

**CITY OF LITTLETON
AGREEMENT FOR PROFESSIONAL SERVICES**

THIS PROFESSIONAL SERVICES AGREEMENT (“Agreement”) is entered into on _____, 2024 by and between **MICHAEL BAKER INTERNATIONAL, INC** whose business address is 100 AIRSIDE DR., MOON TOWNSHIP, PA 15108 (the “Contractor”) and the **CITY OF LITTLETON, COLORADO** (“City”), a Home Rule municipality of the State of Colorado. The City and the Contractor may be collectively referred to as the “Parties.”

RECITALS AND REPRESENTATIONS

WHEREAS, the City needs for certain services to be performed as described in this Agreement;
and

WHEREAS, the Contractor represents that it has the skill, ability, and expertise to perform the services described in this Agreement; and

WHEREAS, the Contractor represents that it can perform the services described in this Agreement within the deadlines provided in this Agreement; and

WHEREAS, the Parties desire to enter into this Agreement.

NOW, THEREFORE, in consideration of the benefits and obligations of this Agreement, the Parties mutually agree as follows:

1.0 SERVICES AND PERFORMANCE

As directed by the City and under the management of the City Manager, the Contractor shall provide the services described in **Exhibit A** (the “Services”). Exhibit A is incorporated herein in its entirety. The City may request a change or changes in the Services. Any changes, which may include additions to scope, fee and schedule, that are mutually agreed upon between the City and the Contractor shall be made in writing and upon execution by both Parties shall become an amendment to this Agreement.

2.0 INDEPENDENT CONTRACTOR

The Contractor shall perform the Services as an independent contractor and shall not be deemed by virtue of this Agreement to have entered into any partnership, joint venture, employer/employee or other relationship with the City other than as a contracting party and independent contractor. The City shall not be obligated to secure, and shall not provide, any insurance coverage or employment benefits of any kind or type to or for the Contractor or the Contractor’s employees, sub-consultants, contractors, agents, or representatives, including coverage or benefits related but not limited to: local, state, or federal income or other tax contributions; insurance contributions (e.g., FICA); workers’ compensation; disability, injury, or health; professional liability insurance, errors and omissions insurance; or retirement account contributions.

3.0 STANDARD OF PERFORMANCE

In performing the Services, the Contractor shall use that degree of care, skill, and professionalism ordinarily exercised under similar circumstances by members of the same profession practicing in the State of Colorado. The Contractor represents to the City that the Contractor is, and its employees performing such Services are, properly licensed and/or registered within the State of Colorado for the performance of the Services (if licensure and/or registration is required by applicable law) and that the Contractor and employees possess the skills, knowledge, and abilities to perform the Services in accordance with this Agreement.

- 3.1 The Contractor shall become acquainted with the available information related to the Services. The Contractor is obligated to affirmatively request from the City such information that the Contractor, based on the Contractor's professional experience, should reasonably expect is available and which would be relevant to the performance of the Services.
- 3.2 The Contractor shall promptly inform the City concerning ambiguities and uncertainties related to the Contractor's performance that are not addressed by the Agreement.
- 3.3 The Contractor shall provide all of the Services required in the Agreement in a timely and professional manner, in accordance with the Schedule.
- 3.4 The Contractor shall promptly comply with any written request for the City or any of its duly authorized representatives to reasonably access, review and audit any books, documents, papers, and records of the Contractor that are pertinent to the Contractor's performance under this Agreement for the purpose of the City performing any review of the Services.
- 3.5 The Contractor shall comply with federal, state and local laws, ordinances, regulations, and resolutions that are applicable to the services to be performed.
- 3.6 The Contractor shall be responsible at the Contractor's expense for obtaining, and maintaining in a valid and effective status, all licenses and permits necessary to perform the Services unless specifically stated otherwise in this Agreement.

4.0 COMPENSATION

Following execution of this Agreement by the City, the City shall compensate the Contractor in accordance with Section 3 of Exhibit A. Any increases or modification of compensation shall be subject to the approval of the City and shall be made only by a written amendment of the Agreement executed by both Parties.

5.0 TERM AND TERMINATION

- 5.1 **Unilateral Termination.** This Agreement may be terminated by either Party for any or no reason upon written notice delivered to the other at least ninety (90) days prior to termination. In the event of the exercise of the right of unilateral termination as provided by this paragraph:

The Contractor shall continue to provide the Services under this Agreement until the ninety (90) day notice period has passed, unless otherwise provided in any notice of termination delivered by the City; and

All finished or unfinished documents, data, studies and reports prepared by the Contractor pursuant to this Agreement shall be delivered by the Contractor to the City and shall become the property of the City.

- 5.2 **Termination for Non-Performance.** Should a Party to this Agreement fail to materially perform in accordance with the terms and conditions of this Agreement, this Agreement may be terminated by the performing Party if the performing Party first provides written notice to the non-performing Party which notice shall specify the non-performance, provide both a demand to cure the non-performance and reasonable time to cure the non-performance, and state a date upon which the Agreement shall be terminated if there is a failure to timely cure the non-performance. For purpose of this Subsection, “reasonable time” shall be not less than thirty (30) business days or other mutually agreed upon time period. Provided that notice of non-performance is provided in accordance with this Subsection, nothing in this Subsection shall prevent, preclude, or limit any claim or action for default or breach of contract resulting from non-performance by a Party.

- 5.3 **Mutual Termination.** The City and the Contractor may agree in writing to mutually terminate this Agreement.

- 5.4 **City Unilateral Suspension of Services.** The City may suspend the Contractor’s performance of the Services at the City’s discretion and for any reason by delivery of written notice of suspension to the Contractor which notice shall state a specific date of suspension. Upon receipt of such notice of suspension, the Contractor shall immediately cease performance of the Services on the date of suspension except: (1) as may be specifically authorized by the notice of suspension or after discussion between the parties and documented in a revised suspension notice (e.g., to secure the work area from damage due to weather or to complete a specific report or study); or (2) for the submission of an invoice for Services performed prior to the date of suspension in accordance with this Agreement.

- 5.5 **Reinstatement of Services Following City’s Unilateral Suspension.** The City may at its discretion direct the Contractor to continue performance of the Services following suspension. If such direction by the City is made within thirty (30) days of the date of suspension, the Contractor shall recommence performance of the Services in accordance with this Agreement. If such direction to recommence suspended Services is made more than thirty-one (31) days following the date of suspension, the Contractor may elect to: (1) provide written notice to the City that the suspension is considered a unilateral

termination of this Agreement; or (2) recommence performance in accordance with this Agreement; or (3) if suspension exceeded sixty (60) consecutive days, request from the City an equitable adjustment in compensation or a reasonable re-start fee and, if such request is rejected by the City, to provide written notice to the City that such suspension and rejection of additional compensation is considered a unilateral termination of this Agreement. Nothing in this Agreement shall preclude the Parties from executing a written amendment or agreement to suspend the Services upon terms and conditions mutually acceptable to the Parties for any period of time.

- 5.6 **Delivery of Notice of Termination.** Any notice of termination permitted by this Section shall be addressed to the person signing this Agreement on behalf of the Contractor or to the City Manager at the address shown below or such other address as either Party may notify the other of and shall be deemed given upon delivery if personally delivered, or forty-eight (48) hours after deposited in the United States mail, postage prepaid, registered or certified mail, return receipt requested.

6. INSURANCE

- 6.1 **Insurance Generally.** The Contractor shall obtain and shall continuously maintain during the term of this Agreement insurance of the kind and in the minimum amounts specified (“Required Insurance”):

A. Worker’s Compensation Insurance in the minimum amount required by applicable law for all employees and other persons as may be required by law. Such policy of insurance shall be endorsed to include the City as a Certificate Holder.

B. Comprehensive General Liability insurance with minimum combined single limit for each occurrence of One Million Dollars (\$1,000,000.00) and of One Million Dollars (\$1,000,000.00) aggregate. The policy shall be applicable to all premises and all operations of the Contractor. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, independent contractors, products, and completed operations. The policy shall contain a severability of interests provision. Coverage shall be provided on an “occurrence” basis as opposed to a “claims made” basis. Such insurance shall be endorsed to name the City as a Certificate Holder and name the City, and its elected and appointed officials, officers, employees and agents as additional insured parties.

C. Professional Liability (errors and omissions) Insurance with a minimum limit of coverage of One Million Dollars (\$1,000,000.00) per claim and annual aggregate. Such policy of insurance shall be obtained and maintained for one (1) year following completion of all Services under this Agreement.

The Required Insurance shall be procured and maintained with insurers with an A- or better rating as determined by Best’s Key Rating Guide. All Required Insurance shall be

continuously maintained to cover all liability, claims, demands, and other obligations assumed by the Contractor.

6.2 **Additional Requirements for Insurance.** In addition to specific requirements imposed on insurance by this Section and its subsections, insurance shall conform to all of the following:

A. All policies of insurance shall be primary insurance, and any insurance carried by the City, its officers, or its employees shall be excess and not contributory insurance to that provided by the Contractor; provided, however, that the City shall not be obligated to obtain or maintain any insurance whatsoever for any claim, damage, or purpose arising from or related to this Agreement and the Services provided by the Contractor. The Contractor shall not be an insured party for any City-obtained insurance policy or coverage.

B. The Contractor shall be solely responsible for any deductible losses.

C. For Required Insurance, no policy of insurance shall contain any exclusion for bodily injury or property damage.

D. Contractor shall provide the City with notice no less than thirty (30) days prior to any cancellation, termination, or a material change in such policy.

6.3 **Failure to Obtain or Maintain Insurance.** The Contractor's failure to obtain and continuously maintain policies of insurance in accordance with this Section and its subsections shall not limit, prevent, preclude, excuse, or modify any liability, claims, demands, or other obligations of the Contractor arising from performance or non-performance of this Agreement. Failure on the part of the Contractor to obtain and to continuously maintain policies providing the required coverage, conditions, restrictions, notices, and minimum limits shall constitute a material breach of this Agreement upon which the City may immediately terminate this Agreement, or, at its discretion, the City may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by the Contractor to the City immediately upon demand by the City, or at the City's sole discretion, the City may offset the cost of the premiums against any monies due to the Contractor from the City pursuant to this Agreement.

6.4 **Insurance Certificates.** Prior to commencement of any Services under this Agreement, the Contractor shall submit to the City certificates of insurance for all Required Insurance. Insurance limits, term of insurance, insured parties, and other information sufficient to demonstrate conformance with this Section and its subsections shall be indicated on each certificate of insurance. The City may request and the Contractor shall provide within three (3) business days of such request a current certified copy of any policy of Required Insurance and any endorsement of such policy. The City may, at its election, withhold payment for Services until the requested insurance policies are received and found to be in accordance with the Agreement.

7.0 OWNERSHIP OF DOCUMENTS

Any work product, materials, and documents produced by the Contractor pursuant to this Agreement shall become property of the City upon delivery and shall not be made subject to any copyright unless authorized by the City. Other materials, methodology and proprietary work used or provided by the Contractor to the City not specifically created and delivered pursuant to the Services outlined in this Agreement may be protected by a copyright held by the Contractor and the Contractor reserves all rights granted to it by any copyright. The City shall not reproduce, sell, or otherwise make copies of any copyrighted material, subject to the following exceptions: (1) for exclusive use internally by City staff and/or employees; or (2) pursuant to a request under the Colorado Open Records Act, § 24-72-203, C.R.S., to the extent that such statute applies; or (3) pursuant to law, regulation, or court order. The Contractor waives any right to prevent its name from being used in connection with the Services.

8.0 COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT AND OTHER LAWS CONCERNING ACCESSIBILITY

Consultant covenants that all designs, plans and drawings produced or utilized under this Agreement will address and comply with all federal, state and local laws and regulations regarding accessibility standards for persons with disabilities or environmentally limited persons including the following: the Americans with Disabilities Act of 1990, 42 U.S.C. § 12101 *et seq.* and the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities ("ADAAG"); the Architectural Barriers Act, Pub. L. 90-480 (1968), and the Uniform Federal Accessibility standards ("UFAS").

If the above standards are inconsistent, Consultant must assure that its designs, plans, and drawings comply with the standard providing the greatest accessibility. Also Consultant must, prior to construction, review the plans and specifications to insure compliance with these standards. If Consultant fails to comply with the foregoing standards, the City may, without limiting any of its remedies set forth in Section 9.2 or otherwise available at law, in equity or by statute, require Consultant to perform again, at no expense, all Services required to be reperformed as a direct or indirect result of such failure.

9.0 CONFLICT OF INTEREST

The Contractor shall refrain from providing any services to other persons, firms, or entities that would create a conflict of interest for the Contractor with regard to providing the Services pursuant to this Agreement. The Contractor shall not offer or provide anything of benefit to any City official or employee that would place the official or employee in a position of violating the public trust as provided by C.R.S. § 24-18-109, as amended, or any City-adopted Code of Conduct or ethical principles.

10.0 REMEDIES

In addition to any other remedies provided for in this Agreement, and without limiting its remedies available at law, the City may exercise the following remedial actions if the Contractor substantially fails to perform the duties and obligations of this Agreement. Substantial failure to perform the duties and

obligations of this Agreement shall mean a significant, insufficient, incorrect, uncorrected or improper performance, activities or inactions by the Contractor. The remedial actions include:

- A. Suspend Contractor's performance pending necessary corrective actions as specified by the City;
- B. Withhold payment to the Contractor until the necessary Services or corrections in performance are satisfactorily completed; and/or
- C. Deny payment for those Services which have not been satisfactorily performed, and which, due to circumstances caused by the Contractor, cannot be performed, or if performed would be of no value to the City; and/or
- D. Recover actual and/or consequential damages; and/or
- E. Terminate this Agreement.

The foregoing remedies are cumulative and the City, at its sole discretion, may exercise any or all of the remedies individually or simultaneously.

