

ASCE Authors' Guide

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Journals Department
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Web: www.pubs.asce.org

ASCE's Journals and Practice Periodicals

Details on any of our 30 journals and practice periodicals can be found by going to our Web site at www.pubs.asce.org.

International Journal of Geomechanics
Journal of Aerospace Engineering
Journal of Architectural Engineering
Journal of Bridge Engineering
Journal of Cold Regions Engineering
Journal of Composites for Construction
Journal of Computing in Civil Engineering
Journal of Construction Engineering and Management
Journal of Energy Engineering
Journal of Engineering Mechanics
Journal of Environmental Engineering
Journal of Geotechnical and Geoenvironmental Engineering
Journal of Hydraulic Engineering
Journal of Hydrologic Engineering
Journal of Infrastructure Systems
Journal of Irrigation and Drainage Engineering
Journal of Management in Engineering
Journal of Materials in Civil Engineering
Journal of Performance of Constructed Facilities
Journal of Professional Issues in Engineering Education and Practice
Journal of Structural Engineering
Journal of Surveying Engineering
Journal of Transportation Engineering
Journal of Urban Planning and Development
Journal of Water Resources Planning and Management
Journal of Waterway, Port, Coastal, & Ocean Engineering
Practice Periodical of Hazardous, Toxic and Waste Management
Practice Periodical on Structural Design and Construction
Leadership and Management in Engineering
Natural Hazards Review

Overview of Journals

The journals of ASCE are the media through which civil engineers exchange technical and professional knowledge. Information published in the journals forms an archival record of the technical advances of the Society and the profession in general.

The Board's Publications Committee sets the policies governing the journals. Responsibility for reviewing manuscripts submitted to ASCE for publication rests with the editors, associate editors, and editorial boards of each journal. The Executive Committee of each division and council or the Publications Committee of each institute is responsible for the contents of its journal.

Papers, technical notes, discussions of papers and technical notes, closures, and errata are published in the journals. Book reviews, editorials, and forums are published in some journals. Authors need not be members of ASCE to submit material to the journals.

The ASCE Publications Committee has adopted the following guidelines regarding the type and quality of material published in the Society's journals.

To be acceptable for publication in the journals, a manuscript must be of value and interest to civil engineers. It must be an original review of past practice, present information of current interest, or probe new fields of civil engineering activity. It should be a thought-provoking study that contributes to the planning, analysis, design, construction, management, or maintenance of civil engineering works. A manuscript should contribute to the advancement of the profession in the forum provided by the journals for the exchange of experiences by engineers for their common advantage. It should include a practical applications section whenever possible; theoretical manuscripts should indicate areas of additional research to implement technology transfer. Practical papers are strongly encouraged.

The manuscript must be consistent with the purpose of the Society, as set forth in its constitution, with established fact, and with the Ethical Standards for Publications of ASCE Journals (see Ethical Standards for Publications of ASCE Journals). It must not contain purely speculative matter, although it can use scientific evidence to challenge current concepts or propose new ideas that will encourage progress and discussion.

The manuscript must be free of evident commercialism or private interest, but must neither obscure proper names when they are required for an understanding of the subject matter nor contain material that can be used to imply ASCE endorsement of products, services, and so on. The manuscript must also be free of personalities, either complimentary or derogatory. The material must not be readily available elsewhere; i.e., it should not have been published previously by ASCE (including a proceeding) or other professional or technical societies, federal agencies, or commercial publishers. (Manuscripts based on material available elsewhere may be published by ASCE provided the manuscript has been significantly revised, updated, and condensed into a more concise and readable form, or otherwise made obviously and significantly more useful to the profession than the original material. The published material, however, must be supplied with such a submission. If a previously published manuscript is considered a highly significant advance in the field and its distribution has

been very limited, the editor may request that the institute or technical division or council executive committee waive the policy against dual publication.)

Society policy mandates that a journal manuscript be reviewed by at least two competent reviewers. Two positive reviews are required for acceptance or two negative reviews for rejection. The Society's goal is to have manuscripts reviewed within three months. Revisions and rereview are frequently required conditions of acceptance.

The Society will not review or publish papers or technical notes whose authorship is in dispute.

If the author is a participant in a case study in a submitted manuscript, the manuscript should describe that precise involvement in the initial paragraphs of the work.

ASCE does not accept multiple submissions; that is, a manuscript may not be submitted to more than one journal simultaneously, either outside ASCE or among the ASCE journals. If a manuscript declined by one ASCE journal is submitted to another, the reviews of the earlier submission will be sent to the new journal. In resubmitting a declined manuscript, the authors must inform ASCE that it was declined by a particular journal and reference the previously assigned file number.

Appeal of Review Decision

An author who is dissatisfied with the review of his or her paper, may have it reviewed a second time by the same division or committee. If the paper is declined a second time and the author is still dissatisfied with the decision, he or she has the right to appeal the decision first to the Executive Committee of the division and then, if the committee upholds the review decision, to the Board Publications Committee. The decision of the Publications Committee is the final decision and ends the appeal process. At each stage in the appeal process, the author must request the appeal in writing, and send the request to Headquarters. Headquarters will direct this appeal to the appropriate level of review. Direct appeals to Director, Journals, ASCE, 1801 Alexander Bell Drive, Reston, VA 20191-4400

Rereview

A “tentatively approved” manuscript under rereview may have the following outcomes:

- Accepted if a single review with positive results is performed. If this single review is negative, two positive reviews are required to finally accept the paper or note.
- Declined if the author did not revise the manuscript as required by the reviewers, if new material was introduced that is considered to be of unacceptable quality, or if additional errors are found.

