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Requirements for Submitting Papers to TRB for Presentation at the Annual Meeting and Publication in the Transportation Research Record

(Updated May xx, 2017)

*Click on the titles below to go directly to the section.*

## **Contents**

ABOUT THIS GUIDE.....	3
PLEASE NOTE FOR 2018.....	3
CRITICAL DATES.....	4
GENERAL REQUIREMENTS AND GUIDELINES .....	5
AUTHOR’S RESPONSIBILITY .....	5
PAPER REVIEW CRITERIA.....	6
PAPER SPECIFICATIONS .....	7
Clearances and Copyrighted Material.....	7
Length of Manuscripts .....	7
Titles .....	7
Length and Content of Abstracts .....	7
Author Names and Affiliations.....	7
Style .....	8
Organization of Manuscript.....	8
Electronic File Formats .....	8
Manuscript Page Setup.....	8
References.....	9
Metrication.....	11
Equations.....	12
Footnotes.....	13
Abbreviations, Acronyms, and Symbols .....	13
Acknowledgments.....	13
Appendixes .....	13
Tables and Figures.....	14
PAPER SUBMISSION .....	15
CONTACTING TRB.....	15

## ABOUT THIS GUIDE

The TRB peer review process is used both for papers submitted for presentation at TRB's Annual Meeting and for papers submitted for publication in the *Transportation Research Record: Journal of the Transportation Research Board*. The peer review process is organized by TRB's standing technical committees under the supervision of TRB staff. A minimum of three reviews are required for a publication recommendation or a presentation decision. The process also allows for scholarly discussion of any paper scheduled for publication, along with an author-prepared closure.

To submit a paper to the Transportation Research Board (TRB) for presentation at the TRB Annual Meeting and/or publication in the *Transportation Research Record: Journal of the Transportation Research Board*, follow the instructions in this guide. All authors are required to submit papers to TRB via the TRB paper submittal website (<https://www.mytrb.org/?PressAmpTarget=/Paper/Instructions>).

This guide is updated periodically; authors should review all information in this guide before submitting papers for consideration. This guide covers the organization and formatting of manuscripts for peer review and for publication, as well as instructions for submission. Papers that do not follow the guidelines will be rejected without review.

*Note:* A separate document, *Preparing Papers Accepted for Publication in the Transportation Research Record*, contains guidelines for the reformatting and resubmittal of papers accepted for publication. For publication in the *Transportation Research Record*, a paper must first complete the peer review process as specified here; if accepted for publication, the paper must be resubmitted according to the guidelines posted at <http://trjournalonline.trb.org>.

## PLEASE NOTE FOR 2018

**Papers must be submitted no later than August 1, 2017.** The paper submission website will close when it is no longer August 1 anywhere in the world.

**Papers must be submitted in PDF with the text line-numbered in the left margin, to facilitate the review process.**

**Editorial quality has increased in importance for peer-review decisions.** An increased emphasis has been placed on the editorial quality of submitted papers. A paper's editorial quality accounts for 25% of the final weighted rating; peer reviewers will consider the paper's clarity, readability, organization, and other editorial factors in this portion of the final rating. If in the judgment of the reviewers or editors a paper's editorial quality is inadequate, it may be rejected at the sole discretion of TRB.

**Copyright and Clearance Information.** Upon submission of papers for publication in the Transportation Research Record, authors are required to accept the following User's Grant of Exclusive License for Papers Accepted for Publication:

*I hereby grant the National Academy of Sciences/Transportation Research Board an exclusive, irrevocable, worldwide license in any media now or hereafter known to use, reproduce, display, perform, adapt, distribute, have distributed, and promote submitted content in any form, anywhere, and for any purpose. The license hereby granted to the National Academy of Sciences/Transportation Research Board is contingent upon my paper being accepted for publication, and no publication rights are granted unless and until I have been notified that my paper has been accepted for publication.*

