Summary NHERI User Satisfaction Survey 2017

A first NHERI user satisfaction survey was conducted in June 2017 under guidance of the recently formed NHERI User Forum committee. The survey asked respondents to answer sixteen closed questions and two open questions, mostly associated with the availability of information about the NHERI facilities and about processes related to the planning, execution, and data management of tests. This line of questions was chosen because NHERI has been active only for a short period and, therefore, few users have yet to conclude their projects. Many "users" in the NHERI community are currently in the stage of acquiring information, preparing proposals, and planning projects.

Of more than 900 invitees, only sixty-four respondents completed the survey. This number is well below the desired threshold. The low number of respondents may be due to the very few users who have completed their NHERI projects, and possibly because the survey was only available (due to timing constraints) for about two weeks. For many questions, approximately half of the respondents chose "Not Applicable/ Cannot Rate", which is likely correlated with the fact that 73% of the respondents indicated that they had not yet used the NHERI facilities. The UF User Satisfaction Survey sub-committee concluded that the low number of respondents with actual experiences using the NHERI facilities demands careful interpretation of the results. It was suggested that the results may serve as indicators of areas that may require more detailed monitoring and investigation in the future. The results should also be used for guidance when planning the next user satisfaction survey in 2018.

Two main trends stood out in the analysis of the results. First, a notable number of respondents (58% of the respondents who answered this question) indicated that website resources represent challenges to users. Specifically, navigation and structure, documentation and training, and data upload were stressed as concerns. Second, respondents indicated a desire to strengthen the NHERI community. Specific suggestions included a calendar of events and trainings, video footage of experiments, a community communication platform with a directory of researchers and experts, postings and data sharing. Overall, most of the respondents were generally positive about the NHERI facilities and the associated tools, support, and so forth. However, 2–5 respondents consistently indicated dissatisfaction on most questions, though it is not possible to draw conclusions as to the reasons for these strongly negative responses. The UF user satisfaction survey sub-committee suggested that a different format may be necessary for future surveys to ensure more meaningful responses and to enable more in-depth analysis. The latter is of particular importance in the case of user dissatisfaction.

In conclusion, the NHERI user satisfaction survey 2017 will serve as a solid base to develop an effective user satisfaction survey program in the future. Potential areas of concern and improvement were indicated, which will be addressed in more detail in the following surveys.

In the most recent discussion of the User Forum, the following suggestions were made regarding the NHERI user satisfaction survey 2018. The survey period should be closer to the solicitation deadlines. Considering the report deadlines, it was suggested to aim for January and February 2018. Differently than in 2017, it was suggested to involve social sciences graduate students to

conduct a survey, as well as interviews. It was mentioned that this concept would be acceptable to NSF, and that there is no concern of bias of graduate students. Another or an additional option may be to establish a REU program for social sciences students who would conduct the survey and interviews. In addition to this major conceptual change in the survey management and execution, it was suggested to alternate between shorter and in-depth surveys over the years to avoid saturation of the target audience. To achieve more meaningful responses, it was proposed to create different tracks in the survey based on proposal status and experience of the respondent. With regard to interviews which would allow for a more individualized questioning, it was suggested to target NHERI awardees whose proposal and project status is publically known, and to allow survey respondents to provide a contact number for a follow-up interview.

User Satisfaction Survey Results

Natural Hazards Engineering Research Infrastructure (NHERI)

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NHERI User Satisfaction Research

The Natural Hazards Engineering Research Infrastructure (NHERI) is the next generation of National Science Foundation (NSF) support for a natural hazards engineering research network, replacing the George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES). During 2015 - 2019, NHERI will enable research and educational advances that can contribute knowledge and innovation for the nation's civil infrastructure and communities, to prevent natural hazard events from becoming societal disasters.

The NSF requires that the Network Coordination Office (NCO) for NHERI conduct user satisfaction surveys each year for the first five years of the NHERI program. The first User Forum community user satisfaction survey is to be completed by the end of year one (by June 30, 2017).

Year One User Satisfaction Survey

The goal of the user satisfaction survey research in the first year was to learn how the NHERI user community feels about the services, tools, support, and resources that NHERI provides.

An 18-question survey was developed by TecEd and the User Forum committee. Sixteen of the survey questions were closed-ended (with specific choices for responses) and two were open-ended (for free-form responses). Members of the DesignSafe-CI mailing list were invited to complete the survey, which was available for a period of 2 weeks in early to mid-June 2017. Sixty-four (64) respondents completed the survey. While this is below the desired threshold it is not unexpected for a year one survey.

