A. **What was the most valuable part of this workshop?**

1. Obtaining the manual, having a nice overview, and discussing the overview of some of the retrofit measures; Mr. Nutt did a very nice job of this, I thought.

2. Overall, a good introduction or overview of the subject, but slides on chapter one does not appear useful as a reference. Perhaps they should have been printed with notes of the dialogs.

3. Getting the manual. It appears to very well done and complete. The history and overview were very helpful.

4. Seismic hazard and characterization, as well as soil structure interaction.

5. Help geotechnical engineers understand how structural engineers perform seismic evaluation and vice versa.

6. Interaction with speakers and handouts.

7. Seismic retrofitting manual; well organized.

8. All of them.

9. Geotechnical modeling and capacity assessment and examples of retrofit measures.


12. Retrofit methods/suggestions and suggestions during the retrofit design process.

13. The overall summary and bridge foundations discussion.

14. Screening rating and geotechnical hazards (liquefaction).

15. Soil structure interaction by Anoosh, and Retrofit by Richard Nutt.

16. I enjoyed all of the presentations, especially the ones that had working examples.

17. Subject matter.

18. Historical perspectives narrative outlining goals of retrofitting.


21. Discussion of overall retrofit philosophy (i.e., screening, evaluation, etc. and performance-based retrofit).

22. Retrofit schemes, the geotechnical aspects, and overview of the manual.

23. Abutment/foundation stiffness.


26. The manual and examples in the manual are helpful.

27. New Guidelines.
28. Examples.
29. Material on soil-structure interaction was very interesting, applicable and well presented.
31. Screening and soil/structure modeling.
32. Overview of screening process, and manual.
34. Overview (Session 2) and Geotechnical Modeling and Capacity Assessment, Retrofit Measures.
35. Overview of the manual, the philosophy, and screening/evaluation methods (Dr. Buckle); Geotechnical Modeling (Mr. Shamsabadi).
36. Each part of the workshop was valuable. If I were to list one, the Geotechnical Modeling would be my choice.
37. Showing simplified methods practical in design.
39. Getting to know the manual and the changes it has gone through and to know about the actual development of “sister” publications.

B. What items would you like to see added?

1. The workshop really did not provide any info that could not be obtained by reading the manual. Perhaps, use examples not straight out of the manual. The workshop seeks to do impossible; present entire manual in one day. It was difficult to pick up; for example, geotechnical modeling was difficult if it was new to you.
2. Tie to current retrofit practices; indicate what is new or changed.
3. Anything that might help a state implement a seismic retrofit program.
4. Transverse abutment response, how to model abutment’s transverse response. Also, one-day seminar on seismic hazard and soil structure interaction.
5. Retaining walls (Irvine, California).
6. Evaluation method for existing bridges, structure assessment to define when we need to provide retrofitting and where (column, x-bm, fig?). Please bring it to Seattle, WA (S.J. Despradel).
7. Evaluation of bridges to determine if bridges need to be retrofitted.
8. More lateral spread design examples, liquefaction problems and remedies.
9. In depth case study.
10. Retrofit details for 100-year inadequacies.
11. Comparison with previous versions of the manual; what advances are made in the version.

12. A course on evaluation methods would be great.

13. Course on evaluation methods, more extensive time for screening methods (Oregon).

14. More practical examples – California.

15. Structural C/D evaluation methods.

16. More tips on bridge modeling might have been interesting (at least to me), such as “structural modeling” since there was “Geotechnical Modeling.” I would not mind attending a course on “evaluation.”

17. More time. Expand to two days. More on soil-structure interaction (an important but overlooked topic), instrumentation and post quake evaluations. More examples relevant to others than just CA.

18. Emphasis on detailing and serviceability impacts of retrofit components. Emphasis on quantitative nature of retrofit design – not a black and white approach.

19. Make it a two-day course. Provide the manual early to students. Have them prepare / familiarize themselves with the material ahead of time. Go through hands on examples by referencing to them in the manual and how it can be used.

20. The new manual vs. the current design code. How much difference between new and existing code? How do we need to do on bridges we just retrofitted or bridges we just built?

21. Comparison of different evaluation methods.

22. More examples of recent retrofits. I liked the photos of projects.

23. More discussion on coupled springs; retrofits for hazardous sites: San Francisco, CA

24. Evaluation course; more real world examples.

25. Retrofit strategies for steel sections/bridges; evaluation methods and available tools/aids for evaluation methods; full (typical) retrofit for a bridge (Appendix or Part III).

26. More pictures with calculations in example problems.

27. More modeling guidance (SSI) much expanded and more clearly explained.

28. Additional analysis/modeling content; i.e., expanded “evaluation” section. Evaluation is just as important as retrofit methods.

