APPENDIX D: PROMOTIONAL METHODS AND TOOLS

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APPENDIX D: PROMOTIONAL METHODS AND TOOLS

Numerous promotional methods and tools are available for consideration and use by lead states teams. The various methods and tools have unique characteristics and advantages, making some better suited for communicating a certain message to a certain audience than other options. Helpful information about a variety of available methods and tools is provided herein, along with examples and templates in many cases.

Overview of Appendix D

Table D-1: Comparison of Promotional Methods and Tools. This table provides a quick review of advantages, disadvantages, and suggestions for the following types of marketing methods and tools:

- Brochures
- PowerPoint Presentations
- Demonstration Workshops
- CDs, DVDs, and Videos
- Conference Exhibits
- Posters
- FAQs Sheets
- Testimonial Sheets

Figure D-1: Generic Tri-fold Brochure Design. A tri-fold design is shown displaying recommended locations of logos and a general layout of information. The graphic designer engaged by the LST may vary from the general information layout to best present the message for a given technology. However, the brochure is required to be identifiable with AASHTO and AASHTO TIG.

Figure D-2: Example Brochure. A tri-fold brochure prepared by an earlier LST is shown to demonstrate the creativeness which may be used in designing brochures. As shown, other partner logos may also be displayed when appropriate. (The AASHTO TIG logo had not been made available to this earlier LST.)

Figure D-3: Generic PowerPoint Slide Masters. Three designs are provided which may be used by LSTs in creating presentations for conferences or demonstration workshops. The LSTs may alter these designs or may develop their own master slides, but AASHTO and AASHTO TIG should be identified with the presentation, along with appropriate other sponsors.

Figure D-4: Generic Workshop Save-the-Date Card and Figure D-5: Generic Workshop Evaluation Form. These generic designs show how continuity may be employed in graphic theme for a demonstration workshop.

Figure D-6: Example FAQs Sheet. A FAQ sheet prepared by an earlier LST is provided to assist LSTs in developing the list of questions to be addressed for their technology's message and audiences.

Figure D-7: Example User Testimonial Sheet. A testimonial sheet prepared by an earlier LST is provided as one of many possible ways to present this type of information.

Table D-1: Comparison of Promotional Methods and Tools

Method or Tool	Advantages and Suggestions	Disadvantages	Template or Example Provided
Brochure	Professionally producing and distributing a colorful brochure is one of the most cost-effective means of putting basic information into the hands of a large number of potential technology users. Advantages include ease of distribution and that the receiver may review it at leisure after brief personal interaction with distributor. Personal distribution at meetings, conferences, and similar opportunities is more effective than mailing. If mailed, consider preparing a FAQs sheet and/or a compilation of user testimonials to accompany the brochure and letter. Design and editing cost for a full-color tri-fold brochure is in the range of $500 to $1000. Printing on high-quality paper costs approximately $0.50 each, depending on quantity.	High-quality brochures are widely used. If not professionally designed, credibility of the information being presented can suffer.	Figures D-1 and D-2
PowerPoint Presentation	Preparation of a PowerPoint presentation allows the expedient delivery of a carefully scripted message to large and small audiences alike. PowerPoint presentations are an essential means of communication in lead states team efforts. Photographs should be used to convey information about the technology whenever possible. Cost to produce is minimal. Travel costs are incurred only by the presenter.		Figure D-3
Demonstration Workshop	Demonstration workshops are most beneficial when attendees can actually use or experience the benefits of the technology being promoted. They are also highly effective in communicating processes. Contractor or department personnel demonstrating the technology should have prior experience and be confident and knowledgeable in its use.	Workshop planning is time intensive and workshops must be scheduled and advertised well in advance. Travel expense can be high for attendees, thereby limiting attendance. Overall cost is high compared to most other methods.	Figures D-4 and D-5

CD and DVD	Preparation and distribution of these tools is particularly valuable when video or large volumes of data or information must be provided for the potential technology users to understand the technology being promoted. Short video length is recommended due to time constraints of the usual target audiences for high cost videos. Video clips and PowerPoint presentations can be creatively used and distributed by CD. Example video clips are available at: http://www.fhwa.dot.gov/bridge/prefab/videos.htm and http://tig.transportation.org/?siteid=57&pageid=697 Professional development of a 5-minute video can cost in the range of $ 1,500 to $15,000. High-quality video production is usually in the $3,000 per finished minute area of that range. Reproduction costs for CDs or DVDs is generally $2 to $5 each, depending upon how elaborate the packing and highly dependent upon the quantity being produced.	As with brochures, because of the prevalence of quality video materials, professional design and production is highly desirable. Cost is relatively high compared to most other methods.	Web urls
Conference Exhibit	The primary advantage of a conference exhibit is that it offers the opportunity for one-on-one conversation with potential users of the technology. Also, as exhibits do not require conference agenda time, they sometimes present the best available means of taking advantage of large gatherings of potential technology users. A lead states team member should be available at the exhibit to answer questions as well as to establish personal contact with potential technology users. Brochures and FAQs sheets should be considered for distribution to maximize exhibit benefit. Whenever possible, the actual technology or products of the technology should be available at the exhibit in addition to appropriate poster information. Professional development of a 36” X 48” color poster ranges from about $100 to $300 each. A 48” X 83” vertical display panel with apparatus can be $1,200 to $2,500 (apparatus and prints outsourced to trade show display company). A combination of these options is often necessary for an effective exhibit.	Exhibits are passive means of contacting individuals. Poor location in the room or limitation on viewing time can impact effectiveness. Cost of exhibit space can be high, as can be preparation costs. But enlarged photos and posters may be used multiple times.	
Poster	Useful for exhibits as described above. Professional development of a 36” X 48” color poster ranges from about $100 to $300 each.	This is a passive communication means with generally low effectiveness unless a knowledgeable individual is available to answer questions.	