Overall Findings

User Satisfaction Assessment is Problematic Due to NHERI Resources Only Recently Becoming Available

NHERI resources have only recently become available, a point which manifested repeatedly in the survey data. Most closed-ended questions had "Not Applicable / Cannot Rate" as the most frequent answer (typically between 45-55% of responses for a given question), and 73% of respondents indicated that they had not used any experimental facilities or the SimCenter in the past year. Some survey respondents also commented that the resources and/or functionality are too new for them to have needed help yet or to have formed an opinion.

To help boost future response rates and enhance the quality of the data the timing of subsequent assessments will be modified to fit better with the academic school year and may also follow submission deadlines. Other assessment methodologies will also be considered.

Website Resources Present User Experience Challenges for Some Users

While the majority of respondents rated the website resources positively (see the Item-Level Data section for further details), there were a variety of user experience issues identified. Nineteen of the sixty-four respondents provided an answer to the open-ended question about the most important change to NHERI's services, tools, and resources; 58% of those responses cited user experience concerns. Those concerns included:

- Navigation and/or organization concerns (cited by 5 respondents)

- Need for more documentation and training (cited by 3 respondents)

- Data upload issues (cited by 3 respondents)

A Desire to Strengthen the NEHRI Community

The final survey question asked about services, tools, and resources to add. Of the 14 responses to this question, eight were focused on community and information sharing. Respondents mentioned adding:

- Calendar of events and training (three respondents)
- Video footage of experiments (streaming and archived; mentioned by two respondents)
- A group space to post resources, data, comments, etc.
- Directory of researchers and experts
- Annual NHERI meeting information
- RSS feed for news

Item-Level Data

This section provides detailed data for the survey responses. Closed-ended questions have a table of data showing response options and frequencies; free-text comments (if any) are also provided. Open-ended questions have their responses listed. In all cases TecEd's observations and recommendations are also included.

Q1. In the past year, how many projects did you have that used either the NHERI Experimental Facilities and/or the SimCenter?

Answer Choices	Responses	
1-2 projects	22.22%	14
3-4 projects	4.76%	3
5-6 projects	0.00%	0
7-8 projects	0.00%	0
9-10 projects	0.00%	0
More than 10 projects	0.00%	0
Have Not Used	73.02%	46
Total		63

Comments from Respondents:

- I just started using this month!
- I am not a researcher.
- This year is my first time.

TecEd Observations and Suggestions:

Facility usage is likely to increase over time, so future years will offer a richer data set. For year two it may be helpful to reduce the option to smaller units (e.g., 1 project, 2 projects, 3 projects, 4 projects, 5 projects, 6+ projects). This could also be informed by the number of projects that have been funded.

Q2. Information about NHERI experimental facilities is readily accessible:

Answer Choices	Responses	
Strongly Disagree	3.13%	2
Disagree	3.13%	2
Neutral	7.81%	5
Agree	39.06%	25
Strongly Agree	25.00%	16
Not Applicable / Cannot Rate	21.88%	14
Total		64

Comments from Respondents:

- All the information is there; it is just sometimes hard to find, since each EF may organize their information differently on the website.

TecEd Observations and Suggestions:

With 64% of respondents expressing positive sentiment about facility information access, NHERI is potentially on the right track (the small sample size is a concern when interpreting this data). The free-text feedback suggests that standardization in information delivery will be beneficial.

Q3. Information about NHERI experimental facilities is comprehensive:

Answer Choices	Responses	
Strongly Disagree	3.13%	2
Disagree	4.69%	3
Neutral	17.19%	11
Agree	31.25%	20
Strongly Agree	17.19%	11
Not Applicable / Cannot Rate	26.56%	17
Total		64

Comments from Respondents:

- Have not reviewed everything on the website yet.
- I have been familiar with them for some time.
- Until I write a proposal, it is hard to know if it is complete. But they are definitely trying.

TecEd Observations and Suggestions:

48% of respondents expressed positive sentiment about facility information being comprehensive, with 17% being neutral. Over time the "Agree" and "Strongly Agree" percentages are likely to grow, as NHERI has more time to expand its information offerings and respondents have more opportunity to use the facilities and seek out the information.

