh on slopes” – Tim Shevlin, Geobrugg

**Midyear Meeting**

1. “Oso Landslide and Risk” – Joe Wartman
2. “Oso Landslide from the perspective of a DOT” – Tom Badger
3. “GAM background and status” – Scott Anderson and Dave Stanley
4. “Determining risk for geotechnical assets” – Herbert H. Einstein
5. “Connecting performance and risk management” – Chad Allan
6. “GAM state of practice: Colorado DOT” – Mark Vessely and Ty Ortiz

**2016****Annual Meeting**

1. “An Example of Mapping Geotechnical Assets” – Alex Strouth
2. “Remote Sensing Technologies Overview and Considerations for Each” – Paolo Mazzanti
3. “Data Interchange for Geotechnical and Geoenvironmental Specialists (DIGGS)” – Bob Bachus
4. “Ground Based Interferometric Radar (GBIR) update” – John Metzger”
5. “CDOT’s Geohazard Tracking Tool” – Mark Vessely

**Midyear Meeting**

1. “Infiltration-Induced Instability of an Embankment along an Interstate Highway near the Colorado Continental Divide” – Alexandra Wayllace
2. “On the Importance of Displacement Monitoring for the Prediction of Landslide Time of Failure” – Paolo Mazzanti
3. “Rock Slope Monitoring and Rockfall Prediction from Lidar and Photogrammetry: State of Art” – Dave Gauthier
4. “Modeling Implications from Observations of Rockfall and Earth Slope Movements Using Ground-Based Interferometric RADAR” – Paco Gomez

**2017****Annual Meeting**

1. “Update on Data Interchange for Geotechnical and Geoenvironmental Specialists (DIGGS)” – Allen Cadden
2. “Idaho Transportation Department Conducts GAM-based Geotechnical Planning” – Darren Beckstrand
3. “The 14 November 2016, M7.8 Kaikoura, New Zealand Earthquake: Effects on Transportation Infrastructure Systems” – Joseph Wartman
4. “Proactive Monitoring – Trends and Analysis” Cliff Preston
5. “Landslide Modeling for Difficult Decisions” – Ben Arndt
6. “Geological and Geotechnical Data for Decision Making – Allocation, Design and Construction” – Alex Strouth

**Midyear Meeting**

1. “Geophysical Applications to Subsurface Investigations”- Warren Dean
2. “KDOT Implementation and Integration of 3D Geologic Subsurface Modeling in the Highway Design Process” – Kyle Halverson
3. “Transformative Subsurface Investigation Practices: 80% Art @ 20% Effort” – Benjamin Rivers
4. “Introduction and Implementation of DIGGS” – Robert Bachus

## 2018

### Annual Meeting

1. “Rock Rolling Experiments” – John Duffy
2. “UAS Data Collection Used for Rock Slope Assessment” – Krystle Pelham
3. “Using Three Dimensional Geological Models in Design” – Kyle Halverson
4. “Concepts for Using Data Driven Processes for Decisions” – Dave Gauthier

### Midyear Meeting

To be held in Portland Main at the venue for the 2018 Highway Geology Symposium.

## 2.4

**Provide** titles of new research need statements (RNS) posted in TRB’s RNS database (by year):

1. “Post Base Support Systems for Flexible Rockfall and Debris Flow Barriers: Design Framework and Performance Criteria” – posted 05/08/2017, modified 05/22/2017
2. “Procedures to Develop Defined Metrics and Protocols Using Existing Rockslope and Rockfall Design Guidelines within Corridors of Rockfall and Rockslides” – posted 04/27/2016, modified 05/05/2016
3. “An Implementation Manual for Geotechnical Asset Management (GAM) for Transportation Agencies” – posted 05/15/2014, modified 05/29/2014

Other NCHRP and AASHTO Research and Problem statements:

- “Deterioration Rates and Unit Costs for Geotechnical Assets” – submitted by the Colorado DOT on behalf of the Subcommittee on Geotechnical Asset Management and cosponsored by AFP10.
- “Defining Geotechnical Test and Performance Data for Asset Management and Accelerated Design Benefits” – Submitted by the Ohio DOT and cosponsored by AFP10, AFP20 and AFS30
- “Liability of State Departments of Transportation with Unstable Slope Management Programs” – Submitted as a Legal Studies Problem Statement, Legal Problems Arising out of Highway Programs by the Joint Section Subcommittee on Geotechnical Asset Management and cosponsored by AFP10, AFP20 and AFS10 among others.

