technotes

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MARYLAND TRANSPORTATION TECHNOLOGY TRANSFER CENTER

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

mdt2center.umd.edu

INSIDE:

National Local Technical Assistance Program Association (NLTAPA) Summer Conference

During the week of July 16 - July 21 we hosted the National Local Technical Assistance Program Association (NLTAPA) Summer Conference in Portsmouth, VA. Our maryland Center is a part of the Mid-Atlantic region - which includes Delaware, Pennslyvania, Virginia and West Virginia.

Our region pulled together to host more than 150 people from all over the country! We worked on finding the location for the conference, putting together the conference agenda, conference events and even conference give aways. Of course we had to make sure Maryland was well represented... we gave out Utz Crab Chips(r).

During the week we were able to connect with the other Local Technical Assistance Programs (LTAPs) to learn about best practices, new innovations and of course connect with our collegues and partners from all over the nation.

The National Build a Better Mousetrap Competition winners were announced, third place went to Clearwater County Highway Department, Minnesota for their Tractor-Mounted Shouldering Box. Second place went to Sioux County Secondary Roads, Iowa for their Survey Pin Puller. The first place winner was from Gunnison County Public Works, Colorado for their Guardrail Reclaimer.

While none of the Mid-Atlantic Region entries placed in the national competition, here are the regional winners.

First place submitted by Henrico Department of Public Works (DPW), Henrico, Virginia. **Improving Snow Plowing Operations with Mobile GIS**
The Public Works department had a need for a system to provide as close as possible to real time, the status of 167 subdivision routes to all levels of management including the county Board of Supervisors. The system needed to:

- Document when, by whom and type of work performed to the subdivision roads.
- Forward citizen complaints to the correct foreman.
- Document the action taken to resolve the complaint.
- Inform all shift foremen of a change in plowing strategy.
- Tracking snow / ice damage within county right-of-ways such as down trees, down power lines, malfunctioning stop lights, etc.

DPW decided to use GIS to solve the problems. Staff used mobile devices (Ipads/Iphones/Android Smartphones) along with ArcGIS Online (AGOL) and the ESRI Collector application to transmit data between the administrative offices and the foremen scattered around the county.

This allowed:

- Track complaints and prevent duplication of complaint responses.
- Create GIS subdivision layers with foreman information and chemical routes.
- Create methods to symbolize subdivision routes to determine their status at a glance.
- Maintain records of all the snow related activity in subdivisions (plowing, spreading, citizen com plaints, number of trips into subdivision and any special notes for workers).
- Provide a mechanism for reporting snow storm related damage by county equipment.

Labor, Equipment, Materials Used: Existing ESRI Enterprise License Agreement, ArcGIS Online, mobile devices (smartphones, tablets, ruggedized laptops).
Cost: $0.00 – County has Enterprise Licensing Agreement with ESRI that includes all software/internet components. Mobile devices previously issued to each staff (independent of this project) for work-related purposes.
Savings/Benefits to the Community: Immediate benefits and savings to the county included:

- Eliminating paper records of complaints/work orders.
- Saved time/costs associated with re-treatments, damage complaints.
- Graphical visualization of plowing status aided decision making.

Interested in learning more about this project? Contact Jason Collins, GISP at 804.501.7465 or by email Jason.Collins@Henrico.us

Second Place was submitted by Whitehall Public Works, Lehigh County, Pennslyvania. Entry titled, Salt Shed Curtain Entrance Cover 40 ft.
Pollution Prevention/Good Housekeeping requires Municipal Operations to reduce or eliminate contaminates from entering stormwater runoff. Salt stored in existing shed at loading opening can be exposed to rain causing stormwater runoff to be contaminated with salt. Discussion of Solution: Design/build an economical, functional, repaiarable shed opening cover from readily available materials while saving space. Labor, Equipment and Materials Used:

- Two 20'x20' tarps
- Twelve 2x4 lumber
- Twenty 1x4 lumber
- Four 10' track
- Six barn rollers
- Nine track hangers
- One aluminum capping
- Twelve closure pins
- Miscellaneous screw
- Scissor lift
- Skilled tradesman
- Laborer

Cost: Materials: $1,190.00. Labor: $2,600.00, Equipment: $500.00
Want to learn more about this project? Contact Fred Nederostek at 610.437.5524x170 or by email at fnederostek@whitehalltownship.com.