Beginning with the 2018 Annual Meeting, TRB will no longer publish a Compendium of Papers, a static DVD image of papers that are included on Annual Meeting Online. TRB will continue to include all papers accepted for presentation at the TRB Annual Meeting on Annual Meeting Online. Upon submission of papers considered for presentation at the TRB Annual Meeting, authors will be required to accept the following Annual Meeting Online Terms and Conditions for Papers Accepted for Presentation:

*Should my paper be accepted for presentation, I understand and agree that my paper will be made available through TRB's Annual Meeting Online ("AMOnLine") unless I opt out and provide an extended abstract of the paper for inclusion in AMOnLine. Papers and extended abstracts made available through AMOnLine are provided by TRB on a complimentary basis as a service for all Annual Meeting registrants, TRB Sponsors, and TRB Patrons. Others may obtain access to papers and extended abstracts on AMOnLine upon payment of a nominal fee. If my paper is accepted for presentation, the presentation acceptance letter will provide me with the instructions and deadlines for submitting an extended abstract for inclusion on AMOnLine in lieu of my paper. The extended abstract must meet all TRB requirements for submission and be approved by TRB. If I do not submit a timely, conforming, acceptable extended abstract, I hereby grant the National Academy of Sciences/Transportation Research Board a nonexclusive, royalty-free, irrevocable, worldwide license to include my paper on AMOnLine. I understand that any agreements with or licenses granted to the National Academy of Sciences/Transportation Research Board are contingent upon my paper being accepted for presentation.*

**The *Transportation Research Record* is published exclusively online.** Each paper is assigned a unique digital object identifier, or DOI, indicating its online release and permanent web address.

## CRITICAL DATES

**June 1:** TRB paper submission website opens.

**August 1:** This is the hard deadline for submitting complete papers for possible presentation at the next Annual Meeting and for possible publication in the next *Transportation Research Record* journal series. Papers must be in PDF format.

**Mid-August–mid-September:** Initial review takes place. Papers are assigned by technical content to technical standing committees that administer the peer review. The committee paper review coordinator assigns at least three knowledgeable reviewers to each paper.

**Early October:** Committees make decisions about which papers to accept for presentation at the TRB Annual Meeting. Committees make preliminary recommendations regarding publication of papers in the TRR, placing each paper in one of the following categories:

1. Publish as submitted or with minor revisions with no re-review.
2. Reconsider for publication, pending author changes and re-review; or
3. Reject for publication.

**Mid-October:** TRB communicates the results of both the presentation decisions and the initial review for publication to the corresponding author. Corresponding authors communicate the information to coauthors.

**November 15:** This is the due date for all papers that have been accepted for presentation at the Annual Meeting and for all papers submitted for publication which have not been rejected in the initial review. Specifically, November 15 is:

- Category 1. Deadline for submission of revised papers approved for presentation at the TRB Annual Meeting.
- Category 2. Deadline for submission of revised papers recommended for re-review before a final decision is made about publication in the *Transportation Research Record*.
- Category 3. Deadline for submission of final manuscripts of papers accepted for publication without revision; these papers will immediately enter editorial production for publication in the *Transportation Research Record*. **Note:** Requirements for final manuscripts are laid out in a separate document:  
<http://onlinepubs.trb.org/onlinepubs/am/2017/TRRAcceptedPaperFormatModel.doc>

**Late November–late January:** The committee paper review coordinator sends the Category 2 revised papers to the initial reviewers for re-review. After re-review, the committee makes the final publication recommendation for these papers.

**Early February:** TRB requests a final manuscript for the Category 2 revised papers that have been accepted for publication.

**March 15:** Final manuscripts for Category 2 papers accepted for publication must be submitted. TRB also notifies authors whose papers were not accepted for publication.

