

1. Report No. FHWA/TX-11/5-5424-01-1		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle IMPLEMENTATION REPORT ON PASSER V-07 TRAINING WORKSHOPS				5. Report Date August 2009 Published: March 2011	
				6. Performing Organization Code	
7. Author(s) Nadeem A. Chaudhary and Chi-Leung Chu				8. Performing Organization Report No. Report 5-5424-01-1	
9. Performing Organization Name and Address Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. Project 5-5424-01	
12. Sponsoring Agency Name and Address Texas Department of Transportation Research and Technology Implementation Office P.O. Box 5080 Austin, Texas 78763-5080				13. Type of Report and Period Covered Technical Report: March 2008–August 2009	
				14. Sponsoring Agency Code	
15. Supplementary Notes Project performed in cooperation with the Texas Department of Transportation and the Federal Highway Administration. Project Title: PASSER V-07 Training Workshops URL: <a href="http://tti.tamu.edu/documents/5-5424-01-1.pdf">http://tti.tamu.edu/documents/5-5424-01-1.pdf</a>					
16. Abstract The objective of this project was to conduct one pilot workshop and five regular workshops to teach the effective use of the enhanced PASSER V-07 arterial signal timing optimization software. PASSER V-07 and materials for conducting a one-day training workshop were developed in Texas Department of Transportation research project 0-5424, <i>Analytical Enhancements to PASSER V for Arterial and Access Management</i> . This report describes the findings of this implementation project.					
17. Key Words PASSER V-07, Two-Way Stop-Controlled Intersections, Signalized Intersections, Signalized Diamond Interchanges, Signal Timing Optimization, Progression Bandwidth, Vehicular Delay			18. Distribution Statement No restrictions. This document is available to the public through NTIS: National Technical Information Service Springfield, Virginia 22161 <a href="http://www.ntis.gov">http://www.ntis.gov</a>		
19. Security Classif.(of this report) Unclassified		20. Security Classif.(of this page) Unclassified		21. No. of Pages 12	22. Price



# **IMPLEMENTATION REPORT ON PASSER V-07 TRAINING WORKSHOPS**

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Report 5-5424-01-1  
Project 5-5424-01  
Project Title: PASSER V-07 Training Workshops

Performed in cooperation with the  
Texas Department of Transportation  
and the  
Federal Highway Administration

August 2009  
Published: March 2011

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## **DISCLAIMER**

This research was performed in cooperation with the Texas Department of Transportation (TxDOT) and the Federal Highway Administration (FHWA). The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the FHWA or TxDOT. This report does not constitute a standard, specification, or regulation. The engineer in charge of the project was Nadeem A. Chaudhary, P.E. #66470.

## **ACKNOWLEDGMENTS**

This project was conducted in cooperation with TxDOT and FHWA. Researchers would like to thank the project director, Henry Wickes of the Traffic Operations Division, and other TxDOT staff for their assistance in scheduling and holding PASSER V workshops under this project. Texas Transportation Institute (TTI) researchers would also like to thank the participants for attending these workshops, actively participating, and providing useful comments.

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## **INTRODUCTION**

The objective of this 18-month implementation project was to conduct six one-day workshops to teach the effective use of PASSER V-07 for timing and analyzing traffic signal operations. PASSER V-07 and accompanying training materials were developed in Texas Department of Transportation research project 0-5424, *Analytical Enhancements to PASSER V for Arterial and Access Management*. Key tasks in this project included:

1. Conduct a pilot workshop to evaluate the appropriateness of training materials, which consisted of the PASSER V User Guide, a PowerPoint® presentation, and data sets for all exercises. Attendance of this workshop would be restricted to Project 0-5424 project monitoring committee members and selected invitees.
2. Refine training materials based on comments received from participants of the pilot workshop.
3. Conduct five regular workshops. One of these workshops would be conducted during fiscal year (FY) 2008 and the remaining four during FY 2009. The locations of these workshops would be selected to maximize participation from all TxDOT districts.

Delays in scheduling the pilot workshop prevented researchers from offering the first regular workshop during FY 2008 as intended. In consultation with the project director, researchers decided to include it in workshops to be conducted during FY 2009. The next section summarizes statistics from all six workshops conducted in this project.

## **WORKSHOP EFFECTIVENESS, FINDINGS AND RECOMMENDATIONS**

Texas Transportation Institute (TTI) researchers used comments obtained from workshop participants, especially those from the pilot workshop, to refine the PowerPoint presentation. This revised presentation has been submitted to TxDOT as a separate deliverable.

Table 1 provides a summary of all six workshops. This information includes: date, type, location, names of instructors, attendance, agencies represented, and evaluations returned by participants for each workshop. As shown in the table, staff from 17 TxDOT districts, divisions, and offices participated in these workshops. In addition, participants included staff from four cities and one other public agency.

