

PROPOSAL FOR TOWN OF ERIE NORTH AND SOUTH ROUNDABOUT GATEWAYS TO TOWN CENTER PEEL ANALYSIS P20-057

April 10, 2020

Prepared For:



Town of Erie
ATTN: Town Clerk
645 Holbrook Street
PO Box 750
Erie, CO 80516



Engineering · Planning · Surveying

www.BaselineCorp.com

112 N. Ruby Drive, Suite 210, Golden, CO 80403



Conveniently serving the Town from Baseline Engineering Corporation's headquarters in Golden.

TABLE OF CONTENTS	2
SIGNATURE PAGE	3
1. EXPERIENCE	4
2. QUALIFICATIONS	14
3. FEES	19
A. APPENDIX A - RESUMES	20

BASELINE ENGINEERING CORPORATION

Headquarters:
112 N Rubey Dr, Suite 210
Golden, CO 80403

Primary Contact:

Noah Nemmers, PE

Division Manager, (970) 879-1825
noah@baselinecorp.com

Business Structure:
Established in 1998 as a Colorado Corporation

CDOT:
Baseline is a CDOT-certified emerging small business (ESB) and on its list of prequalified consultants with a master pricing agreement.

Insurance:
Baseline is able to comply with all insurance requirements.



April 10, 2020

ATTN: Town Clerk
Town of Erie
645 Holbrook Street
PO Box 750
Erie, CO 80516

RE: RFP - NORTH AND SOUTH ROUNDABOUT GATEWAYS TO TOWN CENTER PEEL ANALYSIS

To the Town Clerk and Town of Erie,

Giving close review to the RFP requirements and being thoroughly familiar with the project location, Baseline Engineering Corporation and Fox Tuttle Transportation Group understand the challenges that surface within a roundabout project, such as stormwater culverts, permanent water quality infrastructure, utility relocations, as well as the roadway finish improvements lying within and/or adjacent to the Town right-of-way that includes pedestrian connections, bicycle accommodations, lighting, wayfinding signage, landscape plantings, and other safety and aesthetic treatments. In addition to our key staff that includes: myself, Chris Rundall, Steve Batchelder, Zach Henrichs, Sarah Foster, and Jordan Piaskowy, we have partnered with Fox Tuttle Transportation Group and Steve Tuttle and Bill Fox to ensure that the final deliverable meets all current and future traffic demands. I will serve as project manager and main point of contact. Furthermore, Baseline has reviewed the Town's Professional Services Agreement and agrees to the document.

Baseline's previous roundabout projects such as the Central Park Drive, Ski Time Square/Mt. Werner Circle Roundabout, and NREL's Moss Street Extension, as well as Alameda and C470, and Yale Avenue Roundabout at Indigo at Red Rocks demonstrate our commitment to developing solutions for safety and accessibility, as well as considering the arrival experience to the Town. These projects also demonstrate our personal and professional pride in being a seamless extension of Town staff. We look forward to partnering with the Town and working on the North and South Roundabout Gateways to Town Center Peel Analysis. We acknowledge receipt of the RFP and Attachments and Addenda #1 and #2. As an authorized agent for Baseline Engineering Corporation, please contact me with any questions about my proposal.

Sincerely,



Noah Nemmers, PE
Division Manager
noah@baselinecorp.com

Baseline Engineering Corporation
112 N. Rubey Drive, #210
Golden, CO 80403

PROJECT UNDERSTANDING

Baseline Engineering Corporation (Baseline) will be the lead consulting engineer for the conceptual design for the Erie North and South Roundabout Gateways project. Baseline will be the lead roundabout design consultant and we are teaming with Fox Tuttle Transportation Group (Fox Tuttle), who we have worked with in the past and on current roundabout designs, and who has over 10 years of experience working with the Town of Erie.

The project consists of two key roundabouts, requiring three conceptual design alternatives with a final alternative and an engineer's construction cost estimate on the final concept with input from stakeholders. Each alternative will feature pedestrian connections, bicycle facilities, basic and cost considerations for enhanced landscaping treatments (plantings, fencing, decorative rocks, public art, etc.), lighting and wayfinding signage (including possible interactive digital signs) shall be considered in the concepts and final cost estimate. The concept work will include a drainage evaluation for existing and new drainage infrastructure

as well as the need for permanent water quality infrastructure. Concept design will rely upon a base map compiled from Town GIS, LiDAR data, as-builts, and design drawings. The two roundabouts are assumed to be single lane roundabouts, which must be validated based on current warrants and forecasts based on the Town Transportation Plan showing County Line Road as an eventual 4-lane roadway through the project area.

Coordination with the Town and project stakeholders will be essential starting with the kickoff meeting, and gathering input from the alternatives selection, and final concept proposal. In addition to milestone meetings, we will conduct weekly update calls/meetings of approximately 60 minutes each. Baseline will prepare an engineer's opinion of probable construction cost for the final roundabout and will provide an alternatives analysis during the three alternatives presentation. The concept plans, cost estimate, and preliminary drainage will be standalone documents for each roundabout. Our efforts as an extension of the Town's staff will conclude with a presentation to the Town of Erie Board of Trustees by the end of the second quarter

PROJECT SCHEDULE

BASILINE'S PROJECT TEAM IS FULLY PREPARED TO EXECUTE ON THE ENGINEERING SERVICES REQUIRED BY THE TOWN FOR THE NORTH AND SOUTH ROUNDABOUT GATEWAYS TO TOWN CENTER PEEL ANALYSIS PROJECT. WE WILL CONFIDENTLY DELIVER THREE CONCEPTUAL DESIGNS BY THE END OF MAY AND REFINED PREFERRED ALTERNATIVE WITH ESTIMATE BY THE END OF SECOND QUARTER 2020.

TARGET DATE	MILESTONE
APR 24, 2020	Anticipated Notice to Proceed
APR 27, 2020	Anticipated Full Signed Agreement & Kickoff Meeting with Town Staff
MAY 29, 2020	Conceptual Design Alternatives (Approximately 5 Weeks)
JUNE 2020	Preferred Alternative (Approximately 2 Weeks)
JUNE 2020	Presentation to Town of Erie Board of Trustees

NOTE: We will provide a detailed project schedule to establish deadlines and milestones throughout the entire process. This schedule can be adjusted to expedite or extend if needed. We can discuss in more detail with the Town. Communication will continue throughout the project during each step to ensure the deliverables are in line with the Town's expectations.

ter of 2020 with an explanation of the process for the three conceptual design alternatives, how the preferred conceptual design was determined, and presentation of the comprehensive budget for construction of each roundabout location.

PROJECT APPROACH

We present our project approach below.

■ Conceptual Design Alternatives

Prior to development of the three concept design alternatives, Fox Tuttle will compile and review all relevant studies, reports, and data within the study area. Fox Tuttle will also compile physical data, including existing traffic controls, lane geometry, vehicular and pedestrian/bike accommodations in the study area, as well as future accommodations consistent with the Town Transportation Master Plan. Fox Tuttle will utilize existing data, Town, land use, and regional models to develop 20-year “design year” peak-hour turning movement volumes within the study area for the north and south gateway intersections. ITE trip rates will be used to forecast Town Center trips for the buildout scenario of the “peel” and potential development that will impact volumes and design considerations.

Baseline and Fox Tuttle will work closely, as an extension of the Town staff, and coordinate with stakeholders to develop three concept designs and provide review and recommendations for roundabout/intersection lane geometry, roundabout geometry, traffic controls, transitions from existing roadways, and multimodal traffic accommodations to ensure efficiency and safety for all modes of travel. Baseline and Fox Tuttle will consider specific land use characteristics within the area of each intersection, such as the impact of Aspen Ridge Prep School adjacent to the south gateway and considerations for accommodation of these existing and future uses within the concept designs. Roundabouts will be designed using FHWA and NCHRP standards for modern roundabout design, but we anticipate being highly creative in our approach, to consider potential 5-leg roundabouts, double-roundabouts, and various alignments to fully meet the goals of the Town and stakeholders for this project.

To ensure that concept design alternatives meet the mobility goals of the project, all concepts will be vetted utilizing SIDRA software roundabout models for projected peak hour level of service with 20-year design volumes. These results will also help to

inform the design geometry, including circulatory diameters, entry and exit radii, and roundabout leg alignments. Concept designs will also include accommodations for bicyclist and pedestrian mobility, including locations for on-street and off-street facilities, bike ramps to transition from on-street to off-street facilities, and safe and efficient crossings at these intersections.

For the three conceptual design alternatives, Baseline will provide the following professional engineering services:

1. Review critical resource materials provided by the Town. Fox Tuttle is very familiar with the background traffic data along County Line Road and Baseline will revisit and review all resource materials prior to kickoff.
2. We will attend a kickoff meeting with Town staff via Zoom (due to current social distancing guidelines) to outline design goals, discuss project scope, and determine issues to be further studied.
3. Create an initial base map from Town GIS data, as-builts, design files, and/or LiDAR data. Create a conceptual design for both roundabouts along with all necessary pedestrian access improvements. Considerations for snow plowing, sweeping, and snow storage will also be included.
4. We will utilize AutoCAD civil 3D tools and Auto-Turn analysis to optimize roundabout location for design vehicles, fastest speed tests, and impacts to adjacent properties.
5. The plans will include conceptual drainage improvements and streetscape elements. Include improvements to County Line Road, Maxwell Ave., and Austin Ave. to transition from the existing roadways into the proposed roundabouts.
6. The plans will include an ownership map showing proposed temporary and permanent easements areas and proposed right-of-way.
7. The plans will include conceptual phasing options including demolition of existing infrastructure and traffic control with potential temporary detours to keep County Line Road open at all times.
8. We will prepare a conceptual drainage analysis to evaluate existing and proposed drainage improvements. The approximate sizing for drainage facilities will be identified for each alternative.
9. With completion of the three design alterna-

tives, Baseline and Fox Tuttle will provide considerations (pros and cons) for each alternative to include (at a minimum):

- Safety for all modes,
- Vehicular capacity/efficiency, and
- Bicycle and pedestrian access and mobility
- Impacts to adjacent properties
- Phasing impacts
- Maintenance

Our same team has performed this analysis on recent conceptual roundabout designs for the City of Steamboat Springs.

