



Fall 2011

Volume 22, Number 4

Are We There Yet?

South Carolina Transportation Technology Transfer Service

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About Every Day Counts

Message from the Administrator

Our society and our industry face an unprecedented list of challenges. Because of our economy, we need to work more efficiently. The public wants greater accountability in how we spend their money. We need to find ways to make our roads safer. And we have an obligation to help preserve our planet for future generations.

But it's not enough to simply address those challenges. We need to do it with a new sense of urgency. It's that quality—urgency—that I've tried to capture in our initiative, Every Day Counts (EDC).

EDC is designed to identify and deploy innovation aimed at shortening project delivery, enhancing the safety of our roadways, and protecting the environment.

These goals are worth pursuing for their own sake. But in challenging times, it's imperative we pursue better, faster, and smarter ways of doing business.

EDC is designed to focus on a finite set of initiatives. Teams from the Federal Highway Administration will work with our state, local, and industry partners to deploy the initiatives and will develop performance measures to gauge their success.

The first round of initiatives described in the following pages represent what I hope will lead to a sea change in the way we deploy innovation. As you see represented in the EDC logo (page 2), our industry is shaped by invention, ingenuity, imagination, and innovation. These words are not new to the transportation community's lexicon. They've always been at the heart of our work.

But under Every Day Counts, I want to see us work together to bring more focus and commitment to those qualities, and to the rapid deployment of proven solutions and technologies that make a difference. The traveling public deserves no less.

Secretary LaHood has set the bar high at USDOT. He not only expects us to think innovatively, he understands the times demand it. Every Day Counts is FHWA's effort to provide National leadership in the quest to meet the transportation demands of the 21st Century.

Victor Mendez
FHWA Administrator



Every Day Counts Initiatives



EDC is organized around three pillars. One is an internal effort to make FHWA a greener agency and reduce our carbon footprint. The other two are directly related to our work as stewards of America's highway system:

Accelerating Technology and Innovation Deployment

Every Day Counts is not about inventing the next “big thing.” It's about taking effective, proven and market-ready technologies and getting them into widespread use. By advancing 21st century solutions, we can improve safety, reduce congestion and keep America moving and competitive.

Warm Mix Asphalt

Warm-Mix Asphalt (WMA) is the generic term for a variety of technologies that allow asphalt to be produced and then placed on the road at a lower temperature than the conventional hot-mix method. WMA production is at temperatures ranging from 30 to 120 degrees lower than hot-mix. In most cases, the lower temperatures result in significant cost savings and reduced greenhouse gas emissions because less fuel is required. WMA also has the potential to extend the construction season, allowing projects to be delivered faster. By 2009, more than 40 states constructed WMA projects, with 14 adopting specifications to accommodate WMA.



Prefabricated Bridge Elements and Systems

With Prefabricated Bridge Elements and Systems (PBES), many time-consuming construction tasks no longer need to be done sequentially in work zones. An old bridge can be demolished while the new bridge elements are built at the same time off-site, then brought to the project location ready to erect. Because PBES are usually fabricated under controlled climate conditions, weather has less impact on the quality, safety, and duration of the project. The use of PBES also offers cost savings in both small and large projects. The ability to rapidly install PBES

onsite can reduce the environmental impact of bridge construction in environmentally sensitive areas.

Adaptive Signal Control Technology

Poor traffic signal timing contributes to traffic congestion and delay. Conventional signal systems use pre-programmed, daily signal timing schedules. Adaptive signal control technology adjusts the timing of red, yellow and green lights to accommodate changing traffic patterns and ease traffic congestion. The main benefits of adaptive signal control technology over conventional signal systems are that it can:

- Continuously distribute green light time equitably for all traffic movements.
- Improve travel time reliability by progressively moving vehicles through green lights.
- Reduce congestion by creating smoother flow.
- Prolong the effectiveness of traffic signal timing.

Adaptive Control Software Lite (ACS-Lite) is an example of adaptive signal control technology. ACS-Lite was specifically designed to be deployed using conventional control equipment, communications, and traffic sensors on arterial streets, making it a cost-effective alternative to other signal timing adjustment technologies.