FAQs Sheet	FAQs sheets are particularly useful in conjunction with brochures, providing high interest information in an easily browsed written document. They are quickly prepared and easily distributed. Cost is minimal if distributed in written form.		Figure D-6
Compilation of User Testimonials	User testimonials can be incorporated into brochures, PowerPoint presentation, separate written documents for distribution with FAQs sheets, and particularly videos. Contact information for obtaining additional details should always be provided. Cost to produce is minimal if gathered and distributed in written form.		Figure D-7

Figure D-1: Generic Tri-fold Brochure Design - Side 1.

Figure D-1: Generic Tri-fold Brochure Design - Side 2.

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Subheading for a section describing the technology

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Subheading

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Figure D-2: Example Brochure, Side 1

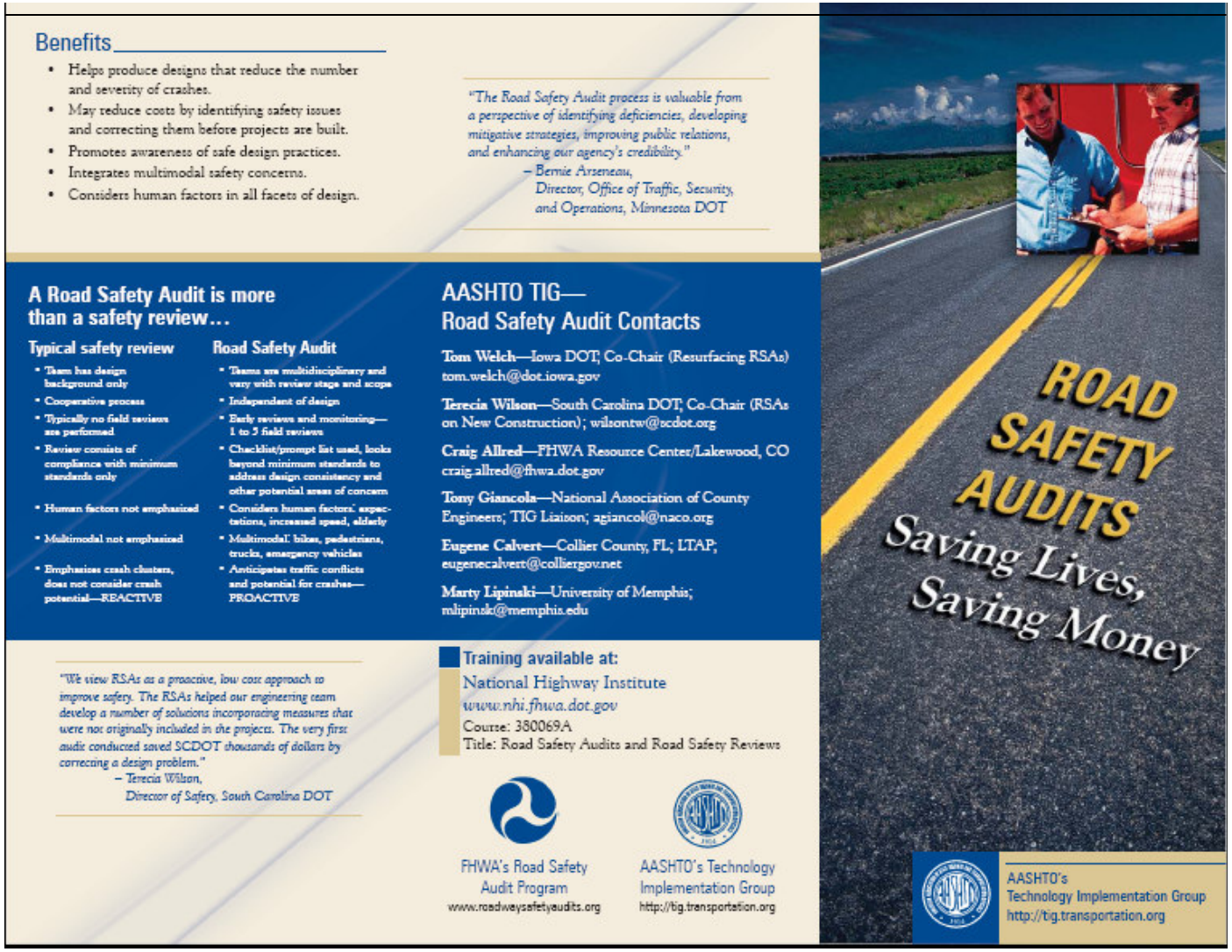


Figure D-2: Example Brochure, Side 2

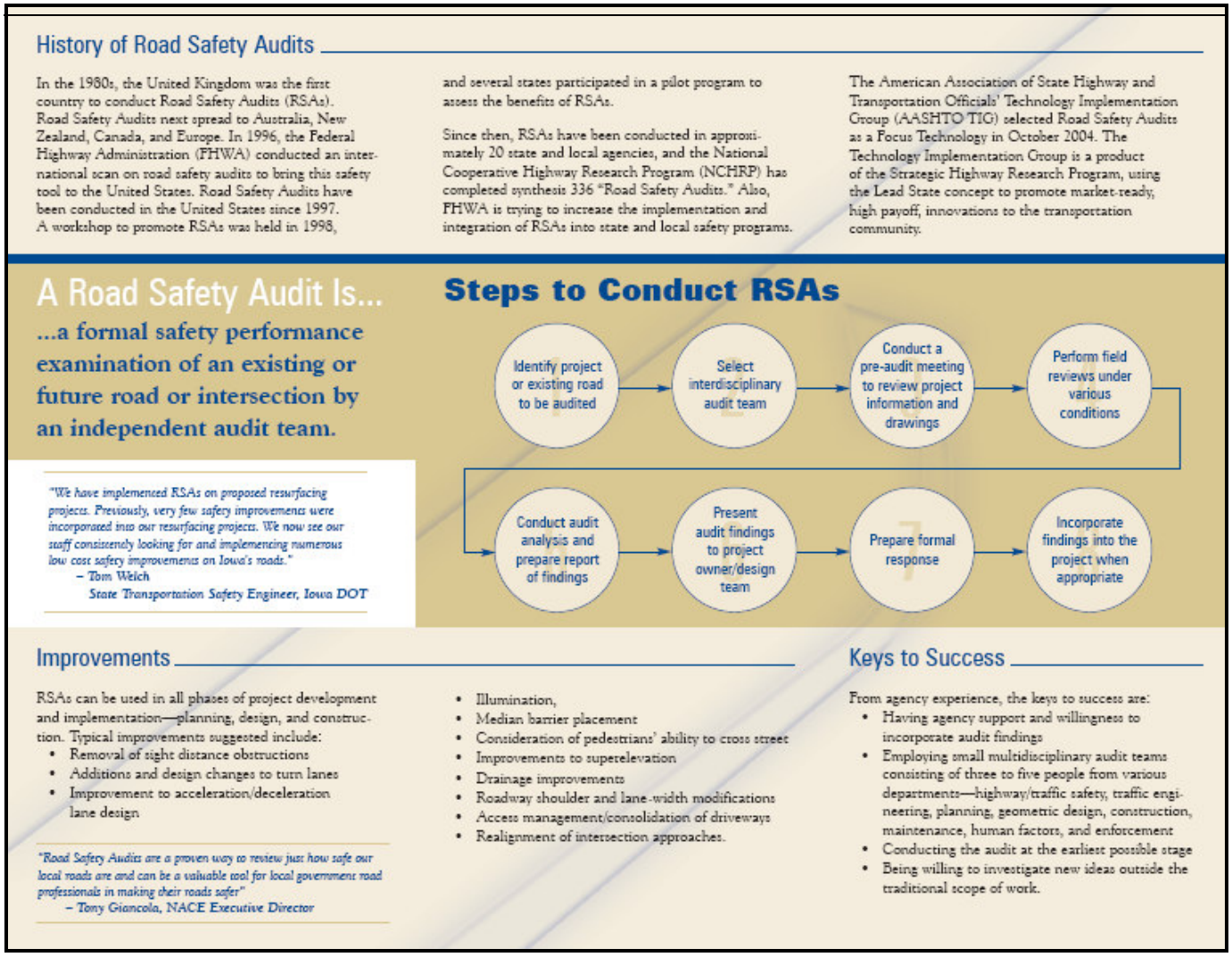