## GENERAL REQUIREMENTS AND GUIDELINES

### AUTHOR'S RESPONSIBILITY

**Language & Editorial Quality:** All papers must be submitted in English. There are cases when a paper's editorial quality and lack of readability hinder a reviewer's ability to review the technical content of the paper. It is the author's responsibility to ensure the readability of the submission. **Authors are encouraged to engage editorial services prior to the paper submission**

**Plagiarism:** Plagiarism is the use of information or concepts from another article, website, or report without clearly attributing the source. Plagiarism is not acceptable. Phrases, sentences, or sections taken from another document, even if written by the same author(s), must appear within quotation marks and the source must be credited.

**Submittal to Other Journals:** The content of a paper must not have been published elsewhere and must not be submitted to another journal while it is under consideration for the TRR.

**Fragmented Publication:** Breaking a single piece of work into many papers dilutes the information and makes it difficult for reviewers and readers to assess the advances that may have been made. Papers submitted for review should stand on their own; **papers submitted as Part I, Part II, etc., will not be accepted for review.**

**Authorship Disputes:** The generally accepted rules for authorship credit are stated in the 2003 Annual

Report of the Committee on Publication Ethics (COPE) are as follows: “(1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; (2) drafting the article or revising it critically for important intellectual content; and (3) final approval of version to be published. All three of these conditions should be met for authorship, (4) anyone credited as an author should have played a significant role in the research and in the writing of the paper (Albert & Wagner 2003).”

**Commercial or Special Interests:** Authors are responsible for ensuring that submitted papers do not advocate special interests and are of a commercial nature. Papers that fall within this category will be removed from the peer review process. A paper also may be removed from peer review if it describes the properties of a product without disclosing its composition or manufacture. Generic names of products and equipment should be used unless the author considers the trade names or manufacturer’s names essential to the purpose of the paper.

## **PAPER REVIEW CRITERIA**

To assist authors in preparing papers, the review criteria for the peer review of papers are provided below. Each paper is evaluated by a minimum of three reviewers selected by TRB in accordance with procedures approved by the Governing Board of the National Research Council of the National Academy of Sciences. Authors should be mindful of the TRB review criteria, which apply to all papers.

Reviewers are asked to rate the paper on each of the characteristics listed below on a scale of 1 to 5 (1 – Unacceptable, 2 – Poor, 3 – Fair, 4 – Good, 5 – Excellent) and provide comments that will be sent to the authors.

1. Is the paper written well enough to be readily understood? Poor English grammar is sufficient grounds for rejection of the paper.
2. Well organized
3. Abstract clearly conveys meaning of paper
4. Objectives appropriate and clearly stated
5. Methodology technically sound
6. Data valid
7. Conclusions valid and properly supported
8. Existing work adequately described and properly referenced
9. Study effort adequately described
10. Demonstrated contribution to the state-of-the-art or practice
11. Original and timely
12. Useful to researchers
13. Demonstrated long-term value as a research reference or description of practice
14. Length of paper appropriate for subject and intended audience
15. Free of sensitive statements advocating special interests, advertising, and recommendations on government policies and programs

TRB may withdraw a paper from consideration anytime during the review process if the paper fails to meet the paper guidelines and specifications, or if the readability hinders the ability to review the technical content of the paper.

## PAPER SPECIFICATIONS

### Clearances and Copyrighted Material

Authors must secure necessary clearances and written permissions for presentation or publication from any contracting or supervisory agencies involved in the research or from holders of copyrights on material used in the paper. Authors must have concurrence from coauthors or coworkers before submitting papers for presentation or publication by TRB, and all contributions to the work must be properly acknowledged. If a paper accepted for publication contains previously copyrighted material, **authors must obtain written permission from the copyright holder(s)**. TRB will assume the authors have obtained this permission before submission of the manuscript for inclusion on the TRB Annual Meeting Online. TRB will retain unrestricted rights to the material.

To request copyright permissions for papers submitted for presentation at the TRB Annual Meeting or published or accepted for publication in the *Transportation Research Record*, contact Jennifer J. Weeks at [jweeks@nas.edu](mailto:jweeks@nas.edu) or 202-334-2984.