Safety Edge

The Safety Edge is a simple but extremely effective solution that can help save lives by allowing drivers who stray off highways to return to the road safely. Instead of a



vertical drop-off, the Safety Edge shapes the edge of the pavement to 30 degrees. Research has shown this is the optimal angle to allow drivers to re-enter the roadway safely. The asphalt Safety Edge provides a strong, durable transition even for vehicles that are particularly vulnerable, such as smaller, lighter cars. Even at higher speeds, vehicles can return to the paved road smoothly and easily. FHWA's goal is to accelerate the use of the Safety Edge technology, working with states to develop specifications and adopt this pavement edge treatment as a standard practice on all new and resurfacing pavement projects.

Geosynthetic Reinforced Soil

Instead of conventional bridge support technology, Geosynthetic Reinforced Soil (GRS) Integrated Bridge System (IBS) technology uses alternating layers of compacted granular fill material and fabric sheets of geotextile reinforcement to provide support for the bridge. GRS also provides a smooth transition from the bridge onto the roadway, and alleviates the “bump at the bridge” problem caused by uneven settlement between the bridge and approaching roadway. The technology offers unique advantages in the construction of small bridges, including:

- Reduced construction time and cost, with costs reduced 25 to 60 percent from conventional construction methods.
- Easy to build with common equipment and materials; easy to maintain because of fewer parts.
- Flexible design that’s easily modified in the field for unforeseen site conditions, including unfavorable weather conditions.

Shortening Project Delivery

The sooner we can deliver projects, the sooner the public can enjoy their benefits. To deliver projects more quickly, FHWA will help the highway community make routine use of innovative practices. We’ve put together a toolkit that includes ideas for using flexibilities in the law and not duplicating efforts in the planning and environmental review process. We are also recommending that states make innovative contracting practices the standard way of doing business.

It’s a commonly held perception that it takes an average of 13 years to deliver a major highway project from planning through completion. This toolkit presents approaches for improving project delivery times by addressing what we’ve identified as a number of frequently cited problem areas. FHWA is prepared to play an active leadership role in helping the people who actually deliver projects States, MPOs, contractors understand and accept the new practices and new technologies.

The first three initiatives below attempt to eliminate time-consuming duplication of effort.

Planning and Environmental Linkages

This initiative will set up a framework for considering and incorporating planning documents and decisions from the earliest stages of project planning into the environmental review process. It represents an approach to transportation decision making that takes environmental, community, and economic information collected early in the planning stage and carries it through project development, design, and construction. This can

lead to a seamless decision making process that minimizes duplication of effort, promotes environmental stewardship, and reduces delays in project implementation.

Legal Sufficiency Enhancements

Decisions made early in planning and project development are often the root causes of problems identified later in the environmental review process when NEPA and Section 4(f) documents undergo legal scrutiny. Consultation with FHWA environmental attorneys at early decision points can help decision-makers avoid problems later, saving time and costs. This initiative will also identify the most common problems in document development, their root causes, and the measures preparers can take to avoid the problems.

Expanding Use of Programmatic Agreements

The continued and expanded use of programmatic agreements (PAs), where procedures have been standardized and agreed upon, has been very effective in saving time. When prior agreements exist for avoiding, minimizing, and mitigating impacts, projects are reviewed quicker and trust is developed that results in improved relationships between DOTs and regulatory agencies. The goal of this initiative is to identify and assist in the expansion of new and existing programmatic agreements to a regional or national level.

The next five initiatives encourage the use of existing regulatory flexibilities.

Use of In-Lieu Fee and Mitigation Banking

In projects that will impact waters of the United States (wetlands, for example), the permitting process under Section 404 of the Clean Water Act currently constitutes a major component of the project development and delivery process. This initiative proposes expanded use of in-lieu fees and mitigation banking currently allowed under existing statute, FHWA regulations, State law, and court decisions in order to save time and expedite project delivery.