29. Present more of screening and geotechnical/structure topics.

30. More time for discussion /interaction/questions. May not be practical for this type of venue. Two- to three-day course would probably allow more time for this.

31. In addition to the material presented herein, a “hands-on” or detailed example(s) would be of interest.
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32. More examples/calculations.
33. As a workshop, provide more hands-on exercises to practice and develop a better knowledge of the subject. Different from what is on the manual.

C. **What items would you like to see deleted?**
   1. (Jerry, many comments state “none.” (approximately 30))
   2. Do not need such detailed discussion of standard methods for determining ground motions. More emphasis on site-specific motions and when they should be used. Anoosh should try harder to relate his discussion to the manual and define terms.
   3. Prioritization should be a separate course.
   4. The summary could be deleted, and allow us to end a little earlier. The speakers and Derrell did a great job of keeping the speakers/program on schedule.
   5. Some of the intro & history – interesting, but not vital. The summary, in total, skip it. It felt longer in summary than it did in original delivery.
   6. Obsolete retrofit ideas, such as waffle scabs. Attempts to go through numerical examples were not documented well in terms of software support of calculations
   7. Less focus on construction of Design Response Spectrum (more condensed).
   8. Eliminate duplication (duplicate slides/etc.).
   9. If geotechnical information is not going to be presented in-depth, then do not try to go into it and leave the attendees with expectations. Maybe this can be an additional day seminar “Advances in Geotechnical Strategies for Retrofitting Bridges.”
   10. Trim down examples of retrofit measures – most of these details are well known (not much “cutting-edge” content) in my subjective view.
   12. Constant clicking of notebooks.
   13. Demand analysis.
   14. Lessons learned at the beginning, because it really was just pictures of what has happened in the past and does not show any remediation methods. Since this was a compressed session, we should have removed the first 30 minutes.

D. **Additional Comments:**
   1. Pass out all handouts at the beginning of the day; provide lunch or more time for lunch. (Note: Workshop is merely a baby step in helping me learn this material.)
   2. Somehow, the types of worked examples in the manual should be identified.
   3. The most beneficial aspect of a workshop like this are things not included in the manual or that cannot be learned by reading the manual.
   4. More detailed notes; i.e., a rite-up would be great for those of us who might have missed some things being said.
5. Would like to have digital data of useful charts, such as 6x6 pile foundation stiffness, so that we can prepare spreadsheet calculations.

6. Would like to see presentations. Please add me to the list of future communication. Thanks. (Gamini Rajapakse, County of Santa Clara, 408-573-2497)

7. Excellent Workshop. Thank you.

8. Would like to see a course on evaluation methods of bridges (WA).

9. Dr. Yen is educational and important. Mr. Annosh’s presentations are practical to understand and effective and well presented.

10. I am looking forward to the next workshop, and my company and I would like to contribute (Jain Ren Tao – SC Solutions, 408-617-4556)

11. Quick review of chapter 7 suggests that some of the equations are complicated – is the rigor justified?

12. Enjoyed this workshop very much


14. Overall, good job!

15. Some parts moved too fast. There seemed to be continuous trouble with the equipment. Handouts need to go out before the speakers start to talk. This was actually a seminar, not a workshop, as the participants did not get to participate in hands-on work. It would be good to have a workshop.

16. A future course on Seismic Isolation.

17. Please provide evaluation workshop. Provide foundation retrofit workshop.

18. Too much for the short time frame that was available.

19. Evaluation of presenters should be made separately.

20. We would like to see a course in evaluation methods, especially/foundation modeling.

21. Session moderator did an excellent job.

22. PDHs and/or CEUs should be given for states like New York.

23. Need a real workshop (hands-on) for using manual: screening process, simplified analysis & modeling, determining capacity & demand, retrofit designs.

24. Thanks nice job.

25. A detailed workshop will be very useful to develop better understanding.

26. A workshop dedicated to retrofit screening and evaluation would be helpful and likely will be attended in Montana.

27. Very good job. The organizers and speakers are to be commended.

28. Very useful for responsible engineers.
29. Show any remediation methods. Since this was a compressed session, we should have removed the first 30 minutes. It would be nice if coffee would be served throughout the session.

30. It was a very condensed course. It was very effective to acquaint with the manual Part “I.” Detailed examples/calculations will be much more beneficial. Hopefully, we will have LRRD specifications soon, which should be displacement/performance-based. Is there any course/manual/software to explain push over analysis, both linear and nonlinear to better understand the phenomenon? Is there any manual with examples of soil-structure interaction with shake analysis to obtain site-specific spectra? (Rajesh Taneja – NYSDOT)

31. Because of the short time, the workshop became more of a review of the manual than a hands-on workshop. A longer workshop with practical examples and discussions of problems found throughout those examples. Can become an NHI course (National Highway Institute).