



KITTELSON LLC

FORENSIC TRANSPORTATION ENGINEERING

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GARY B. THOMAS, PH.D., P.E.

PRINCIPAL ENGINEER | GTHOMAS@KITTELSON.COM

EDUCATION

- Ph.D. in Civil Engineering, Arizona State University, 1998
- M.S. in Civil Engineering, Arizona State University, 1993
- B.S. in Civil Engineering, with distinction, University of Minnesota, 1989 (minor in Speech/Communications)

LICENSES

- Professional Engineer, State of Texas, No. 88914
- Professional Engineer, State of Arizona, No. 27834
- Professional Engineer, State of Florida, No. 80237
- Professional Engineer, State of Louisiana, No. 41832
- Professional Engineer, State of Iowa, No. P15126
- Professional Engineer, State of Maryland, No. 54466
- Professional Engineer, State of Oklahoma, No. 33890
- Professional Engineer, State of Minnesota, No. 61422
- Professional Engineer, State of Illinois, No. 062.076372

ACCREDITATIONS AND CERTIFICATIONS

- Certified Instructor, National Highway Institute/Federal Highway Administration
- Remote Pilot Certification for Small Unmanned Aircraft Systems (sUAS), FAA Part 107

EXPERIENCE

- 2017 – Present Principal Engineer, Kittelson LLC
- 2015 – 2017 Senior Engineer, Armstrong Forensic Engineers
- 2011 – 2015 Consulting Engineer, Armstrong Forensic Engineers
- 2001 – 2015 Research Engineer/Center Director, Texas A&M Transportation Institute
- 1999 – 2001 Assistant Professor, Civil and Construction Engineering, Iowa State University
- 1996 – 1999 Traffic Engineer, Town of Gilbert, Arizona
- 1992 – 1996 Project Engineer, Lee Engineering, Phoenix Arizona
- 1990 – 1992 Graduate Research Assistant, Center for Advanced Research in Transportation, Arizona State University
- 1989 – 1990 EIT, Transportation Division, Short-Elliott-Hendrickson, St. Paul, Minnesota
- 1987 – 1989 Intern, Pavement Management, Minnesota Department of Transportation

PROFESSIONAL ASSOCIATIONS

- Fellow, Institute of Transportation Engineers (ITE)
 - President and Past Board Member, Texas District of the Institute of Transportation Engineers
 - Member and Past Chair, Transportation Forensics and Risk Management Council/Committee
 - Past Board Member, International Board of Direction of ITE
 - Journal Reviewer

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- Member, National Academy of Forensic Engineers (NAFE)
 - Journal Reviewer
 - Member, National Society of Professional Engineers (NSPE)
 - Member, Transportation Research Board (TRB)
 - Member, Standing Committee on Tort Liability and Risk Management

PROFESSIONAL DEVELOPMENT

NORTHWESTERN UNIVERSITY CENTER FOR PUBLIC SAFETY

- Crash Investigation 1, September 2015
- Crash Investigation 2, October 2015
- Traffic Crash Reconstruction 1, October 2015
- Traffic Crash Reconstruction 2, November 2016

INSTITUTE OF POLICE TECHNOLOGY AND MANAGEMENT (IPTM)

- Bosch® CDR Tool Technician Training, June 2020

AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA)

- Texas Traffic Control Technician, December 2016
- Texas Traffic Control Supervisor, December 2016

FARO

- FARO Reality for Crash Reconstruction, July 2015
- FARO Laser Scanner and SCENE Software, October 2016

ACADEMIC COURSES TAUGHT

- 2006, 2008 Introduction to Transportation Engineering, Texas A&M University
- 2000, 2001 Graduate Transportation Seminar, Iowa State University
- 2001 Planning and Design of Airports, Iowa State University
- 2000 Traffic Engineering, Iowa State University

EXPERT WITNESS ACTIVITIES

As a qualified expert in the areas of highway design, traffic engineering, and crash reconstruction, Dr. Thomas has assisted plaintiff and defense attorneys in private practice, insurance companies, and governmental entities in tort cases filed throughout the United States.

Dr. Thomas's areas of expertise include, but are not limited to, traffic control devices; roadway design; temporary traffic control (work zones); pavement markings; traffic signal operations; highway-rail grade crossings; parking lots; intersection safety; bicycle and pedestrian safety; and crash reconstruction.

SELECTED PUBLICATIONS

B. Chandler, G. B. Thomas, et al., *Signalized Intersections Informational Guide, 2nd Edition*. Federal Highway Administration, Washington, DC. July 2013.

G.B. Thomas. *Applying the Systems Engineering Approach to Video over IP Projects: Workshop. 5-5942-01-1*. Texas Transportation Institute, College Station, TX. December 2011.