Figure 3: Example PowerPoint Slide, Design 1

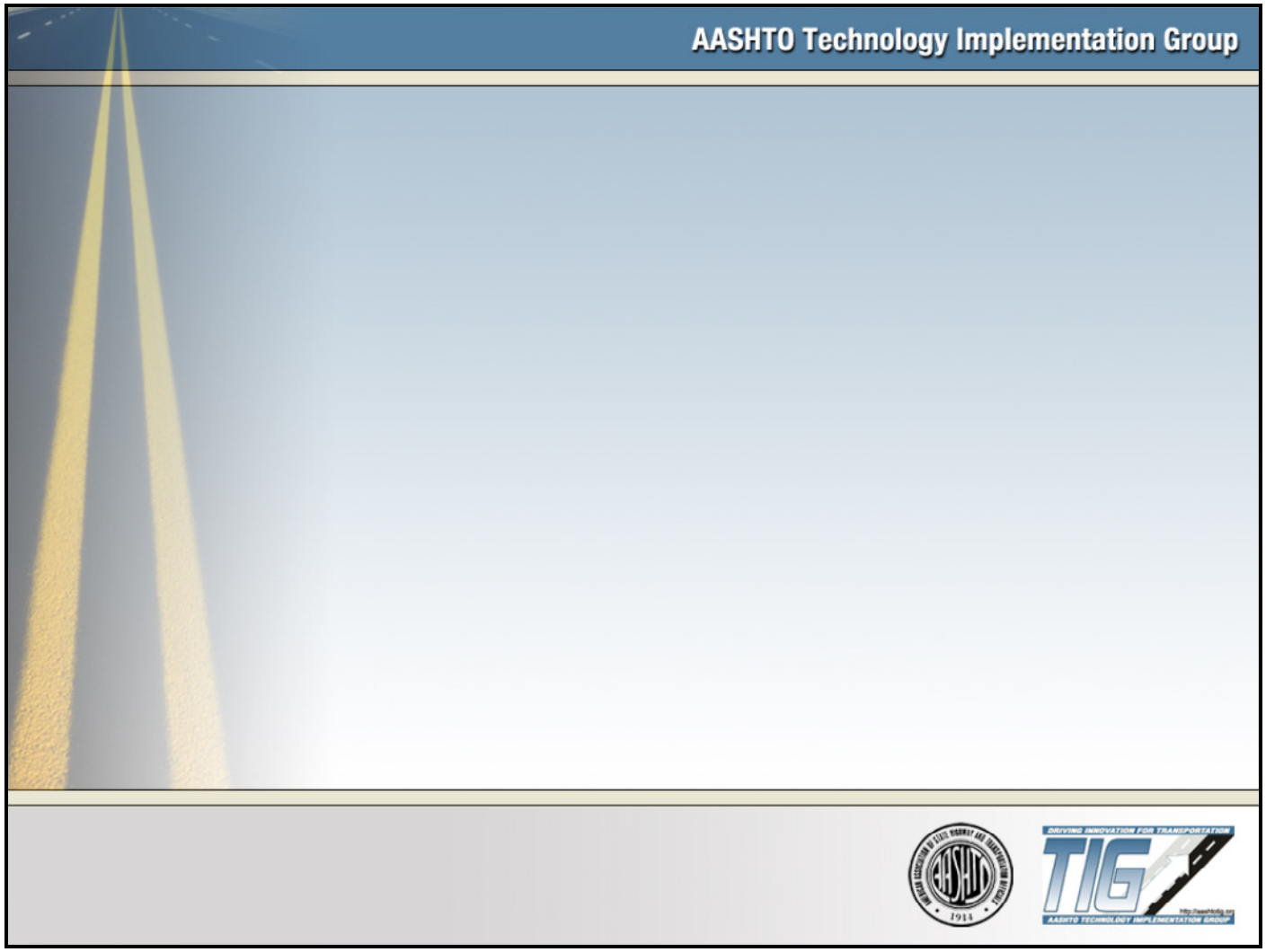


Figure 3: Example PowerPoint Slide, Design 2

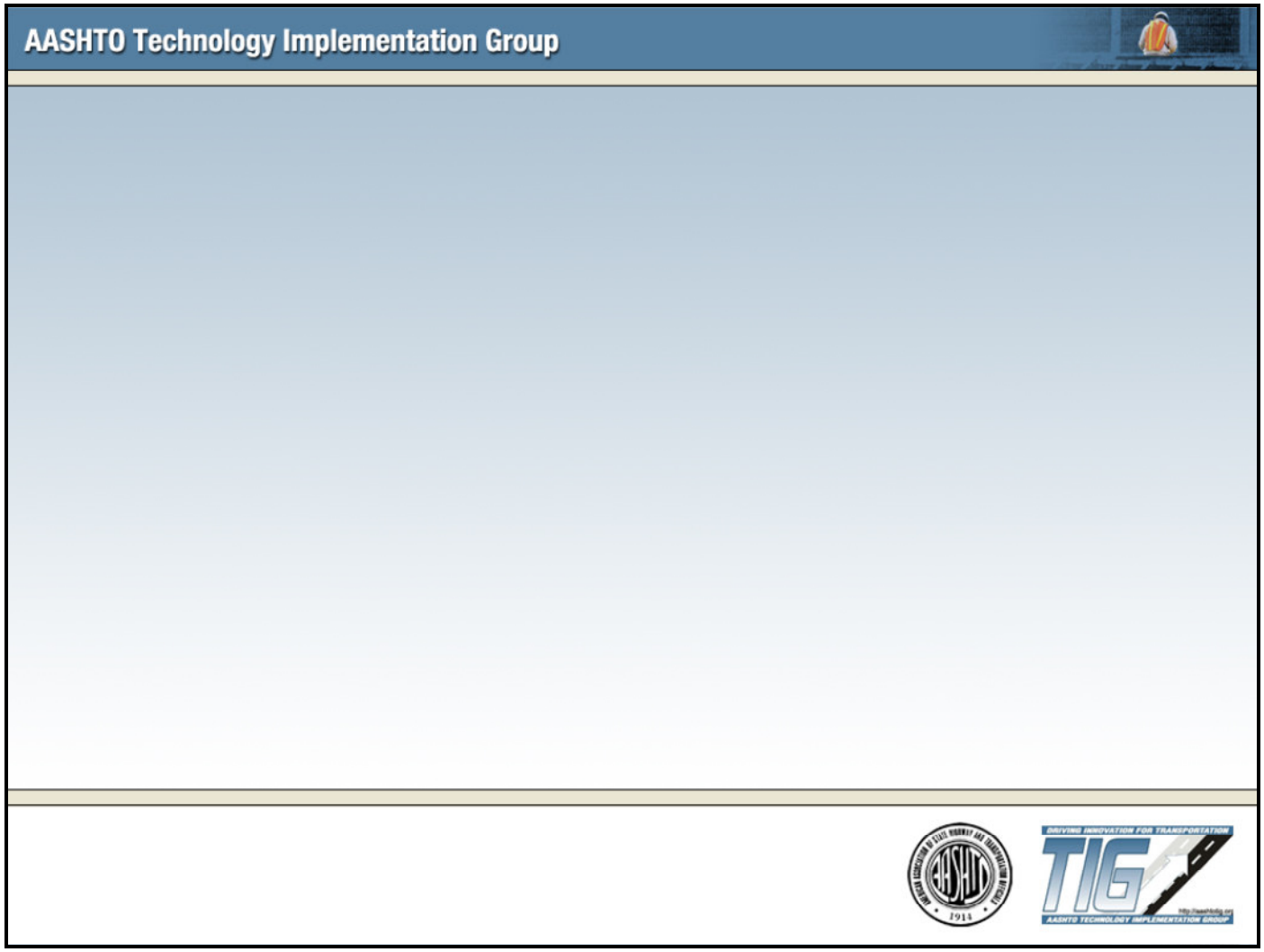


Figure 3: Example PowerPoint Slide, Design 3

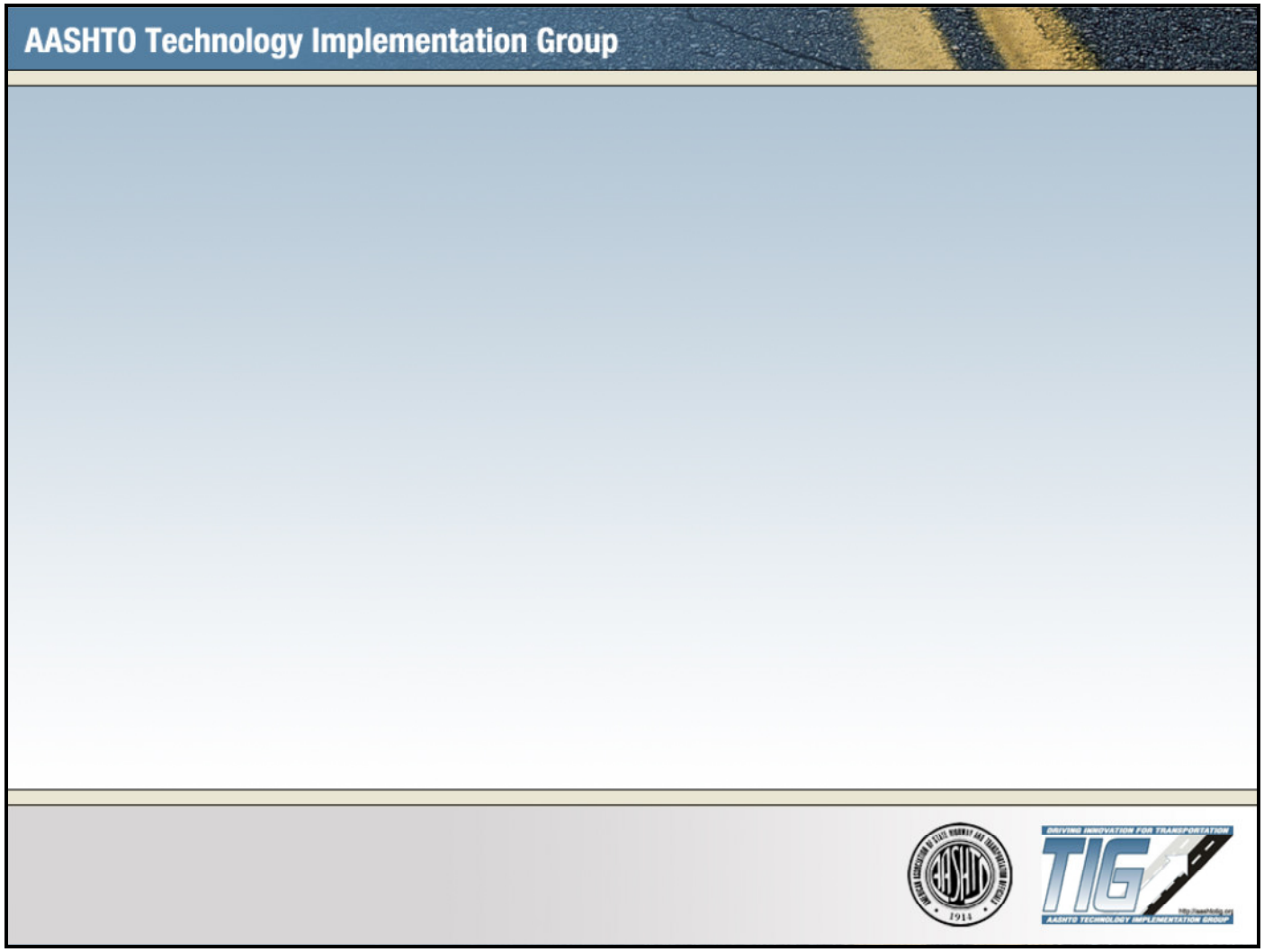
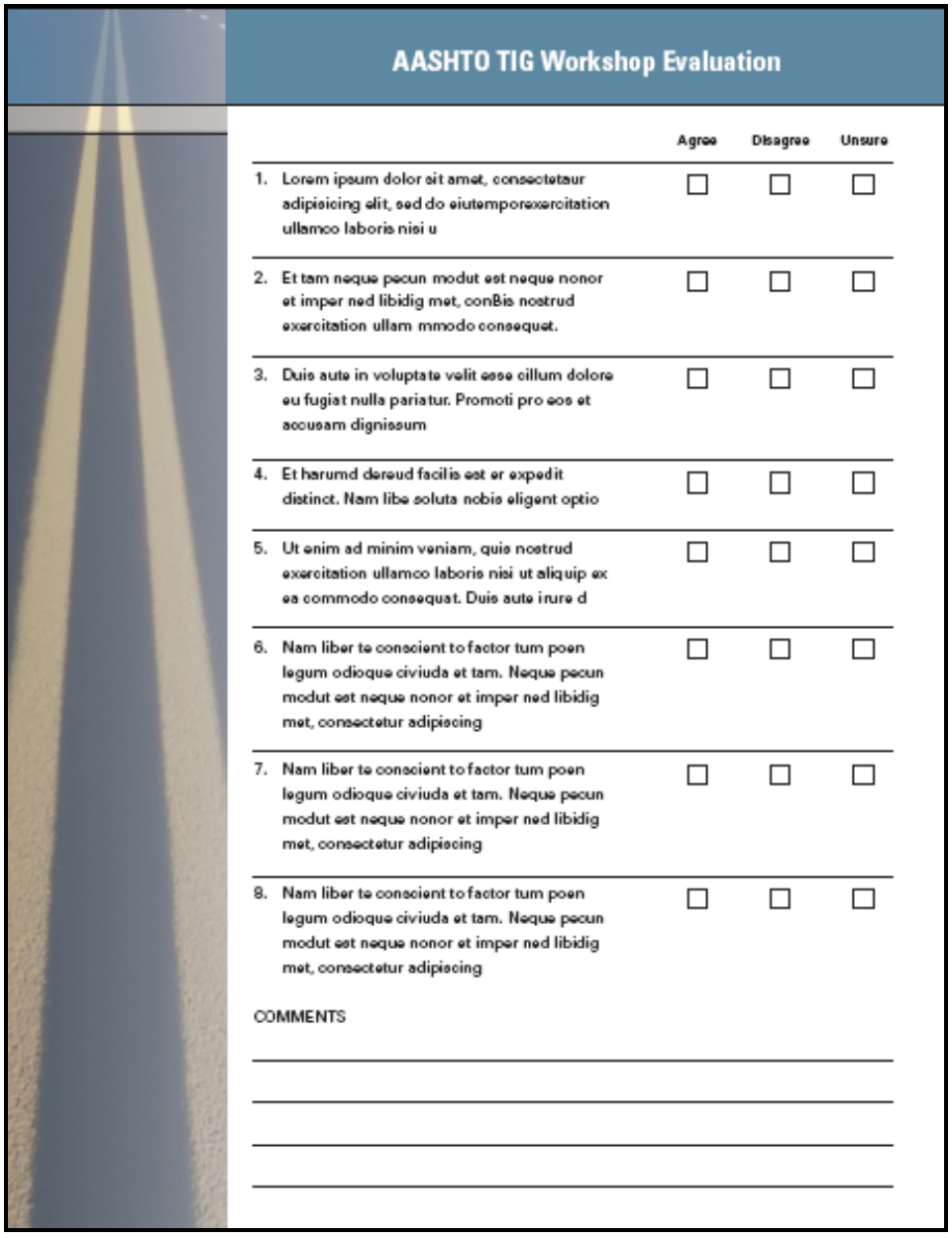


