



CRG

COMMUNICATION
REFERENCE
GUIDE



U.S. Department
of Transportation
**Federal Highway
Administration**

Turner-Fairbank Highway Research Center R&D

FOREWORD

The *Turner-Fairbank Highway Research Center R&D Communication Reference Guide* (CRG) provides you with tools, techniques, and timelines for effectively planning, scheduling, and producing your communication products, which include print materials, electronic information, and technology. The CRG will be posted on the Internet at the Federal Highway Administration's (FHWA) research website: www.fhwa.dot.gov/research. This document replaces previous versions of the *Quick Reference Guide*.

This guide will be useful to FHWA researchers, contract office representatives, contractors, and support staff who develop research and technology communication products to the standards and regulations referenced in this publication. The CRG is available on the research website (www.fhwa.dot.gov/research). Although this guide is available as a printed version upon request, the most recent and up-to-date version is posted on the research website.

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Management

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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
AREA				
in ²	square inches	645.2	square millimeters	mm ²
ft ²	square feet	0.093	square meters	m ²
yd ²	square yard	0.836	square meters	m ²
ac	acres	0.405	hectares	ha
mi ²	square miles	2.59	square kilometers	km ²
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft ³	cubic feet	0.028	cubic meters	m ³
yd ³	cubic yards	0.765	cubic meters	m ³
NOTE: volumes greater than 1000 L shall be shown in m ³				
MASS				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
ILLUMINATION				
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m ²	cd/m ²
FORCE and PRESSURE or STRESS				
lbf	poundforce	4.45	newtons	N
lbf/in ²	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
AREA				
mm ²	square millimeters	0.0016	square inches	in ²
m ²	square meters	10.764	square feet	ft ²
m ²	square meters	1.195	square yards	yd ²
ha	hectares	2.47	acres	ac
km ²	square kilometers	0.386	square miles	mi ²
VOLUME				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m ³	cubic meters	35.314	cubic feet	ft ³
m ³	cubic meters	1.307	cubic yards	yd ³
MASS				
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
TEMPERATURE (exact degrees)				
°C	Celsius	1.8C+32	Fahrenheit	°F
ILLUMINATION				
lx	lux	0.0929	foot-candles	fc
cd/m ²	candela/m ²	0.2919	foot-Lamberts	fl
FORCE and PRESSURE or STRESS				
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in ²

* SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380. (Revised March 2003)

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LIST OF ABBREVIATIONS

CAD	computer-aided design
CD	compact disc
CD-ROM	compact disc read-only memory
CENDI	Commerce, Energy, NASA, Defense Information Managers Group
CIO	Chief Information Officer
COR	Contracting Officer's Representative
CRG	Communication Reference Guide
DVD	digital versatile disk
FAQ	frequently asked question
FHWA	Federal Highway Administration
GPO	Government Printing Office
HAIS	Office of Information Technology Services
HPA	Office of Public Affairs
HRTM	Office of Corporate Research, Technology, and Innovation Management
HTML	HyperText Markup Language
NARA	National Archives and Records Administration
NTIS	National Technical Information Service
OCIO	Office of the Chief Information Officer
OMB	Office of Management and Budget
PDF	portable document format
PII	personally identifiable information
R&D	research and development
R&T	research and technology
RD&T	research, development, and technology

SPII	sensitive personally identifiable information
SSI	Sensitive Security Information
SSN	Social Security number
TFHRC	Turner-Fairbank Highway Research Center
USB	Universal Serial Bus
USDOT	U.S. Department of Transportation
ZIP	Zone Improvement Plan

CHAPTER 1. INTRODUCTION

This *Turner-Fairbank Highway Research Center (TFHRC) R&D Communication Reference Guide* (CRG) is for FHWA staff members and contractors who develop, write, edit, and produce RD&T reports, fact sheets, technical flyers (e.g., TechBriefs and Application Notes), brochures, booklets, Web pages, articles, other publications, events, and marketing outreach. HRTM recommends that you read this guide before beginning to write and format a publication.

The CRG provides you with tools, techniques, and timelines to effectively plan, schedule, and produce your print or electronic publications, marketing and outreach materials, and events. The CRG contains publication formatting requirements, editorial style preferences, printing-publishing policies and procedures, and examples. The CRG is available online on the Federal Highway Administration (FHWA) research website.⁽¹⁾

The CRG provides editorial and formatting guidance from the most recent versions of the *U.S. Government Printing Office (GPO) Style Manual (GPO Style Manual)*, *Merriam-Webster's Collegiate Dictionary*, and *The Chicago Manual of Style* by the University of Chicago Press and it also contains details that are specific to research, development, and technology (RD&T) products.⁽²⁻⁴⁾ Writers must use the CRG for writing their documents; however, the choice to use a style outside of the *GPO Style Manual* is at the discretion of the writer. The chosen style must be consistent throughout the document. Therefore, if you choose to follow *The Chicago Manual of Style*, for consistency, you should not switch to using GPO style.

A complimentary piece to the CRG is the Research Publication Development Web page at <http://www.fhwa.dot.gov/research/publishing/>. The Web page, designed to assist researchers, contracting office representatives, and contractors with developing, writing, and submitting FHWA research publications, is located at www.fhwa.dot.gov/research/publishing.^(5,6)

CHAPTER 2. HRTM SERVICE AND SUBMISSION PROCESS

This chapter offers an overview of the services provided by HRTM's Innovation Management and Communication Team. The applicable laws, rules, and FHWA policies are in accordance with 44 U.S. Code § 501.⁽⁵⁾

HRTM SERVICES

HRTM guides, oversees, manages, and produces a variety of communication materials to disseminate RD&T information to a wide range of audiences composed of transportation industry professionals, legislators, scientists, association members, educators, corporate customers, and the public. This effort is supported with the assistance of contract editors, writers, photographers, Web programmers, and others. When developing your communication material, the following are a few important points to keep in mind.

Identify Your Audience

When writing, consider your audience and take time to think about who will read what you're writing.

Define Your Message

A message is a communication or statement conveyed from one person or group to another. Determine what you want the reader to learn from your publication. Be sure to provide important details that support the central message within the publication.

Communication products must provide information clearly, concisely, and consistently in design, style, grammar, spelling, composition, and format. This is important because many readers equate the quality of our research, the reliability of our innovations, and the competence of our research staff with the quality of FHWA's communication products. Publications provide a permanent record of developments in technology, implementation, and research. Our communication products represent FHWA. To present the most professional image of the agency, FHWA products must be technically accurate and appropriately comprehensive.

Consider Effective Ways to Reach Your Audience

After identifying your audience(s) and defining your message(s), you must then determine the most effective way of reaching your audience. Consider the following questions:

- What does your audience consider the most effective approach for communicating information about a specific type of knowledge, product, or service?
- What is the most appropriate means for transmitting the message(s)? A printed report may be best for one audience, an article for another audience, or a Microsoft® PowerPoint presentation for yet another group.
- What resources are available for developing and distributing the product?

- What do you intend the audience to do with this communication product?

SNAPSHOT OF PUBLICATION WORK SCHEDULE

There are many steps to the publication process. However, to give you a sense of the steps and associated development timelines, the snapshot of the publication work schedule is provided for your consideration.

Steps	Work/Review Iterations	Deliverables	Length	Responsible
1	Concept Review	Form 1113, HRTM Service Request form	15 working days	FHWA researcher, HRTM liaison, Office of Public Affairs (HPA)
2	Initial Edit	Edited report, editorial comments, 508 captions, permissions for figures	10 working days	Editor
3	FHWA Researcher Review	FHWA researcher responses	10 working days	FHWA researcher
4	Final Editing and Final Layout Version	Draft deliverable in final form/layout	10 working days	Editor
5	Review the Draft Final Delivery	FHWA researcher responses	30 calendar days	FHWA researcher
6	Address FHWA Researcher Comments	Final Adobe® Acrobat portable document format (PDF) file	5 working days	Editor
7	Final Review and Approval	Acceptance or nonacceptance	10 working days	FHWA researcher
8	FHWA Final Review and Approval	Acceptance or nonacceptance.	20 working days	HPA
9	Final Package Preparation and Delivery	Final deliverable of publication files	5 working days	Editor
10	Printing	Final publication is printed.	14 to 42 working days	HRTM-20
11	Distribution	Final publication is distributed.	7 to 14 working days	HRTM-20
12	Web Files	Final publication is uploaded to the web.	5 working days for PDF. 7-14 days for HTML.	HRTM-20

The formal process to develop and publish a document includes submitting a few forms to HRTM for processing. HPA must complete an initial review of the information you will be conveying before the publishing process begins. See chapter 8 and appendixes S and T for more information. Details regarding each form are as follows, and the forms are available on the FHWA internal research Microsoft® SharePoint site:⁽⁷⁾

- **FHWA Form 1113, “Clearance Request for Public Materials Video, Print, Web, Social Media, or Multimedia”:** This is required if you are requesting approval to develop external communications material including, but not limited to video, print, web,

and social media products. Submit this form to HRTM. Because of HRTM's liaison status between researchers and HPA, the form will be submitted to HPA by HRTM.

- **HRTM Service Request Form (i.e., Intake Form):** In addition to the submission of the form listed above, a Microsoft® Word document containing the report in layout format, a Microsoft® Word document containing alternative text for all nontext elements in the report, separate graphics, and signed copyright permissions or licensing transfers also must be submitted. It is important to ensure that the copy of the document that is submitted to HRTM for development is in its final format. Therefore, confirm support and approval of the final document from your office director prior to submitting the publication job request. HRTM staff must receive a hard copy of the Service Request Form that is signed by an office or technical director or other delegate. Office directors also may submit the HRTM Service Request Form by email. The office directors' endorsements or approvals indicates the following:
 - They are aware of the publication's content.
 - They endorse its publication and are willing to commit office funds to publish it, if appropriate.
 - They assure that it has had the proper review by all stakeholders (i.e., headquarters and field offices) and support the plan pertaining to the publication media, intended audience, use of the document, and distribution.
 - They confirm that it is fully compatible with U.S. Department of Transportation (USDOT) and FHWA policies and positions and that all potential sensitivities have been appropriately addressed.
- **FHWA Form 1528, "Authorization to Proceed to Printing/Reprinting/Web Posting/Multimedia/Video Production":** As the last step prior to publishing any external communications products after the editorial, design layout, and quality assurance processes are complete, HRTM must submit an FHWA Form 1528, "Authorization to Proceed to Printing/Reprinting/Web Posting/Multimedia/Video Production" to HPA for approval. The communication products include, but are not limited to:
 - Documents.
 - New, extensively updated, or redesigned web content or websites.
 - Videos.
 - Social media posts.
 - Displays.
 - Posters.
 - Presentations.

- Articles.
- Brochures.
- Reports.

EDITORIAL REVIEW PROCESS

Once the report is written, it will be formally edited by FHWA’s editors. The complete time to develop a publication is about 3 to 4 months when the defined timelines are not changed. Layout and design needs may require additional steps, depending on approvals, which may add time and expense to jobs. For this reason, researchers are encouraged to discuss their concerns about the publication job and possible layout and design issues prior to approving the job and cost estimate after submission. The following estimated times should be used as a broad guideline for final HRTM communication product editorial process, quality assurance, and delivery:

1. **HPA Initial Review (1 to 3 weeks):** The researcher will provide the FHWA Form 1113 to HRTM for submittal to HPA, which will lead to the following:

- HRTM will inform the researcher of the results of the initial HPA review.

The researcher will submit a completed Service Request Form (i.e., Intake Form) to HRTM indicating all of the submission requirements (e.g., permissions and copyrights) have been met to obtain a cost estimate for preparing the publication. This submission will lead to the following:

- Upon receipt of information from the contractor, HRTM will provide the researcher with two cost estimates: (1) estimated cost if the document has been developed in accordance to the CRG, and (2) estimated cost if any requirements to develop the document have not been fulfilled (e.g., lack of 508 captions and permissions).
 - Upon approval of the cost estimate by the researcher, HRTM will notify the contract editor to proceed with working on the document. Note: At this stage, the timeline for which the contractor is held liable to maintain the delivery schedule begins. Any deviations from the timeline may delay the final deliverable date.
2. **Initial Edit (10 working days):** The Microsoft® Word file containing the publication is edited and formatted in compliance with CRG and the *GPO Style Manual*.⁽²⁾
 3. **FHWA Researcher Review (10 working days):** The author reviews the editor’s changes and responds to outstanding questions and action items.
 4. **Final Editing and Final Layout Version (10 working days):** The editor incorporates the researcher’s responses and changes into the file, and the designer creates an Adobe® Acrobat PDF of the publication layout.

5. **FHWA Researcher Reviews the Draft Final Delivery (30 calendar days):** The author reviews the editor's changes and responds to outstanding questions and action items.
6. **Editor Addresses FHWA Researcher Comments (5 working days):** The editor incorporates the author's responses and changes into the file and creates the final PDF for approval.
7. **FHWA Researcher Final Review and Approval (10 working days):** The author reviews the final PDF and either sends further changes to the editor or approves the publication for publishing.
8. **HPA Final Review (20 working days):** Upon receipt of the author's final approval, HRTM sends the final document and the FHWA Form 1528 for review to HPA. Completion date of review is subject to change due to conflicting demands within HPA.
9. **Final Package Preparation and Delivery (5 working days):** The editor assembles the publication files and sends them to FHWA after any changes indicated by HPA are made.
10. **Printing (14 to 42 days depending on job).**
11. **Distribution (7 to 14 days).**
12. **Web files (5 working days for PDF, and 14–28 days for the HyperText Markup Language (HTML) version of the publication.**

All communication products are edited electronically (i.e., using Track Changes in Microsoft® Word) for consistency and adherence to acceptable style, punctuation, and grammar. Edits normally will include checking sections for basic errors, grammar, and adherence to the selected writing style. The process also includes analyzing formatting, providing suggested changes to text for readability, and checking for organizational problems within the document (e.g., removing or indicating repetitive information; ensuring parallelism in bulleted and numbered lists, headings, and text).

Responsibility for Corrections

The editor will provide a summary edit sheet that describes the edits in the document. The researcher is responsible for reviewing all editorial changes and answering queries as requested by the editor within the expressed timeline. In the case of reports, the researcher who submitted the report or the office's contractor is responsible for reviewing all electronic edits and incorporating all changes into the document.

This review time should be built into a research contract.

Expediting the Editing Process

The speed of the publication process relies on how quickly researchers, contract office representatives, and their contractors make the corrections indicated by the editor and return the

communication product to HRTM. Planning a project from the start with Section 508 in mind will save money and time in the long run.

The researcher can save time and money by doing the following:

- Submitting a 508 compliance alternative text for nontext elements (captions) file when submitting the first draft of a communication product, report, brochure, technical flyer, etc. Both the draft and the 508 captions can go through the editorial process at the same time.
- Ensuring that authors and contractors working on publications are familiar with the Section 508 guidance and the specific rules and standards that apply to each publication or other communication product.
- Communicating the “simple table” concept to authors and contractors. A simple table contains only one row of horizontal and one row of vertical headers. Complex tables with more than a single row of headers can add a tremendous amount of time when converting a document into HTML and making it 508 compliant.
- Submitting final text that does not require major rewrites or changes.
- Providing quality, high-resolution (300 dots per inch [dpi] or greater) photography or artwork if necessary and providing original drawings or illustrations at the beginning of the cycle.
- Ensuring that all legal written permissions or licensing for any content or graphics that are not owned by FHWA are included with the submission.

See chapter 4, Section 508, and Publication Content for more information.

Printing the Publication

Upon completion of the publication job, it can be printed and posted on the FHWA website.⁽¹⁾

GPO is the Federal Government’s official, digital, secure resource for producing, procuring, cataloging, indexing, authenticating, disseminating, and preserving the official information products of the U.S. Government. Every publication of the executive department, independent office, and establishment of the Government, including FHWA, shall be printed at GPO.⁽⁵⁾

Errata Process (i.e., Errors in Printing or Online)

Errata are short and minor revisions to a printed or published document to correct mistakes such as factual, spelling, or typographic corrections. After a research document is printed or published (i.e., defined as released to the public) on a website and typographical or technical errors are found, an errata notification is to be created to notify readers of the need for corrections in the document. Errata are posted on the FHWA website and sent to a print distribution. The errata contain information that informs readers of the changes needed and are posted to the FHWA research website.

HRTM will ask the researcher or author to provide a completed errata template, including information such as the name of the report, report number, page numbers where errors appear, the errors, and the corrections. Those changes should be incorporated in the electronic document. See appendix Q for the Errata Form Template.

CHAPTER 3. POLICIES AFFECTING ALL RD&T PUBLICATIONS

This chapter details the applicable laws, rules, and FHWA policies affecting all RD&T publications.

Any RD&T publication, website, or other communication product—including published, printed, reprinted, electronic, Internet material, and compact discs (CDs) sponsored or funded by FHWA RD&T offices—must be published or posted on the Web through HRTM. This policy ensures compliance with various publishing guidelines and Federal regulations, consistency across products, and high standards for both academic and general communications. The HRTM office sets guidelines for publishing RD&T communication products and has coordinated with other offices involved in the process, including RD&T staff managers, HPA, and FHWA legal offices.

HPA must provide initial and final clearance approvals for all publications, even if the publication will be published only electronically or on the Internet. This policy applies to all electronic publications.

Recognizing the important role that information plays in Federal and non-Federal decisionmaking, Congress passed the *Data Quality Act* as part of the *Treasury and General Government Appropriations Act for Fiscal Year 2001*.⁽⁸⁾ In brief, the *Data Quality Act* (also known as the *Information Quality Law*) requires all Federal agencies to strive toward issuing the highest quality information that is accurate, timely, and responsive to the needs of the public.⁽⁸⁾ The act also requires agencies to provide a means for the public to challenge information that appears to be inaccurate or that does not comply with the Office of Management and Budget (OMB) *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*.⁽⁹⁾

In addition to the *Freedom of Information Act*, the *Paperwork Reduction Act*, the *Paperwork Elimination Act*, the *Data Quality Act*, and the presidential memorandum of June 1, 1998, about using plain language, products must comply with current policy requirements of Section 508 of the *Rehabilitation Act* for electronic information and technology dissemination. (See references 10–12, 8, 13, and 14.)

The *Plain Language Act of 2010* requires the Federal Government to write all new publications, forms, and publicly distributed documents in a “clear, concise, well-organized” manner.^(15,16) Any and all publications, forms, and publicly distributed documents or websites procured through this effort also must meet the applicable provisions of the *Plain Writing Act of 2010* (Public Law 111–274).⁽¹⁷⁾ Guidance for complying with the act can be found in the Federal Plain Language Guidelines at <http://www.plainlanguage.gov>.⁽¹⁸⁾ All deliverables for posting on the World Wide Web must also comply with the appropriate provisions of the Act. Noncomplying deliverables will be returned to the contractor to be brought into conformance at the contractor’s expense. See the USDOT’s Plain Language Checklist for more information.⁽¹⁶⁾

Under Federal law, all printing and duplicating must be performed through GPO.⁽⁵⁾ No more than 10 copies may be generated outside a GPO contract. In addition, a document published by USDOT should be prepared in accordance with the instructions and guidelines provided in the

latest versions of the *GPO Style Manual*, USDOT and FHWA orders, and the accessibility requirements in Section 508 of the 1998 amendments to the *Rehabilitation Act of 1973*.^(2,13,19)

DEFINITION OF PUBLISHING

The *Copyright Act* defines publishing in the following manner:⁽²⁰⁾

To perform or display a work “publicly” means—

(1) to perform or display it at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered; or

(2) to transmit or otherwise communicate a performance or display of the work to a place specified by clause (1) or to the public, by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times.

ELECTRONIC PUBLISHING OF COMMUNICATION PRODUCTS

Each time a publication is prepared for printing, an electronic version must also be prepared for online use on an FHWA website.⁽¹²⁾ All electronic and Internet publications must be compliant with Section 508 of the *Rehabilitation Act*.⁽¹⁴⁾ Electronic documents must be placed at an approved website URL or a Web address (such as www.fhwa.dot.gov/research).⁽¹⁾

SECTION 508 OF THE *REHABILITATION ACT*

In 1998, Congress amended the 1973 *Rehabilitation Act* to require Federal agencies to make their electronic and information technology (EIT) accessible to people with disabilities.^(14,19) The law applies to all Federal agencies when they develop, procure, maintain, or use EIT.⁽¹⁴⁾ Under Section 508, agencies must provide employees with disabilities and members of the public access to information that is comparable to access available to others.^(14,19)

Section 508 of the *Rehabilitation Act* states that all electronic products produced by Government agencies must be accessible to persons with disabilities, including those persons with vision, hearing, cognitive, and mobility impairments.⁽¹⁴⁾ The *Paperwork Elimination Act* and FHWA require that printed publications must be available in electronic format; final printed documents must provide minimum Section 508 compliance requirements.^(12,14) In addition, FHWA requires that all documents will be made Section 508 compliant when they are posted to a website.^(14,19,21)

Section 508 affects the following RD&T products:⁽¹⁴⁾

- **Electronic documents, reports, brochures, etc., that are the main final products of FHWA research and development (R&D):** For more information regarding the Section 508 standards for web-based intranet and internet information and applications, see *Web-based Intranet and Internet Information and Applications*.^(14,19,22)

- **Universal Serial Bus (USB) drives, compact discs (CDs), digital versatile disks (DVDs), and other storage mechanisms; and any electronic files, databases, report databases, and applications housed on them or used to install them, such as an install shield program:** For more information regarding the Section 508 standards for software applications and operating systems, see *Software Applications and Operating Systems* and *Web-based Intranet and Internet Information and Applications*.^(14,23)
- **Microsoft® PowerPoint presentations if they are distributed through a storage mechanism such as USB drives, CD, DVDs, Web, etc., and if they contain graphic elements that need a text-based alternative (such as HTML or American Standard Code for Information Interchange (ASCII) text file):** For example, a Microsoft® PowerPoint presentation distributed on a USB drive or website must have an accessible text version for any nontext element provided on the USB drive or website.⁽²⁴⁾
- **Videos and audio files:** For Section 508 standards related to video and multimedia products, see *Video and Multimedia Products*, *Software Applications and Operating Standards*, and *Web-based Intranet and Internet Information and Applications*. (See references 14, 24, 23, and 22.) When a Web page requires a plug-in, see *Guide to the Section 508 Standards*.⁽²⁵⁾
- **Web files, including database applications/research databases, search engines, and interactive tools:** For related Section 508 standards, see *Software Applications and Operating Systems* and *Web-based Intranet and Internet Information and Applications*.^(14,23,22)
- **Stand-alone (or unmanned) kiosks such as a computer or television screen showing a presentation or video at a conference or trade show:** For more information regarding Section 508 standards that are related to self-contained, closed products and unmanned kiosks, see *Video and Multimedia Products* and *Self Contained, Closed Products*.^(13,24,26)

ENSURING CONTRACTOR PUBLICATION COMPLIANCE

Section 508 is not only the law, but it is also mandated by FHWA Order 1370.13.⁽²⁷⁾ For this reason, the research contract office representative must communicate the importance of preparing documents in accordance with Section 508 of the *Rehabilitation Act* to the research contractor.^(14,19) To do so, information relevant to Section 508 law must be attached to all statements of work and contracts for preparing publications, websites, multimedia presentations, and other electronic communication products. While Section 508 currently does not apply to one-time purchases of \$3,000 or less, contract office representatives are to comply with the applicable accessibility standards.⁽¹⁴⁾ Please note that if your intent is to print or publish (e.g., make the document available to the public) the final product, it must meet the 508 accessibility requirements for electronic posting regardless of the dollar value of the purchased product.^(20,12,14)

Please remember that HPA must review and approve all publication or Web content prior to publishing the information on any website.