NOTE: Attachment B shows all statements currently posted in TRB’s RNS database.

**2.5**

**Provide** title(s) of RNS submitted for funding consideration:

“Post Base Support Systems for Flexible Rockfall and Debris Flow Barriers: Design Framework and Performance Criteria” – posted 05-08-2017, modified 05-22-2017

The RNS did not receive funding. The Committee intends to revise the RNS and resubmit for funding consideration.

“An Implementation Manual for Geotechnical Asset Management (GAM) for Transportation Agencies” – posted 05/15/2014, modified 05/29/2014, **Selected for NCHRP funding**, project NCHRP 24-46. The title of the report is the same as the RNS with a first draft expected in 2018. This RNS was submitted on behalf of the AFP00(1) Joint Subcommittee on Geotechnical Asset Management.

“Deterioration Rates and Unit Costs for Geotechnical Assets” – submitted by the Colorado DOT on behalf of the Subcommittee on Geotechnical Asset Management and cosponsored by AFP10. Submitted in August 2017 for NCHRP funding. The problem statement did not receive funding.

“Defining Geotechnical Test and Performance Data for Asset Management and Accelerated Design Benefits” – Submitted in 2017 for NCHRP funding by the Ohio DOT and cosponsored by AFP10, AFP20 and AFS30. Unknown at this time if the Problem Statement received funding.

“Liability of State Departments of Transportation with Unstable Slope Management Programs” – Submitted as a Legal Studies Problem Statement, Legal Problems Arising out of Highway Programs by the Joint Section Subcommittee on Geotechnical Asset Management and cosponsored by AFP10, AFP20 and AFS10 among others. **The research proposal was accepted in 2017**. The Project number is NCHRP 20-06/Topic 24-02 and the title is “Potential Liability Associated with Unstable Slope Management Program”. Submitted in 2017.

NOTE: If funded, include research project title/number and name of funding organization(s).

**2.6**

**Provide** titles of synthesis topics submitted (by year):

2017 – Summary of Practice for Design, Estimation, and Contracting Rock Slope Scaling on Transportation Corridors. The synthesis did not receive funding, however, the Committee held a workshop on the topic during the 2018 Annual Meeting and an e-circular is in the works. AFP20 co-sponsored the workshop and is working on the e-circular.

2017 - Recent Advances in Landslide Instrumentation and Monitoring. Co-sponsored with AFS20.

These are the synthesis topics the Committee has a record of submitting. Since synthesis do not require Committee approval there may be other topics submitted on the subject of Engineering Geology or a related field that are not recorded in meeting minutes or notes.

NOTE: **List** any synthesis topic(s) funded in a research program.

## 2.7

Membership Make-up: Please see Attachment C provided by TRB for summary details.

The committee has 30 members that includes representation from all five regions of the U.S., four international members, three young members and one emeritus member. Not included in this count is one young member nominated in January 2018 and finalized in February 2018.

Representation from the Central and Northeast parts of the U.S. are low with only two representative from each. There are only three minorities and, counting international, young and interim members, there are only seven women on the committee. Six state departments of transportation have a member on the committee and two FHWA members are on the committee one from the Central Federal Lands Office and one from the Resource Center. Of the regular members on the committee, eight represent consultants, two represent contractors, two represent manufactures and one represents a university. With the exception of the contractors and manufactures, the professional disciplines of regular committee members is geology, engineering geology and geotechnical engineering.