Figure 4: Example Save-the-Date Card Layout

Figure 5: Example Workshop Evaluation Format



AASHTO TIG Workshop Evaluation

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COMMENTS

Figure 6: Example FAQs Sheet

1. **Origin of Method?**
2. **Is the system Proprietary or Generic? (See Federal Register, 5/25/06.)**
3. **What subgrade work is required prior to installation?**
4. **What methods or bedding materials does the system utilize for achieving complete slab support?**
5. **Can the system or method accommodate Pre- or Post- Tensioning technology?**
6. **Describe the method of load transfer between precast panels/slabs.**
7. **Describe the method of tying longitudinal joints to adjacent slabs.**
8. **Type of Transverse & Longitudinal Joints? How is expansion accommodated? How are joints sealed?**
9. **Modularity: Adaptable to meet plan view dimensions (i.e., tapers, widenings, curves, etc.)?**
10. **Able to accommodate 3-dimensional surfaces (i.e., trapezoidal pieces, horizontal & vertical curves, radii, ramps, etc.)?**
11. **Time Requirements: Can slabs be installed overnight or over the weekend? Time required for traffic-ready installation? Production rates for a specific time period?**
12. **Constructability: What are the lane/space requirements for installation? Are specialized processes or equipment required? Are special contractors/workers required?**
13. **Seasonal Limitations: Cold weather considerations? Hot weather considerations?**
14. **Inspection Requirements: Is any special training of inspectors required?**
15. **Expectations of finished surfaces: Is diamond grinding required? Choices of slab construction and finish/texture: Broomed, tined, astro-turf drag, exposed aggregate, two-course construction?**
16. **Applications: Can the system be used for single slab replacements? Can the system be used for multiple slab placements? Can system be used for short - slab or joint replacement?**
17. **Replaceability/Reusability/ Removability: Can individual slabs be replaced?**
18. **What dimensional and geometric information is required about existing pavements at the time of design/bidding?**
19. **What testing has been done on the system and what reports are available?**
20. **What Technical Support is available (e.g., on-site training and assistance, shop drawings and engineering support, installation and manufacturing manuals)? Are pre- and post-pour processes established and checklists available?**
21. **List and describe installations in service?**
22. **Is assistance provided to prepare contract documents? Are cost estimates provided and by whom? Are actual historical installation rates available?**
23. **Other comments, considerations, etc.?**
24. **Contact Information**

Figure 7: Example User Testimonial Sheet

Air Void Analyzer

Innovative Projects – Comments by State and Industry Users on the Air Void Analyzer

American Concrete Paving Association (ACPA)

The concrete paving industry in Kansas has seen the benefits of the Air Void Analyzer (AVA) first hand. When premature joint distress began to manifest itself on a number of concrete pavements constructed in the 1990's Industry and Kansas Department of Transportation (KDOT) worked together to identify the cause of the problem and come up with a solution. The cause was identified as an inadequate air void system in the surface of the concrete and the solution the AVA. By incorporating the AVA into KDOT paving specs KDOT and Industry are now able to check and monitor the air void characteristics in fresh concrete allowing changes to be made in essentially real time. In an age of QC/QA, incentives/disincentives, performance related specifications, design/build, and warranties contractors need tools which provide immediate and meaningful results. The AVA is such a tool and is capable of not only benefiting our contractors but also extending the life of our product.

— Todd M. LaTorella, P.E., Missouri/Kansas Chapter Director of Engineering

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California Department of Transportation (Caltrans)

Caltrans has an interest in using the Air Void Analyzer (AVA), which is designed to measure the air content of concrete while in the wet condition. Our initial intention was to use the AVA for field support for our San Francisco Oakland Bay Bridge (SFOBB) construction. The concrete mix designed called for 8% air content which would require monitoring that the AVA could perform. After training our Rigid Pavement laboratory staff for using the AVA equipment, we determined the AVA would not work for our needs at SFOBB. The AVA process requires a very stable base to allow the finite air bubbles to be measured. The SFOBB project requires measuring the air content from a barge, which is positioned at the construction site.

Caltrans will be using the AVA system for our concrete application where freeze-thaw is a consideration. Caltrans has developed a draft California Test Method with the help of Chetana Rao, ERES Consultants, a Division of Applied Research Associates, Inc.

— Charles Dayton, P.E., Caltrans Division of Engineering Services

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Kansas Department of Transportation (KDOT)

Kansas pavements less than 10 years old showed cracking at longitudinal joints, distress at edge of milled transverse joints, distress at transverse joints on super-elevated curves, and centerline cracking.

Upon examination of the distressed concrete, it was found that the distress was not aggregate-related. Petrography of core samples showed poor spacing factors of the air voids in the paste, even though the total air contents met the specifications (5½ % on average).

KDOT found that the most effective distress prevention strategy was to assure an adequate spacing factor on projects under construction, but petrographic analyses were not rapid enough for this application. An Air Void Analyzer (AVA) was purchased in April 2001, and was used for monitoring concrete paving projects during 2001 and 2002 construction seasons.

With the immediate results contractors made immediate improvements in the air-void system on on-going projects. A KDOT spacing factor specification was developed and used on three projects in 2002.

In order to estimate cost savings, the spacing factors on monitored pavements were compared with previous results, and durability was estimated from the spacing factors. Cost savings were estimated from the reduced repair costs for the more durable pavements. Even though only longitudinal joint repair costs were included, for the 2001-2002 projects future savings from the improving spacing factor was estimated to be $1,136,000.

The AVA test is the only test that needs to be run on fresh concrete to assure durability.

— John Wojakowski, P.E., Concrete Research Engineer

Master Builders Technologies

Master Builders Technologies determined to buy a plastic Air Void Analyzer (AVA) primarily because of the rapid feedback from the instrument. Previously, as part of the admixture product development process, we relied upon results from petrographic examination on hardened specimens (by ASTM C457) to determine the characteristics of the air-void system. This process typically takes a minimum of 3 days from the time of casting to get the results. By use of the AVA, this time was cut down to a matter of 1 hour or less from the time of casting. And though the AVA does not always give perfect agreement with the results obtained by ASTM C457, it does give sufficient immediate information to provide direction in the admixture development process.

— Bruce Christensen, P.E., Master Builders Inc.