Clarifying the Scope of Preliminary Design

This initiative will identify the amount of design work allowable under current law prior to NEPA completion regardless of contracting mechanism, and develop guidance to allow this work to be done consistently.

Flexibilities in Right of Way

The Right of Way (ROW) process is currently a major part of the project development process. Significant time savings can be achieved by employing flexibilities already provided for in statute and FHWA regulations. This initiative will underline opportunities for improved coordination of ROW activities with other key project development actions in preliminary design; land acquisition for utilities

accommodation and relocation project activities; NEPA mitigation land needs; and a number of other areas where streamlined approaches may prove beneficial. The proposed initiative deals only with flexibilities allowed under existing regulations and statutes. Legislative changes required for additional flexibilities will need to be addressed separately.

Flexibilities in Utility Accommodation and Relocation

The often–conflicting priorities of state transportation agencies and utility companies can adversely affect the timely completion of transportation projects. Potential utility conflicts exist on most transportation projects. It is estimated that half of all highway and bridge projects eligible for Federal funding involve the relocation of utility facilities, and construction generally takes longer and costs more when utilities need to be relocated. The initiative will spotlight existing flexibilities currently in place under Federal law and regulations and describe techniques that foster effective utility coordination during project development which warrant more widespread use.

Enhanced Technical Assistance on Ongoing EISs

This initiative will provide additional FHWA technical assistance to identify major challenges on ongoing Environmental Impact Statement projects and implement solutions to resolve project delays where feasible. Candidate projects would ideally be those where 60 months have elapsed since issuance of the Notice of Intent (NOI) without issuance of a Record of Decision (ROD). FHWA teams will focus on facilitating interagency coordination and collaboration to resolve outstanding issues and provide peer–to–peer activities, workshops, training, or specialized on–site assistance.

The next two initiatives focus on the construction phase of a project.

Design Build

Traditionally, a project is designed, put out for bid to construction firms, then built by the winning bidder (design–bid–build). Design–Build (DB) is an alternate method of project delivery in which the design and construction phases are combined into one contract, eliminating the separate bid phase and allowing certain aspects of design and construction to take place at the same time. This can provide significant time savings compared with the design–bid–build approach, where the design and construction phases must take place in sequence.

With DB project delivery, the designer–builder assumes responsibility for the majority of the design work and all

construction activities. This provides the designer–builder with increased flexibility to be innovative, along with greater responsibility and risk.

In addition to the time savings, a DB contract provides savings in cost and improvement in quality. Cost savings are realized by transferring many of the construction engineering and inspection costs from the contracting agency to the designer–builder. The arrangement also results in fewer change orders or claims for errors or delays. Finally, the ongoing involvement of the design team throughout the process puts a greater focus on quality control and assurance, and allows better coordination between the needs of the project and the contractor’s capabilities.

Construction Manager/General Contractor

Construction Manager/General Contractor (CM/GC) occupies the middle ground between the traditional design–bid–build and design–build. In a typical CM/GC scenario, the owners of a project hire either a general contractor or design firm to serve as the construction manager, placing responsibility for design review, design modifications, system integration, and construction with that single contractor. CM/GC allows state DOTs to remain active in the design process while assigning risks to the parties most able to mitigate them. As with the design–build approach, there are potential time savings because of the ability to undertake a number of activities concurrently.

Additional benefits include:

- Increased partnership and team building fosters an environment where innovation can be nurtured, be rewarded, and flourish.
- Owner has control over design details as a member of the design team.
- Potential for lower project costs, primarily due to risk identification and allocation during early project development.
- Enhanced cost certainty at an earlier point in design because of real time costing information inherent to CM/GC.
- Value engineering savings accrue to owner. The number of change orders, which are indicators of design quality, is also low. ▼

ADA Compliance Deadline—March 15, 2012

The Americans with Disabilities Act of 1990 (ADA) is a law that was enacted by the U.S. Congress. It was signed into law on July 26, 1990, by President George H.W. Bush, and later amended with changes effective January 1, 2009.