A manuscript that has been “declined with encouragement” to revise requires two positive reviews for acceptance and two negative reviews for rejection.

A manuscript that has been “decline final” may not be resubmitted to the same journal unless it has been substantially revised and treated as a new submission.

Ethical Standards for Publications of ASCE Journals

Preface

The American Society of Civil Engineers (ASCE) serves the civil engineering community and society at large in several ways, including the publication of technical journals that present the results of current engineering and scientific research and practice. Fundamental to that service is the responsibility of editors, authors, and reviewers to maintain high ethical standards relating to the submittal, review, and publication of manuscripts. These ethical standards derive from the ASCE's definition of the scope of the journal and from the community's perception of standards of quality for engineering and scientific work, and its presentation. The ethical standards that follow reflect a conviction that the observance of high ethical standards is so vital to the entire engineering and scientific enterprise that a definition of those standards should be brought to the attention of all concerned.

Ethical Standards

Obligations of Editors

1. The primary responsibility of an ASCE journal editor is to ensure an efficient and fair review process of manuscripts submitted for publication, and to establish and maintain high standards of technical and professional quality. Criteria of quality are originality of approach, concept and/or application; profundity; and relevance to the civil engineering profession.
2. An editor shall give unbiased consideration to all manuscripts offered for publication and shall judge each on its merits without regard to any personal relationship or familiarity with the author(s), or to the race, gender, sexual orientation, religious belief, ethnic origin, citizenship, professional association, or political philosophy of the author(s).
3. The editor and editorial staff shall disclose no information about a manuscript under consideration to anyone other than those from whom professional advice regarding the publication of the manuscript is sought. The names of reviewers shall not be released by the editors or editorial staff.
4. An editor who authors or co-authors a manuscript submitted for consideration to the journal with which that editor is affiliated, shall not review that work. If after publication, the editor-author's work merits ongoing scientific debate within the journal, the editor-author shall accept no editorial responsibility in connection therewith.
5. An editor shall avoid conflicts of interest and/or the appearance thereof. An editor shall not send a manuscript to reviewers who are known to have personal bias in favor of or against the author(s) or the subject matter of that manuscript.

6. Unpublished information, arguments, or interpretations contained in a submitted manuscript are confidential and shall not be used in the research of an editor or associate editor, or otherwise disseminated except with the consent of the author (s) and with appropriate attribution.

7. If an editor is presented with convincing evidence that the substance, conclusions, references or other material included in a manuscript published in an ASCE journal are erroneous, the editor, after notifying the author(s) and allowing them to respond in writing, shall facilitate immediate publication of an erratum. If possible, an editor shall also facilitate publication of appropriate comments and/or papers identifying those errors.

8. If an editor is presented with convincing evidence that a manuscript or published paper contains plagiarized material or falsified research data, the editor shall forward such evidence to the Manager, Journals, for investigation by the ASCE Professional Conduct Committee.

Obligations of Authors

1. An author's central obligation is to present a concise account of the research, work, or project completed, together with an objective discussion of its significance.

2. A submitted manuscript shall contain detail and reference to public sources of information sufficient to permit the author's peers to repeat the work or otherwise verify its accuracy.

3. An author shall cite and give appropriate attribution to those publications influential in determining the nature of the reported work sufficient to guide the reader quickly to earlier work essential to an understanding of the present work. Information obtained by an author privately, from conversation, correspondence, or discussion with third parties shall not be used or reported in the author's work without explicit permission from the persons from whom the information was obtained. Information obtained in the course of confidential services, such as refereeing manuscripts or grant applications, shall be treated in the same confidential manner.

4. The submitted manuscript shall not contain plagiarized material or falsified research data. ASCE defines plagiarism as the use of the ideas or words of another person without giving appropriate credit to that source. The Society views any similar misappropriation of intellectual property, which may include data or interpretation, as plagiarism. [This definition is based on one used by the National Academy of Science, National Academy of Engineering, and the Institute of Medicine. ASCE added the sentence on misappropriation of intellectual property.]

5. Fragmentation of research papers shall be avoided. An engineer or scientist who has done extensive work on a system or group of related systems shall organize publication so that each paper gives a complete account of a particular aspect of the general study.

6. It is inappropriate for an author to submit for review more than one paper describing essentially the same research or project to more than one journal of primary publication.

7. Scholarly criticism of a published paper may sometimes be justified; however, personal criticism is never appropriate.

8. To protect the integrity of authorship, only persons who have significantly contributed to the research or project and manuscript preparation shall be listed as co-authors. The corresponding author attests to the fact that any others named as co-authors have seen the final version of the manuscript and have agreed to its submission for publication. Deceased persons who meet the criterion for co-authorship shall be included, with a footnote reporting date of death. No fictitious name shall be given as an author or co-author. An author who submits a manuscript for publication accepts responsibility for having properly included all, and only, qualified co-authors.

9. It is inappropriate to submit manuscripts with an obvious commercial intent.

10. It is inappropriate for an author either to write or co-author a discussion of his or her own manuscript, except in the case of a rebuttal or closure to criticism or discussion offered by others.

Obligations of Reviewers

1. Because qualified manuscript review is essential to the publication process, all engineers and scientists have an obligation to do their fair share of reviews.