CHAPTER 4. GUIDELINES AND STYLES FOR ALL PUBLICATIONS

This chapter outlines the guidelines and recommended styles for all RD&T publications. The applicable laws, rules and FHWA polices are as follows (see appendixes A through U for examples of forms, and other publication components):

- Section 508 of the *Rehabilitation Act*.⁽¹⁴⁾
- *Minimum Requirements for FHWA Web Pages*.⁽²¹⁾
- 44 U.S. Code § 501, *Title 44—Public Printing and Documents*.⁽⁵⁾
- *Plain Writing Act of 2010*.⁽¹⁷⁾
- *Copyright Law of the United States of America and Related Laws Contained in Title 17 of the United States Code*.⁽²⁰⁾
- *Government Paperwork Elimination Act and Implementation of the Government Paperwork Elimination Act*.^(28,29)
- *Government Paperwork Reduction Act*.^(30,31)
- *GPO Style Manual*.⁽²⁾

TWO-COLOR VERSUS FOUR-COLOR PRINT

The use of multiple colors increases both the cost and the production time for a publication. Therefore, additional color should be used only when necessary to ensure that the publication achieves its communication goal. If the goal is to simply disseminate information, consider using a single color of ink (i.e., black) to convey the information.

Four-color printing should be used only when the supporting visual elements (e.g., photographs or graphs) require full color to accurately convey the message or when there are other special considerations. The use of four-color printing requires the approval of the applicable office director because the cost will likely be increased significantly.

FHWA uses the CMYK (Cyan-Magenta-Yellow-Black) color model for processing print jobs through GPO. Please furnish all image and Adobe® Acrobat™ PDF files in CMYK. If necessary, convert RGB (Red-Green-Blue), hexadecimal, or Pantone colors into CMYK.

PHOTOS OF NONPUBLIC FIGURES

Photos of individuals must not be taken and published without their permission via a signed Model Release Form (appendixes M and N), which provides permission for FHWA to publish a person's likeness (or image). It is especially important to receive permission to publish the image

of a child. If a researcher, contract office representative, or contractor does not receive permission, then do not use the photo.

ELECTRONIC ACCESSIBILITY

The *Government Paperwork Elimination Act* requires Federal agencies to allow individuals or entities that deal with the agencies the option to submit information or transact with the agency electronically (when practicable) and to maintain records electronically (when practicable). Therefore, all publications must be in electronic format.^(28,29)

SECTION 508 AND PUBLICATION CONTENT

All RD&T publications must be prepared in an accessible electronic format for online use on an approved FHWA website such as www.fhwa.dot.gov/research.⁽¹⁾ When choosing to print the document, an electronic version of the same document must be prepared and meet the accessibility requirements of Section 508 of the *Rehabilitation Act*.^(28,14)

Two Roles: Writer/Content Producer and Website Technical Coder/Programmer

There are two distinct components necessary to publish an electronic publication on a website: the written and visual portion (i.e., content) and the HTML programming portion. Both are needed for compliance with Section 508; however, each has a different role.⁽¹⁴⁾ Therefore, two reviews will take place before posting a Web page on the Internet—an editorial review by HRTM and HPA and a technical review by the Office of the Chief Information Officer (OCIO).

Writer/Content Producer

Writing content, gathering information, creating visuals, and collecting photos for a publication or website is normally the function of a program specialist or writer. The person who performs this function is usually referred to as a content producer-writer or publication writer. A content producer-writer is normally responsible for fulfilling the information content portion of Section 508.⁽¹⁴⁾ R&D information and publications that are written and posted on a website must be edited by HRTM. Because the information falls under the jurisdiction of “public information,” HPA also must review it.

Whether you are writing a report or publication or writing text specifically for a Web page, you must use the following Section 508 guidelines when creating material that will be posted on a website.⁽¹⁴⁾

- Write the content in plain language.⁽¹⁷⁾
- Write 508 captions or text for nontext elements in plain language and be specific.^(22,32,33)
- Select colors and include graphics, charts, photos, etc., that have high contrast.^(22,33)
- Design Web pages so that all information conveyed with color is also available without color.^(22,33) The following are possible examples:

- Label each line in a graph or make each line a distinct pattern such as dashes, exes, dots, thin lines, or thick lines.
- Label or number each bar in a bar graph.
- Do not refer to color alone as a differentiator within a graphic or text, such as “the red line,” “the blue text,” “the green button.” Instead of saying, “The red sign on this page...,” use, “The red stop sign shown in figure 1...” (22,33)
- Create simple tables whenever possible containing one vertical header column and one horizontal header row, rather than nested tables with multiple subheadings. (22,33)
- Ensure that a text equivalent, such as a transcript, is provided for audio files that will be included with an electronic publication or highlighted on a Web page. Audio is considered a nontext element because you cannot see it. (24,33)
- Similarly, a (silent) Web slide show presentation does not need to have an audio description accompanying it but does require text alternatives to be associated with the graphics. See the section in this document entitled 508 Alternative Text for Nontext Elements (Captions) Requirements. (22,33)
- When deciding what text and the order of text to include on an electronic or Web form, place labels adjacent to data input fields, not in separate cells of a table. Label each data field. Whenever possible, write any detailed instructions for completing a specific field before that field instead of the following: (22)

Name: (Use only upper case letters)

Label your form in the following manner:

Name (Use only upper case letters):

Website Technical Coder/Programmer

The programming portion of posting a publication on the Web consists of HTML coding (or other types of Web and database programming such as Java™, JavaScript™, Visual Basic®, etc.). It is normally a technical function carried out by a technical programmer under the auspices of an information technology office. A Web programmer must program a website using specific standards and programming language rules in accordance with FHWA requirements and Section 508. (21,14,22) The programming portion of a publication or website also will undergo a review by a technical group (OCIO) for adherence to Section 508 and FHWA’s *Minimum Requirements for FHWA Web Pages*. (14,21)

Researchers, contractors, and technical programmers who will work on a website or provide HTML files or a website as a final deliverable should see chapter 7 for more specific guidelines on electronic publishing on an FHWA website.

HTML Files

If your contract calls for HTML file delivery in addition to a Microsoft® Word file, the researcher should coordinate with HRTM for additional guidance. This is important because before the document is coded in HTML and deployed, any new RD&T Web publication or website must be edited in Microsoft® Word format by the HRTM editors and reviewed by HPA. For this reason, research contract office representatives should ensure that their contract deliverable schedules include sufficient time for editing and the editorial process by HRTM, alternative text for nontext elements (508 captions) requirements, and an HPA review.⁽¹⁴⁾

An electronic 508 captions file in addition to the final publication file is required when submitting a report or publication for print or electronic posting. The Intake Form will not be accepted without the complete 508 captions file.

The separate 508 captions file must contain a listing of all the descriptions of nontext elements within a publication—including but not limited to every photo, chart, graph, pie chart, flowchart, diagram, and equation.

How to Write 508 Captions for Nontext Elements

To write a 508 caption, writers may find it easiest to use the technique of covering a figure with one hand. Describe both the content of the nontext element and what the relevance of the nontext element is within a document. Use the results of that technique to write the text equivalent.

The Access Board (the governing body responsible for enforcing accessibility standards) defines text equivalent as follows:⁽²²⁾

“A text equivalent means adding words to represent the purpose of a nontext element. This provision requires that when an image indicates a navigational action such as “move to the next screen” or “go back to the top of the page,” the image must be accompanied by actual text that states the purpose of the image. This provision also requires that when an image is used to represent page content, the image must have a text description accompanying it that explains the meaning of the image.”

“How Much Information Actually Needs to Be in the Text Equivalent?”

Whenever possible, the text information associated with a nontext element should communicate the same information as its associated element. For example, when an image indicates an action, the action must be described in the text. The types of nontext elements requiring actual text descriptions are limited to those elements that provide information required for comprehension of content.”⁽²²⁾

Format for 508 Captions for Nontext Elements

For every figure, graph, photo, formula, equation, chart, etc., shown in a publication or Web document, use the following FHWA format for the 508 caption:

Figure 1. Graph. Name of graph. [Insert 508 caption for graph.]

Figure 2. Photo. Name of photo. [Insert 508 caption for photo.]

Figure 3. Formula. Name of formula. [Insert 508 caption for formula.]

Figure 4. Chart. Name of chart. [Insert 508 caption for chart.]

Figure 5. Equation. Name of equation. [Insert 508 caption for equation.]

Examples of 508 Captions for Nontext Elements

The following are examples of 508 captions that were used in actual FHWA reports:

- **Figure 2. Graph. Strength and ductility increase with confining pressure in these triaxial compression simulations.** The vertical axis of this graph depicts Stress (megapascals) and ranges from negative 42 to negative 1. The horizontal axis represents Displacement (centimeters) and ranges from 0 to 0.026. The graph shows three lines starting at negative 1 on the vertical axis and 0 on the horizontal axis. The red or solid line (representing 0 megapascals confinement) falls to negative 28 on the vertical axis and 0.0045 on the horizontal axis and then climbs through negative 11 on the vertical axis and 0.0145 on the horizontal axis and ends at negative 1.5 on the vertical axis and 0.0245 on the horizontal axis. The blue or long-dashed line (representing 1.4 megapascals confinement) falls along the same trajectory, then at negative 35 on the vertical axis and 0.005 on the horizontal axis starts curving through negative 26 on the vertical axis and 0.012 on the horizontal axis, peaking and leaving the graph at negative 14 on the vertical axis. The green or short-dashed line (representing 2.8 megapascals confinement) falls along the same trajectory, stopping at negative 40 on the vertical axis and 0.006 on the horizontal axis and curving through negative 31 on the vertical axis and 0.012 on the horizontal axis and peaking at negative 20 on the vertical axis, where it leaves the graph.⁽³⁴⁾
- **Figure 2. Pie Chart. Percent of respondents by truck volume corridor categories.** Pie chart depicts the following distribution of respondents: 23 percent from corridors with fewer than 5,000 trucks per day, 24 percent from corridors with 5,001 to 10,000 trucks per day, 15 percent from corridors with 10,001 to 15,000 trucks per day, and 38 percent from corridors with 15,001 to 20,000 trucks per day.
- **Figure 16. Illustration. A diagonal band of damage is calculated with frictional end constraints if one end cap is allowed to rotate or slide relative to the other (bottom cap constrained from rotating and sliding).** This figure shows the damage simulated in one concrete cylinder at three different times, and two views. The damage is quite similar to that previously discussed in Figure 14. In the first three views, the cylinder is sliced in half vertically to reveal the cylinder midplane. By 400 milliseconds, a weak diagonal band of damage has formed, and spreads from the top right side, about three-fourths of the way down to the left side. By 1 second, the damage band has grown stronger and wider. By 3 seconds, the diagonal spreads across seven elements. The midplane cylinder mesh is 16 elements high and 8 elements wide. A view of the outside of the cylinder at 3 seconds reveals that two elements have eroded.⁽³⁴⁾
- **Equation 1. Equation. Minimum Retroreflectivity Level at the Standard Geometry.** This equation gives the minimum required retroreflectivity level at an observation angle

of 0.2 degrees and an entrance angle of negative 4 degrees, or minimum R subscript A. To calculate the minimum R subscript A, the average retroreflectivity of new sheeting at the standard geometries (New R subscript A, SG) is multiplied by the quotient of the retroreflectivity required to produce the demand luminance (Demand R subscript A, NSG) divided by the retroreflectivity of the new sheeting at a nonstandard geometry (Supply R subscript A, NSG).⁽³⁵⁾

For additional examples, see *Evaluation of LSDYNA Concrete Material Model 150, Minimum Retroreflectivity Levels for Overhead Guide Signs and Street-Name Signs, Safety Evaluation of Improved Curved Delineation, Development of a Multiaxial Viscoelastoplastic Continuum Damage Model for Asphalt Mixtures, and Effects of Yellow Rectangular Rapid-Flashing Beacons on Yielding at Multilane Uncontrolled Crosswalk*. (See references 34 through 38.)

GRAPHICS

Including graphics in your document can help communicate your message. When doing so, please ensure that the graphic is as clear as possible for effectiveness. For this reason, the researcher should not submit second-generation or previously printed materials as graphics. In addition, please refrain from using tape; correction fluid; photocopies; or fuzzy, dark, or faded artwork, because this will make the graphics more difficult to read in the final publication.

Please submit high-resolution files at 300 dpi at actual size (i.e., the picture should be 300 dpi at the size that you would like the picture to appear in the report) or greater for printing purposes when submitting electronic files, especially for layout. The rule regarding graphics is that the larger the dpi number, the clearer and crisper an image will appear in a printed document. Making a graphic larger in size will not increase the resolution; in fact, it does the exact opposite. This is why large, high-resolution pictures have the best quality for printing.

COPYRIGHT

According to *Copyright Basics* from the United States Copyright Office, copyright is a form of protection provided by the laws of the United States to the authors of “original works of authorship” including literary, dramatic, musical, artistic, and certain other intellectual works. (See references 39 through 43.) Original works, when applied to FHWA publications, normally include photos, graphics, illustrations, tables, charts, sentences/paragraphs of information (i.e., excerpts), and possibly formulas depending on the application.

Copyright and Works of Federal Employees

Works created by the Federal Government are not copyrightable.⁽⁴¹⁾ This restriction on copyright applies to publications produced by the U.S. Government and its employees within the scope of their employment.

For more information about Federal Government employees’ ownership of content, see Title 17 Section §105, *Subject Matter of Copyright: United States Government Works*.⁽⁴¹⁾

Copyright Owned by External Source

Figures and texts that are not in the public domain must have clear license transfer such as in a stock photo purchase license, royalties paid to an owner, or written permission from the owner(s) to use the figure or text.

Prior to submitting the document for publication, the researcher, contract office representative (COR), or contractor must receive written permission for FHWA use and confirm with a copyright owner what type of credit should appear next to the copyrighted figure or text. Generally, most FHWA contracts do not allow contractors to include copyrighted material in a report without prior approval by FHWA.

See the Copyright Q&A in the appendix O for more information. For more information about copyright laws, see Title 17 of the U.S. Code.⁽³⁹⁾

Required Copyright Format in Publications

Whenever a copyright is published in the United States or elsewhere by authority of the copyright owner, a notice of copyright may be placed on publicly distributed copies as indicated under 17 U.S. Code §401.^(39,40)

Within FHWA publications, the following notice must appear on the distributed copies of any communication documents containing copyrighted material: the symbol © (the letter C in a circle), the word “Copyright” or the abbreviation “Copr.,” the year of the first publication of the work, and the copyright owner. For more information, please see 17 U.S. Code §401.⁽⁴⁰⁾

Federal CORs should review the data rights clauses in the back of their contracts regarding the contract deliverables to determine ownership of the photos and other copyrightable works that are the work of a contractor under that contract. Never assume that the Government or FHWA owns a photo or drawing, because the data clause determines the owner, not whether a contractor takes a photo while performing work on that contract. Seek assistance from the legal office or contract officer if needed because they have the ability to look up the data clauses and interpret the ownership of deliverables from that contract.

Public Domain Works

If a graphic is in the public domain, then you would not put anything except the figure number and caption, as illustrated in figure 1. The FHWA legal office recommends, however, that authors use a “Source: FHWA” credit line.

Note that the copyright symbol is missing from the photo. This is correct for public domain graphics. FHWA recommends authors use a "Source: FHWA" credit line.



Source: FHWA

Figure 1. Photo. Example of copyright treatment for copyright owned by FHWA (public domain).

Copyright Owned by an Outside Organization but Never Published

If a contractor or other company owns the graphic and the graphic was never published, then you would add a copyright attribution under the graphic and place the figure number and figure caption as illustrated in figure 2. Notice that under figure 2, the three elements needed for a copyright attribution are the copyright symbol, the year, and the copyright owner's name.

Note that the copyright is placed below the photo. This is correct. Make sure to use the copyright symbol and year if you know it.



© 2016 VTTI.

Figure 2. Photo. Example of copyright treatment of a photo with copyright owned by an outside organization but never published.

Copyright Owned by Outside Source and Was Published

If a copyright owner is not FHWA, and the owner previously published the photo or graphic, you would reference it by placing a copyright symbol and a reference next to the figure number and caption as illustrated in figure 3.

Note that the copyright is placed on the bottom below the photo. This is correct. In addition, note the placement of the reference number at the end of the figure caption.



© 2011 VTTI.

Figure 3. Photo. Example of copyright treatment of a photo with copyright owned by an outside organization and was published.⁽¹⁾

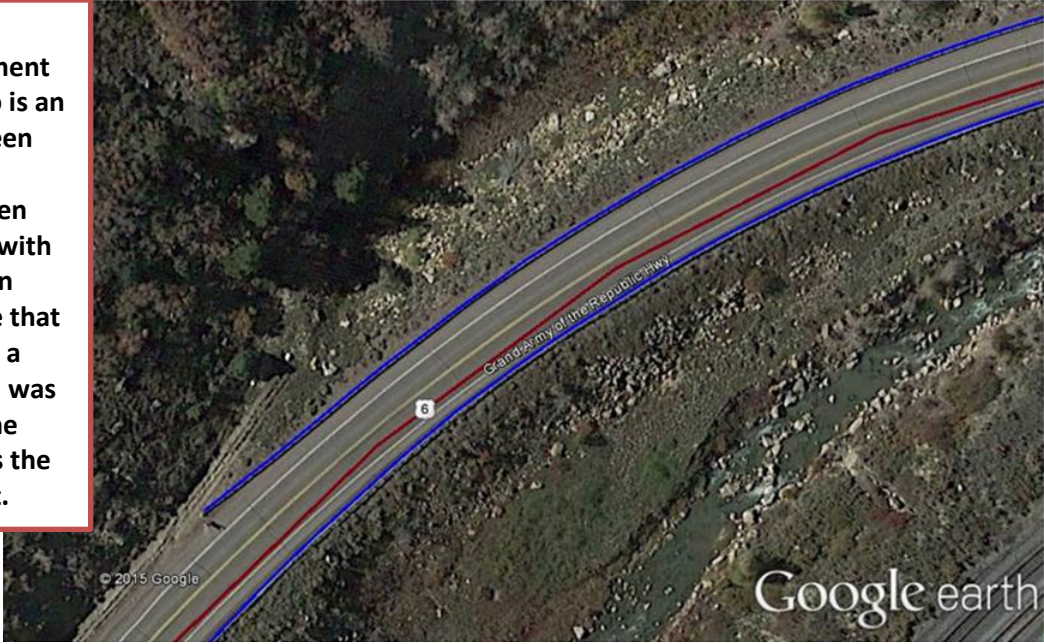
The reference citation that corresponds with the reference number would be shown in the reference section at the back of your report and correspond to the method of publication such as report, presentation, Web page, etc. as follows:

1. Doe, J. (2011). "Ultra-High Performance Meetings," *TechNote*, Publication No., VTTI, Austin, TX.

Copyright Owned by Outside Organization, Previously Published, and Modified by Authors

If the copyright owner is not FHWA, the owner previously published the photo or graphic, and the photo or graphic or map was altered from the original copyrighted material, please contact the copyright owner to ensure that they are aware of the changes when seeking written permission for use. Indicate the changes to the graphic, if alterations were made. When doing so, please be sure to place the copyright owner's name next to the graphic, a reference if applicable, and instructions to see the acknowledgements section of report, as illustrated in figure 4.

Note the acknowledgement that the photo is an original has been added to the copyright. When using a photo with copyright by an outside source that is published in a document and was modified by the authors, this is the correct format.



Original Photo: © 2015 Google® (see Acknowledgements section).

Figure 4. Photo. Example of a photo with the copyright owned by an outside source, published in a document, and modified by the authors.⁽⁴⁴⁾

Modifications to Copyrighted Material Notice in Acknowledgements Section

In the acknowledgements section of the publication, add a description of the changes made and whether those changes are part of the study or the other circumstances. When developing your acknowledgements, an example to consider is as follows:

Acknowledgements

The original map is the copyright property of Google® Earth™ and can be accessed from <https://www.google.com/earth>.⁽⁴⁴⁾ The map overlays showing the incorrect longitudinal placement of centerlines were developed as a result of this research project. The overlays include red and blue lines showing the incorrect placement of centerlines.

EDITORIAL STYLES FOR ALL PUBLICATIONS

FHWA prefers that publications follow the style guidelines in the following order: CRG and the most recent versions of the *GPO Style Manual*, *Merriam-Webster's Collegiate Dictionary*, and *The Chicago Manual of Style* by the University of Chicago Press.⁽²⁻⁴⁾ Therefore, when looking up a particular style, the above order helps prioritize conflicting styles or when a specific style element is not included in one or more style manuals. As previously stated, you may deviate from using the aforementioned preferred styles. However, the ultimate choice of style should be consistent throughout the publication.