### Length of Manuscripts

**The length of each paper, including the abstract, text, references, figures, and tables, must not exceed 7,500 words.** Each table, figure, or photograph counts as 250 words. For example, if two figures and three tables are submitted, the abstract, text, and references may total no more than 6,250 words.

**The title page of the paper should clearly note the following:**

- ) The total number of words in the abstract, text, and references; and
- ) The number of figures (including photographs) and tables.

**Papers not meeting this requirement may be withdrawn from the peer review process at any time.**

### Titles

The wording of titles should be clear and concise; avoid lengthy clusters of nouns. Acronyms—except those of a few major transportation organizations (see list, page 13)—are not permitted in the titles of papers submitted for peer review. If a title runs long, consider breaking portions out into a subtitle.

### Length and Content of Abstracts

*Each paper must have an abstract.* The abstract must be no longer than 250 words, it must be self-contained, and it must not require reference to the paper to be understood. The abstract should present the primary objectives and scope of the study or the reasons for writing the paper; the techniques or approaches should be described only to the extent necessary for comprehension; and findings and conclusions should be presented concisely and informatively. The abstract should not contain unfamiliar terms that are not defined, undefined acronyms, reference citations, or displayed equations or lists.

### Author Names and Affiliations

**The name, affiliation, complete mailing address—an accurate and functional mail delivery location—telephone number, fax number, and e-mail address for each author must be listed on the title page.** The list should be a single column. One corresponding author must be designated for papers with multiple authors. TRB will communicate only with the corresponding author, who is responsible for informing the coauthors of the paper's submission and disposition. An author should list his or her affiliation and address at the time of the research for the paper, including university department and school,

as appropriate; if the affiliation has changed, the current affiliation and address also should be included. (Corresponding authors are responsible for notifying TRB of any change in address for themselves or coauthors by following the instructions in the submission confirmation letter.)

## Style

The TRB publications staff uses certain standard reference works for guidance. In matters of spelling, definition, and compounding of words, *Merriam-Webster's Collegiate Dictionary*, 11th edition, is generally followed. Published standards of scholarly organizations are accepted in questions involving usage of technical terms. Other matters of style and usage are based on documents widely accepted as authoritative (e.g., *Chicago Manual of Style*, 16th edition). Authors should avoid jargon, undefined acronyms, use of personal pronouns—particularly first-person singular and plural (I, we, you)—and sexist language in their papers.

## Organization of Manuscript

Submit the manuscript in a single electronic file organized in the following sequence:

- ) Title page, including submission date, word count, and author names, affiliations, addresses, phone numbers, fax numbers, and e-mails (please indicate corresponding author);
- ) Abstract;
- ) Body of paper, with figures and tables embedded in the text, as close as possible to the related text;
- ) Acknowledgment (if any); and
- ) References.

## Electronic File Formats

**The paper must be submitted in PDF with the text line-numbered in the left margin, to facilitate the review process.**

## Manuscript Page Setup

For a sample paper showing model formatting, see

<http://onlinepubs.trb.org/onlinepubs/dva/PaperFormatModel.docx>

- ) Margins: 25.4 mm (1 in.) top; 25.4 mm (1 in.) left; adjust settings for bottom and right margins so that the text area is not more than 165.1 mm by 228.6 mm (6.5 in. by 9 in.).
- ) Font (typeface): Times New Roman, no smaller than 10 points.
- ) Numbering: Insert page numbers at upper right of each page; insert name(s) of author(s) at upper left of each page.
- ) Text: Single-spaced.
- ) **Line-number all text within the document.**
- ) Paragraphs: Indent first line 12.7 mm (0.5 in.); do not use an extra line space between paragraphs;
- ) do not indent first line after a subhead.
- ) Subheads: All subheads should be flush with the left margin, with one line space above.