The ADA is a wide-ranging civil rights law that prohibits, under certain circumstances, discrimination based on disability. It affords similar protections against discrimination to Americans with disabilities as the Civil Rights Act of 1964, which made discrimination based on race, religion, sex, national origin, and other characteristics illegal. Disability is defined by the ADA as “a physical or mental impairment that substantially limits a major life activity.”

On July 23 2010, Attorney General Eric Holder signed final regulations revising the Department’s ADA regulations, including its ADA Standards for Accessible Design.

Revised ADA regulations implementing Title II and Title III requirements were published in the Federal Register, September 15, 2010 and took effect on March 15, 2011. The regulations were updated November 15, 2010. Compliance with the 2010 Standards is required by March 15, 2012.

New Amendments to Titles II and III

As part of the administration’s commemoration of the 20th anniversary of the Americans with Disabilities Act (ADA), there have been new rules that will amend the Department of Justice’s regulations implementing Title II and Title III of the ADA. These two rules will be published concurrently in the Federal Register.



- Title II of the ADA focuses on public services. Public services, which include state and local government instrumentalities, the National Railroad Passenger Corporation (AMTRAK), and other commuter authorities, cannot deny services to people with disabilities or deny participation in programs or activities that are available to people without disabilities. In addition, public transportation systems, such as public transit buses, must be accessible to individuals with disabilities.
Title III of the ADA focuses on public accommodations. All new construction and modifications must be accessible to individuals with disabilities. For existing facilities, barriers to services must be removed if readily achievable. Public accommodations include facilities such as restaurants, hotels, grocery stores, retail stores, etc., as well as privately owned transportation systems.
- Some of the changes that will affect Title II and Title III follow:
Adoption of the Revised Design Standards – New accessible design standards are established for a variety of recreational facilities, including swimming pools, playgrounds, golf courses, amusement rides, recreational boating facilities, exercise machines and equipment, miniature golf courses and fishing piers; as well as for such public facilities as courthouses, jails and prisons.
- Element by Safe Harbor – The department is mitigating the cost of design changes by adopting a “safe harbor” under which existing building elements that already comply with the 1991 ADA Standards for Accessible Design would not be required to be brought into compliance with the 2010 Standards until the elements were subject to a planned alteration.
- Ticketing – The department has added provisions that provide guidance on the sale of tickets for accessible seating, the sale of season tickets, the secondary ticket market, the hold and release of accessible seating to persons other than those who need accessible seating, ticket pricing, prevention of the fraudulent purchase of accessible seating and the ability to purchase multiple tickets when buying accessible seating.

Service Animals – The regulations define “service animal” as a dog that has been individually trained to do work or perform tasks for the benefit of an individual with a disability.

Wheelchairs and Other Power-Driven Mobility Devices – The amended rules provide a two-tiered approach under which wheelchairs and scooters must be permitted in all areas open to pedestrian use.

Other areas of focus are, ticketing for public events, effective communication, and residential housing built by or on behalf of public entities.

Further information on these regulations is available by visiting the following websites that provide more detailed information and fact sheets.

- www.access-board.gov
- www.usdoj.gov
- http://www.ada.gov/regs2010/factsheets/title2_factsheet.html (Implementing Title 2 of ADA)
- http://www.ada.gov/regs2010/factsheets/title3_factsheet.html (Implementing Title 3 of ADA)
- http://www.ada.gov/regs2010/factsheets/2010_Standards_factsheet.html (2010 Standards for Accessible Design)
- <http://www.access-board.gov/ada-aba/index.htm>
- Title III: Final Rule amending 28 CFR Part 36: Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities -- (HTML)

Editor’s Note: Compliance with the 2012 standards is required by March 15, 2012. T3S will be hosting an ADA workshop in Charleston November 9th-10th. Visit our web page at www.clemson.edu/t3s for more information.

