

Resume of
James H. Anspach, P.G.(r) Dist.M.ASCE
Utility Engineering Scientist
J.H.Anspach Consulting

EDUCATION

B.S., Geologic Sciences, Pennsylvania State University, 1977 (Geology, Geophysics, Geochemistry Options)
Appalachian Underground Corrosion Short Courses (Basic, Intermediate, Advanced)
Institute of Gas Technology, 1979. Gas Distribution Engineer Certificate
3000+ PDH in Civil Engineering

REGISTRATIONS

Initial Registration: Professional Geologist, Virginia, 1992. (retired)
Additional Professional Geologist Registrations: PA (retired), TN (retired)

AWARDS

2020 Damage Prevention Hero – Damage Prevention Professional Magazine
2019 G. Brooks Ernest Technical Lecture Award – American Society of Civil Engineers
2018 Distinguished Member of the American Society of Civil Engineers
2014 Recipient of the FIATECH CETI Innovation Award, Life Cycle Data Mgmt & Info Integration Category
2012 Recipient of the ICTAS Water Infrastructure Center of Excellence Awards Program –Utility Engineering Category
2010 Recipient of the FIATECH CETI Innovation Award, Real-Time Project & Facility Mgmt, Coord., and Control Category
2009 Recipient of the FHWA’s Excellence in Utility Relocation and Accommodations Awards Program -Leadership Category

SKILLS

Expert Witness Services, Utility Investigations, Horizontal Directional Drilling (HDD) Risk Mitigation, Geophysics, Buried Asset Management, Utility Condition Assessment, Codes & Standards Development, Technical Writing, Project Management, Corrosion Engineering, Leakage Detection, Utility Coordination, Utility Relocation Design, Innovation, Forensic Engineering for Utility Issues, Utility Damage Prevention Management, Research and Development, Training/Education, Executive Management.

PROFESSIONAL QUALIFICATIONS

Mr. Anspach is considered a principal founder of the profession of Subsurface Utility Engineering, and the development of Utility Engineering as a recognized civil discipline. He has been referred to as the “Godfather of Subsurface Utility Engineering” and the “Father of Modern Utility Engineering.” He is an authority on standard of care issues for the utility damage prevention and the practice of subsurface utility engineering. He has over 40 years’ experience in the research, development, and application of surface geophysical techniques for the purpose of utility identification and detection and in the development of our nation’s One-Call statutes and industry. Mr. Anspach routinely serves on national and international committees regarding utility detection, investigations, community resilience, damage prevention, asset management, and standards.

Mr. Anspach was the founding Governor and 2018 President of the American Society of Civil Engineer’s (ASCE) Utility Engineering and Surveying Institute (UESI). UESI is pushing the concepts of utility engineering into university curricula around the world. Mr. Anspach is a frequent lecturer at Universities on utility issues. Anspach is the Course Developer and Principal Instructor for Louisiana Tech’s\Utility Engineering and Surveying Institute’s 40 Hour Utility Investigation School. This School is also taught at Colorado School of Mines, University of Texas Arlington, Lawrence Technical University, and Purdue. Other Universities where Anspach has taught Utility Engineering classes include: Princeton, Rutgers, Bucknell, Penn State, Carnegie Mellon, Oklahoma State, Wisconsin, Purdue, IUPUI, LA Tech, Washington State, Oregon State, Arizona State, Alabama, Florida, Florida State, Delaware, North Carolina State, Wyoming, Colorado State, Cornell, Brown, George Mason, Texas A&M, Texas Tech, and Univ of Texas.

Mr. Anspach has served as a Project Manager, Principal, or Quality Assurance reviewer for thousands of utility mapping and/or coordination projects. These include mega-projects (Woodrow Wilson Bridge, Alaska Way Viaduct); classified projects for the White House, CIA, Pentagon, Department of State; and infrastructure projects for the state DOTs of RI, VA, NY, NJ, DE, MD, WV, NC, SC, GA, FL, TX, MO, OH, PA, AZ, WA, DC, WI, OR, and KY. He has also served in the same capacity for nuclear power plant and conventional

power plant projects, water and waste water facilities, airports, ports, and industrial plants. Additionally, Mr. Anspach served in a Quality Assurance role

Mr. Anspach served as a workshop moderator for the ASCE Pipelines Conference in 2010, 2014, and 2016. He was a keynote speaker at the 2009 International Conference on Construction Research Funding, and at the 1994 NTSB Workshop on Damage Prevention, the 2016 CCGA and MAPPS conferences, the 2017 Ontario ROW Association, and the 2021 Canadian Geolignite Conference. He holds several citations from the US Secretary of Transportation for his work in Utility Damage Prevention. He has delivered courses in utility damage prevention practices for HDD projects at University of Wisconsin and for many industry events. Currently, Mr. Anspach is developing a 40 Hour Utility Conflict Identification and Resolution School for Texas A&M and ASCE.

PROFESSIONAL ASSOCIATIONS AND ACTIVITIES

American Society of Civil Engineers –

ASCE Distinguished Member: In 2018 ASCE bestowed upon Mr. Anspach its highest honor, that of Distinguished Member. This honor is reserved for individuals who are eminent in a field of civil engineering or related science. There are currently less than 200 members world-wide with this honor. Anspach's citation reads "For his exemplary 38 year career as a practitioner, educator, and researcher benefiting the public and the engineering profession by fostering a dynamic evolution of the industry for the practice of subsurface utility engineering and the utility damage prevention profession."

Utility Engineering and Surveying Institute: Charter Board Member / Institute Formation Committee / President 2018

This new Institute of ASCE began provisional status on October 1, 2015 and began full operation on Oct 1, 2017 with Jim Anspach as the Charter President. It combines the Pipeline and Geomatics Division with the Utility Engineering Committee to house all utility-related and surveying issues under one umbrella.