### **FIRST-LEVEL SUBHEAD**

(all capitals, boldface, on separate line)

### **Second-Level Subhead**



(initial capitals, boldface, on separate line)

*Third-Level Subhead*

(initial capitals, italic, on separate line)

**Fourth-Level Subhead** (initial capitals, boldface, on same line as text, with extra letter space between the subhead and text)

*Fifth-Level Subhead* (initial capitals, italic, on same line as text, with extra letter space between the subhead and text)

- ) Bulleted and numbered lists: Indent first line 12.7 mm (0.5 in.); do not indent text runovers.
- ) Table titles and figure captions:

**TABLE 5 Effects of All Factors**

(Insert title above the table; “Table” is all capitals; title is initial capitals; all type is boldface; extra space but no punctuation after number; no punctuation at end of title.)

**FIGURE 3 Example of results.**

(Insert caption below the figure; “Figure” is all capitals; caption is sentence case; all type is boldface; extra space but no punctuation after number; period at end of caption.)

## References

*Searching and Citing Transportation Research Record Papers*

TRB provides a tool to assist authors in conducting a literature review and identifying references for papers—**TRR Online**. This tool is available to provide access to the extensive information on research published in past volumes of the *Transportation Research Record*.

### *Guidelines for References*

1. The reference list should contain only references that are cited in the text, numbered in the order in which they are first cited. Bibliographic lists will not be published. Papers that do not conform to the numbered reference style may be rejected.
2. Denote a reference at the appropriate place in the text with an italicized Arabic numeral in parentheses, e.g., (2). Do not denote text references with superscripts.
3. Do not include in the reference list personal communications, telephone conversations, or similar
4. Material that would not be available to readers electronically or in printed form in a library or from the originating agency. Instead, cite the unpublished work in the text and enclose the author’s name along with the term “personal communication” in parentheses.
5. Do not repeat a reference in the list, and do not use *ibid.*, *idem*, *op. cit.*, or *loc. cit.* If a reference is
6. Cited more than once in the text, repeat the number first assigned to the reference.
7. Use the following content guidelines and samples in preparing reference lists:

- ) **Printed sources.** Be sure that references to printed sources are complete. Include names of corporate or personal authors or editors, or both; title of article, chapter, book, or report; publisher or issuing agency; volume and issue or report number; page numbers; location of publisher; and year of publication.

*TRR Journal Papers*

**Note: Do not add “In” before the journal title; do not include the publisher or place of publication. If available, please include the digital object identifier (DOI).**

Dewan, S. A., and R. E. Smith. Creating Asset Management Reports from a Local Agency Pavement Management System. *Transportation Research Record: Journal of the Transportation Research Board*, No. 1853, 2003, pp. 13–20. <http://dx.doi.org/10.3141/1853-02>.

#### *TRB Publications*

Morcous, G., K. Wang, P. C. Taylor, and S. P. Shah. *NCHRP Report 819: Self-Consolidating Concrete for Cast-in-Place Bridge Components*. Transportation Research Board, Washington, D.C., 2016. <http://dx.doi.org/10.17226/23626>.

#### *Book*

Newland, D. E. *Random Vibrations: Spectral and Wavelet Analysis*. John Wiley & Sons, Inc., New York, 1998.

#### *Chapter in a Book*

Shunk, G. A. Urban Transportation Systems. In *Transportation Planning Handbook* (J. D. Edwards, Jr., ed.), Prentice Hall, Englewood Cliffs, N.J., 1992, pp. 88–122.

#### *Periodical*

**Note: Do not include the publisher or place of publication in a periodical citation. If available, please include the DOI.**

Hurwitz, D. S., Jr., M. A. Knodler, and B. Nyquist. Evaluation of Driver Behavior in Type II Dilemma Zones at High-Speed Signalized Intersections. *Journal of Transportation Engineering*, Vol. 137, No. 4, 2010, pp. 277–286. [http://dx.doi.org/10.1061/\(ASCE\)TE.1943-5436.0000219](http://dx.doi.org/10.1061/(ASCE)TE.1943-5436.0000219).