ADA Self Evaluation for Anderson County

In August of 2010, Anderson County hosted their first ADA Summit. Their goal from the summit was to bring awareness to all county government offices concerning ADA regulations and requirements and to develop a transition plan. Over 100 participants attended the summit from Anderson County departments and other local agencies throughout the state. On November 16, 2010 the Anderson County Council approved a “Proclamation of Recommitment to Full Implementation of the Americans with Disabilities Act (ADA).”

Anderson County is currently in the process of updating its own ADA standards in county buildings and facilities. In March of 2011, a SELF-EVALUATION survey was

given to all county departments. This survey contained a more simplified version of the ADA Checklist for Readily Achievable Barrier Removal questionnaire. At the end of each question, there was plenty of room for survey or comments and recommendations.

The “Anderson County Self-Evaluation Building & Facility Survey” is just the beginning, however. This process is complex, but we MUST begin with an accurate self-examination that identifies the basic problem areas. The self-evaluation inventory survey reflects the approach of “compliance planning” in the Anderson County ADA Transition Plan and the survey will provide a structure for organizing and managing the compliance process by identifying and analyzing information and documenting the steps of action.

When problem areas are identified they will be included along with the needed improvements and cost estimates for repairs in the county’s transition plan. All buildings, facilities and services that do NOT comply with the new ADA regulation will be noted in the transition plan. Anderson County will use these data when determining funding requirements for the county’s Capital Improvement Program. (CIP)

Four priorities were covered in the survey:

- Are there accessible entrances to the facilities?
- Is there access to all other goods and services?
- Is there access to rest rooms?
- Are there any other measures necessary to provide adequate services to folks with disabilities?

Three distinct purposes have been defined through the self-evaluation process:

- Our goal is to afford every individual the opportunity to benefit from our county’s services, as well as to encourage all county businesses and services to include accessibility for all citizens.
- This process is not a one-time effort. Access issues must be re-evaluated annually.
- Barrier removal that might be too difficult to fix now, could possibly be done at a later date through tax incentives that may help absorb the costs over several years.

In August of 2011 Anderson County hosted a second ADA summit with topics that focused on ADA policies and regulation updates as well as public rights-of-way and recreational areas. The topics discussed will be beneficial in prioritizing corrections and modifications to existing structures and facilities.

Information obtained from A. Wayne Proctor, Senior Planner/ADA Coordinator, Anderson County ▼

Technical Writing for Transportation Professionals, #3

The Structure of a Proposal

By Richard Kronick, freelance technical writer and writing trainer

My first two articles in this series (spring & summer *Are We There Yet*) showed you how to get ready to write a technical document. This article focuses on the structure of proposals. Proposals are arguably the most important documents written by transportation professionals because almost no transportation project gets a go-ahead until a proposal has been accepted.

A descriptive title

The title of your proposal should not only identify the problem you are addressing; it should also suggest your solution. For example, instead of “Brown County Landfill,” make it “Clay Lining to Remediate Leakage of the Brown County Landfill.” This will increase your readers’ eagerness to dig into your text.

The three-part structure

Aristotle’s advice on how to give a lecture has been summarized as:

- First tell ‘em what you’re gonna tell ‘em.
- Then tell ‘em.
- Then tell ‘em what you told ‘em.

When I show this idea to people in my writing seminars, it is always greeted with a bit of laughter—and I know why: It seems wrong! It contradicts the saying made famous by architect Ludwig Mies Van der Rohe: “Less is more.” Mies’s saying certainly applies to your proposal. You should use as few words as possible. But the “Tell ‘em...Tell ‘em...Tell ‘em” idea is also valid for proposals because of your readers’ psychological needs: First, no one wants to be taken for a ride until the driver says where they’re going—hence the need to “Tell ‘em what you’re gonna tell ‘em.” Second, because your readers undoubtedly have a few dozen other thoughts bumping around in their minds as they read your proposal, you need to reinforce what you’ve already said—hence the need to “Tell ‘em what you told ‘em.” But within the “Tell ‘em..., Tell ‘em..., Tell ‘em...” formula, you must ‘tell ‘em’ differently each time.