Construction Standards Council: Chairman (1998-2020)

The Construction Standards Council (CSC-CI) oversees all standards committees and proposals for the Construction Institute. CSC is responsible for reviewing and approving the technical content of its standards, recommending leadership positions within the committees, and resolving disputes/conflicts. It is responsible for identifying new construction-related services, tasks, products, and materials that could benefit from standardization and for promoting existing standards' use. This position reports to the Construction Institute Board.

Codes & Standards Committee: Chairman (2008-2012), Member (1998-2018), CTA Liaison (2012-2018)

The Codes and Standards Committee (CSC-ASCE) oversees and directs the Codes and Standards Program of the Society. It develops, modifies, and maintains rules and procedures in accordance with ANSI accreditation requirements. It approves appointment of standards' chairs, and hears and adjudicates any appeals from members or the public. It approves all standards for development and publication. CSC was a Board Committee during 2006-2012. A Society reorganization in 2012 now has CSC reporting to a new Board Committee for Technical Advancement.

Board Committee for Technical Advancement: Charter Member (2012-2018)

The Committee for Technical Advancement (CTA) was formed in 2012 to oversee and coordinate the technical activities of the Society, its Institutes, and Academies. It has 13 constitute Divisions, Councils and Committees: Aerospace Division, Cold Regions Engineering, Computing & IT, Energy Division, Forensic Engineering, Geomatics Division, Lifelines Earthquake Engineering, Critical Infrastructure, Disaster Risk Management, Pipelines Division, Wind Engineering, Codes & Standards, and Adaption to Changing Climate. Anspach was the specific liaison to the Geomatics, Codes & Standards, Energy, and Infrastructure Resiliency Divisions. In 2014, CTA reorganized its Divisions, created the Infrastructure Resilience Division, and spun off Pipelines and Geomatics to form the Utility Engineering and Surveying Institute.

Board Task Committee on Claims Reduction and Management: Charter Member (2016-current)

The CCRM Committee brings coordination and focus to what had been disparate activities around the Society. This high-level committee has begun work to elevate the standing of the issue, enhance ASCE's professional liability insurance and educational programs, and provide guidance and advocacy on related legal and legislative matters

ASCE 38: Chairman (1998-current)

ASCE 38, *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*, is an internationally recognized standard regarding utility mapping. It is increasingly cited in state statutes, case law, and project procurements.

ASCE Innovation Jury Member, 2019-2020.

ASCE OCEA (Outstanding Civil Engineering Award) Jury member, 2019-2020.

Utility Engineering Committee: Charter Chairman (2012-2015)

The Utility Engineering Committee was formed in 2012 to bridge the gap between current engineering and construction practices and subsurface utility engineering. It served as ASCE and AASHTO's main vehicle to get Utility Engineering recognized as a specific sub-discipline of engineering. It was a Construction Institute board level committee, now housed as the Utility Risk Management Division of the Utility Engineering and Surveying Institute.

EJCDC Engineering Committee: Observer Member (2013 – 2014, current), Delegate (2014-2017)

The Engineers Joint Contract Documents Committee is comprised of individuals appointed by ASCE, ACEC, and NSPE. It also has 15 other participating member organizations (APWA, AGC, Insurance, etc.). EJCDC has existed since 1975 to develop and update fair and objective standard documents that represent the latest and best thinking in contractual relations between all parties involved in engineering design and construction projects.

ASCE XX (Standard Guideline for the Recording and Exchanging of Utility Infrastructure Data -Utility "As-Builts" Standard): Member and CI-CSC Oversight (2013-current)

This new activity was formed to develop a national format and procedure for developing as-builts for utilities. It will focus on new utilities under construction mainly.

Other Special Assignments

ASCE Energy Division, 2014 Conference Track Chair on "Fracking" Infrastructure Issues.

Pipeline Planning Manual of Practice Re-write

Board Task Committee: Risk Management Study (2015-current)

Board Task Committee on Innovation Awards

OTHER

NIST/NOAA/DHS/EPA Community Resilience Panel Member 2016-2018

Buried Asset Management Institute-International, Board Member 2013-2020

Transportation Research Board, Member AFB70-Committee on Utilities (2008-current)

Transportation Research Board, Member – Subcommittee on Airport GIS (2009-current)

American Association of State Highway Transportation Officials – (2009-Current) Utility Project Scoping and Coordination Technical Council

American Association of State Highway Transportation Officials – (2013-Current) Utility Mapping and Subsurface Utility Engineering Technical Council

National Highway Institute (FHWA) – Instructor / Course Developer "Highway / Utilities Issues Course" (2001-2010)

National Academies / TRB SHRPII Co-Principal Investigator "Encouraging Innovation in Locating and Characterizing Utilities"

National Academies / TRB SHRPII Investigator "DOT-Utility Coordination: Understanding Key Aspects of the Problem and Opportunities for Improvement"

National Academies / TRB NCHRP Principal Investigator, "Utility Location and Highway Design"

National Academies / TRB ACRP Principal Investigator, "Subsurface Utility Engineering Information Management for Airports"

National Academies / TRB SHRPII. Co-Principal Investigator, Project R01(A), "Technologies to Support Storage, Retrieval, and Utilization of 3-D Utility Location Data."

National Academies / TRB SHRPII. Investigator, Project R01(B), "Utility Locating Technology Development Utilizing Multi-Sensor Platforms."

National Academies / TRB SHRPII. Investigator, Project R01(C), "Innovations to Expand the Locatable Zone for Underground Utilities."