The staff of the MDT2 Center are getting right back to work with our full fall schedule and Carly and Janette are preparing to exhibit at the Maryland Association of Counties (MACo) Annual Summer Conference held August 16-18 in Ocean City, Maryland, stop by and visit if you are attending!

Our Currently Scheduled Courses

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 301.405.6535 or register online at www.mdt2center.umd.edu.

SCHOOL CROSSING DESIGN & SAFETY ANALYSIS

Location: MD T2 Center at College Park, Maryland
Date: August 22, 2017
Time: 8:30am - 4:00pm

The School Crossing Design Course instructed by Dane Ismart will cover the recommended guidelines for school crossings. Various issues such as determining the school area boundaries, signing and markings for school crossing areas, and design criteria will be covered. Requirements and guidelines as covered by the Maryland MUTCD will be reviewed as part of the class. How to select treatments such as potential signalization, crossing guards, pedestrian cross walks, coverage, school speed zones and speed monitoring, location of traffic control devices, and warrants will be presented to the class. The Safe Routes to School program will be reviewed. Sources for information and school crossing information will be given to the class as well as innovative school treatments from other states. A class exercise will be conducted by the partricipants to demonstrate the application of the procedures and design principles for implementing school crossing treatments.
Audience: Local and state planners and designers, school officials and associations involved in school transportation, and transportation consultants.
Professional Development Hours: 6.0
Registration Fees: $110 for Maryland local government participants, $125 for all other participants.

CRASH AND SAFETY DATA ANALYSIS

Location: MD T2 Center at College Park, Maryland
Date: August 23-24, 2017
Time: Day 1 - 8:30am - 4:00pm, Day 2 - 8:30am - 12:30pm

This day and a half course instructed by Dane Ismart will cover the following:

- Crash Data and Computation of Crash Frequency - Using several years data, establish crash rates to compare with similar locations, while explaining hazard indices, conflict analysis, and warrant analysis.
- Condition Diagramming and Collision Types - Review the process and the elements contained in a condition diagram and use police reports to identify the type, times, conditions or crashes on a collision diagram.
- Speed Analysis and Traffic Calming - Methods for conducting speed studies, including data collections, sample size, computation of mean, 85th percentile and pace speeds, and controlling speed with traffic calming techniques.
- Sight Distance Analysis - Methods for determining minimum stop and sight distances will be covered, to check whether sight distances for exercise area are adequate, or should be made improved to be adequate.
- Pedestrian Safety - Design features such as signing, marking, timing for intersection crossings, crosswalk widths, minimum sidewalk standards including radius, ramps, and specialized HAWK pedestrian crossing.
- School Crossing Considerations - Review school crossing mitigation measures including school guard criteria, school signs and markings, speed zones, gap analysis, and school crossing signalization.
- Marking and Signing Considerations - Review marking designs and requirements, including sign design and location requirements as well as both longitudinal and traverse markings specifications according to the MUTCD.
- Safety Design Issues and Mitigation - Introduce the concept of Improving safety through improved access design and applying them to identify mitigation measures for improving real and potential safety problems.
- Presentation - Following provided guidelines, each team will present their findings as part of a television interview.

Audience: This course is intended for Traffic Engineers, planners, traffic analysts, traffic signal technicians and local officials involved in the planning or design of transportation facilities.
Professional Development Hours: 10.0
Registration Fees: $115 for Maryland local government participants, $130 for all other participants.