Units of Measurement

The use of metric measurements is now optional, per the November 25, 2008, internal FHWA memo from former executive director Jeffrey Paniati.⁽⁴⁵⁾ However, research reports must include the metric/SI conversion chart at the beginning of the report in the front matter section. Each office may use its own judgement in the value of metric measurements or dual units based on the audience for each document. Offices that wish to use dual units are encouraged to present them in the format of inch-pound value followed by metric value in parentheses. When choosing to use metric measurements, the units must be used consistently throughout the report. You may not use English units in one chapter and then SI units in another chapter.

Punctuation

The *GPO Style Manual* uses a hyphen between the elements of compound numbers from twenty-one to ninety-nine (when they must be spelled out) and in compound adjectives with a numerical first element.⁽²⁾ For example, see the following measurements:

- 24-inch ruler.
- four-lane highway.
- 8- by 12-inch page.
- 3-to-1 ratio.
- 3-m-wide screen.

For further guidance related to hyphenation and compounding of words, see the *GPO Style Manual*.⁽²⁾

Use an em dash—instead of a hyphen—as shown here to set off a particular phrase. There should be no spaces around the em dash.⁽²⁾

When parentheses or brackets are used to enclose an independent sentence, the period falls inside as in the following example. (See sample here.) If the enclosed matter is part of a sentence, the period falls outside (when the enclosed matter completes the sentence).⁽²⁾

Periods and commas should be placed inside quotation marks; semicolons fall outside quotation marks. Use a comma after each member within a series of three or more words, phrases, letters, or figures used with “and,” “or,” or “nor.”⁽²⁾

Semicolons are to be used to separate groups of items only when commas are already used within each group. For example, “He checked the streets, highways, and lanes; the subways, bus routes, and airlines; and the theaters, museums, and art galleries.” In other instances in which intervening commas are used and confusion may result, use semicolons to separate elements containing commas.⁽²⁾

Numbers and Measurements

Any number that begins a sentence is to be spelled out. Numbers that range from one through nine are to be spelled out. Use numerals for numbers 10 and above. However, if a number 10 or above is in the same sentence with a lower number, use numerals for all.⁽²⁾

Units of money, measurement, and time (actual or implied) must be expressed in numerals. These units do not affect and are unaffected by other numbers in a sentence. Therefore, when using a monetary, measurement, or time reference in the sentence, only use a numeral to depict other numbers if the number is 10 or greater.⁽²⁾

Numbers and their units of measurement should not be separated on two lines. Also, keep words that depend on each other for meaning together on the same line of type by using nonbreaking spaces.⁽²⁾

Abbreviations

Use *GPO Style Manual* abbreviations for units of measurement.⁽²⁾ Abbreviations used for units of measurement are the same for both singular and plural. However, to ensure Section 508 compliance is maintained and avoid confusion with the word “in,” do not abbreviate the word “inch” and do not use periods after these abbreviations.

The following are examples of some commonly used units:⁽²⁾

- mi for mile(s).
- mi² for square mile(s).
- m for meter(s).
- mi/h or mph for miles per hour.
- ft for foot (feet).
- km/h for kilometers per hour.
- ft³ for cubic foot (feet).
- lb for pound(s).
- lbf/in² or psi.
- ft²/s for square foot (feet) per second.
- s for second(s).

Percent and Other Symbols

“Percent” and most other symbols (e.g., & and #) should be spelled out in the text. Some symbols may be used in figures, tables, and references if there is not space to spell them out.

List of Preferred Terminology and Abbreviations

See appendix J for terms that are unique to FHWA.

Unique GPO Style Manual Rules

The following are unique *GPO Style Manual* guidelines you should be aware of when developing FHWA publications:⁽²⁾

- Common nouns such as table 1, chapter 2, sample A, reference 4, appendix A, etc., should not be capitalized within the text.

- The word “State” should be capitalized when referring to a geographic or governmental entity.
- Typically, the words “Federal” and “Government” are capitalized, whether they appear together or alone when referring to the Federal Government. The word “Nation” is capitalized when used as a synonym for the United States.
- Acronyms or abbreviations must be established by spelling out the term the first time it is used followed by the acronym in parentheses, such as Federal Highway Administration (FHWA). If the publication or report has many acronyms, a list of acronyms/abbreviations may be included after the list of tables. The sole exception is for an executive summary, which should be treated as a separate document.
- The following prefixes and suffixes generally do not require a hyphen when joined with other words:
 - multi
 - super
 - pre
 - micro
 - under
 - re
 - like
 - post
 - semi

CHAPTER 5. PREPARING A RESEARCH REPORT

PURPOSE

The purpose of a research report is to communicate the full details of an experiment or research project, its results, data collected from analysis, or findings and recommendations.

AUDIENCE

The typical audience for FHWA research reports is transportation technical staff in Federal, State, local, and international governments; academia; and private industry.

STYLE

The style of an FHWA research report will include the following:

- Normally, 10 or more pages, not including front matter.
- One-color cover. Note that a specific color indicates the applicable FHWA RD&T office that generated the research and report, with a standard cover design graphically depicting the area of research.
- Sample photo covers are illustrated in figure 5.



Figure 5. Photo. Cascade of research report covers.

FORMAT FOR RESEARCH REPORTS

Standard research reports should follow the guidance in the CRG regarding formatting and font, type size, symbols, margins, page numbering, bullets, columns, and other elements as FHWA's preferred style. The report must be consistent in format and style. For example, all first-level headings should follow the same style. The author of a research report must adhere to these preferences unless there is a clear, compelling reason to deviate. An author may be required to reformat a document if the HRTM office determines that the preferred format or style is not in line with FHWA basic standards.

Use of FHWA Logo, Seal, and Symbol by Private Sector Partners, Contractors, Grantees, and Vendors

Seals and devices of the Federal Government, departments, bureaus, and independent agencies are not in the public domain and cannot be used for purposes other than official business without specific authorization of the agency involved.⁽⁴⁶⁾ For logo use with formal partnerships, contact HRTM.

The FHWA seal and logo are for the official use of USDOT and not for the use of the private sector on its materials. To the public, such use would send a message that the USDOT favors or endorses an organization, its activities, its products, its services, or its personnel (either overtly or tacitly), which it does not and cannot do.

Whether the private sector partner/grantee/vendor/contractor is nonprofit or commercial is not a factor. Regardless of how the organization is funded, non-FHWA communication products are for the principal benefit and use of the partner/grantee/vendor/contractor and not for the principal benefit or use of the Government. Non-FHWA communication products are not construed to be Government communication products.

Use of FHWA/USDOT Logo on Proposals or Consulting Deliverables

Contractors may not use the FHWA logo, seal, or symbol on proposals or consulting deliverables.⁽⁴⁷⁾

Publications Developed by Contractors with FHWA/USDOT Logo

If a contractor deliverable is camera-ready or other reproducible copy, for the express purpose of being an FHWA publication for FHWA distribution to the public, only then may the contractor affix the FHWA logo under the direction and guidance and approval of HPA.

Private Sector or Contractor Logos on Government Publications

FHWA offices may not use private sector or contractor logos on Government publications or other Government communication products. Such use is prohibited. Whether or not the private sector organization is nonprofit or commercial is not a factor.

Private sector logos constitute institutional advertising. Using a private sector logo on a Government communication product (regardless of intent) implies that the Government favors or endorses all that which the logo represents.

Per Section 13 of the Government Printing and Binding Regulations, published by the Joint Committee on Printing, United States Congress, states:

No Government publication or other Government printed matter, prepared or produced with either appropriated or nonappropriated funds or identified with an activity of the Government, shall contain any advertisement inserted by or for any private individual, firm, or corporation; or contain material which implies in any manner that the Government endorses or favors any specific commercial product, commodity, or service.⁽⁴⁸⁾

Inclusion of Contractors Names or Consultants in FHWA Publications

Within an FHWA report, the names of contractors or consultants who contributed to its development may not appear in the report, with the exception of block 9 on the Technical Report Documentation Page (Form DOT F 1700.7).⁽⁴⁸⁾

Microsoft® Word Format

The FHWA standard software for composing reports is Microsoft® Word. For this reason, please submit all reports and documents in a Microsoft® Word file. The document will be printed in black ink unless otherwise specified. Should a report need to be printed in color, HRTM must receive a justification in writing that is approved by the applicable office director stating why color within the document is necessary. The justification from the office director is required because there will likely be a significant increase in cost to produce the document in color.

Report Contents

All of the components of a document are listed in table 1 in the order in which they should appear. However, please note that it is not necessary to use all elements in all reports. (For example, if a report does not contain references, there would be no need for a reference section in the report.)

Table 1. Contents of a research report.

Section	Contents
Covers	Front Cover Inside Front Cover (R&D Foreword and Disclaimer Notice) ¹
Front Matter	Technical Report Documentation Page (Form DOT F 1700.7) Preface (if any) ² Metric Conversion Chart Table of Contents List of Figures (required if the report contains figures) List of Tables (required if the report contains tables) List of Abbreviations and Symbols ²
Body of Report	Introduction Main text separated into chapters Conclusions Recommendations ²
Back Matter	Appendices (Use consecutive pagination, not A-1, etc.) ² Glossary ² Acknowledgements ² References Bibliography ² Index ²
Back Covers	Cover 3 (blank) Cover 4 (blank but FHWA will insert the publication number and printing code)

¹Use the statement shown on page 31 and the inside front cover of this guide in all research reports.

²Optional.

The report items listed above were derived from the *GPO Style Manual*.⁽²⁾

Foreword

Publications containing technical material must have a foreword on the inside front cover explaining that the publication has been approved by the office director via written confirmation. An email is sufficient. The foreword should contain the following information:

- Purpose of the report, manual, or study.
- Content summary.
- Interested audience.
- Previous printings of the publication.
- Publication status (preliminary, interim, or final).

The foreword page of an FHWA report must contain the following standard disclaimer notice and quality assurance statement below:

Notice

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in this document.

The U.S. Government does not endorse products or manufacturers. Trademarks or manufacturers' names appear in this report only because they are considered essential to the objective of the document.

Quality Assurance Statement

The Federal Highway Administration (FHWA) provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

Type Arrangement and Typefaces

The following rules apply to type arrangement and typefaces:

- The preferred font is Times New Roman, sized at 12 point for both headings and text. However, the font size should not be smaller than 10 point.
- Type styles in the text must match those in the front matter and table of contents for all headings and subheadings. This includes font, capitalization, punctuation, bolding, italics, and other attributes.
- Margins must be at least 1 inch on all sides, including on pages with figures and tables.
- Single spacing is preferred if superscript and subscript do not touch the next line of text. Use the superscript and subscript features in Microsoft® Word.^(sample superscript)
- Paragraphs are not indented. There should be two returns (i.e., one blank line) between paragraphs.
- Right margins should not be justified because text with ragged margins is easier to read and edit.
- Ensure that words are correctly divided, mathematical symbols or formulas are not divided between lines, and spacing is not excessive or erratic.
- “Widows and orphans” (single lines of text at the top or bottom of a page) should be avoided. Please do not leave a single line of text at the top or bottom of a page.
- When using special math or scientific fonts in equations and formulas, create a .jpg, .bmp, or .gif graphic file of the equation and insert it into the document as a figure. This

is because not all computers, browsers, cellphones, software, printers, and operating systems can interpret special math and scientific fonts or special markup languages such as MathML.

Volume Format

Volume designates an individually bound book. When a report exceeds 400 pages of reproduction copy (including figures, tables, appendices, and front matter), it must be divided into two or more individual volumes, with each volume containing a separate publication number and Roman numeral (e.g., Volume I and Volume II) as part of the subtitle. This is to ensure that the binding during the printing process will hold. The volumes should also be listed on the foreword and the Technical Report Documentation Page (Form DOT F 1700.7) in the abstract portion of the form. Indicate the following information within the foreword and abstract for each of the volumes:

- This volume is the first in a series. The other volume in the series is: FHWA-HRT-##-### Volume II: *Name of Publication*

References and Bibliography

The following guidance applies to references and bibliographies. Use the *Chicago Manual of Style* to determine which elements to include in a particular reference.⁽⁴⁾

- See appendix P for sample references and information about what elements need to be included in each reference entry.
- References callouts in the text should use superscript numbers enclosed in parentheses or brackets or the author date format. They must be placed after the end of the punctuation. If there is more than one reference, separate them with commas but no spaces. For example use one of the two following reference styles:
 - “This guide contains many references.^(1,5,7)
 - For more than three references, use a separate sentence in parentheses. Example: “This guide contains many references. (See references 1, 5, 7, and 18.)”
 - Use a single series of Arabic numbers beginning with 1 and continuing through the document and appendices.
 - “This guide contains many references. (Bach 1999, Jones 2003, Sullivan 2007)”
- Each reference must be cited. If a reference is used more than once in a report, repeat the reference callout. Do not repeat the reference in the reference list. Materials not cited may be listed in a bibliography placed at the end of the volume on the page(s) following the references. However, a bibliography is not required.

- On a reference list, do not include references that are not accessible, such as a personal email or telephone conversation. Instead, include the elements for that reference in a page footnote or in the body of the text. The items referenced in a footnote will not be included on a reference list.

Pagination

The following guidance applies to pagination:

- The Technical Report Documentation Page (Form DOT F 1700.7) is always unnumbered page i. (See sample form in appendix C.)
- Include front matter in the page count in the number of pages (block 21) of the form 1700.7.
- Front matter should use lower case Roman numerals such as ii, iii, etc. Start numbering with Arabic “1” at the executive summary or, if there is no executive summary at the start of chapter 1.
- The FHWA preference is to use only one series of Arabic numbers from the first page of the report to the last. Do not number appendix pages as A-1, B-1, etc.
- Decimal numbers, hyphenated numbers, or numbers combined with letters for chapters, sections, or subsections should not be used as page numbers. Minimize the use of paragraph and subparagraph numbers.
- Page numbers should be centered 0.5 inches up from the bottom edge of each page and should stand alone with no dash on either side of the number. Page numbers are centered for consistent appearance in single- and double-sided printing.
- Chapters must begin on the right-hand page (i.e., an odd-numbered page). Insert blank pages to achieve this effect. Blank pages are counted in the page number sequence, but no number is printed on the page. Do not label “this page intentionally left blank” when adding a blank page to start a new chapter on a right-hand page. Individual chapters, appendices, etc., should not have title pages.

Table of Contents

The following guidance applies to the table of contents:

- A table of contents is useful in most reports of more than 10 pages and is required in all reports of 30 or more pages.
- At a minimum, chapter headings and first-level headings should be included in the table of contents, and the text and punctuation in the table of contents must reflect the exact text used in the body of the document. The idea is to create a section that is useful to the reader. See the table of contents sample in appendix E.

- Do not list front matter in the table of contents. List only the body of the text from page 1 through the appendices.
- Type styles and text in the table of contents should match those used in the report. Like the headings in text, each level of subordination must consistently use a particular type treatment, such as all capitals, bold, etc.

Headings

The following rules apply to headings:

- To delineate different parts of a lengthy document, material is separated into chapters, and lengthy chapters are separated internally with subheadings. Because the titles of chapters and the next level of heading will be presented in the table of contents, it is important to use headings that will be most useful to readers.
- Do not number subheadings. There are four levels of headings; each is a subset of the level above it. See the following examples for preferred heading styles.

CHAPTER 1. MAJOR SECTION HEADING EXAMPLE

The chapter headings are all caps, bold, and centered. Chapter numbers, when used, may be Arabic or Roman and may be followed by a period and one or two spaces. (Please be consistent throughout all chapter heads.) There should be three returns (i.e., two blank lines) after a chapter heading.

FIRST LEVEL HEADING EXAMPLE

All caps, bold, and flush left (i.e., at the left margin). No numbering. There are only two returns (i.e., only one blank line) after this and all subordinate headings.

Second Level Heading Example

Initial caps, bold, and flush left. Follow with two returns. No numbering.

Third Level Heading Example

Initial caps, bold, italics, and flush left. Follow with two returns. No numbering

Fourth Level Heading Example

Initial caps, italics, and flush left. Follow with two returns. No numbering.

Figures and Tables

A figure is a nontext visual element shown as a graph, photo, formula, equation, chart, diagram, illustration, etc. Each figure should be separate and should have its own figure number and caption. Do not combine multiple types of elements into one large figure, such as a photo and a table. Text elements, such as a table or tables, should not be grouped as part of the figure (see figure 6).

There are times when it is acceptable to combine elements into a composite figure such as a blueprint with a magnified area (or blow up) of a specific section. In addition, compound figures are permissible when a comparison is needed; however, see figure 12 and figure 13 for examples of the acceptable method to number those figures.

Notice the table and the picture are both incorporated into one figure. This is incorrect. The table and figure should be separated and numbered separately—one as a table and the other as a figure.

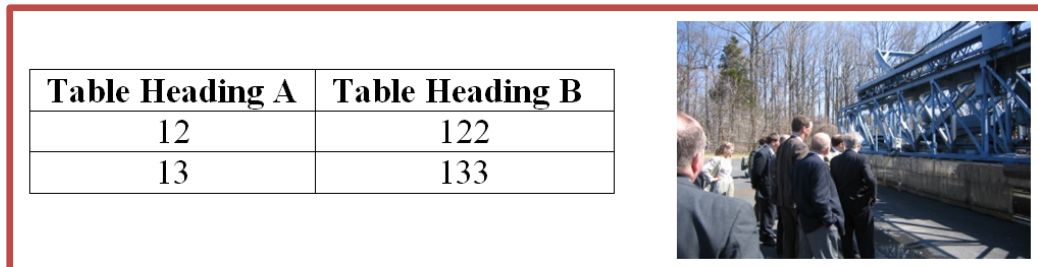


Figure 6. Unacceptable graphic. Sample of table depicted as part of the figure graphic.

The incorporation of a table and table caption into a figure (picture) and figure caption is incorrect because a table format is different than a graphic format. A table should be depicted in a Microsoft® Word text table format rather than as part of a figure or graphic (see table 2 and figure 7).

To help distinguish between the two formats, *Merriam-Webster's Dictionary* defines a table as “a systematic arrangement of data usually in rows and columns for ready reference.”⁽³⁾ The easiest way to determine whether a table or text is formatted correctly is to try to change information within the table. A Microsoft® Word table or text will allow a person to change information, while a picture format will not.

Not only was the format incorrect, but the two captions were combined under a single figure caption rather than as a separate table caption and separate figure caption. The table should have a table caption and the figure should have a figure caption.

In figure 7 and table 2, the table was converted from a graphic format to a Microsoft® Word text-based table format with its own table number and title. The figure has its own figure number and caption.

Note that the table and figure no longer are grouped together and are numbered separately. This is correct.

Table 2. Sample of separate table.

Table Heading A	Table Heading B
12	122
13	133



Figure 7. Photo. Sample of separate figure.

Like figure 6, another example of multiple items is shown in figure 8, incorporating a table with multiple figures.

Below you will see a combination of elements. There are one table and three figures combined and under one figure number and caption. This is incorrect because they should be separated.

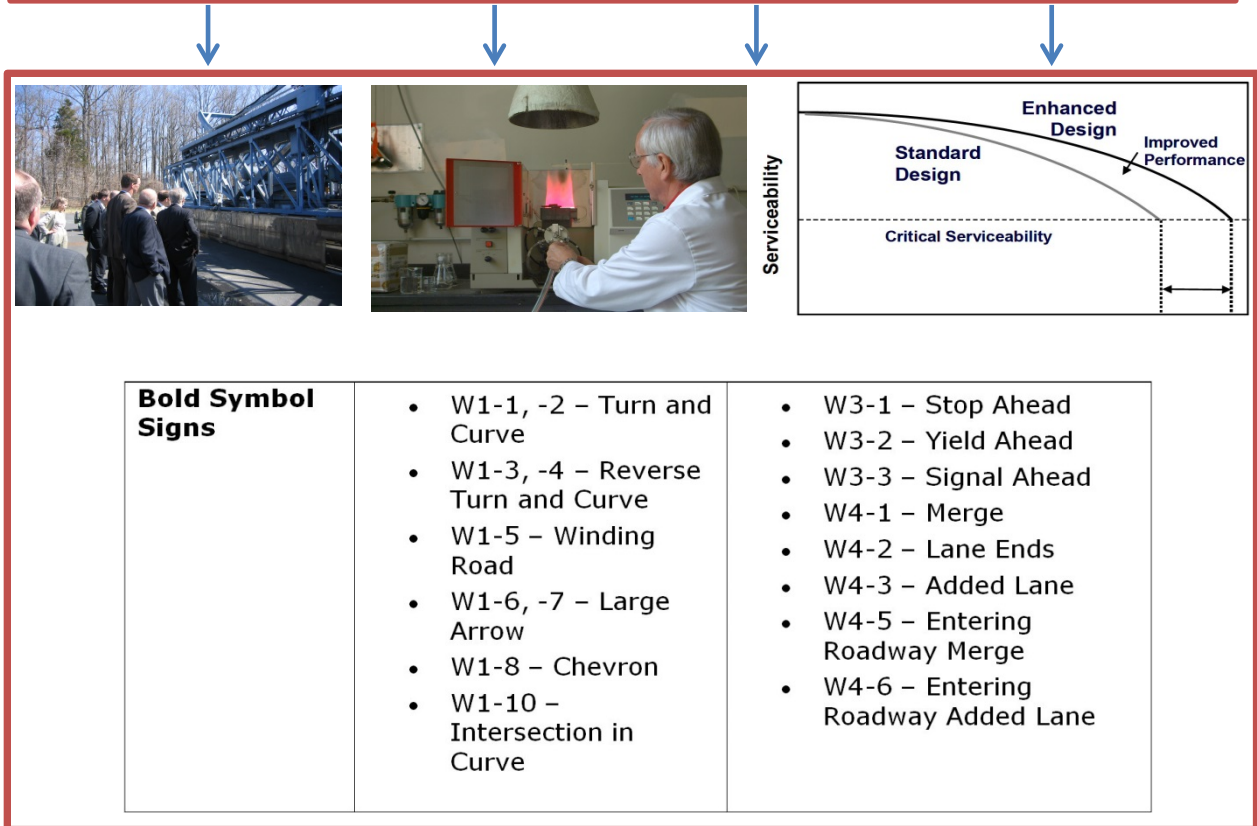


Figure 8. Multiple elements. Incorrect depiction of one table and three figures under one figure number and caption.