11.0 MISCELLANEOUS PROVISIONS

- 11.1 **No Waiver of Rights.** A waiver by any Party to this Agreement of the breach of any term or provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach by either Party. The City's approval or acceptance of, or payment for, Services shall not be construed to operate as a waiver of any rights or benefits to be provided under this Agreement. No covenant or term of this Agreement shall be deemed to be waived by the City except in writing signed and any written waiver of a right shall not be construed to be a waiver of any other right or to be a continuing waiver unless specifically stated.
- 11.2 **No Waiver of Governmental Immunity.** Nothing in this Agreement shall be construed to waive, limit, or otherwise modify any governmental immunity that may be available by law to the City, its elected and appointed officials, employees, contractors, or agents, or any other person acting on behalf of the City and, in particular, governmental immunity afforded or available pursuant to the Colorado Governmental Immunity Act, Title 24, Article 10, Part 1 of the Colorado Revised Statutes.
- 11.3 **Equal Employment Opportunity.** The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure applicants are employed, and employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

- 11.4 **Binding Effect.** The Parties agree that this Agreement, by its terms, shall be binding upon the successors, heirs, legal representatives, and assigns; provided that this Section shall not authorize assignment.
- 11.5 **No Third Party Beneficiaries.** Nothing contained in this Agreement is intended to or shall create a contractual relationship with, cause of action in favor of, or claim for relief for, any third party, including any agent, sub-consultant or sub-contractor of the Contractor. Absolutely no third party beneficiaries are intended by this Agreement. Any third-party receiving a benefit from this Agreement is an incidental and unintended beneficiary only.
- 11.6 **Article X, Section 20/TABOR.** The Parties understand and acknowledge that the City is subject to Article X, § 20 of the Colorado Constitution (“TABOR”). The Parties do not intend to violate the terms and requirements of TABOR by the execution of this Agreement. It is understood and agreed that this Agreement does not create a multi-fiscal year direct or indirect debt or obligation within the meaning of TABOR and, therefore, notwithstanding anything in this Agreement to the contrary, all payment obligations of the City are expressly dependent and conditioned upon the continuing availability of funds beyond the term of the City's current fiscal period ending upon the next succeeding December 31. Financial obligations of the City payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available in accordance with the rules, regulations, and resolutions of the City, and other applicable law. Upon the failure to appropriate such funds, this Agreement shall be terminated.
- 11.7 **Governing Law, Venue, and Enforcement.** This Agreement shall be governed by and interpreted according to the law of the State of Colorado. Venue for any action arising under this Agreement shall be in the appropriate court for Arapahoe County, Colorado. To reduce the cost of dispute resolution and to expedite the resolution of disputes under this Agreement, **the Parties hereby waive any and all right either may have to request a jury trial in any civil action relating primarily to the enforcement of this Agreement.** The Parties agree that the rule that ambiguities in a contract are to be construed against the drafting party shall not apply to the interpretation of this Agreement.
- 11.8 **Survival of Terms and Conditions.** The Parties understand and agree that all terms and conditions of the Agreement that require continued performance, compliance, or effect beyond the termination date of the Agreement shall survive such termination date and shall be enforceable in the event of a failure to perform or comply.
- 11.9 **Assignment and Release.** All or part of the rights, duties, obligations, responsibilities, or benefits set forth in this Agreement shall not be assigned by the Contractor without the express written consent of the City. Any written assignment shall expressly refer to this Agreement, specify the particular rights, duties, obligations, responsibilities, or benefits so assigned. No assignment shall release the Contractor from performance of any duty, obligation, or responsibility unless such release is clearly expressed in such written document of assignment.

- 11.10 **Headings.** The captions in this Agreement are for the convenience and reference of the Parties and are not intended in any way to define, limit or describe the scope or intent of this Agreement.
- 11.11 **Integration and Amendment.** This Agreement represents the entire and integrated agreement between the City and the Contractor and supersedes all prior negotiations, representations, or agreements, either written or oral. Any amendments to this Agreement must be in writing and be signed by both the City and the Contractor.
- 11.12 **Severability.** Invalidation of any of the provisions of this Agreement or any paragraph, sentence, clause, phrase, or word herein or the application thereof in any given circumstance shall not affect the validity of any other provision of this Agreement.
- 11.13 **Notices.** Any notice required or permitted by this Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if sent by certified mail or registered mail, postage and fees prepaid, addressed to the Party to whom such notice is to be given at the address set forth below or at such other address as has been previously furnished in writing, to the other Party. Such notice shall be deemed to have been given when deposited in the United States Mail properly addressed to the intended recipient.

If to the City:

If to the Contractor:

City Manager City of Littleton 2255 W. Berry Avenue Littleton, Colorado 80120	MICHAEL BAKER INTERNATIONAL, INC 100 AIRSIDE DR , MOON TOWNSHIP, PA 15108
With Copy to: City Attorney City of Littleton 2255 W. Berry Avenue Littleton, Colorado 80120	

12.0 INDEMNIFICATION AND HOLD HARMLESS

The Contractor expressly agrees to, and shall, indemnify and hold harmless the City and any of its elected and appointed officials, officers, agents, or employees from any and all claims, damages, liability, or court awards, including costs and reasonable attorney fees that are or may be awarded as a result of any loss, injury or damage sustained or claimed to have been sustained by anyone, including but not limited to, any person, firm, partnership, or corporation, to the extent caused by the negligent acts, errors or omissions of the Contractor or any of its employees, agents, partners, subcontractors, consultants, or others working on behalf of the Contractor in performance of the Services under this Agreement. Nothing in this paragraph shall constitute an agreement by the Contractor to indemnify or hold the City harmless for any omission or action by the City or any of its elected and appointed officials, officers, agents, or employees. By demanding this right to indemnification, the City in no way waives or limits its rights under the Colorado Governmental Immunity Act, C.R.S. § 24-20-101, *et. seq.*

13.0 FORCE MAJEURE

Contractor shall not be liable for any failure to perform or any impairment to its performance to the extent such failure or impairment is caused by any act of God, fire, flood, natural catastrophe, labor dispute or strike or shortage, national or state emergency, epidemic or pandemic, insurrection, riot, act of terrorism, war, act of government, any action or inaction of the City or a third-party engaged by it, and/or any other event, occurrence or circumstance beyond the reasonable control of the Contractor. The compensation due Contractor and the schedule governing the timing for Contractor's performance shall be equitably increased and extended, respectively, to address any such impacts to Contractor's performance.

14.0 COST ESTIMATES

Contractor does not have control over construction costs, methods employed to determine bid prices or quantities, bid or negotiation processes, market conditions and, as such, Contractor makes no representation, warranty or guarantee as to the accuracy of any cost plan, cost estimate or cost check prepared by Contractor in connection with the Services, or that the same will not significantly deviate from any budget or estimate of the City.

15.0 QUANTITY RISK

With respect to any construction quantities that may be furnished by Contractor as a part of the Services, the City specifically agrees that Contractor shall bear no responsibility for any quantity increase, deviation, inaccuracy or overrun regardless of cause as any such quantities furnished by Contractor are preliminary and approximate in nature, are only intended to serve as a check against the quantities independently developed by the City, and that the City is solely responsible for determining all applicable quantities and allocating appropriate contingencies thereto relating to the Project.

16.0 SUBMITTAL REVIEWS

To the extent Contractor reviews any shop drawing, product data, samples or other submittal relating to the Project ("Submittal") as a part of the Services, any such review is limited to checking for general conformance with the design concept contained in the final released for construction design prepared by or with the express authorization of Contractor, and no other purpose whatsoever including, without limitation, verifying accuracy and/or completeness of dimensions, quantities, performance criteria and/or construction means, methods, techniques, sequences or safety procedures. Contractor shall not be deemed to have reviewed of any design deviation contained in any Submittal which is not specifically "clouded" in the Submittal or which Contractor is not separately notified of in writing. Nothing contained in any Submittal stamp or approval shall be construed to modify or limit the Submittal review terms of this Agreement.

17.0 AUTHORITY

The individuals executing this Agreement represent that they are expressly authorized to enter into this Agreement on behalf of City and the Contractor and bind their respective entities.
THIS AGREEMENT is executed and made effective as provided above.

APPROVED AS TO FORM

CITY OF LITTLETON, COLORADO

By: _____
REID BETZING
CITY ATTORNEY

By: _____
KYLE SCHLACHTER
MAYOR

ATTEST

By: _____
COLLEEN NORTON
CITY CLERK

CONTRACTOR
MICHAEL BAKER INTERNATIONAL, INC

By: _____
STEPHEN POULIOT
VICE PRESIDENT

EXHIBIT A

To Agreement between the City and MICHAEL BAKER INTERNATIONAL, INC

1. Scope of Services. The Contractor hereby agrees to and accepts responsibility to perform the services described on the attached Exhibit B (Scope of Services/Proposal).
2. Time of Performance. Performance of the Services of the Contractor shall commence on 05/21/2024 and shall be completed, or shall end, by 05/21/2027.
3. Compensation. The City agrees to compensate the Contractor for the performance of the Services detailed in Exhibit B, as follows:
 - A. Lump Sum: The total sum of \$ 0.00 for the Services described in Exhibit B. If the City is satisfied with Contractor's performance, the City shall pay this sum within forty-five (45) days of receipt of Contractor's invoice indicating that it has completed the Services. Non-reimbursable Costs, Charges, Fees, or Other Expenses. Any fee, cost, charge, fee, or expense incurred by the Contractor shall be deemed a non-reimbursable cost and shall be borne by the Contractor and shall not be billed or invoiced to the City and shall not be paid by the City. If dollar amount in this Sub-paragraph A, Lump Sum, is zero, this Sub-paragraph shall void and of no effect.
 - B. Time and Material: The Contractor shall perform the Services described in Exhibit B and shall invoice the City for work performed based on the rates and/or compensation methodology described in Exhibit B. Total compensation (including any and all mobilization costs, other costs, charges, fees, or other expenses that might otherwise be incurred by other contractors and payable as a reimbursable expense) shall not exceed \$ 1,255,793.00 The Contractor shall submit invoices and requests for payment in a form acceptable to the City. Invoices shall not be submitted more often than once each month unless otherwise approved by this Agreement or in writing by the City. Unless otherwise directed or accepted by the City, all invoices shall contain sufficient information to account for all Contractor time (or other appropriate measure(s) of work effort) and all authorized reimbursable expenses for the Services during the stated period of the invoice. Following receipt of a Contractor's invoice, the City shall promptly review the Contractor's invoice. The City may dispute any Contractor time, reimbursable expense, and/or compensation requested by the Contractor described in any invoice and may request additional information from the Contractor substantiating any and all compensation sought by the Contractor before accepting the invoice. When additional information is requested by the City, the City shall advise the Contractor in writing, identifying the specific item(s) that are in dispute and giving specific reasons for any request for information. The City shall pay the Contractor within forty-five (45) days of the receipt of an invoice for any undisputed charges or, if the City disputes an item or invoice and additional information is requested, within thirty (30) days of acceptance of the item or invoice by the City following receipt of the information requested and resolution of the dispute. To the extent possible, undisputed charges within the same invoice as disputed charges shall be timely paid in accordance with this Agreement. Payment by the City shall be deemed made and completed upon hand delivery to the Contractor or designee of the Contractor or upon deposit of such payment or

notice in the U.S. Mail, postage pre-paid, addressed to the Contractor. If dollar amount in this Sub-paragraph B, Time and Material, is zero this Sub-paragraph shall be void and of no effect.

C. Annual Fee: The annual sum of \$ for the Services described in Exhibit B. The City shall pay this sum in equal monthly payments over twelve months. Non-reimbursable Costs, Charges, Fees, or Other Expenses. Any fee, cost, charge, fee, or expense incurred by the Contractor shall be deemed a non-reimbursable cost and shall be borne by the Contractor and shall not be billed or invoiced to the City and shall not be paid by the City. If dollar amount in this Sub-paragraph C, Annual Fee, is zero, this Sub-paragraph shall be void and of no effect.

**2023 BROADWAY & LITTLETON BOULEVARD AND BROADWAY & MINERAL
AVENUE INTERSECTION IMPROVEMENT PROJECT
PHASE 1**

Prepared by Michael Baker International

November 13, 2023

BACKGROUND AND DESCRIPTION

This scope defines services to be provided by Michael Baker International referred to as “MBI” or “Consultant” and their subconsultants for a grant funded Highway Safety Improvement Project (HSIP) administered by the Colorado Department of Transportation (CDOT) and managed by the City of Littleton (City). This project includes engineering services to analyze and design safety improvements for all modes of transportation at the intersections of Broadway and Littleton Blvd and Broadway and Mineral Ave including all roadway approaches. Coordination with the ongoing Broadway Corridor Study and accounting for their findings and recommendations will be required. This phase 1 scope of work includes consultant services including concept development and preliminary design 30% / Field Inspection Review (FIR).

Broadway and Littleton Boulevard

Broadway is one of the main north-south routes through the City of Littleton, connecting to C-470 to the south and to the communities of Englewood and Denver to the north. Littleton Boulevard is an east-west route that connects to Downtown Littleton, Santa Fe Drive, and Jefferson County to the west and the City of Greenwood Village to the east. The area surrounding the intersection is primarily used for commercial/retail purposes, including a grocery store, bank, gas station, automobile dealerships, and restaurants located in all four corners of the intersection. Littleton High School is in the northeast quadrant of the intersection, and the new LPS EPIC Center is planned to open in Fall 2023 directly south of Littleton High School. There are also residential areas to the southwest and southeast of the intersection. The intersection is in the City of Littleton zone district designation of CM: Corridor Mixed and CM/PL-O: Corridor Mixed/Planned Overlay District.

Broadway is considered a major arterial with an AADT of approximately 40,000 vehicles/day and Littleton Boulevard has an AADT of 21,000 vehicles/day. There have been capacity issues at this intersection for some time. In the past, the solution has been to apply band-aid fixes rather than addressing the intersection, which has led to access management issues, alignment issues, and many of the fixes are not in-line with driver expectancy (including southbound buses that are allowed to go through the right turn lane and often collide with eastbound right turning vehicles). Northeast of the intersection is Littleton High School which leads to higher than normal ped volumes at this intersection three times a day—arrival, lunch time, and departure from school.