Dawley, C. B., B. L. Hogenwiede, and K. O. Anderson. Mitigation of Instability Rutting of Asphalt Concrete Pavements in Lethbridge, Alberta, Canada. *Journal of Association of Asphalt Paving Technologists*, Vol. 59, 1990, pp. 481–508.

Sansalone, M., J. M. Lin, and W. B. Streett. Determining the Depths of Surface-Opening Cracks Using Impact-Generated Stress Waves and Time-of-Flight Techniques. *ACI Materials Journal*, Vol. 95, No. 2, 1998, pp. 168–177.

#### *Government Report*

Von Quintus, H. L., and A. L. Simpson. *Documentation of the Backcalculation of Layer Parameters for LTPP Test Sections*. Publication FHWA-RD-01-113. FHWA, U.S. Department of Transportation, 2002.

) **CD-ROMs.** References to CD-ROMs should include the same information as references to printed sources and have “CD-ROM” after the title.

Solaimanian, M., J. Harvey, M. Tahmoressi, and V. Tandon. Test Methods to Predict Moisture

Sensitivity of Hot-Mix Asphalt Pavements. In *Moisture Sensitivity of Asphalt Pavements*. CD-ROM. Transportation Research Board of the National Academies, Washington, D.C., 2004, pp. 77–110.

) **Websites and electronic sources.** References to websites should include corporate or personal authors, title of document, date of document (if available), web address (complete URL), and date accessed by the author.

State and Local Policy Program. *Value Pricing*. Hubert H. Humphrey Institute of Public Affairs, University of Minnesota, Minneapolis. [www.hhh.umn.edu/centers/slp/vp/vp\\_org](http://www.hhh.umn.edu/centers/slp/vp/vp_org). Accessed Feb. 5, 2008.

*Guide to Developing Performance-Related Specifications*. FHWA-RD-98-155, FHWA-RD-98-156, FHWA-RD-98-171, Vol. III, Appendix C. [www.tfhr.gov/pavement/pccp/pavespec](http://www.tfhr.gov/pavement/pccp/pavespec). Accessed March 5, 2003.

Nemmers, C. Transportation Asset Management. *Public Roads Magazine*, July 1997. [www.tfhr.gov/pubrds/july97/tam.htm](http://www.tfhr.gov/pubrds/july97/tam.htm). Accessed Jan. 13, 2002.

) **Unpublished papers.** References to unpublished papers presented at meetings should include name(s) of author(s); title of paper; and title, sponsor(s), location, and dates or year of meeting.

Corbett, J. J. Toward Environmental Stewardship: Charting the Course for Marine Transportation. Presented at 83rd Annual Meeting of the Transportation Research Board, Washington, D.C., 2004.

) **Program manuals, tapes, or other documentation for models.** References to these items should cite the specific edition, the department responsible, and the year of release.

*MINITAB User's Guide 2: Data Analysis and Quality Tools*. Minitab, State College, Pa., 2000, pp. 27–52.

If a reference has no date, use “undated.” Detailed reference style instructions are available on request from the Publications Office.

## Metrication

Authors are encouraged to provide measurements in both SI (metric) and U.S. customary units. The measurement unit of the original research should be followed by the equivalent conversion in parentheses. Papers accepted for publication without unit conversions will be published with the measurement units as submitted. TRB will not supply specific conversions for the papers; a general conversion chart appears in the front pages of each volume of the *Transportation Research Record*. **Table 1** supplies some frequently used unit conversion factors.

*Note:* When converting U.S. customary measures of weight (force) and mass into SI units, express weight (force) in newtons and mass in kilograms; express poundforce per square inch (psi or lbf/in.<sup>2</sup>) of pressure or stress in kilopascals (kPa). For SI units, use prefixes instead of powers of 10.

For tables and figures, provide only the units of the original research and show the base unit conversion in a footnote; for example, NOTE: 1 mi = 1.61 km. Alternatively, in figures, equivalent units may be shown on the top and right axes of data plots.