As the committee and industry move in the direction of incorporating asset management principles and data driven decision concepts into discussions, research needs and practice, its professional discipline makeup may need to expand to include nontraditional stakeholders such as IT specialists, GIS and database programmers, data visualization specialists and planners among others. This will be an opportunity to add members from the Central and Northeast regions of the U.S. and minority and women to fill some of the open membership slots. The committee may also attract underrepresented groups and other nontraditional stakeholders by incorporating more online communication and meetings, including updating the committee webpage to be more inviting and interactive than the current and outdated webpage. Participation in social media as a communication tool is not high within the committee. However, with better promotion it may be possible to use social media for both communication and to attract interest in the committee by underrepresented groups and potential young members and friends.

**NOTE: Comment** on demographics, balance or lack of balance of membership. Provide an action plan to address any deficiencies. See attachment C for summary details.

**2.8**

Provide any of the following:

- Any special publications, such as TR circular, and conference proceedings
- Sponsored or co-sponsored specialty conferences, symposia, workshops, webinars or other joint efforts with other TRB committees, other TRB entities, or other organizations (i.e. AASHTO, FHWA, State DOTs, ASTM, ASCE, and/or other modes of transportation)

In 2016 NCHRP report 823 “Guidelines for Certification and Management of Flexible Rockfall Protection Systems” was released.

In July 2016 the committee sponsored the webinar “Visualization of Geotechnical Data for Hazard Mitigation and Disaster Response, A Practical Update”. The webinar reviewed NCHRP Synthesis 467 of the same name.

In June 2017 the 3<sup>rd</sup> North American Symposium on Landslides was held in Roanoke, Virginia. TRB as a cosponsor of the conference.

At the 2017 Annual Meeting the committee cosponsored workshop 176: Mobile Apps for Geological and Geotechnical Data Collection and Analysis: Review and Value-Added Features.

At the 2017 Annual Meeting the committee cosponsored lectern Session 383: Sustainability in Geological and Geoenvironmental Engineering.

At the 2017 Annual Meeting the committee cosponsored poster session 313: Innovative Approaches for Subsurface Investigations

At the 2017 Annual Meeting the committee cosponsored lectern session 791: Geological Models as a Decision Tool for Planning and Design in an Era of Rapid Change.

At the 2017 Annual Meeting the committee cosponsored lectern session: Implementation of Geotechnical Asset Management.

At the 2018 Annual Meeting the committee cosponsored workshop 170: Managing Highway Rock Slope Scaling: Design and Construction State of the Practice. An e-circular is being prepared summarizing the workshop presentation and discussion.

At the 2018 Annual Meeting the committee cosponsored Poster Session 319: Investigation and Design of Geotechnical Geological Slope and Subsurface Hazards.

At the 2018 Annual Meeting the committee cosponsored Lectern Session 351: Implementation and Extension of Geotechnical Asset Management Practice.

AFP10 has two subcommittees, AFP10(1) Rockfall Management Subcommittee and AFP10(2) Advances in Landslides, Analysis, and Control Subcommittee. AFP10(1) meetings are held annually during the Annual Meeting. And the first AFP10(2) meeting was held at the 2018 Annual Meeting.

AFP10(1) remains popular with attendance sometimes exceeding the parent committee. The committee is responsible for several RNS statements and research and the 2018 Rock Scaling Workshop discussion originated during this committee meeting in 2017, which is leading to an e-

Circular. During the 2018 meeting the subcommittee brainstormed an RNS topic on the design of rock scaling for projects, which would be a follow up to the Rock Scaling Workshop.

AFP10(2) was organized to discuss the need for an update to TRB Special Report 247, Landslides: Investigation and Mitigation (1996). The consensus of the meeting attendees was that the subcommittee would recommend updating the report. The committee will discuss the format of the update during online meetings and at the next annual meeting. The committee leaned toward an on line update or wiki, to better fit the needs of the anticipated audience.