10. We will present the three alternatives to Town staff and stakeholders using Zoom and can include as many people as is needed to gather feedback.

■ Preferred Alternative

After review of the three conceptual design alternatives, Baseline will prepare a preferred conceptual design, taking into consideration input from Town staff and stakeholders. Fox Tuttle will provide design support for the refinement of the preferred conceptual design, with detailed capacity and queuing analysis to inform geometric details of the north and south gateway intersections. For the preferred alternative, Baseline and Fox Tuttle will provide the following professional engineering services:

1. Prepare a final conceptual design incorporating revisions and suggestions received from Town staff and stakeholders.
2. We will prepare an Engineer's Opinion of Probable Costs based on the preferred alternative conceptual design. The estimate will include easement acquisition needs and utility relocation. We will also address temporary detour paving costs to maintain traffic along County Line Road. Fox Tuttle will provide support to Baseline during this task, to include review of cost estimates, design refinements, and discussion of design details that would impact costs.
3. Baseline's in-house landscape architect will support this task by preparing landscape and irrigation-related costs that will be included in the estimate. The landscape and irrigation costs will be based on similar project experience. We are very familiar with the prevailing construction costs which is critical in creating realistic estimates.

4. We will present the preferred alternative and cost to staff for review and concurrence. It is assumed that this will also be hosted by Baseline via Zoom
5. Refinements to the Preferred Alternative and Cost will be presented to the Town of Erie Board of Trustees by the end of the second quarter of 2020. Fox Tuttle will review meeting materials prepared by Baseline and provide input as needed. Fox Tuttle staff will also attend the Board of Trustees meeting to respond to questions regarding transportation mobility and safety.

■ Deliverables

- Three conceptual alternatives in PDF and AutoCAD versions.
- Conceptual design for the preferred alternative in AutoCAD and PDF formats engineered in conformance with federal, state, and local regulations.
- Engineer's estimate of probable hard costs of the work.
- Conceptual drainage assumptions and calculations

■ Quality Control

Quality control for all our projects begins in the early stages of all our projects is provided through review from multiple levels of company expertise including planning, survey, drainage design, traffic, and ultimately ending with our company president. Our schedule control comes through constant oversight of the various work efforts and our use of Microsoft Project to track tasks in a simple and easy-to-follow Gantt chart. We take great pride in our ability to accurately estimate design costs and evaluate risk through proper levels of contingency. We factor them into our project budgets.

ABILITY TO PERFORM ALL ASPECTS OF THE PROJECT

With the team presented, Baseline has proven roundabout design experience and expertise to complete all aspects of the projects as provided in the Scope of Work within the RFP that includes all of the following:

1. Attend kickoff and progress meetings with Town staff. Prepare meeting agenda and minutes to the meeting along with a list of tasks. Progress meetings are anticipated for the project kickoff, presentation and review of the three conceptual design alternatives, review of the preferred conceptual design, review of Board of Trustee presentation materials, presentation at a Board of Trustee meeting.
2. Prepare three conceptual design alternatives, considering available Town plans, of the north and south roundabout gateways for review with Town staff and stakeholders to include:
 - Property acquisitions, including additional right-of-ways and easements
 - Pedestrian access considerations
 - Defining landscaped areas for cost estimation
 - Considerations for snow plowing, sweeping, snow storage
 - AutoTurn analysis for an appropriately sized vehicle(s)
- Include improvements to County Line Road, Maxwell Ave., and Austin Ave. to transition from the existing roadways into the proposed roundabouts
- Construction phasing plan and traffic control with potential temporary detours to keep County Line Road open at all times
- Demolition of existing infrastructure,
- Identify all utilities that might need to be relocated. Include the cost for Town utilities (water, sanitary and storm)
- Discussion and approximate sizing for drainage facilities needed for each alternative
- Pros and cons for each conceptual design alternative
3. After review of the three conceptual design alternatives, prepare a preferred conceptual design taking into consideration input from Town staff and stakeholders.
4. For the preferred conceptual design, prepare a cost estimate for staff review and concurrence.
5. Prepare and present the analysis which includes the three conceptual design alternatives, how the preferred conceptual design was determined, and comprehensive budget for construction by the end of the second quarter of 2020 to the Town of Erie Board of Trustees.

North Roundabout: Perspective from the northeast side of the roundabout, looking southwest.



South Roundabout: Perspective from the southeast side of the roundabout, looking northwest.



RELEVANT RECENT EXPERIENCE

Baseline has provided design services for multiple roundabout projects throughout the years and are familiar with its requirements in roadway design and policies/procedures that will benefit the North and South Roundabout Gateways to Town Center Peel Analysis.

We have completed a multitude of projects that illustrate our transportation expertise including access permits and utility/special use permits, roadway realignment and rehabilitation, turn lanes, roundabouts, intersection improvements, and signal design.

COMPARABLE PROJECTS

Baseline's portfolio of similar projects with the Town and other governmental entities show that we believe in a high level of professional excellence without sacrificing honesty, integrity, and respect. It also conveys that we are conscientious about dedicating ourselves to the communities we serve, rapidly responding to clients' needs, meeting budget and deadline requirements, and maintaining our reputation for accurately estimating costs. We instill this philosophy in all sub-consultants that we engage on projects.

We have a wide range of experience providing cost estimating services for governmental agencies, districts, towns, cities, and private clients similar in size and scope requested by the Town.

Having worked similar roundabout projects over the past 10 years, we have gained an in-depth familiarity with the prevailing materials and labor markets in the area. We have worked on very similar local infrastructure projects and have a database of unit costs.

We also track cost escalation from year to year from discussions with contractors, suppliers, and vendors to understand trends. We apply these factors to our unit costs when preparing estimates that span one or more construction seasons to ensure they are accounted for in the project budget.

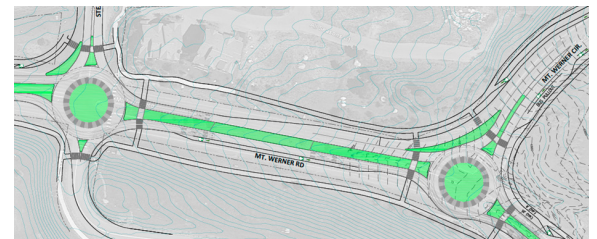
Highlighting our experience that directly relates to conceptual design services and cost estimating for the North and South Roundabout Gateways to Town Center Peel Analysis project, we present similar projects below as testimony to our design merits and budget efficiencies.

BASELINE PROJECT 1: SKI TIME SQUARE/ MT. WERNER CIRCLE/ROUNDAABOUT OWNER: CITY OF STEAMBOAT SPRINGS



Baseline design a 120-ft-diameter roundabout at Ski Time Square and Mt. Werner Circle. We relied on our knowledge of the City's Design Criteria for Roads & Drainage and sidewalks, AASHTO Road Design Standards, as well as experience in applying these standards. We performed work in every key phase starting with schematic design, then into design development, and finally construction documents, while incorporating critical elements to improve the overall arrival experience, such as safety, wayfinding, and right-of-way. Our work involved meetings with tenants/owners from properties adjacent to the roadway to solicit feedback. Challenges we overcame included adjusting the center of the roundabout early in the design to minimize impacts to adjacent properties while conforming to design considerations for the function of the roundabout. The project had an aggressive design and construction schedule as well as budget. The project was complete on schedule and under budget.

BASELINE & FOX TUTTLE PROJECT 2: MT. WERNER ROUNDAABOUTS OWNER: CITY OF STEAMBOAT SPRINGS



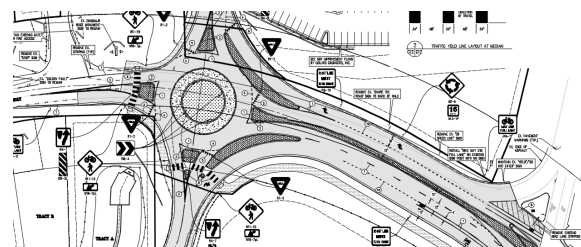
Baseline was recently awarded the Mt. Werner Roundabouts project and is the civil engineer leading the design team for public improvements at two intersections on Mt. Werner Road in Steamboat Springs, the western on/off-ramps of Highway 40 and Steamboat Boulevard. Fox Tuttle is a partner on the project. The project consists of the following key improvements:

- Roundabouts on Mt. Werner Road at Highway 40 on/off-ramps and the Steamboat
- Boulevard intersection.
- Complete Streets features, including pedestrian connections, bicycle facilities, basic and enhanced landscaping treatments (plantings, fencing, decorative rocks, public art, etc.), lighting and wayfinding signage.
- Stormwater culverts and permanent water quality infrastructure.
- Survey collection, including subsurface utility engineering ("SUE") plan in accordance with SB-18-167 and Colorado Department of Transportation (CDOT) requirements.

Fox Tuttle provided traffic analysis and conceptual designs for a "dog bone" system of roundabouts along Mt. Werner Road at Steamboat Blvd. and Mt. Werner Circle. The project was in support of the Arnold Barn (Butterfly Barn) relocation to determine right-of-way needs adjacent to the new barn site. Steve Tuttle led Fox Tuttle's efforts, which involved forecasting vehicular traffic volumes for the Steamboat Springs mountain base area based on previous land use and traffic projections and conceptual designs for both roundabouts. Fox Tuttle's work also involved designing multimodal accommodations through the corridor to be integrated with the roundabouts, including re-purposing of existing roadway width for bicycle lane improvements, detached pedestrian sidewalks, and transit accommodations. Fox Tuttle, with Steve Tuttle as the transportation planning/engineering lead, is currently working with Baseline Engineering and the City on a subsequent project to plan and design roundabouts at the Mt. Werner/US 40 Eastbound Ramp and Mt. Werner/Steamboat Blvd. intersections. Steve's work on the project has included several meetings with City engineering and planning staff to revisit base area land use and traffic projections, including an assessment of development potential at the base area over the 20-year planning horizon. Baseline and Fox Tuttle collaborated to create several conceptual options for the Mt. Werner Steamboat Blvd. roundabout. We created a pros and cons analysis for the City's review. We took into account feedback from the City departments, such as Streets, Parks & Recreation, and Transit while preparing the conceptual design.