National Academies / TRB NCHRP. Technical Expert Task Group, Project 21-10, "AASHTO Manual on Subsurface Investigations."

National Academies / TRB NCHRP. Technical Expert Task Group, Project 24-44, "Guidebook for Managing Subsurface Differing Site Conditions Risk in Design-Build Projects".

National Academies / TRB SHRPII. Investigator, Project R-31 "Deployment of Innovative Technologies."

Federal Highway Administration / Applied Research Associates. Investigator – Technology Transfer Activities, "Every Day Counts" Initiative.

Engineering and Physical Sciences Research Council (UK), Project Steering Committee and Investigator, Assessing the Underworld Project 2013-2017.

National Academies / TRB Expert Panel NCHRP 20-07/Task 418, "An Impact and Value Analysis of Requiring Geo-spatial Locations for Utility Installation As-builts." 2019.

Past Member - Environmental and Engineering Geophysical Society

Past Member - Network Reliability Committee, Alliance for Telecommunication Industry Solutions subcommittee.

Past Senior Member - American Society of Highway Engineers

Board Advisor – National Damage Prevention Conferences (1996-current)

2019-Jan 19, 2021 (retired)

Senior Technical Principal – T2 Utility Engineers

In 2019 Cardno demerged T2UE from its Australian public company. Mr. Anspach served as Principal for Utility Market and Practice development, mentoring T2 Professionals in Responsible Charge and leading the Utility Engineering Industry outreach efforts.

2013 – 2019

Global Senior Principal - Cardno Inc.

Mr. Anspach was responsible for international thought leadership for the utility engineering and survey profession, M&A activity, international standards development, and research concerning underground utility engineering issues. He served as Principal for significant and unique projects. He served as a corporate liaison to ASCE, AASHTO, APWA, and CGA. Cardno transitioned its Utility Engineering and Survey Division to a separate corporate entity, T2ue, in October of 2019.

2008-Current

Owner: J.H. Anspach Consulting

Mr. Anspach served various corporate clients with consulting services in utility risk management. He was a Special Consultant with Pegasus Global, headed by the Vice-Chair of the National Science Foundation and past ASCE president. He was a retained consultant for UIT, GTI, Prostar, UtiStar, Google, and others. He worked with UIT (Underground Imaging Technologies, a Caterpillar Company), Gas Technology Institute, Sentinel USA, Louisiana Tech University, Purdue University, Grafton Tech, University of Birmingham, University of Leeds, Southampton University, Bath University, University of Nottingham, Oxford University, and Visible Assets on various National Academy Research Projects and Royal Society Projects.

He had a personal services contract with the National Academies to serve as their subject expert in disseminating information on underground utilities research projects.

Representative projects in this time frame include the following:

- Complete re-write of PENNDOT's Utility Processes Manual, prequalification criteria for SUE providers, SUE Impact Rating Form, and CADD Utility drafting standards.
- Development for the City of Lenexa KS SUE standards for project development
- Development of BWI Airport SUE standards for GIS and CIP project development
- Coordination with Standards Australia for development of SUE standards
- Development of Iowa DOT Survey Specifications for Utilities and SUE initiation
- US coordination with the UK's Mapping the Underworld Program
- National Academy of Science's Strategic Highway Research Program regarding Utilities

2006-2008

Mr. Anspach served as the Principal (Emeritus) of So-Deep.

1983-2006

Mr. Anspach served as a Principal of So-Deep. During this time frame he was responsible for close to one hundred utility coordination projects for the DOTs of MD and VA, and served as the project manager/principal for thousands of utility mapping projects.

1978-1983

Mr. Anspach served as a consultant for Heath Consultants. Duties included performing Cathodic Protection design for NIST, US Military bases, and the U.S. Naval Academy. He performed leakage surveys for natural gas systems, water systems, and Underground Storage Tanks. He worked with the NTSB and Office of Pipeline Safety on many natural gas explosion investigations.

He developed and taught classes in utility locating, explosive characteristics of natural gas. He worked with Bell Labs to develop procedures for checking combustible gases in battery locations, and in entering confined spaces.

EXPERT WITNESS CASES (in addition to confidential arbitrations and mediations engagements):

Diversified Services v. City of Bradenton, Florida (on-going)

Enbridge Pipelines Inc. v. Grand Rapids Pipeline et al. Alberta, Canada (mediation, on-going)

Randall Dickson et al v. Trunkline Gas Co LLC. US District Court for the Northern District of Indiana, South Bend Division. Case no. 3:18-cv-494. (on-going)

Las Olas Co et al v. Florida Power and Light, et al. 17th Judicial Circuit Broward County, FL. Case no. CACE-19-019911 (18). (on-going)

Columbia National Insurance Co et al v. MUD, North Central Service et.al. District Court of Douglas County, Nebraska Case No. CI 16-7667 and consolidated cases (on-going)

Vance, Yates, Sherman, Kouba, Moser, Shapland, Gearhart Construction, LLC, City of Bellevue vs. Metropolitan Utility District of Omaha, NE. 2017 (Expert Report leading to successful mediation)

Liberty Mutual Fire Insurance vs City of Seattle et.al. United States District Court, Western District of Washington at Seattle, No. 2:15-cv-1039 JCC 2016 (Report, Deposition)

Escalante v. System Communications Services, et.al. Superior Court of New Jersey Law Division: Middlesex County, Docket No.: MID-L3083-15 (report)

Panasar v. Underground Utilities Corp. Superior Court of New Jersey Law Division: Middlesex County, Docket No.: MID-L6617-15 (report)

JJ's v. MO Gas et.al. Case # 1316cv11288, Division 1. Circuit Court of Jackson County, MO. 2015 (deposition, on-going consulting)