Table 3 and figure 9 through figure 11 show the correct method of numbering figures and tables. Notice that the example shows Arabic numbering and separation of the figures into distinct numbers yet offers the flexibility of placing the figures adjacent to one another if a comparison is needed.



Figure 9. Photo. Correct format 1.



Figure 10. Photo. Correct format 2.

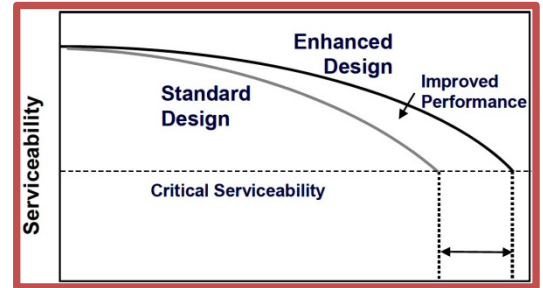


Figure 11. Graph. Sample of correct graph.

Table 3. Correct way to depict table from figure 8.

<p>Bold Symbol Signs</p>	<ul style="list-style-type: none"> • W1-1, -2 – Turn and Curve • W1-3, -4 – Reverse Turn and Curve • W1-5 – Winding Road • W1-6, -7 – Large Arrow • W1-8 – Chevron • W1-10 – Intersection in Curve 	<ul style="list-style-type: none"> • W3-1 – Stop Ahead • W3-2 – Yield Ahead • W3-3 – Signal Ahead • W4-1 – Merge • W4-2 – Lane Ends • W4-3 – Added Lane • W4-5 – Entering Roadway Merge • W4-6 – Entering Roadway Added Lane
---------------------------------	--	--

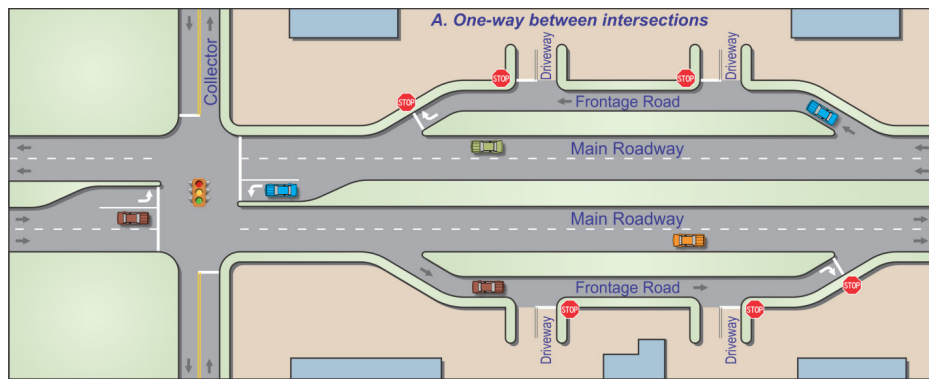
One additional acceptable figure-numbering method for research reports is to combine several graphic elements (not tables) into a compound figure. Use the format in figure 12 to number a compound figure. A figure number with caption should describe or summarize all elements (subfigures) falling under the figure number. Notice that each of the elements (subfigures) that comprise figure 12 contains the following:

- A letter in the place of a number to identify each subfigure in the compound figure.
- A full figure caption enabling each subfigure in the compound figure to stand on its own.
- Copyright and reference information when needed.
- 508 caption for each graphic or element in the compound figure.

Each subfigure in the figure also is a separate graphic element (in graphic jpg format), and both the figure and individual subfigure captions are in text format within the document.

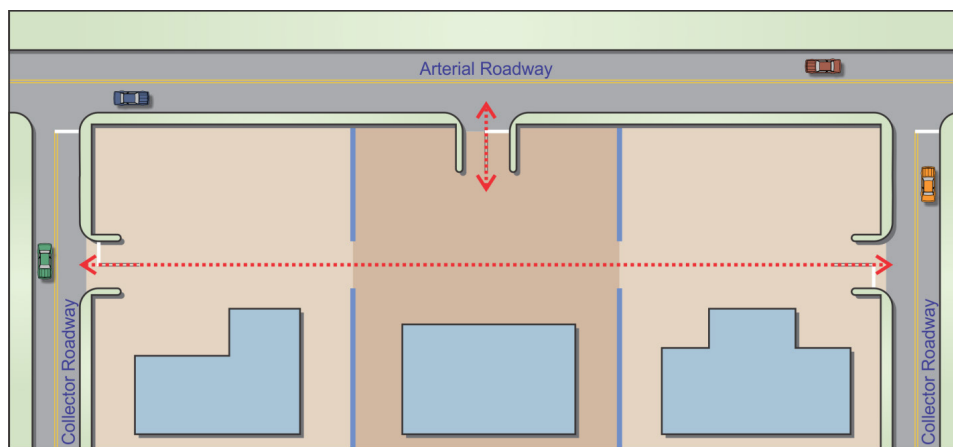
When citing the callout in the text, make sure to distinguish the subfigure elements separately, when a specific point is being made about each individual subfigure. In the following text example, notice that both the figure number and the subfigure letter are combined to make a unique number for the graphic because the text is calling out a specific point about each illustration.

Frontage and backage roads may be configured for one-way operation or two-way operation. Figure 12-A illustrates one potential frontage road configuration. Access management also promotes the implementation of shared-access driveways and cross-access easements between (compatible) adjacent properties, which allow pedestrians and vehicles to circulate between properties without reentering the abutting roadway (see figure 12-B).



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A. Subfigure example for one-way frontage road between intersections is a possible access configuration. This example shows copyright and reference number.⁽²⁾



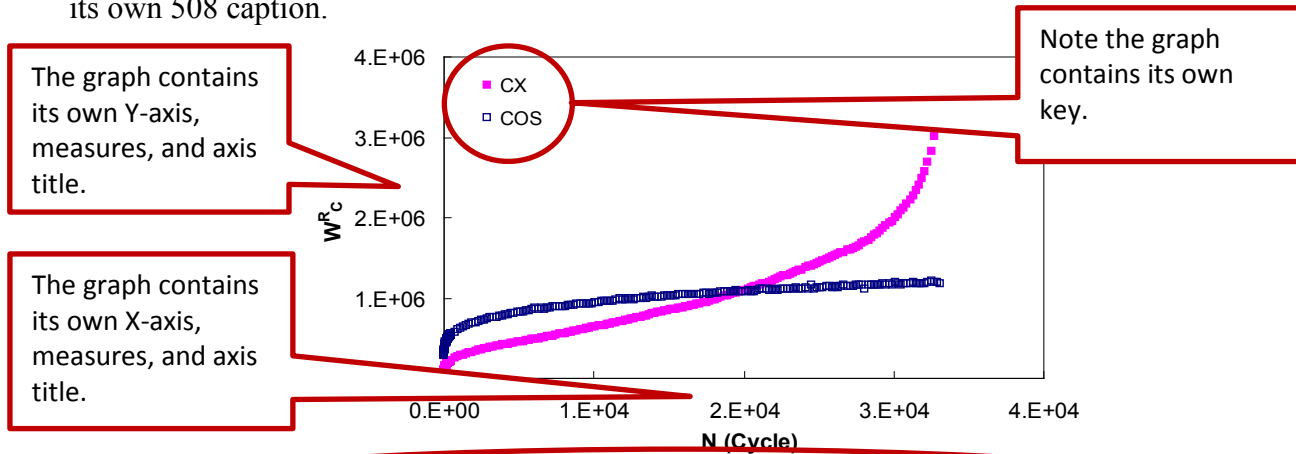
B. Subfigure example for cross connectivity configuration enables circulation between properties without reentering the abutting roadway.

Figure 12. Illustrations. Compound figure showing one-way potential frontage road and cross-connectivity configuration options for intersection safety and access.

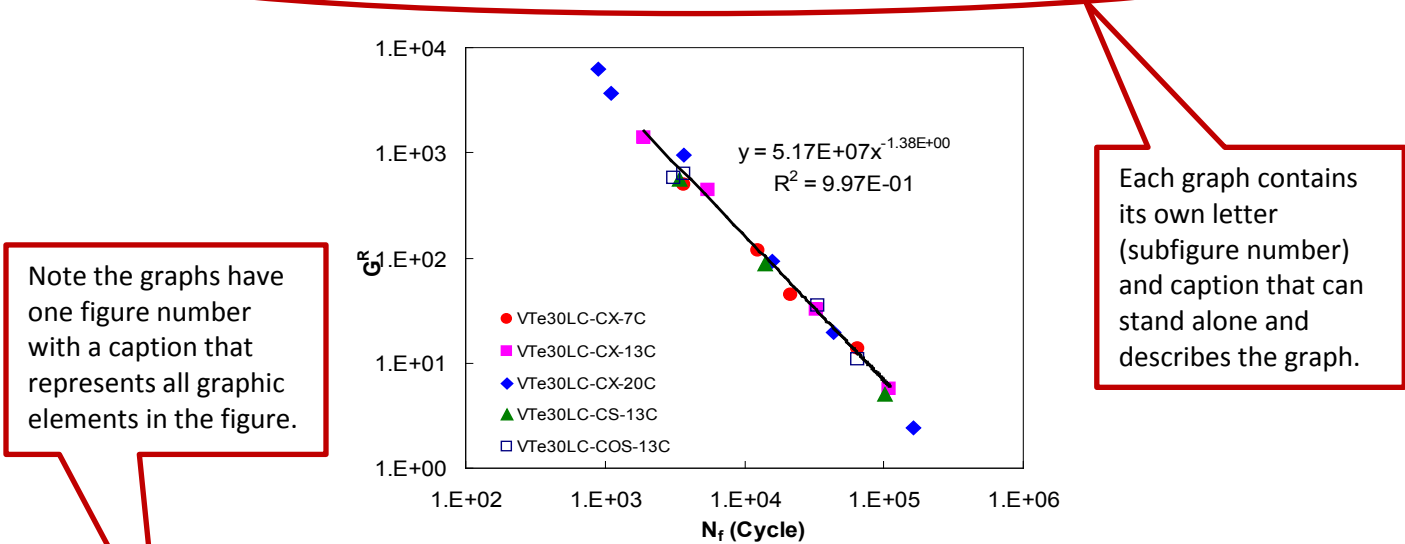
Another acceptable compound figure shows multiple subfigures in the form of graphs as seen in figure 13. Each of the graph subfigures in figure 13 contains the following:

- Its own labeled x and y axes.
- A key or legend.
- Copyright and reference information when needed.
- An identifying letter to take the place of a number for the subfigure.
- Full subfigure caption enabling each subfigure to stand on its own.
- Figure number with a caption describing all subfigures in the figure.
- Each subfigure in the figure a separate graphic element (in graphic jpg format).
- Figure caption and individual subfigure captions are in text format within the document.

In addition to a letter caption, each element of the figure (i.e., each subfigure graph) must have its own 508 caption.



A. Subfigure example of failure criteria W^R_C versus N for CX and COS modes with similar N_f .



B. Subfigure example of failure Criteria: G^R versus N_f for CS, COS, and CX modes.

Figure 13. Graphs. Compound figure example showing subfigures comparing mode tests resulting in about the same number of cycles to failure.

When citing the callout in the text, make sure to distinguish the subfigure illustrations separately as figure 13-A or figure 13-B when calling out particulars for a specific element in the graph, chart, or diagram.

Every table must have a unique caption centered at the top. All tables must be numbered in a single sequence from the beginning of the volume through the appendices. Use the following format for writing, punctuating, capitalizing, and centering table captions:

Table 1. [Insert caption for table.]

All captions must be in Times New Roman 12-point font.

Tables must have a text element such as an asterisk or a dash in all blank cells. The table must have a note below the table that explains what the symbol represents (e.g., “*No data.”).

Table lines can be any thickness. However, tables should not have merged cells that create nested table headers. Although lines are not needed in tables, be sure that you are not creating nested cells within tables when omitting lines.

All figures and tables must have linked in-text callouts to cross-reference the figure or table. A figure or table should be placed as soon after the first mention in the text as physically possible.

Spacing before and after captions should be consistent throughout the document.

“Figure” and “table” should be lowercased in documents because they are not proper nouns.

For reports of 30 pages or more, lists of figures and tables are required and are placed immediately following the table of contents. Lists of figures and tables can be on the same page (with a blank line between them) if both lists fit completely on a single page.

Entries in the list of figures and the list of tables (in the front matter) must match the captions within the document exactly (i.e., same wording, capitalization, punctuation, and type style). The only exception to this is that reference callouts may be deleted in the lists of figures and tables.

Every figure must have a unique caption centered at the bottom. All figures must be numbered in a single sequence from the beginning of the volume through the appendices. Figures include graphs, photos, formulas, equations, charts, etc. Use this format for writing, punctuating, capitalizing, and centering figure captions:

- Figure 1. Graph. [Insert caption for graph.]
- Figure 2. Photo. [Insert caption for photo.]
- Figure 3. Formula. [Insert caption for formula.]
- Figure 4. Chart. [Insert caption for chart.]
- Figure 5. Equation. [Insert caption for equation.]

Equations and Formulas

When using special symbol, math, or scientific fonts in equations and formulas, create a .jpg graphic file of the equation and insert it into the document as a graphic/picture. Before creating the .jpg, make sure that the equation text has all necessary variables italicized.

Keep in mind that not all computers, printers, and operating systems can interpret special math and scientific fonts. All equations must be numbered in one of the two following methods as seen in figure 14 or equation 1.

$$q_{ult,an,c} = \left[\sigma_c + 0.7 \left(\frac{s_v}{6d_{max}} \right) \frac{T_f}{S_v} \right] K_{pr} + 2c\sqrt{K_{pr}}$$

Figure 14. Equation. Sample equation pasted as graphic in document.

Notice that the equation was created as a graphic object (figure) and pasted into this document as a picture. It was not created as text or in a text box using a special font through Microsoft® Word. The caption in figure 14 shows a normal equation and caption as reflected in a report and would be automatically pulled into the list of figures in the front matter. The advantage of numbering the equation as a figure is that it will be easy for readers to find the equation in the list of figures.

$$q_{ult,an,c} = \left[\sigma_c + 0.7 \left(\frac{s_v}{6d_{max}} \right) \frac{T_f}{S_v} \right] K_{pr} + 2c\sqrt{K_{pr}} \quad (1)$$

Notice the similarity between the abbreviated figure caption in figure 14 and the 508 caption listed below. The only difference between the two is the actual depiction of the equation into text format. The 508 caption (which would be a deliverable in a separate Microsoft® Word file) would be written as follows:

Figure 14. Equation. Sample equation pasted as graphic in document. $q_{ult,an,c}$ equals the sum of the product of K_{pr} and the sum of σ_c and the product of 0.7 raised to the quotient of one-sixth s_v and d_{max} and the quotient of T_f and S_v and the product of $2c$ and the square root of K_{pr} .

Lists

Lists should be bulleted unless the sequence of items is critical, in which case Arabic (1, 2, 3, etc.) numerals followed by periods and one space may be substituted for bullets. In either case, use the following guidelines:

- Include an introductory sentence before every bulleted list (e.g., “Use the following guidelines”).

- Place a colon at the end of the introductory sentence preceding the list.
- Use the standard (Microsoft® Word) round bullets.
- Use parallel rhetorical and grammatical structure, as in this list. That is, if a bullet starts with a verb, all bullets should start with a verb. If a bullet starts with a noun, all should start with nouns. If a complete sentence is used, all should use a complete sentence.
- Begin each entry with a capital letter.
- End each entry with a period even if it does not form a complete sentence.
- Do not end the next-to-last item with “and” or “or.”
- Put two returns (i.e., one blank line) after the bulleted list.

Footnotes

The following rules apply to footnotes:

- Use superscript figures without parentheses or brackets for footnote references.⁽²⁾
- In each chapter, footnotes to text are numbered starting with “1.” Footnotes to tables or figures begin with 1 for each table or figure. Use superscript numbers.⁽²⁾
- Footnotes must begin on the page carrying the footnote number. Avoid breaking a footnote between pages.⁽²⁾
- Footnotes should be single spaced. Indent the first line of each footnote by 0.25 inches.
- Asterisks, daggers, or italic superior letters may be used only when a numeral in a table or figure might cause confusion, such as being mistaken for an exponent.⁽²⁾

A template for creating research reports is available on the FHWA Research Publication Development Web page. See table 4 for the list of submission requirements for research reports.

Table 4. Research report—what to submit.

Black/White Print (.doc)	Two- or Four-Color Print (.doc and .qxd)	Website Only (.doc)	Deliverables for Research Reports
•	•	•	HRTM Service Request Form
•	•	•	Microsoft® Word file of report
•	•	•	Microsoft® Word file of 508 captions
•	•	•	Completed Form DOT F 1700.7 (Technical Report Documentation Page)
•	•	•	Metric chart ¹
•	•	•	Foreword and Disclaimer
•	•	—	FHWA Distribution Form in a Microsoft® Excel file with names and complete addresses. See distribution section of this document.
•	•	•	Tables, charts, graphs in separate native file formats (Microsoft® Excel files for tables and .jpg or .tif files for graphic and computer-aided design (CAD) files)
•	•	•	Illustrations, equations, photos, figures in .jpg or .bmp file format
—	•	—	GPO Form 952 - http://www.gpo.gov/pdfs/customers/sfas/952.pdf (if you provide graphic layout of any files)
—	•	—	Adobe® InDesign or other graphic design files after the files have been edited. Include all text, font files, graphic files

¹Optional.

—Submission not required.

Do not submit second-generation or previously printed materials as graphics. Do not use correction fluid, tape, photocopies, or artwork that is fuzzy, dark, or faded. Do not submit CAD drawings; export them to a .jpg or .tif format.

CHAPTER 6. OTHER PUBLICATIONS

There are a variety of documents that each office may use to communicate with a specific audience, including booklets (see figure 15), technical flyers (e.g., TechBriefs, report summaries, and product application notes), brochures, fact sheets, and newsletters. Please refer to chapter 4 and the *GPO Style Manual* for additional editing and style requirements.⁽²⁾

BOOKLETS

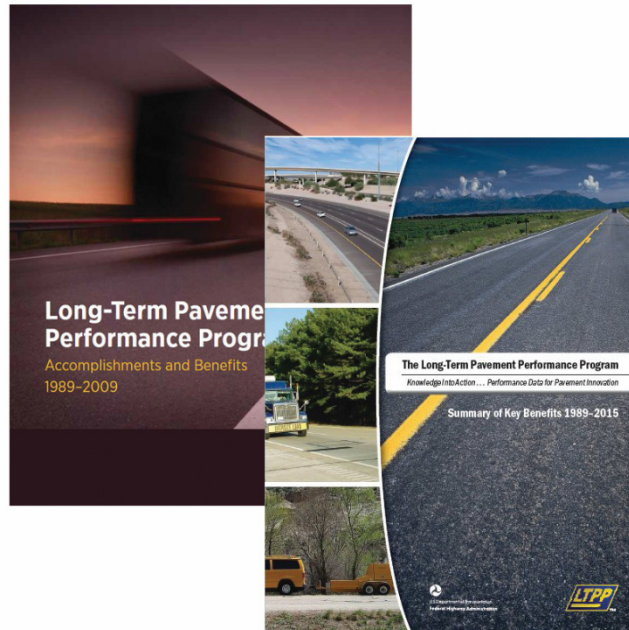


Figure 15. Photo. Cascade of booklet cover examples.

Purpose

To communicate detailed summaries, achievements, and recommendations from research projects and programs.

Target Audience

Transportation managers, decisionmakers, and executives.

Style

- Publication length is usually fewer than 40 pages.
- Publication types include guidebooks, executive summaries, and annual reports.
- Covers are full- or two-color with up to two-color text pages.
- Design should include eye-catching graphics that illustrate the project.
- Publications must include a foreword and a standard disclaimer notice at the bottom.

TECHNICAL FLYERS

There are several types of flyers, including TechBriefs and Application/Technical Notes (see figure 16).



Figure 16. Photo. Cascade of technical flyers.

Purpose of a TechBrief

To summarize an experiment, TechBriefs provide results, data collected from analysis, or findings and recommendations.

Purpose of Application/Technical Notes

To provide technical information and benefits about an FHWA product or research findings used by an FHWA customer.

Audience

Transportation managers and technical staff.

Style

- Two-color publication.
- Usually 2 to 16 pages in the following page numbers: 2, 4, 6, 8, 12, 16.
- Signature colors assigned to RD&T offices and teams.
- Standard information about the research program area and key resources.
- Back matter information about availability, keywords, and distribution.

Elements to Include in a TechBrief

The following components are needed for each TechBrief (which must be a minimum of 2 pages):

- Logo and the word “TechBrief.”
- Organization name, office name, and address.
- Publication number in this format: Publication No. FHWA-HRT-##-####.
- Distribution and Publishing Information No: XXXX-##/##-##(#M)E.
- Contact information in the following format:
 - FHWA Contact: Name of Person, office code (e.g., HRDI-10), (202) 493-####, email.
- Date.
- Technical content, including the following minimum items:
 - Objective.
 - Introduction (sometimes includes Background).
 - Methodology (or Approach).
 - Results (can be broken down according to testing analysis).
 - Conclusion (sometimes Recommendations).
 - References.
 - Distribution and Standard Disclaimer containing the following (sample) elements:
 - Researchers—This study was performed by name of organization and office and researcher and lab if FHWA or Contract No. DTFH61-06-C-00027 if not FHWA.

- **Distribution**—This TechBrief is being distributed according to a standard distribution. Direct distribution is being made to the FHWA divisions and Resource Center.
- **Availability**—The publication associated with this TechBrief is Curl and Warp Analysis of the LTPP SPS-2 Site in Arizona (FHWA-HRT-12-068). It is available in print and online at <http://www.fhwa.dot.gov/research>.
- **Key Words**—Insert keywords and phrases here.
- **Notice**—This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in this document. The U.S. Government does not endorse products or manufacturers. Trademarks or manufacturers' names appear in this document only because they are considered essential to the objective of the document.
- **Quality Assurance Statement**—The Federal Highway Administration (FHWA) provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

TechBrief Layout

For printing purposes, the TechBrief layout must be in one of the following formats, and the finished product is 8.5 by 11 inches:

- 2 pages (rarely used because it is difficult to include all technical elements).
- 4 pages (stitched).
- 6 pages (tri-fold, no stiches).
- 8 pages (stitched).
- 12 pages (stitched).
- 16 pages (stitched).