2. If a reviewer feels inadequately qualified or lacks the time to fairly judge the work reported, the reviewer should immediately notify the editor and promptly return the manuscript.

3. A reviewer shall objectively judge the quality of a manuscript on its own merit and shall respect the intellectual independence of the author(s). Personal criticism is never appropriate.

4. A reviewer shall avoid conflicts of interest and/or the appearance thereof. If a manuscript submitted for review presents a potential conflict of interest or the reviewer has a personal bias, the reviewer shall return the manuscript promptly without review and so advise the editor.

5. Unpublished information, arguments, or interpretations contained in a submitted manuscript are confidential and shall not be used in the research of a reviewer or otherwise disseminated except with the consent of the author and with appropriate attribution.

6. If a reviewer receives for review a manuscript authored or co-authored by a person with whom the reviewer has a personal or professional relationship, the existence of this relationship shall be promptly brought the attention of the editor.

7. A reviewer shall treat a manuscript received for review as a confidential document and shall neither disclose nor discuss it with others except, as necessary, with persons from whom specific advice may be sought; in that event, the identities of those consulted shall be disclosed to the editor.

8. Reviewers shall explain and support judgments adequately so that the editor and author(s) may understand the bases for their comments. Any statement that an observation, derivation, or argument has been previously reported shall be accompanied by the relevant citation.

9. A reviewer shall call to the editor's attention any substantial similarity between the manuscript under consideration and any published manuscript or any manuscript submitted concurrently to another journal.

10. A reviewer shall not use or disclose unpublished information, arguments, or interpretations contained in a manuscript under consideration, except with the consent of the author(s) and with appropriate attribution.

11. If a reviewer has convincing evidence that a manuscript contains plagiarized material or falsified research data, the reviewer shall notify the editor and send the evidence to the Manager, Journals, for investigation by the ASCE Professional Conduct Committee.

Acknowledgments

The ethical standards reported herein were initially drafted using the "AGU Policies and Procedures" of the American Geophysical Union. ASCE acknowledges its appreciation to the AGU for granting permission to quote from that work.

Companion Papers

Papers submitted as sets of companion papers will be reviewed as separate papers if the editor determines that this is the most appropriate and logical presentation of the work. If the work would more logically be presented as a single paper, companion papers will be returned to the author(s) for revision and resubmission as a single paper. If the resulting single paper is overlength, it will be subject to the normal rules for overlength papers. When submitting manuscripts, authors are encouraged to provide a written justification for publishing their work as companion papers. Companion papers should be submitted together. Authors should recognize that review of companion papers may take longer than that for a single paper.

Journal Submission Procedures

- Submit five DOUBLE-SPACED, single-column copies of papers and technical notes and four copies of discussions to the ASCE, Journals Department, 1801 Alexander Bell Dr., Reston, VA 20191-4400. (The references and abstract must also be double-spaced.)
- Retain the original manuscript and illustrations and send them to ASCE when your manuscript is approved for publication.
- Include a disk or CD-ROM with text, tables, and figures. Indicate the file format on the disk label (Word, WordPerfect, PDF, etc.)
- Include a cover letter (Fig. 1), indicating the name of the journal to which the manuscript should be referred. Do not send a cover letter separately of your manuscript.
- Consult the General Information page of the printed journal or the Submission Information page found on-line at www.pubs.asce.org of the journal you wish to submit your paper to for further requirements such as recommended reviewer lists; overlength statements; and any division, council, institute and/or technical committee designations.
- Include a completed ASCE sizing worksheet located at www.pubs.asce.org/journals/sizing.pdf with all submissions

Submit material to the Journals Department at ASCE headquarters unless instructions for direct submission to editors are given in the description of the specific journal to which you wish to submit your manuscript. The names and addresses of the editors are listed in the General Information page of the most current issue of the journal for those journals where direct submission is encouraged. Each ASCE journal contains an aims and scope statement in each issue. Specific information about each journal can also be found on the ASCE publications Web site at www.pubs.asce.org.

Practice Periodical Submission Procedures

A Practice Periodical is a publication by practitioners for practitioners. It publishes original features about innovative and practical solutions to the problems and challenges faced by practitioners in consulting firms, construction companies, private industry, and government agencies. Features about small- and medium-sized projects are especially welcomed. Articles that describe practical projects and how the most significant issues were raised and resolved are especially encouraged.

Review

The review process differs from that of the journals in that the editor requires only one review to accept or decline a manuscript. The review is performed by either an editor or a qualified individual selected by the editor from a pool of approved reviewers. Manuscripts must represent technically competent work; however, the primary criterion for acceptance or rejection will be the work's level of practical or reader interest. The instructions and policies described in this guide for journals also apply to the Practice Periodicals.

Material Published in ASCE Journals (Other Than Papers)

Technical Notes. Technical notes present (1) original, practical information; (2) preliminary or partial results of research; (3) concisely presented research results; and (4) innovative techniques to accomplish design objectives.

Discussions. Discussions present significant comments or questions about the technical content of a technical paper or note published in an ASCE journal, or a paper presented at a specialty conference or

Dr. Jack Smith, P.E.
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Dept. of Civil Engineering
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Anytown, NY 02020

July 15, 2003

ASCE
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1801 Alexander Bell Dr.
Reston, VA 20191

To whom it may concern:

Please find enclosed five copies of "**Benefits of Civil Engineering Journals**" by Jack Smith, Billy Bud, and Bob Peterson. I would like to have this manuscript reviewed by the **Journal of Management in Engineering**.