Broadway and Mineral Avenue

Broadway is one of the main north-south routes through the City of Littleton, connecting to C-470 to the south and to the communities of Englewood and Denver to the north. Mineral Avenue is one of three routes that provide primary east/west connectivity through the City of Littleton and provides access to Santa Fe Drive and Jefferson County to the west and to the City of Centennial to the east. These factors make Mineral Avenue one of the more heavily trafficked corridors in the City. The area surrounding the intersection is primarily used for commercial purposes, including grocery stores, pharmacy, restaurants, and shopping center in the four corners of the intersection. Littleton Adventist Hospital is north of the intersection. The Republic National Distributing Company warehouse is southwest of the intersection. There are residential areas to the northwest and northeast of the intersection. The intersection is in the City of Littleton zone district designation of CM/PL-O: Corridor Mixed/Planned Overlay District.

Broadway is considered a major arterial with an AADT of 31,000 vehicles/day and Mineral Avenue has an AADT of 24,000 vehicles/day. At the intersection, there are left turn capacity issues especially in the northbound direction. Both left turn movements on Mineral Avenue have two protected-permissive lanes, which creates risk for both side swipes and approach turn collisions, as well as vehicle-pedestrian conflicts.

Design for the intersection will need to take into account on-street bike lanes west of the intersection, and how to move bicyclists across the intersection onto a south side shared use path east of the intersection.

TASK 1: PROJECT MANAGEMENT AND MEETINGS

This task shall include general administration, coordination, documentation, scheduling, reporting, and related activities for the overall successful completion of the project. The consultant Project Manager will work directly for and support the City's Project Manager in the management and administration of the project.

The consultant will provide general project management for their scope elements. This includes providing the City with monthly invoices for an assumed Phase 1 duration of 10 months, based on actual monthly expenditures and services, and a progress report that contains a brief review of the past month's progress/services rendered. This also includes coordinating with the City on the project schedule and providing updates throughout the duration of the project. The consultant will also:

- Complete general project management activities including team coordination and periodic and informal coordination with subconsultants: David Evans and Associates (DEA), Triunity, ERO Resource Corporation, Shannon & Wilson and All Traffic Data.
- Prepare and submit to the City a Project Management Plan (PMP), to include a Project Specific Quality Management Plan; adhere to the QA/QC process throughout the project and for each deliverable.
- Develop and maintain a project contact list.
- Develop and maintain a project schedule.
- DEA will develop and administer a Quality Assurance and Quality Control plan including specific names and locations of technical reviewers and a commitment to adhering to the QA/QC plan.

The Consultant will have QA/QC check sets for technical reports, plans, and specifications available upon request and will provide comment resolution documentation for each review.

Refer to DEA's scope for more detailed information.

Task 1 Assumptions:

- Consultant will attend the following meetings:
 - One (1) Project scoping meeting with CDOT and the City
 - One (1) Project Kickoff Meeting with the City and/or CDOT (In-Person)
 - One (1) Project Kickoff Meeting – Internal
 - One (1) Site visit meeting with City staff to observe general pedestrian and traffic patterns, behaviors, and movements.
 - Up to twenty (20) bi-weekly Coordination and Progress Meetings (virtual) with the City
 - Up to ten (10) monthly project team meetings (internal with consultant team)
 - Up to four (4) coordination meetings with the Broadway Corridor Study Team (HDR)
 - Up to four (4) discipline specific and technical coordination meetings will be conducted as necessary to discuss design process and decision items.
 - Up to two (2) CDOT review meetings
 - One (1) CDOT format FIR meeting with the City and CDOT (virtual)
 - One (1) site visit meeting with City staff 30% (FIR) design to verify assumptions in the field
- Up to four (4) attendees from the MBI team at major milestone meetings (PM, Drainage, Traffic and Lighting) and as needed for coordination and progress meetings. Subconsultants will also attend as needed.

Task 1 Deliverables:

- Project Management Plan
- Project Schedule
- Meeting agendas, supporting materials and minutes

TASK 2: DATA COLLECTION

TASK 2.1: Review Existing Project Data

To set the foundation for concept development and stakeholder engagement, we will compile data from existing sources. The following lists possible data needed along with who will be responsible for providing the data. MBI will summarize up to six (6) existing studies, and review traffic counts and crash data to determine adequacy of information.

City of Littleton to Provide

- Turning movement counts (TMCs) at the two Broadway intersections

- Historic annual traffic counts
- City of Littleton GIS data
- Crash data from the most recent 5 years that has occurred within 700 feet of each of these intersections
- 2020 HSIP Application Data
- 2020 Intersection Engineering Study
- Latest available GridSMART Data
- Bicycle and Pedestrian Counts
- City of Littleton Transportation Master Plan
- Littleton High School Circulation Plan
- Traffic Impact Study for EPIC Center
- Drainage reports for surrounding developments
- Any existing as-built drawings or wiring diagrams of the existing traffic signals

Michael Baker Team to Collect:

- Turning movement counts (refer to All Traffic Data's scope and fee)
 - Broadway & Littleton: Up to 9 RIRO driveways and 3 adjacent intersections (driveways without a median)
 - Broadway & Mineral: Up to 2 RIRO driveways and 2 adjacent intersections
- Queuing data to better understand existing congestion
 - On all approaches to both intersections, for one hour, during each of the following peak times (7-9am, 11-1pm, 3-6pm)
- DRCOG Travel Demand Model

Refer to All Traffic Data's scope and fee for more detailed information regarding additional traffic data collection.

Aerial imagery tiles (2022 or newer) with surface contour data will be obtained from Denver Regional Council of Governments (DRCOG) and used to create an AutoCAD aerial base file to be used as a basis for the development of the conceptual designs.

See DEA's scope and fee for more detailed information regarding the aerial imagery.

TASK 2.2: Survey

The consultant will be responsible to conduct survey tasks to obtain base-level information on existing project topography, physical features, utility surface features, and existing right-of-way (ROW) limits at the following intersections:

- Broadway and Littleton Boulevard
- Broadway and Mineral Avenue

Survey collection will not be performed until a preferred alternative for each intersection has been selected to advance to FIR (30%) design. For scoping purposes, project limits are assumed and will be revisited and refined to specific project limits that will be identified for the FIR design.

Survey Control and Topographic Survey

The consultant will establish primary control points within the project area where all topographic and boundary survey work will be based.

The consultant will provide topographic mapping including contours at an interval of 1-foot and a Survey Control drawing. A topographic survey will be performed from ROW line to ROW line at both intersections previously mentioned and will extend approximately 700 feet to correspond with survey limits.

Surveys will include existing surface evidence of underground utilities, sidewalks, edge of asphalt, flowline, back of curb, ADA ramps, light poles, traffic signal poles, intersecting driveways, landscaping, pavement markings, traffic signs, electric and communication cabinets, utility pull boxes, fences, trees, fire hydrants, manholes, water valves, gas valves, and underground SUE markings located by Triunity within the project area.

See attached scope of work from DEA for more detailed information.

Right-of-Way Determination

The consultant will determine existing ROW lines at each intersection previously mentioned. The existing ROW lines will be established from the recorded subdivision plats that establish the ROW. The consultant will research Arapahoe County and the Littleton Clerk and Recorder's records to acquire the required plats and documents to draft the existing ROW lines. The consultant will perform a field survey to find sufficient property corner and boundary evidence to correctly place the drafted public ROW lines.

See attached scope of work from DEA for more detailed information.

TASK 2.3: Subsurface Utility Engineering (SUE) Data Collection

Locating and surveying of underground utilities shall be the responsibility of the consultant. Prior to beginning any field work, consultant staff will familiarize themselves with available utility data through a thorough desktop review of the site and research of available as-builts and survey data.

Utilizing the information collected through 811 notifications, additional mapping obtained from utility owners, and field observations, the consultant shall designate all known utilities to QL-B with utility marks to be collected by the consultant and incorporated into the overall project mapping.

The consultant shall develop traffic control plans for any temporary lane closures required within the City's ROW and obtain a Public Improvements permit through the Public Works Department. The consultant shall review the survey data to check that all utilities are accurately shown and depicted and develop an existing utility base map in electronic CAD format.

See attached scopes of work from Triunity for more detailed information.

TASK 2.4: Geotechnical Investigation and Pavement Design

The consultant shall be responsible for geotechnical explorations and laboratory testing and analysis to develop geotechnical recommendations summarized in a report for:

- Evaluation of the applicability CDOT S-Standards for traffic signal pole caissons
- Recommendations for pavement patching, subgrade treatment, and pavement design for roadway widening at each intersection.

See attached scope of work from Shannon & Wilson for more detailed information.

TASK 3: STAKEHOLDER ENGAGEMENT

Stakeholder engagement will focus on businesses and organizations located at and near the project intersections, and the community members, employees, students and patients who visit the areas. For each phase we explain if we are focusing on informing stakeholders or providing them with information and an opportunity to ask questions and provide input.

Stage 1: Initiation: This phase sets up the project team to be on the same page in how we are discussing the project, directing interested parties to find more information and finalizing our engagement strategy. This phase is focused on informing stakeholders.

- A. Engagement Goals: Affirm and revise the 2-3 goals for our engagement activities.
 - a. Goal 1: Provide key business stakeholders with information about the project and opportunities for input.
 - b. Goal 2: Create materials that clearly show the design concept and are easy for stakeholders to understand.
 - c. Goal 3: Advancing the concepts from the Broadway Corridor study to arrive at preferred conceptual designs and provide materials that explain how feedback was considered, and when feasible, incorporated into the outcomes.
- B. Stakeholder Contact List and Tracker: Coordinate with the City of Littleton project staff to create a stakeholder list by pulling business and property owner data. This list will be a working document that will be updated throughout the project, as needed. MBI will use it to organize our outreach, communication and tracking.
- C. Project Overview Materials: MBI will create project overview document and graphics to communicate with stakeholders throughout the project. Our team will develop:
 - i. Project One-pager: This will include the project description, timeline, location, intended outcomes, project contact information and project web page address.
 - ii. Project website: The consulting team will provide information to the City of Littleton to integrate into their website. Initial content will mirror that of the one-pager. As the project progresses, our team will update the project web page with additional information and highlight opportunities for stakeholder input. The page will also include a field where interested parties can submit questions at any point during the project and sign up to receive additional information.

Stage 2: Concept Input: The consultant team will create an initial set of conceptual alternatives for consideration and vet these the city's project staff, identifying where there are opportunities for refinement (and stakeholder input), and what elements can't be adjusted due to safety concerns or other requirements. Once the consultant team and city staff have agreed on where design flexibility exists, we can proceed with the engagement effort. This phase focuses on informing and gathering input from stakeholders.

A. Concept Input Materials

- i. MBI will develop graphics for each intersection that illustrate the considered changes, highlight elements that we are seeking input on, and include brief narrative explaining what's being considered. Materials will be branded for the City of Littleton and be designed so they can be easily understood by non-technical stakeholders. We will address and respond to one round of comments from city staff on the graphics and narrative before finalizing the content.

B. Concept Input Process

- i. MBI will send initial emails to stakeholders to notify them that concepts are available for review and invite them to a 1:1 or small group meeting to provide input. We will offer both virtual and in-person options to best accommodate schedules. We will hold a total of 3 meetings for each intersection.
- ii. For any stakeholders on our list whom we don't engage via 1:1 or small group meetings, we will notify them that the concepts are available on the project page, and they are welcome to provide input.
- iii. MBI will solicit input on the project webpage via a digital survey form or an aerial image of each intersection on which stakeholders can place location-specific comments.

C. Input and Response Summary

- i. MBI will summarize stakeholder input received on the concept designs and provide a summary of how comments have been addressed.
- ii. MBI will address and respond to one round of comments from city staff on the input / response summary before finalizing the content.

D. Stakeholder Contact List and Tracker: We will update the contact list / tracker to include a summary of engagement activities from this phase and any notable interactions with stakeholders resulting in changes to the concept designs.

Stage 3: Final Design Concepts / Preferred Alternative: In this phase of the project, the consultant team will produce final design concepts for each intersection based on input received during the prior phase. This is also an opportunity to discuss letters of support (as appropriate) from stakeholders that could support future grant applications for construction funds. This phase focuses on informing and gathering input from stakeholders. MBI's work will include the following:

- A. Concept Graphics - Produce draft graphics to illustrate final design concepts and short narratives describing key elements. We will revise and finalize graphics and narrative based on one round of comments from City staff.

- B. Meet with stakeholders to share how feedback from Phase 2 was incorporated into the final design concepts and request identification of their preferred alternative for each intersection. Again, we will invite them to a 1:1 or small group meeting to provide input. We will offer both virtual and in-person options to best accommodate schedules. MBI will cluster / combine interested stakeholders in this round and conduct two (2) meetings for each intersection.
- C. Final Website Update
 - a. Post final design concepts to webpage with narrative summarizing how Phase 2 input was incorporated and addressed.
 - b. Post additional project updates on outcomes and next steps / timeline for project implementation.

Stage 4: Engagement Summary & Next Steps

- A. MBI will develop a summary that captures which stakeholders we engaged throughout Phase 2 and 3 (virtually or in-person) and the key points of input received. Later in the project, prior to the completion of final designs for each preferred alternative, MBI will make a final attempt to share project information with any identified stakeholders we were not able to reach during Phase 2 and 3.

Task 3 Deliverables:

- Stakeholder Contact List and Tracker (updated throughout)
- Project description overview / one-pager
- Graphics and narrative to solicit input on concept alternatives
- Graphics illustrating and narrative explaining final design concepts
- Web content and updates (Assume up to 3 updates)
- Stakeholder Input and Response Summaries
- Preferred Alternative Graphics
- Engagement Summary

TASK 4: DEVELOP ALTERNATIVES CRITERIA**Task 4.1: Review of Existing Data**

The criteria used to develop alternatives will also be used to help guide decision making throughout the course of the project. To develop the alternatives criteria, MBI will review the results of the preliminary stakeholder engagement discussions and consider the summaries of existing studies.