MARKETING BROCHURES

Purpose

To create awareness or attract interest in a specific project or program, brochures (see figure 17) communicate the benefits of a research, technology, or service.



Figure 17. Photo. Cascade of marketing brochures.

Audience

Transportation decisionmakers, senior executives, managers, and technical staff.

Style

- Two-color or full-color publication.
- Visually appealing graphics and layout attract awareness and interest in a subject area.
- Information or a call to action that asks the reader to act in some manner for additional information, a service, or participation in a program.

FACT SHEETS

Purpose

To provide concise, factual information about a specific topic such as a facility, laboratory, technology, or subject area (see figure 18).



Figure 18. Photo. Cascade of fact sheets.

Audience

Transportation decision makers, managers, technical staff, and students.

Style

- Concise and informative.
- 2 pages (1 page back and front).
- Usually one or two colors.
- Text and graphic layout have a similar design if part of a series.

Templates for creating FHWA publications are available on the FHWA Research Publication Development Web page at <http://www.fhwa.dot.gov/research/publishing/>. See table 5 for the list of submission requirements for booklets, flyers, brochures, and fact sheets.

Table 5. Booklets, flyers, brochures, and fact sheets—what to submit.

One Color Print (.doc)	Two- or Four-Color Print (.doc and .qxd)	Website Only (.doc)	Submission Requirements for Booklets, Technical Flyers, Brochures, and Fact Sheets from the Contracting Officer's Representative (COR)
•	•	•	HRTM Service Request Form
•	•	•	Microsoft® Word file of document
•	•	•	Microsoft® Word file of 508 captions or alternative text
•	•	—	FHWA Distribution Form and either labels or a Microsoft® Excel file with names and complete addresses
•	•	•	Tables, charts, and graphs in separate native file formats (Microsoft® Excel files for tables and .jpg or .tif files for graphic and CAD files)
•	•	•	Equations in .jpg file formats
—	—	•	Low-resolution illustrations and figures in .jpg, .tif, or .bmp file formats
•	•	—	Digital graphics with high resolution (300 to 1,260 dpi or greater), and at least 4 by 6 inches or equivalent pixel sizes in separate native file formats
•	•	—	GPO Form 952 - http://www.gpo.gov/pdfs/customers/sfas/952.pdf
•	•	•	PDF file of the document after final edit
•	•	—	Adobe® InDesign, Adobe® Illustrator, or other graphic design files after the files have been edited. Include all text, font files, and graphic files.

—Submission not required.

Do not submit second-generation or previously printed materials as graphics. Do not use correction fluid, tape, photocopies, or artwork that is fuzzy, dark, or faded. Do not submit CAD drawings; export them to a .jpg or .tif format.

Normal Final Deliverables for Publications

Provide the following items on a separate CD or DVD for each, labeled with the date, researcher name, publication name, publication number, and one of the following designations: GPO, Web, HRTM, or NTIS, depending on the content:

- **GPO files (on CD, DVD or file share):** Adobe® InDesign files, graphic files, fonts, and PDF for the printer. In addition, please download the complete GPO 952 (located at <http://www.gpo.gov/pdfs/customers/sfas/952.pdf>) and include that file on the CD, DVD or file share as well. In addition, include distribution files (or mailing list) in Zone

Improvement Plan (ZIP) Code™ sortable format in a Microsoft® Excel file with the following fields:

- Salutation.
 - First Name.
 - Last Name.
 - Title.
 - Name of Company.
 - Address Line 1.
 - Address Line 2.
 - City.
 - State.
 - ZIP Code™.
 - Country Code.
 - Number of Copies.
- **Web files (on CD or DVD):** Microsoft® Word text, Section 508 captions for all nontext elements, graphic files, Microsoft® word files for the Web, and high- and low-resolution PDF files.
 - **HRTM files:** All files included in the GPO and Web file sets.
 - **NTIS files:** Low-resolution PDF files, Microsoft® Word files, and Section 508 caption files for all nontext elements.

TRADE PUBLICATION ARTICLES

Purpose

The purpose of trade publication articles is to inform and promote advances and innovations in transportation research and technology (R&T), critical national transportation issues, important activities and achievements of FHWA and others in the highway community, specific FHWA program areas, and subjects of interest to highway industry professionals.

Audience

The audience varies from journal to journal. The audience will typically include one or more of the following: Federal, State, municipal, and foreign transportation officials, planners, and

researchers; association leaders; engineering professors and students; transportation reporters and trade media representatives; and members of Congress.

Format and Issue

The format and issues vary from journal to journal.

Circulation

The circulation varies from journal to journal.

Submission Guidelines Process

A trade publication may be an appropriate vehicle to provide information to your intended audience. If so, please contact HRTM for writing or editing articles for trade publications. Any R&T technical articles submitted for publication in journals and magazines outside FHWA must be edited by HRTM. Upon final edit and review, HRTM will submit the article to HPA for final review and submission to the magazine or journal. To publish articles in trade publications, please do the following:

- Provide guidance to HRTM regarding the trade publication style, deadlines, and editorial office contacts.
- Provide HRTM with your article idea and substantial background information from which to draft the article, or provide a draft version of the article for HRTM to edit.
- Include illustrations (print, slides, or electronic images) to support the text. Generally, a minimum of 1 illustration for every 600 words is required.
- Include the author's name, professional title, employer/organization/office, mailing address, telephone number, fax number, and email address. Also attach a short biographical paragraph about each author, including previous positions relevant to the subject of the article and educational background/degrees received. If applicable, also include the State(s) where an author is licensed as a professional engineer.

PERIODICALS

Definition

A periodical is defined as a publication that is published on a regular basis such as monthly, bimonthly, quarterly, weekly, or daily. Periodicals include magazines, newsletters, newspapers, or updates. Every issue of every periodical distributed to the public must be edited and then reviewed by the HPA.

PUBLIC ROADS

Public Roads and several other FHWA periodicals provide unique vehicles for presenting the latest news on your program to the transportation community.⁽⁴⁹⁾ The following description gives

details on the purpose, audience, format, circulation, submission guidelines, technical review, style, policies, and schedule of *Public Roads*.

Purpose

The purpose of *Public Roads* is to inform and promote advances and innovations in transportation R&T, critical national transportation issues, important activities and achievements of FHWA and others in the highway community, specific FHWA program areas, and subjects of interest to highway industry professionals.⁽⁴⁹⁾

Audience

The *Public Roads* audience includes Federal, State, municipal, and foreign transportation officials, planners, and researchers; association leaders; engineering professors and students; transportation reporters and trade media representatives; and members of Congress.

Format and Issue

The 64-page magazine is published bimonthly by FHWA.

Circulation

The total print circulation for each edition of *Public Roads* is 5,000 copies.

Submission Guidelines

Contributors to *Public Roads* include Federal, State, and local governments; transportation industry organizations; associations; and academic institutions.⁽⁴⁹⁾ Articles are reviewed and considered by the *Public Roads* Editorial Board.⁽⁴⁴⁾ The *Public Roads* Editorial Board is comprised of the FHWA executive director, associate administrators, and select office directors who are also subject matter experts in the field of highway transportation issues.

If you are interested in publishing an article in *Public Roads*, please contact HRTM.⁽⁴⁹⁾

Schedule

The magazine is distributed every other month, with submissions due approximately 5 months before the publication date of each issue: January/February (deadline is July 1), March/April (deadline is October 1), May/June (deadline is December 10), July/August (deadline is February 1), September/October (deadline is March 21), and November/December (deadline is May 21).

CHAPTER 7. ELECTRONIC PUBLISHING

This chapter provides details regarding the electronic publishing process. The applicable laws, rules and FHWA policies are as follows:

- Section 508 of the *Rehabilitation Act*.^(13,19)
- *Paperwork Reduction Act*.⁽¹¹⁾
- *Privacy Act*.⁽⁵⁰⁾
- *Freedom of Information Act*.⁽¹⁰⁾
- Federal Acquisition Regulations.⁽⁵¹⁾

Electronic publishing refers to any document or published item that is not printed on paper. Examples are digital versatile disks (DVDs), Web pages, websites, publications, and multimedia presentations (such as Microsoft® PowerPoint presentations containing slides, sounds, and movies/videos such as .avi or .mov files).

FILE FORMATS

Multimedia options that provide special graphic enhancement, multimedia effects, or interactive applications can be prepared. If you need special video or audio effects for a presentation, video wall, or other item, contact the Office of Information Technology Services (HAIS) or HRTM for assistance. Keep in mind that multimedia presentations such as Microsoft® PowerPoint, videos, and .mov files must also be compliant with Section 508, and they follow a different set of rules than those used for Web page or database software applications.^(14,24) See the Access Board’s Section 508 website for more information.⁽³³⁾

HTML format is the required electronic format for all FHWA publications. It can be used to create a range of document styles, from simple, text-only items to those with elaborate graphics. Documents in HTML format adapt to different screen sizes and computer characteristics. In addition, HTML documents are easily searchable by Internet search engines and can be used by assistive devices, such as screen readers that “read” the code on a Web page and translate it into audio format for people who have vision disabilities. See information about DVDs below and for website publishing.

Adobe® Acrobat PDF files can be prepared for a publication in addition to HTML format. If you want users to be able to print your document on their desktop printers so that it looks exactly like the original, consider also providing a PDF file. However, PDF files do not adapt as readily to individual computer formats nor are they considered “accessible” files for complying with Section 508 of the *Rehabilitation Act*.⁽¹⁴⁾

For every publication created as an Adobe® Acrobat PDF file, there also should be a Section 508-compliant HTML document.⁽²¹⁾ This is a requirement for files on the Internet or StaffNet. If a PDF file or other format is desired, it may be prepared and posted on an FHWA website along with the HTML version of the publication.⁽²¹⁾

The following guidelines for reviewing final Adobe® Acrobat PDF documents are recommended:

- Compare page breaks with those in the original file. Make necessary adjustments so that the Adobe® Acrobat PDF file is an exact copy of the print version and the original electronic version.
- Check the table of contents in the Adobe® Acrobat PDF file to ensure that if repagination occurs, the page numbers are correct for the entries in the table of contents.
- Compare figures and tables with the original file. Make necessary adjustments to the figures and tables so that the Adobe® Acrobat PDF file is an exact copy of the print version and the original electronic version.
- Verify that the figures and tables are readable and printable.
- Reduce file size, if necessary.
- Use the correct publication cover. You can have one created by HRTM, if needed.
- Submit an abstract of the publication in electronic format along with the Adobe® Acrobat PDF files.
- Do not create Adobe® Acrobat PDF documents from scanned “originals.”

PRESENTATIONS AND VIDEOS

Policy Implications

The office director or designate is responsible for making sure that external presentations and videos are in agreement with management policies and approved by HPA.

Schedule

Timeframes for presentations developed in-house are the responsibility of the requesting office. When using HRTM services, expect about 4 weeks for turnaround for presentations, depending on length and scope of presentation. See table 6 for the list of submission requirements for Microsoft® PowerPoint presentations. Videos can take months to complete.

Prior to performing a video shoot, you must provide a video script and a completed FHWA Form 1113 to HRTM, who in turn will submit the information to HPA for review and approval. A storyboard depicting a visual representation of the storyline also would be helpful.

Prior to publicly releasing a video or presentation, researchers and authors must provide the final version in a completed FHWA Form 1528 to HRTM, who will submit the information to HPA for review and approval.

In addition to the above submission requirements and depending on the product and distribution of that product, other Section 508 guidelines may also apply.⁽¹⁴⁾ For example, a video in a presentation may fall under Video and Multimedia Products under the Access Board's *Guide to the Section 508 Standards for Electronic and Information Technology* in the Technical Standards section.^(24,33)

Any multimedia file also must include software applications to run or view it (i.e., movie or media players, browsers, Adobe® Acrobat Readers, Microsoft® PowerPoint readers, Microsoft® Word readers, etc.) as links or executable zipped download files on the website, DVD, and the software also must follow Software Applications and Operating Systems guidelines under the Access Board's *Guide to the Section 508 Standards for Electronic and Information Technology* in the Technical Standards section.^(23,33)

Presentations and videos accessible through an HTML or other Web interface must follow Web-based Intranet and Internet Information and Applications guidelines under the Access Board's *Guide to the Section 508 Standards for Electronic and Information Technology* in the Technical Standards section.^(22,24,33)

If the electronic information or multimedia is presented on an unmanned kiosk such as at a trade show or event, the equipment may be considered a "standalone kiosk" and as such may fall under Self Contained, Closed Products under the Access Board's *Guide to the Section 508 Standards for Electronic and Information Technology* in the Technical Standards section.^(26,33)

Program offices are responsible for ensuring that videos are captioned to comply with Section 508.

Table 6. Microsoft® PowerPoint presentations, movies, videos—what to submit.

Steps	What to Submit	Videos (MPEG, AVI)	Audio (MP3)	Photos (JPG)	Multimedia (PPT, MPEG)
1	Video or audio script for HPA review prior to video shoot	•	•	—	•
2	FHWA 1113 Clearance Request for Public Materials Video, Print, Web, Social Media, or Multimedia Form for HPA review prior to video shoot	•	•	—	•
3	HRTM Service Request Form	•	•	•	•
4	FHWA 1528 Form Authorization to Proceed for Public Materials. Materials Video, Print, Web, Social Media, or Multimedia Form for HPA review and approval prior to releasing the video or presentation for distribution.	•	•	—	•
5	508 captions for nontext elements in Microsoft® Word file for editing	•	•	•	•
6	Originating file format (i.e., AVI, MOV, etc.)	•	•	•	•
7	Accessibility according to Section 508 ⁽¹³⁾	•	•	•	•

—Submission not required.

WEBSITE PUBLISHING

Website publishing can be used as a primary route of publication, a secondary source of publication, or as a supplemental source of information. (See references 50, 52, 11, 53, and 14.) The Web provides an electronic medium that offers graphical interface, instantaneous transmission, and multimedia presentation materials. Website publishing is especially useful for documents containing information that needs to be issued quickly, and many agencies are publishing only on the Web. Because all publications must be in electronic format, make sure that your specifications for your electronic publication include Section 508 guidelines.^(12,14) Keep in mind that a high-quality Web design can be just as costly as a printed design.

Web projects may face posting delays due to the number of complex tables, equations, and figures; the number of pages; missing 508 captions; the researcher's final review; and other jobs in the queue at the same time.

Website Requirements

The FHWA Chief Information Officer (CIO) must approve both new FHWA websites and the purchase and use of new website domain names (www.webname.gov). To provide transparency, it is the CIO's policy to have all websites under a .gov domain. In addition, HAIS must approve the final HTML code and design before any websites are posted "live." Any new content, major updates to content, and redesigned content must be approved by HPA prior to public release.

Contractors and FHWA personnel who will perform HTML coding or will accept a final deliverable composed of HTML files are required to ensure that, after editing, all HTML files are coded according to both FHWA requirements and the requirements of the Access Board and FHWA's minimum requirements.^(21,14,19) Contact HRTM for more information.

Minimum Requirements for FHWA Web Pages

Please contact HRTM for specific Web page requirements before creating or preparing material for the research website. Electronic publishing guidelines frequently evolve or change as a result of legislation and the dynamic development of electronic communications technologies. For this reason, HPA and HAIS Web group must review all new materials.

In an effort to achieve greater quality, usability, and consistency, the Information Technology Division has established the following minimum technical standards that must be met by all FHWA Web pages; Web documents that do not meet these standards will not be posted.⁽²¹⁾

- *FHWA Web Pages will be encoded to conform to HTML 4.01 Transitional or higher, as defined by the World Wide Web Consortium.⁽⁵⁴⁾*
- *File names will not exceed 20 characters in length. File names will be lower case, consist solely of letters, numbers and the underscore and will not contain slashes, spaces, tildes or hyphens. File extensions are to be three characters or less whenever possible (i.e., .htm instead of .html).*
- *All Web pages will have a title in the head section of HTML documents. The title should be unique (to the server), brief, and descriptive—not to exceed 150 characters in length.*
- *Web pages must be free of broken links or missing images. All links to pages within the server will be relative.*
- *Web pages posted on the public Internet will have a standard header and footer. Web pages posted on StaffNet will use the standard templates.*
- *FHWA Web pages will comply with Section 508 Web accessibility standards as established by the Architectural Transportation Barriers Compliance Board.^(14,19)*

- *All textual files posted on the FHWA Internet server will be available in HTML format. All other formats (e.g., PDF, Microsoft® Word, Microsoft® Excel, and Microsoft® PowerPoint) will have HTML equivalents.*
- *The bodies of Web pages will use sans-serif fonts (e.g., Arial or Helvetica).*
- *Internet Web pages will feature “exit doors” on links to non-Government websites (anything other than Federal, State, or local governments).*
- *All entry point Web pages on the Internet will feature a privacy policy statement or a link to the Agency privacy policy statement on the main server.*
- *Web pages that collect survey information from the public must be approved by the OMB, in accordance with the Paperwork Reduction Act.⁽¹¹⁾*
- *New FHWA websites must be approved by the FHWA CIO before posting.*
- *The use of persistent cookies on FHWA websites is forbidden. Session cookies are permitted, subject to approval on a case-by-case basis.*

HRTM also will assist the researcher with their request and work with them and HAIS to process the website request. If a contractor is preparing the material for Web publishing, the COR must ensure that the contractor has received the most current set of guidelines from HRTM before starting the HTML programming phase.

Technical Review

Each office should establish its own process for reviewing documents for technical soundness, accuracy, and adherence to policy; this process should contain the necessary checks and balances and coordination with other appropriate offices and individuals to ensure that FHWA continues to publish high-quality materials. The office director is responsible for all content related to his/her office and functional areas for which he/she is responsible.

See table 7 for the list of submission requirements for Web-only communication products.

Surveys

OMB, in accordance with the *Paperwork Reduction Act*, must approve all surveys to be disseminated to the public in electronic or nonelectronic format, whether the surveys appear in documents or are conducted in other forums such as focus groups, interviews, test groups, or telephone surveys.⁽¹¹⁾ The *Paperwork Reduction Act* clearance is required when standardized data collection from 10 or more respondents is collected in response to a Federally sponsored data collection within a 1-year period.⁽¹¹⁾ The “*Paperwork Reduction Act* clearance” is the term used for the process of obtaining approval from OMB for Federally sponsored data collections as required by the *Paperwork Reduction Act*.⁽¹¹⁾

OMB was originally granted this authority in 1940 under the *Federal Reports Act*.⁽⁵⁵⁾ Due to increasing complaints from the public about duplicate and lengthy Federal Government data

collections, Congress passed the *Paper Reduction Act of 1980*, which was reissued in 1995.⁽¹¹⁾ The purpose of the act remains to ensure that Federal agencies do not overburden the public with Federally sponsored data collections.⁽¹¹⁾

Privacy Act

The *Privacy Act* (Title 5 U.S Code 552a), passed by Congress in 1974, establishes certain controls over what personal information is collected and maintained by the Executive Branch of the Federal Government and how the information is used.^(50,56) The act grants certain rights to an individual on whom records are maintained and assigns responsibilities to an agency that maintains the information.

The entire USDOT workforce (Federal and contracted employees) is subject to the *Privacy Act* and must comply with all of its provisions.⁽⁵⁰⁾ Noncompliance with the *Privacy Act* carries criminal and civil penalties.⁽⁵⁰⁾

What are USDOT's Responsibilities Under the Privacy Act?

USDOT's responsibilities under the *Privacy Act* are as follows:⁽⁵⁰⁾

- Maintaining only such information that is both relevant and necessary to accomplish a purpose of the agency.
- Collecting information to the greatest extent practicable directly from the subject individual.
- Informing each individual whom it asks to supply information with a *Privacy Act* Statement.
- Maintaining all records used by the agency about an individual with such accuracy, relevance, timeliness, and completeness to assure fairness to the individual.
- Publishing the existence of a system of records (i.e., system of records notice).

What Rights are Granted Individuals Under the Privacy Act?

Under the act, individuals are granted the right to do the following:⁽⁵⁰⁾

- Determine what records about them are being collected, maintained, used, or disseminated by USDOT.
- Prevent records pertaining to them from being used or made available for another purpose without their consent.
- Gain access to records about oneself, subject to *Privacy Act* exemptions.
- Amend a record if it is inaccurate, irrelevant, untimely, or incomplete.

- Sue the government for violations of the statute, such as permitting unauthorized individuals access to your records.

Which Individuals are Covered by the Privacy Act?

The *Privacy Act* applies only to records collected and maintained on living individuals who are U.S. citizens or lawfully admitted aliens, whose records are filed in a “system of records” where those records are retrieved by a personal identifier.⁽⁵⁰⁾

What Records are Subject to the Privacy Act?

Records subject to the *Privacy Act* are those about an individual collected and maintained in a “system of records.”⁽⁵⁰⁾ A system of records is a group of records that have the following in common:

- Contains personal identifiable information (PII) such as a name, date of birth, Social Security number (SSN), Employee Number, fingerprint, etc.
- Contains at least one other item of personal data (e.g., home address, performance rating, and blood type).
- Requires the data about the subject individual to be retrieved by their personal identifier(s).

What Are PII and Sensitive Personally Identifiable Information (SPII)?

PII is information that can be used to distinguish or trace an individual’s identity, such as their name, SSN, biometric records, etc., alone or when combined with other personal or identifying information that is linked or linkable to a specific individual, such as date and place of birth, mother’s maiden name, etc.

Certain PII, while not sensitive PII, may be Sensitive Security Information (SSI) under 49 CFR Part 15 or 49 CFR Part 1520.^(57,58) PII that is SSI must be maintained, disseminated, and destroyed in accordance with this policy, the *Privacy Act* (if applicable), and the applicable SSI requirements at 49 CFR Part 15 or 1520.^(50,57,58)

SPII is a subset of PII that, if lost, compromised, or disclosed without authorization, could result in substantial harm, embarrassment, inconvenience, or unfairness to an individual. SPII requires stricter handling guidelines because of the increased risk to an individual if the data are compromised.