Should you need to contact me, please use the above address or call me at (703) 295-6000. You may also contact me by fax at (703) 295-6278 or via e-mail at jsmith@au.edu.

Sincerely,

Jack Smith

Jack Smith

enclosures

Fig. 1. Sample cover letter for a new manuscript submission.

Discussion of “Benefits of Civil Engineering Journals” by Billy Bud and Bob Peterson

July/August 2004, Vol. 130, No. 4, pp. 281-290.

DOI: 10.1061/(ASCE)1776-8452(2004)130:4(281)

John Smith, P.E., M.ASCE¹; and Jim Jones²

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The authors of this paper present some interesting comments regarding civil engineering journals. The discussers are happy to see dialogue on this topic....

Fig. 2. Example of a properly formatted Discussion page. The closure would be titled “Closure to...” and have all the same information as the discussion page.

other meeting that has been published in an ASCE proceedings. They are limited to 2,000 words. They may be submitted during a 5-month period following the date of publication of the paper or note, with a 1-month extension possible after a written request by the discussor. Discussions should not contain matter readily found elsewhere, advocate special interests, contain obvious commercial intent, controvert established fact, or be purely speculative.

Discussions follow the requirements for other manuscripts except that they do not have abstracts, introductions, or conclusions. Separate discussions must be submitted for companion papers (a study presented as multiple parts in the same issue). Numbering of author footnotes, figures, tables, and equations should begin with one and continue sequentially making it clear when a table, figure, or equation being discussed is from the original paper or the discussion or closure

The first page of the discussion should include the title, authors, and publication information of the original paper (Fig. 2). Directly below the title of the discussion or closure, provide the publication month and year, the volume and issue numbers, the page range, and the DOI of the original paper. A discussion of an ASCE conference paper should also include the date and location of the conference, e.g., "Presented by James L. Sherard at the ASCE International Convention, New York, N.Y., May 11-12, 1981, and published in *Recent Developments in Geotechnical Engineering for Hydro Projects*, ASCE, New York, 1981." If figures are submitted with the discussion, they must be high quality originals.

Closures. Closures are responses written by the author(s) of the original paper or note. The author(s) addresses and clarifies issues raised in discussions and provides conclusions to the issues. Closures and discussions are published together. Guidelines for formatting a closure are the same as for discussions. Please make sure that those authors involved in the writing of the closure be included in the byline. Not all of the original authors need to be listed.

Book Reviews. Book reviews assess new books whose content is judged important. They summarize the work, illuminate its strengths and weaknesses, and place it in context with existing literature. Reviews are limited to 1,200 words and are usually written upon request by a journal’s book review editor or editor. Not all ASCE journals publish book reviews.

The first page of a book review must contain the following information: book title, author(s)/editor(s), publication year, publisher and publisher address, ISBN, price in U.S. dollars, and total number of pages. The reviewer’s name and affiliation must also be provided.

Editorials. An editorial is a brief opinion piece, normally written by the editor, concerning the scope, content, direction, or philosophy of the journal or a policy issue concerning engineering research or its application. Editorials are occasionally invited but not reviewed. Contributions are usually short, not exceeding one or two printed pages or 1,000-2,000 words, and rarely contain tables, figures, or references. Editorials are indexed in the CE Database (www.pubs.asce.org) and thus require a title and author’s byline with current affiliations.

Forums. A forum is a thought-provoking opinion piece or essay founded in fact, sometimes containing speculation, on a civil engineering topic of general interest and relevance to the readership of the journal. Its purpose is to stimulate discussion rather than document an advance in research or its application. A forum is subjected to either partial or full peer review, depending on the subject matter and recommendation of the editor. Forums are usually two to five printed pages or 2,000-5,000 words. Tables, figures, and references are often included but an abstract is unnecessary. Forums are indexed in the CE Database (www.pubs.asce.org) and thus require a title and author’s byline with current affiliations.

A forum in a practice periodical may fit the foregoing definition, or alternatively may comprise a series of short reports on a variety of news items of general interest to practitioners.

Errata. Errata are corrections of errors that appear in print. If errors are serious enough to impair understanding or mislead readers, authors should submit errata to the ASCE Journals Department. Errata are published in earliest available issue. See the example in Fig. 3.

Errata for “Evaluation and Improvement of Bed Load Discharge Formulas Based on Helly-Smith Sampling in an Alpine Gravel Bed River” by Helmut M. Haberstack and Jonathan B. Laronne

May 2002, Vol. 128, No. 5, pp. 484-499.

The following corrections for this paper should be noted.

On page 496, Eq. (52) should be as follows:

$$u_{s,max} = u_m \chi = u_m \frac{\left\{ \left[(y_D + s) \frac{u^*}{v} \right]^{-2} + P_{yt} \left[2.5 \ln \left(\frac{y_D + s}{k_s} \right) + B \right]^{-2} \right\}^{-1/2}}{2.5 \left[\ln \left(\frac{D}{k_s} \right) - 1 \right] + B}$$

Fig. 3. Example of the first page of an erratum

Manuscript Requirements

Typescript

Type the manuscript using type no smaller than 10 points, DOUBLE-SPACED (10 mm baseline to baseline), single-column (including references and abstract) on one side only of 215 x 280 mm (8.5 x 11-in.) paper with at least 25.4 mm (1-in.) margins. Handwritten manuscripts will not be accepted for review. Provide an electronic copy of the manuscript on a disk with the file type indicated (e.g., Word, Word Perfect, LaTeX, etc.)