BASELINE PROJECT 3: ALAMEDA/C470 ROUNDABOUT

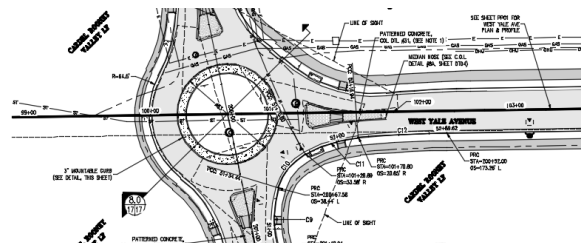
OWNER: STREAM REALTY



The West Alameda Parkway roundabout is located just west of the eastbound on and off ramps from C-470 for access to proposed industrial sites north and south of Alameda Parkway in Jefferson County. The roundabout was designed with WB-67 truck turning movements in mind since there will be a lot of large truck traffic to the industrial sites. A 10-ft-wide regional trail was routed through roundabout at two of the legs and bicycle traffic was accommodated to travel through the roundabout.

PROJECT 4: YALE AVENUE EXTENSION AND ROUNDABOUT AT INDIGO AT RED ROCKS SUBDIVISION

OWNERS: CARDEL HOMES



Indigo at Red Rocks is a 98-acre community located in the City of Lakewood. The site is subject to the Rooney Valley Master Plan and the Rooney Valley Zoning Commission. The goal for this site is to create 79 single-family detached residential lots on the east side of McIntyre and 471 single- and multi-family units west of McIntyre. Baseline provided full entitlement services for a 98-acre vacant property located in Lakewood's Rooney Valley. Baseline's survey division created ALTA/NSPS survey and all base files for future phases.

Currently, our planning and engineering divisions are working together on major site plans and subdivision plats across the site to entitle each of the four phases. Our work includes street design, grading, drainage, and erosion control design, for the approval of a series of subdivision plats (also, produced by Baseline). The four phases include a “superlot” plat for future development projects, a 254-unit townhome site plan, a 199-unit townhome plan and plat, and a plan for a 79-unit, single-family detached and 18-unit, townhome site plan.

As part of this project, Baseline is currently designing a roundabout as part of the road improvements to Yale Avenue and Rogers Street. The roundabout design plans for the intersection of Yale Avenue and Rogers Street include horizontal control plans, curb flowline profiles, storm sewer profiles, cross sections, grading plan, signage and striping plan, and details to Subsurface Utility Engineering plans meeting ACSE 38 standard for QL-B locates to facilitate Baseline Roadway Plans for the Yale Avenue extension adjacent to the Indigo at Red Rock subdivision project. QL-A locates have not been identified as a necessary level at this time.



Examples of Baseline's award-winning Mt. Werner Circle/Ski Time Square roundabout in its design phase, using Infracore.

FOX TUTTLE PROJECT 5: 20TH STREET CORRIDOR STUDY AND DESIGN SUPPORT OWNER: CITY OF GREELEY



Fox Tuttle has provided transportation engineering analysis and design support for the 20th Street arterial corridor (Phases 1 through 5) improvements since 2014. The corridor is being widened from two to five lanes with improvements to multimodal travel including sidewalks, multi-use paths, pedestrian crossings, and on-street bike lanes. Fox Tuttle services have included development of design volumes, Synchro and Rodel roundabout analysis to refine recommended laneage and auxiliary lane needs, functional roadway design, pedestrian and bicycle facility design support and recommendations, roundabout design, and traffic signal design. Fox Tuttle provided a feasibility study to compare traffic signal vs. roundabout safety, operations and cost and provided geometric and functional design for the arterial multi-lane roundabout that was ultimately selected. The recent 74th to 83rd Avenue improvements cost \$5,800,000 and the new multi-lane roundabout at the intersection of 83rd Avenue & 20th Street opened in December 2019 at a cost of approximately \$1,500,000.

“Baseline has been excellent, and all the work done so far has been top flight.” — **Curt Freese, Community Development Director, Town of Berthoud**

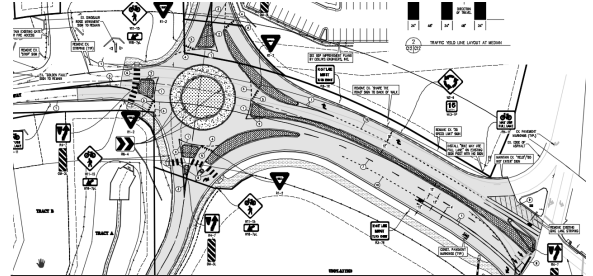
REFERENCES

In this section, we provide our references for similar services who can attest to our performance. We welcome the Town to reach out to our contacts who can attest to our outstanding delivery.



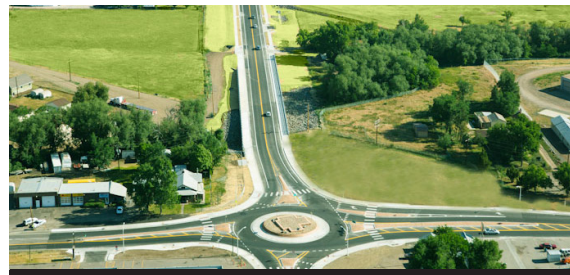
REFERENCE & PROJECT DETAILS - SKI TIME SQUARE/MT. WERNER CIRCLE ROUNDABOUT

CONTACT: DANNY PAUL, PROJECT MANAGER/CIVIL ENGINEER
CITY OF STEAMBOAT SPRINGS
137 10TH STREET, PO BOX 775088
STEAMBOAT SPRINGS, CO 80477
DPAUL@STEAMBOATSPRINGS.NET, (970) 871-821



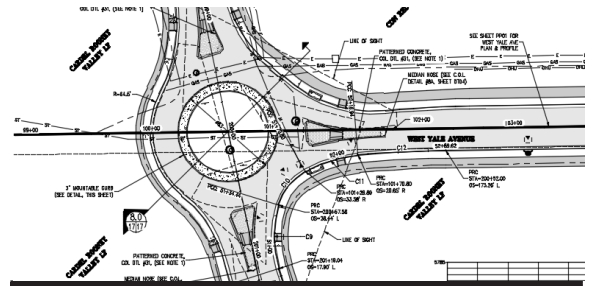
REFERENCE & PROJECT DETAILS - JEFFCO ALAMEDA ROUNDABOUT

CONTACT: HANK BRUMLEY, VICE PRESIDENT
STREAM REALTY
1801 BROADWAY, SUITE 250
DENVER, CO 80202
HANK.BRUMLEY@STREAMREALTY.COM, (303) 957-5300



REFERENCE & PROJECT DETAILS - RESEARCH ROAD EXTENSION

CONTACT: BRIAN LARSEN, PROJECT MANAGER
NREL
15013 DENVER WEST PARKWAY
GOLDEN, CO 80401
BRIAN.LARSEN@NREL.GOV, (303) 384-7617



REFERENCE & PROJECT DETAILS - LAKEWOOD YALE ROUNDABOUT

CONTACT: ROD MICKELBERRY, PRINCIPAL
CARDEL HOMES
9110 E. NICOLS AVE. SUITE 120
CENTENNIAL, CO 80112
RMICKELBERRY@CARDELHOMES.COM, (720) 251-0087

"Dependable, proactive, positive." — Sam Albrecht, Elbert County Manager

SIMILAR MUNICIPAL EXPERIENCE

While no two projects are exactly the same, Baseline provides the following projects, demonstrating our team's past similar experience with similar sized municipalities. The Town benefits from our collective, local expertise for its North and South Roundabout Gateways to Town Center Peel Analysis.

SIMILAR MUNICIPAL CLIENTS

CLIENT

EXPERIENCE

Town of Steamboat Springs

Baseline has worked with the City for over 10 years on various transportation projects that include: Mt. Werner Circle/Ski Time Square Roundabout, Central Park Drive Reconstruction, Oak-Lincoln Alley Reconstruction, Mt. Werner Roundabouts, Complete Streets 4B, Downhill Drive/US 40, and many others. Projects always completed within budget and on time.

Town of Berthoud

With the Town of Berthoud's highest growth rates in the North Front Range Region, Baseline is assisting by providing the Town with general engineering services that includes:

- Reviewing private development plans for conformance with the Town's public infrastructure standards related to roads, water, sanitary sewer, stormwater, landscaping, and parks.
- Owner's representative for the Town's new recreation center.
- Providing construction oversight and inspection of public infrastructure installed by private development, including geotechnical testing and other quality control.
- Assisting with code compliance, planning review, landscape plan review, and other related services.

City of Black Hawk

Baseline contracted with the City of Black Hawk to provide on-call civil and structural engineering services to complete various projects in the City. Projects we assisted through the contract include:

- Gregory Street Parking and Plaza- parking lot improvements at the corner of Gregory and High Streets (detailed site plan, landscape plan, lighting plan, floodplain development permit and drainage analysis, and SRU permit coordination). Civil design services that included flume reconstruction and realignment that is also the new storm drainage for the plaza, surface improvements, utility connections that serve history buildings, development plans of the horizontal components, grading plans with ADA compliance goals, utility plans, landscaping plans, access improvements to the Bobtail Building and parking garage, and plans for the Grand Staircase.
- Highway 119 Waterline - preliminary and final design for the Highway 119 water line between Richard and Mill Streets
- Owners Representative on various build projects.

City of Lakewood

Baseline was contracted to provide surveying and engineering services to the City for drainage design and intersection improvements along Kipling Street at the Hampden, Mississippi and Exposition intersections. We managed the environmental impact study preparation and coordinated with City Public Works for survey control and drainage report submittals to CDOT. Our road/ROW mapping projects on the intersections demonstrate our ability to quickly work with a municipality's point code/layer system and efficiently incorporate the information into AutoCAD. We also performed drainage calculations and prepared plan and profiles for road side ditch improvements along Highway 287 adjacent to the ramps onto Kipling at the interchange.