**TABLE 1 Measurement Conversions**

When You Know	Multiply by	To Find
<b>Length</b>		
inches (in.)	25.4	millimeters (mm)
feet (ft)	0.305	meters (m)
yards (yd)	0.914	meters (m)
miles (mi)	1.61	kilometers (km)
<b>Area</b>		
square inches (in. <sup>2</sup> )	645.1	millimeters squared (mm <sup>2</sup> )
square feet (ft <sup>2</sup> )	0.093	meters squared (m <sup>2</sup> )
square yards (yd <sup>2</sup> )	0.836	meters squared (m <sup>2</sup> )
acres	0.405	hectares (ha)
square miles (mi <sup>2</sup> )	2.59	kilometers squared (km <sup>2</sup> )
<b>Volume</b>		
fluid ounces (fluid oz)	29.57	milliliters (mL)
gallons (gal)	3.785	liters (L)
cubic feet (ft <sup>3</sup> )	0.028	meters cubed (m <sup>3</sup> )
cubic yards (yd <sup>3</sup> )	0.765	meters cubed (m <sup>3</sup> )
<b>Mass</b>		
ounces (oz)	28.35	grams (g)
pounds (lb)	0.454	kilograms (kg)
short tons (2,000 lb)(T)	0.907	megagrams (Mg)
<b>Temperature (exact)</b>		
Fahrenheit temperature (°F)	$(F - 32)/1.8$	Celsius temperature (°C)
<b>Illumination</b>		
footcandles (fc)	10.76	lux (lx)
footlamberts (fl)	3.426	candela/m <sup>2</sup> (cd/m <sup>2</sup> )
<b>Force and Pressure or Stress</b>		
poundforce (lbf)	4.45	newtons (N)
poundforce per square inch (psi)	6.89	kilopascals (kPa)

## Equations

All variables should be defined at first use, either in the text or where the equation is listed.

1. Fractions in displayed equations should be stacked, in accordance with preferred mathematical practice.
2. If a displayed equation is numbered, use an Arabic numeral in parentheses, placed flush right.
3. Carefully distinguish the following:
  - All capital and lowercase letters;
  - Capital *O* (“oh”), lowercase *o* (“oh”), and 0 (zero);
  - Lowercase *l* (“el”) and number 1 (one);

- Letter  $X$ , Greek chi ( $\chi$ ), and multiplication sign  $\times$ ;
- Prime  $\prime$ , apostrophe  $'$ , and superscript one  $^1$ ; and
- English and Greek letters such as
  - $B$  and beta ( $\beta$ ), upper- or lowercase  $k$  and kappa ( $\kappa$ ),
  - $n$  and eta ( $\eta$ ),  $v$  and nu ( $\nu$ ),
  - $u$  and upsilon ( $\upsilon$ ),  $\mu$  and mu ( $\mu$ ), and
  - Upper- or lowercase  $p$  and rho ( $\rho$ ), and  $w$  and lowercase omega ( $\omega$ ).

### Footnotes

Do not use footnotes to the text. Incorporate the information into the text or delete the notes.

### Abbreviations, Acronyms, and Symbols

Abbreviations, acronyms, and symbols must be fully defined at first use in both the abstract and the paper; the full term should be spelled out first, followed by the abbreviated term in parentheses. The following acronyms may be used without definition:

AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACRP	Airport Cooperative Research Program
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials (known by abbreviation only)
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
SAE	Society of Automotive Engineers
SHRP	Strategic Highway Research Program
SHRP 2	Second Strategic Highway Research Program
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board

### Acknowledgments

Authors of papers that report results of research sponsored directly or indirectly by federal programs should indicate this sponsorship in an Acknowledgment section at the end of the text, above References. Contract, award, or project codes or numbers are not published in the *Transportation Research Record*.

### Appendixes

Do not use appendixes. Include pertinent material in the paper itself or, where necessary, include a note that background material—such as derivation of formulas, specifications, or survey forms—is available from the author or in another report, which should be cited in the reference list.