Q4. NHERI provides useful feedback on proposed tests that use a facility:

Answer Choices	Responses	
Strongly Disagree	1.61%	1
Disagree	6.45%	4
Neutral	6.45%	4
Agree	11.29%	7
Strongly Agree	19.35%	12
Not Applicable / Cannot Rate	54.84%	34
Total		62

Comments from Respondents:

- I don't really understand this question. It could be interpreted many ways. Who do you mean by NHERI? Do you mean experiment sites of the CO or what?

TecEd Observations and Suggestions:

55% of respondents could not rate this aspect of user satisfaction, likely due to how recently the facilities have become available. Of the remaining respondents 8% rated the experience negatively, suggesting that NHERI may want to explore this issue more deeply and consider ways to make the feedback more useful. Revisions to question phrasing should also be considered, given the free text comment regarding the question interpretation.

Q5. The process for scheduling facilities matches my expectations:

Answer Choices	Responses	
Strongly Disagree	3.13%	2
Disagree	0.00%	0
Neutral	7.81%	5
Agree	9.38%	6
Strongly Agree	17.19%	11
Not Applicable / Cannot Rate	62.50%	40
Total		64

No Comments from Respondents

TecEd Observations and Suggestions:

63% of respondents could not rate this aspect of user satisfaction, likely due to how recently the facilities have become available. Of the remaining respondents, the sentiment was generally positive (27%). However, two respondents had a strong negative sentiment and this should be explored in more detail in future years.

Q6. The available training for the facility's equipment meets my needs:

Answer Choices	Responses	
Strongly Disagree	1.56%	1
Disagree	1.56%	1
Neutral	7.81%	5
Agree	17.19%	11
Strongly Agree	15.63%	10
Not Applicable / Cannot Rate	56.25%	36
Total		64

No Comments from Respondents

TecEd Observations and Suggestions:

56% of respondents could not rate this aspect of user satisfaction, likely due to how recently the facilities have become available. Of the remaining respondents, the sentiment was generally positive (33%), with two respondents responding negatively. Year two and subsequent years will see these distributions shift as more facilities are scheduled, and the questions can explore the reasons for the negative responses.

Q7. Technical support for the facility's equipment meets my needs:

Answer Choices	Responses	
Strongly Disagree	1.56%	1
Disagree	0.00%	0
Neutral	7.81%	5
Agree	15.63%	10
Strongly Agree	17.19%	11
Not Applicable / Cannot Rate	57.81%	37
Total		64

Comments from Respondents:

- I'm quite new and I have not asked for support yet.

TecEd Observations and Suggestions:

58% of respondents could not rate this aspect of user satisfaction, likely due to how recently the facilities have become available. Of the remaining respondents, the sentiment was largely positive (33%), with one negative response. Year two and subsequent years will see these distributions shift as more facilities are scheduled, and the questions can explore the reasons for the negative responses.

Q8. The process of uploading my data is easy to complete:

Answer Choices	Responses	
Strongly Disagree	4.69%	3
Disagree	6.25%	4
Neutral	12.50%	8
Agree	7.81%	5
Strongly Agree	14.06%	9
Not Applicable / Cannot Rate	54.69%	35
Total		64

Comments from Respondents:

- Had trouble initially but the support team was very good about getting the glitches sorted out on my account.
- For data collected at a non-NHERI site, data upload is slow (but the interface is easy to use and understand).
- Is uploading the data required? There has been no communication about the data yet to the community.

TecEd Observations and Suggestions:

55% of respondents could not rate this aspect of user satisfaction; this percentage should diminish significantly in future years. Of the remaining respondents, there was a sizable minority (11%) who expressed negative sentiment. The data upload process would likely benefit from further analysis and optimization.

Q9. The process of adding metadata matches my expectations:

Answer Choices	Responses	
Strongly Disagree	6.25%	4
Disagree	1.56%	1
Neutral	14.06%	9
Agree	6.25%	4
Strongly Agree	7.81%	5
Not Applicable / Cannot Rate	64.06%	41
Total		64

Comments from Respondents:

- Have not done yet.
- We still need to do this.
- Information on how to use the super computer on DesignSafe is not easy to access. Running Matlab on DesignSafe is not as fast as expected.
- Metadata tagging was not available in the CI until about two weeks ago, so this is not a relevant question.

TecEd Observations and Suggestions:

64% of respondents could not rate this aspect of user satisfaction; this percentage should diminish significantly in future years. Of the remaining respondents, 8% expressed negative sentiment, suggesting that the process of adding metadata could benefit from further analysis and optimization. It is also noteworthy that 14% of respondents selected 'Neutral', which is the same rate as 'Agree' and 'Strongly Agree' combined. That finding lends further support to an analysis of the metadata process in order to identify areas of improvement.