"Baseline Engineering, Planning and Surveying completed the Survey and the Drainage Engineering for the Kipling signal project. The work and the design report were completed in a timely and professional manner and within budget. Baseline exhibited the attributes of a professional survey and engineering firm." — **Ken Nyhoff, Project Engineer, City of Lakewood**

OUR LOCAL PROJECT TEAM

Baseline's local project team has the professional expertise to perform the engineering services required by the North and South Roundabout Gateways to Town Center Peel Analysis. Our team has successfully completed numerous projects with similar needs.

Civil engineering design services will be primarily spearheaded and completed from Baseline's Golden Headquarters with support from local subconsultants.

In this section, we identify our key team members according to their project roles. Resumes in *Appendix A* provide additional details about why they're critical to successful delivery. Our licensed engineers are registered professional engineers in the State of Colorado.



Noah Nemmers, PE
Project Manager/Point of Contact

Baseline Engineering

Chris Rundall, PE, LEED AP
Assistant Project Manager

Steve Batchelder, PE
Senior Project Engineer

Zach Henrichs, PE
Project Engineer

Sarah Foster, PE, CFM
Project Engineer

Jordan Piaskowy, PE
Project Engineer

Subconsultants

Steve Tuttle, PE, PTOE
Principal Transportation Engineer -
Fox Tuttle Transportation Group

Bill Fox, PE
Principal Transportation Engineer -
Fox Tuttle Transportation Group

*"The City's relationship with the Project Team was a partnership that exceeded our expectations and resulted in a successful project that was completed on schedule and under budget..." — **Danny Paul, EIT, Project Manager and Civil Engineer, City of Steamboat Springs***

PROJECT MANAGER



Noah Nemmers, PE, Baseline Civil Engineer Division Manager/Owner – Noah joined Baseline in 2010. He has 20 years of experience in

large-scale project design and staff management. Noah's broad range of expertise with private and government clients includes overseeing: entitlement processes, engineering design, permitting, land surveys and platting, maintenance of traffic planning, and construction administration. He was QA/QC reviewer on the City of Steamboat Springs' Central Park Drive Reconstruction roundabout project and the Ski Time Square/Mt. Werner Circle Roundabout. Noah assisted on the City of Steamboat's Lower Spring Creek Extension project. His additional experience includes NREL/DOE's Research Road Roundabout in Golden where he worked with CDOT and many other stakeholders. Noah also leads the charge at Baseline for incorporating SUE into our designs. Noah has recent experience with projects involving CDOT partnering and permitting.



Chris Rundall, PE, LEED AP, Baseline Division Manager/Owner – Chris has designed and managed several projects including the Ski Time

Square/Mt. Werner Circle Roundabout, Central Park Drive Reconstruction roundabout project, US Highway 40 Sidewalk Connection, Complete Streets 4B project, Oak Street Sidewalks, as well as the National Renewal Energy Lab (NREL)/Department of Energy (DOE) Research Road Roundabout and Access Road in Golden project. Chris' design work was instrumental in Baseline receiving *Engineering News-Record Mountain States' Best projects Award of merit* for the NREL and Department of Energy's (DOE) Moss Street Extension project in Golden. Chris' design work was instrumental in Baseline receiving *Engineering News-Record Mountain States' Best projects Award of merit* for the NREL and Department of Energy's (DOE) Moss Street Extension project in Golden and the Ski Time/Mt. Werner Roundabout in Steamboat Springs.

PROJECT ENGINEERS



Steve Batchelder, PE, Baseline Project Engineer – Steve joined Baseline in 2008. He has over 20 years of experience working on

an extensive range of land-development projects throughout Colorado. He assisted with Baseline's work on Routt County's Minor Bridges project where Steve performed drainage analysis and prepared plans to replace five drainage structures. He supported on the City of Steamboat Springs' Central Park Drive Reconstruction roundabout project. To improve traffic flow and safety, Steve designed a roundabout and bus pullout relocation for a busy intersection at an existing retail development. He also prepared construction documents for 1,500 feet of roadway and worked with the City to remain within budget by value engineering. Steve also has contributed to several other roundabout projects including: Ski Time Square/Mt. Werner Circle Roundabout, NREL's Moss Street Extension project, Alameda and C470 Roundabout, Yale Avenue Extension and Roundabout, and Red Rocks Drive Roundabout.



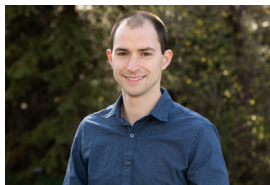
Zach Henrichs, PE, Baseline Project Engineer – Zach assisted on the Central Park Drive Reconstruction project, Oak Street's sidewalk improvements, the US40 South

Hotels Trail Connection, and Rocky Mountain Youth Corps' Field House. He conducted field inspection for the Yampa Well Treatment Facility Improvements project. He's currently assisting with design for US Highway 40 Sidewalk Connection and the Complete Streets 4B projects. Zach is also our local SUE lead and keeps Baseline aligned with updates in legislations and requirements regarding SUE.



Sarah Foster, PE, CFM, Baseline Project Engineer – Sarah is a certified floodplain manager. She has developed well-rounded, diverse, civil engineering experience in a short timeframe. Her expertise spans individual house sites, subdivisions, city sewer

lines, solar panel farms, floodplain mapping, bridge design, town infrastructure improvements, and forest restoration. Working as both a designer and a drafter, Sarah worked on a variety of different civil engineering projects including: floodplain mapping, bridge and culvert design, drainage and floodplain studies, road improvements, local town infrastructure improvements, stormwater designs, subdivision designs, and grading plans.



Jordan Piaskowy, Baseline Project Engineer –

Jordan has extensive experience in site development and infrastructure design of commercial parcels, utilities, roadways, schools, and residential subdivisions. He also determined and coordinated the locations of a stepped building foundation and calculated and designed water quality ponds based on rational calculations and UDFCD criteria. Jordan has completed civil construction documents for multiple projects on the NREL – Golden Campus. Each project contained a combination of drainage evaluation, grading, site layout, and retrofitting existing infrastructure. He has also assisted on CDOT Non-Road projects including Arvada and Franktown Permanent Water Quality Feature Retrofits and a Vehicle Storage Facility Site Design. He completed civil construction documents for an 6-bay vehicle storage facility and sand storage shed on a 2-acre existing site, coordinated building layout and locations to meet CDOT's operational needs, utility setbacks, sight distance, and existing site geometry. Previous to Baseline, Jordan assisted on several Illinois Department of Transportation Projects including the Illiana Tollway Corridor, I-57 at Stunkel Road Interchange, and Traffic Signal Construction for the City of Chicago.

SUBCONSULTANTS

Baseline has selected subconsultants with deep, local knowledge to collaborate with us. Each one has been a reliable partner in their specific disciplines. Our long-term relationships are testimonials to the successful synergies of our firms and our shared philosophy in delivering excellent client service.

TRAFFIC ENGINEERING

Fox Tuttle Transportation Group



Since 2001, the Fox Tuttle Transportation Group (FT) provides high quality transportation consulting services to local governments and private sector clients. Based in Colorado for over a decade, FT only commits to projects that are compatible with their staff's expertise, implement safe streets for all modes of travel, and fit with staff's availability. FT is ready to exceed the Town's expectations during this project and is a committed partner with Baseline and has partnered with Baseline on numerous transportation projects similar to the Town's project.

Fox Tuttle has worked with the Town of Erie for over a decade, providing on-call and project-specific services across a wide range of traffic engineering and transportation planning projects. These projects have showcased their ability to provide timely, high-quality consulting services and project deliverables and to develop a great relationship with Town staff and often work as an extension of staff.

Within the study area, Fox Tuttle has a wealth of experience, including designing the existing traffic signal at Austin Avenue & County Line Road (southern "peel" gateway) as part of the County Line Road – Bonnell Avenue to Telleen Avenue project (2016) and more recently performing traffic analysis and engineering in support of the East County Line Road Master Plan project in conjunction with Boulder County. Through these and other projects for the Town, Fox Tuttle has a keen understanding of the multimodal traffic characteristics of the project area and potential future growth scenarios that will influence concept design alternatives.



Steve Tuttle, PE, PTOE, Fox Tuttle Principal –

Steve has over 22 years of experience across a broad range of private and public-sector projects in Colorado. Steve is among a small group of Professional

Traffic Operations Engineers (PTOE) that have been working for over a decade in Colorado to adapt complete streets standards into land development and corridor projects across the state. Steve has performed numerous single and multi-lane round-

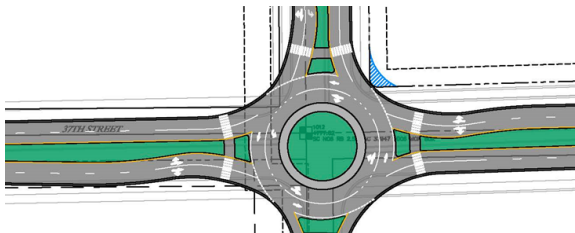
about designs and is well-versed in the use of roundabout capacity and design software applications, including SIDRA, Synchro (HCM6), RODEL, VISSIM and TORUS. He is a graduate of the University of Colorado at Boulder and former US Air Force officer.



Bill Fox, PE, Fox Tuttle

Principal – Bill has been a traffic engineer and transportation planner working with communities throughout Colorado for the past

33 years. His areas of expertise include roadway functional and intersection design, traffic safety studies, pedestrian and bicycle facility planning and design, bus transit and BRT corridor functional design, travel demand forecasting, transportation access planning, neighborhood traffic calming, traffic control plans, and urban neighborhood planning using new urbanism and transit-oriented design principals. One of Bill's strengths is his ability to communicate the results of detailed technical evaluations in a way that is readily understandable to the public. Bill has served as an on-call traffic engineer for the Town of Erie for over 10 years and has worked on numerous projects in Erie as an extension of Town staff. Bill is a graduate of both the University of Colorado at Boulder and Colorado State University.