Minnesota Department of Transportation

The Concrete Air Void Analyzer provides information on the air content and distribution in plastic concrete so that appropriates adjustments can be made in a timely manner to ensure that quality concrete is being produced.

Historically, air entrained concrete has been accepted on the basis of either the pressure method or the volumetric method. These test procedure provided the total air content in the concrete mix but do not provide information on the bubble size or distribution in the air-entrained concrete mixture. To produce a freeze-thaw resistant concrete structure, it is necessary to know the total air content, size and distribution of air voids. The Linear Traverse Test provides this information but it cannot be used for quality control since it involves testing hardened concrete, too late to make adjustments to the mixture.

The Air Void Analyzer produces all the necessary data on air-void characteristics to produce quality concrete, therefore, the Minnesota Department of Transportation strongly endorses the implementation of this procedure.

— Douglas Schwartz, P.E., Concrete Engineer

Missouri Department of Transportation

The AVA offers Missouri the never-before opportunity to obtain valuable and reliable data concerning the air-void system in freshly mixed concrete. Like many others, Missouri has always relied on mix air content measured during construction to indicate future concrete freeze thaw durability. Information concerning air-void spacing factor and specific surface, which more accurately indicate freeze thaw durability (as opposed to total air content), can only be determined following concrete hardening using conventional methods. Analysis is then tedious and requires a highly skilled operator, limiting it only for special circumstances or

for research purposes in Missouri. Thus, frequent questions or concerns initiated during construction regarding adequate in-place air are either answered long after placement or often remain unanswered. The ability to obtain timely answers to these questions, which would then allow immediate mix or production changes, is an ideal opportunity for Missouri to place a more appropriate focus on quality instead of quantity of air during construction. Missouri is highly interested in the AVA and anticipates that its implementation should result in valuable and timely data used to enhance and ensure future in-place concrete performance.

— Patty Brake Lemongelli, P.E., Concrete Researcher

New York Department of Transportation

NY DOT has worked with the Air Void Analyzer (AVA) for approximately 3 months on precast concrete production projects. The intent was to have the precasters/industry become familiar with the equipment. Using the AVA in precast work provides benefits to both the precast industry and the Department. The current process involves taking cores from precast units at a set frequency and testing for air content and compressive strength. When air contents are low, projects are frequently delayed until corrective actions are taken. The process of taking and testing cores takes 2 to 4 weeks and creates considerable work for the Department, as well as a backlog at the precast facility before units can be accepted and shipped.

Implementing use of the AVA provides the precasters with a quality control tool that, when used daily in conjunction with a pressure meter, maintains a quality air-void system in concrete. The Department will accept the AVA results as representative of a day's production and therefore eliminate the need for hardened concrete sampling and testing. With this equipment in use, the precasters will know in 30 to 60 minutes that his materials will be accepted for that day's production, rather than the normal 14 to 28 days. The Department will benefit in that much less testing will be performed at the Department Laboratory on hardened concrete samples. The Department has recently implemented a QC/QA program for precast concrete production. Through this program, the Department will routinely observe the precasters operation and use of the AVA, and possibly run our own tests on companion samples as part of a QA procedure.

NY DOT is also considering the use of the AVA on critical concrete placements where freeze thaw durability is important. The AVA could be used on bridge decks and other critical flat work to assure both the quality of the material (as sampled during delivery) and the quality of the construction practices (as sampled immediately after placement).

— Donald Streeter, P.E., Concrete Section Program Manager

National Ready Mixed Concrete Association (NRMCA)

The Air Void Analyzer (AVA) provides a tool for quality control and concrete mixture evaluation based on sound science to establish the potential durability of concrete exposed to freezing and thawing environments. The advantage of this method is that it provides information on the air void characteristics of concrete in real time so that concrete ingredients and production and placement processes can be modified to rectify a deficient situation. The method provides the flexibility of establishing whether the cause of an inadequate air void system in concrete is a result of materials, production or placement and consolidation procedures. The AVA has shown good success in reducing the propensity of durability failures in Europe where it has been used extensively. Using this technology in the US will promote the use of hydraulic cement concrete for long service life in severe exposures.

While the basic concepts of a desirable air void system in concrete have been established in research literature, the criteria for acceptable concrete using the AVA have to be established with a proper understanding of the data provided in relationship to traditional methods of evaluating and testing concrete mixtures.

— Colin Lobo, P.E., Vice President, Engineering

North Carolina Department of Transportation

NCDOT purchased the “Air Void Analyzer” for two solid reasons: concise data, and innovative technology. North Carolina currently uses the pressure meter and/or the volumetric method to measure “air content” in concrete. These methods measure both entrapped and entrained air, but fail to establish their individual parameters. Based on continuous data collection, these methods continue to supply questionable results. Utilizing the AVA eliminates this confusion and clearly defines the separate air amounts with the addition of potential design related specifications. The field of concrete technology and design continues to change daily. NCDOT is seizing the opportunity to improve efficiency and reliability by adopting its newest product: the AVA. This is an important step in moving towards the future. The Air Void Analyzer has been assigned to selected projects throughout the state to further enhance our production of quality concrete.

— Sam Frederick, P.E., Field Concrete Engineer