Q10. How many times a month, on average, do you use DesignSafe and other NHERI online resources and tools?

Answer Choices	Responses	
1-4 times	38.33%	23
5-10 times	18.33%	11
11-15 times	3.33%	2
16-20 times	3.33%	2
More than 20 times	3.33%	2
Have Not Used	33.33%	20
Total		60

Comments from Respondents:

- Just getting started, but will be using extensively for a current project.
- I don't use the tools yet. I just check DesignSafe periodically for updates because I don't get the email notifications I asked for despite registering on DesignSafe.
- My student has used.
- This is a guess as I'm just starting.
- Once in a while I have used it, but am trying to use it more.

TecEd Observations and Suggestions:

Responses to this question highlight the limited use to date of NHERI's online resources, which helps to explain the low number of survey completions. One-third of respondents had never used any NHERI online resource, and another 38% had only used online resources 1-4 times.

Q11. It's easy to locate the data that I want:

Answer Choices	Responses	
Strongly Disagree	5.00%	3
Disagree	10.00%	6
Neutral	20.00%	12
Agree	23.33%	14
Strongly Agree	10.00%	6
Not Applicable / Cannot Rate	31.67%	19
Total		60

Comments from Respondents:

- I put my own data on.
- Databases are harder to locate on DesignSafe than it was on NEESHub, and I found NEESHub hard to navigate. I still can't find certain items that I know were on NEESHub; I had to contact the PIs directly because DesignSafe was not helpful.
- Data that was archived in NEESHub datastores is now offline.
- I was able to find through search terms, but not through scrolling the list of projects.
- Is there any new data since NEES? I do not see any data sets.
- Not sure how to access the data previously available on NEESHub.

TecEd Observations and Suggestions:

Navigation for online resources needs to be evaluated further and improved; some data may also be missing in the new site. With 15% of respondents expressing negative sentiment there are clearly areas for improvement.

Q12. Data is provided in a useful format:

Answer Choices	Responses	
Strongly Disagree	5.00%	3
Disagree	1.67%	1
Neutral	13.33%	8
Agree	25.00%	15
Strongly Agree	10.00%	6
Not Applicable / Cannot Rate	45.00%	27
Total		60

Comments from Respondents:

- Not using existing data.
- Not sure what you are getting at.
- It is very hard to find the data. Where did the NEES data sets go and the descriptions?

TecEd Observations and Suggestions:

Data format ranked as much less of a concern than navigation (7% negative sentiment), although 45% of respondents could not rate this. Future years are likely to provide a much better picture of how this aspect of user satisfaction is faring.

Q13. The metadata format, quality, and comprehensiveness for the experimental data meets my needs:

Answer Choices	Responses	
Strongly Disagree	1.67%	1
Disagree	3.33%	2
Neutral	5.00%	3
Agree	21.67%	13
Strongly Agree	8.33%	5
Not Applicable / Cannot Rate	60.00%	36
Total		60

Comments from Respondents:

- I have not really tried to upload or use data from DesignSafe yet, but I think it will work.
- Again, this functionality was JUST implemented so it cannot be evaluated yet.
- This is hard to assess with limited data.

TecEd Observations and Suggestions:

60% of respondents could not rate this; free-text comments suggest there is a lack of exposure. Future years are likely to provide a much better picture of how this aspect of user satisfaction is faring.

Q14. Data is available for download in useful formats:

Answer Choices	Responses	
Strongly Disagree	3.39%	2
Disagree	0.00%	0
Neutral	8.47%	5
Agree	18.64%	11
Strongly Agree	10.17%	6
Not Applicable / Cannot Rate	59.32%	35
Total		59

No Comments from Respondents

TecEd Observations and Suggestions:

59% of respondents could not rate this aspect of user satisfaction. Future years are likely to provide a much better picture of how this aspect of user satisfaction is faring, as more users will have downloaded data.

Q15. The training available for NHERI's online resources and tools meets my needs:

Answer Choices	Responses	
Strongly Disagree	6.67%	4
Disagree	3.33%	2
Neutral	11.67%	7
Agree	23.33%	14
Strongly Agree	6.67%	4
Not Applicable / Cannot Rate	48.33%	29
Total		60

Comments from Respondents:

- All of the training seems to be on simulation tools.