Fox Tuttle Success Story -35th Street Corridor Study and Design Support, Town of Evans, CO

Fox Tuttle prepared a traffic study to inform the design of the 35th Street corridor (Two Rivers Parkway) between 35th Avenue and 65th Avenue in the Town of Evans. The study involved projection and analysis of 20-year design volumes along the corridor which is planned to be widened from two lanes to five lanes and includes signal or roundabout improvements at three major arterial intersections. Fox Tuttle provided a feasibility study to compare traffic signal vs. roundabout safety, operations and cost and provided geometric and functional design for the arterial multilane roundabout at the intersection of 47th Street & 35th Avenue. Two other intersections will remain with traffic signal improvements which Fox Tuttle is providing final design services for in a later phase.II.



Success Story - Oak-Lincoln Alley Reconstruction Project, Steamboat Springs, CO

Baseline contracted with the City of Steamboat Springs to provide engineering design documents for a six-block reconstruction project of an existing alley in the downtown area. he construction documents included asphalt paving, sanitary sewer replacement, proposed storm sewer, and undergrounding of existing overhead utilities. A detailed engineer's construction cost estimate was provided.

Baseline coordinated closely with the City and multiple utility providers in order to ensure all the utilities would fit within a 20-ft-wide right-of-way given the required clearances. Components of the project required careful coordination with the reconstruction of Highway 40 project and future storm sewer projects. The project final cost was \$106,000 under the Engineers Estimate provided by Project Manager Chris Rundall.



Success Story - Alvarado Road Reconstruction, Clear Creek County, CO

Baseline contracted with Clear Creek County to provide engineering and construction oversight for two miles of Alvarado Road. Included in this project was extensive utility analysis and coordination with utility providers, working with CDOT for licensing agreements and right-of-way exhibits, neighborhood meetings, easement plans, surveying, floodplain mapping, bridge sub-structure design, bridge superstructure coordination, construction plans, bid letting and construction administration. The hydrology of multiple large basins was analyzed to determine flows for culvert sizing.

The first construction phase of the project included an analysis of existing utilities owned by Xcel Energy, Century Link, and Comcast and design of relocation through portions of the project areas. Also included was replacement of a multiple culvert crossing of Clear Creek with a prefabricated steel bridge, was completed in the fall of 2009. Baseline also obtained a Nationwide Permit from USACE on behalf of the County. This project's final construction cost was exactly the same as the Engineers Estimate of \$2.3M provided by Project Manager Chris Rundall.

ABILITY TO MEET SCHEDULES WITHIN BUDGET

We have a wide range of experience providing cost estimating services for governmental agencies, districts, towns, cities, and private clients similar in size and scope requested by the Town.

A Colorado business of 22 years, Baseline has gained an in-depth familiarity with the prevailing materials and labor markets in the area. We have worked on very similar local infrastructure projects and have a database of unit costs.

We also track cost escalation from year to year from discussions with contractors, suppliers, and vendors to understand trends. We apply these factors to our unit costs when preparing estimates that span one or more construction seasons to ensure they are accounted for in the project budget.

COST ESTIMATING EXAMPLES

Oak-Lincoln Alley Reconstruction Project

Engineers Estimate: \$1,176,000

Actual Construction Cost: \$1,070,000

Alvarado Road Reconstruction Project

Engineers Estimate: \$2,300,000

Actual Construction Cost: \$2,300,000

NREL Research Road (Moss Street) Extension Project

Engineers Estimate: \$5,400,000

Actual Construction Cost: \$5,200,000

Central Park Drive Reconstruction Project

Engineers Estimate: \$1,321,000

Actual Construction Cost: \$1,310,000

COMPANY RESOURCES

Baseline has 50 employees who cover our core, four divisions: Infrastructure, Land Surveying, Community Planning, and Water/Wastewater Engineering. Our employees span five Colorado locations: headquarters in Golden, and regional offices in Denver, Loveland, Colorado Springs, and Steamboat Springs. Since 1998, these offices have worked together to spearhead municipal and government projects for:

- Cities of: Aurora, Black Hawk, Brighton, Golden, Greeley, Idaho Springs, Longmont, Louisville, and Steamboat Springs
- Counties of: Clear Creek, Elbert, Jefferson, Lar-

imer, Routt, and Weld

- Towns of: Berthoud, Elizabeth, Evans, Ft. Garland, Kremmling, Parker, Red Cliff, and Windsor
- Federal entities: Department of Energy, National Research Energy Laboratory, Buckley Air Force Base, Fort Carson Army Base, and US Forest Service
- State of Colorado and Colorado Department of Transportation

Our team is flexible and seasoned in juggling multiple client projects. We utilize weekly team meetings and weekly, company-wide resource planning meetings to accommodate the ebb and flow of our work. We assign one project manager to each project even for multi-discipline projects. This procedure assures proper allocation of resources and budget oversight.



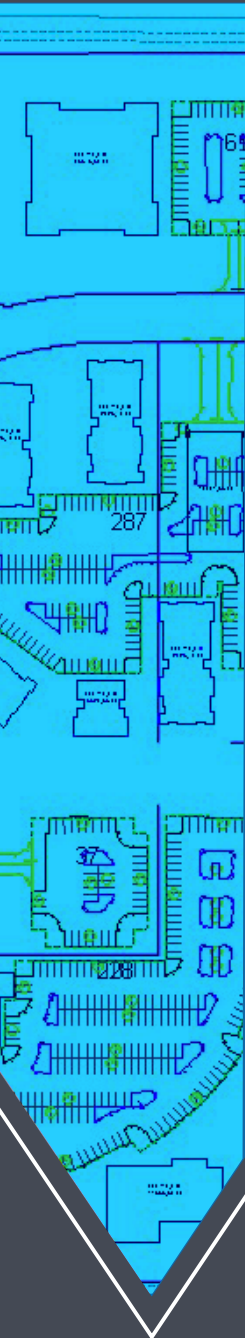
Success Story - Central Park Drive Reconstruction, Steamboat Springs, CO

Another example demonstrating our in-depth knowledge of the City's Design Criteria for Roads & Drainage and sidewalks, as well as experience in applying these standards, was the Central Park Drive reconstruction project. Baseline performed work in every key phase: conceptual design development, preliminary engineering, and construction document design. Our work involved conducting public meetings with tenants/owners from properties adjacent to the roadway to solicit feedback.

Challenges we overcame included allowing more time during the design phase so we could work with private property owners on access, bus stop and sidewalk modifications that would improve safety onto Central Park Drive. This project won the "2016 Best in Colorado for City Street or New Construction" award from the Colorado Asphalt Pavement Association.

FEES

As required by the RFP, our fees can be found in our fee proposal separately.



RESUMES

In *Appendix A*, Baseline provides resumes for team members who will serve the Town of Erie's needs for Engineering Services on its North and South Roundabout Gateways to Town Center Peel Analysis project. Their resumes provide additional details about our public and private clients who have benefited from their expertise.



Success Story - NREL Research Road (Moss Street) Extension, Golden, CO

Baseline is proud of being named an award winner in Engineering News-Record's Transportation Project of the Year for the NREL roundabout project in Jefferson County, Colorado. We contracted with NREL and the DOE to provide final design for the Moss Street Extension project, which is now Research Road. It consists of approximately ½ mile of a new, two-lane collector roadway and bike lanes extending to NREL's campus.

The project required that we analyze and resolve multiple utility conflicts throughout the design process. We handled them using AutoCAD Civil 3D and pothole information that we obtained on the project's existing utilities. Additional project elements included a bridge spanning the Lena Gulch floodplain, multiple, large-box culverts under the roadway to convey flows within two additional separate floodplains. These floodplains bisected the project and required map revision permitting through FEMA. We also managed all surveying phases of the project including, aerial topography, traditional surveying in conjunction with design, and construction staking. Our work supported a right-of-way acquisition process involving five private-property owners.

Baseline was responsible for coordinating the project with the DOE, The Alliance for Sustainable Energy, NREL, Jefferson County, and the Pleasant View Parks and Recreation District. Input and approval came from many agencies including CDOT, the City of Golden, the City of Lakewood, FEMA, Metro Districts, RTD, and XCEL Energy.

Baseline's involvement was from start to finish—transportation planning, field surveying, NEPA Phase work, right-of-way acquisition, hearing representation, construction plans, survey construction staking, and construction oversight. We're proud to say that our engineering cost estimate came in just 3% of the awarded bid.

SUMMARY

In closing, Baseline Engineering Corporation has always taken great pride in not only providing sound and cost-effective design, but also in customer service through our responsiveness and communication skills. We implement a quality assurance/quality control approach on every project. With many procedures in place to exceed the Town of Erie's expectations and achieve our standard of excellence, we have the same high level of technical knowledge and experience as larger firms. However, we feel our exceptional service and local knowledge will be a successful match with the as-needed projects, as well as with Town staff and stakeholders. Thank you again for the opportunity to present our proposal for North and South Roundabout Gateways to Town Center Peel Analysis.