Table 2 provides a summary of evaluations completed by workshop participants at the conclusion of each workshop. The evaluation form asked the participants to answer four questions to assist researchers in evaluating the adequacy/appropriateness of training materials, level of difficulty, and value of workshop. As shown in this table, almost 88 percent of the participants indicated that the workshop met their expectations fully, while 10.3 percent of the participants felt that their expectations were partially met. Over 80 percent of the participants were fully satisfied that the material was presented at the correct difficulty level and that attending the workshop was beneficial to them. Most others felt that these criteria were partially met. More than 79 percent of the participants indicated that the course materials and instructions were adequate, while the other 20.7 percent indicated that the course materials and delivery

could be improved. Only three participants answered ‘No’ for any of these questions. These participants were among those whose job functions do not require them to work with timing traffic signals. Two of these individuals, who are working as inspectors, attended the same workshop.

**Table 1. Workshop Data.**

<b>Date</b>	<b>Type</b>	<b>Location</b>	<b>Instructors</b>	<b>Attendance</b>	<b>Districts/Agencies Represented</b>	<b>Evaluations Returned</b>
8/25/08	Pilot	Austin	Chaudhary and Chu	9	Waco, Dallas, Fort Worth, San Antonio, Traffic Operations Division, Research and Technology Implementation Office, and City of Austin	9
12/16/08	Regular	Fort Worth	Chaudhary and Chu	12	Fort Worth and Atlanta Districts, Cities of Arlington and Fort Worth, and North Central Texas Council of Governments	12
2/24/09	Regular	Lubbock	Chaudhary and Chu	13	Odessa, Amarillo, Lubbock, and Wichita Falls	11
4/20/09	Regular	Houston	Chu	6	Houston and Beaumont	4
5/26/09	Regular	Tyler	Chaudhary and Chu	15	Tyler, Atlanta, and Paris	12
7/29/09	Regular	Corpus Christi	Chu	10	Corpus Christi, Pharr, Traffic Operations Division, and City of Corpus Christi	10

**Table 2. Evaluation Summary.**

<b>Question</b>	<b>Response</b>		
	<b>Yes</b>	<b>Somewhat</b>	<b>No</b>
1. Did the course meet your expectations?	51 (87.9%)	6 (10.3%)	1
2. Was the material presented at the correct level of difficulty?	48 (82.8%)	9 (15.5%)	1
3. Were presentations and guidebook adequate?	46 (79.3%)	12 (20.7%)	
4. Do you feel time spent on this course was beneficial?	47 (81.0%)	8 (13.8%)	3

These statistics indicate that the workshops were successful. Nevertheless, evaluations do indicate that there is room for improvements. Review of participant comments solicited via the evaluation form provides additional insight, which is summarized below.

1. Specific comments about what participants liked about these workshops included:
  - Instructors' in-depth knowledge and presentation of the subject matter.
  - Explanation of signal setup examples, especially diamond interchanges.
  - Inclusion of detailed information.
  - User-friendly and quick-to-use nature of the program, especially for diamond interchanges.
  - Well compiled training material and updates to previous materials.
  - Examples and hands-on use of the program.
2. Some participants indicated that the workshop should include more hands-on exercises. A few participants suggested accomplishing this objective by reducing the time spent on the discussion of theory. Most, however, suggested that this objective should be achieved by making it a two-day workshop. Some participants suggested including a signal timing exercise covering the entire start-to-finish signal timing job as their jobs require in real-life. This exercise would include data collection, analysis of existing timings, development of optimized timings, and emulation of in-field fine-tuning aspects of signal timings produced by a program.
3. A limited number of participants commented that the theory was either too much or too complicated. In this regard, some suggested reducing discussion of theory, specifying and/or requiring prerequisite training/experience, and offering an introductory course for those not familiar with the subject.
4. Two participants suggested that the materials should be provided to participants in advance of the day of the scheduled workshop.

## **PROJECT RECOMMENDATIONS**

Based on the comments received, researchers recommend that this PASSER V workshop be expanded from one day to two days. The general format of the expanded workshop could be as follows:

1. Provide introduction to signal timings in the morning session of the first day.
2. Conduct simple hands-on exercises in the afternoon session of the first day.
3. Perform more complex exercises during the second day.

This expansion will require significant changes to the existing training materials, including the development of additional real-world exercises. This format will allow beginners to attend both days and advanced level participants to join the second day.

Researchers also recommend that a fact sheet be developed to inform potential participants about the prerequisites. In addition, researchers recommend that a mechanism be identified and implemented to share this information and training materials with potential participants at the time a specific workshop is scheduled and advertised within the department.