G.B. Thomas. *Fundamentals of Video over IP and Systems Engineering: Workshop Materials. 5-5942-01-P1*. Texas Transportation Institute, Houston, TX. December 2011.

R.E. Brydia, B.E. Brackin, R.F. De Roche, J.D. Johnson, G.B. Thomas. *Video over IP Design Guidebook. 0-5942-P1*. Texas Transportation Institute, College Station, TX. December 2009.

R.E. Brydia, B.E. Brackin, R.F. De Roche, J.D. Johnson, G.B. Thomas. *Development of a Video over IP Guidebook. 0-5942-1*. Texas Transportation Institute, College Station, TX. September 2009.

R.E. Brydia, B.E. Brackin, R.F. De Roche, J.D. Johnson, G.B. Thomas. *Comprehensive Guide to the Use of IP-Based Video for Traffic Operations. PSR. 0-5942-S*. Texas Transportation Institute, College Station, TX. May 2009.

E.R. Stollof, J.M. Barlow, G.B. Thomas, F. Carroll, E. Bradley, P. Caruso, M. Saglam, C. Garneski. *Pedestrian Mobility and Safety Audit Guide*. AARP. 2008.

R.E. Brydia, B.E. Brackin, J.D. Johnson, G.B. Thomas, K.N. Balke. *Wireline Communications: A Design Guidebook for Intelligent Transportation Systems: Expanded Materials. Research Report. 5-4969-01-P1*. Texas Transportation Institute, College Station, TX. October 2007.

R.E. Brydia, B.E. Brackin, J.D. Johnson, G.B. Thomas, K.N. Balke. *Wireline Communications Workshop for Intelligent Transportation System Applications. PSR. 0-4969-S*. Texas Transportation Institute, College Station, TX. December 2005.

R.E. Brydia, B.E. Brackin, J.D. Johnson, G.B. Thomas, K.N. Balke. *Development of a Wireline Communications Design Guidebook for Intelligent Transportation Systems. Technical Report. 0-4969-1*. Texas Transportation Institute, College Station, TX. October 2005.

G.B. Thomas. *Development and Delivery of Research Implementation Workshops in Transportation Operations and Management. Implementation Report. 5-1439-01-2*. Texas Transportation Institute, College Station, TX. September 2005.

D. Smith, S. Hallmark, K. Knapp, G.B. Thomas. *Temporary Speed Hump Impact Evaluation. 00-73*. Iowa Department of Transportation, IA. July 2002.

E. Padget, K. Knapp, G.B. Thomas. *Investigation of Winter Weather Sport Utility Vehicle, Pick-Up Truck, and Passenger Car Speed Variability*, Transportation Research Record. 1779. Transportation Research Board, Washington, DC. 2001.

G.B. Thomas, C. Schloz. *Durable, Cost-Effective Pavement Markings Phase I: Synthesis of Current Research*. Final Report. Digest 02-08-06. Iowa Department of Transportation, IA. October 2001.

G.B. Thomas. *Traffic Signal Inventory Project*. Final Report. 00-67. Iowa Department of Transportation, IA. June 2001.

G.B. Thomas, D.J. Smith. *Effectiveness of Roadway Safety Improvements*. Final Report. 00-61. Iowa Department of Transportation, IA. March 2001.

G.B. Thomas. *The Relationship between Detector Location and Travel Characteristics*. ITE Journal, October 1999.

G.B. Thomas. *Optimal Detector Location on Arterial Streets for Advanced Traveler Information Systems*. Dissertation presented in partial fulfillment of the requirements for the degree of Doctor of Philosophy, Arizona State University, December 1998.

G.B. Thomas, J.E. Upchurch. *Effect of Non-Optimal Cycle Lengths and Traffic Volumes on Progression*. ITE Journal, May 1998.

J.S. Matthias, M.E. DeNicholas, G.B. Thomas. *A Study of the Relationship between Left Turn Accidents and Driver Age in Arizona*. AZ-SP-9603. Arizona Department of Transportation. December 1996.

G.B. Thomas. *Traffic Accident Analysis: Evaluation of Two-Phase Signalized Intersections*. Thesis presented in partial fulfillment of the requirements for the degree of Master of Science, Arizona State University, May 1993.

J.E. Upchurch, M.H. Baaj, G.B. Thomas, J.D. Armstrong. *Evaluation of Variable Message Signs: Target Value, Legibility and Viewing Comfort*. Safety Research, Transportation Research Record. 1376. National Academy Press, Washington, DC. 1992.