MBI anticipates discussions with stakeholders will provide insight into mode preferences, areas of concern, and areas for compromise. The review of existing studies is expected to shed light on guidance, goals, and priorities both citywide or relevant to the existing project.

Task 4.2: Environmental Existing Conditions

The consultant team will also review environmental existing conditions within the project area, perform a desktop review of pertinent regulatory databases and gather data that could be utilized in the alternatives criteria.

See attached scope of work from DEA for more detailed information.

Task 4.3: Alternatives Criteria and Pre-Concept Development

Using our understanding of the data sources from Tasks 4.1 and 4.2, the MBI Team will work with DEA and City staff to identify evaluation criteria and recommended weighting to score each concept alternative. This information will be summarized and documented in the final report.

Design Criteria and Standards

MBI will support DEA in the review and all applicable standards (CDOT, City of Littleton, AASHTO, ADA and the MUTCD) and prepare a design criteria document for review and approval from the City and CDOT.

Task 4 Deliverables:

- Existing Conditions Summary
- Alternatives Analysis Criteria
- Design Criteria and Standards Spreadsheet

TASK 5: CONCEPT DESIGN & ALTERNATIVES SCREENING**Task 5.1: Initial Concept Development**

Using the information from Task 4, MBI will work with DEA to identify up to ten (10) total concept designs at the Broadway and Littleton Boulevard and the Broadway and Mineral Avenue intersections that generally align with the alternatives criteria. The following outlines the key steps to completing the initial concept development:

1. Conduct a crash analysis to identify patterns in the type and cause of crashes
 - a. Import crash data into GIS and prepare two maps showing the location and severity of crashes.
 - b. Review crash data for patterns in crash type, location, severity, or other factors.
 - c. If available, we will review all crash narratives to better understand the cause of crashes.
 - d. Prepare crash diagrams of each intersection for use during the field meeting(s)
 - e. Document results of crash analysis
2. Conduct an analysis of existing 2023 conditions to evaluate existing traffic operations during typical weekday peak periods: Broadway/Littleton Blvd – (AM, mid-day and PM peak hours), Broadway/ Mineral (AM, mid-day and PM peak hours). (six (6) models total).

- a. Broadway/Littleton and adjacent intersections – Synchro analysis of up to four (4) signalized intersections and up to two (2) unsignalized intersections
 - b. Broadway/Mineral and adjacent intersections – Synchro analysis of up to four (4) signalized intersections and up to two (2) unsignalized intersections
 - c. Prepare graphics showing traffic counts and level of service results by movement at each of the study intersections during each of the peak hours.
 - d. Document the process and results of the analysis.
3. Conduct an analysis of future 2050 no-build conditions to evaluate future traffic operations during typical weekday peak periods: Broadway/Littleton Blvd – (AM, mid-day and PM peak hours), Broadway/ Mineral (AM, mid-day and PM peak hours). (six (6) models total).
- a. Forecasting of traffic volumes to 2050
 - b. Broadway/Littleton and adjacent intersections - Synchro analysis of up to four (4) signalized intersections and up to two (2) unsignalized intersections
 - c. Broadway/Mineral and adjacent intersections - Synchro analysis of up to four (4) signalized intersections and up to two (2) unsignalized intersections
 - d. Graphics showing traffic counts and level of service results by movement at each of the study intersections, for the 2050 no-build scenario
 - e. Documentation of the process and results of the analysis
4. Conduct a field evaluation to observe traffic patterns and compare results of the crash and traffic operations analysis.
- a. Assume up to three (3) staff from MBI and one (1) to two (2) staff from the City of Littleton, and one (1) member from the local police department.
 - b. Document the results of the field evaluation.
5. Work with DEA to identify up to ten (10) potential concept design alternatives based on results from steps 1-4.
- a. DEA will prepare graphics showing each of the ten (10) alternatives.
6. Evaluate the pros and cons of each concept design in relation to one another.
- a. Pros and cons could include high level cost estimates, impact to traffic operations, pedestrian and bicyclist safety, and accessibility to transit, as well as flexibility for phased implementation.
 - b. Incorporate results into the report.
7. Conduct an environmental alternatives screening. DEA will apply the environmental criteria developed in Task 4.2 to perform a screening of the concept designs from an environmental perspective to identify potential impacts and benefits and provide a coherent process for evaluating and comparing concepts. The results of the environmental screening will be summarized.

See attached scope of work from DEA for more detailed information.

8. Identify up to six (6) alternatives total that would benefit from capacity analysis to better understand the operational impacts.
 - a. Conduct Synchro analysis of up to six (6) alternatives total including up to three (3) weekday peak hours. This will result in up to eighteen (18) Synchro models.
 - b. Graphics showing traffic counts and level of service (LOS) results by movement at each of the study intersections, for each of the alternatives.
 - c. Documentation of the process and results of the analysis
9. Identify up to four (4) preferred alternatives to progress further into development using the scoring system identified in Task 4.
 - a. The final scored alternatives will be provided to staff for review. This step assumes MBI and City staff will utilize one of the bi-weekly coordination meetings to finalize the preferred alternatives.
 - b. Prepare planning level graphics showing each of the four (4) potential alternatives, for use during the next round of engagement with stakeholders.
 - c. Documentation of the preferred alternatives and incorporation of graphics into the report.
 - d. This step must be completed before moving into conceptual design.

Task 5.1 Deliverables:

- Report summarizing review of existing documents, crash analysis, existing and future traffic analysis, field observations, potential design alternatives, pros and cons of each alternative, evaluation criteria and recommended weighting, and the final preferred alternative. The report will include the following:
 - Graphic summary of crash results
 - Graphic summary of existing and future traffic analysis with traffic counts and analysis results
 - Synchro files
 - Planning level graphics showing each of the preferred alternatives.

See attached scope of work from DEA for more detailed information.

Task 5.2: Preferred Concept Development

Upon review of the concept designs (prepared by DEA with support from MBI) and the alternatives screening (prepared by MBI with support from DEA), it is assumed the City will select up to four (4) total preferred concepts to advance into further development.

For each concept that is selected, DEA with multimodal, traffic, drainage and lighting design support of MBI will progress the concepts to better understand feasibility, the horizontal and vertical geometry, and generally understand large project issues and limits. The design of the preferred concepts will be advanced to a 15% level and presented on design exhibits for review, by the City. Additionally, DEA with

support of MBI, will develop an opinion of probable construction cost (OPCC) to assist the City in selecting the most cost-effective option.

Once the four (4) detailed concepts are accepted by the City, a review meeting will be held with CDOT. The intent of this review meeting is to determine one (1) concept for each intersection to advance into the preliminary 30% (FIR) design phase. It is anticipated either one alternative at each intersection will be eliminated or there will be a blended design that will be created. The consultant team assumes one (1) revision to the preferred concepts to achieve one (1) design, at each intersection. The final concepts will then be reviewed by both the City and CDOT prior to moving forward to design.

Task 5.2 Deliverables:

- Up to four (4) refined concept design alternatives (MBI support - multimodal, traffic, drainage, lighting)
- Up to four (4) Opinions of Probable Construction Cost (MBI support - multimodal, traffic, drainage, lighting)
- Up to two (2) final 15% concepts to proceed to preliminary design (MBI support - multimodal, traffic, drainage, lighting)

Task 5.2 Meetings:

- Discipline specific and technical coordination meetings will be conducted as necessary to discuss design process and decision items. Assumes up to four (4) meetings as shown in Task 1.
- Prepare for and attend up to two (2) CDOT review meetings as shown in Task 1.

See attached scope of work from DEA for more detailed information.

TASK 6 – ENVIRONMENTAL CLEARANCES AND PRELIMINARY DESIGN

Following the selection of one (1) preferred conceptual alternative for each intersection that is moved to preliminary design, DEA will begin to advance the environmental clearance process and the consultant team will advance the preliminary designs.

The consultant must obtain CDOT clearances prior to the advertisement for construction, coordinate between the agencies, and prepare and submit applications and design information to the appropriate agencies for Environmental, Utility, and Right-of-Way Clearances.

The project will adhere to the National Environmental Policy Act (NEPA) requirements for environmental compliance due to HSIP federal funds. The project is assumed to be cleared with a Programmatic Categorical Exclusion (CatEx) using CDOT Form 128 but will be confirmed during an environmental scoping meeting with CDOT. At this time air quality, noise, and paleontology are assumed to be cleared by CDOT. Hazardous materials, archeological resources, and historic resources will be evaluated by ERO. Below is a description of the environmental resources that will be evaluated and documented.

Task 6.1A – Environmental Tracking (provided by DEA)

DEA will prepare an environmental tracking log which will include clearance status, responsible consultant, CDOT contact information, approximate level of completion, and major deadlines for each environmental clearance.

Task 6.1B Section 4(f) and Section 6(f) (Recreational Resources) (provided by DEA)

DEA will evaluate the nature, magnitude, and duration of changes to Section 4(f) and 6(f) properties and any required mitigation, and prepare a memo documenting the Section 4(f) and 6(f) evaluation and results. DEA will prepare Section 4(f) and 6(f) exception letters for review by CDOT and the City, and signature from the Owner With Jurisdiction for up to two resources.

Task 6.1C Biological Resources including Wetlands/Waters of the U.S. (Provided by DEA)

Based on the proposed project limits and developed nature of the project area it is not anticipated that biological resources or wetlands/waters of the U.S. would be significantly impacted by the project. DEA will prepare a Biological Resources Report (BRR) that evaluates impacts to biological resources and any required mitigation based on the 30% (FIR) preliminary design improvements and findings from Task 3. The BRR will consider threatened and endangered species habitat, general wildlife, migratory birds, noxious weeds, Senate Bill 40 (SB 40) resources, wetlands, and other surface waters.

Task 6.1C – Hazardous Materials (provided by ERO)

ERO will conduct Limited Hazardous Materials Assessment – Initial Site Assessments (ISAs) for hazardous materials for the two separate project areas: Broadway & Littleton Blvd and Broadway & Mineral Ave. The assessments will generally conform to CDOT ISA requirements detailed in CDOT's Hazardous Material Guidance, dated June 2018. To complete this task, ERO will conduct visual site inspections of the project areas. The purpose of the inspections is to document environmental concerns. ERO will document the general site setting, such as current use(s) of the project area and adjoining properties, and general hydrogeologic and topographic features. ERO will provide a general description of structures and other improvements and identify site conditions if they are observed during the site inspections.

Based on the information gathered during this record search and site inspections, ERO will compile the information and findings into two detailed written reports, including an ISA Checklist, that includes the site descriptions, records reviews, site reconnaissance, and conclusions. The ISA reports will be submitted as a draft to the Client for review and comment prior to being submitted to CDOT. ERO will subcontract with DS Environmental Consulting (DS) to provide a Certified Lead-Based Paint (LBP) Inspector to perform limited LBP screenings of accessible painted structures, signs, and poles within the project areas using a hand-held X-Ray fluorescence (XRF) analyzer, per the manufacturer's specifications.

Task 6.1D – Archeological and History Resources (provided by ERO)

Compliance with Section 106 of the National Historic Preservation Act (NHPA) and with the Colorado State Register Act (CRS 24-80.1 and 8 CCR 1504-5) is required as part of the NEPA documentation and CatEx process. In coordination with CDOT, ERO will conduct a formal file search and literature review of the CDOT-defined area of potential effects (APE) to assist in determining whether the project has the potential to cause effects on historic properties. Sources include Historic Street Cars of Colorado, CDOT's Historic Sites Viewer, historical aerial photography, U.S Geological Survey quadrangles and

highway maps, county assessor records, and the Office of Archaeology and Historic Preservation's (OAHP) Compass database.

Based on a preliminary review of historical records, no previously resources are present and there is no potential for unknown archaeological or historical resources within the area of potential effect (APE).

Because the project is located in disturbed areas in the road right-of-way and at this time it is assumed the project will not require new ROW or easements, ERO will compile the file search and literature review results into two memoranda (one for archaeological resources and one for historical resources) to CDOT recommending no further work.

See attached scopes of work from DEA and ERO for more detailed information.

Task 6.2 – Preliminary 30% (FIR) Design

Design through preliminary 30% (FIR) is included in this scope of work. Design for 90% (FOR) and 100% (PS&E) will be funded under a future amendment.

The 30% design will conform and adhere to City of Littleton and CDOT design standards. All plan sheets are assumed to follow the City of Littleton's CADD standards and are assumed to be 11"x17" and will be completed in AutoCAD Civil 3D 2023, or latest accepted version.

After the City of Littleton confirms the concept design described in Task 5, MBI will support DEA with the revision of the two (2) concepts with up to four (4) intersection specific adjustments. An example of this would be an exhibit displaying a standard right turn vs a channelized right turn. These will also include two (2) high-level opinion of probable construction cost (OPCC).

Once the concepts have been refined with the intersection specific adjustments and the City determines the details of the design to be acceptable, the Consultant team will complete 30% (FIR) design, plans, and opinion of probable construction cost (OPCC). In the preliminary design phase, the Consultant team will uncover any critical issues related to the horizontal and vertical elements of the proposed intersections. The design will be progressed to a sufficient point, allowing the design team to identify any outstanding project issues.

Preliminary plans and OPCC will be submitted to the City and CDOT for review and comment. A 30% (FIR) plan review meeting will be conducted as described in Task 1.

