The Los Angeles County Metropolitan Transportation Authority (Metro) has developed a comprehensive program in the areas of signal operation and maintenance to upgrade the skills of local traffic engineers and signal maintenance personnel.

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**OVERVIEW**

**INSTRUCTORS**

Fred Minagar, M.S., R.C.E., P.E.,
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**REGISTRATION**

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COURSES

ADVANCED TRAFFIC SIGNAL OPERATIONS (2-DAYS)

This two-day workshop will discuss the principles and applications of the Traffic Signal Phasing Design for complex intersections. Signal Controller Operations and Maintenance, Advanced Traffic Adaptive Systems. The course will enable participants to learn advanced functions at both the Local Control Level and the System Level.

BI-TRANS 200 CA, LACO 1 R & CALTRANS C-8 (2-DAYS)

This workshop focuses on the application of the BI-TRANS software program used in Type 200 intersections. BI-TRANS operation will be presented, as well as the coordination features and the special features available in each program.

BI-TRANS 200 PROGRAM FOR 2070 SIGNAL CONTROLLER (2-DAYS)

This workshop presents the features available in the BI-TRANS 2003 Program designed to work with the 2070 Controller Unit. It will include coordination, basic functions and timing operations, traffic responsive strategies, Special Operations, and Advanced Traffic Adaptive Systems. The workshop will enable participants to learn advanced functions at both the Local Control Level and the System Level.

BI-TRANS 233 (1.5-DAYS)

In this workshop, the BI-TRANS Version 27.1 software program for the BI-TRANS 233 controller is presented, including: Traffic Signal Timer and Coordination Techniques, Input and Output manipulation, and Special Functions. Background or Introduction to the BI-TRANS Traffic Signal Controller workshop is highly suggested.

BUS SIGNAL PRIORITY, QUINET & CTNET (2-DAYS)

The workshop starts with the concepts and operations of bus/transit priority as well as emergency pre-emption systems; followed with a focus on the latest Quinet signal controller system and the latest State of California Caltrans CTNet traffic signal controller system on the second day.

COMPUTERIZED TRAFFIC SIGNAL CONTROL SYSTEM (2-DAYS)

This workshop presents concepts and control strategies available for computerized traffic signal control systems. It covers the subjects of system architecture, concept of operations, functional requirements, and an overview of the latest design, installation and maintenance of Video Detection for Traffic Signal Systems will be presented.

INTRODUCTION TO THE 2070 TRAFFIC CONTROL SYSTEMS (2-DAYS)

This workshop introduces an overview of the latest advanced traffic signal control systems available in the L.A. City and Caltrans software programs for the Type 2070 Traffic Signal Controller in a 323 cabinet, as well as an introduction of ITS cabinet. Caltrans specifications and configuration conﬁgurations will be presented.

NEMA CONTROLLERS AND VIDEO DETECTION (1.5-DAYS)

This workshop will be an overview of NEMA 185, with emphasis on NEMA L2C, L2D Switches, Detectors, BIU, MMU, and Cabinet Troubleshooting. Considerations for proper installation, design and maintenance of Video Detection for Traffic Signal Systems will be presented.

SIGNAL SYSTEMS AND HOMELAND SECURITY (1-DAY)

This workshop provides an overview of the role of traffic & transportation professionals as effective homeland security specialists. It focuses on: Emergency Response & Recovery, Continuity of Operation as well as Disaster Planning, Prevention and Preparedness with emphasis on traffic signal systems. Application, legal and technology aspects of available video security camera systems will be covered.

SYSTEMS COMMUNICATIONS & TMC REGIONAL CENTER VISIT (1-DAYS)

A familiarization workshop provides an overview of the Traffic Management Centers (TMC) and transportation professionals as effective homeland security specialists. It focuses on: Emergency Response & Recovery, Continuity of Operation as well as Disaster Planning, Prevention and Preparedness with emphasis on traffic signal systems. Application, legal and technology aspects of video security camera systems will be covered.

TMC TRAFFIC MANAGEMENT CENTER TOUR OF REGIONAL CENTERS (1-DAY)

This tour offers a familiarized tour at the four most technology advanced, Transportation Management Centers (TMC) in Los Angeles County. The tour will include visiting four (4) TMC’s and will focus on key ITS applications for traffic control, local controller and design elements, and operations and maintenance functions. The tour includes Caltrans’ new RTMC, Metro’s BOC, LADOT’s ATASC, and LA County’s new TMC. Transportation will be provided.

TRAFFIC SIGNAL OPERATIONS AND HIGHWAY CAPACITY ANALYSIS (2-DAYS)

This two-day workshop will discuss traffic signal operational theory, analysis, and applications of Highway Capacity Manual (HCM 2000) for signalized intersections. Topics include signal phasing, signal controller design, operations and maintenance and applications. The courses will cover traffic signal control systems and operations, and Traffic Signal Systems of California.

TRAFFIC SIGNAL TIMES PART I & II (TWO SEPARATE 2-DAY SESSIONS/4-DAYS TOTAL)

These workshops provide beginning, intermediate to advanced level training covering the basic design and applications of the Synchro 6.0 & Synchro Studio 7.0 computer software. Participants will utilize Synchro programs at the workshop to perform capacity analyses for signalized intersections and to develop optimum signal timing plans that reduce delays and stops for isolated and networked intersections during the workshop. Prior experience with Synchro is not required for Part I; however, prior general knowledge of traffic engineering is strongly recommended for Part II.

TYPE 170 HARDWARE & TROUBLESHOOTING (2-DAYS)

In this workshop, the Model 332 and cabinet and its available components are presented along with Cabinet Specifications, Cabinet Layout, Cabinet Writing, Type 170 History, Cabinet Troubleshooting, Monitor Unit Programming, Cabinet Specifications, Detector Theory and application, and Model 170 Specifications and configurations.

VIDEO DETECTION AND SURVEILLANCE (2-DAYS)

This workshop covers the principles and applications of the state-of-the-art freeway/arterial intersection surveillance/detection/monitoring and control systems. Special attention will be devoted to Closed Circuit Televisions technologies. An overview of real light camera system will also be covered. Three Case Studies from Northern California, Southern California and Washington, D.C. will be explored in great length, and nationwide lessons from the FHWA will be presented.