**PART 3: Committee Future Outlook Statement and Committee Three-Year Plan (Limit 1,500 words total)**

**Committee Future Outlook Statement**

*The committee future outlook statement should include a discussion of the primary factors and influences that will shape the transportation community and topic(s) within the committee's scope over the short- (one to three years) and long-term (four to seven years). This statement should include:*

- *identification of emerging, critical, and cross-cutting issues **within the committee scope** (these issues could have been identified by the committee, Section, Group, Technical Activities Council, TRB Executive Committee, or other transportation committees and organizations);*
- *identification of emerging, critical, and cross-cutting issues **outside the committee scope** that provide opportunities for liaison and collaborative efforts (these issues could also come from a wide range of sources).*

The Committee focuses on applying geological science principles to assess earth materials as they affect civil engineering works for transportation infrastructure, and to evaluate and mitigate geologic hazards. By continuing to participate in applied engineering geologic research and collaborating with industry through conferences, workshops, webinars, online discussions and technology exchange, the committee will promote awareness of the effects earth materials and geologic hazards have on transportation.

Cross cutting issues the committee will be concerned with when developing research and problem statements include the effect extreme weather events and long-term weather pattern changes have on earth material and geologic hazards. The collection, visualization, management, and quality assurance and control of data that used to measure the performance of earth material and geologic hazards with respect to DOT goals of safety, mobility and system reliability and condition is also a key cross cutting issues. As the collection and use of aerial data become mainstream and, as the technology to develop surface and subsurface models improves, geologic models will likely be used increasingly more in the design of transportation infrastructure. Promoting proper use of these models will be an important focus for the committee. In addition, the combination and visualization of data that affects earth materials, surface models and subsurface models can be a means of developing methods for data based decisions within the engineering geology industry. As this concept develops it will be important for the committee to stress the subjective nature of geologic information and the importance of empirical observation and adherence to geologic engineering principles.

The committees continued goals listed here will focus on these cross cutting and important issues for the engineering geology field:

- 1) Promote the proper use of geologic data in planning, design, construction and maintenance of transportation systems including the development of investment strategies from a geotechnical asset management perspective,
- 2) Improve the quality of applied research for engineering geology as it applies to transportation systems,
- 3) Collaborate with TRB committees and other engineering geology professional organizations to improve the state of practice of investigating and assessing engineering geology as it applies to transportation systems by performing innovative research,
- 4) Provide opportunities for oversight, timely critiques and reviews of research results; and the dissemination of valuable research contributions to the science of engineering geology, and
- 5) Continue to respond to requests from TRB for engineering geology information.

AFP10 is an active and critical part of TRB. Geologic hazards affect all aspects of the transportation system. Evaluation, assessment and management of geologic hazards are essential to maintaining the health of the system. As innovative techniques and practices are conceived, investigated and confirmed by researchers and practitioners, our committee will strive to provide leadership to disseminate findings through TRB.

### **Committee Three-Year Plan**

*The committee plan is a short, focused statement of where the committee wants to go and how to get there. The committee plan may include, but is not limited to:*

- ***projects, activities and products** that the committee will undertake during the next three years to address the emerging, critical, and cross-cutting issues identified above;*
- *how the current or proposed changed membership composition will respond to issues identified above;*
- *strategies to encourage significant involvement by the committee's Young Members, state DOT members, and other key constituents, both during committee meetings and at other times;*
- *committee's communication activities, and efforts to provide assistance and technology transfer to the transportation community;*
- *research – for the TRB committees, “research” is a very broad concept that can begin with providing the user perspective on research needs, writing research needs statements, tracking research, understanding the funding available for research in their topic area, developing case studies, lessons learned, disseminating research, technology transfer, and other activities that will advance the state of the practice. Potential research activities are:*
  - *research directions, results, and needs or gaps;*
  - *plan for maintaining and augmenting the Research Need Statements (RNS) database;*
  - *efforts to address research implementation and user needs, and ways to identify research use and implementation.*

The AFP10 Committee can best serve the engineering geology community through continued incorporation of Geotechnical Asset Management (GAM) principles into its activities, communication with industry and research. As DOT's move towards data driven management strategies and decisions, the committee will strive to provide industry direction for best practices using data for investigation, assessing, design and construction of transportation systems with respect to earth materials. The committee will also commit to moving towards evaluating and developing state of the art practices using geologic data, three dimensional geologic and surficial models and GAM concepts to enhance empirical observation while also recognizing the importance of honoring traditional engineering geology observations and practices. Over the next three years, the committee hopes to achieve the goals of this strategic plan through activities, membership, communication and research.