Irth Solutions v. Daniel Colby. Case No. 13CV-06097, Franklin County Ohio Court of Common Pleas. 2012 (Court testimony)

Posen v. Peoples Gas: Case No. 2:11-cv-231-FtM-29-SPC, U.S. District Court, Ft. Myers, FL. (consulting and Report) 2014

Amatel v. PSE&G et.al. (consulting). Case No. MID-L 553512, Superior Court of New Jersey (consulting and Report) 2015

Bolinder v. USIC. Lake Mary, FL. (consulting) 2012

Stacey & Witbeck v. Level 3 Communications. Superior Court of Washington, King County, WA. (Report and Deposition) 2012

Neese *et.al.* v. Enterprise Products Operating et.al. v. Survey and Mapping Inc. et.al. (consulting) ,Dallas County, TX 2011

Colorado Interstate Gas Company *et.al.* v. National Union Insurance. (Report, Deposition, and Testimony) 2012
Case No. 2008cv4157
District Court, Denver County, CO

lasis Healthcare Corporation vs. E. K. Bailey Construction, *et al.* (Report and Deposition) 2010
Case No. 2:07CV00638
United States District Court for the District of Utah, Central Division

TW Telecomm v. Locating, Inc. (Report) 2009
District Court, Eastern District of the State of Washington. # CV-08-229-FVS

Nautilus v. SCI Infrastructure et.al. (Report) 2009

Carpenter v. Central Locating Service, LTD. (Report and Court Testimony) 2009
Superior Court of Washington, King County. # 07-2-33296-1SEA

George & Lynch, Inc. v. Cereza et al. (Report and Deposition) 2009
Superior Court of the State of Delaware, New Castle County.

State Farm & Casualty Co., Subrogee of Leethel Neal v Corby Energy Services, Inc. et al (Report and Deposition) 2004
Oakland County Circuit Court Case No. 04-057675 NZ

Se-Kan Asphalt, Inc. v. City of Iola et al. (Report) 2004
District Court of Allen County, Kansas
Case No. 03CV35

Dorian Thompson, et.al. v. PECO, et.al. and related cases (Report) 2005
Court of Common Pleas of Philadelphia County
July 2001 Term, Case Numbers 2107, 4084, 4179

Carl J Arbes et.al. v. OSP Consultants, Inc, and Mid-Atlantic Pipeliners, Inc. (Consulting) 2002
Virginia, circuit Court for Fairfax County
At Law No. 19470

Alder Siesta, Inc. v. Central Locating Service, Ltd., Seattle Washington. Wilson Smith Cochran Dickerson, counsel. (Consulting) 2007

Herzog v. Sound Transit. King County, WA. (Consulting) 2011

USDOE v. Bell Atlantic, Savanna River Site, GA. (Consulting and Testimony) 1999

PUBLICATIONS (partial list) as Author or major contributor

Peer Reviewed/Refereed

Anspach, J and Paul Scott. Subsurface Utility Engineering for Municipalities: Scope of work and Prequalification Guide. ASCE, Reston, VA 2019.

Quiroga, C, , J. Anspach, et al. Strategic Research Needs in the Area of Utilities. Transportation Research Board, Washington DC., 2019

Quiroga, C and J. Anspach and C. Scott. "FEASIBILITY OF MAPPING AND MARKING UNDERGROUND UTILITIES BY STATE HIGHWAY AGENCIES." FHWA – USDOT Project DTFH61-12-C-00025, McLean, VA. 2017

Anspach, James H. and Carlo Pilia. Advances in 3D Modeling of Existing Subsurface Utility Data. ASCE T&DI Annual Conference, Orlando, FL 2014.

Anspach, James H. and Randy Murphy. ACRP 34. Subsurface Utility Engineering Management for Airports., National Academy of Sciences., Washington, DC. 2012

7th International Visualization Symposium. National Academy of Sciences. 3D Utility Mapping Challenges. Irvine, CA 2013.

Anspach, James H. *Subsurface Utility Engineering Information for Airports.* ACRP Study 34. National Academies, Washington DC 2012.

Sterling, Allouche, Anspach, Matthews, Berchmans, Simicevic. Development of the Selection Assistant for Utility Locating Technologies. SHRP2 Report S2-R01-RW-2, Transportation Research Board, National Academies, Washington DC 2012.

C.D.F. Rogers, T. Haoa, S.B. Costello, M.P.N. Burrow N. Metje, D.N. Chapman, J. Parker, R.J. Armitage, J.H. Anspach, J.M. Muggleton, K.Y. Foo, P. Wang, S.R. Pennock, P.R. Atkins, S.G. Swingle, A.G. Cohn, K. Goddard, P.L. Lewin, G. Orlando, M.A. Redfern, A.C.D. Royal, and A.J. Saul. Condition Assessment Of The Surface And Buried Infrastructure – A Proposal For Integration. Journal of Tunneling and Underground Space Technology, 2011.

T. Hao , C.D.F. Rogers, N. Metje, D.N. Chapman, J.M. Muggleton, K.Y. Foo, P. Wang, S.R. Pennock, P.R. Atkins, S.G. Swingle, J. Parker, S.B. Costello, M.P.N. Burrow, J.H. Anspach, R.J. Armitage, A.G. Cohn, K. Goddard, P.L. Lewin, G. Orlando, M.A. Redfern, A.C.D. Royal, A.J. Saul. Condition Assessment Of The Buried Utility Service Infrastructure. Journal of Tunneling and Underground Space Technology, 2011.

Anspach, James H. *Utility Location and Highway Design*. NCHRP Study 405. National Academies, Washington DC 2009.

Innovation in Locating and Characterizing Utilities. Sterling, Anspach, Allouche, et.al. SHRP2 R-01, National Academies, Washington DC 2009.