Copyright Ownership

By the terms of U.S. copyright law, ASCE must obtain a Copyright Transfer Agreement, completed without alterations and signed by the corresponding author, as a condition of publication. Papers, technical notes, and some kinds of forums will not be published without it. The author retains, to the extent provided by law, the right to the fair use of the manuscript for various purposes such as teaching (including multiple copies for classroom use) and other nonprofit educational purposes. A copy of the Copyright Transfer Agreement is available on the publications Web site at <http://www.pubs.asce.org/journalscta.pdf>.

General Text Considerations

Title. Make sure the title is not more than 100 characters long including spaces between words. Avoid titles beginning with "Analysis of ...," "A Note on ...," "Theory of ...," "On the ...," "Some ...," and "Toward a"

Footnotes for Presented Manuscripts. Use a footnote to indicate that the manuscript has been presented at an ASCE convention or specialty conference.

CE Database Subject Headings. Provide a list of up to nine subject headings with submissions for publication. See *Subject Heading List to CE Database* on the ASCE publications Web site at www.pubs.asce.org/subjlst.html for acceptable terms. Subject headings are used for indexing and other information-retrieval purposes.

Authors' Bylines and Affiliation Footnotes. Under the title of a submission, type the full name of each author (the byline) and his or her ASCE Society membership grade, if applicable. Professional engineers registered in the United States are encouraged to use the P.E. designation after their names. At the bottom of the first page of the typescript, type a footnote stating each author's title, current affiliation, and complete address (even if the affiliation and address information is the same for some or all of the authors). Former affiliations are permissible only if an author's affiliation has changed after a work has been submitted for publication. Include the date of death for deceased authors.

Surnames. Surnames should be listed as the last name on submitted and accepted manuscripts so that they are consistent with the westernized style used by other authors and indexes (e.g., R. C. Chen, Yuan-Neng Tang). Be sure the name is used consistently in manuscripts and correspondence.

Author Contact Information. Corresponding authors must include the complete mailing address, telephone and fax number, and an e-mail address for all authors listed in the byline.

Footnotes in Text. Footnotes and endnotes are almost never permitted in the text. Please incorporate any necessary information within the text of the paper.

Abstract. Write an abstract of 150-175 words for all papers and technical notes (Fig. 4). An abstract should not contain jargon, but should be written in plain language and include a summary of the key conclusions. It should be written for a general engineering audience such as recent graduates/beginning graduate students. To be most useful to the engineering community, the following should be clear: the purpose of the work, the scope of the effort, the procedures used to execute the work (if of special interest), and the major findings. The abstract must include this information because abstracts are often used separately for information retrieval and may be the only part of the paper a reader ever sees. Revised abstracts are routinely requested from authors before papers are assigned for review if the abstract is incomplete. Do not include mathematics or references to other literature in an abstract.

Gender-Specific Words. Avoid "he," "she," "his," "her," and "hers." Use words such as "author," "discusser," "engineer," and "researcher."

Length

For most ASCE journals, the maximum number of words and word-equivalents is 10,000 for papers, 3,500 for notes, and 2,000 for discussions. The editor may waive these restrictions to encourage papers on topics that cannot be treated within these limitations. Such topics may include state-of-the-art reviews and detailed case histories. However, authors are advised that most topics can be covered within these limitations, and that clear justification is required for longer manuscripts.

To estimate the length, consult the Manuscript Sizing Guide by downloading a Microsoft Excel version at www.pubs.asce.org/journals/sizing.pdf. Count the number of words (except for tables and figures) on a typical manuscript page and multiply that by the number of total pages. Add word-equivalents for figures and tables by estimating the portion of the journal page each will occupy when reduced to fit on a journal page. A page in ASCE's journals holds approximately 1,260 words; e.g., a

Visioning: The Future of Civil Engineering

C. R. "Chuck" Pennoni, F.ASCE¹

Abstract: ASCE's first Strategic Plan, adopted by the Board of Direction April 28, 1985, states "The Plan is designed to anticipate the future rather than react to it, and to keep ASCE in a leadership role in addressing the challenges and opportunities facing the profession in the years ahead." ASCE's Strategic Plan starts with this mission and develops goals and objectives to be achieved in a one-to-five year time Visioning has no definition of term-10, 20, or 30 years hence-and it studies change. How has civil engineering changed in the past 25 years? Is it continuing to change? What will civil engineering be 25 years from now? This paper takes a look at the past, present, and future of civil engineering; studies change; and hopes to stimulate discussion and debate on the role of ASCE in the 21st century.

