technotes

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MARYLAND TRANSPORTATION TECHNOLOGY TRANSFER CENTER

Local Technical Assistance Program (LTAP)
University of Maryland at College Park

www.mdt2center.umd.edu

INSIDE:

FHWA Announces New Resources Now Available

Video: Modern Roundabouts: A Safer Choice

Modern Roundabouts: A Safer Choice explains the many benefits of roundabout intersections and is intended primarily for decision makers in state and local transportation agencies to overcome the common barriers and reasons for not considering roundabouts as intersection alternatives. It is presented in a non-technical manner and can be used at public meetings for proposed roundabout projects.

The video covers such things as: roundabout features and principles; applicability to all roadway types, including state highways and at interchange ramp termini; accommodation of pedestrians, large trucks and emergency vehicles; and acceptance by the public, including older drivers. It discusses the safety, operational, environmental, and aesthetic benefits of roundabouts.

The video is on the safety web site at http://safety.fhwa.dot.gov/intersection/roundabouts/, and hard copies are also available from the Report Center. If you have any questions or need additional information, please contact either Jeff Shaw at jeffrey.shaw@dot.gov or at 708.283.3534 or Ed Rice at ed.rice@dot.gov or at 202.366.9064.

FHWA Comprehensive Intersection Resource Library CD: Fourth Edition

This is to announce the availability of the fourth version of the FHWA Comprehensive Intersection Resource Library CD, originally developed in 2002 and updated in 2004. It contains intersection safety-related resources that represent a broad cross section of publications, educational materials, and other media published by FHWA and other transportation safety partners. Material searches can be made by keyword, title, author or topic.

The CD is targeted primarily to working level engineers and related practitioners in their efforts to improve intersection safety. It can be used by transportation professionals at all levels including engineers, planners, safety managers, policy makers, law enforcement and others as easy references to pertinent intersection safety materials. Although the main focus is on engineering materials, the CD also includes associated information on law enforcement, education and emergency response treatments and programs.

After an initial section of background information, the library content is organized into five broad categories including signalized intersections, unsignalized intersections, roundabouts, highway-rail grade crossings, and alternative intersection designs (such as the Displaced Left Turn Intersection and Median U-Turn Intersection). Links to other transportation safety partner web sites are also provided for additional information.

This CD is available on the FHWA web site at http://safety.fhwa.dot.gov/intersection/resources/fhwasa09027/. Hard copies can be ordered from the Report Center. For further information, please contact Ed Rice, FHWA Intersection Team Leader, at 202.366.9064, or at ed.rice@dot.gov.

To obtain copies of either resource, you can visit the links provided in the above article or email us at mdt2@umd.edu and we will be glad to get the resources to you.

September 19, 2010 - Register 8:00am, Run begins at 9:00am

Register today to participate in the Fort McHenry 5K Tunnel Run/Walk and take advantage of a rare opportunity to walk/run through this unique venue! A $25 donation pre-registers you for the 5K, however, additional fundraising is encouraged to show your support of the thousands of Special Olympics Maryland athletes. The race is sponsored by the Maryland Transportation Authority Police, the Maryland Special Olympics, and the Maryland Transportation Authority.

Registration & Packet Pickup:

$25.00 pre-registration
$30.00 on race day

If registered, you may pick up your packets, including race number, shirt, and other items on:

Saturday, September 18 from 10:00am - 3:00pm at:
Road Runner Sports
6630-C Marie Curie Drive
Elkridge, MD 21075

The race course is closed to bikes, skaters and baby joggers/strollers. Water will be provided on course and at the start and finish line. Splits provided at the one and two mile marks.

Awards:

- Top 3 overall male & female
- Top Law Enforcement
- Top 3 males & females overall in:
  - 15 years old & Under
  - 16-19 years old
  - 20-29 years old
  - 30-39 years old
  - 40-49 years old
  - 50-59 years old
  - 60-69 years old
  - 70 years old +
- Top 3 teams overall (based on time)

MARYLAND TRANSPORTATION AUTHORITY POLICE

Special Olympics Maryland
Be a fan.

Maryland Transportation Authority

Amenities:

The first 500 pre-registered runners will receive a t-shirt and all event participants are welcome to join in the post race celebration to include light refreshments.