The following PII is always (de facto) sensitive, with or without any associated personal information, and cannot be treated as low confidentiality:

- SSN.
- Passport number.

- Driver's license number.
- Vehicle identification number.
- Biometrics, such as finger or iris print, and DNA.
- Financial account number such as credit card or bank account number.
- The combination of any individual identifier and date of birth, mother's maiden name, or last four digits of an individual's SSN.

The following information is SPII when associated with an individual:

- Account passwords.
- Criminal history.
- Ethnic or religious affiliation.
- Last 4 digits of SSN.
- Mother's maiden name.
- Medical Information.
- Sexual orientation.

In addition to de facto SPII, some PII may be deemed sensitive based on context. For example, a list of employee names is not SPII; however, a list of employees' names and their performance rating would be considered SPII.

The following PII is not sensitive alone or in combination unless documented with sensitive qualifying information and may be treated as low confidentiality:

- Name
- Professional or personal contact information, including email, physical address, phone number, and fax number

Federal employee name, work contact information, grade, salary, and position are not considered PII. Except for limited circumstances, this information is publically available and is not considered sensitive.⁽⁵⁹⁾ For more information, go to FHWA's privacy policy page.⁽⁵⁹⁾

Freedom of Information Act

Based on the principle that an informed public is essential to the democratic process, the *Freedom of Information Act*, which can be found at Title 5 §552 of the U.S. Code, requires Federal agencies to make agency records available to the public either proactively or in response to a request, subject to certain conditions and exceptions.⁽¹⁰⁾ The *Freedom of Information Act* includes nine exemptions and three exclusions that permit an agency to withhold a record in part or in full in limited circumstances.⁽¹⁰⁾ The Federal *Freedom of Information Act* does not provide a right of access to records held by the U.S. Congress, the U.S. Courts, or State or local Government agencies or by private businesses or individuals.⁽¹⁰⁾

Federal Acquisition Regulations

The Federal Acquisition Regulations affect publishing content, copyright ownership, licensing, patents, photography, illustrations, and other items that are represented in a document provided to FHWA through a contract deliverable.⁽⁵¹⁾ For example, *Federal Acquisition Regulation Subpart 27.4—Rights in Data and Copyrights* in a contract can affect whether FHWA or a contractor owns a photo taken during a research study.⁽⁶⁰⁾ Another Federal Acquisition Regulation clause may affect whether FHWA may post software code on a website.^(51,61) For more information, consult with HRTM, the FHWA Office of Acquisition and Grants Management, or the Office of Chief Counsel.^(60,61)

Table 7. Web-only communication products—what to submit.

What to Submit	Reports	Other Communication Products
HRTM Service Request Form	•	•
Microsoft® Word file of document(s)	•	•
Microsoft® Word file of 508 captions	•	•
Foreword and disclaimer	•	—
Completed Technical Report Documentation Page (Form DOT F 1700.7)	•	—
Metric chart	•	—
Tables, charts, and graphs in separate native file formats (Microsoft® Excel files for tables and .jpg or .tif files for graphic and CAD files)	•	•
Illustrations, figures, and equations in .jpg or .bmp file formats	•	•
FHWA’s HTML coding template with proper headers and footers for reports. Reports must be coded using these HTML headers and footers	•	—
PDF file of the document after final edit	•	•
Document falls under Web-based Intranet and Internet Information and Applications under the Access Board’s <i>Guide to the Section 508 Standards for Electronic and Information Technology</i> in the Technical Standards section. ^(22,33)	•	•

—Submission not required.

CHAPTER 8. GUIDELINES FOR HPA REVIEW, SOCIAL MEDIA, AND MEDIA RELATIONS

This chapter provides an overview of the guidelines for HPA review, social media, and media relations. The applicable laws, rules, and FHWA policies are as follows:

- Section 508 of the Rehabilitation Act.^(14,19)
- 44 US Code §3301.⁽⁶²⁾
- 36 CFR §1236.⁽⁶³⁾
- USDOT Order 1351.33.⁽⁶⁴⁾

HPA REVIEWS

In addition to the standard research reports, technical flyers, and brochures, there are many other ways to disseminate research results and information about the activities and accomplishments of FHWA R&T.

As stated several times within this guidance, any communication provided to an external audience must be reviewed by HPA. Prior to writing and submitting a document or other communications vehicle like a video, the researcher must submit FHWA Forms 1113 and 1528 to HRTM. HRTM will submit the information and forms to HPA for review and approval. See appendixes S and T for a copy of the forms.

HPA Review of External Trade Magazine and Journal Articles

All articles for external periodicals (e.g., trade or scientific journals) must be sent by HRTM to HPA for review, possible editing, and distribution by HPA. Prior to writing and submitting an article, the researcher must submit FHWA Forms 1113 and 1528 to HRTM and HRTM, in turn, will submit the information to HPA for review and approval. See appendixes S and T for a copy of the forms.

Before submission to HPA, the external trade journal article must have the written endorsement of the appropriate office director, indicating that the release or article is accurate, is consistent with USDOT policies and positions, addresses sensitive or timely issues, and is appropriate for mass dissemination.

Because publication in trade magazines or journals requires a longer lead time than placement in newspapers or broadcast media, authors should contact the HPA media relations staff for publishing deadlines.

Trade Magazine or Journal Articles: Do Not Sign Any Forms or Agreements

After receiving final approval from the HRTM HPA liaison, articles may be submitted to a trade publication—either by HPA or by the research employee (with permission from HPA). FHWA employees who write articles are not permitted to sign forms or agreements on behalf of the Federal Government unless they have documented written authority to commit the agency to a legal and binding agreement. Instead, the Office of Chief Counsel approved a letter template that

can be signed by a researcher and used to accompany the submission of a journal article in lieu of signing an agreement (see appendix U). Please consult with HRTM or the Office of Chief Counsel for more information.

SOCIAL MEDIA

FHWA uses social media to inform multiple audiences about current and completed projects and initiatives. Other uses include recruiting potential employees, promoting events, and sharing photographs and video clips from recent events and speaking engagements. Social media is a channel through which the agency engages readers, builds interest, and seeks public feedback and input.

FHWA has a Facebook® page, a YouTube® channel, a Twitter® account, a Flickr® account, and a LinkedIn® account. (See references 65 through 69.)

FHWA Social Media Policy

When considering the use of social media for FHWA communication, please refer to the following directive for FHWA's social media policy.⁽⁷⁰⁾

1. *What Is FHWA's Policy Concerning Social Media/Web 2.0?*

a. *Account Management*

- 1) *HPA is the authorized office responsible for the approval, management, maintenance, and governance of all FHWA Social Media/Web 2.0 accounts. All accounts created on third-party Social Media/Web 2.0 technologies for purposes of official communications will be approved, governed, and centrally managed by HPA.*
- 2) *To comply with the provisions of DOT Order 1351.33, FHWA may only use technologies approved by OCIO and listed in the Social Media/Web 2.0 technologies catalog maintained by that office.*
- 3) *This directive does not apply to existing FHWA Communities of Practice. However, existing or new Communities of Practice that incorporate or intend to incorporate Social Media/Web 2.0 components (e.g., blogs, wikis, and YouTube®) must be discussed, reviewed, and approved by HPA prior to implementation.*

b. *Content Management*

- 1) *All content to be shared on FHWA Social Media/Web 2.0 sites by FHWA employees and contractors must be approved by HPA prior to posting.*
- 2) *All FHWA Social Media/Web 2.0 sites shall comply with the requirements of Section 508 of the Rehabilitation Act and all the applicable provisions of the Departmental Web Policy, DOT Order 1351.24.*

- 3) *To ensure adequate access for individuals who prefer not to use Social Media/Web 2.0 sites to communicate with or obtain information and services from FHWA, equivalent content posted to a third-party platform must be available on an official “.gov” site, and visitors to the third-party platform must be properly directed to the official “.gov” site to find equivalent content.*
- 4) *All approved FHWA third-party Social Media/Web 2.0 sites must, to the extent practical, display or direct visitors to:*
 - a) *An official FHWA “.gov” website for official information (e.g., www.fhwa.dot).*
 - b) *The Citizen Conduct Policy in DOT Order 1351.33, when Social Media/Web 2.0 technology allows for additional citizen conduct requirements (i.e., comment policies, take-down notices, terms of use, etc.), whether hosted on or outside a “.gov” website address. The Citizen Conduct Policy establishes general guidelines for participating in the use of FHWA-maintained Social Media/Web 2.0 sites.*
- 5) *If the third-party Social Media/Web 2.0 site is used to invite feedback, an official FHWA email address where users can also send feedback shall be provided. An official FHWA telephone number and/or mailing address may also be provided.*
 - a) **Privacy Management.** *FHWA third-party Social Media/Web 2.0 technologies shall follow the privacy policies outlined in DOT Order 1351.24, paying particular attention to complying with requirements to collect the minimum information necessary.*
 - b) **Information Collection Requests/Paperwork Reduction Act**
- 6) *When FHWA uses a “general suggestion/comment box” to generate feedback and does not request respondent identification beyond a username and email address, OMB approval is not required.*
- 7) *When there is a need to solicit feedback from the public using a Social Media/Web 2.0 technology, an approval from OMB is required if:*
 - a) *FHWA requests information from respondents beyond names and email addresses (e.g., age, sex, race/ethnicity, mailing address, employment, or citizenship status).*
 - b) *FHWA asks the public to respond to a series of specific questions or a series of specific prompts that gather information (e.g., for purposes of aggregation or survey).*
- c. **Records Management.** *Official FHWA business information stored on Social Media/Web 2.0 sites are considered Federal records and must be managed accordingly. Refer to 44 U.S.C. 3301 for a definition of Federal records, 36 CFR 1236 for general guidance on electronic records management, and National Archives and Records Administration*

(NARA) Bulletin 2011-02 for guidance on managing records in Social Media/Web 2.0 technologies.

- d. **Intellectual Property.** FHWA employees and contractors may not use or post copyrighted materials without permission from the copyright owner. FHWA-owned images and videos used in an agency context do not constitute copyright infringement and may be used wherever appropriate, given HPA's approval. (See DOT Order 1351.33 for Departmental policy on Intellectual Property).*
- e. **Employee Conduct***
 - 1) FHWA employees shall follow the Employee Conduct Policy in DOT Order 1351.33. Failure to comply with this policy may result in disciplinary action, up to and including removal from Federal service.*
 - 2) When using Social Media, FHWA employees are bound by the same conduct and ethical rules that apply to offline conduct, including those under 5 CFR 2635.*
 - 3) FHWA employees and contractors have no expectation of privacy for any communications executed on Government-owned equipment, whether the communications are made by employees in their official or personal capacities.*
- f. **Citizen Conduct.** While FHWA encourages the submission of comments on transportation-related issues from the public, FHWA expects communications to follow conventions of civil discourse. Therefore, FHWA will follow the Citizen Conduct Policy in DOT Order 1351.33.*

RESPONDING TO THE MEDIA

When a manager or researcher needs to reach a more specific audience or the public, it may be appropriate to seek further outreach in a press release, an interview, or through publication in trade journals. Conversely, members of the press often contact researchers directly for technical commentary. Establishing and conducting media relations, writing news releases, participating in interviews, and publishing in trade journals require approval from HPA. Please refer such inquiries to them at 202-366-0660.

If a reporter contacts you, refer them to HPA (202-366-0660) immediately.

If possible, please follow up with an email to the Associate Administrator for Public Affairs or the Senior Media Relations Specialist in HPA.

CHAPTER 9. DISTRIBUTING YOUR COMMUNICATION PRODUCTS

This chapter provides an overview of the process for distributing your communication products. The applicable laws, rules, and FHWA policies are as follows:

- N1-406-08-6.⁽⁷¹⁾
- FHWA Order 1324.1B.⁽⁷²⁾
- Title 44 of the U.S. Code.⁽⁵⁾
- *American Technology Preeminence Act of 1992*.⁽⁷³⁾

TARGET YOUR AUDIENCE

You may customize your own distribution plan by identifying the audience you want to reach and providing a Microsoft® Excel file with addresses in electronic format or submitting preprinted mailing labels.

REPORT, TECHBRIEF, AND PUBLICATION MAILING LISTS

HRTM maintains report, TechBrief, and other publication standard distribution mailing lists to reach targeted technical audiences. The mailing lists include entities that have requested printed copies of all our products. They are generally libraries, researchers, State transportation departments, and academic institutions such as the Transportation Research Board Library, Texas Transportation Institute, and the National Network of Transportation Research Information Services Repositories at Northwestern University. HRTM will add these mailing labels to your distribution requirements upon request.

FHWA Internal Distribution

Internal distributions of a publication are handled upon request of the submitting office. When choosing to distribute copies of a publication internally, please consider which offices would benefit from your RD&T product, identify the number of copies needed, and advise HRTM accordingly.

FHWA External Mailing Lists

There are about a dozen official FHWA mailing lists that can be added to your distribution plans to reach yet another audience of highway transportation associations. The FHWA publishing office maintains and updates these official lists. For more information, please contact HRTM.

Customized Mailing List

If you would like to submit your own mailing list for distribution, please provide a Microsoft® Excel file that includes the names and addresses of recipients. Please include the field names listed in table 8 for the headers in the Microsoft® Excel document.

Table 8. Format for customized mailing list.

Use This Field Name as the Microsoft® Excel Header	Enter This Type of Data in the Field
COMPANY_1	Company name or name of person (if desired)
COMPANY_2	Company name
STREET_1	Street address
STREET_2	Addition street address
CITY	City
STATE	State
ZIP	First 5 digits of ZIP Code™
ZIP_4	Last 4 digits of ZIP Code™
COUNTRY	Country code
Number of copies	Total copies to the person/company at the address

ELECTRONIC DATABASE SUBMISSIONS

As information managers for TFHRC R&T documents, HRTM will ensure your products follow required record retention and public access regulations through the appropriate communication channels.

Records Archives

Under the disposition authority granted by NI-406-08-6, RD&T is responsible for transferring its technical report files, which have been determined by the National Archives and Records Administration (NARA) to be permanent records, to the Federal Records Center 3 years after the cutoff date.^(71,74) Complying with this authority, HRTM is working with the FHWA Research Library and the FHWA Records Officer to transfer a copy of all FHWA RD&T technical reports produced by TFHRC to the National Archives according to the disposition schedule detailed in FHWA Order 1324.1B, dated July 29, 2013.⁽⁷²⁾

Copies of Publications to GPO, Library of Congress, and NARA

GPO administers the dissemination of certain tangible publications, as specified by public law. Under Title 44 of the United States Code, GPO is required to provide copies of publications to certain Federal agencies and others, at the direction of Congress.⁽⁵⁾ Two or more copies of every publication printed are provided to the Library of Congress.⁽⁷⁴⁾ NARA is entitled to receive three copies of every publication printed.⁽⁷⁵⁾ In addition, on behalf of the Department of State, GPO distributes copies of publications to foreign legations.⁽⁷⁶⁾ GPO also maintains mailing lists for by-law distribution of specific publications.⁽⁷⁷⁾

Publications to National Technical Information Service (NTIS)

Regardless of how a researcher or author chooses to disseminate a communication product, the *American Technology Preeminence Act of 1992* requires that all publications must be available for public distribution through NTIS.⁽⁷³⁾ When HRTM processes your communication product for editorial review and publication, the appropriate number of copies and the link are provided to NTIS.

NTIS's basic authority to operate a permanent clearinghouse of scientific and technical information is codified as chapter 23 of Title 15 of the U.S. Code.⁽⁷⁸⁾ This chapter also established NTIS's authority to charge fees for its products and services and to recover all costs through such fees "to the extent feasible."

This authority was restated in the *National Technical Information Act of 1988*, codified at 15 U.S. Code 3704b.⁽⁷⁹⁾ That act gave NTIS the authority to enter into joint ventures and declared the clearinghouse to be a permanent Federal function that could not be eliminated or privatized without Congressional approval.

Finally, the act was amended by the *American Technology Preeminence Act of 1991* (Public Law 102-245), which requires agencies to make copies of their scientific and technical reports available to NTIS.⁽⁸⁰⁾ See: <http://www.ntis.gov/about/#statutes>.

Please note that the *Copyright Act* defines "published" as available to the public, and it is FHWA's position that items sent to NTIS are considered published because the information is made available to the public.⁽²⁰⁾ Therefore, no publication items are to be considered "unpublished" and provided solely to NTIS.

APPENDIX A. SAMPLE OF REPORT FRONT COVER

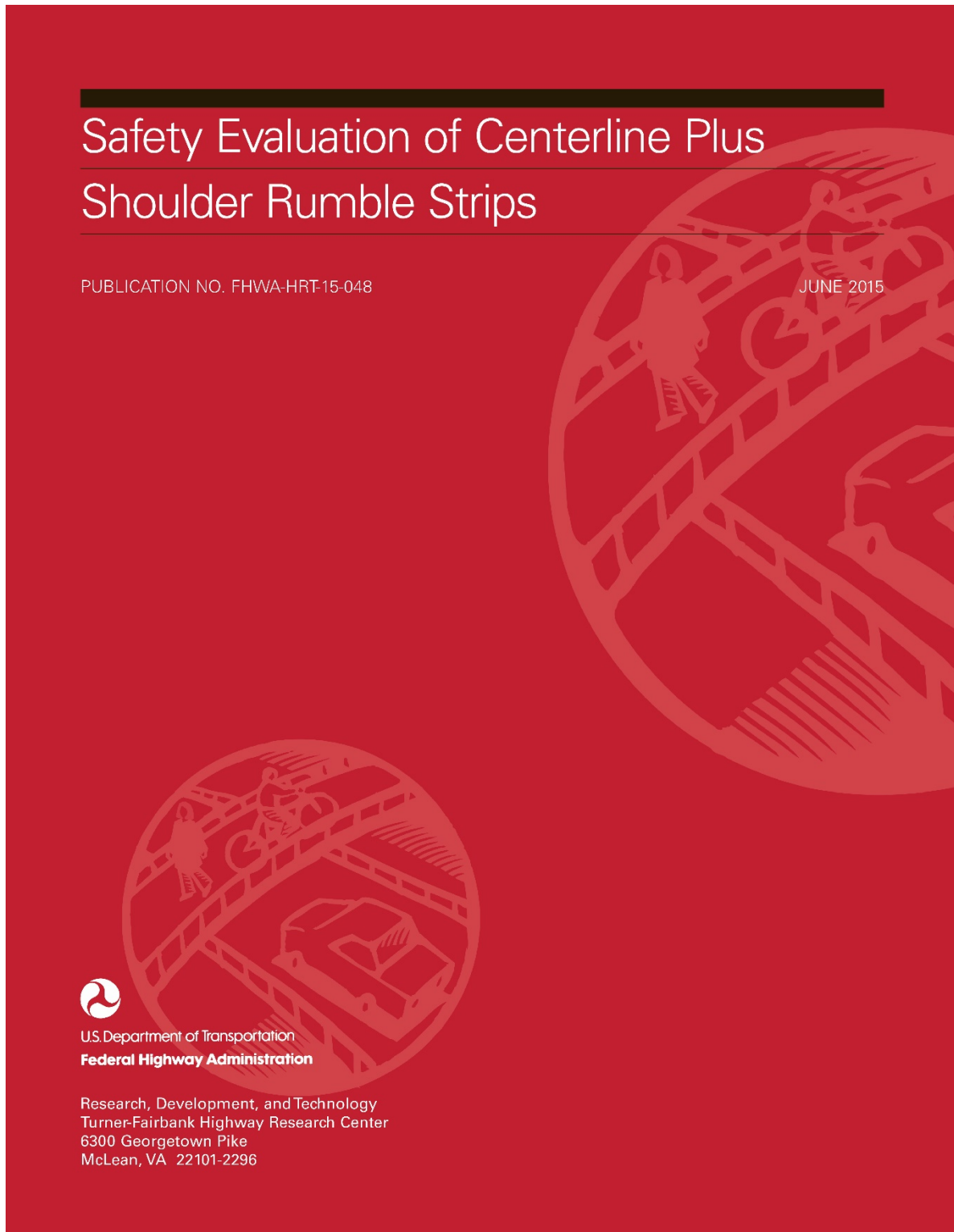


Figure 19. Photo. Report cover.

APPENDIX B. SAMPLE INSIDE FRONT COVER

Foreword

Salt-induced reinforcing steel corrosion in concrete bridges has undoubtedly become a considerable economic burden to many State and local transportation agencies. Because the iron in the steel has a natural tendency to revert eventually to its most stable oxide state, this problem will, unfortunately, still persist, but to a much lesser degree as a result of the use of various corrosion protection strategies currently used in new construction. The adoption of corrosion protection measures in new construction, such as the use of good design and construction practices, adequate concrete cover depth, low-permeability concrete, corrosion inhibitors, and coated reinforcing steel, is significantly reducing the occurrence of reinforcing steel corrosion in new bridges. This report summarizes the results of various research investigations in developing and evaluating the performance of various corrosion protection systems. This report describes materials and measures that can be used for corrosion control in reinforced and prestressed concrete bridge structures in new construction.

This report will be of interest to materials and bridge engineers, reinforced concrete corrosion specialists, and those concerned with the performance of reinforced and prestressed concrete bridges.

John Doe
Director, Office of Infrastructure
Research and Development

Notice

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Quality Assurance Statement

The Federal Highway Administration (FHWA) provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

APPENDIX C. TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. FHWA-HRT- -	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle		5. Report Date	
		6. Performing Organization Code	
7. Author(s)		8. Performing Organization Report No.	
9. Performing Organization Name and Address		10. Work Unit No.	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address Office of Federal Highway Administration 6300 Georgetown Pike McLean, VA 22101-2296		13. Type of Report and Period Covered	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract			
17. Key Words		18. Distribution Statement No restrictions. This document is available to the public through the National Technical Information Service, Springfield, VA 22161. http://www.ntis.gov	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages	22. Price

Form DOT F 1700.7 (8-72)

Reproduction of completed pages authorized.

