



Education

*Master of Science
Civil Engineering
University of Wyoming (1986)*

*Bachelor of Science
Civil Engineering
University of Wyoming (1984)*

Professional Registration

*Professional Engineer in
Colorado, Wyoming, Iowa
Professional Traffic Operations
Engineer – Institute of
Transportation Engineers*

Experience

*Total – 34 years
Time with STS – 10 years*

Professional Associations

*Institute of Transportation
Engineers
(Colorado/Wyoming Section Past
President)*

*University of Wyoming
Department of Civil and
Architectural Engineering
Advisory Board
(Past Chair)*

*Wyoming Engineering Society
(Member)*

Joe's Clients Say It Best

"Joe Henderson has superior technical capabilities in the areas of traffic signal design, traffic operations, and construction management. In addition, he adheres to challenging budget and schedule requirements. I would recommend Joe to anyone seeking an experienced and reliable traffic engineer."

*Joliette Woodson, PE
Transportation Engineer
City of Lafayette*

Sustainable Traffic Solutions, Inc.

Joseph L. Henderson PE, PTOE
Traffic Engineer / Principal

Joe has over 34 years of experience in the design, planning, and operation of transportation facilities throughout Colorado and Wyoming for motorists, pedestrians, and cyclists. His design experience includes intersections, traffic control devices, traffic signal systems, work zone traffic control, and construction phasing. Many of these projects were CDOT Local Agency projects following state and federal guidelines. Joe has performed planning studies for developments, corridor access control, corridor studies, and subarea plans. His operations experience includes traffic signal timing, maintenance of traffic control devices, and crash studies. Joe has a unique knowledge of the Manual on Uniform Traffic Control Devices having been a technical committee member of the National Committee on Uniform Traffic Control Devices for many years.

Traffic Signal Design

With over 34 years of experience designing, operating, and maintaining traffic signals, Joe gained his traffic signal knowledge through hands-on experience working as a city traffic engineer, working for a signal contractor, through equipment sales, and as a consultant. Joe has designed 161 traffic signals and managed the construction of 55 of the signals that he has designed. He has experience with mast arm signals, span wire signals, and modular poles. Many of the projects included modifications to curb & gutter, sidewalks, and curb ramps.

Traffic Signal Timing and Evaluation

Mr. Henderson has developed interval timing for hundreds of signals that are operated by NEMA, 2070, and Type 170 controllers. He has performed timing studies for corridors and grid networks utilizing PTV VISTRO. Joe has optimized the timing in the field to verify that his timing accommodated the traffic flows. The following are examples of corridor and network timing projects that he has performed.

- Yellowstone Road Corridor – Cheyenne
- SH 44 – Grimes, IA
- US 160 – Alamosa
- US 34 Bypass – Greeley
- Citywide Signal Timing – Casper

Traffic Signal System Design

Joe has designed and implemented multiple traffic signal systems in Colorado and Wyoming. His experience includes the selection of controllers and system software, communications design, preparation of specifications for hardware and construction, and implementation of the systems. The following examples demonstrate his experience in the area of traffic signal system design.

- Signal System Database Review – Fort Collins
- Fiber Optic Design – Thornton, Louisville, Broomfield
- Broadband Radio Design – Louisville, Brighton
- Traffic Signal System Selection and Implementation – Brighton
- System Implementation – Park Meadows Mall

"Joe Henderson has a wealth of experience with municipal traffic engineering issues and challenges. He uses sound engineering judgement to provide the best possible solutions to the City of Northglenn. I would recommend Joe Henderson to any municipal agency or firm that is seeking reliable traffic engineering expertise combined with exceptional customer service."

Kent Kisselman, PE
Director of Public Works
City of Northglenn

"I would recommend Joe Henderson to any public agency or private firm that seeks a traffic engineer with unsurpassed traffic engineering knowledge and expertise along with exceptional customer service."

Joseph P. Olson, PE
City Traffic Engineer
City of Fort Collins

- System Implementation – Longmont & Denver
- Design and Implementation – Casper

Traffic Phasing and Work Zone Traffic Control Design

Mr. Henderson has developed construction phasing and work zone traffic control for several large diameter pipe water line projects. The construction phasing for each project was developed to optimize movement of traffic and to provide a large enough area for the contractor to work safely. The work zone traffic control was designed based on the MUTCD. Project examples include:

- Gun Club Road Pipeline – Aurora
- Northern Colorado Water Conservancy District – Carter Lake to Boulder Reservoir
- Harvard Avenue and Abilene Street 66" Water Line and Sewer Line Relocations – Aurora
- Large Valve Rehabilitation – Aurora
- Zone 3 Transmission Main Replacement – Boulder
- Nevada Avenue and Cascade Avenue Water Main Replacement – Colorado Springs
- Denver Water Conduit 12 – Downtown Denver
- Denver Water Conduit 16 (84" Water Line) Construction Phasing and Work Zone Traffic Control - Jefferson County, Arvada, Wheat Ridge and Lakewood
- Denver Water Conduit 30 (60" Water Line) Installation at US 285 / SH 121, Construction Phasing and Work Zone Traffic Control - Lakewood
- Ute Water Conservancy District I-70 Crossing Construction Phasing and Work Zone Traffic Control Review – Mesa County

Intersection Study and Design Projects

Mr. Henderson has designed and managed intersection study and design projects for local agencies as well as CDOT. The projects have involved capacity analysis to compare alternatives, accident study, utility clearance, intersection design, signal design, and accommodation of pedestrians and bicycles based on ADA guidelines, AASHTO, and the MUTCD. The following examples demonstrate his experience in this type of project.