About the Special Olympics

The mission of Special Olympics is to provide year-round sports training and athletic competition in a variety of Olympic-type sports for citizens with intellectual disabilities, giving them continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in a sharing of gifts, skills and friendship with their families, other Special Olympics athletes and the community.

For more information about the race, visit: www.tunnelrun.org

SafeZones Speed Enforcement Technology Deployed on I-695 at Liberty Road

Maryland State Highway Administration (SHA) and Maryland State Police (MSP) will deploy speed enforcement through the SafeZones program at the I-695 (Baltimore Beltway) bridge project at Liberty Road (MD 26) beginning June 24. The goal of the SafeZones program is to reduce vehicle speeds and make construction zones safer for workers and motorists. Through the end of May, more than 34,600 citations have been issued through the SafeZones program.

Large warning signs are placed in advance of the work zone to alert drivers of automated speed enforcement use. Crews also utilize "speed trailers" to display the posted speed limit and drivers' speeds in advance of the enforcement vehicle. SHA has installed more than a dozen speed enforcement warning signs along the Baltimore Beltway, as well as an additional sign along the I-795 ramp to southbound I-695.

Maryland SafeZones mobile enforcement vehicles using laser technology will continue to rotate among eligible work zones throughout the State. In addition to the location at the I-695 and Liberty Road project, SafeZones currently operates and rotates within the following work zones: I-95 between MD 198 and MD 212 (ICC work zone) in Prince George's County, I-695 at Charles Street in Baltimore County, and I-95 Electronic Toll Lane (ETL) project in northeastern Baltimore County.

The law allowing automated speed enforcement was passed during the 2009 legislative session and became effective October 1. Transportation Article §21–810 allows law enforcement to use speed cameras to fine drivers exceeding the speed limit by 12 mph or more in work zones along controlled access roadways with a 45 mph or more speed limit.

"Preliminary before and after speed data indicate that drivers are slowing down where the SafeZones program is present within the I-695 interchange improvement project at Charles Street, and we are confident we can carry that success west to I-695 at Liberty Road as well," said Maryland State Highway Administrator Neil J. Pedersen. "The overriding goal of the program is to change driver behavior so that construction crews, as well as drivers and their passengers, arrive home safely at the end of the day."

Four out of every five people injured or killed in work zone crashes are drivers or their passengers, not workers. Even when workers are not present, work zones can be dangerous due to reduced lane width, barrier walls, uneven pavement and modified signage placement. On average, 12 people are killed per year and nearly 1,500 people injured in crashes in work zones in Maryland.

For more information the Safezones Speed Enforcement Technology visit: www.marylandroads.com.

CITE Blended Courses for 2010

The Consortium for ITS Training and Education (CITE) announces its Blended Course schedule for 2010. A "blended" course combines the best features of both instructor-led and web-based instruction. Features include: live discussions through the use of conference calls, convenient, flexible web-based learning, a specific time schedule in which to complete the course, and student interaction through the use of a discussion board.

For more information about or to register for CITE's Blended Courses visit:
www.citeconsortium.org

Scheduled courses include:

- Managing High Technology Projects in Transportation, September - October
- Traffic Signal Timing, September - October
- Principles and Tools of Road Weather Management, October - December
- Introduction to Systems Engineering, October - December

Statewide Opportunities for Integrating Operations, Safety and Multimodal Planning: A Quick Overview of the Reference Manual

This reference manual is intended to assist managers and staff at State DOTs in their efforts to more effectively integrate operations, safety, and planning. The manual builds on a previous Federal Highway Administration (FHWA) document, Statewide Opportunities for Linking Planning and Operations: A Primer. While the primer identifies broad opportunities for State DOTs to integrate planning and operations, the reference manual extends this information to provide practical instruction on how to implement these opportunities and others along with case study examples and "toolkits" to help get started. This reference manual also expands the focus of integration to include operations, safety, and planning in a multimodal context.

State departments of transportation (DOTs) face a wide range of challenges in their missions to provide safe and efficient transportation systems. In the United States, roadway fatalities and serious injuries-to vehicle occupants, bicyclists, and pedestrians-continue to be unacceptably high. Traffic congestion continues to challenge our Nation's transportation system, resulting in billions of gallons of wasted fuel, hours of wasted time, and costs to the economy. Affordable and safe options for transit, bicycling, and walking are still limited in many communities, and the public wants transportation to support more livable, economically vibrant, and sustainable communities. While the needs for transportation investments to support all these goals are substantial, the reality is that funding for needed improvements is limited. Consequently, State DOTs are increasingly seeking innovative ways to get the most out of their investments.