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Our Currently Scheduled Courses
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DESIGNING PEDESTRIAN FACILITIES FOR ACCESSIBILITY

Location: MD T2 Center at College Park, Maryland
Date: August 28-29, 2017
Time: 8:30am - 3:30pm

Upon completion of this course instructed by Juan M. Morales, P.E., the participant will be able to identify applicable laws, regulations, guidelines, and standards pertaining to accessibility for persons with disabilities. Know the requirements for ensuring accessibility in existing facilities vs. work in new construction and alterations. Identify some of the challenges in the Public Right-of-Way (PROW) faced by persons with disabilities. Review design elements necessary for achieving accessibility in the PROW, including work zones. Identify best practices. There will be (weather permitting) a field visit to a nearby intersection to assess its design and accessibility. Topics covered in the course include:

- Laws, Regulations, and Pedestrian Characteristics
- Pedestrian Access Routes
- Curb Ramps and Other Transitions
- Detectable Warning Surfaces
- Pedestrian Crossings
- Accessible Pedestrian Signals
- Pedestrian Facilities and Temporary Pedestrian (TPAR) in Work Zones
- Field Visit

Professional Development Hours: 12.0.
Registration Fees: The following registration fees will be charged for this course, $199 for Maryland local government participants, and $225 for all other participants.

FLAGGER CERTIFICATION

Location: MD T2 Center at College Park, Maryland
Date: August 31, 2017
Time: 8:30am - 12:30pm

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 instructed by Juan M. Morales, P.E. 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).
Audience: The course is intended for anyone whose actions affect safety of contemporary traffic control work zones, including traffic managers, traffic technicians, inspectors and designers.
Professional Development Hours: 4.0.
Registration Fees: There is a $100 registration fee charged for all participants.

PROJECT DEVELOPMENT FOR FEDERAL-AID PROJECTS (HOW NOT TO BECOME NON-PARTICIPATING)

Location: MD T2 Center at College Park, Maryland
Date: September 19-20, 2017
Time: 8:30am - 4:00pm

State DOTs and local agencies when developing projects involving federal-aid must follow a prescribed set of rules, regulations, and procedures. This course will cover the various steps necessary to meet the federal requirements. The course will be initiated with a discussion of categorical funds and what activities they are eligible for. A detailed presentation will be made on how the federal highway financial system works and the process that determines the amount of federal funds that will be available to the States and MPOs. Presentations will then be made on federal rules to meet planning and environmental requirements, right-of- way rules and requirements (the Uniform Act), design standards, the bridge inspection program requirements. Federal contract requirements will also be presented that discuss a broad of issues such as use of proprietary materials, contract bidding rules, contract provisions, etc. Class exercises will be used to demonstrate typical real life issues involving the development of federal-aid projects.
Audience: State DOT and local staff and officials involved in the development of transportation projects using federal-aid funds.
Professional Development Hours: 12.0
Registration Fees: $199 MD Local Government, $210 all other registrants.

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ROAD SAFETY 365 - A SAFETY WORKSHOP FOR LOCAL LOVERNMENTS

Location: MD T2 Center at College Park, MD
Date: September 21, 2017
Time: 8:30am - 3:30pm
This course is designed to provide local and rural agencies with practical and effective ways to mainstream safety solutions into their day-to-day activities and project development process. This one-day workshop focuses on processes for incorporating safety into all aspects of local and rural projects, and on making safety a priority through inclusion in the traditional decision-making process - 365 days a year. The course stresses the importance of road safety, and illustrates how it can be integrated into rural/local transportation project development at all stages: planning, design, construction, implementation, operations, and maintenance. Through practical exercises and facilitator-led discussions, the emphasis is on operations and maintenance to reflect the predominant, day-to-day responsibilities of rural/local transportation agencies. The benefits and potential cost savings of safety initiatives are shown using examples from rural/local agencies.
Aufience: The workshop audience ranges from decision-makers to road crews. It is aimed primarily at local and rural road and public works supervisors. Others who would benefit include: elected officials, public safety advocates, State DOT personnel, law enforcement, consultants, regional and rural development organizations, municipal associations.
Professional Development Hours: 6.0
Registration Fees: There is a $100 registration fee charged for all participants.

SITE IMPACT ANALYSIS

Location: MD T2 Center at College Park, MD
Date: September 27, 2017
Time: 8:30am - 4:00pm
This course will cover the ITE Trip Generation Report and ITE's procedure for conducting a traffic impact study. The content includes discussions on site impact methodology, development of background traffic, evaluation of existing and future conditions, trip generation rates, trip distribution, mode split, traffic assignment, and impact mitigation strategies. Special attention is paid to trip generation and includes how to use the ITE tables, pass-by trips, and internal capture. The completion of the course will increase the participants understanding of traffic impact studies.
Audience: This course is designed for transportation engineers, traffic engineers, and planners concerned about the impacts of site impact development.
Professional Development Hours: 6.0
Registration Fees: There is a $110 registration fee charged for all participants.