Anspach, James H. and Lew, Jeff J. *Depiction of Existing Subsurface Utility Information*. Proceedings of the CIB Annual Meeting, Beijing, China. 2006.

Huber, Frank W. and Anspach, James H. *Reducing Uncertainty in Subsurface Utility Construction*. Proceedings of the ASCE Pipeline Annual Conference, San Diego, CA 2004.

Developing Curricula for Subsurface Utility Engineering. Proceedings of the CIB W89 International Conference on Building Education and Research (BEAR 2003). University of Salford, U.K. 2003. Pg 492-500.

Pipeline Planning Utilizing C/I ASCE 38-02. "New Pipeline Technologies, Security, and Safety." American Society of Civil Engineers, Reston, VA, pages 1406-1414. 2003.

Pipeline Relocation Design Utilizing C/I ASCE 38-02. "New Pipeline Technologies, Security, and Safety." American Society of Civil Engineers, Reston, VA., pages 1415-1421. 2003.

CI ASCE 38-02. Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data. American Society of Civil Engineers, Reston, VA 2002.

Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data. Proceedings of the ASCE Annual Pipeline Conference. Cleveland, OH. 2002.

Lew, Jeffrey J. and Anspach, James H. *Elimination of Utility Line Cuts on a Highway Project Using Subsurface Utility Engineering*. Proceedings of the CIB International Conference on Building Education and Research , London, U.K. 2000.

Cost Savings On Highway Projects Utilizing Subsurface Utility Engineering. FHWA, 1999.

Pipeline Route Selection for Rural and Cross-Country Pipelines, American Society of Civil Engineers, Manuals and Reports on Engineering Practice No. 46, August 1998.

Protecting Public Safety Through Excavation Damage Prevention, National Transportation Safety Board, PB97-917003, NTSB/SS-97/01, December 1997.

Anspach, James H. *Design and Construction Risk Management for Existing Utilities*, Proceedings of the Construction Congress V, American Society of Civil Engineers, October 1997.

Subsurface Utility Engineering: Applications in Public Works, American Public Works Association, 1997.

Underground Utilities Detection and Excavation, U.S. Department of Energy, Office of Nuclear and Facility Safety, DOE/EH-0541, December 1996.

Anspach, James H. and Lew, J.J. *Subsurface Utility Engineering: Locating before Construction*. Proceedings of the CIB International Conference on Construction Modernization and Education, Beijing, China, October 1996.

Results and Recommendations Pertaining to Facilities Reliability, Alliance for Telecommunications Industry Solutions, Network Reliability Steering Committee, Bellcore, February 1996.

Subsurface Utility Engineering (SUE); Summary of Benefits, Costs, Savings, Users, Applications, Activities, and Responsibilities, U.S. Department of Transportation, Federal Highway Administration, Office of Engineering, January 1995.

Anspach, James H. *Subsurface Utility Engineering: A Damage Prevention Tool for Trenchless Technology*. Proceedings of the North American Society for Trenchless Technology. May 1995.

Subsurface Utility Engineering, U.S. Department of Transportation, Federal Highway Administration, Office of Engineering, FHWA-PD-96-0004. November 1995.

Anspach, James H. *Subsurface Utility Engineering: Upgrading the Quality of Utility Information*. "Advances In Underground Pipeline Engineering," Second International Conference. American Society of Civil Engineers. June 1995.

Anspach, James H. *Managing Risk on Light Rail Projects – Subsurface Utility Engineering*, Proceedings of the National Conference on Light Rail Transit, TRB/APTA, November 1995.

Anspach, James H. and J.J. Lew. *Subsurface Utility Engineering: Locating Before Construction*. Proceedings of the CIB International Conference on Construction Modernization and Education, Beijing, China. October 1996.

Anspach, James H. *Subsurface Utility Engineering: Upgrading the Quality of Utility Information*. "Advances In Underground Pipeline Engineering," Second International Conference. American Society of Civil Engineers. June 1995. Note: Nominated for ASCE Technical Paper of the Year.

Review of and Recommendations for Engineering and Construction Practices Relative to Utility Damage Prevention at the Hanford Site, Kaiser Hanford/U.S. Department of Energy, March 1995.

Dodge, Lawra D. and James H. Anspach. *A Case Study of an Environmental Assessment Combining Historical Practices and Subsurface Utility Engineering*. Proceedings of the 1995 American Power Conference. April 1995.

Anspach, James H. and Stanley E. Wilson. *A Case Study of an Underground 138 kV Transmission Line Design Utilizing Subsurface Utility Engineering*. Proceedings of the American Power Conference, April 1994.

Subsurface Utility Engineering. Proceedings of the Fourth National Highway/Utility Conference. U.S. Department of Transportation, Federal Highway Administration, Office of Engineering. Publication No. FHWA-PD-94-032. April 1994.

Anspach, James H. *Integrating Subsurface Utility Engineering into Damage Prevention Programs*. Proceedings of the 1994 Excavation Damage Workshop, National Transportation Safety Board. September 1994.

Anspach, James H. *Locating and Evaluating the Condition of Underground Utilities*. Proceedings of RETROFIT '94, sponsored by Stanford University/National Science Foundation. June 1994.

Subsurface Utility Engineering - SUE HANDBOOK. U.S. Department of Transportation, Federal Highway Administration, Office of Engineering. October 1994

Cable Cuts: Causes, Impacts, and Preventive Measures, Special Review, U.S. Department of Transportation, Federal Aviation Administration, Safety Quality Assurance Division, June 1993.

Advances in Site Investigation and Detection, "Research Needs in Automated Excavation and Material Handling in the Field," National Science Foundation, April 1993.