#### Activities:

The committee bases activities around discussion during the annual and midyear meetings. Often the topics are specific to presentations given during the meetings. During the next three years, the committee will be mindful to encourage presentations that relate to the vision of best and state of art practices for using and managing geologic data and models with respect to GAM concepts and to assess the effect earth materials have on transportation systems design and performance. In addition, we will encourage discussion on the effect extreme weather events and long-term weather patterns have on earth materials and how they affect resiliency of the transportation system. As part of this effort, the committee will look to collaborate with the FHWA's Office of Natural Environment's Sustainable Transportation and Resilience Team to sponsor a workshop on the effect extreme weather

and long-term weather pattern changes may have on geologic hazards as it relates to resilience of the transportation system. We will also make an effort to collaborate with A0020T, TRB's Special Task Force on Climate Change and Energy on this topic. We will look to have the workshop during the 2020 Annual Meeting and we will discuss the viability of combining this topic with that of geologic data collection, use and management as a topic for the 2019 or 2020 midyear meeting.

To gain backing from other committees for research need statements and to increase the potential for funding, the committee will strive to collaborate with other AFP and AFS section committees. We will also attempt to collaborate with nontraditional stakeholders and committees from other TRB Groups on cross cutting topics. Topics related to data driven decision for engineering geology practices is one such topic. For example, during the 2019 or 2020 Annual Meeting we will endeavor to invite a presentation on data quality and management and lessons learned from a specialist in the machine-learning field. As remote sensing and especially aerial data collection become increasingly cost effective and data quality increases; and with the potential to gain data from Intelligent Transportation technologies like Road X, large amounts of data will become available to the engineering geology industry. Without introducing proper management and use of this information, the industry may not be able to use the data efficiently on a large scale. During the next three years, the committee will invite papers on this topic in the hope of attracting support for this work. We will also look to develop synthesis topics on the subject of data management and data decision making as a means of learning best and state of art practices for data management and processing.

The committee will attempt to participate in and host webinars on these topics and will strive to have online meetings and collaboration regarding research need statements on innovative concepts regarding engineering geology strategies for transportation. The committee will strive to conduct as much committee business as possible on-line as a means of making the annual meeting more meaningful to members and friends of the committee by adding time for presentations, open discussion and brainstorming research needs.

Membership:

As online awareness and data driven decision-making processes become commonplace in the engineering geology field, it will be important for the committee to involve nontraditional stakeholders in our discussion and activities. With this trend in business practices, there is a need for nontraditional stakeholders to become members of the committee in order to have a consistent voice when incorporating data processing, visualization, management, planning, modeling and extreme weather events into a broader transportation management space involving engineering geology. These nontraditional stakeholders may include IT specialists, GIS and database programmers, data visualization specialists and planners among others. The open membership slots allow an opportunity to incorporate or recruit nontraditional stakeholders and underrepresented groups such as women and minorities as well as representatives from underrepresented regions of the country into the committee.

It is necessary to mention that the committee is not attempting to overhaul the membership body, rather it is recognizes that an expansion of knowledge base and expertise is needed as we move toward incorporating technology from other disciplines into our practices. The committee recognizes the importance of maintaining a strong and diverse engineering geology skillset among members and will endeavor to maintain representation from engineering geology fields of DOT's, construction, manufacturing, and university, as well as, non-traditional stakeholders.