The following is an estimation of sheets that will be included in this scope for the 30% (FIR) submittal to but is not all-inclusive. All sheets are to be created by MBI unless otherwise noted:

- Title Sheet - by MBI
- Standard Plans List - by MBI
- General Notes – by MBI, DEA and Triunity
- Survey Control Sheets – by DEA
- Summary of Approximate Quantities – by MBI, DEA & Triunity
- Removal Plans – by DEA
- Roadway Plans – by DEA
- Curb Return and Flowline Profiles – by DEA

- Drainage Plans - by MBI
- Signing and Striping Plans and Details - by MBI
- Traffic Signal Plans - by MBI
- ITS Plans – by Triunity
- Lighting Plans - by MBI
- SUE and Utility Coordination Plans – by Triunity

Upon completion of the 30% plans, a site visit will be conducted to confirm design assumptions, identified constraints, and validate design decisions as described in Task 1.

Task 6.2 Deliverables:

- Preliminary 30% (FIR) Design Plans
- Preliminary 30% (FIR) Opinion of Probable Construction Cost Estimate (OPCC)
- 30% Comment Resolution Matrix
- Preliminary Drainage Report

See attached scopes of work from DEA and Triunity for more detailed information.

Project Name: 2023 Broadway & Littleton Blvd and Broadway & Mineral Ave Intersection Improvement Project
 Performed By: Brett Higgins
 Date: 13-Nov-23

MBI Fee Spreadsheet		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
WBS	Task Name	Principal-in-Charge Butters, Mike Group Manager II \$250.00	PM/Traffic Design Higgins, Brett Sr. Project Manager \$205.00	MM & Cost Estimates Combs, Benjamin Sr. Engineer \$179.00	CAD & Sheet Setup CAD Tech Sr. CAD Technician \$125.00	Drainage & Water Quality East, Lucy Project Manager I \$167.00	Salay, Nick Civil Associate I \$91.00	Engagement Kuechenmeister, Anne Sr. Project Manager \$195.00	Engagement/Multimodal Heyd, Ted Project Manager III \$180.00	Engagement/Safety Carpenter, Jennifer Project Manager III \$180.00	Safety Mishra, Adyasha Civil Associate III \$128.00	Traffic Operations Yang, Lingling Engineer II \$130.00	Traffic Ops & Design Starling, Andy Civil Associate II \$101.00	Graphic Design Friel, Connor Designer III \$110.00	GIS/Data Review Yeager, Jill GIS Technician III \$125.00	Electrical & Lighting Design Yamashiro, Charles Project Manager III \$180.00	Chesnut, Michael Engineer I \$125.00	Administrative McKinney, Gidget Project Controls \$120.00
1.0 Project Management and Meetings	Project Management																	
	Project Setup & Initiation	8	2	6														
	General Management, Invoicing, Status Reporting, Schedule Updates, Coord with City and Subs	65		55														10
	Project Management Plan	5	1	4														
	Project Schedule	5	1	4														
	Meeting Agendas, Minutes & Materials	60		40														
	Project Meetings													20				
	Project Scoping Meeting with CDOT & City (1 Total)	4	2	2														
	Project Kickoff Meeting with City (1 Total)	12	2	2														
	Project Kickoff Meeting - Internal (1 Total)	10		1														
	Initial Site Visit (1 Total)	18		4														
	Coordination Meetings (bi-weekly, Assume up to 20)	48		20														
	Project Team Meetings (monthly, Assume up to 10)	31		10														
	Broadway Corridor Study Coordination Meetings (Assume up to 4)	16		4														
	Technical Review Meetings (assume up to 4)	7		4														
CDOT Review Meetings (up to 2)	2		2															
30% FIR Review Meeting	7		3															
Post 30% (FIR) Site Visit - (1 Total) (Design Verification)	6		3															
Subtotal 1.0 Project Management and Meetings	302	8	164	0	1	23	1	20	17	24	0	1	21	0	0	12	0	10
2.0 Data Collection	2.1 Review Existing Project Data																	
	Data Collection/Coordination	10		2														3
	Review Data and Summarize Reports	58		2														12
Subtotal 2.0 Data Collection	68	0	4	0	0	0	0	0	0	13	32	4	0	0	15	0	0	0
3.0 Stakeholder Engagement	1.A Engagement Goals	0																
	1.B & 2.D Stakeholder Contract List and Tracker (and updates)	18																
	1.C Project Overview Materials	12																
	2.A Concept Input Materials	36		2														
	2.B Concept Input Process	60		10														
	2.C Input and Response Summary	20		4														
	3.A Concept Graphics	21																
	3.B Stakeholder Meetings	28		4														
	3.C Final Website Update	8																
	4.A Engagement Summary	19																
Subtotal 3.0 Stakeholder Engagement	220	0	20	0	0	0	0	60	54	40	0	0	0	46	0	0	0	0
4.0 Develop Alternatives Criteria	4.1 Review of Existing Data																	
	Identify Evaluation Criteria	18		2														
	4.3 Alternatives Criteria and Pre-Concept Development																	
Identify Weighting of Criteria	14		2															
Design Criteria and Standards	8		4															
Subtotal 4.0 Develop Alternatives Criteria	40	0	8	0	0	4	0	12	8	8	0	0	0	0	0	0	0	0
5.0 Concept Design & Alternatives Screening	5.1 Initial Concept Development																	
	Crash Analysis (includes documentation)	58		4														
	2023 Traffic Analysis Existing (Littleton Blvd & Mineral - AM, mid-day, PM)(6 models)	68		2														
	2050 Traffic Analysis No Build (Littleton Blvd & Mineral - AM, mid-day, PM)(6 models)	42		4														
	Field Evaluation (includes documentation)	32		8														
	Creation of Concept Designs (Support DEA) (up to 10)	28		6														
	Evaluation of Concept Designs (includes documentation)	30		6														
	2050 Traffic Analysis (6 AIs) (Littleton Blvd & Mineral - AM, mid-day, PM)(18 Models)	164		12														
	Select Preferred Alternatives (up to 4) (includes documentation)	18		2														
	Draft Report	60		4														
	Final Report	44		4														
	5.2 Preferred Concept Development																	
	Detailed Concept Design (Multi-Modal, Traffic, Drainage & Lighting)	28		2														
	Refined Concept Exhibits (up to 4) (Multi-Modal, Traffic, Drainage & Lighting)	14		1														
	Cost Estimate (Multi-Modal, Traffic, Drainage & Lighting)	8		2														
Subtotal 5.0 Concept Design & Alternatives Screening	594	0	57	5	0	5	12	6	8	94	66	158	154	12	6	5	6	0
6.0 Enviro Clearances & Preliminary Design	6.2 Preliminary 30% (FIR) Design																	
	Title Sheet	3		1														
	Standard Plans List	6		1														
	General Notes	14		1														
	Survey Control Sheet - by DEA	1		1														
	Summary of Approximate Quantities	24		2														
	Removal Plans - by DEA	1		1														
	Roadway Plans - by DEA	1		1														
	Curb Return and Flowline Profile Sheets - by DEA	1		1														
	Drainage Plans	53		1														
	Signing and Striping Plans	64		8														
	Signal Plans	96		12														
	ITS Plans - by Trinity	1		1														
	Lighting Plans	81		1														
	Existing Utility Plans - by Trinity	2		2														
Project Opinion of Probable Construction Cost Estimate	15		2															
Drainage Report	37		1															
QA/QC	80		10															
30% (FIR) Comment Resolution Matrix	8		4															
Subtotal 6.0 Enviro Clearances & Preliminary Design	488	3	51	9	0	5	12	6	8	94	66	158	154	12	6	5	6	0
Total Labor Hours	1712	11	304	14	93	81	79	98	87	179	98	163	296	58	21	50	70	10

	Baker Labor Fee																	
1.0 Project Management and Meetings	\$56,568.00	\$2,000.00	\$33,620.00	\$0.00	\$125.00	\$3,841.00	\$91.00	\$3,900.00	\$3,060.00	\$4,320.00	\$0.00	\$130.00	\$2,121.00	\$0.00	\$0.00	\$2,160.00	\$0.00	\$1,200.00
2.0 Data Collection	\$9,651.00	\$0.00	\$820.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,096.00	\$520.00	\$0.00	\$1,875.00	\$0.00	\$0.00	\$0.00	\$0.00
3.0 Stakeholder Engagement	\$37,780.00	\$0.00	\$4,100.00	\$0.00	\$0.00	\$0.00	\$0.00	\$11,700.00	\$9,720.00	\$7,200.00	\$0.00	\$0.00	\$5,060.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4.0 Develop Alternatives Criteria	\$7,628.00	\$0.00	\$1,640.00	\$0.00	\$0.00	\$668.00	\$0.00	\$2,340.00	\$1,440.00	\$1,440.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5.0 Concept Design & Alternatives Screening	\$32,239.00	\$0.00	\$11,685.00	\$895.00	\$0.00	\$835.00	\$1,092.00	\$1,170.00	\$1,440.00	\$16,920.00	\$9,448.00	\$20,840.00	\$15,554.00	\$1,320.00	\$750.00	\$900.00	\$750.00	\$0.00
6.0 Enviro Clearances & Preliminary Design	\$84,888.00	\$750.00	\$10,455.00	\$1,611.00	\$11,500.00	\$8,183.00	\$6,006.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$12,221.00	\$0.00	\$0.00	\$5,940.00	\$8,000.00	\$0.00
Subtotal Labor Fee	\$258,492.00	\$2,750.00	\$62,320.00	\$2,506.00	\$11,625.00	\$13,827.00	\$7,189.00	\$19,110.00	\$15,660.00	\$32,220.00	\$12,644.00	\$21,190.00	\$28,896.00	\$6,380.00	\$2,625.00	\$9,000.00	\$8,750.00	\$1,200.00

Direct Expenses				
Mileage	Rate Per Unit	Unit	Quantity	Direct

DEA Subconsultant Services
**HSIP Broadway & Littleton Blvd and Broadway &
Mineral Ave Intersection Improvements**
TASK ORDER / PHASE 1
November 11, 2023

Introduction

This scope defines services to be provided by David Evans and Associates, Inc. herein referred to as “DEA” or “Consultant” for a Highway Safety Improvement Program (HSIP) project administered by the Colorado Department of Transportation (CDOT) and managed by the City of Littleton (herein referred to as the “City”). This project will analyze and design the Broadway and Littleton Boulevard intersection and the Broadway and Mineral Avenue intersection, to increase safety for all modes of transportation. This Phase 1 scope of work includes services through concept development & preliminary design (30% FIR).

Elements of the Scope of Services

The overall scope of services for the project includes topographic data collection, support of alternatives development, collection of environmental clearance data, and preparation of preliminary design plans. Preparation of final construction plans, specifications, and support during the bidding phase to be included in a future amendment.

The project intersections being evaluated are shown in Figures 1 and 2. See Attachment 1A and 1B for assumed improvement limits and anticipated design.