Highway/Utility Guide U.S. Department of Transportation, Federal Highway Administration, Office of Technology Applications. Publication No. FHWA-SA-93-049. June 1993.

Anspach, James, H. *Subsurface Utility Engineering*. Proceedings of the 29th Paving and Transportation Conference, University of New Mexico, 1992.

Improving the Quality Level of Underground Information, Proceedings of the Third National Highway/Utility Conference, U.S. Department of Transportation, Federal Highway Administration, Office of Engineering, Publication No. FHWA-PD-93-030, October 1992.

Papers/Presentations

Anspach, James H. Mitigating Existing Utility Uncertainties and Risks. *The Military Engineer*, Issue No. 72, Washington DC, 2019.

2016 Presentations: LA/AL/FL Annual Engineering Conference; Common Ground Alliance Conference; ASCE Pipelines, AASHTO ROW and Utilities Conference

2017 Presentations: ASCE FL Section Summit; Canadian Center for Trenchless Technology Vancouver meeting; ASCE Construction Institute Summit; ASCE CTA Congress; Ontario ROW Association, Common Ground Alliance Conference, AASHTO ROW and Utilities Conference

Anspach, James H. and M. Pitchford. "Getting the Best Long-Term Use of Utility Data." AASHTO ROW, Utility and ODA Conference, Minneapolis, MN 2015.

Anspach, James H., C. Quiroga and G. Young "Best Practices for Creating Design Data to Support Digital Project Delivery." Transportation Research Board Annual Meeting, Construction/Data and Information Technology/Design Workshop, Washington DC. 2015.

Anspach, James H. "Reducing Underground Imaging Uncertainty and Managing the Rest." Transportation Research Board Annual Meeting, AFB70 Workshop, Washington DC. 2015.

Anspach, James H. "Building 3D Utility Models." Transportation Research Board Annual Meeting, AFB80 Workshop, Washington DC. 2015.

Anspach, James H. "Utility Engineering Educational Needs." ASCE Construction Institute Summit, Lake Las Vegas, 2015.

Anspach, James H. "Geospatial Intelligence Comes to the Oil and Gas Industry: Pieces of the Puzzle." *World Oil Magazine*, July 2015. London, UK.

Utilities & SUE. Keynote Address – 2015 MAPPS Conference, Sunriver, OR.

Anspach, Tucker, and Slusarenko. New Technologies Present Opportunities for Pipeline Asset Managers. *Inspectioning Journal*, Feb 1, 2015.

NCEES Annual Meeting. Understanding ASCE 38 and its Intersection with Engineers, Surveyors, and Geologists. Seattle, WA 2014.

Lawrence Arcand and James H. Anspach and Randy Seaver. Pipeline and other Utility Infrastructure Mapping for Planning, Design, Construction, and Damage Prevention. ASCE Shale Energy Conference, Pittsburgh, PA 2014.

FDOT Design Training Expo. ASCE Utility As-Built Standard Development. Orlando, FL 2014.

- National Damage Prevention and CGA Conference. Coordinating with Utilities, Successful Damage Prevention Begins Early in Design. Phoenix, AZ 2014
- National Damage Prevention and CGA Conference. 4 hour Utility Engineering Workshop. Phoenix, AZ 2014
- Rodas, Alejandro and James H. Anspach. The Emergence of ASCE Standards for Utility Detection and Mapping for South American Water Development and other Civil Projects. ASCE EWRI International Water Resources Conference. Quito, Ecuador. 2014.
- Joint Engineers Council of Montana. Utility Engineering. Helena, MT, 2013.
- Joint Engineers Council of Montana. Engineering Standards. Helena, MT, 2013.
- National Damage Prevention and CGA Conference. Good Data, Bad Data. West Palm Beach, FL 2013
- National Damage Prevention and CGA Conference. 4 Hour SUE Workshop. West Palm Beach, FL 2013
- FDOT Design Training Expo. SUE Plus. Orlando, FL. 2013.
- AAAE GIS Annual Meeting. Subsurface Utility Engineering Information Management for Airports; Effective Practices for Airports., Arlington VA 2013.
- ASCE Texas Section. Utility Engineering. Dallas, 2013.
- ASCE Annual Meeting. Managing Utility Risks on Projects: Standards, Asset Management, and Technology. Charlotte, NC, 2013.
- Texas Section ASCE. Texas One-Call for Design. Ft. Worth, TX 2012.
- National Damage Prevention and CGA Conference. When you Know the One-Call Marks are Wrong. Phoenix, AZ 2012
- National Damage Prevention and CGA Conference. Making the Case for As-Builts. Phoenix, AZ 2012
- Texas Section ASCE. A Utility Mapping Company Perspective. Ft. Worth, TX 2012.
- TRB Annual Meeting, Session 662. What's Missing in the Big Picture. Washington, DC 2012.
- FHWA/FDOT/AASHTO/AGC Joint Conference. SHRP Research Results. Orlando, FL 2012
- FHWA/FDOT CIM Conference. SHRP Research 3. 2012.
- Anspach, James H. and McLaughlin, Matt. VDOT's Successful RFID Experiment. Damage Prevention Professional Magazine, Fall Issue 2011.
- Anspach, James H. Utility Strikes: When to Dig a Test Hole. Proceedings of the Underground Construction Technology Conference. Feb 2011.
- Anspach, James H. and Young, Gary. New Technologies for Utility Mapping. Proceedings of the American Association of Airports Executives GIS conference, March 2011.
- Anspach, James, and Young, Gary. Safety and Savings in Capital Project Design and Construction Using Subsurface Utility Engineering and Advanced Geophysical Imaging. Fiatech Technology Conference, April 2011.
- Anspach, James H. SUE and SUE PLUS, A History and Journey. Damage Prevention Professional Magazine, Summer Issue, 2011.
- Anspach, James H. Managing Pipeline Risk. Workshop Proceedings of the ASCE Pipeline Conference. August 2011.