Although all parts of the DOT organization work in support of the agency mission and goals, the areas of planning, operations, and safety have all too often functioned separately, and the perspective of those who work in these areas can be quite different largely due to their day-to-day responsibilities.

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FHWA to Provide an Accelerated Boost to the Deployment of Selected Safety Technologies

Through the Highways for LIFE Technology Partnerships Program, the Federal Highway Administration (FHWA) will enter into Cooperative Research and Development Agreements with selected safety product manufacturers and conduct Product Safety Performance Evaluations. The solicitation opens on August 6th, 2010 and closes on October 6th, 2010. The program anticipates selecting up to eight technologies to evaluate in a two year period.

The purpose of the Technology Partnership Program is to partner with the highway construction industry and state and local highway agencies to accelerate the adoption of promising innovations. For the 2010 solicitation the program will focus exclusively on safety and address a challenge in the deployment of new innovative technologies – the need for an independent performance and product evaluation of technologies with limited or no U.S. installations so that public agencies can make informed purchasing decisions.

To address this challenge, the program seeks to develop a process to evaluate, document, and disseminate the performance results of promising innovative highway safety technologies through a partnership with general industry and state and local highway agencies. The resulting evaluation report will provide credible, comprehensive performance information on a select group of technologies to help highway agencies make informed decisions.

Specifically, the program limits the scope to commercially available infrastructure-based safety products that address one of the following focus areas:

- Roadway departure events (with an emphasis on those occurring on two-lane rural road horizontal curves), or
- Pedestrian-related detection, warning and enhanced conspicuously, or
- Rural, unsignalized intersections

Competition under this solicitation is open to all non-profit and for-profit organizations. International companies are encouraged to apply.

The deadline for submission is October 6th, 2010. A pre-proposal teleconference is scheduled for September 2nd and September 16th. The application requirements are posted at http://www.fhwa.dot.gov/hfl/tech.cfm. For more information contact, Julie Zirlin, Technology Partnerships, program manager at julie.zirlin@dot.gov or at 202.366.9105 or contact Jeffrey Shaw, Office of Safety, highway engineer at jeffrey.shaw@dot.gov or at 708.283.3524.

For more information about the pre-proposal teleconference, read the article on page 7.

Statewide Opportunities for Integrating Operations, Safety and Multimodal Planning

(Continued from page 4)

Multimodal planning must consider not only the existing needs of the system but also long-term forecasted needs for infrastructure investments. In contrast, system operation focuses primarily on the short-term response to system needs utilizing technology and staff solutions. Transportation safety focuses on reducing highway fatalities by making our roads safer through a data-driven, systematic approach and addressing all "4 E's" of safety: engineering, education, enforcement, and emergency medical services. Each of these functions holds an essential role in meeting the larger agency mission.

Integration of operations, safety, and multimodal transportation planning offers great potential for helping State DOTs stretch their limited dollars, maximize the value of their investments, and achieve positive outcomes for the transportation system. While new infrastructure takes a long time to plan and construct, operations strategies are often available in the near term to help address mobility needs at lower cost. Moreover, it is estimated that more than half of congestion experienced by travelers is caused by nonrecurring events, such as weather conditions (e.g., snow, ice, rain), work zones, special events, and major incidents and emergencies, that are not directly addressed through adding infrastructure capacity.

This reference manual is designed to provide "how to" information to assist transportation professionals in taking action to integrate these activities. It identifies and describes opportunities at various levels of decisionmaking-statewide, regional, corridor, and project level-and the benefits of these approaches. It also highlights overarching themes such as the important role of multidisciplinary teams; data collection, sharing, and analysis; and broad use of performance measures within each of these levels. The term "operations" is applied differently across State DOTs: here it refers to an integrated program to optimize the performance of State roadways and transit systems by implementing projects and programs that will improve the throughput, as well as the security, safety and reliability of the transportation system.