"Baseline is easy to work with, and they understand how to bring project constituents together to expedite a timely and successful project completion." — **Brian Larsen, Project Manager, NREL**

NOAH NEMMERS, PE

Civil Engineering Division Manager

Expertise:

Subsurface Utility Engineering
Master Planning
Infrastructure Planning
Earthwork Analysis
Drainage Design
Roadway Design
Stormwater Management
Hydraulics/Hydrology
QA/QC
Management

Education:

BS Civil Engineering
Southern IL University

Certification:

ACEC - Subsurface Utility
Engineering for Governmental
Agencies

Registrations:

State of Colorado Professional
Engineer No. 39820
State of Wyoming Professional
Engineer No. 12072
State of Idaho Professional
Engineer No. 13007
State of Illinois Professional
Land Surveyor No. 35-003640

Baseline
Engineering
Corporation

112 N. Rubey Drive, #210
Golden, CO 80403
303.940.966
www.baselinecorp.com

***Noah** is a civil engineering manager with over 20 years of experience in large-scale project design and staff management. He is responsible for the site development and infrastructure design of residential subdivisions, industrial parks, commercial parcels, utilities, and roadways that includes subsurface utility engineering. Noah has a broad range of expertise having worked for both private and government clients overseeing entitlement processes, engineering design, permitting, land surveys and platting, maintenance of traffic planning, and construction administration. In addition to engineering, he has a survey background and expertise in the field of land surveying in respect to preparing plats, writing legal descriptions, topographic mapping, and boundary analysis. Recent projects under Noah's supervision include:*

QA/QC, US Highway 40 West Sidewalk Connection-Phase II, Steamboat Springs, CO - Providing quality review of design and engineering services for a 2,200 lf of an 8-ft-wide detached, shared-use concrete sidewalk to connect existing sidewalks along US Highway 40 in Steamboat Springs, that also accounts for the future four-lane improvement of US Highway 40. Designs are currently to SUE level B. By the FOR review, SUE level A will be completed. This federally-funded project is administered by CDOT.

Project Manager, Hance Ranch, Wheat Ridge, CO - Managing professional services for transit-oriented development by RTD Station at G Line. Providing: ALTA survey, outline development plan, final site development plan, civil plans (SUE level B), construction documents, final drainage report, traffic impact report, subdivision plat as well as support at meetings (pre-application, initial/submittal, neighborhood) and hearings.

Project Manager, Indigo at Red Rocks, Lakewood, CO - Managing civil design for a 98-acre community. Work includes street design, grading, drainage, and erosion control design, for the approval of a series of subdivision plats that included SUE-level B. The goal for this site is to create 79 single-family detached residential lots on the east side of McIntyre and 471 single- and multi-family units west of McIntyre.

Project Manager, Thrive Yarrow, Wheat Ridge, CO - Managing project located the northwest corner of Yarrow Street and W. 42nd Avenue, on approximately 4.5 acres, to be developed into 89 attached townhomes. Revising lot lines and associated utility and grading improvements for 34 of the units, earthwork analysis for the entire site and construction administration services through project completion.

Project Manager, Welby Station, City of Thornton, CO - Managed a Brownfield redevelopment on 182 acres by RTD Original Thornton at 88th Station at N Line. Infrastructure master planning, site grading, earthwork balance, and coordination between multiple private utility districts. The project exists within an unmapped floodplain resulting from undetained development upstream of the site. Drainage improvements consisted of outfall improvements with large box culverts in 88th Avenue and open channel analysis through the site using CUHP/SWMPP. The improvements were coordinated with the City of Thornton and Urban Drainage.

Project Manager, NREL/DOE Moss Street Extension & Research Road Roundabout, Golden, CO - Created final drawings for roundabout and roadway extension on this project receiving *Engineering News-Record Mountain States' Best Projects Award of Merit*.

Project Manager, 8th Street Infrastructure Realignment and Rehabilitation Project, Garden City, CO - Managed the realignment and rehabilitation road project. Completed survey, traffic analysis, drainage plan design, and conceptual and final design for realignment and rehabilitation spanning over five City blocks.

Project Manager, MIRADOR/NASCO JV 6TH Avenue Renovation, Phase 1 Re-alignment, Buckley Air Force Base, Aurora, CO - Overseeing design services that require 35%, 65%, 100% design drawings; construction survey services; demolition plans; stormwater plans and design; project manual; QA control plan; record drawings and construction site inspections. Ensuring work is in compliance with Department of Defense Antiterrorism/Force Protection Standards.

CHRIS RUNDALL, PE, LEED AP

Owner/Division Manager

Expertise:

Roadway Design
Residential Subdivision
Commercial Development
Construction Inspection
Hydraulics/Hydrology
Stormwater Facility Design
Floodplain Analysis

Education:

BS Civil Engineering
Texas A&M University

Registrations:

State of Colorado Professional
Engineer No. 40319
LEED AP

Organizations:

American Society of
Civil Engineers

Baseline
Engineering
Corporation

1169 Hilltop Parkway, Suite 204,
PO Box 770152
Steamboat Springs, CO 80477
970.879.1825
www.baselinecorp.com

***Chris** has over 21 years' experience related to land development and construction. It includes civil engineering, construction management, and geotechnical engineering. He has worked in private and public sectors. Before joining Baseline, Chris spent three years as the City of Steamboat Springs' staff civil engineer. He gained extensive experience in review of land development projects as part of the Technical Advisory Committee, project administration, civil design, and construction inspection. This diverse experience is apparent in his design work, which is thorough, practical and consistently results in a quality end product. Following are examples of his expertise:*

Design of Three Culverts (Cow Creek Culvert Design), Routt County, CO –

Project manager for design of three minor structures that convey Cow Creek along County Road 33. Replacement of the three structures included single span structures in compliance with CDOT design specifications.

Mt. Werner Road Roundabouts, Steamboat Springs, CO – Project manager for the design of two intersections on Mt. Werner Road for the western on/off-ramps of Highway 40 and Steamboat Boulevard, consisting of: roundabouts on Mt. Werner Road at Highway 40 on/off-ramps intersections; Complete Streets features, including pedestrian connections, bicycle facilities, basic and enhanced landscaping treatments (plantings, fencing, decorative rocks, public art, etc.), lighting and wayfinding signage; stormwater culverts and permanent water quality infrastructure; and survey collection, including Subsurface Utility Engineering ("SUE") Plan. All roundabout improvements were within the CDOT right-of-way and CDOT FIR and FOR review processes were followed.

US Highway 40 Sidewalk Phase II and III, Steamboat Springs, CO – Project manager for the design, property acquisition, and engineering services for a concrete sidewalk connecting to existing sidewalks with a detached sidewalk along US Highway 40 that accounts for the future four-lane improvement of US Highway 40. Project funded by the Federal Highway Administration Grant and administered by CDOT.

Central Park Drive Reconstruction, Steamboat Springs, CO – Provided conceptual analysis of roadway improvements to this busy, multi-use, public road serving an adjacent shopping center and commercial businesses. Preferred option included roundabout at one intersection along with bicycle and pedestrian improvements and adjustments to roadway geometry. Prepared preliminary and final design for roadway improvements along with a final drainage report. Also coordinated with business owners and City representatives, and performed construction administration. Project was awarded 2016 "Best in Colorado Award" (City Street or New Construction category) from Colorado Asphalt Pavement Association.

Ski Time Square & Mt. Werner Circle Roundabout, Steamboat Springs, CO –

Project manager for the design of a 120-ft-diameter roundabout at Ski Time Square and Mt. Werner Circle. Completed the schematic design, design development, and finally construction documents, while incorporating critical elements to improve the overall arrival experience, such as safety, wayfinding, and right-of-way. The project also involved meetings with tenants/owners from properties adjacent to the roadway to solicit feedback. This project won the 2019 *Engineering News-Record* Mountain State Award of Merit for Best Small Project.

Complete Streets 4B, Steamboat Springs, CO – Project manager for the design for a segment in the arrival corridor of the Mountain Urban Renewal Area that included the roadway finish improvements within the City right-of-way, pedestrian connections, bicycle accommodations, lighting, wayfinding, landscaping, and other safety and aesthetic treatments.

STEVE BATCHELDER, PE

Senior Project Engineer

Expertise:

Roadway Design
Drainage Design
Stormwater Facility
Infrastructure Planning
Water & Wastewater Design
Hydraulics/Hydrology
Commercial Development
Residential Subdivisions
3D Models and Visualization
QA/QC

Education:

BS, Civil Engineering
Colorado School of Mines,
Golden, CO

Registration:

State of Colorado
Professional Engineer
No. 37112

Baseline
Engineering
Corporation

112 N. Rubey Drive, #210
Golden, CO 80403
303.940.966
www.baselinecorp.com

***Steve** has a wide range of transportation, water, wastewater, and land development expertise over the past 20+ years. He has worked on projects throughout Colorado, Arizona, Nevada, North Dakota, and Utah. His eye for detail consistently produces high-quality designs. Following are examples of Steve's project experience:*

Ski Time Square and Mount Werner Circle Roundabout, Steamboat Springs, CO

- Schematic to final design for a busy intersection in Steamboat Springs near the base area of the resort. Built a 3D model of the project during preliminary design to help convey the design intent to the project stakeholders and public in a clear and effective way. Project was awarded 2019 "Award of Merit: Small Project" by ENR Mountain States.

US Highway 40 Sidewalks and Intersection Redesign for CDOT, Steamboat Springs, CO

- Helped manage the creation of construction documents and visualization aids for sidewalk along US Highway 40 and adding signalization at an existing intersection taking into account future expansion of the highway and all the affected property owners.

Squaw Pass Road Improvement Plans, Clear Creek County, CO - 6.7 miles of roadway rehabilitation and widening to provide an uphill bike lane. Preparation of grading, plan and profiles, cross sections, and cost estimate. Coordination with geotechnical engineer for retaining wall and pavement designs.

Central Park Drive Reconstruction, Steamboat Springs, CO - Provided final construction drawings for roundabout on this busy, multi-use, public road serving an adjacent shopping center and commercial businesses. Goals of roundabout were to improve traffic flow and safety, and relocate bus pullout. Project was awarded 2016 "Best in Colorado Award" (City Street or New construction category) from Colorado Asphalt Pavement Association.

8th Street Infrastructure Realignment and Rehabilitation Project, Garden City, CO

- Project engineer for a road realignment and rehabilitation project. Completed traffic analysis, drainage plan design, and conceptual and final design for realignment and rehabilitation spanning over five City blocks. Also created a 3D model of the proposed improvements to aid in visualization for stake holders.

Hance Ranch, Wheat Ridge, CO - Providing road and drainage design for transit-oriented development (11818 W. 52nd Avenue) by RTD Station at G Line. Tasks entail: building West 51st Avenue, widening 52nd Avenue and Tabor Streets and handling off-site drainage that needs to bypass project site.