APPENDIX D. SAMPLE METRIC CONVERSION FACTORS PAGES

SI* (MODERN METRIC) CONVERSION FACTORS				
APPROXIMATE CONVERSIONS TO SI UNITS				
Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
AREA				
in ²	square inches	645.2	square millimeters	mm ²
ft ²	square feet	0.093	square meters	m ²
yd ²	square yard	0.836	square meters	m ²
ac	acres	0.405	hectares	ha
mi ²	square miles	2.59	square kilometers	km ²
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft ³	cubic feet	0.028	cubic meters	m ³
yd ³	cubic yards	0.765	cubic meters	m ³
NOTE: volumes greater than 1000 L shall be shown in m ³				
MASS				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
ILLUMINATION				
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m ²	cd/m ²
FORCE and PRESSURE or STRESS				
lbf	poundforce	4.45	newtons	N
lbf/in ²	poundforce per square inch	6.89	kilopascals	kPa
APPROXIMATE CONVERSIONS FROM SI UNITS				
Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
AREA				
mm ²	square millimeters	0.0016	square inches	in ²
m ²	square meters	10.764	square feet	ft ²
m ²	square meters	1.195	square yards	yd ²
ha	hectares	2.47	acres	ac
km ²	square kilometers	0.386	square miles	mi ²
VOLUME				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m ³	cubic meters	35.314	cubic feet	ft ³
m ³	cubic meters	1.307	cubic yards	yd ³
MASS				
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
TEMPERATURE (exact degrees)				
°C	Celsius	1.8C+32	Fahrenheit	°F
ILLUMINATION				
lx	lux	0.0929	foot-candles	fc
cd/m ²	candela/m ²	0.2919	foot-Lamberts	fl
FORCE and PRESSURE or STRESS				
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in ²

*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380. (Revised March 2003)

Figure 20. Photo. Sample metric conversion factors page.

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APPENDIX H. SAMPLE ACKNOWLEDGMENTS PAGE

Acknowledgments

Federal Highway Administration would like to express appreciation to the following organizations for granting permission to copy publications and for providing information used in developing this training program:

The American Association of State Highway and Transportation
ASTM

The agency also would like to acknowledge the following State transportation departments for the same courtesy:

Connecticut
Idaho
Maryland
Massachusetts
Michigan
New York

Complete copies of publications can be obtained by contacting these organizations and offices directly.

Some of the map figures in this document were modified. The original maps are the copyright property of Google® Earth™ and can be accessed from <https://www.google.com/earth/>.⁽⁴⁴⁾ The map overlays showing the incorrect longitudinal placement of centerlines were developed as a result of this research project. The overlays include red and blue lines showing the incorrect placement of centerlines.

Note: Under no circumstances should a contractor name be added to this page.⁽⁴⁸⁾ The contractor acknowledgement for FHWA research reports is on DOT Form 1700.7.

APPENDIX I. LIST OF PREFERRED TERMINOLOGY

Please use the following preferred terminology when writing a document.

backcalculation

clear-cut

coleader (codirector)

co-op

cost effective

cross section

day-to-day

decisionmaking

Federal

Federal aid (as a noun)

Federal-Aid Highway Program (official)

Federal-aid program (generic)

federally recognized (as an adverb)

fine-tune

free flowing

hands-on

indepth

in-place

in-house

in-service (adjective/adverb for bridge or road operational status, e.g., in-service bridge inspection)

lifecycle

long-range (as adjective)

long-term (as adjective)

misstate

multiagency

multiyear

multidimensional

nondestructive (nonattainment, noncohesive, nonconforming, nonresponsive, etc.)

offsite

ongoing

online

offsite

onsite

pooled fund

prequalify

preregister

prerequisite

preset

prestressed

post-stressed

reenact

regrade

retest

reinstitute

reengineer

right-of-way

self-contained

short-term (as adjective)

State

statewide

thought-out

time-consuming

two-sided

ultrawide band

underestimate

Web page (World Wide Web, Web, Internet, Intranet)

website

webinar

workgroup

APPENDIX J. LIST OF PREFERRED ACRONYMS/ABBREVIATIONS

Please use the following organization names, abbreviations, and acronyms. Note that terms such as AADT (annual average daily traffic), PCC (portland cement concrete), dpi (dots per inch), and many more are common nouns, and are thus lowercase when spelled. Keep common nouns in mind when deciding whether to use uppercase or lowercase.

AAA	American Automobile Association
AAAE	American Association of Airport Executives
AAAM	American Association of Automotive Medicine
AADT	annual average daily traffic
AAMVA	American Association of Motor Vehicle Administrators
AAPA	American Association of Port Authorities
AAR	American Association of Railroads
AASHTO	American Association of State Highway and Transportation Officials
ABA	American Bus Association
AC	asphalt concrete
ACI	American Concrete Institute
ACIR	Advisory Commission on Intergovernmental Relations
ACPA	American Concrete Pavement Association
ACTS	Automotive Coalition for Traffic Safety, Inc. (formerly American Coalition for Traffic Safety, Inc.)
ADA	Americans with Disabilities Act
AGCA	Associated General Contractors of America
AHUA	Association of Heads of University Administration
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ALF	Accelerated Loading Facility

AMPO	Association of Metropolitan Planning Organizations
AMTRAK	National Railroad Passenger Corporation (Amtrak is not a governmental agency; it is a private company called the National Railroad Passenger Corporation)
ANSI	American National Standards Institute
AOPA	Aircraft Owners and Pilots Association
APA	American Planning Association
API	American Petroleum Institute
APTA	American Public Transportation Association
APWA	American Public Works Association
ARTBA	American Road and Transportation Builders Association
ASBI	American Sequential Bridge Institute
ASCE	American Society of Civil Engineers
ASQ	American Society for Quality
ASTM	(formerly American Society for Testing and Materials)
ATA	American Trucking Association OR Air Transport Association
ATPA	American Technology Preeminence Act
AVC	Automatic Vehicle Classification
AWS	automated weather station
BAC	blood alcohol concentration
BESTEA	Building Efficient Surface Transportation and Equity Act of 1997
BMS	Bridge Management Systems
BPR	Bureau of Public Roads
BRR	Bridge Rehabilitation and Replacement
BTS	Bureau of Transportation Statistics
C SHRP	Canadian Strategic Highway Research Program

CAAA	Clean Air Act Amendments
CAFE	Corporate Average Fuel Economy
CBO	Congressional Budget Office
CBSSE	Commission on Behavioral and Social Sciences and Education (NRC)
CD	compact disk
CERF	Civil Engineering Research Foundation
CETS	Commission on Engineering and Technical Systems (NRC)
CFLHD	Central Federal Lands Highway Division
CFR	Code of Federal Regulations
CIMA	Construction Industries Manufacturers Association
CMAQ	Congestion Mitigation and Air Quality
CMS	Corporate Management Strategy
COMTO	Conference of Minority Transportation Officials
CoP	community of practice
COST	Cooperation on Science and Technology (program)
COTA	Congressional Office of Technology Assessment
COR	Contracting Officer's Representative
CPI	Continuous Process Improvement
CRG	<i>Turner-Fairbank Highway Research Center R&D Communication Reference Guide</i>
CRP	Cooperative Research Program (TRB)
CRS	Congressional Research Service
CSD	context sensitive design
CUTC	Council of University Transportation Centers
CVISN	Commercial Vehicle Information Systems and Networks
CVO	commercial vehicle operations

DARPA	Defense Advanced Research Projects Agency (DoD)
DoD	Department of Defense (U.S. Department of Defense)
dpi	dots per inch
DVD	digital versatile disk
EAP	Employee Assistance Program
ECMT	European Conference of Ministers of Transportation
EDL	Electronic Document Library
EEOC	Equal Employment Opportunity Commission
EFLHD	Eastern Federal Lands Highway Division
EIS	Environmental Impact Statement
EIT	electronic and information technology
EPA	Environmental Protection Agency (U.S. Environmental Protection Agency)
EPS	Encapsulated PostScript file
ESAL	equivalent single axle load
ETTM	Electronic Toll and Traffic Management
EU	European Union
EUREKA	European Research Coordination Agency
FAA	Federal Aviation Administration
FAQs	frequently asked questions
FARS	Fatality Analysis Reporting System
FEHB	Federal Employee Health Benefits
FHWA	Federal Highway Administration
FIFO	first in, first out
FIMS	Fiscal Management Information System
FMCSA	Federal Motor Carrier Safety Administration

FRA	Federal Railroad Administration
FRC	Federal Records Center
FRP	fiber reinforced polymer
FTA	Federal Transit Administration
FWD	falling weight deflectometer
FY	fiscal year
GAO	General Accountability Office
GIF	Graphic Interchange Format
GIS	geographic information system
GOE	general operating expenses
GPO	Government Printing Office
GPR	ground penetrating radar
GPRA	Government Performance and Results Act
GPS	Global Positioning System
GSA	U.S. General Services Administration
HBRRP	Highway Bridge Replacement and Rehabilitation Program
HIPERPAV™	High Performance Pavement
HITEC	Highway Innovative Technology Evaluation Center
HMA	hot mix asphalt
HP&R	Highway Planning and Research
HP&R	Highway Planning and Research
HPMS	Highway Performance Monitoring System (FHWA)
HR	human resources
HRTM	Office of Corporate Research, Technology and Innovation Management
HSGT	high-speed ground transportation

HSIP	Highway Safety Improvement Program
HTF	Highway Trust Fund
HTML	HyperText Markup Language
HUFSAM	Highway Users Federation for Safety and Mobility, now called American Highway Users Alliance
IACP	International Association of Chiefs of Police
IAHR	International Association for Hydraulic Research
IANA	Intermodal Association of North America
IATA	International Air Transport Association
IBTTA	International Bridge, Tunnel and Turnpike Association (no serial comma according to IBTTA's usage)
ICAO	International Civil Aviation Organization
IDEA	Innovations Deserving Exploratory Analysis
IDP	Individual Development Program
IEEE	Institute of Electrical and Electronics Engineers
IHSDM	Interactive Highway Safety Design Module
IIHS	Insurance Institute for Highway Safety
INA	International Navigation Association (formerly called PIANC, Permanent International Association of Navigation Congresses)
IOM	Institute of Medicine
IPP	individual performance plan
IRF	International Road Federation
IRI	International Roughness Index
ISO	International Organization for Standardization (correct even though it looks incorrect)
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute for Transportation Engineers

ITS	intelligent transportation system
ITS America	Intelligent Transportation Society of America
ITS/JPO	Intelligent Transportation Systems Joint Program Office
IUPT	International Union of Public Transport
IVHS	intelligent vehicle highway systems
IVI	Intelligent Vehicle Initiative
JPEG	Joint Photographic Experts Group
KM	knowledge management
KSAs	knowledge, skills, and abilities
L&D	learning and development
LADS	Learning and Development System
LAN	local area network
LCCA	lifecycle cost analysis
LRFD	load and resistance factor design
LTAP	Local Technical Assistance Program
LTP	Leave Transfer Program
LTBP	Long-Term Bridge Performance (Program)
LTTP	Long-Term Pavement Performance (Program)
MARAD	Maritime Administration (USDOT)
MB	Marine Board (TRB)
MBNQA	Malcolm Baldrige National Quality Award
MMS	Minerals Management Service
MPO	metropolitan planning organization
MSPB	Merit Systems Protection Board
MTMC	Military Traffic Management Command

MUTCD	Manual on Uniform Traffic Control Devices
MYAEP	Multi Year Affirmative Employment Program
NACE	National Association of County Engineers
NACO	National Association of Counties
NAE	National Academy of Engineering
NAGHSR	National Association of Governors' Highway Safety Representatives
NAPA	National Asphalt Pavement Association
NARA	National Archives and Records Administration
NARC	National Association of Regional Councils
NAS	National Academy of Sciences
NASAO	National Association of State Aviation Officials
NASS	National Automotive Sampling System (NHTSA)
NBIS	National Bridge Inventory System
NCAT	National Center for Asphalt Technology
NCHRP	National Cooperative Highway Research Program
NCP	National Coordinated Program (of Highway Research, Development, and Technology)
NCSL	National Conference of State Legislatures
NCSRO	National Conference of State Railway Officials
NDE	nondestructive evaluation
NDR	National Driver Register
NEPA	National Environmental Policy Act
NEXTEA	National Economic Crossroads Transportation Efficiency Act of 1997
NGA	National Governors' Association
NHI	National Highway Institute
NHS	National Highway System

NHTSA	National Highway Traffic Safety Administration
NIST	National Institute of Standards and Technology
NIT League	National Industrial Transportation League
NPR	National Performance Review
NPTS	Nationwide Personal Transportation Survey
NQI	National Quality Initiative
NRC	National Research Council
NSC	National Safety Council
NSF	National Science Foundation
NSPE	National Society of Professional Engineers
NSTC	National Science and Technology Council
NTI	National Transit Institute
NTIS	National Technical Information Service
NTL	National Transportation Library
NTSB	National Transportation Safety Board
OECD	Organisation for Economic Cooperation and Development
OIG	Office of the Inspector General
OMB	Office of Management and Budget
ONR	Office of Naval Research
OPM	Office of Personnel Management
ORI	Office of Road Inquiry
OSHA	Occupational Safety and Health Administration
OST	Office of the Secretary of Transportation
OSTP	Office of Science and Technology Policy (White House)
PBCAT	Pedestrian and Bicycle Crash Analysis Tool

PCA	Portland Cement Association
PCC	portland cement concrete (“portland” is lowercase when used in text)
PCI	Precast/Prestressed Concrete Institute
PDF	Portable Document Format
PDP	professional development program
PI	Principal Investigator
PIANC	Permanent International Association of Navigation Congresses (now called International Navigation Association)
PIARC	Permanent International Association of Road Congresses
PICRI	Pavement Industry Cooperative Research Initiative
PIH	Pan American Institute of Highways
PQA	President’s Quality Award
PROMETHEUS	Program for European Traffic with Highest Efficiency and Unprecedented Safety
PTRC	Planning and Transport Research and Computation
QC/QA	quality control/quality assurance
R&D	research and development
R&T	research and technology
RABA	Revenue Aligned Budget Authority
RAC	Research Advisory Committee
RCCC	Regular Common Carrier Conference (ATA)
RD&T	research, development, and technology
RFP	Request for Proposals
RIDER	Research and Information Databases and Electronic Resources
ROSAN	Roadway Surface Analyzer
RSF	Roadway Safety Foundation (AHUA)

RSPA	Research and Special Programs Administration (USDOT)
RTAP	Rural Transportation Assistance Program (FHWA)
RTCC	Research and Technology Coordinating Committee
SAE	Society of Automotive Engineers
SAFETEA	Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003
SCOH	Standing Committee on Highways (AASHTO)
SCOQ	Standing Committee on Quality
SCOR	Standing Committee on Research (AASHTO)
SFLHD	Southern Federal Lands Highway Division
SHRP	Strategic Highway Research Program
SHRP 2	Second Strategic Highway Research Program
SIP	State implementation plan
SMARTS	Site Management and Retroreflective Tracking System
SMS	safety management system
SMSA	standard metropolitan statistical area
SNO	Subcommittee for NRC Oversight (TRB)
SOW	statement of work
SPC	statistical process control
SPPR	Subcommittee on Planning and Policy Review (TRB)
SPR	State planning and research
SPS	Specific Pavement Studies
STB	Surface Transportation Board
STIPDG	Summer Transportation Internship Program for Diverse Groups
STP	Surface Transportation Program
STPP	Surface Transportation Policy Project

STRAHNET	Strategic Highway Network
SUPPS	Shared United Performance Plan System
SWE	Society of Women Engineers
T&I	technology and innovation
T2	technology transfer
TASC	Transportation Administrative Service Center
TCRP	Transit Cooperative Research Program (TRB)
TCSP	Transportation and Community and Systems Preservation
TCT	Technical Career Track
TDC	Transit Development Corporation (APTA)
TDIP	Technology Deployment Initiatives and Preservation
TEA-21	Transportation Equity Act for the 21st Century
TFHRC	Turner-Fairbank Highway Research Center
TIFF	Tagged Image File Format
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIN	Technology Innovation Network
TIP	Transportation Improvement Program
TMA	Transportation Management Association
TMC	Transportation Management Center
TNM	traffic noise model
TQM	Total Quality Management
TRB	Transportation Research Board
TRF	Transportation Research Forum
TRI	Trucking Research Institute (ATA)
TRIP	The Road Information Program

TRIS	Transportation Research Information Services (TRB)
TRL	Transportation Research Laboratory
TReL	Traffic Research Laboratory
TRRL	Transportation and Road Research Laboratory (United Kingdom)
TSM	Transportation System Management
UPACS	User Profile and Access Control System
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard (U.S. Department of Homeland Security)
USDOT	U.S. Department of Transportation
UTC	University Transportation Center
UTCP	University Transportation Centers Program (USDOT)
VMT	vehicle miles traveled
VNTSC	Volpe National Transportation Systems Center (USDOT)
VTI	Road and Traffic Research Institute of Sweden
VWS	virtual weather station
WFLHD	Western Federal Lands Highway Division
WIM	weigh in motion
WRA	World Road Association (formerly PIARC, Permanent International Association of Road Congresses)
WSCG	Western States Concrete Group

APPENDIX K. SAMPLE PAGE OF A RESEARCH WEB REPORT

In addition to adhering to the HAIS Web guidelines listed in chapter 7 and the Section 508 guidelines at <https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/guide-to-the-section-508-standards> for HTML development and programming, each Web page of a report includes the top blue banner and the bottom footer as a method of branding FHWA research reports.⁽⁸¹⁾



Figure 21. Screen shot. Research report Web page.⁽¹⁾

APPENDIX L. FHWA LOGO

Use one of the following two FHWA logos on publications, Microsoft® PowerPoint presentations, and other communication products you prepare. These are the only two logos approved for use on FHWA publications.

The logo can be printed or depicted in any color, but the entire logo must be in the same color with the exception that the triskelion may be reproduced in DOT blue while the signature is printed in black. See under “Color Standards” in DOT Graphics Standards. You can enlarge or shrink the size of the logo, but you must keep the same design proportions shown below. (For example, do not move the triskelion symbol, enlarge the symbol, or reduce the size of the type.) Consult with HPA and HRTM.

The FHWA logos are available for download from the Research Publication Development Web page at <http://www.fhwa.dot.gov/research/publishing/>. If you have any questions on the use of the FHWA logo, please contact HRTM.



U.S. Department of Transportation
Federal Highway Administration

Figure 22. Illustration. This is the correct two-line version of the FHWA logo.



U.S. Department
of Transportation
**Federal Highway
Administration**

Figure 23. Illustration. This is the correct four-line version of the FHWA logo.

APPENDIX M. FHWA MULTIMEDIA MODEL RELEASE FORM

**-Model Release Form-
US Department of Transportation
Federal Highway Administration (FHWA)**

Name: _____
Location: _____
Date: _____

I hereby grant to the FHWA the absolute and irrevocable right and permission, in respect of the photographs or audio or video recording and their transcripts, that it has taken or has had taken of me or in which I may be included with others, to copyright the same, in its own name or otherwise (and assign my rights throughout the world in such photograph and audio and video recordings and their transcripts), to use, reuse, publish, and republish, and otherwise reproduce, modify and display the same, in whole or in part, individually or with other photographs, and with any copyrighted matter, in any and all media now or hereafter known, for illustration, promotion, art, advertising and trade, or any other purpose whatsoever; and to use my name in connection therewith if it so chooses.

I hereby release and discharge FHWA from any and all claims and demands arising out of, or in connection to, the use of the photographs, including without limitation any and all claims for libel or invasion of privacy. FHWA may sell, assign license, or otherwise transfer all rights granted to it hereunder.

This authorization and release shall also inure to the benefit of the specific legal representatives, licensees, and assigns of the FHWA, as well as the staff representative(s) (if any) for whom it took the photographs.

I am of full age and have the right to contract in my own name. I have read the foregoing and fully understand the contents thereof. This release shall be binding upon me and my heirs, legal representatives and assigns. I further release the FHWA from any responsibility for injury incurred during the photography or audio or videotaping session.

Signed: _____
(If minor, parent or legal guardian must sign.)

Printed Name: _____

Address: _____

City, State, Zip _____

Phone: _____

Fax Number: _____

Date: _____

APPENDIX N. FHWA MULTIMEDIA CHILD MODEL RELEASE FORM

**-Multimedia Child Model Release Form-
US Department of Transportation
Federal Highway Administration (FHWA)**

Name: _____ **Location:** _____ **Date:** _____

I hereby grant to the FHWA the absolute and irrevocable right and permission, in respect of the photographs or audio or video recording and their transcripts, that it has taken or has had taken of me or my child, _____, or in which I or my child may be included with others, to copyright the same, in its own name or otherwise (and assign my rights throughout the world in such photograph and audio and video recordings and their transcripts), to use, reuse, publish, and republish, and otherwise reproduce, modify and display the same, in whole or in part, individually or with other photographs, and with any copyrighted matter, in any and all media now or hereafter known, for illustration, promotion, art, advertising and trade, or any other purpose whatsoever; and to use my name in connection therewith if it so chooses.

I hereby release on behalf of myself and my child and discharge FHWA from any and all claims and demands arising out of, or in connection to, the use of the photographs of my child and me, including without limitation any and all claims for libel or invasion of privacy. FHWA may sell, assign license, or otherwise transfer all rights granted to it hereunder.

This authorization and release shall also inure to the benefit of the specific legal representatives, licensees, and assigns of the FHWA, as well as the staff representative(s) (if any) for whom it took the photographs.

I am of full age and have the right to contract in my own name and in the name of my child. I have read the foregoing and fully understand the contents thereof. This release shall be binding upon me, my child, and my heirs, legal representatives, and assigns. I further release the FHWA from any responsibility for injury incurred during the photography or audio or videotaping session.

Signed: _____

(If minor, parent or legal guardian must sign.)

Signer's Name _____

Child's Name and Age: _____

Address: _____

City, State, Zip _____

Phone: _____

Fax Number: _____

Date: _____

APPENDIX O. FREQUENTLY ASKED QUESTIONS (FAQs) ABOUT GENERAL COPYRIGHTS AND COPYRIGHT AND COMPUTER SOFTWARE UNDER FEDERAL CONTRACTS

For more information, see Title 17 of the U.S. Code and the Federal Acquisitions Regulations.⁽³⁹⁻⁴³⁾

1. Q: *What is copyright?*

A: Copyright is a legal protection for authors of original works of authorship. Copyright law protects a variety of works, including literary works, artistic works, and other intellectual works such as computer software.