Although all parts of the DOT organization work in support of the agency mission and goals, the areas of planning, operations, and safety have all too often functioned separately, and the perspective of those who work in these areas can be quite different largely due to their day-to-day responsibilities. Multimodal planning must consider not only the existing needs of the system but also long-term forecasted needs for infrastructure investments. In contrast, system operation focuses primarily on the short-term response to system needs utilizing technology and staff solutions. Transportation safety focuses on reducing highway fatalities by making our roads safer through a data-driven, systematic approach and addressing all "4 E's" of safety: engineering, education, enforcement, and emergency medical services. Each of these functions holds an essential role in meeting the larger agency mission.

Integration of operations, safety, and multimodal transportation planning offers great potential for helping State DOTs stretch their limited dollars, maximize the value of their investments, and achieve positive outcomes for the transportation system. While new infrastructure takes a long time to plan and construct, operations strategies are often available in the near term to help address mobility needs at lower cost. Moreover, it is estimated that more than half of congestion experienced by travelers is caused by nonrecurring events, such as weather conditions (e.g., snow, ice, rain), work zones, special events, and major incidents and emergencies, that are not directly addressed through adding infrastructure capacity.

Organizing Structure

A structured approach is present throughout the reference manual to allow users to easily navigate this information and find what is most appropriate for their needs. Section 1 (Introduction) introduces the underlying

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Benefits of Operations and Safety Strategies

Traffic signal optimization can decrease delay substantially (13-94%) while improving safety (by reducing speeding and red-light running), at a fraction of the cost of infrastructure capacity expansion. The Texas DOT's Traffic Light Synchronization Program reduced delay by 25%, resulting in a benefit-to-cost ratio of 62:1.

Roundabouts are a strategy that can be used at unsignalized intersections that are experiencing high rates of right-angle, rear-end, and turning crashes. They can decrease fatalities at an intersection by 90%, reduce injuries by 76%, and reduce all crashes by 35%. They also help to improve traffic flow.

Traffic incident management can decrease incident duration by 30-40%. Combined traveler information and incident management systems can increase peak period freeway speeds by 8-13%, reduce crash rates, and improve trip time reliability by 1-22%.

Road weather information systems can reduce traveler delay and lower crash rates by 7-83%.

Electronic Toll Collection (ETC) can yield substantial savings in travel time. A 10-30% participation rate in electronic toll collection yielded benefit-to-cost ratios from 2:1 to 3:1.

Managed lanes provide an option for more reliable travel and can significantly improve transit service speeds. Express lanes on I-95 in Miami resulted in express bus route travel times falling from 25 to 8 minutes on a 7.5-mile section, and a 30% increase in route ridership.

Transit signal priority (TSP) can yield a 2-18% saving in transit running time, and can reduce the number of buses needed in service.

Sources: USDOT, Intelligent Transportation Systems Joint Program Office, Investment Opportunities for Managing Transportation Performance through Technology. January 2009. FTA, Miami Urban Partnership Agreement (UPA) Project: Phase 1A -Transit Evaluation Report, November 2009. Transit Cooperative Research Program Report 118: Bus Rapid Transit Practitioners Guide, 2007.

importance of integration for each functional area and organization of the reference manual. Each of the subsequent sections contains information on specific opportunities, arranged in the following format.

- Opportunity fact sheets: Describe the individual opportunities along with associated challenges, benefits, and who is involved, and recommended steps to implement.
- Relevant case studies: Illustrate how some DOTs have approached integration, and include contact information for further support.
- Toolkits: Provide useful takeaway information that may be a helpful starting point for practitioners in implementing an associated opportunity.
- Self-assessment checklist: Helps identify where the agency may have current practices in place to support integration, and where more focus may be needed.

It is important to remember that these opportunities or steps are often not independent of each other. Instead, opportunities often build upon one another and link together. Users should explore the entire manual to identify connections and relationships as well as take advantage of what they are already doing. Self-assessments may be useful to consider early in the process or to assess achievement over time. This feature supports a "gap analysis" that may quickly guide the user to the greatest need. The toolkits contain references to other supporting information outside of the reference manual itself.

Top-Down and Bottom-Up
Integration of operations, safety, and multimodal planning within a State DOT requires leadership from executives and managers. However, integration does not necessarily require large-scale change within the organization. Efforts to coordinate among functional areas can be undertaken by individuals at all levels within the organization.