MIRADOR/NASCO JV 6TH Avenue Renovation, Phase 1 Realignment, Buckley Air Force Base, Aurora, CO

- Carrying out design services that require 35%, 65%, 100% design drawings; traffic design; demolition plans; stormwater plans and design; project manual; QA control plan; record drawings and construction site inspections. To meet Department of Defense Anti-terrorism/Force Protection Standards, performing calculations for vehicle approach and velocity to meet force protection requirements. Utilizing information to design and locate passive barriers.

NREL/DOE Moss Street Extension & Research Road Roundabout, Golden, CO

- Contributor to the design for roundabout and roadway extension on this project receiving *Engineering News-Record Mountain States' Best Projects Award of Merit*.

8th Street Infrastructure Realignment and Rehabilitation Project, Garden City, CO

- Project engineer for a road realignment and rehabilitation project. Completed traffic analysis, drainage plan design, and conceptual and final design for realignment and rehabilitation spanning over five City blocks. Also created a 3D model of the proposed improvements to aid in visualization for stake holders.

ZACHARY HENRICH, PE

Project Engineer

Expertise:

Site Development
Drainage Studies/Reports
Construction Inspection
Residential Subdivisions
Materials Testing
Subsurface Utility Engineering

Education:

MS Geotechnical
Engineering, University
of Wyoming
BS Civil Engineering,
University of Wyoming

Registrations:

State of Colorado
Professional Engineer
No. 54639
State of Wyoming
Professional Engineer
No. 16319

Certifications:

ACI Aggregate Testing
Technician - Level 1
WMTC Testing Technician
- Asphalt Concrete
WMTC Testing Technician
- Soils and Aggregates

Organizations:

Wyoming Engineering
Society

Baseline
Engineering
Corporation

1169 Hilltop Parkway, Suite 204
PO Box 770152
Steamboat Springs, CO 80487
970.879.1825
www.baselinecorp.com

***Zachary** has an extensive civil engineering background. His experience includes geotechnical engineering, construction materials testing, site development, roadway design, infrastructure improvements, and land subdivisions. Prior to joining Baseline, he worked with the Wyoming Department of Transportation to develop testing procedures to determine and estimate the strength of subgrade soils. Since joining Baseline, Zach has worked on a variety of municipal and private projects involving site layout and design, subsurface utility engineering, construction inspection, and drainage impact studies. This broad experience allows him to complete multiple aspects of a project with feasibility, constructability, and efficiency in mind. Following are examples of his projects:*

US Highway 40 West Sidewalk Connection-Phase II, Steamboat Springs, CO - Prepared civil design, property acquisition, and engineering services for a 2,200 lf of an 8-ft-wide detached, shared-use concrete sidewalk to connect existing sidewalks along US Highway 40 in Steamboat Springs. The project is designed to meet ASCE 38-02 Subsurface Utility Engineering Quality Level A for proposed utilities including storm sewer, water main, electrical, and various utility relocations. This project is federally-funded and administered by CDOT for complete PS&E review process.

Routt County Minor Structures, Unincorporated Routt County, CO - Perform hydrologic analysis using HEC-HMS to generate flow values for multiple existing culverts beneath various County Roads for creek crossings. Determine appropriate culvert sizing by producing hydraulic model using HEC-RAS. Write structure selection letter summarizing alternative designs, costs, and solutions. Prepare construction plans and bid documents for culvert replacement.

Oak Street Sidewalk Improvements, Steamboat Springs, CO - Working on a design/build approach for a multi-block, multi-year streetscape project. Project consists of office design for site plans with cost estimates and field design for final grading and extent of work. Scope includes storm sewers, curb and gutter, sidewalk, street lights, and landscaping. Requires constant coordination with City, contractor, and property owners.

Central Park Drive Reconstruction, Steamboat Springs, CO - Conducted construction inspection and oversight for circle intersection improvement and roadway reconstruction project. Completed daily oversight and quality control inspections for construction of earthwork, storm sewer, sidewalk, asphalt paving, etc. Project was awarded 2016 "Best in Colorado Award" (City Street or New Construction category) from Colorado Asphalt Pavement Association.

Pine Grove Road Median Project, Steamboat Springs, CO - Design and field fit median for Pine Grove Road. Identify MUTCD and CDOT requirements for proposed pedestrian crossings mid-block with rectangular rapid flashing beacons. Analysis vehicle turning movements for city bus, and snow removal operations for restricted left turn lanes.

Mt. Werner Road Roundabouts, Steamboat Springs, CO - Prepared detailed conceptual cost estimate and plans for a roundabout intersection at the off ramp of US HWY 40 and Mt. Werner Drive. Detailed conceptual plans are used for aid in budgeting purposes and to provide direction for preliminary design.

US40 South Hotels Trail Connection, Steamboat Springs, CO - Produced concept designs and cost estimates for multiple proposed routes for 2A Trails Committee. Provided concept that outlined trail routes, grading, easement acquisition and wetlands impact. Design details included pedestrian safety and mitigation of visual obstructions through use of innovative landscaping and vertical elevation differences. Completed final design upon Committee's route decision.

SARAH FOSTER, PE, CFM

Project Engineer

Expertise:

Hydraulic Modeling/HEC-RAS
Stormwater Design
Transportation and Roadway
Design
AutoCAD Civil 3D
Floodplain Management
Erosion Control

Education:

BS Civil Engineering,
Montana State University
BS Earth Sciences
Montana State University
Stream Management Academy
- 2019-2020

Registration:

State of Colorado
Professional Engineer No.
0056970

Certifications:

Certified Floodplain Manager
Transportation Erosion Control
Supervisor, Colorado
Temporary Erosion and
Sediment Control Supervisor,
Washington
Low Impact Development
Training
FEMA 101 Training
Floodplain Delineation Using 2D
HEC-RAS, Urban Watersheds
Research Institute

Organizations:

Engineers without Borders
Society of Women Engineers
Tau Beta Pi
Phi Kappa Phi

Sarah has developed a well-rounded, diverse, civil engineering experience in a short time-frame. Her expertise spans individual house sites, subdivisions, city sewer lines, solar panel farms, floodplain mapping, bridge design, town infrastructure improvements, and forest restoration. Following are examples of Sarah's public- and private-sector experience:

Indigo at Red Rocks, Lakewood, CO – As a project engineer, she completed the drainage analysis for the entire 98 acre site and a more detailed analysis for each smaller phase within the project. She calculated the stormwater impacts due to the development and designed a drainage system complete with extended detention basins, storm drain systems, and swales.

Hugo Floodplain, Hugo, CO – As a Certified Floodplain Manager and project engineer, she worked to use all available information and data to map the 100-yr floodplain of the Big Sandy Creek with base flood elevations through the town of Hugo, so that future infrastructure projects could be designed and implemented with minimal threat of flooding.

Encompass Engineering and Surveying – As design engineer, Sarah designed and drafted projects ranging from individual house sites to subdivision and city sewer lines to solar panel farms. Her responsibilities also included many of the water-related aspects of projects, such as watershed basin modeling, drainage reports, floodplain mapping, and downstream analyses. She consistently delivered complete designs and plans for all deadlines, while bringing innovative ideas to projects.

Russell Planning and Engineering – Working as both a designer and a drafter, Sarah worked on a variety of different civil engineering projects including: floodplain mapping, bridge and culvert design, drainage and floodplain studies, road improvements, local town infrastructure improvements, storm water designs, subdivision designs, and grading plans. Additionally, she spent time on projects as the construction administrator, providing input and guidance where needed in the field. She became highly efficient at using AutoCAD, Civil 3D, HEC-RAS, and HydroCAD.

Lewis and Clark National Forest, Montana – Sarah spent a season working for the Forest Service as an engineering technician, where she was part of the road decommissioning crew. Sarah surveyed old logging roads to be obliterated, in order to restore the forest to a more natural state in accordance with the Heritage Act and to restore the natural watershed balance. She helped out on a variety of side projects, including laying, staking, and surveying new trails, fish stocking, exploratory caving, fencing, backcountry cabin restoration, remodeling, demolition, data entry, and office work.

Baseline
Engineering
Corporation

3001 Brighton Boulevard, Suite 770
Denver, CO 80216
303.362.1061
www.baselinecorp.com

Expertise:

Infrastructure Planning
Earthwork Analysis
Drainage Design
Hydraulics/Hydrology
Commercial Development
Residential Subdivisions
Roadway Design
AutoCAD Civil 3D
Microstation GEOPAK

Education:

BS, Civil Engineering
Valparaiso (IN) University
Dale Carnegie Training
Valparaiso (IN) University

Registrations:

State of Colorado
Professional Engineer
No. 53301

Certifications:

CDOT SWMP Preparer

Organizations:

American Society of
Civil Engineers
Tau Beta Pi

Baseline
Engineering
Corporation

112 N. Rubey Drive, #210
Golden, CO 80403
303.940.966
www.baselinecorp.com

***Jordan** has extensive experience in site development and infrastructure design of schools, residential subdivisions, commercial parcels, utilities, and roadways. He has executed responsibilities in producing plansets and calculations. In addition to strong interpersonal skills, Jordan is relied upon to efficiently plan, manage, and meet project deadlines. Following are examples of this experience serving in engineering roles:*

Hance Ranch, Wheat Ridge, CO - Drainage analysis and design of roadway drainage features including off-site runoff analysis of 52nd Avenue.

Jefferson County Fairgrounds, Golden, CO - As project engineer, designed 850-ft of ADA accessible sidewalks and ramps. Determined best route for ADA walks based on cut/fill volumes, client preferences, and site constraints. Created and compiled construction documents.

Big Thompson Fiber Line Permit Acquisition, Estes Park, CO - Subsurface utility engineering plans to cross Colorado Department of Transportation owned roadway with new fiber line. Oversaw and coordinated the survey, utility locates, and final plan set. Plan set required for permit outlined the location of the existing utilities and the proposed underground fiber line.