The introduction

You may entitle the first part of your proposal “Introduction,” “Summary,” or “Executive Summary.” (Use the last one when you think your readers will be flattered by being referred to as executives!) But no matter what you call it, the beginning of your proposal must answer three questions that will be on your readers’ minds:

- What’s the background of the situation?
- What’s the problem that has grown out of the background?
- What’s your solution to the problem?

Here’s an example of this three-part structure in a cover letter from a financial planner:

Dear Mr. and Mrs. Jones:

It was good to see you last night. As we discussed, you would like to open an account to invest some money that has been building up for your kids. This new account will be registered jointly. We recommend investing these funds in the Capital Income Builder Fund (prospectus enclosed). Please complete the highlighted areas on the enclosed forms and return them to us along with a check payable to The X Fund. I hope you will call me if you have any questions.

Continued on page 11

Safety Zone



Panel Keeps Pushing for More Bike Lanes

Published on 07/28/11

BY DAVE MUNDAY

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Three weeks after a well-known local doctor was killed riding his bicycle across the James Island connector, a committee formed to advise Charleston City Council on bike safety is pressing forward with its demands for more bike lanes.

The group is making some progress, said Dan Kelley, chairman of Charleston's Bicycle and Pedestrian Advisory Committee, which met Wednesday.

The city of Charleston is studying ways to reserve a bike lane over the Ashley River. The state Department of Transportation is finalizing plans to add bike lanes on St. Andrews Boulevard.

Charleston Mayor Joe Riley made a brief appearance at the committee's monthly meeting to reaffirm his commitment to making the T. Allen Legare Bridge safer for cyclists.

"We believe it is absolutely essential," he said. "We will not rest until we succeed. That will be a game-changer, the ability to cross the Ashley River safely on bike and foot."

Riley also said he has been talking to the Transportation Department about making the James Island connector safer. For instance, one short-term possibility is to put poles between the right lane and emergency lane where bikers ride.

"That is under review," he said.

Officials should consider banning bikes from the bridge altogether, Arthur Field of Charleston suggested.

"It's inherently dangerous to ride a bicycle (with so much car traffic)," he said.

"We don't really look at that as an option," Kelley said.

There is no other practical way to get from James Island to the peninsula, because the Wappoo Bridge is even more dangerous than the connector, committee member Courtney Gruber said.

Committee members agreed that police need to educate and ticket bikers who run red lights and ride on congested downtown sidewalks.

Riley pointed out that the city printed up biking safety cards in May to give out to students. They are yellow and say "Bike Right City of Charleston" on one side and have safety and legal tips on the back. Riley said he would check to make sure they are included in student orientation packets this summer.

The law requires bicyclists to ride with the flow of traffic, as far to the right side of the road as possible, and to obey stop signs and stoplights.

The committee looked over Transportation Department plans to put bike lanes on a section of St. Andrews Boulevard by the end of the year. The road will be repaved and bike lanes added between Wesley Drive near the bridge and 5th Avenue near the intersection with S.C. Highway 171 toward Charles Towne Landing.

The committee agreed to ask the DOT to try to extend the lanes all the way to the bridge, to mark the bike paths across intersections and to make the crosswalks more visible.

Mitchell Hollon, an anesthesiologist and cycling enthusiast, was killed July 5 when he was knocked over the guardrail on the connector into the marsh below. The van driver was given a \$113 ticket for an improper lane use. ▼



Low-Cost Safety Improvements Can Improve Safety At Stop Sign-Controlled Intersections

Introduction

Stop signs are the primary form of traffic control at intersections across the United States. However, intersections controlled by stop signs also account for one-third of all intersection crashes and more than 40 percent of fatal crashes¹. Research has shown that a primary reason for the high number of crashes is driver inability or failure to see the stop sign and/or to understand where to stop. Research also demonstrates that the number and severity of crashes can be reduced by using simple, low-cost enhancements such as improving stop sign visibility, adding “Stop Ahead” advance traffic control signs, and adding pavement markings to increase the level of driver compliance with the stop sign. The experience of Winston-Salem, NC, demonstrates how transportation agencies can improve safety with low-cost enhancements.