INTRODUCTION TO ACCESS MANAGEMENT

Location: MD T2 Center at College Park, MD
Date: September 28, 2017
Time: 8:30am - 4:00pm
Traffic engineers have long recognized that eliminating unexpected conflicts and separating decision points improves safety. Access control reduces the number the number, and spacing of events and driveways. The greatest benefits are significantly reduced crash rates, less congestion, and higher capacity. This course introduces the participants to the principles and techniques as contained in TRB's Access Management Manual. The course covers such issues such as median design, driveway spacing, signal spacing, cross street design at interchanges, left turn and right turn lanes, and joint and interconnected driveways. Examples of good practice are presented to the class. A series of short class exercises are included in the course.
Professional Development Hours: 6.0
Registration Fees: There is a $110 registration fee charged for all participants.

ROAD DIET (ROAD CONFIGURATION) WORKSHOP

Location: MD T2 Center at College Park, MD
Date: September 28, 2017
Time: 8:30am - 4:00pm
The course covers the design, safety, and operations of road diets. Road diets, although they come in many different designs, reduce the number of through lanes and allocate excess roadway width to parking, bicycle lanes, freight movements, and transit operations. The classical design reduces a 4-lane undivided highway to three lanes consisting of one through lane in each direction and a continuous two lane left turn in the middle. A road diet may also reduce the widths of lanes as well when appropriate. The advantages, disadvantages, various road diet configurations, guidance, and criteria for determining the feasibility of implementing a road diet are discussed. Safety and operational considerations as well as examples of actual case studies are part of the course. The after results of example corridors that are renovated and redesigned as road diets are presented. The course is concluded with the class broken up to teams that work on a corridor problem and present their solution and road diet design.
Audience: This Workshop will be of interest to Engineers, Transportation Planners, Pedestrian and Bicycle Coordinators, Safe Routes to School Coordinators, Local Public Agency Coordinators, and Transportation Alternatives Program Managers.
Professional Development Hours: 6.0.
Registration Fees: There is a $110 registration fee charged for all participants.

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Our Currently Scheduled Courses
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TRAFFIC ENGINEERING FUNDAMENTALS

Location: MD T2 Center at College Park, Maryland
Date: October 2-5, 2017
Time: 8:30am - 4:15pm

This course instructed by Dane Ismart and Juan M. Morales, P.E. condenses what was the five-day Traffic Engineering Short Course into a new four-day course.
Agenda Day One:
8:30AM Introduction
9:00AM Traffic Engineering Terms and Design Year Traffic
10:00AM Site Impact Analysis
1:15PM Safety Principles and Crash Principles
2:45PM Principles of Access Management
4:15PM Adjourn
Agenda Day Two:
8:30AM Intersection Analysis and Geometrics
10:15AM Signal Timing
1:15PM Arterial and Freeway Analysis
3:00PM MUTCD
4:15PM Adjourn
Agenda Day Three:
8:30AM Roundabout Basics
9:45AM ITS Overview
11:00AM Traffic Calming
1:30PM Pedestrian Safety
3:00PM ADA Accessibility
4:15PM Adjourn
Agenda Day Four:
8:30AM Temporary Traffic Control Standards and Guidelines
9:45AM Component Part of a TTC Zone
11:00AM Traffic Control Devices
1:30PM Traffic Control Devices, continued
3:00PM Work Zone Impact Analysis
4:15PM Adjorn
Audience: This course is geared towards anyone with an engineering background and/or traffic engineering responsibilities in a related field. Also junior level traffic engineers, transportation planners, highway designers and city/county engineers.
Professional Development Hours: 24.0.
Registration Fees: $399 MD local government and $420 all other registrants

ROAD SURFACE MANAGEMENT

Location: MD T2 Center at College Park, Maryland
Date: October 18, 2017
Time: 8:30am - 3:30pm

This course instructed by Ed Stellfox 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.
Professional Development Hours: 6.0.
Registration Fees: There is a $99 registration fee charged for all participants.