MIRADOR/NASCO JV 6TH Avenue Renovation, Phase 1 Realignment, Buckley Air Force Base, Aurora, CO - Designed and adjusted roadway alignments and profiles to achieve client's unique goals. Carrying out design services that require 35%, 65%, 100% design drawings; traffic design; demolition plans; stormwater plans and design; project manual; QA control plan; record drawings and construction site inspections. To meet Department of Defense Antiterrorism/Force Protection Standards, performing calculations for vehicle approach and velocity to meet force protection requirements. Utilizing information to design and locate passive barriers.

Oak Street Sidewalk Improvements, Steamboat Springs, CO - Created preliminary plans for addition of 1,800 feet of new sidewalks. Confirmed sidewalks were compliant with City design standards and communicated deviations along with suggested alternatives.

CDOT Permanent Water Quality Feature Retrofits - Arvada, CO & Franktown, CO - Designed and produced construction drawings for 2 separate CDOT maintenance facilities to retroactively meet local MS4 water quality standards. Proprietary treatment devices were exhaustively researched to determine which product would provide the required treatment and minimize the disturbance to the active maintenance operations. A different solution was proposed for both sites as dictated by site geometry, operational layout, and existing grading challenges.

CDOT Vehicle Storage Facility Site Design - Wolcott, CO - Civil construction documents for an 6-bay vehicle storage facility and sand storage shed on a 2-Arce existing site. Coordinated building layout and locations to meet CDOT's operational needs, utility setbacks, sight distance, and existing site geometry. Evaluated sight distance and turning templates for snowplows to safely enter and exit the site. Incorporated the existing site grading and items to remain into the proposed grading and layout of the new facilities. Designed permanent water quality feature to meet the local MS4 requirements for stormwater runoff leaving the site.

Illinois Department of Transportation's I-74 Corridor, Moline, IL - Calculated watershed areas, flow rates and inlet spacing. Prepared, compiled and edited plan sets as well as incorporated client comments.

Illinois Department of Transportation & Developer's Illiana Tollway Corridor, Wilmington, IL - Optimized interchange geometry and profiles to save on construction costs. Managed creation and updates of cross sections to reflect layout and profile changes.

Steve Tuttle, P.E., PTOE Principal



Previous Work Experience:

- *Senior Engineer*
Short Elliott Hendrickson, Inc.
Boulder, CO (1997-2005)
- *Civil Engineering Officer*
United States Air Force
Kelly AFB, TX (1994-1997)

Licenses:

- Professional Engineer (CO)
- Professional Traffic Operations Engineer

Professional Affiliations:

- Institute of Transportation Engineers (ITE)
- American Society of Civil Engineers (ASCE)

Education:

- B.S., Civil Engineering
University of Colorado, 1994

Technical Training and Proficiencies:

- Rodel, SIDRA
- Synchro/SimTraffic, HCS, VISSIM
- AutoCAD, TORUS, AutoTURN

Awards:

- 2003 ITE Pedestrian Project Award for Safety (as project manager for City of Boulder Crosswalk Compliance and Treatment Implementation)

Steve Tuttle has over 22 years of experience across a broad range of private and public-sector projects in Colorado. Steve is among a small group of Professional Traffic Operations Engineers (PTOE) that have been working for over a decade to adapt sustainable complete street standards into project across Colorado. Steve has received awards from ITE for his leading-edge work with the City of Boulder on Pedestrian Crosswalk Installation Guidelines. He is a graduate of the University of Colorado at Boulder and former US Air Force officer.

Traffic Signal and Roundabout Design

20th Street & 83rd Avenue Multilane Roundabout Design – City of Greeley
Mt. Werner Road “Dog Bone” Roundabout Concept Design – Steamboat Springs
Horsetooth & Ziegler Multilane Roundabout Modifications – City of Fort Collins
Sterling Ranch Filing 1 Roundabout Designs – Douglas County
US 287 & Isabelle Rd – Boulder County & CDOT
104th Avenue & Belle Creek Signal Relocation – City of Commerce City & CDOT
SH 119 & US 287 – City of Longmont & CDOT
US 36 & McConnell Drive/Stone Canyon Drive – Town of Lyons & CDOT
Mason Corridor (MAX) BRT Signal and Preemption Design – City of Fort Collins
County Line Signals (2) – Town of Erie
Broadway – 16th to 18th Signals (4) – City of Boulder
SH 257 & 37th Street – City of Greeley & CDOT
US 34 & 83rd Avenue Interim and Final Signal Designs - City of Greeley & CDOT
35th Avenue & 16th Street- City of Greeley
18th Street & Wazee Street Signal Modifications – City & County of Denver

Multimodal Operational and Safety Studies

7th Street & Main Street Operational Assessment – Town of Windsor
SH 119 & SH 52 Intersection Evaluation and Long-Range Study – Boulder County
65th Avenue Corridor Improvements – City of Greeley/City of Evans & CDOT
Citywide Signalized Intersection Operations (Synchro) - City of Boulder
Pedestrian Crossing Treatment Installation Guidelines – City of Boulder
Corridor Travel Time and Delay Studies – City of Boulder
BRT Corridor Laneage Evaluations – City of Boulder
Monarch School Campus Transportation Study – City of Louisville

Multimodal Corridor Planning and Design

20th Street Corridor Design - City of Greeley
County Road 39 Relocation Study – Weld County
Downtown Westminster Mobility Plan – City of Westminster
Civic Center Transit District Plan – City & County of Denver
Denver Moves – Broadway – City & County of Denver
Broadway-Euclid Transportation Improvements – City of Boulder
Baseline & Broadway Underpass Project – City of Boulder
Multimodal Traffic Signal Practices – City of Boulder
Sterling Ranch Roadway Design Standards – Douglas County
Denver Protected Bike Lane Projects – City & County of Denver
Dartmouth and Raleigh Bike Lane Evaluations and Design – City & County of Denver
Suniga Road Design – City of Fort Collins
East County Line Road Master Plan – Boulder County

VISSIM Microsimulation Projects

Denver Moves – Broadway, City & County of Denver
Baseline Road Underpass – City of Boulder
Civic Center Transit District Plan – City & County of Denver
Multimodal Corridor Evaluations – City of Boulder
30th and Colorado Corridors – City of Boulder



William C. Fox, P.E.

Principal



Previous Work Experience:

- *Principal* - TransPlan Associates
Boulder, CO (1987-2001)
- *Project Engineer* - KKBNA
Wheat Ridge, CO (1986-1987)

Licenses:

- Professional Engineer
State of Colorado

Professional Affiliations:

- Institute of Transportation Engineers (ITE)
- Transportation Research Board
- Pedestrian Committee
- National Committee on Uniform Traffic Control Devices (Bicycle Technical Committee)
- American Society of Civil Engineers (ASCE)
- National Academy of Forensic Engineers (NAFE)
- National Society of Professional Engineers (NSPE)
- Society of Automotive Engineers (SAE)

Education:

- B.S., Civil Engineering
University of Colorado, 1986
(with Special Honors)
- B.S., Forestry
Colorado State University, 1978

Bill Fox has supported transportation planning and engineering projects in Colorado for over 30 years. His unique background in a broad range of transportation engineering and planning has been critical in gaining consensus on transportation plans statewide. Bill is best known for presenting transportation engineering in a non-technical format that is understandable to a wide range of audiences. Bill has been a longstanding member of the NCUTCD Bicycle Technical Committee. He is a graduate of Colorado State University and the University of Colorado at Boulder.

Multimodal Corridor Planning and Design

East Arapahoe Transportation and BRT Plan – Boulder, CO
SH 7 Bus Rapid Transit Station Area Planning – Brighton to Boulder, CO
Junction Place Shared Street Design – Boulder, CO
SH 50 (Tomichi Avenue) Access Control Plan – Gunnison, CO
Colorado Avenue and 18th Street Multimodal Redesign – University of Colorado
30th Street and Colorado Avenue Corridor Project – Boulder, CO
College Avenue Transportation Study – Ft. Collins, CO
SH 82 Multi-Use Path and Bridge Capacity Evaluation – Aspen, CO
Hallam Street Neighborhood Bikeway Before and After Study – Aspen, CO
Pedestrian Hybrid Beacon “HAWK” Evaluation – City of Boulder and University of Colorado

Parking and Transportation Demand Management (TDM) Studies

Downtown Boulder Parking – Central Area General Improvement Dist. – Boulder, CO
Boulder Junction Parking and TDM Monitoring – Boulder Junction Access District. – Boulder, CO
City-wide Parking Code Update – City of Boulder
City-wide Parking Code Update – City of Westminster
Boulder Civic Campus Parking Management and TDM Plan – Boulder, CO

On-Call Traffic Engineering Support and Multimodal Design Standard Development

Served as the on-call traffic engineer in the following Colorado communities: Crested Butte, Eagle, Erie, Gunnison County, Mead, Mount Crested Butte, Lafayette, Windsor
Traffic Engineering and Planning Support for the Belmar Project – Lakewood, CO
Multimodal Design Standard Development – Boulder County, CO
Transportation Design Standard Updates – Boulder, CO
Pedestrian Crossing Treatment Guidelines – Boulder, Erie, Parker, and Windsor CO

Traffic Impact Studies and Area Plan Development

Boulder Community Hospital Expansion Traffic Study –Boulder, CO
Alpine/Balsam Area Plan Traffic and Parking Study – Boulder, CO
Hay Meadow Traffic Study – Eagle, CO
Steamboat 700 Traffic Study – Steamboat Springs, CO
West Steamboat Neighborhood Traffic Study – Steamboat Springs, CO
Commerce Place Traffic Study – Commerce City, CO

Access Studies

Williams Village Campus Transit Access Study – University of Colorado, Boulder, CO
Commerce City Station Access Study – Commerce City, CO
Poudre Valley Heath, Harmony Campus Access Study – Fort Collins, CO
Oil Well Access Studies – Routt County, CO

Neighborhood Traffic Management

Developed traffic calming programs and/or neighborhood traffic management plans in the following Colorado communities: Aurora, Boulder, Broomfield, Castle Rock, Denver, Douglas County, Eagle, Englewood, Glenwood Springs, Lakewood, Longmont, Superior and Westminster



Transportation planning and engineering for people. Data driven. Safety first.