TecEd Observations and Suggestions:

48% of respondents could not rate this aspect of user satisfaction. Of the remaining respondents 10% expressed negative sentiment about the training, which suggests that training may need to be improved. The lone free-text comment indicates that the training could benefit from an expanded scope.

Q16. The technical support for NHERI's online resources and tools meets my needs:

Answer Choices	Responses	
Strongly Disagree	5.00%	3
Disagree	1.67%	1
Neutral	6.67%	4
Agree	21.67%	13
Strongly Agree	8.33%	5
Not Applicable / Cannot Rate	56.67%	34
Total		60

Comments from Respondents:

- So far support has been very helpful.
- Generally good, except for the datastores mentioned earlier.
- Have not used support.

TecEd Observations and Suggestions:

57% of respondents could not rate this aspect of user satisfaction. Of the remaining respondents 7% expressed negative sentiment about the technical support. As users gain more experience with the NHERI online resources a clearer picture will emerge concerning this aspect of user satisfaction.

Q17. What is the most important change to NHERI's services, tools, and resources that would improve your experience with them?

Responses:

- NHERI seems to be a ghost of NEES. It provides only a fraction of the tools and services NEES used to provide. The whole program seems to be heading in the wrong direction and will soon vanish.
- Easier file transfer.
- I am just getting started with the DesignSafe-ci.org site, so I cannot answer this yet. However, more documentation about actual file paths would be helpful in the FAQs or on the home screen of the DataDepot and Discovery Workspace. Upload speeds seem slow to me, but that is probably due to going through the HTML framework instead of direct access using terminals. However, the access from any electronic device will be useful when I do not have access to a terminal application (e.g. only have phone or tablet and want to check on a run).
- Training would be helpful and adding different formats for downloading resources.
- Improve DesignSafe navigation, so that is quick to find the page that is being sought.
- Need some way for people to organize, compare, and share information (processed results and derived data, not just the sensor data) from many experiments.
- I must get a proposal funded first, which is the biggest challenge.
- Easy data upload and download.
- The website should be more organized. The home page has good links, and I can find the tutorials, but if I want something else, I have to click too much.
- Training visual resources/aides that show step by step how to access information and show what is the information available. Right now, it is not clear what is available. It seems that the system is geared to people who already are familiar with it.
- Elevate the information about the EF's and NHERI above the information about DesignSafe on page 1.
- More transparent.

- Enhance simulation capabilities
- Everything seems to be in folders and it is very hard to find anything that way.
- Bring NEEShub capabilities like groups, wiki, projects (for viewing) to DesignSafe.
- Examples of applications in DesignSafe relevant to coastal modeling.
- Having more information when enrolled in a program on what the schedule will look like and presented more clearly.

TecEd Observations and Suggestions:

The most frequently mentioned themes involve improvements to information architecture (website navigation and organization), training, and data uploads. Improving those aspects of user satisfaction should be a priority going forward. Feedback related to facilities would benefit from information about what facility was being referenced, so subsequent assessments may want to request more precise data about the facility and potentially the type of issue encountered.

Q18. What service, tool, or resource not currently in NHERI should be added? What need is this going to meet?

Responses:

- Well-advertised meetings of researchers and funding.
- A calendar of events/training. This tool would provide upcoming training that I can view and attend according to my schedule. Others can also see what events have taken place and will be able to look for an archive of this event.
- Provide a page for practitioners. Also, user surveys should be specific for audience; one survey for researchers, one survey for practitioners. With the current survey, most practitioners would probably not take it again in the future because most of the questions are not applicable to them. Also, the survey locked up on question 8; had to restart.
- Need to have a NHERI annual meeting for the community to come together.
- RSS feed for news. Video footage of experiments. Updates on when interesting experiments are available to view live.
- A tool that provides simple/summary information about what is happening—not only about tests, but also seminars, meetings, calls for proposals, etc. It should be in terms of a searchable calendar. Searchable by date, topic, etc.
- Is there any openness to other software beyond what DesignSafe selects to be available on the website?
- Live test demonstrations.
- A directory of researchers and experts in areas of natural hazards impact mitigation.
- It would be nice to be able to find the data as was possible in the NEES project.
- A group space to post resources, data, comments, etc.

TecEd Observations and Suggestions:

The need to build community and strengthen outreach was the strongest theme in these responses. One respondent also suggested having separate satisfaction

surveys based on audience, which had been considered for the first year survey but ultimately not pursued; it is worth considering in future years.