CE Database subject headings: civil engineers, engineering societies, planning, professional advancement

¹ Chairman of the Board and President., Pennoni Assoc. Inc. Consulting Engineers., 1600 Callowhill St., Philadelphia, PA 19130. E-mail: author@address.com

Fig. 4. Example of first page of manuscript

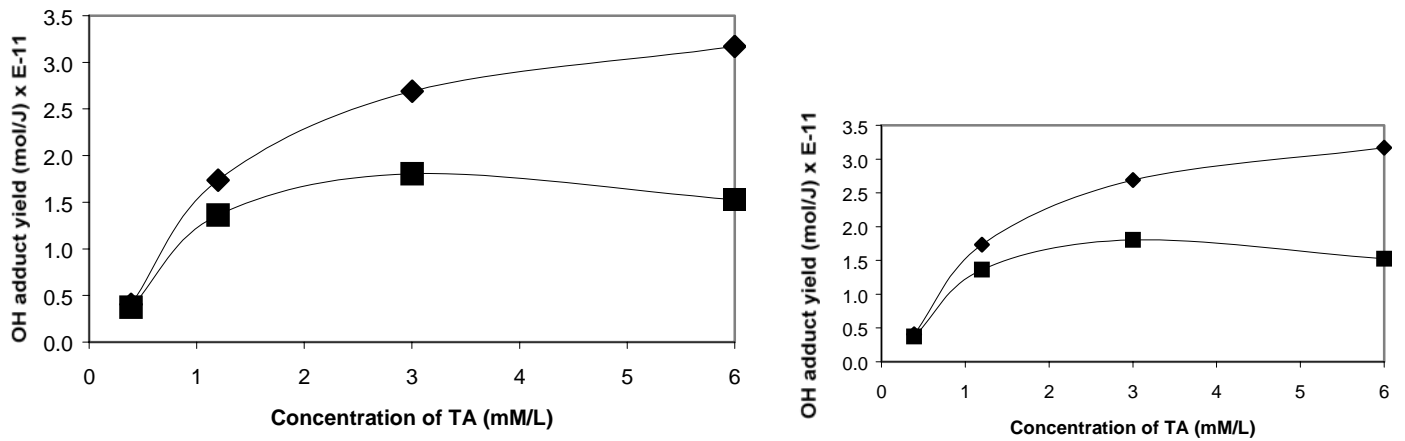


Fig. 5. All elements of a figure should be proportional. The size of symbols should be the same as the size of text. Figures should be created to fit in a one- or two-column format with letters large enough for reduction (10 pt. minimum). The figure on the left is the original sent, which is too large to fit in one column, with 8 pt. type. The right hand figure shows the same image reduced to fit into a column (7 pt. type.)

figure reduced to one-half a journal page would be 630 word-equivalents. When reduced, the figures must be legible and the type no smaller than 6 point (2 mm) (Fig. 5).

Mathematics

Clearly type all mathematics and make sure special characters and super- and subscripts are distinguishable. List symbols alphabetically in a section called “Notation” at the end of the manuscript (preceding the references). Fig. 6 is a sample manuscript page of a Notation section. Note that the section is typed double-spaced and that capital letters precede lowercase letters. The Roman alphabet comes first, followed by the Greek alphabet. Do not intermingle alphabets. Note also that the Greek alphabet is in the Greek alphabetical order.

Make sure ambiguous characters (such as prime) and look-alike characters (lowercase “ell” and numeral one; capitalized “oh” and zero; “zee” and two; “vee” and Greek nu; and “double you” and lowercase Greek omega) are clear for the copyeditor and typesetter to identify. Unambiguous characters, such as uppercase Greek delta, need not be identified.

Identify dimensionless variables such as Froude (F), Mach (M), Reynolds (R), Richardson (Ri), Strouhal (S), Weber (W), Peclet (P), Prandl (Pr). These will be typeset in a different font. Identifying these in text or in a

Notation		
<i>The following symbols are used in this paper:</i>		
A	=	cross-sectional area of soil samples;
I	=	current;
K_{eo}	=	electroosmotic conductivity;
L	=	length between points where voltage difference is measured;
Q	=	electroosmotic flow rate;
ΔV	=	voltage difference; and
σ	=	electrical conductivity of soil.

Fig. 6. Sample manuscript of Notation list

Notation list is adequate.

Identify the levels of subscripts, superscripts, and exponents if they are typed ambiguously, e.g., $Y^{a1/2}$, for example if superscripts have sub- or superscripts.

Matrices, tensors, and vectors should be typed either in boldface or placed consistently within brackets and italicized, e.g., \mathbf{X} or $[X]$.

In text, write single-level expressions, e.g., $1/(a + b)$, not stacked equations. In numbered (displayed) equations, stack numerators over denominators. All displayed equations should be numbered sequentially throughout the entire manuscript, including appendixes. Equations should be in the body of a manuscript; complex equations in tables and figures are to be avoided.

SI Units

The use of Systéme International (SI) units as primary units of measure is mandatory. Other units may be given in parentheses after the SI unit if the author desires. More information about SI units can be found from NIST at <http://physics.nist.gov/cuu/Units/index.html>.

SI units are constructed from seven base units for independent physical quantities (A, cd, K, kg, m, mol, and s), and two supplementary units for plane angle (rad) and solid angle (sr); Table 1. Derived SI units whose names and symbols are approved by the International General Conference on Weights and Measures are listed in Table 2. Other common derived units with generic or complex names are listed in Table 3.

A wide range of SI unit sizes is available through the use of prefixes to form decimal multiples and submultiples of units. Prefixes generally applicable to engineering are listed in Table 4.