Communication Activities:

During the next three years, the committee intends to improve its online presence for committee business, research collaboration and promoting the awareness of geological hazards. Online activities will include:

- Conducting committee business such as voting for research need statements to submit for funding, committee rotations, soliciting for topics to discuss during the annual meeting and midyear topics, etc.
- Updating the committee webpage. Activities are already underway. We are attempting to make the webpage more visually inviting than the current webpage, as well as, interactive so it can be used as a place to post photos of engineering geology work and hold presentations for a general audience for promoting geologic hazard awareness, and the type of work performed by engineering geologists.
- Promoting social media for communicating with nontraditional stakeholders. Informal polling during the annual meetings by show of hands indicates a relatively low use of social media. Social media can serve as a means of communication and promotion as we attempt to expand the expertise of the committee. Social media forums and online meeting formats such as Zoom, Skype and GoToMeeting are common place and the committee intends to take advantage of these platforms to allow those unable to attend the annual or midyear meeting to participate in committee business, the development of research problem statements and brainstorming discussions.

The committee will also commit to communicating with outside organization with similar missions regarding earth materials and geologic hazards. These organizations include the Association of Environmental and Engineering Geologists (AEG), the Association of Geohazards Professionals (AGHP), FHWA's Geohazards Program and geotechnical offices, and our continued relationship with the Highway Geology Symposium. Encouraging AFP10 committee members already involved with these organizations to communicate our efforts and to invite them to collaborate with us during brainstorming discussions and to give presentations at the annual meeting, webinars and workshops, we hope to facilitate a technology exchange and identify gaps in research needs.

Research:

Over the last three years, the committee reviewed and archived several research need statements (RNS). The current list of existing, non-funded RNS the committee will consider resubmitting for funding include:

1. "Post Base Support Systems for Flexible Rockfall and Debris Flow Barriers: Design Framework and Performance Criteria".
2. "Procedures to Develop Defined Metrics and Protocols Using Existing Rockslope and Rockfall Design Guidelines within Corridors of Rockfall and Rockslides".
3. The committee submits RNS on behalf of the AFS00/AFP00 Joint Subcommittee on Geotechnical Asset Management (GAM). There is one non-funded, GAM RNS the committee will consider resubmitting for funding: "Deterioration Rates and Unit Costs for Geotechnical Assets".

We propose to rework these RNS so they incorporate and added benefit to the greater DOT population and a relationship to the goals and vision of AFP and TRB. We would like to resubmit them for NCHRP funding in 2019 and interested DOT research funds.

A new RNS ideas we will consider that came during follow up conversations to the 2018 Rock Scaling Workshop is “Rock Scaling Design Concepts for Projects”.

The committee will consider future RNS topics on aerial data (collection, processing, use and management) combined with GAM principles and data driven decision concepts for the effects geologic hazards have on transportation systems. In addition, the effect of extreme weather events and long-term weather pattern changes as they affect geologic hazards and resilience of geologic hazard work and its effects on the transportation system will be considered for future research topics.

The committee will continue to pursue innovative research projects that align with the vision outlined in this plan. We will strive to begin online discussions prior to the annual meeting to identify research topics. To strengthen the likelihood of an RNS receiving funding, the committee will need to strengthen its review process to ensure submitted RNS incorporate a benefit to other DOT disciplines as well TRB priorities. The committee will attempt to increase collaboration with other TRB committees, DOT’s, FHWA and industry; and continue to work with the Joint Subcommittee on Geotechnical Asset Management to submit RNS on their behalf and to incorporate GAM principles into RNS and other research activities. Finally, the committee will look to other sources besides NCHRP and pooled funds for funding research. Collaborating with DOT’s, professional organizations, FHWA and industry will be part of this effort.