- 22nd Street / Willet Drive Intersection Improvement Study – Laramie
- Pershing Boulevard / T-Bird Drive – Cheyenne
- Lowell Boulevard from Midway Blvd to 136th Ave – Broomfield
- SH 42 / Short Street – Louisville
- SH 42 / Paschal Drive – Louisville
- 27th Avenue / Southern Street - Brighton
- 88th Avenue / York Street - Thornton
- 1st Avenue / Sheridan Boulevard Design - Broomfield
- SH 60 / Telep Avenue Intersection Design – Johnstown
- US 287 at 29th Street and 37th Street HES Design – Loveland
- US 34 Bypass / 11th Avenue HES Design – Greeley



Traffic Operations and Safety

Mr. Henderson has extensive traffic engineering experience related to projecting traffic flows to determine necessary improvements, evaluating the operation and safety of intersections, reviewing warrants for traffic control devices, developing construction phasing, and designing work zone traffic control. Project examples include:

- Traffic Signal Warrant Studies – Several Intersections in CO and WY
- School Traffic Assessment Studies – Westminster & Northglenn
- City-Wide Speed Limit Study – Laramie
- 120th Avenue Traffic and Air Quality Study – Westminster

Corridor and Subarea Study Projects

The corridor studies conducted by Joe involved the evaluation of traffic flows for a variety of access and traffic signal configurations. Results have included the ultimate laneage, ROW, traffic control, and access. Subarea studies have taken the results of transportation master planning studies and focused on the impacts of the development of a portion of a community. The following examples demonstrate his experience in this type of project.

- Whitney Road Corridor Study – Cheyenne
- Bowles Avenue Traffic Study – Jefferson County
- Bill Nye Corridor Study – Laramie
- College Drive Corridor Study – Rock Springs
- Fox Farm Road Corridor Study – Cheyenne / Laramie County
- SH 42 Corridor Evaluation – Louisville
- SH 119 Access Control Plan – Longmont
- Bromley Lane Master Plan Design – Brighton
- Union Avenue and Dayton Street Corridor Study and Design – Greenwood Village
- West Central and South Poplar Street Corridor Urban Renewal Planning Study – Casper
- Southeast Casper Transportation Plan – Casper
- Dewar Drive Traffic Study – Rock Springs

Street Lighting Design

Joe has designed street lighting on arterials, bridges, freeway interchanges, and in a snow shed. His work has involved the selection of poles and fixtures, design to meet agency standards, plan preparation, and construction administration. Projects representative of his experience include the following examples.

- Stagecoach Drive & College Drive Lighting Design – Rock Springs
- Broncos Parkway, Jordan Road, Mineral Avenue LED Lighting Design – Arapahoe County / Dove Valley Metro District
- LED Lighting Specification Review – City of Thornton
- Wolf Creek Pass Snow Shed Lighting Design – Wolf Creek Pass
- Meridian International Business Park – Douglas County
- Yosemite Street Lighting – Greenwood Village
- I-70 Interchange Lighting Designs, CDOT Region 1



Bicycle Facility Design

Mr. Henderson has designed on-street and off-street bicycle facilities based on AASHTO Guide for the Development of Bicycle Facilities and the MUTCD. The following are examples of his work.

- Grant Drive and Larson Lane Bicycle Lane Design – Northglenn
- Claude Court Bicycle Lane Design – Northglenn
- Bicycle Plan Improvements – Aurora

Railroad Grade Crossing Evaluation

Joe has studied the operation of railroad grade crossings and developed alternatives to improve their safety. The following examples demonstrate his experience in this type of project.

- PUC Application for Trail Crossing Signalization – Fort Collins
- Main Street / WCR 2 PUC Application – Brighton
- Quiet Zone Studies – Fort Morgan, Brush, and Sterling
- US 550/Tremble Lane Traffic Signal and Railroad Crossing Treatment Design – Durango

Prior Experience

- Senior Professional Engineer / Principal, Short Elliott Hendrickson (1998-2009)
- Traffic Engineer, WL Contractors (1995-1998)
- Traffic Engineer, Western Signal (1994-1995)
- Transportation Specialist, Center for Transportation Education and Research, Iowa State University (1992-1994)
- City Traffic Engineer, City of Casper, Wyoming (1987-1992)
- Transportation Engineer, Centennial Engineering (1986-1987)

Municipal Resume
April 3, 2020