PROFESSIONAL DEVELOPMENT SEMINARS TAUGHT

NATIONAL HIGHWAY INSTITUTE (NHI)

- Signalized Intersections: Informational Guide
- Traffic Signal Design and Operation
- Evaluating the Performance of Traffic Signal Systems
- Computerized Traffic Signal Systems
- Instructor Development Course
- Designing and Operating Intersections for Safety
- Low Cost Safety Improvements (Instructor Led)
- Low Cost Safety Improvements (Web-Based)
- Freeway Management and Operations
- Intersection Safety Workshop

TEXAS DEPARTMENT OF TRANSPORTATION

- Fundamentals of Video Over IP and Systems Engineering
- Beginning CORSIM
- Basics of Wireline Communication

CEU INSTITUTE

- Vehicle Accident Reconstruction

INSTITUTE OF TRANSPORTATION ENGINEERS (ITE)

- Fundamentals of Signal Timing
- ITS Standards Overview

SELECTED PRESENTATIONS

Tales of Crashes and Tort Liability, Presented at Brazos Valley ITE Meeting, College Station, Texas, September 2019.

The Science of Forensic Engineering, Presented at Navarro College, Corsicana, Texas, September 2016.

Use of the Highway Safety Manual in Legal Liability Cases, Presented at ITE Annual Meeting, Anaheim, California, August 2016.

Maintain Your Reputation by Communicating Effectively, Panelist at ITE Annual Meeting, Anaheim, California, August 2016.

Improving Safety Through Mobility Coordination, Presented at ITE Technical Conference, Miami, Florida, March 2014.

Utilizing the Power of the Transportation Professional, Presented at ITE Annual Meeting, Boston, Massachusetts, August 2013.

Traffic Control on I-35, Presented at TxDOT Short Course, College Station, Texas, October 2012.

Educating the Transportation Professional – Innovative Practices in the Classroom and Workplace Conversation Circle, Panelist at ITE Annual Meeting, Atlanta, Georgia, August 2012.

Addressing Needs of All Users: Results of an Intersection Safety Audit with AARP Members, Presented at ITE Technical Conference, Miami, Florida, March 2008.

Development of a Web-Based Traffic Signal Design Guide and Checklist, Presented at ITE Annual Meeting, Pittsburgh, Pennsylvania, August 2007.

Assessing the New-Hire Expectations of Transportation Engineering Employers, Presented at Transportation Research Board Annual Meeting, Washington, DC, January 2007.

Development of a Web-based Traffic Signal Design Guide for the Laredo District, Presented at South Texas ITE Meeting, South Padre Island, Texas, November 2006.

Educational Expectations of Transportation Engineering Employers, Presented at ITE Annual Meeting, Milwaukee, Wisconsin, August 2006.

Workforce Development: Where Do We Go From Here?, Presented at ITS Texas Annual Meeting, College Station, Texas, November 2005.

Help Wanted: Transportation Professionals- Experience a Plus, Presented at 8th Annual Texas Transportation Summit, Irving, Texas, August 2005.

Resources Available on Urban Intersection Safety, Presented at ITE / IMSA Arizona Spring Conference, Phoenix, Arizona, March 2005.

Resources Available on Urban Intersection Safety, Presented at TexITE Winter Meeting, Waco, Texas, February 2005.

Reaching Out to Our Future: Texas' Efforts in K-12 Transportation Outreach, Presented at Institute of Transportation Engineers, Philadelphia, Pennsylvania, August 2002.

Effectiveness of Intersection Safety Improvements Using Crash Reduction Factors and Benefit-Cost Ratios, Presented at Transportation Research Board, Washington, DC, January 2002.

Crash Reduction Factors for Highway Intersection Improvements in Iowa, Presented at Institute of Transportation Engineers, Chicago, Illinois, August 2001.

Simulation of Detector Locations on an Arterial Street Management System, Presented at Mid-Continent Transportation Symposium, Ames, Iowa, May 2000

The Relationship Between Detector Location and Travel Characteristics, Presented at Transportation Research Board, Washington, DC, January 2000.

The Relationship Between Detector Location and Travel Characteristics, Presented at Institute of Transportation Engineers, Las Vegas, Nevada, August 1999.

Using Synchro and CORSIM to Determine Signal Spacing, Presented at ITE / IMSA Annual Conference-Arizona Section, Phoenix, Arizona, March 1999.

Detector Locations for Arterial Street Management Systems, Presented at ITE District 6 Annual Meeting, San Jose, California, July 1998.

A Sensitivity Analysis of PASSER II-90, Presented at ITE International Conference, Dana Point, California, March 1996.

Development of GIS-Based Sign Inventory System, Presented at TexITE Section Winter Meeting, Plano, Texas, February 1996.

Traffic Accident Analysis at Two-Phase Signalized Intersections, Presented at Transportation Research Board, Washington, DC, January 1994.

Target Value, Legibility and Viewing Comfort, Presented at Transportation Research Board, Evaluation of Variable Message Signs, January 1992.