Figure 1- Project Area
S BROADWAY AND LITTLETON BLVD

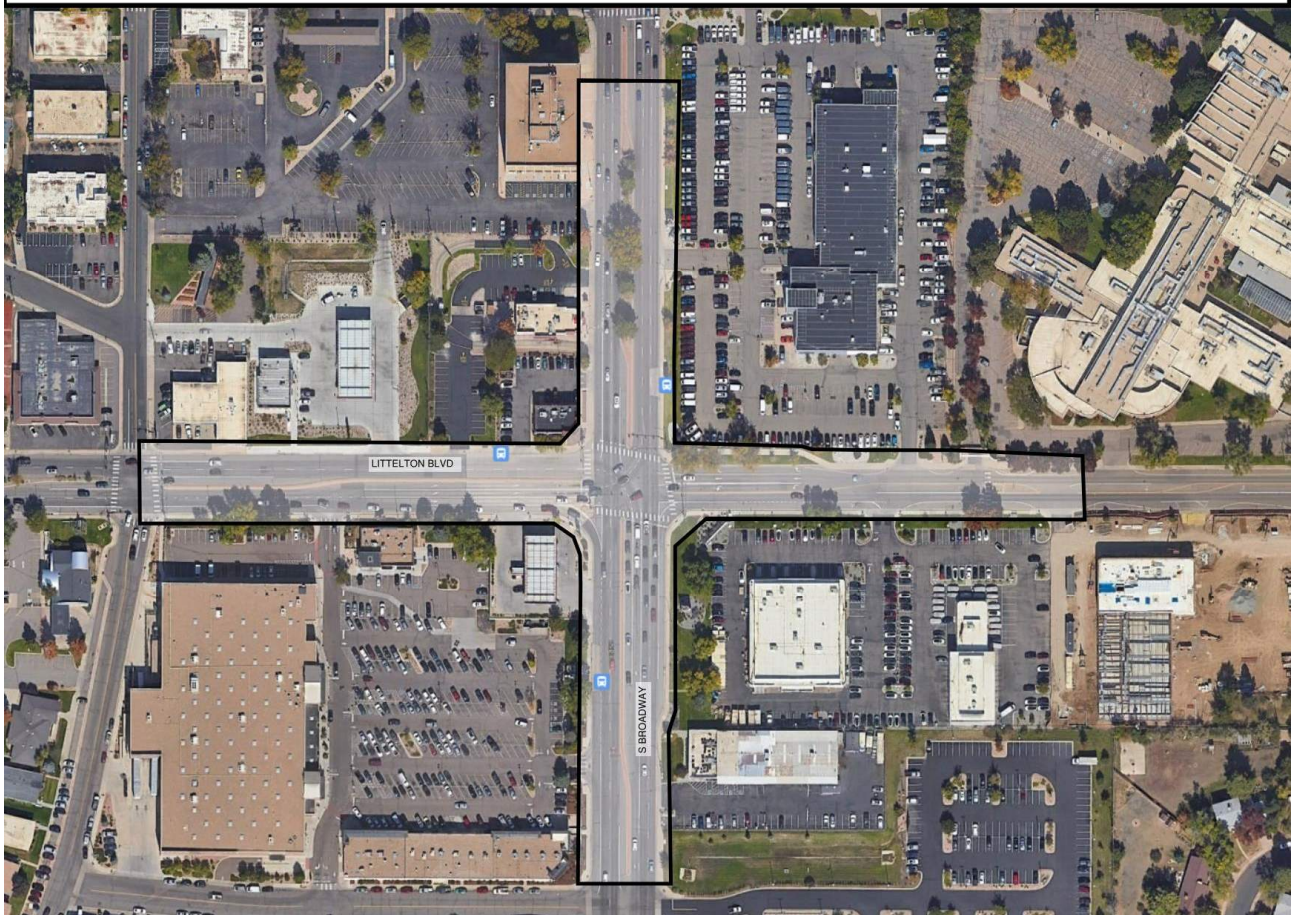
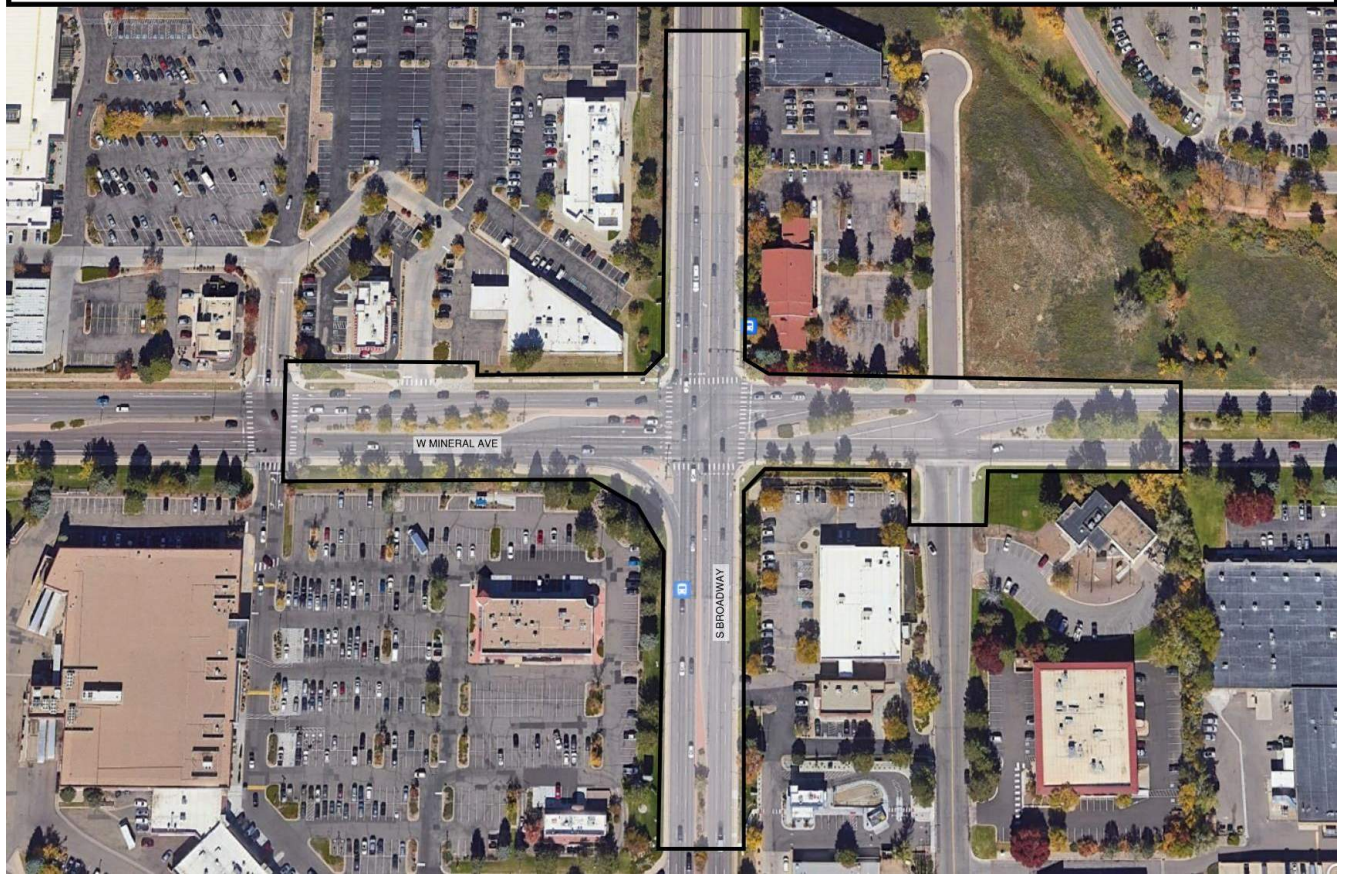


Figure 2- Project Area
S BROADWAY AND W MINERAL AVE



Task 1: Project Management and Meetings

The consultant will regularly schedule and participate in monthly project team meetings with Michael Baker. It is assumed that Michael Baker will coordinate with the City to identify, administer, and facilitate milestone meetings, and meetings with CDOT. DEA will be in attendance of the described milestone meetings with the City and CDOT to support Michael Baker. DEA will assist Michael Baker in updating the monthly schedule and project status reports (assumes 10 months). The Consultant will also:

- Complete general project management activities, including team coordination and periodic and informal coordination with Michael Baker.
- Complete monthly progress reports with invoicing.
- Develop and administer a Quality Assurance and Quality Control plan including specific names and locations of technical reviewers and a commitment to adhering to the QA/QC plan. The Consultant will have QA/QC check sets for technical reports, plans, and specifications available upon request and will provide comment resolution documentation for each review.
- Participate in bi-weekly progress meetings with Michael Baker and the City
- Participate in monthly project team meetings with Michael Baker
- Participate in meetings with HDR for adjacent project coordination (Broadway Corridor Study)
- Attend a project scoping and kick-off meeting
- Coordinate, prepare for, and conduct an internal kick-off meeting

Task 1 Assumptions:

- Attend up to (10) monthly project team meetings with Michael Baker
- Attend up to (1) kick-off meeting with the City and/or CDOT
- Attend up to (1) scoping meeting with CDOT

- Attend up to (4) coordination meetings with HDR
- Hold up to (1) internal kick-off meeting
- Attend up to (20) bi-weekly progress meetings with the City & Michael Baker

Task 1 Deliverables:

- Monthly Invoicing and Progress Reports
- Meeting Agenda content and materials to support Michael Baker
- QA/QC Plan

Task 2: Data Collection and Right of Way

Task 2.1 Review Existing Project Data & Aerial Imagery

DEA will review readily available project data, such as existing traffic studies and master plans.

Aerial imagery will be collected from DRCOG 2022 tiles. These images will then be used to create an AutoCAD aerial base file, to be used during the development of the concept designs.

Task 2.2 Survey

Survey collection will be performed once one alternative has been selected to advance to FIR (see Task 6.2). Currently, project limits are assumed and will be revisited and refined to the specific project limits identified for the FIR design.

DEA will conduct survey tasks to obtain base-level information on existing project topography, physical features, utility surface features, and existing right-of-way (ROW) limits at the following intersections and shown in figures 1 and 2:

- Broadway and Littleton Boulevard
- Broadway and Mineral Avenue

Survey Control and Topographic Survey

DEA will establish up to 8 primary control points within the project area. The control points will consist of a 5/8" rebar with a 2" aluminum cap. All of the topographic and boundary survey work will be based on the primary control points. DEA will perform GPS Static observations in conjunction with differential leveling to produce high accuracy, post processed coordinates on the 8 primary control points. At least one NGS monument will be tied to establish vertical values.

A Survey Control Diagram will be provided as part of this proposal.

DEA will schedule with Triunity, Inc. to provide utility locates.

A topographic survey from ROW line to ROW line will be performed at both intersections mentioned and shown in figures 1 and 2 above, using RTK GPS, LiDAR scanning and conventional survey methods. The topographic survey will extend approximately 700 feet to correspond with survey limits shown in figures 1 and 2, along the streets, in all directions at said intersections. In between said intersections the limits of the topographic survey will be from ROW to ROW. All the signposts and striping in the project area will be acquired in the topographic survey.

The topographic survey will consist of the following elements:

- Surface evidence of underground utilities
- Sidewalks
- Edge of Asphalt, Flowline, Back of Curb
- ADA Ramps
- Light Poles
- Power Poles
- Intersecting Driveways

- Landscaping
- Pavement Striping and Traffic Signs
- Electric and Communication Cabinets
- Fences
- Trees
- Fire Hydrants
- Manholes
- Water Valves
- Gas Valves
- Inlets
- Utilities located by Triunity, Inc. within the project area.

DEA will develop a Topographic CAD base file in Civil 3D format. The planimetric features and topographic field data acquired will be used to generate a DTM or TIN model with 1-foot topographic mapping.

ROW Determination

DEA will determine the existing ROW lines at each intersection shown in figures 1 and 2 above. The existing ROW lines will be established from the recorded subdivision plats that establish the ROW. DEA will research Arapahoe County and the Littleton Clerk and Recorder's records to acquire the required plats and documents to draft the existing ROW lines. DEA will perform a field survey to find sufficient property corner and boundary evidence to correctly place the drafted public ROW lines.

Task 2.2 Assumptions:

- DEA has assumed this project will not include any ROW acquisition, and ROW Acquisition plans will not be prepared.
- The City will be responsible for securing ROE onto private property.
- The City will be responsible for securing any permits for working within the public right of way.
- Preparation of exhibits and legal descriptions for acquisition of easements or right of way is not included in this scope.

Task 2.3 Subsurface Utility Engineering (SUE)

Not included in this scope of work (provided by Triunity).

Task 2.4 Geotechnical Investigation and Pavement Design

Not included in this scope of work (provided by Shannon and Wilson).

Task 3: Stakeholder Engagement

Not included in this scope of work (provided by Michael Baker).

Task 4: Develop Alternatives Criteria

Task 4.1 Review of Existing Data

Not included in this scope (provided by Michael Baker).

Task 4.2 Environmental Existing Conditions

DEA will review environmental existing conditions within the project area including biological resources, wetlands and surface waters, and Section 4(f)/6(f) recreational resources. Hazardous materials, archeological resources, and historic resources will be reviewed by ERO.

DEA will perform a desktop review of pertinent regulatory databases, gather and analyze available GIS data, and perform a cursory field survey to confirm results. Existing conditions will be summarized including

potential critical issues and regulatory requirements. Applicable GIS data representing the locations and/or boundaries of identified resources will also be provided for use in the alternatives analysis.

Task 4.2 Deliverables

- Existing Conditions summary and corresponding GIS shapefiles

Task 4.2 Assumptions:

- Summary of existing conditions will be organized to match the requirements of the Biological Resources Report and Section 4f/6f memo in Task 6.1 for seamless integration.
- Hazardous materials, archaeological resources, and historic resources will be reviewed by ERO.

Task 4.3 Alternatives Criteria & Pre-Concept Development

Environmental Criteria

DEA will coordinate with Michael Baker and the City to develop criteria for analyzing and comparing the intersection concepts with respect to the environmental existing conditions data from Task 4.2 and any resource occurrences provided by ERO.

Design Criteria & Standards

DEA will review all applicable standards (CDOT, City of Littleton, AASHTO, ADA and MUTCD) and prepare a design criteria document for review and approval of the City and CDOT.

Site Visit

DEA will conduct one site visit to review, photograph and document the existing conditions for validation of existing conditions.

Task 4.3 Deliverables

- Alternatives analysis criteria (environmental only)
- Design Criteria Spreadsheet
- Existing Site Conditions Photos

Task 5: Concept Development & Alternatives Screening

Task 5.1 Initial Concept Development and Alternatives Screening

Concept Development

Based on existing conditions, traffic data collected and the approved design criteria, DEA will prepare up to ten (10) total concept layouts at the Broadway and Littleton Boulevard intersection and the Broadway and Mineral Avenue intersection. The concepts will be developed simultaneously with the alternatives screening and are intended to inform each other. Because this is an iterative process it is assumed up to two (2) informal revisions will be made to the concept exhibits and one (1) formal revision as described below will be made to the exhibits. The concepts are assumed to help the project team analyze some of the following:

- Access management & access to transit
- Multi-modal facilities including bicycle and pedestrian facilities
- Intersection geometry & lane assignments
- Preliminary drainage implications
- Utility impacts

The concept designs will be presented in up to ten (10) 11x17 exhibits, and up to five (5) supplemental information exhibits. Concept designs will include plan views and typical sections only, it is assumed vertical profiles will not be provided.

It is assumed the concept designs will be discussed and vetted at the bi-weekly progress meetings described in Task 1. Once the various alternatives have been vetted, the concepts will be submitted to City for review and comment. It is assumed up to one (1) round of revisions will be made to the exhibits.

Environmental Alternatives Screening

DEA will apply the criteria developed in Task 4.2 to perform a screening of the concept designs to identify potential impacts and benefits and provide a coherent process for evaluating and comparing concepts. Potential impacts of each alternative on environmental resources and feasibility regarding environmental issues and regulations will be analyzed. The results of the environmental screening will be provided in a spreadsheet or other organizational format developed by Michael Baker.

Task 5.1 Deliverables

- Up to ten (10) 11x17 concept exhibits (assumed up to two (2) informal revisions per bi-weekly meeting discussions and one (1) formal revision)
- Up to five (5) supplemental information exhibits
- Environmental screening results spreadsheet

Task 5.1 Assumptions

- Hydraulic and hydraulic modeling is not included in this scope of work.
- Traffic control is not included in this scope of work.
- Striping layout will be displayed to show lane configurations but, detailed signing and striping will not be included.
- Vertical profiles and grading will not be evaluated during this phase.

Task 5.2 Preferred Concept Development

Upon review of the concept designs (prepared by DEA) and the alternatives screening document (prepared by Michael Baker), it is assumed the City will select up to four (4) total preferred concepts to advance into further development.

For each concept that is selected, DEA will progress the concepts to better understand feasibility, the horizontal and vertical geometry, and generally understand large project issues and limits. The design of the preferred concepts will be advanced to a 15% level and presented on roll plots for review, by the City. Additionally, DEA will develop an opinion of probable construction cost (OPCC) to assist the City in selecting the most cost-effective option.