Table 1. Base and Supplementary Units in SI System

Quantity name	Unit name	Unit symbol ^a
Base units		
Amount of substance	Mole	mol
Electric current	Ampere	A
Length	Meter	m
Luminous intensity	Candela	cd
Mass	Kilogram	kg
Thermodynamic temperature	Kelvin	K
Time	Second	s
Supplementary units		
Plane angle	Radian	rad
Solid angle	Steradian	sr

^a Unit symbol to be used only when preceded by a numeral

Table 2. SI Units Approved by the International General Conference on Weights and Measures

Quantity	Unit	Symbol ^a	Formula
Absorbed dose	Gray	Gy	J/kg
Activity (of a radionuclide)	Becquerel	Bq	1/s
Celsius temperature	Degree Celsius	°C	K
Dose equivalent	Sievert	Sv	J/kg
Electric capacitance	Farad	F	C/V
Electric conductance	Siemens	S	A/V
Electric resistance	Ohm	Ω	V/A
Electric potential, potential difference, electromotive force	Volt	V	W/A
Energy, work, quantity of heat	Joule	J	N•m
Force	Newton	N	kg•m/s ²
Frequency (of a periodic phenomenon)	Hertz	Hz	1/s
Illuminance	Lux	lx	lm/m ²
Inductance	Henry	H	Wb/A
Luminous flux	Lumen	lm	cd•sr
Magnetic flux	Weber	Wb	V•s
Magnetic flux density	Tesla	T	Wb/m ²
Power, radiant flux	Watt	W	J/s
Pressure, stress	Pascal	Pa	N/m ²
Quantity of electric, electric charge	Coulomb	C	A•s

^aSymbol to be used only when preceded by a numeral.

In engineering applications there is preference for use of prefixes representing only the ternary powers of 10 (10^3 , 10^6 , 10^9 , etc.). For example, statements of pressure, stress, and elastic modulus are preferably given in kPa, MPa, GPa. The prefixes hecto, deka, deci, and centi are avoided except in the special cases of the hectare, ha (the more common alternative symbol for hm^2), which is used in expressing large land areas, and the liter, L (the more common symbol for dm^3 , cubic decimeter), which is used in expressing fluid or particulate volumes.

Prefixes are applied directly to unit symbols (e.g., millimeter, mm; megawatt, MW; kilonewton, kN; gigapascal, GPa) except in the case of the kilogram, for which all prefixes are applied directly to the gram; thus, for example, Mg (megagram) is 10^3 kg. Precise use of uppercase and lowercase letters is essential. Authors using word processors should not put SI and other metric units in italics; doing so increases the chance of their being mistaken for variables by copy editors and the typesetter. For the same reason, there should be a space between numerals and SI units (e.g., 2 N).

To provide preliminary assistance to authors, the ASCE Committee on Metrication (COM) recommends the conversion factors and guides given in Table 5.

When quantities are converted from one system of units to another, care must be taken to retain a sufficient number of digits to reflect the accuracy of the original quantity. Converted quantities should not imply a degree of accuracy greater than that of the original values; they should be rounded to an appropriate level of accuracy and number of significant digits.

Table 3. Other Common Derived SI Units

Quantity	Unit	Unit symbol ^a
Acceleration	Meters per second squared	m/s ²
Angular acceleration	Radians per second squared	rad/s ²
Angular velocity	Radian per second	rad/s
Area	Meters squared	m ²
Concentration ^a	Mole per cubic meter	mol/m ³
Current density	Ampere per meter squared	A/m ²
Density (mass)	Kilogram per cubic meter	kg/m ³
Electric field strength	Volt per meter	V/m
Electric flux density	Coulomb per meter squared	C/m ²
Energy density	Joule per cubic meter	J/m ³
Entropy	Joule per kelvin	J/K
Heat capacity	Joule per kelvin	J/K
Heat flux density (irradiance)	Watt per meter squared	W/m ²
Luminance	Candela per meter squared	cd/m ²
Magnetic field strength	Ampere per meter	A/m
Molar energy	Joule per mole	J/mol
Molar entropy (heat capacity)	Joule per mole kelvin	J/mol•K
Moment of force	Newton meter	N•m
Permeability (magnetic)	Henry per meter	H/m
Permittivity	Farad per meter	F/m
Radiance	Watt per meter squared steradian	W/(m ² •sr)
Radiant intensity	Watt per steradian	W/sr
Specific heat capacity	Joule per kilogram kelvin	J/(kg•K)
Specific energy	Joule per kilogram	J/kg
Specific entropy	Joule per kilogram kelvin	J/(kg•K)
Specific volume	Cubic meter per kilogram	m ³ /kg
Surface tension	Newton per meter	N/m
Thermal conductivity	Watt per meter kelvin	W/(m•K)
Velocity	Meter per second	m/s
Viscosity (dynamic)	Pascal second	Pa•s
Viscosity (kinematic)	Meters squared per second	m ² /s
Volume	Cubic meter	m ³
Wave number	One per meter	1/m

^a Unit symbol used only when preceded by a numeral.

Table 4. SI Prefixes Applicable to Engineering

Factor	Prefix	Symbol ^a
10 ⁹	Giga	G
10 ⁶	Mega	M
10 ³	Kilo	k
10 ²	Hecto	h
10 ¹	Deka	da
10 ⁻¹	Deci	d
10 ⁻²	Centi	c
10 ⁻³	Milli	m
10 ⁻⁶	Micro	μ
10 ⁻⁹	Nano	n

^a Unit symbols used only when preceded by a numeral.