Role of Leadership- At the executive level, even a simple statement of intent provides support for efforts to break down silos. Setting policies and strategies toward implementation through agency-wide plans will move the agency further along this path. Ultimately, an environment within the agency that supports enhanced cross-functional collaboration in conjunction with policy statements provides the most sustained support for this intent. The presence of a champion to encourage others toward implementing a new policy or action is strongly supportive.

Staff Level Actions- At the same time, staff working within the agency are critical to fully implement and sustain an integrated approach. In many cases, staff with a strong sense of the potential benefits can propel the concept forward. The case studies included in the manual in many instances began with actions at the staff or supervisor level. Staff within State DOTs can also use the reference manual to provide recommendations to managers.

Opportunities Across Multiple Levels of Decisionmaking
To provide a user-friendly reference, this document is divided into sections that enable users-from operations, safety, and planning functional areas-to go directly to appropriate sections based on the focus of their efforts at different levels of decisionmaking.

Section 2 (Creating an Environment for Integrating Operations, Safety, and Multimodal Planning) of the reference manual focuses on business processes, institutional issues, and human resource considerations that can support agency-wide change led at the executive level. It also is a useful starting point for readers who wish to gain a high-level appreciation of opportunities before reading other sections of this document. The opportunities described in section 2 are cross-cutting in supporting integration at the statewide, corridor and sub-area, regional, and project levels.

Section 3 (Statewide Level Opportunities) supports integrating operations, safety, and multimodal planning at the statewide level and may enhance integration at other levels. The statewide level provides an opportunity to establish goals, objectives, and strategies that support the larger agency mission. Required planning documents can form the basis for programming and demonstrate accountability by setting performance measures. Opportunities for integration can occur by developing links between safety-focused efforts (such as the Strategic Highway Safety Plan), operations-focused efforts (such as operations or ITS plans), and other multimodal transportation planning efforts with the State Long Range Transportation Plan. This is particularly true when interdisciplinary teams, performance measures, and data collection and analysis methods are brought into these efforts.

Section 4 (Regional Level Opportunities) focuses on interaction between the State DOT-often at a regional or district-level office-to address operations, safety, and planning in coordination with Metropolitan Planning

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U.S. Department of Transportation
Federal Highway Administration
HIGHWAYS FOR LIFE

Highways for LIFE Technology Partnerships Program
for Innovative Highway Safety Technologies - 2010 Announcement

Information on Pre-Proposal Teleconference
Date / Time: In an effort to provide clear guidance on the announcement requirements, FHWA plans to conduct two pre-proposal teleconferences on Thursday, September 2, 2010 from
1:30pm – 3:00pm and Thursday, September 16, 2010 from 12:00pm – 1:30pm Eastern time.

Purpose: The purpose of the pre-proposal teleconferences is to present the requirements of this announcement and answer questions from potential applicants.

Registration: Interested potential applicants who wish to participate must register for the meeting by August 31, 2010 for the September 2nd teleconference and by September 14th for the September 16th teleconference.

Participants can register by emailing the following point of contact. Participation from potential applicants shall be limited to two phone lines. When registering, please provide: (1) organization name; and (2) number of phone lines planned to call in (limit two lines). FHWA will not release the identity of organizations and individuals participating in the pre-proposal teleconferences.

Pre-proposal Teleconference Point of Contact for Registration:
Julie Zirlin
Email: Julie.Zirlin@DOT.GOV

Upon receipt of your registration information, FHWA will provide interested applicants the 1-888 phone number for applicants to call to participate in the teleconference.

Questions for Pre-Proposal Teleconference: Potential applicants are encouraged to submit questions for the pre-proposal teleconferences by email to Julie.Zirlin@dot.gov. FHWA will compile the questions and, to the extent possible, provide answers during the teleconference. FHWA will not reveal the identity of the individuals and/or organizations submitting the questions. Rather, questions will be paraphrased. As time permits, FHWA will also entertain additional questions during the pre-proposal teleconference. FHWA will compile and post online at http://www.fhwa.dot.gov/hfl/tech.cfm, a summary list of Questions & Answers discussed during the pre-proposal teleconferences.

To learn more about the scope of this FHWA opportunity, make sure to read the article on page 4.

Questions & Answers
During the period between release of the announcement and proposal due date, FHWA may periodically post a summary of questions received and answers to those questions. The periodic summaries of "Questions & Answers" will be posted on the Highways for LIFE website at http://www.fhwa.dot.gov/hfl/tech.cfm.