## Tables and Figures

**For peer review**, figures and tables should be embedded in the text, as close as possible to the related text. Each figure or table should be cited in the text in numbered sequence. Color is permissible.

### *Tables*

Tables should supplement, not duplicate, the text.

1. Tables must conform to TRB style for tables.
  - All tabular material should be single-spaced in a font (typeface) no smaller than 10 points. Use the same font for all tables.
  - Place titles flush left to align with the left margin of the table; use boldface. The word “TABLE” should be in all-capital letters; use initial capitals for the remaining words in the title.
  - Do not submit a table in separate parts or sections that introduce new columns.
    - A table must be structured so that the data in each column pertain to the column heading.
    - New columns and column headings with new data rows may not be introduced farther down within the established format of a table.
    - New columns and column headings properly define a distinct table and should be presented separately with an appropriate title and table number.
  - Tables should not incorporate photographs, illustrations, or other material that cannot be typeset. Graphic materials should be presented as separate figures.
  - Give each column in the table a heading. Place abbreviated measurement terms in parentheses under the column heading. All headings should be aligned in flush left format.
  - To adhere to Accessibility Guidelines for the vision-impaired reader, avoid the use of spanner heads. For example, “Production per Year” and “Production per Day” should appear as

Production per Year	Production per Day
------------------------	-----------------------

- Insert a rule that extends across the full width of the table under the column heads.
  - Insert a full-width rule at the end of the table (and above the footnotes, if any).
  - Use lowercase italic superscript letters for footnotes.
  - Do not leave empty cells in a table. Insert a placeholder that indicates why the cells contain no data. Define the meaning of the placeholder in a general note to the table: for example, “NA = not available; na = not applicable; — = missing data.”
  - When a dash (—) is used in a table, indicate its meaning in a footnote (for example, missing data, incomplete research, data not applicable or unavailable, or problem investigated but no results).
2. Check the accuracy of all totals included in tables before submitting the paper.
  3. For use of measurements, see section on metrication.
  4. Do not use dots or screens for decorative purposes. If shading carries significance or if color coding of data is necessary, explain in a table note or in the text.
  5. Do not place a box or ruled frame around a finished table.

### *Figures*

Use the following guidelines for figures:

1. Photographs should be high resolution (at least 300 dpi at a size of 4 in. × 5 in.).

2. Give each figure a caption. Place a figure caption single-spaced below each figure. If a figure contains several parts, label each part with a letter in parentheses—(a), (b), (c), etc.—use the same size type as that in the rest of the figure, and cite each labeled part in the caption.
3. Define in the caption all abbreviations, acronyms, and variables used in the figure.
4. Number figures consecutively in the order first cited in the text, using Arabic numerals. Reference must be made to each figure by number at the appropriate place in the text.
5. **Avoid the use of dots or screens in figures and spreadsheet charts, especially in areas that include type.**
  - If dots or screens are used in text areas, they should be no more than 30% black.
  - If more than one dot or screen weight is used, there should be a difference of at least 20% between dot or screen values.
  - Legends identifying the significance of dotted, screened, or crosshatched elements must be included in the figure if not explained in the caption or text.
6. Do not place a box or ruled frame around a finished figure.
7. Figures should be clear and legible:
  - The font (typeface) must be easily readable, not too small.
  - Use the same font for all figures.
  - Letters and symbols must be uniform and the same size throughout the figure (e.g., if wording on the ordinate and abscissa is in 10-point type, the symbols used to identify the data points also should be in 10-point type).
  - Line weights (except for lines indicating different data series in a graph) also must be uniform.
8. For use of measurements, see section on metrication.

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## References

1. Tim Albert and Elizabeth Wager. How to Handle Authorship Disputes: A Guide for New Researchers. *The COPE Report 2003*. <http://publicationethics.org/files/u2/2003pdf12.pdf>.

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