- Anspach, James H. "Subsurface Utility Engineering in 2010 – A Look Back and Towards the Future." *Damage Prevention Professional Magazine*, Summer Issue, 2010.
- Anspach, James H. International Workshop on Construction Research Funding in the XXI Century: A Partnership between Academia, Industry, and the Public Sector, Urbana, IL. Proceedings, ASCE, Reston, VA 2009.
- R. Sterling, J. Anspach, et al. *Innovation in Utility Locating and Mapping Technologies*. Proceedings of the 2009 ASCE Pipelines Annual Conference, San Diego, CA.
- Anspach, James H. *Update of Utility Engineering Studies*. Proceedings of the 2009 FAA / AAE GIS Conference, Chicago, IL.
- Anspach, James H. *Using Subsurface Utility Engineering for Risk Management on Trenchless Projects*. Proceedings of the 2009 NW Municipal Engineers Forum on Trenchless Technology. Louisiana Tech University, Held in Tacoma, WA.
- Anspach, James H. *Finding and Characterizing Utilities Without Records*. Proceedings of the 2009 CGA Excavation Safety Conference & Expo, Orlando, FL.
- Anspach, James H. *How Standards Affect Damage Prevention Professionals: An Expert Witness Perspective*. Proceedings of the 2009 CGA Excavation Safety Conference & Expo, Orlando, FL.
- Anspach, James H. *Keeping Utility Data Current on Long-Duration Projects*. Proceedings of the 2008 National Damage Prevention Conference. Las Vegas, NV.
- Anspach, James H. *Unknown Utilities – Finding Them and Dealing with Them*. Proceedings of the 2008 National Damage Prevention Conference. Las Vegas, NV.
- Anspach, James H. *Challenges of Utility Data Repositories*. Proceedings of the 2008 Common Ground Alliance Safety Conference, Las Vegas, NV 2008.
- Anspach, James H. *History of Utility Damage Prevention*. Proceedings of the 2008 Common Ground Alliance Safety Conference, Las Vegas, NV 2008.
- Anspach, James H. *Managing Underground Utility Risks*. Proceedings of the 2008 Chicago-land Construction Safety Council Conference, Chicago, IL, 2008.
- Anspach, James H. *Managing Underground Utility Risks*. Proceedings of the Construction Institute Conference, Chicago, IL 2006.
- Anspach, James H. *Developing GIS Utility Information for Site Security Issues*. Proceedings of the American Association of Airport Executives GIS conference, Dallas, TX. 2005.
- Anspach, James H. *Subsurface Utility Engineering – Through the Crystal Ball*. *Trenchless Technology Magazine*. Peninsula, OH 2005.
- Anspach, James H. *ASCE 38-02 and Airport GIS Systems*. Proceedings of the American Association of Airport Executives GIS conference, Boston, MA. 2004.
- Anspach, James H. and Harter, John. *Collecting and Depicting Utility Data*. Proceedings of the National Damage Prevention Conference. 2004. Houston, TX.
- Anspach, James H. *Designer Tickets: Pros and Cons*. Proceedings of the National Damage Prevention Conference. 2004. Houston, TX.
- Anspach, James H. *New National Utility Standards & Guidelines from AASHTO, ASCE, and FHWA*. Proceedings of the New Jersey Transportation Quality Initiative Conference, Atlantic City, NJ. 2004.

Anspach, James H. *Construction Speed and Utilities*. GEOWORLD, Washington DC 2004.

Nguyen, Kien and Anspach, James H. *Reducing Utility Damages that Affect Air Traffic Control Operations*. Proceedings of the Aviation Technical Committee Symposium. Federal Aviation Administration. Washington DC. 2003.

Anspach, James H. *Avoiding Utility Relocations*. Proceedings of the International Right of Way Association annual meeting. Austin, TX 2003.

Anspach, James H. *History of the ASCE Standard*. Proceedings of the National Highway and Utility Conference. Tampa, FL 2003.

Anspach, James H. *Subsurface Utility Engineering (SUE) & The New National Engineering Standard For Utilities*. Proceedings of the APWA Annual Meeting, Washington DC. 2002.

Anspach, James H. *The Real Key to Damage Prevention*. Proceedings of the National Damage Prevention Conference. San Diego, CA. 2002.

Anspach, James H. *The Role of ASCE's Construction Standards Council*. Proceedings of the ASCE Texas Section Annual Meeting, Arlington, TX. 2002.

Anspach, James H. *Dealing with the Challenges and Risks of Underground Construction*, Proceedings of the American Water Works Association, March 1999.

Anspach, James H. *SUE: New Standards – Same Old Applications*. Trenchless Technology Magazine, Oct 1999.

Anspach, James H. *Defining Allocations of Risk: Support of Risk Management Standards*. Georgia Professional Engineer, December 1998.

Anspach, James H. *Utility Quality on the Level*. Constructor Magazine. March 1998.

Anspach, James H. *SUE Comes of Age*. Underground Construction Magazine. April 1998.

Anspach, James H. *Reducing Existing Underground Utility Risks on Airport Improvement Projects: Subsurface Utility Engineering*. Proceedings of the 25th International Air Transportation Conference, June 1998.

Subsurface Utility Engineering Success Stories / Subsurface Utility Engineering Evaluation Activities. Federal Highway Administration . Proceedings of the Sixth National Highway/Utility Conference. Cleveland, OH April 16-18, 1997. Publication No. FHWA-PD-98-006.