For more information about this announcement, visit:
http://www.fhwa.dot.gov/hfl/partnerships/07292010_solicitation.cfm

The following courses are currently scheduled and we are still adding to the list! For more information or to schedule a class, contact Janette Prince at 301.403.4623 or register online by visiting us at www.mdt2center.umd.edu.

CONSTRUCTION MATHEMATICS

Ed Stellfox
August 26, 2010, 8:30am – 3:00pm
College Park, Maryland
$89 All Participants

Construction inspectors may need to brush up on math skills specifically related to construction inspection, especially basic geometry, fractions, area, volume and conversions. The class lead by Ed Stellfox is a good refresher, and excellent preparation for the construction inspection class. The course was designed for road workers, foremen, superintendants, construction inspectors and supervisors in need of a refresher, especially in preparation for the Construction Inspections class.

FLAGGER CERTIFICATION

Juan Morales
August 26, 2010, 8:30am – 12:30pm
College Park, Maryland
$100 All Participants

The safety of workers, motorists and pedestrians is dependent upon the flaggers' performance. Since the flagger position involves safety, proper training is vital; flaggers are expected to pass a test to prove their proficiency and competence level. A MD SHA-approved ATSSA (American Traffic Safety Services Association) flagger card will be issued upon satisfactory completion of this course. This will be valid for 4 years and is acceptable in several states, including MD, VA and DC. The class is presented in PowerPoint© and will include a 25-question multiple choice exam and a flagger demonstration (dexterity test). Students will receive their ATSSA Flagger Certification card the day of the course (upon passing the exam).

CONSTRUCTION INSPECTION FOR LOCAL AGENCY EMPLOYEES

John Hopkins
September 1, 2010, 8:00am - 4:00pm
College Park, Maryland
$110 Maryland Local Government Employees
$125 All Other Participants

This one day session will cover some of the major duties and responsibilities of an individual responsible for the quality of a project. It will address the importance of understanding the plans, the contract, the order of operations, the materials to be used and the various quality control tests used in project inspection. This course is presented in a straight forward manner and deals with the reality of everyday factors involving contractors and agencies. Qualified field inspection personnel with one to three years of field experience are encouraged to attend; participants must possess basic math skills in geometry and algebra. **Participants should bring a calculator, scale and straight edge; notebooks will be provided.*

BRIDGE MAINTENANCE INSPECTION

John Hopkins
September 2, 2010, 8:00am - 4:00pm
College Park, Maryland
$110 Maryland Local Government Employees
$125 All Other Participants

This one day course will cover inspection of bridge maintenance. A brief summary of the topics to be covered are as follows: approach, deck maintenance, deck joints, deck drains, bearing maintenance, concrete beams, steel beams, timber beams, bridge seats and caps, piles and bents, truss maintenance, painting, and winter maintenance. The class is for the actual field maintenance worker who has to do the repairs. It is mostly concerned with what to look for from a maintenance standpoint not a structural rating perspective.

BASIC DRAINAGE

Ed Stellfox
September 15, 2010, 8:30am – 3:00pm
College Park, Maryland
$89 All Participants

This course emphasizes the importance of good drainage with discussions of water and its effects on roads, problems caused by improper drainage, and ways to handle these problems. It covers types of drainage facilities, ranging from ditches, culverts, subdrains, inlets and end structures. Their uses, materials, installation and maintenance as well as erosion control are addressed. It also introduces geosynthetic drainage applications.

ROAD SURFACE MANAGEMENT

Ed Stellfox
September 16, 2010, 8:30am – 12:30pm
College Park, Maryland
$59 All Participants

This course provides participants with the basic concepts of road surface management including inventory, distress identification, condition survey, strategies, programs, budgets, and field surveys. A Road Surface Management Systems software demonstration will also be conducted during this course.

WINTER MAINTENANCE

Ed Stellfox
September 22, 2010, 8:30am – 3:00pm
College Park, Maryland.
$89 All Participants

This course covers all aspects of winter operations- planning and organizing, methods of snow and ice control, salt usage, and winter equipment maintenance. This lesson will include usage of snow maps, formal snow plans, snow plow and salt spreader operation. This course in intended for municipal officials, road commissioners, supervisors, superintendents, publics works and maintenance personnel, equipment operators, and city or town managers.