The city of Winston-Salem was concerned about the high number of crashes at some of its intersections controlled by stop signs. Recognizing that poor sign visibility and inadequate markings can cause crashes, the city of Winston-Salem installed larger additional stop signs, “Stop Ahead” advance traffic control signs and clearly visible markings in various combinations at 16 intersections experiencing a high incidence of crashes, many with injuries². The crash reduction averages in this report reflect the average percent reduction per year based on the difference between the total number of “before” and “after” crashes, observed over a minimum duration of 3 years at each intersection, between 1988 - 2002. The “before” and “after” observation periods ranged between 39-55 months depending on the intersection.

This article summarizes the application of four successful combinations of intersection treatment enhancements that reduced crashes at stop sign-controlled intersections. These four combinations are described below.

Low-Cost Improvements



Figure 1: Larger (30-inch) Stop Sign

1) Install Larger (30-inch) Stop Signs, “Stop Ahead” Advance Traffic Control Signs, and Pavement Markings

Winston-Salem replaced existing 24-inch stop signs with 30-inch signs (Figure 1) and placed 12-inch stop bars and a short segment of double-yellow centerlines at four intersections. Officials also installed “Stop Ahead” advance traffic control signs at two intersections. Data showed that 45 crashes occurred before the improvements were made; 20 crashes occurred after the changes. These relatively inexpensive treatments have proven effective in reducing crashes, and Winston-Salem experienced an average crash reduction of 56.9 percent per year at these intersections.

2) Add Pavement Markings (Double-Yellow Centerline and Stop Bars) to Existing (24-inch) Stop Signs

Winston-Salem added pavement markings at four two-way, two-lane, stop-controlled intersections to increase visibility of both the intersection and the proper stop position as well as to alert drivers to the intersection control (Figure 2). Data showed that 45 crashes occurred before the improvements were made; 21 crashes occurred after the changes. Installing these simple, low-cost countermeasures reduced crashes by 52.7 percent and reduced injuries by approximately 70 percent per year.



Figure 2: Enhanced Pavement markings (double-yellow centerlines and stop bar)

3) Install Additional and Larger (30-inch) Stop Signs

To visually emphasize the required stop at four intersections, Winston-Salem placed additional stop signs on the left side of the stop approach and used larger (30-inch) stop signs for the intersections (Figure 3). These enhancements were intended to better alert drivers to the upcoming stop sign, and enhance their ability to safely navigate the intersection. Data showed that 68 crashes occurred before the improvements were made; 35 crashes occurred after the changes. Winston-Salem realized an average crash reduction of 48.3 percent per year at these locations.



Figure 3: Additional, larger (30-inch) stop signs with stop bars

4) Install Additional and Larger (30-inch) Stop Signs with Added Pavement Markings

Drivers were not always able to see approaching traffic from the cross streets at four intersections with existing 24-inch stop signs. The city implemented a set of low-cost sign and marking enhancements to heighten the awareness of the intersection control and encourage drivers to stop in a position that provided an effective view of approaching traffic. Countermeasures included placing an additional stop sign on the left side of the stop approach, installing larger (30-inch) stop signs for the intersection at all stop-controlled approaches, and placing 12-inch stop bars at all stop-controlled approaches. Short segments of double-yellow centerlines (up to 50 feet) were also installed at two approaches. Data showed that 41 crashes occurred before the improvements were made; 14 crashes occurred after the changes. These simple, low-cost countermeasures reduced crashes by 65.9 percent and reduced injuries by 65 percent per year.

The Cost of Improved Safety

Winston-Salem had no implementation issues with these countermeasures and the costs for implementing the enhancements were low: approximately \$350 for a 30-inch stop sign or a “Stop Ahead” advance traffic control sign, and approximately \$1,250 for the enhanced pavement markings (centerlines and stop bars). The signing and pavement marking treatments were implemented within 3 months.