Other:

It is important to have young member participation on the committee. We will encourage participation of young geo-professionals at the Annual Meeting, midyear meeting and online discussions. The committee will also encourage and invite other geo-professionals, DOT, FHWA, and industry leaders to attend the Annual Meeting. We will work with professional organizations such as the Association of Engineering and Environmental Geologists (AEG), Highway Geology Symposium (HGS), the American Society of Civil Engineers (ASCE) and the Association of Geohazard Professionals (AGHP) to include presentations on state of art concepts such as remote sensing data collection and processing and development of data based decisions for managing geologic hazards. The committee will continue to cosponsor a midyear meeting at the HGS venue with AFP20, Standing Committee on Geotechnical Site Characterization and the AFS/AFP Joint Section Subcommittee on Geotechnical Asset Management. The committee looks to actively emphasize the importance of engineering geology in the application of earth materials to civil engineering works and especially to the transportation community.

**TRB 97th Annual Meeting**

January 7–11, 2018

**Standing Committee on Engineering Geology**

<b>Session Type</b>	<b>Committee Code</b>	<b>Title</b>
Published Meeting - Committee	AFP10	Rockfall Management Subcommittee, AFP10(1)
Workshop	AFP10	Managing Highway Rock Slope Scaling: Design and Construction State of the Practice
Published Meeting - Committee	AFP10	Engineering Geology Committee
Published Meeting - Committee	AFP10	Advances in Landslides, Analysis, and Control Subcommittee, AFP10(2)

**TRB 96th Annual Meeting**

January 8–12, 2017

**Standing Committee on Engineering Geology**

<b>Session Type</b>	<b>Committee Code (including sponsoring committees)</b>	<b>Title</b>
Lectern Session	AFP10	Geological Models as a Decision Tool for Planning and Design in an Era of Rapid Change
Published Meeting	AFP10	Rockfall Management Subcommittee, AFP10(1)
Published Meeting	AFP10	Engineering Geology Committee

**TRB 95th Annual Meeting**

January 10–14, 2016

<b>Session Type</b>	<b>Committee Code (including sponsoring committees)</b>	<b>Title</b>
Published Meeting	AFP10	Engineering Geology Committee
Published Meeting	AFP10	Rockfall Management Subcommittee, AFP10(1)
Published Meeting	AFP10	Geotechnical Asset Management Subcommittee, AFP10(2)
Lectern Session	AFP10	Geotechnical Asset Management
Poster Session	AFP10	Characterization of Geologic Hazards

**Attachment B**

**Post Base Support Systems for Flexible Rockfall and Debris Flow Barriers: Design Framework and Performance Criteria**

Committee: AFP10, Engineering Geology

Date Posted: 5/8/2017

Date Modified: 5/22/2017



**Procedures to Develop Defined Metrics and Protocols Using Existing Rockslope and Rockfall Design Guidelines within Corridors for Mitigation of Rockfall and Rockslides**

Committee: AFP10, Engineering Geology

Date Posted: 4/27/2016

Date Modified: 5/5/2016



**Improving Processes for Characterizing Corrosion Potential of Soils and Fill Materials**

Committee: AFS10, Transportation Earthworks

Date Posted: 5/15/2014

Date Modified: 5/29/2014



**An Implementation Manual for Geotechnical Asset Management (GAM) for Transportation Agencies**

Committee: AFP10, Engineering Geology

Date Posted: 3/11/2014

Date Modified: 3/25/2014



## ATTACHMENT C COUNT OF COMMITTEE MEMBERS

Committee Members as of December 4, 2017

<b>Main Members</b>	20
<b>International Members</b>	4
<b>Minority</b>	3
<b>Female</b>	5
<b>Room for more Members</b>	7 slots to be allocated Main Member: 5 International Member: 1 Young Member: 1

### Membership Make-up

<b>Northwest</b>	<b>Southwest</b>	<b>Central</b>	<b>Northeast</b>	<b>Southeast</b>
6	7	2	2	6

<b>Women</b>	<b>Non-US</b>	<b>Emeritus</b>	<b>Young</b>
6	24	1	3

<b>Federal</b>	<b>Local</b>	<b>Academia</b>	<b>Industry</b>	<b>Consultant</b>	<b>Other</b>
3	8	3	2	11	2

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