PREVENTIVE PAVEMENT MAINTENANCE

Ed Stellfox
September 23, 2010, 8:30am – 3:00pm
College Park, Maryland
$89 All Participants

The course covers preventive maintenance treatments such as chip seals, slurry seals, and micro-surfacing and discusses when and where each technique could be effective. It presents application methods, including preparation, materials, equipment, operations and safety, along with practical tips on how to avoid trouble.

INTERSECTION AND ARTERIAL SAFETY DESIGN ANALYSIS

Dane Ismart
October 6-7, 2010, 8:00am – 4:00pm
College Park, Maryland
CEU's: 1.2
$215 Maryland Local Government
$230 Maryland State Government
$250 All Other Participants

This course will provide broad general coverage of at-grade intersection analysis and design features. The analysis will include signalized, unsignalized and roundabout intersections. Specific coverage will include capacity, analysis, signal warrants, queue analysis and safety selected design features. Software packages such as HCS and SIDRA will be demonstrated.

TRAFFIC SIGNS

Ed Stellfox
October 12, 2010, 8:30am – 12:30pm
College Park, Maryland
$59 All Participants

This half-day course will cover the regulations and guidelines for traffic signs including; regulatory signs, warning signs, and guide signs. A review of the Manual on Uniform Traffic Control Devices (MUTCD) will also be covered. An in depth discussion of sign examples, installation and maintenance, as well as sign management will be covered.

TECHNIQUES FOR REDUCING CONSTRUCTION & MAINTENANCE COSTS

Ed Stellfox
October 13-14, 2010,
Day 1: 8:30am – 3:00pm, Day 2: 8:30am - 12:30pm
College Park, Maryland
$99 All Participants

Inflation, increasing cost of labor, materials and fuel have risen steeply in the past few years. At the same time, municipal budgets have not kept pace. It is essential to conserve resources, find energy efficient and low maintenance materials and to use more efficient techniques. This workshop will conclude with groups of participants developing a cost control plan for a project.

BLUEPRINT READING FOR HIGHWAY WORKERS

Glynn Stoffel
October 18, 2010, 8:00am – 4:00pm
College Park, Maryland
$125 Maryland Local Government
$150 Maryland State Government
$175 All Other Participants

Today's highway workers use a variety of blueprints and drawings to guide them in accurately performing the construction and maintenance of roadways and related components. Upon successful completion of this course the student will be able to read and interpret many of these blueprints as well as demonstrate the ability to produce accurate and legible field sketches.

ENGINEERING FABRICS, GRIDS, WEBS AND CELLS (WHAT THEY ARE AN HOW THEY'RE USED)

Ed Stellfox
October 20, 2010, 8:30am – 12:30pm
College Park, Maryland
$59 All Participants

This course is an introduction to geosynthetics, beginning with a discussion of geosynthetics, what they are, how they are made and how they can be used in a road maintenance program. The course then looks at other geosynthetics and their road system uses, including geogrids, geocells and geowebs, presenting new materials with new applications.

UNDERSTANDING ROAD DESIGN AND MAINTENANCE FOR ELECTED OFFICIALS

Ed Stellfox
October 21, 2010, 8:30am – 3:00pm
College Park, Maryland
$89 All Participants

This course is the first step in understanding the problems that a Municipal Road department faces on a daily basis. This course designed for elected officials conveys an understanding of design and maintenance of municipal roads that will make your life easier when dealing with Road Superintendents, Public Works Directors, Foremen, etc. It also gives elected officials a better understanding of what is involved in a road and street budget.

WINTER MAINTENANCE

Ed Stellfox
November 10, 2010, 8:30am – 3:00pm
College Park, Maryland.
$89 All Participants

This course covers all aspects of winter operations- planning and organizing, methods of snow and ice control, salt usage, and winter equipment maintenance. This lesson will include usage of snow maps, formal snow plans, snow plow and salt spreader operation. This course in intended for municipal officials, road commissioners, supervisors, superintendents, publics works and maintenance personnel, equipment operators, and city or town managers.