2. Q: *What rights does copyright provide?*

A: Generally, the *Copyright Act of 1976* gives the author the exclusive right to do, and to authorize others to do, the following: copy the work, prepare derivative works based on the work, distribute copies of the work to the public, perform the work publicly, and display the work publicly.

3. Q: *How is copyright different from other forms of intellectual property?*

A: Copyright differs from patents and trademarks in both the terms and kind of coverage that is granted. Patents protect new inventions such as processes, machines, manufacturers, and compositions of matter. Trademarks protect words, phrases, symbols, and designs. Trademarks also identify and distinguish the source of goods or services of one party from those of another, such as logos or names of products or organizations.

4. Q: *What is public domain?*

A: Works that are not protected by copyright and are publicly available are considered to be in the public domain. They may be used by anyone, anywhere, anytime without permission, license, or royalty payment.

A work is not in the public domain simply because it does not have a copyright notice. In addition, just because a work is included in a U.S. Government work with permission does not mean the private work is not copyrighted. The user is responsible for figuring out whether a work is in the public domain or not and should make sure to read the permissions and copyright notices.

5. Q: *Does the copyright law apply to materials on the Internet or the Web?*

A: Yes, the Internet is another form of publishing or disseminating information, and copyright can apply to websites, email messages, Web-based music, etc. Works found on the Internet are not automatically in the public domain.

6. Q: What is a U.S. Government work?

A: Any work prepared by an employee of the U.S. Government as part of that person's official duties is considered a U.S. Government work. Contractors, grantees, and certain categories of people who work with the Government are not considered Government employees for purposes of copyright. An employee's official duties are the duties assigned to the individual as a result of employment.

7. Q: Can U.S. Government work be copyright protected?

A: No. Copyright protection is not available for any work of the U.S. Government, but the United States is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.

8. Q: Are all U.S. Government works publicly available without any restrictions?

A: No. Certain statutes, such as the *Freedom of Information Act*, provide the Government with authority to restrict access to U.S. Government works for purposes of national security, export control, the filing of patent applications, etc. In addition, for the purposes of specific agreements, such as Cooperative Research and Development Agreements, the Government has statutory authority to withhold from public dissemination certain Government-produced information for a specified period of time.

9. Q: What should I pay attention to in deliverable materials submitted by contractors?

A: Contracting Officers and Contracting Officer Representatives should become familiar with contract deliverables and make sure written deliverables include clauses establishing the data rights that FHWA received when it accepts a final written product from the contractor.

Please see the data rights FAQs for data rights clauses that FHWA should include in order to provide the FHWA with a broad license to use the data for certain Federal purposes.

10. Q: What is the difference between proprietary software and open source?

A: A copyright owner has a proprietary license that typically restricts a licensee's rights to modify, prepare derivative works, and distribute the computer program. However, for open-source software, a user receives a license that allows them to use, modify, and redistribute the original source code and/or modified versions (derivative works).

Many different open-source licenses exist, so please contact the FHWA Office of Chief Counsel if you have any questions regarding open source software. In addition, the Commerce, Energy, NASA, Defense Information Managers Group (CENDI) document from October 1, 2010, on the SharePoint site thoroughly explains the basics of open-source software.

11. Q: How do the Federal Acquisitions Regulations address open-source software?

A: The Federal Acquisitions Regulations treat open-source software as “commercial software” that would be licensed to the Government under the same terms as licensed to the public.

12. Q: When do I need a license or written permission to use art, software code, figures, graphs, charts, illustrations, standards, drawings, etc.?

A: You must obtain a license or written permission to use, publish, or distribute any art, software code, figures, graphs, charts, illustrations, standards, drawings, photos, etc., unless one or more of the following conditions are met:

- An FHWA employee developed or created the art, software code, figures, graphs, charts, illustrations, standards, drawings, photos, etc., during the course of their work at FHWA, and therefore the work is in the public domain.
- An employee of another Federal agency developed or created the art, software code, figures, graphs, charts, illustrations, standards, drawings, photos, etc. during the course of their work at another Federal agency, and therefore the work is in the public domain.
- The art, software code, figures, graphs, charts, illustrations, standards, drawings, photos, etc., are part of a contract deliverable, which either transfers the copyright ownership to FHWA or provides the work to the government with unlimited rights or with a license (written permission) to FHWA to use it for the purpose and in the manner you require.
- FHWA already purchased a license to certain rights from the copyright owner to use the art, software code, figures, graphs, charts, illustrations, standards, drawings, photos, etc., for the purpose and in the manner you require.

13. Q: Do I need a license (written permission) to use, publish, or distribute figures that are developed or created by an FHWA employee or an employee of another Federal agency?

A: No. Works created by Federal Government employees within the scope of their jobs are not subject to copyright.

14. Q: Do I need a license (written permission) to use, publish, or distribute art, software code, figures, graphs, charts, illustrations, standards, drawings, etc., that are developed by a Federal contractor under a contract?

A: Yes. The rights in data clause or another clause within the contract statement of work, as well as the deliverable itself, will specify whether FHWA owns a copyright or a license to the art, software code, figures, graphs, charts, illustrations, standards, drawings, etc. Here are common scenarios you might encounter:

- **Contractor transfers ownership of a deliverable:** No additional written permission is needed when the contract states that there is a clear transfer of ownership of the art, software code, figures, graphs, charts, illustrations, standards, drawings, etc., to FHWA.

In this case, since the ownership or copyright is transferred to FHWA, it may be used for any purpose by FHWA.

- **Contractor provides unlimited rights to a deliverable:** Except for works in which the contractor asserts claim to copyright, the Government has unlimited rights in all data first produced in the performance of a contract and all data delivered under a contract unless provided otherwise in the contract. *Unlimited rights* means FHWA may use, disclose, reproduce, prepare derivative works of, distribute copies to the public, and perform publicly and display publicly (including posting the work to a public website), in any manner and for any purpose and to have or permit others to do so. No additional written permission is needed when the contract states that FHWA has unlimited use of the art, software code, figures, graphs, charts, illustrations, standards, drawings, etc., to FHWA.
- **Contractor asserts copyright in a deliverable:** In general, the Government's license is a nonexclusive, irrevocable, worldwide license to use, modify, reproduce, release, perform, display, or disclose the work by or on behalf of the Government. The Government may use the work within the Government without restriction and may release or disclose the work outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose the work on behalf of the Government. The Government's license includes the right to distribute copies of the work to the public for Government purposes. Under some contract data rights clauses, if the work is a computer program, the right to release or disclose the computer program to the public is not included in the Government's license.
- **Contractor does not provide FHWA with a copy of the work:** Without the work, such as an image or illustration or software code, FHWA will not have any license or ability to use the work.

15. Q: When do I need to provide attribution or include a "©" and the artist's or author's name in materials that I plan to distribute or publish?

A: You should provide attribution for any item that is copyrighted and that FHWA obtains a license to use. For works created under contract that are copyrighted, you should include the following language for those materials:

COPYRIGHT STATUS: This work, authored by _____ employees, was funded in whole or in part by _____ under U.S. Government contract _____, and is, therefore, subject to the following license: The Government is granted for itself and others acting on its behalf a paid-up, nonexclusive, irrevocable worldwide license in this work to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. All other rights are reserved by the copyright owner.

No attribution or copyright citation is needed for works of the U.S. Government; however, it is often helpful to the public to include the following for those materials:

This is a work of the U.S. Government and is not subject to copyright protection in the United States. Foreign copyrights may apply.

16. Q: How do I determine who owns a graphic?

A: You may do one of the following actions:

- Review the contract language.
- Research the graphic and try to contact a current user or a creator of the graphic.
- Ask the legal office or contractor when in doubt.

17. Q: May I use, publish, or distribute a graphic if I have tried to communicate with the person who owns art, software code, figures, graphs, charts, illustrations, standards, drawings, etc., or if the owner is not responding to my request to use the graphic?

A: No. You must find other pieces of art, software code, figures, graphs, charts, illustrations, standards, drawings, etc.

18. Q: When asking for permission to use a figure in my publication, what do I need to ask the owner of the figure?

A: Use the form created by HRTM-20 and the legal office. It contains language that gives FHWA a license (written permission) to the material and includes a signature line.

19. Q: I found art, software code, figures, graphs, charts, illustrations, standards, drawings, etc., on the Internet that I would like to use in a publication. Do I need permission?

A: Yes. As stated above in FAQ #5, materials found on the Internet are not necessarily in the public domain, even though they can be accessed by the public. You must receive a license (written permission) from the person(s), company(ies), or organization(s) that own the art, software code, figures, graphs, charts, illustrations, standards, drawings, etc.

20. Q: These illustrations were created by a contractor while under contract with FHWA. Do I need to get permission from the contractor to use the illustration?

A: Maybe. If the illustration was part of a contract deliverable, then you will need to consult the contract data clause and possibly the FHWA Office of Acquisitions or Office of Chief Counsel to determine what FHWA's rights are.

Although FHWA may be able to reuse the illustration for certain uses, the license may restrict other uses. The agency will also likely need to provide attribution and indicate under the illustration a copyright "©" if the contractor claims ownership in the illustration.

21. Q: Do maps require permission for use?

A: Maybe. FHWA is permitted to use maps without permission from Google Maps™ or other maps as long as the agency does the following: 1) the agency reviews the licensing for usage and 2) the person using the map in a publication abides by the licensing agreement and clearly

indicates the map copyright owner(s) for every map. Prior to using any map, consult HRTM or the Office of Chief Counsel with the legal licensing language for review.

22. Q: *Can facts, databases, and compilations be copyrighted?*

A: Facts cannot be copyrighted, but the creative selection, coordination, and arrangement of information and materials forming a database or compilation may be protected by copyright. Note, however, that the copyright protection only extends to the creative aspect, not to the facts contained in the database or compilation.

23. Q: *Where can I find more information on this topic?*

A: Please search FHWA's Intellectual Property SharePoint site for more useful resources. The legal office particularly suggests that researchers and contract office representatives read all the Commerce, Energy, NASA, Defense Information Managers Group (CENDI) documents.

APPENDIX P. REFERENCE INFORMATION AND EXAMPLES

Table 9 outlines the elements to include for the most used references in a report. In addition to these reference items, the following items in a report also must be cited in the text and added to the reference list:

- advertisement
- blog
- broadcast
- brochure
- cartoon
- conference
- congress
- court case
- database
- dictionary
- digital file
- digital image
- dissertation abstract
- dissertation
- editorial
- encyclopedia
- executive order
- Federal bill/report/rule/statute/testimony/law/act
- Government publication
- interview
- lecture
- letter
- magazine
- mailing list
- manuscript
- map
- music
- musical recording
- newsgroup
- newsletter
- newspaper
- online database
- painting
- pamphlet
- patent
- photo
- press release
- radio
- raw data
- report
- reprinted work
- review
- scholarly project
- software
- television
- thesis

It is important to use recoverable or accessible information in a document so that readers can find the original source from a reference. Personal emails or personal telephone conversations that are not published are normally added within the text or as a footnote and not a reference.⁽⁴⁾

Table 9. Reference information and examples.

Reference	Elements to Include	Example of Text for Reference List
Publication	Author Year of publication Title Publication number Publisher name Publisher city and State Optional page numbers Optional URL of Web page (such as www.xyz.com/xxx/xxx.htm)	1. Jonas, P.G. and Scharosch, D.L. (1972). <i>Ultrasonic Inspection of Butt Welds in Highway Bridges</i> , Report No. CA-HY-MR-6210-1-72-36, California Department of Transportation, Sacramento, CA.
Web page/ social media/ blog	Author of Web page (if evident) Year of publication Name of Web page Type of Web page (i.e., “Web page” or “Blog” or “Twitter comment”) Publisher of Web page Publisher city and State URL of Web page (such as www.xyz.com/xxx/xxx.htm) Date that the Web page was last accessed	2. Federal Highway Administration. (2006). “What’s New.” (website) McLean, VA. Available online: http://www.fhwa.dot.gov/research/whatsnew.htm , last accessed August 13, 2016.
Workshop or meeting	Author Year of publication or presentation Title Meeting name Meeting sponsor Meeting city and State Optional URL of Web page (such as www.xyz.com/xxx/xxx.htm)	3. Gibbons, R., Andersen, C., and Hankey, J. (2005). “ <i>The Wet Night Visibility of Pavement Markings: A Static Experiment</i> .” Presented at the 84th Annual Meeting of the Transportation Research Board, Washington, DC.
Article	Article’s Author Article title Year of publication Periodical Title Volume Page Number Range Publisher name Publisher city and State Optional URL of Web page (such as www.xyz.com/xxx/xxx.htm)	4. Shiffrin, R. and Schneider, W. (1977). “Controlled and Automatic Human Information Processing: II. Perceptual Learning, Automatic Attending, and a General Theory.” <i>Psychological Review</i> , 84, pp.127–190, American Psychological Association, Philadelphia, PA.

Reference	Elements to Include	Example of Text for Reference List
Map	Map title Type: Map or Chart Contributors Source Title Advanced Info, Publication Info, Pages Website Title Publisher/Sponsor URL Date Published Date Accessed Person Accessed Scale	5. "Washington, DC." Map. Google Maps. Washington, DC. August 18, 2016. Accessed August 18, 2016. http://maps.google.com/xyz.xyz . Scale: 1:24,000 ft

APPENDIX Q. ERRATA FORM TEMPLATE



U.S. Department of Transportation
Federal Highway Administration

Errata

Date: Insert Date

Issuing Office: Federal Highway Administration—Office of Research, Development, and Technology: Insert Office R&D

Address: Turner-Fairbank Highway Research Center, 6300 Georgetown Pike, McLean, VA 22101

Name of Document: Insert Document Title

FHWA Publication No.: FHWA-HRT-##-###

The following changes were made to the document after publication on the Federal Highway Administration website:

Location	Incorrect Values	Corrected Values
Page number, section name, paragraph number	Insert incorrect value or typo	Insert corrected value
Page number, section name, paragraph number	Insert incorrect value or typo	Insert corrected value
Page number, section name, paragraph number	Insert incorrect value or typo	Insert corrected value
Page number, section name, paragraph number	Insert incorrect value or typo	Insert corrected value

APPENDIX R. HPA PROGRAM LIAISONS COORDINATION PROTOCOLS

Updated: June 8, 2016

ITEMS REQUIRING COORDINATION WITH HPA

- New Public Initiatives.
 - Must be discussed in conceptual phase between Program Liaisons and HPA to develop strategies.
 - Requires HPA coordination/review/approval prior to implementation of strategies.
- New Publications.
 - Should be discussed in conceptual phase between Program Liaisons and HPA to determine value and cost effectiveness of strategy.
 - Requires HPA review of draft content and layout.
 - Requires HPA review/approval before print.
- Articles (e.g., trade publications and newsletters).
 - Should be discussed in conceptual phase between Program Liaisons and HPA to determine value and cost effectiveness of strategy.
 - Requires HPA review of draft content.
 - Requires HPA review/approval before print.
- Presentations
 - Requires review by Program Liaisons
 - Requires HPA review/approval before release of final.
- Development of new FHWA websites (external audiences).
 - Should be coordinated with HPA and HAIS during the conceptual phase prior to contracting or any preproduction activities.
- New website content review (external sites).
 - Requires review by Program Liaisons.
 - Does not require HPA coordination/review until content is in final form (i.e., ready to be posted) unless there will be a discussion of legislative or budgetary issues.

- New videos (development/production).
 - Should be discussed with Program Liaisons to determine if this is the best and most cost effective strategy.
 - Should be coordinated with HPA during the conceptual phase prior to contracting or any preproduction activities.
 - Requires HPA coordination/review/approval prior to proceeding with contracting or preproduction.
 - Requires HPA review/approval before release of final.
- Social Media Content (text).
 - Requires initial discussion/review by Program Liaisons.
 - Should be coordinated with HPA early to discuss audience, message, and desired outcomes.
 - Requires HPA review/editing/approval.
 - Will be posted to social media by HPA.
- Proposed Social Media Content (video).
 - Requires initial discussion/review by Program Liaisons.
 - Requires use of the “New Video” development protocol for new videos.
 - Should be coordinated with HPA early to discuss audience, message, and desired outcomes.
 - Requires HPA review/editing/approval.
 - Will be posted to social media by HPA.
- Development of communications/marketing strategies/plans to develop or promote FHWA products, services, or program initiatives.
 - Requires initial discussion with Program Liaisons.
 - HPA specialist will be assigned to assist in the development of strategies/plan.
 - HPA Specialist will assist in coordination of appropriate approvals and coordination with offices as required.

ITEMS NOT REQUIRING COORDINATION WITH HPA

- Communications/marketing activities targeted toward internal audiences.
 - Program Liaisons should make the determination regarding the need for additional assistance from HPA.
- Minor edits, updates, and revisions to existing Web content.
 - Program Liaisons should be able to approve text of graphical changes that do not alter the original context of the material.


APPENDIX S. CLEARANCE FORM 1113

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION CLEARANCE REQUEST FOR PUBLIC MATERIALS VIDEO, PRINT, WEB, SOCIAL MEDIA, OR MULTIMEDIA		1. DATE OF REQUEST	2. DATE REQUIRED
<i>INSTRUCTIONS - As required by FHWA Order 2-4, requests for publications, videos and exhibits to be shown to the public or any external audience (outside DOT) shall be submitted to the Office of Public Affairs for review and approval as early in the conceptual stage as possible. Visual presentations (e.g., PowerPoint) that will be publically accessible on any FHWA Web site, and/or contain high level policy or budget information to be shared with the public or any external audience, must also be submitted to the Office of Public Affairs for review and approval prior to posting or dissemination.</i>		3. ORIGINATING OFFICE	
		4. REFER QUESTIONS TO	
		5. OFFICE	PHONE
6. PROPOSED TITLE OR SUBJECT			
7. WHY PRODUCT IS NEEDED			
8. MESSAGE OR STORY			
9. PROPOSED AUDIENCE			
9A. DISTRIBUTION STRATEGY			
10. MEDIUM <input type="checkbox"/> PRINT <input type="checkbox"/> VIDEO <input type="checkbox"/> WEB <input type="checkbox"/> SOCIAL MEDIA <input type="checkbox"/> POWERPOINT <input type="checkbox"/> OTHER _____			
10A. JUSTIFICATION FOR TYPE OF MEDIUM			
11. APPROVAL RECOMMENDED (Signature of Program Liaison)			11A. DATE
12. COMMENTS / NOTES			12A. DATE
13. ESTIMATED PRODUCTION COST (To be filled in by Publishing and Visual Communications Team)			
14. PRODUCT APPROVED IN PUBLIC AFFAIRS BY			14A. DATE

FORM FHWA-1113 (Rev. 3-11)

Figure 24. Photo. Clearance Form 1113.

APPENDIX T. CLEARANCE FORM 1528



U. S. Department of Transportation
Federal Highway Administration

AUTHORIZATION TO PROCEED TO PRINTING/REPRINTING/ WEB POSTING/MULTIMEDIA/VIDEO PRODUCTION

Attached are typeset copy and graphic elements in final layout for a proposed FHWA publication or for reprint of an existing FHWA publication. Approval of copy and graphics is necessary before printing can begin. The final print run must be completed within 60 days from receipt of this approval.

Check one: Print Reprint Web Multimedia Video

Publication Name: _____

Quantity: _____ Printing Cost: _____

Date of Delivery to Printer/Webmaster/Contractor: _____

Estimated Completion Date: _____

Originating Program Office:

_____		_____
(Approved)		(Date)
_____		_____
(Approved With Corrections)		(Date)
_____		_____
(Disapproved)		(Date)

Associate Administrator/
Office Director or Designee:

_____		_____
(Approved)		(Date)
_____		_____
(Approved With Corrections)		(Date)
_____		_____
(Disapproved)		(Date)

Office of Public Affairs:

_____		_____
(Approved)		(Date)
_____		_____
(Approved With Corrections)		(Date)
_____		_____
(Disapproved)		(Date)

Special Instructions:

REMINDER: To comply with Federal guidelines; when posting on the Web in lieu of printing, this form **MUST** be routed through HAIM-20 along with four (4) copies of the disk before forwarding on to Webmaster.

Four copies of disk provided to HAIM-20 _____ _____

(HAIM-20 Signature) (Date)

FORM FHWA-1528 (Rev. 4-2012)

Figure 25. Photo. Clearance Form 1528.

APPENDIX U. JOURNAL SUBMISSION LETTER TEMPLATE

	Name of Employee Federal Highway Administration 6300 Georgetown Pike McLean, Virginia 22101
Date	
Name of Employee	
Title of Journal Employee	
Journal Name	
Journal Address	
City, State Zip	
Dear Journal Editor:	
Attached please find the manuscript of the paper “[insert name of article]”, for the [insert date and year] issue of the [insert journal name]. Unfortunately, as a Federal employee, I am precluded from signing any forms assigning copyright rights to any one entity.	
Federal Government employees cannot copyright material prepared in the course of their employment, because work created by a Federal employee is the work of the United States Government and remains in the public domain, meaning no employee may assign an exclusive right to any one entity as the work is already in the public domain. Because the work is the public domain, that allows any entity to use the work equally without having specific granted rights. Because the Government does not own any copyright rights, there are no rights we can grant. As an employee of the U.S. Department of Transportation, I have no copyright interest to assign, and upon the direction of the Office of Chief Counsel at Federal Highway Administration am not permitted to sign the agreement.	
Although for the above reasons I am unable to assign any copyright to [insert the name of the journal], I do verify that to-date this article has not been published by any other publication. I do request and authorize you to publish the submitted article in accordance with your standard editorial policies. Although I cannot sign the requested agreement, I hope this letter will be sufficient authorization for your needs to enable you to consider my submission for publication in your [insert name of journal].	
Many journal publishers in the United States accept the above statements as permission to publish technical papers written by employees of the U.S. Federal Government. We will not seek publication of this manuscript elsewhere before a decision is made by your editorial board.	
If you have any additional questions, please contact the Federal Highway Administration attorney Anastasiya Sidorova at Anastasiya.Sidorova@dot.gov or 202-366-0662.	
Thank you for your consideration of my submission.	
Sincerely,	
[Insert your name]	
[Insert your title]	
Office of Research, Development, and Technology	

Figure 26. Template. Journal submission letter template.

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