Anspach, James H. *SUE Applies Engineering, Surveying, and Geophysics to Damage Prevention*. Underground Focus Magazine. Sept 1997

Anspach, James H. *Subsurface Utility Engineering (4 parts)*. AEGIS Insurance Services Inc. Quarterly Review. 1996, 1996, 1997, 1997.

Anspach, James H. *NCDOT Documented Savings from Accurate Location Data*. Underground Focus Magazine. Jan 1996.

Subsurface Utility Engineering (SUE). North Carolina Department of Transportation, Engineering Management. February 1, 1996.

Anspach, James H. *Integrating Technology into Subsurface Utility Engineering Projects*. Pipeline and Gas Journal. June 1996.

Anspach, James H. *Subsurface Utility Engineering: Utility Detection Methods and Applications*. Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems. Environmental and Engineering Geophysical Society, April 1996. Pages 443-450.

"The Engineer's View." (Bi-monthly editorial column) Underground Focus Magazine, Sept-Oct 1995., Nov-Dec 1995., Jan-Feb 1996., April 1996, Nov-Dec 1996, Nov-Dec 1997, Oct-Nov 2000, Apr-May 2001, Apr-May 2002.

"Find All Underground Lines Before Construction Starts." Underground Focus Magazine, April 1995.

Anspach, James H. *Subsurface Utility Engineering: Standards for the Depiction of Subsurface Utility Quality Levels Within Geographic Information Systems*. Proceedings of the Geographic Information Systems For Transportation Symposium (GIS-T). AASHTO. April 1995

Anspach, James H. *Subsurface Utility Engineering: A Damage Prevention Tool for Trenchless Technology*, Proceedings of the North American Society for Trenchless Technology, May 1995.

Underground Precision Develops. Engineering News Record. Feb 1994.

Anspach, James H. *A Solution Named SUE*. Airport Magazine. July 1992.

Anspach, James H. *Out of Sight Work-With Vision*. Ohio Contractor Magazine. July 1992.

Anspach, James H. *Subsurface Utility Engineering*. Engineering Times. October 1991.

FILMS

Subsurface Utility Engineering: A Technology for the 90's. Written, directed, and produced by So-Deep, Inc. and distributed by the Federal Highway Administration, 1990.

Subsurface Utility Engineering: A Proven Solution. Written and directed by So-Deep, Inc. Produced by the U.S. Department of Transportation, Federal Highway Administration. 1995.

RESEARCH AND DEVELOPMENT PROJECTS

Jim has participated in a wide variety of research projects, either as an Investigator or Principal Investigator, for over 30 years. Many of these projects are performed in conjunction with research universities. Jim's wide array of expertise in surface geophysics, data repositories, damage prevention statutes and procedures, utility design, highway design, utility construction practices, and project management make him a valuable addition to research teams dealing with these, and peripheral, issues.

The following sampling of projects illustrates the breadth of these investigations. These do not include the many projects where Jim had significant input as a project resource but was not part of the primary research team.

1978: Gas Research Institute, development of the early ground penetrating radar units for utility detection

1985: Battelle Research Institute, correlation of depth accuracy claims by surface geophysics vs actual exposure

1995: Virginia Center for Innovative Technology, correlation of accuracy and completeness of utility records to actual utility location

1999: FHWA, "*Cost Savings On Highway Projects Utilizing Subsurface Utility Engineering*." (in association with Purdue University)

2007: National Academies/SHRPPII, "Encouraging Innovation in Locating and Characterizing Utilities" (in association with Louisiana Tech University) R-01

2007: National Academies/SHRPPII, "*DOT-Utility Coordination: Understanding Key Aspects of the Problem and Opportunities for Improvement*." (in association with University of Florida) R-15

2008: National Academies/TRB, "Utility Location and Highway Design" NCHRP Project 40-04, 20-05.

2009: PHMSA/GTI/VDOT/VUPS/ProStar: *Electronic Whitelining and Excavation Encroachment System Research Study and Pilot.*

2010: Engineering and Physical Sciences Research Council (UK). *Mapping the Underworld*

2009: National Academies/SHRP2:

Co-Principal Investigator: Project R01-A: *Innovation in Technologies to Support the Storage, Retrieval, and Utilization of 3-D Utility Location Data*

Investigator: Project R01-C: *Innovations to Expand the Locatable Zone for Underground Utilities*

Investigator: Project R01-B: *Multi-Sensor Platforms for Locating Utilities*

Co-Principal Investigator: R-01 SAULT

2011: National Academies/TRB, "Subsurface Utility Engineering Information Management for Airports." ACRP Project 34.

2011: National Academies/SHRP2. Personal Services Contract for Technology Transfer of projects SHRP2 R-01 and R-15.

2012: National Academies/SHRP2. Deployment of Innovative Technology, SHRP2 R-31.

2012: FHWA DTFH61-12-R-00036. Feasibility of Mapping and Marking Underground Utilities by State Highway Agencies.

2013: National Academies/SHRP2. Technology Transfer of Innovative Technology, SHRP2 R-55.

2013: Engineering and Physical Sciences Research Council (UK). *Assessing the Underworld*

2014: *Every Day Counts 3 Briefings to State DOTs*

2015: FEASIBILITY OF MAPPING AND MARKING UNDERGROUND UTILITIES BY STATE HIGHWAY AGENCIES." FHWA – USDOT Project DTFH61-12-C-00025, McLean, VA. 2015

2015 *Every Day Counts 3 Workshops and Webinars Development*

2018 *National Highway Institute Course Development: Utility Investigations, Utility Conflict Management, Utility Coordination.*

2020: *National Academies/Iowa State SUE Synthesis study*

2020: *National Academies/Iowa State "Valuing the Right of Way" Study*