The combinations of enhanced countermeasures installed in these Winston-Salem stop-controlled intersections reduced total crashes by approximately 55 percent and total injuries by an average of 70 percent per year.

As the Winston-Salem experience demonstrates, low-cost improvements can effectively improve safety and reduce traffic crashes and their resulting injuries and/or fatalities. For more detailed data and results on this success story and other proven intersection safety treatments from across the country, please see the following website: <http://safety.fhwa.dot.gov/intersection>. For more information, contact Ed Rice, Intersection Safety Team Leader, FHWA Office of Safety (ed.rice@dot.gov), or Stanley Polanis, Director of Transportation, City of Winston-Salem, NC (stanp@cityofws.org).

¹ Insurance Institute for Highway Safety, Volume 37, No 9, October 26, 2000.

² Existing intersections met minimum Manual on Uniform Traffic Control Devices (MUTCD) standards. ▼

Continued from page 7

Notice that the first 11 words (through “discussed”) are the background statement. Without going into any detail, the writer references what has brought him and his readers to this point. Do the same thing in your proposals. Begin with a statement of the history of the situation, leaving out most of the details.

Next, notice that the financial planner states the problem as seen by his readers: (“... you would like to...invest some money that has been building up...”). That strategy is crucial to the success of a proposal. In the first article in this series, I admonished you to analyze your readers. Now you must use the information you developed in that analysis to craft your problem statement. If your readers conclude that you don’t see the situation from their viewpoint, your proposal will be DOA.

Finally, notice that the financial planner concludes by suggesting the solution to the problem—again without much detail. The details are in the enclosed documents.

Here’s another example: I’m currently writing a proposal for a county highway engineer to his county commissioners. We are proposing that new highway department facilities be built. In our executive summary, we could have emphasized that the existing facilities are worn out and do not comply with the building code, but that would have been stating the problem from the highway engineer’s viewpoint. Instead, we are emphasizing that the existing facilities are not giving county residents a sufficient return on their tax dollars. That states the problem as seen by the county commissioners. Whether they are genuinely altruistic or merely seek re-election, they will see the problem as: What is the best way to serve the needs of county residents?

The ‘body’

The body of the proposal is where the detailed information belongs. In the first article of this series, I explained that there are only four reasonable ways to organize any information:

- Order of importance
- Time order
- Pro vs. con

Cause and effect

The first one, order of importance, is a good choice as the overall organizing principle for the body of a proposal. That means you start with the single most important reason why whatever you are proposing should happen—and then continue in order of lesser importance as seen by your primary audience. Why? Because the primary audience—those who have the power to accept or reject your proposal—are always at the tops of organizations. They are busy people who will only be willing to give your proposal a few minutes to grab their attention. So you must hit them with the most important idea right away—which, again, means most important according to their value system. Do this and you will hook your fish. Don’t do it and the project will be one that got away.

The conclusion

In your conclusion, do two things:

- Reinforce your readers’ memories by restating your most important ideas.
- Define the action that should happen next.

This should be straightforward: Read what you’ve written in the body of the proposal, pick out the most important points, and restate them as a concise bulleted list. Then write a polite ‘call to action.’ Define not only what should happen next, but also who should do it. If the method of responding to proposals was defined in the RFP, this could be nothing more than, “Please contact us if you have any questions.” But if you are in a position to define what happens next, you might write, “I would like to meet with you to go over this proposal and respond to your questions.” ▼



Are We There Yet? is published by the South Carolina Transportation Technology Transfer Service (T³S) for the benefit of county and municipal government agency personnel in South Carolina. T³S, administered by the Clemson University Civil Engineering Department, is the Local Technical Assistance Program (LTAP) center for SC. T³S is part of a nationwide network of LTAP centers established by the Federal Highway Administration (FHWA) in cooperation with state transportation agencies. T³S is jointly funded by FHWA and the South Carolina Department of Transportation (SCDOT). The views, opinions, and recommendations contained in the newsletter do not necessarily reflect the views of the FHWA or the SCDOT.

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