Once the four (4) detailed concepts are accepted by the City a review meeting will be held with CDOT. The intent of this review meeting is to determine one (1) concept for each intersection to advance into the final design phase. At this time DEA anticipates either one alternative at each intersection will be eliminated or there will be a blended design that will need to be created. DEA assumes one revision to the preferred concepts to achieve one (1) design, at each intersection. The final concepts will then be reviewed by both the City and CDOT prior to moving forward to design.

Task 5.2 Deliverables

- Up to four (4) refined concept design alternatives
- Up to four (4) Opinions of Probable Construction Cost
- Up to two (2) final 15% concepts to proceed to preliminary design

Task 5.2 Meetings

- Discipline specific and technical coordination meetings will be conducted as necessary to discuss design process and decision items. Assumes up to four (4) meetings.
- Prepare for and attend two (2) CDOT review meetings.

Task 6: Environmental Clearances & Preliminary 30% (FIR) Design Phase Services

Once one (1) alternative has been selected, for each intersection, DEA will begin to advance the environmental clearance process and preliminary design.

The project will adhere to the National Environmental Policy Act (NEPA) requirements for environmental compliance due to HSIP federal funds. The project is assumed to be cleared with a Programmatic Categorical Exclusion (CatEx) using CDOT Form 128 but will be confirmed during an environmental scoping meeting with CDOT. At this time air quality, noise, and paleontology are assumed to be cleared by CDOT. Hazardous materials, archeological resources, and historic resources will be evaluated by ERO. Below is a description of the environmental resources that will be evaluated and documented by DEA.

Task 6.1A Environmental Tracking (DEA)

DEA will prepare an environmental tracking log which will include clearance status, responsible consultant, CDOT contact information, approximate level of completion, and major deadlines for each environmental clearance.

Task 6.1A Deliverables:

- Environmental clearance log/spreadsheet

Task 6.1B Section 4(f) and Section 6(f) (Recreational Resources) (DEA)

The Consultant will evaluate the nature, magnitude, and duration of changes to Section 4(f) and 6(f) properties and any required mitigation, and prepare a memo documenting the Section 4(f) and 6(f) evaluation and results. Consultant will prepare Section 4(f) and 6(f) exception letters for review by CDOT and the City, and signature from the Owner With Jurisdiction for up to two resources.

Task 6.1B Deliverables:

- Memorandum with graphics/exhibits and Owner With Jurisdiction letters. Assumes two reviews (one by City and one by CDOT Section 4(f)/6(f) specialist) and associated edits.

Task 6.1B Assumptions:

- For Section 4(f) compliance, the project qualifies for an enhancement exception for recreation resources. Bicycle/pedestrian detours will be provided in the design plans to support the Section 4(f) exception.
- Section 4(f) compliance for historic properties is not included and will be performed by CDOT.
- No use of any Section 6(f) properties will occur.

Task 6.1C Biological Resources including Wetlands/Waters of the U.S.

Based on the proposed project limits and developed nature of the project area it is not anticipated that biological resources or wetlands/waters of the U.S. would be significantly impacted by the project. The Consultant will prepare a Biological Resources Report (BRR) that evaluates impacts to biological resources and any required mitigation based on the 30% preliminary design improvements and findings from Task 4. The BRR will consider threatened and endangered species habitat, general wildlife, migratory birds, noxious weeds, Senate Bill 40 (SB 40) resources, wetlands, and other surface waters.

Task 6.1C Deliverables:

- Biological Resources Report

Task 6.1C Assumptions:

- A supplemental field survey of the 30% design footprint will be conducted.

- No permits, certifications, or regulatory agency clearances are included.
- Assumes two reviews (one by the City and one by the CDOT biologist) and associated edits.

Task 6.2 Preliminary 30% (FIR) Design

Design through 30% (FIR) is included in this task order. Design for 90% (FOR) and 100% (PS&E) will be funded under a future amendment.

The 30% design will conform and adhere to CDOT design standards. All plan sheets are assumed to follow the City of Littleton's CADD standards and are assumed to be 11"x17" and will be completed in AutoCAD Civil 3D 2023, or latest accepted version.

It is assumed that Michael Baker will coordinate with CDOT and the City for the FIR milestone meeting. DEA will attend the FIR meeting to provide support and answer any design related questions.

Preliminary Roadway Design

After the City of Littleton confirms the concept design, described in Task 5, DEA will revise the two (2) concepts with up to four (4) intersection specific adjustments. An example of this would be an exhibit displaying a standard right turn vs a channelized right turn. These will also include two (2) high-level opinion of probable construction cost (OPCC).

To supplement the selected designs truck turning exhibits will be prepared to demonstrate successful vehicle movements through the intersections.

Once the concepts have been refined with the intersection specific adjustments, truck turns have been ran, and the City determines the details of the design to be acceptable, DEA will complete 30% (FIR) design, plans, and opinion of probable construction cost (OPCC). In the preliminary design phase DEA will uncover any critical issues related to the horizontal and vertical elements of the proposed intersections. The design will be progressed to a sufficient point, allowing the design team to identify any outstanding project issues.

Preliminary plans and OPCC will be submitted to the City and CDOT for review and comment.

This scope anticipates the 30% (FIR) plan set to include the following sheets:

- General Notes (review and content for civil improvements)
- Survey Control Sheet
- Preliminary Typical Sections
- Preliminary Removal Plan Sheets
- Preliminary Roadway Plan Sheets
- Preliminary Curb Return and Flowline Profiles

It is assumed the following sheets will be prepared by Michael Baker:

- Title Sheet
- General Notes
- Preliminary Drainage Plan
- Preliminary Signing and Striping Plan

It is assumed the following sheets will be prepared by Triunity:

- Existing Utility Plan

Upon completion of the 30% plans a site visit will be conducted to confirm design assumptions, identified constraints and validate design decisions.

Task 6.2 Assumptions

- Roadway:
 - Detailed grading for curb ramps and driveways is not included in this scope of work.
 - Detailed grading for median design is not included in this scope of work.
 - Design team will coordinate with RTD to identify routes and anticipated stops; however truck turns and specific details will be excluded from this scope of work and is assumed to be completed in subsequent task order.
- Forestry, Tree Protection & Landscaping:
 - Assumes the City will coordinate a meeting or site visit with the forestry department to determine which trees can be removed and which cannot, prior to preliminary design beginning.
 - This scope of work anticipates identifying tree removals, but tree protection & removal plan is assumed to be in subsequent task order.
- Geotechnical:
 - All geotechnical work is excluded from this task order. Pavement design and geotechnical work is assumed to be prepared during the final design phase and completed by Shannon and Wilson.

Task 6.2 Exclusions

- Preparation of intersection grading and any pavement improvements
- Preparation of drainage design and hydraulic modeling
- Preparation of construction stormwater/dewatering/street use permits
- Phased construction documents
- Detailed retaining wall or landscaping wall sheets
- Access management plan
- Landscaping design except for seed mixes to stabilize fills and slopes
- Street lighting and photometric analysis
- Fiber communications or interconnect design or plans
- Electrical one-line diagram

Task 6.2 Deliverables

- 30% FIR Plans (described sheets only)
- 30% FIR Opinion of Probable Construction Cost Estimate (civil items only)
- 30% FIR Comment Resolution Matrix

Task 6.2 Meetings and Coordination

- Discipline specific technical coordination meetings will be conducted as necessary to discuss design process and decision items. Assumes up to six (6) meetings.
- Attend one (1) CDOT format FIR meeting.

Project Schedule

DEA will begin work on Phase 1 of this HSIP project upon notice to proceed. Total Task Order duration is assumed to be 10 months from NTP. Preliminary 30% design plans and estimate are anticipated to be completed in Fall of 2024. This completion date assumes NTP by December 1, 2023 and typical review durations by the City and CDOT.

Project Fee

The total amount requested for this Task Order is **\$277,136**. See attached estimate for totals.

Please let me know if you have any concern or questions. I can be contacted directly at (305) 951-5442 or sarah.rachal-dormand@deainc.com

Sincerely,

DAVID EVANS AND ASSOCIATES, INC.

Sarah Rachal-Dormand, PE

Project Manager

Cc: Contract File, Sara Ciasto, Velvet Kuesel

Attachments:

- Attachment A= Fee Estimate
- Attachment B= Work Breakdown
- Attachment 3A & 3B= Project Area Assumptions

ATTACHMENT A- Fee Estimate

David Evans and Associates

Classification	Hourly Rate	Hours	Total
Senior Project Manager	\$ 250.00	22	\$ 5,500.00
Project Manager	\$ 212.00	342	\$ 72,504.00
Engineer II	\$ 155.00	455	\$ 70,525.00
Designer	\$ 125.00	191	\$ 23,875.00
Junior Planner	\$ 110.00	30	\$ 3,300.00
Planning Task Leader	\$ 205.00	92	\$ 18,860.00
Project Accountant	\$ 135.00	10	\$ 1,350.00
Project Coordinator	\$ 125.00	24	\$ 3,000.00
Survey Manager	\$ 230.00	9	\$ 2,070.00
Project Surveyor	\$ 160.00	113	\$ 18,080.00
GPS Surveyor	\$ 138.00	294	\$ 40,572.00
Survey Tech II	\$ 132.00	120	\$ 15,840.00
Expenses			\$1,660
	DEA Subtotal	\$	277,136.00

Attachment B: Work Hour Breakdown (for information only) 1 of 2

City of Littleton

Base Project: Labor Hours and Costs David Evans and Associates

Broadway & Mineral and Broadway & Littleton Blvd Intersection Improvements

Task Order/Phase 1

11/1/2023

Task	DEA														DEA Hours	DEA Labor Cost	DEA Direct Cost
	Civil Design & Utilities						Survey and ROW					Administrative					
	\$ 250	\$ 212	\$ 155	\$ 125	\$ 110	\$ 205	\$ 230	\$ 160	\$ 138	\$ 138	\$ 132	\$ 135	\$ 125				
Senior PM	Project Manager	Engineer II	Designer	Jr Planner	Planning Task Leader	Survey Manager	Project Surveyor	GPS Surveyor	GPS Surveyor	Survey Tech II	Project Accountant	Project Coordinator					
Task 1- Project Management and Meetings																	
Project Management																	
Project Management, setup, invoicing & progress reports	2	10				1						10	24	47	\$ 7,175		
Project Schedule		3												3	\$ 636		
Meeting Agendas, minutes & materials		12	6	2		2								22	\$ 4,134		
General Project Management		24												24	\$ 5,088		
Quality Management Plan	1	2												3	\$ 674		
Project Meetings																	
Project Team Meetings (Assumes up to 10)		14	7			8								29	\$ 5,693		
City Kick-Off Meeting		1				1								2	\$ 417		
CDOT Scoping Meeting		1				1								2	\$ 417		
Coordination Meetings with HDR		6	4											10	\$ 1,892		
Internal Kick-Off Meeting		1	1			1	1	1						5	\$ 962		
Bi-Weekly Progress Meetings (Assumes up to 20)		20	14			8								42	\$ 8,050		
Discipline Specific Meetings (Assumes up to 6)		6	3											9	\$ 1,737		
SUBTOTAL	3	100	35	2	0	22	1	1	0	0	0	10	24	198	\$ 36,875	\$ -	
Task 2- Data Collection and Alternatives Analysis																	
Task 2.1 Review Existing Project Data																	
Review Project Data		3	6											9	\$ 1,566		
Aerial Data- Collect Imagery & Create Base File			5											5	\$ 775		
Task 2.2 Survey																	
Survey Control										34	30			64	\$ 8,652		
Topographic Data and Map								40		95	50			185	\$ 26,110		
Ownership file and Preliminary ROW (desktop)								40		41				81	\$ 12,058	\$ 250	
Existing ROW (field)										44	40			84	\$ 11,352		
Extracting									80					80	\$ 11,040		
PM Review							8							8	\$ 1,840		
Survey Equipment (Scanner)																\$ 1,300	
SUBTOTAL	0	3	11	0	0	0	8	80	80	214	120	0	0	516	\$ 73,393	\$ 1,550	
Task 4- Develop Alternatives Criteria																	
Task 4.2 Environmental Existing Conditions																	
Review of Environmental Existing Conditions					8	8								16	\$ 2,520		
Existing Conditions (summary and GIS)					4	8								12	\$ 2,080		
Task 4.3 Alternatives Criteria & Pre-Concept Development																	
Environmental Criteria					4	4								8	\$ 1,260		
Design Criteria Spreadsheet		2	6											8	\$ 1,354		
Site Visit and Documentation		4	8											12	\$ 2,088		
SUBTOTAL	0	6	14	0	16	20	0	0	0	0	0	0	0	56	\$ 9,302		
Task 5- Concept Development																	
Task 5.1 Initial Concept Development																	
Concept Development		30	60											90	\$ 15,660		
Concept 11x17 Exhibits (up to 10)		16	25	35										76	\$ 11,642		
Supplemental Information Exhibits (up to 5)		6	16	16										38	\$ 5,752		
Environmental Alternatives Screening		2			8	8								18	\$ 2,944		
QAQC Concept Design & Exhibits	3	10	16											29	\$ 5,350		