Table 5. Conversions Factors from U.S. Customary to SI Units

U.S. customary unit (symbol)	SI unit (symbol)	Multiply by
Acre-foot (acre/ft)	Cubic meter (m ³)	1.23 x 10 ³
Acre (acre)	Hectare (ha)	0.405
Inch (in.)	Millimeter (mm)	25.4
Kilogram force (kgf)	Newton (N)	9.81
Mile (mi)	Kilometer (km)	1.61
Pound force (lbF)	Newton (N)	4.45
Pound force per squared inch (psi)	Kilopascal (kPa)	6.89
Pound mass (lbm)	Kilogram (kg)	0.454
Gallon (gal.)	Liter (L)	3.79

Definitions and Symbols. Use standard definitions and symbols. Refer to the lists published by the American National Standards Institute (ANSI) and to reports from ASCE divisions. For example, for geotechnical engineering, consult the *Glossary of Soil Mechanics Terms of the International Society of Soil Mechanics and Foundation Engineering*, and for water resources engineering, consult the *UNESCO International Glossary of Hydraulics* (1974).

Concluding the Paper

Conclusions. Write a set of conclusions, or a summary and conclusion, in which the significant implications of the information presented in the body of the manuscript are reviewed.

Acknowledgments. Include an acknowledgments section to recognize any advisory or financial help you received.

Appendixes. Use appendixes to record details and data that are of secondary importance or that are needed to support assertions in the text. Make sure the text contains references to all appendixes. Equations, tables, and figures should be numbered sequentially from text.

References

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Conference Proceedings and Symposia: Fwa, T. F., Liu, S. B., Teng, K. J. (2004). “Airport pavement condition rating and maintenance-needs assessment using fuzzy logic.” *Proc., Airport Pavements: Challenges and New Technologies*, ASCE, Reston, Va., 29-38.

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Books and Reports: Feld, J., and Carper, K. (1997). *Construction failure*, 2nd Ed., Wiley, New York.

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Type each table on a separate 215 x 280 mm (8.5 x 11 in.) sheet of paper. Tables should be grouped together at the end of the manuscript preceding the figures, not intermingled with the body of the manuscript.

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Table format. Tables should follow the guidelines below. See sample Table A to follow for an example of a properly formatted table.

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- Each table must be called out in text; it will be placed on a page as close to the first mention as possible.

Table. A. Properly Formatted Table—Every Table Needs a Table Number and Title^a

Heading level 3 ^b			
Heading level 2		Heading level 2	
Heading level 1	Heading level 1	Heading level 1	Heading level 1
Subsection identifier			
Body text entry	Body text entry	Body text entry	Body text entry
Body text entry	Body text entry	Body text entry	Body text entry
Body text entry	Body text entry	Body text entry	Body text entry
Subsection identifier			
Body text entry	Body text entry	Body text entry	Body text entry
Body text entry	Body text entry	Body text entry	Body text entry
Body text entry	Body text entry	Body text entry	Body text entry

^a All tables must have clear columns. Each column must have a heading. Repeated columns will be combined and repeated headings will be deleted. All vertical rules will be deleted as will most horizontal rules within the body of the text.

^b Try to avoid having a lot of levels of headings in a table. Combine headings if you can.

Tables must have a table number, a title, and be numbered sequentially. Do not number tables as 1, 1a, 1b, etc. If there are individual tables, please number them 1, 2, 3, etc.

- Tables must have more than one column with each column having a unique heading; do not repeat column heads in order to create more than one column (see sample Tables B and C).
- Tables cannot be simple lists. Simple lists should be added to the body of the text (see sample Table C).
- Each table can have only one set of column heads within the body of the table (see sample Tables D and E).
- Avoid using equations in tables. The font size is smaller in tables than in the text, and super- and subscripts tend to get lost.
- Notes are acceptable in tables and should be represented by superscript letters. Do not use numbers as they could be confused as math.
- Vertical rules are not permitted in tables.
- Horizontal rules are permissible around headings only.
- Divide tables into two or more when data are sizable. (Note: Avoid redundancy of data in figures, tables, and text. Select the format that presents data in the clearest form for readers.)

TABLE B. INCORRECT Table Format- Repeated Headings

Action	Result	Action	Result
Go to the beach	Have fun	Take a walk	Get exercise
Go swimming	Stay cool	Put up umbrella	Stay in shade
Go fishing	Catch fish	Drink water	Stay hydrated

Column Headings should not be repeated. This table should only have two columns.

TABLE C. INCORRECT Table Format- Simple List

Skills	Skills
Leadership	Negotiation
Delegation	Ability to compromise
Compassion	Integrity
Discipline	Management

This is not a table but rather a simple list. It does not have at least two unique columns and should be eliminated or included in the text.

The first column needs to have a heading.

The second column has information unnecessarily repeated and there are more columns on the top portion than the bottom portion.

There are two levels of headings within the body of the table.

TABLE D. INCORRECT Table Format- Multiple Headings in Columns

	Activity	Managers	Editors	Vendors	Proofreaders		
Requirements	Editing	2	10	5	0		
	Composition	3	4	1	10		
	Proofreading	1	6	1	10		
	Activity	Pens	Pencils	Rulers	Dictionaries	Computers	Printers
Equipment	Editing	10	25	10	15	5	2
	Composition	10	0	20	3	10	5
	Proofreading	10	25	10	10	0	0

TABLE E. Properly Formatted Version of Table D

Resources	Activity		
	Editing	Composition	Proofreading
Managers	2	3	1
Editors	10	4	6
Vendors	5	1	1
Proofreaders	0	10	0
Pens	10	10	10
Pencils	25	0	25
Rulers	10	20	10
Dictionaries	15	3	10
Computers	5	10	0
Printers	2	5	0

This shows the same information as Table D above. The format conforms to the ASCE style and is easier to read.

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