Our Currently Scheduled Courses
(concluded from page 9)

TRAFFIC CALMING
Dane Ismart
November 16, 2010, 8:15am – 4:00pm
College Park, Maryland
CEU's: 0.6
$115 Maryland Local Government
$140 Maryland State Government
$195 All Other Participants

This Traffic Calming seminar is designed to present a broad-based understanding of traffic calming philosophy and measures while recognizing and preserving the function of roadways. This course is adapted toward state and local government officials and employees who are charged with enhancing roadway safety. The seminar will focus on the appropriateness and effectiveness of various traffic calming measures as well as the specifics of designing such measures to achieve their desired effect. Upon completion of the workshop sessions, the participants will present their solutions to the class. The goal of the course is that participants will leave with a basic understanding of what traffic calming is, and what issues are typically encountered when using traffic calming techniques. Students will receive a course notebook.

INTRODUCTION TO TEMPORARY TRAFFIC CONTROL
Juan Morales
December 7, 2010, 8:15am – 3:30pm
College Park, Maryland.
$115 Maryland Local Government
$135 Maryland State Government
$150 All Other Participants

An introductory course to temporary traffic control in work zones, TCC is a one-day course designed to give participants a complete overview of traffic control in work zones, including applicable standards, devices used, component parts and their requirements, and installation/removal considerations. This is intended for anyone whose actions affect safety on temporary traffic control work zones, including traffic managers, traffic technicians, inspectors and designers; and will prepare participants to take the Maryland SHA Traffic Manager's course. The following topics will be covered: definition of temporary traffic control (TTC), quantification of the safety problem, manuals and standards applicable in the State of Maryland, fundamental principles of TTC, component parts of the TTC, introduction to traffic control devices, tapers and other transitions, and installation and removal considerations.

WORK ZONE DESIGN
Juan Morales
December 8-9, 2010, 8:15am – 3:30pm
College Park, Maryland.
$225 Maryland Local Government
$240 Maryland State Government
$260 All Other Participants

The course will give participants knowledge of the entire temporary traffic control (TTC) process: planning, design, review, installation, maintenance, and evaluation of proper maintenance of traffic (MOT) controls for work zones. While the functions of planning, design, review, and operation of temporary traffic control are covered in detail, issues concerning safety of pedestrians and highway workers, human factors, and legal responsibility are also addressed. The procedures and devices covered are generally taken from Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and are modified to meet practices and standards in Maryland.

Statewide Opportunities for Integrating Operations, Safety and Multimodal Planning
(Concluded from page 6)

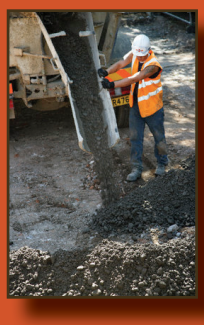
Organizations (MPOs), rural planning organizations, Federal lands agencies, tribal governments, transit agencies, and other partners. Data sharing and analysis tools provide key opportunities for advancing integration at this level.

Section 5 (Corridor and Sub-Area Level Opportunities) considers integration at the corridor and sub-area level both within planning studies and corridor system management and operations activities. Best practices that have developed within this planning level tend to be highly inclusive of many partners and stakeholders as well as consider a wide range of potential solutions. Key opportunities at this level include use of operations/safety data and tools in planning studies and multidisciplinary teams to develop solutions that include operations and safety strategies. Corridor System Management Plans directly tie together operations, safety, and planning through coordinated system monitoring and evaluation, demand management, traveler information, operational improvements, and planning for needed capacity enhancements.

Section 6 (Project Level Opportunities) considers integration at the project level, where representatives of each function commonly interact. Within project development are opportunities to effectively address operations, safety, and multimodal planning needs. Strategies can also be developed to address traffic management and system performance issues during project construction.

Conclusion
Integrating operations, safety, and multimodal planning within a State DOT is a way to increase both efficiency and effectiveness of transportation decisionmaking. This reference manual is designed to support transportation professionals toward integrating their functions and partnering with other agencies, such as MPOs, transit agencies, and local jurisdictions, resulting in a safer, more reliable, multimodal transportation system.

To obtain the full maual (FHWA-HOP-10-028) contact us at mdt2@umd.edu.




MD T² Center Staff

Tom Jacobs, Director
301.403.4534
Tjacobs@umd.edu

Ed Stellfox, Co-Director
301.403.4696
Stellfox@umd.edu

Janette Prince
Program Manager
301.403.4623
Janette@umd.edu

Ellen Neal
Administrative Assistant
301.403.4239
Ellen@umd.edu

Carly Keane
Newsletter Editor
301.403.4601
Ckeane@umd.edu

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