WINTER MAINTENANCE

Location: MD T2 Center at College Park, Maryland
Date: October 25, 2017
Time: 8:30am - 3:30pm

This course covers all aspects of winter operations-planning and organizing, methods of snow and ice control, salt usage, and winter equipment maintenance. Instructed by Ed Stellfox 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.
Professional Development Hours: 6.0.
Registration Fees: $99 for all participants.

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WORK ZONE DESIGN

Location: MD T2 Center at College Park, Maryland
Date: November 7-8, 2017
Time: 8:30am - 3:30pm

The course instructed by Juan M. Morales, P.E. will give participants knowledge of the entire temporary traffic control (TTC) process: planning, design, review, installation, maintenance, and inspection of temporary traffic control for highway work zones. Issues regarding planning, design, review, and operation of temporary traffic control are covered, including pedestrian accessibility, worker safety, human factors, and legal aspects. The material is based on Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and are modified to address Maryland State Highway Administration (SHA) TTC standards and guidelines.
Topics Covered:

- Introduction to TTTC
- TTC Standards and Guidelines (MUTCD and MD SHA)
- Fundamental Principles of Traffic Control
- Human Factors
- Component Part of the TTC Zones
- Traffic Control Devices
- The Typical Project
  - Planning
  - Design
  - Installation
  - Inspection
  - Enhancements and Modifications
  - Constructability Reviews
  - Removal
- Traffic Control Plan Strategies
- MD SHA Standards, Guidelines and Practices
- Legal Aspects of TTC
- Workshops

Audience: The course is aimed at individuals who are responsible for the design, review, or modification of temporary traffic control for work zones adjacent to and within roads and highways. The course will also be of interest to those responsible for installation, operation, and inspection.
Professional Development Hours: 12.0.
Registration Fees: The following registration fees will be charged for this course, $199 MD Local Government and $210 All Other Registrants.

DESIGNING SAFER ROADS FOR PEDESTRIANS AND VULNERABLE ROAD USERS

Location: MD T2 Center at College Park, Maryland
Date: November 7-8, 2017
Time: 8:30am - 3:30pm

Vulnerable road users (VRU) are susceptible to traffic injuries and fatalities, perhaps more so than drivers. Yet we design highways for the mobility of cars sometimes neglecting the needs of the most vulnerable, such as pedestrians, bicyclists, motorcyclists, transit users and others. This course instructed by Juan M. Morales, P.E. will teach participants how to diagnose pedestrian (and other VRU) safety deficiencies and select the appropriate countermeasures to make conditions safer for all users including an overview of the American with Disabilities Act (ADA)accessibility requirements. Engineering countermeasures will be emphasized but education and enforcement countermeasures will also be covered. Upon Completion of the Course, Participants Should be Able to: Define vulnerable road users, Describe VRU needs, Diagnose crash causes and select proper countermeasures, Identify safety-related geometric design elements, and Discuss VRU safety issues and how to address them.
Professional Development Hours: 12.0.
Registration Fees: The following registration fees will be charged for this course, $199 MD Local Government and $210 All Other Registrants.

FLAGGER CERTIFICATION

Location: MD T2 Center at College Park, Maryland
Date: November 9, 2017
Time: 8:30am - 12:30pm

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 instructed by Juan M. Morales, P.E. 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).
Audience: The course is intended for anyone whose actions affect safety of contemporary traffic control work zones, including traffic managers, traffic technicians, inspectors and designers.
Professional Development Hours: 4.0.
Registration Fees: There is a $100 registration fee charged for all participants.



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Need training but budget cuts won't allow travel? Request a class and we'll bring it to you!

We understand your training needs and the tremendous budget cuts everyone is dealing with in this economy. By logging on to www.mdt2center.umd.edu and requesting a course that 10 or more of your employees need, we'll bring our course to you. We'll need a room where your employees can learn and either a white board or bare wall for our projector and a pot of coffee for our instructor.

Requesting a course is simple, visit www.mdt2center.umd.edu and fill out our request training form or call Janette Prince at 301.405.6535 and she'll be glad to assist you.

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