Attachment B: Work Hour Breakdown (for information only) 2 of 2

Task	DEA														DEA Hours	DEA Labor Cost	DEA Direct Cost
	Civil Design & Utilities						Survey and ROW					Administrative					
	\$ 250	\$ 212	\$ 155	\$ 125	\$ 110	\$ 205	\$ 230	\$ 160	\$ 138	\$ 138	\$ 132	\$ 135	\$ 125				
Senior PM	Project Manager	Engineer II	Designer	Jr Planner	Planning Task Leader	Survey Manager	Project Surveyor	GPS Surveyor	GPS Surveyor	Survey Tech II	Project Accountant	Project Coordinator					
Task 5.2 Preferred Concept Design																	
Detailed Concept Design	1	12	30											43	\$ 7,444		
Refined Concept Exhibits (up to 4)		8	14	12										34	\$ 5,366		
Quantity Take Off & Opinion of Probable Construction (OPCC)		8	12	4										24	\$ 4,056		
Final 15% Concept Designs & Exhibits (up to 2)	1	4	10	8										23	\$ 3,648		
QAQC Final Concept Exhibits	3	8	14											25	\$ 4,616		
Technical Review Meetings (up to 4)	1	4	2			2								9	\$ 1,818		
CDOT Review Meetings (up to 2)		4				1								5	\$ 1,053		
SUBTOTAL	9	112	199	75	8	11	0	0	0	0	0	0	0	414	\$ 69,349	\$ -	
Task 6- Environmental Clearances & Preliminary 30% (FIR) Design																	
Task 6.1 Environmental Clearances																	
6.1 A- Environmental Tracking		1				3								4	\$ 827		
6.2 B- Section 4f/6f/Recreational Resources					4	6								10	\$ 1,670		
6.3 C- Biological Resources					2	16								18	\$ 3,500	\$ 110	
Environmental Resource Coordination						12								12	\$ 2,460		
Task 6.2 Preliminary 30% (FIR) Design																	
Intersection Specific Adjustments & Associate OPCC	4	20	30	20										74	\$ 12,390		
Preliminary Roadway Design	2	35	40	10										87	\$ 15,370		
Preliminary Truck Turn Exhibits		5	10	12										27	\$ 4,110		
30% (FIR) Plans															\$ -		
General Notes		2	2			1								5	\$ 939		
Survey Control Sheet								32						32	\$ 5,120		
Preliminary Typical Sections			10	4										14	\$ 2,050		
Preliminary Roadway Plan Sheets		16	26	12										54	\$ 8,922		
Preliminary Curb Line Profiles		10	20	12										42	\$ 6,720		
Preliminary Median Profiles		10	20	12										42	\$ 6,720		
Existing Utility Plan (review & incorporation into design plans)		2	10											12	\$ 1,974		
30% (FIR) Quantities & Opinion of Probable Construction Cost	2	6	10	8										26	\$ 4,322		
30% (FIR) QAQC	2	10	16	16		1								45	\$ 7,305		
30% (FIR) Comment Resolution Matrix		3		8										11	\$ 1,636		
Post 30% Site Visit (Design Validation)		1	2											3	\$ 522		
SUBTOTAL	10	121	196	114	6	39	0	32	0	0	0	0	0	518	\$ 86,557	\$ 110	
TOTAL LABOR HOURS	22	342	455	191	30	92	9	113	80	214	120	10	24	1702			
TOTAL DEA COST	\$ 5,500	\$ 72,504	\$ 70,525	\$ 23,875	\$ 3,300	\$ 18,860	\$ 2,070	\$ 18,080	\$ 11,040	\$ 29,532	\$ 15,840	\$ 1,350	\$ 3,000		\$ 275,476	\$ 1,660	

TOTAL COST \$ 277,136

Attachment 3A- PHASE 1- Project Area Assumptions

S BROADWAY AND W MINERAL AVE



ASSUMES MAINLINE VERTICAL PROFILE WILL NOT BE ADJUSTED.
 PHASE 1 WORK ASSUMES PRELIMINARY MEDIAN HORIZONTAL AND VERTICAL GEOMETRY.

PHASE 1 CURB RAMPS TO INCLUDE 2D LAYOUTS ONLY. CURB RAMP GRADING EXCLUDED FROM PHASE 1.

PHASE 1 CURB RAMPS DESIGN TO INCLUDE 2D LAYOUTS ONLY. CURB RAMP GRADING EXCLUDED FROM PHASE 1 WORK

ASSUMED PRELIMINARY CURB LINE PROFILE. ASSUMES EXISTING CURB LINE REMAINS IN PLACE.
 WIDENING IS NOT ANTICIPATED.

ASSUMES MAINLINE VERTICAL PROFILE WILL NOT BE ADJUSTED.
 PHASE 1 WORK ASSUMES PRELIMINARY MEDIAN HORIZONTAL AND VERTICAL GEOMETRY.

ASSUMED PRELIMINARY CURB LINE PROFILE. ASSUMES EXISTING CURB LINE REMAINS IN PLACE.
 WIDENING IS NOT ANTICIPATED.

ASSUMED PRELIMINARY CURB LINE PROFILE. ASSUMES EXISTING CURB LINE REMAINS IN PLACE.
 WIDENING IS NOT ANTICIPATED.

PHASE 1 CURB RAMPS TO INCLUDE 2D LAYOUTS ONLY. CURB RAMP GRADING EXCLUDED FROM PHASE 1.

ASSUMED PRELIMINARY CURB LINE PROFILE. ASSUMES EXISTING CURB LINE REMAINS IN PLACE.
 WIDENING IS NOT ANTICIPATED.

PHASE 1 CURB RAMPS DESIGN TO INCLUDE 2D LAYOUTS ONLY. CURB RAMP GRADING EXCLUDED FROM PHASE 1 WORK

ASSUMES MAINLINE VERTICAL PROFILE WILL NOT BE ADJUSTED.
 PHASE 1 WORK ASSUMES PRELIMINARY MEDIAN HORIZONTAL AND VERTICAL GEOMETRY.

LEGEND:

- ASSUMED PRELIMINARY CURB LINE PROFILE LIMITS
- ASSUMED LIMITS OF PRELIMINARY MEDIAN HORIZONTAL/VERTICAL GEOMETRY
- ASSUMED LIMITS OF PRELIMINARY ISLAND IMPROVEMENTS

ERO Resources Corporation Scope of Work for Environmental Services for Littleton Broadway Intersection Improvements Jefferson County, Colorado

August 23, 2023

Summary

ERO Resources Corporation (ERO) prepared this scope of work (SOW) for the Littleton Broadway Intersection Improvements (Project) in the [City of Littleton, Jefferson County, Colorado. ERO will provide environmental services, including necessary research, fieldwork, and documentation to complete Colorado Department of Transportation (CDOT) Categorical Exclusion (CatEx) and City of Littleton environmental requirements.

Table 1 lists the resources and permitting requirements in the CDOT Form 128 (National Environmental Policy Act (NEPA) Determination/Project Certification). ERO will address Form 128 clearances for hazardous materials, archaeology, and history resources, and understands all other resources will not need to be analyzed in detail or that CDOT or the Client will provide clearances, as noted. Work will not commence on this contract until written Notice to Proceed is received from the Client.

Table 1. Resource Analysis and Permitting Requirements

Resource or Permit	Task Number
Clearances Required for NEPA Process	
<i>*ERO uses subconsultants for services related to Air Quality, Noise, and Paleontology</i>	
Hazmat – Initial Site Assessment (ISA)	Task 1
Lead-Based Paint Survey	Task 1a
Archaeology	Task 2
History	Task 2

Approach

Task 1. HazMat — Limited Hazardous Materials Assessment / Initial Site Assessment

Task 1a. Limited Hazardous Materials Assessment – Initial Site Assessment

ERO will conduct Limited Hazardous Materials Assessment – Initial Site Assessments (ISAs) for hazardous materials for the two separate project areas: Broadway & Littleton Blvd and Broadway & Mineral Ave. The assessments will generally conform to CDOT ISA requirements detailed in CDOT’s *Hazardous Material Guidance*, dated June 2018. To complete this task, ERO will conduct visual site inspections of the project areas. The purpose of the inspections is to document environmental concerns. ERO will

SCOPE OF WORK – UTILITIES (PHASE 1 - PRELIMINARY DESIGN)

Triunity anticipates the following tasks in support of the Preliminary Design Effort (Phase 1) of the Broadway & Littleton Blvd and Broadway & Mineral Ave Intersection Reconstruction Project with the following Scope of Work elements as taken from the Request for Qualifications:

Task 1: Project Management & Meetings (Preliminary Design)

Triunity anticipates the following Project Management activities as part of Task 1:

- Project kick-off meeting in person, as well as two additional in person meetings. The in-person meetings are anticipated ahead of the Final Design phase of the project.
- Up to 12 bi-weekly meetings for Preliminary Design phase. – Assumes 10-month Preliminary Design Phase, however, utilities will not be discussed at every bi-weekly meeting.
- Up to 2 stakeholder meetings.
- Up to 2 1-hr coordination meetings with CDOT, City of Littleton, and Consultant Team for the Scoping and FIR meetings.
- Monthly progress reports and invoicing

Exclusions/Assumptions:

- Meeting agendas and meeting minutes will be prepared by others.

Task 2.3: Data Collection - Subsurface Utility Engineering (SUE)

Triunity will perform the following activities as part of Task 2.3:

- Identify existing utilities within project work zone.
 - Perform records research to obtain utility location maps by performing the following:
 - Submit a notification to the Colorado811.
 - Contact local utility providers to request records.
 - Collect known data on utilities within project area– (key maps, electronic files, as-built drawings, GIS data, etc.).
- Complete subsurface utility designation by geophysical investigation (Quality Level B) using equipment capable of radio frequency generation and detection up to 700 feet for each approach.
- Develop existing utility base mapping in appropriate CAD standards depicting the achieved quality levels, utility ownership, type, size, and material where provided.
- For activities requiring work on land not controlled by the City of Littleton, obtain the necessary written permission to enter the premises with support from the project team where applicable.

Deliverables:

Existing Utility Base Map in electronic CAD format

Exclusions/Assumptions:

- Field survey, to be performed by others, will be coordinated by Triunity to pick up designation marks and above ground utility features for utility base file mapping.
- Quality Level B mapping of non-metallic, untraceable, unmapped, or abandoned utilities, thrust blocks, traffic loops, irrigation systems, septic systems, underground storage tanks, and drain tiles is excluded. These facilities will be represented on the plans as Quality Level D where shown on existing maps, as-builts, or other records obtained as part of the research and investigation.
- Ground Penetrating Radar is excluded.
- Cleaning of manholes filled with water or debris is excluded.
- Confined space entry is excluded.
- CCTV services to locate sanitary mains and services are excluded.
- Permits are not included in the fee, but will be sent as a pass-through cost, where applicable.

Task 5.2: Preferred Concept Development

Triunity anticipates cursory reviews of 4 concept designs, up to 8 hours, with input regarding utility impacts and potential design considerations that may help minimize utility conflicts where possible.

Exclusions/Assumptions:

- No formal deliverables for Concept Development.

Task 6.2: Preliminary 30% (FIR) Design

Triunity anticipates the following tasks associated with the Preliminary Design:

- Develop SUE Plans in combination with Utility Coordination Plans for up to 2 Concepts selected to advance to preliminary design, illustrating proposed conceptual utility relocations as identified in coordination meetings with the utility owners.
- Coordinate with utility companies during the Preliminary design phase of this project.
 - Coordination with utility companies is anticipated to include Denver Water, City of Littleton Sewer (South Platte Renewal Partners), Xcel Electric and Gas, and various communications companies.
 - Host up to 6-1 hour coordination meetings with 6 utility owners including agendas and meetings minutes.
- Outline utility impacts in the Utility Matrix for up to 2 Concept Plans.
- Prepare draft Utility Specifications with outline of Contractor and Utility Owner responsibilities.
 - Specifics regarding utility impacts will not be included until Final submittal.
- Prepare a preliminary cost estimate for any utility impacts anticipated to be a project cost.

Deliverables:

- Preliminary SUE/Utility Coordination Plans
- Draft Utility Specifications
- Preliminary Utility Cost Estimate

Exclusions/Assumptions:

- Engineered design of utilities is not included.
- Electrical design is not included.
- Assumes 4 plan sheets plus General Notes & Legend, Utility Matrix, and Test Hole Log (7 sheets total) each for 2 Concept Designs.
- Draft Utility Specifications (1 draft) will be outline and format only, specifics regarding utility impacts will not be included.
- SUE Report will not be included at Preliminary Design.
- Assumes 1 FIR Review and Comment Response period.

ITS Services

Triunity anticipates the following tasks to support ITS related service for the Preliminary Design (Phase 1) of the Broadway & Littleton Blvd and Broadway & Mineral Ave Intersection Reconstruction Project.

Task 1: Project Management & Meetings (Preliminary Design)

Triunity anticipates attending the following activities as part of Task 1:

- Project kick-off meeting in person, as well as two additional in person meetings. The in-person meetings are anticipated ahead of the Final Design phase of the project.
- Up to 5 design meetings.
- Up to 2 1-hr coordination meetings with CDOT, City of Littleton, and Consultant Team for the Scoping and FIR meetings.

Exclusions/Assumptions:

- Meeting agendas and meeting minutes will be prepared by others.

Task 2.3: Data Collection - Subsurface Utility Engineering (SUE)

Triunity anticipates the following activities as part of Task 2:

- Participate in the Alternatives Analysis.
- Review impact on existing Fiber Optic infrastructure and provide input on potential relocations and updated connection of the intersections.

Deliverables:

- Coordination of impacts on new and existing fiber optics.

Exclusions/Assumptions:

- Field survey, to be performed by others
- Fiber Optic connection of Traffic Cabinets only. NO other ITS design required.

Task 5.2: Preferred Concept Development

Triunity anticipates cursory reviews of up to 4 concept designs, up to 10 hours, with input regarding impact of fiber optic designs and other potential design considerations.

Exclusions/Assumptions:

- No formal deliverables for Concept Development.

Task 6.3: Preliminary 30% (FIR) Design

Triunity anticipates the following tasks:

- Develop ITS Plans illustrating proposed fiber optic relocations and new lateral connects.
- Draft Specifications (CDOT or other Standard specifications).
- Prepare a preliminary cost estimate.
- Perform 30% design QA/QC.



2023 Broadway & Littleton and Broadway and Mineral
Intersection Reconstruction Project
City of Littleton – SHO M18-023
Preliminary Design (Phase 1) – ITS Scope of Work
Prepared for Michael Baker International

Deliverables:

- FIR design plans
- Draft Specifications
- Preliminary Cost Estimate

Exclusions/Assumptions:

- Electrical design is not included.
- Assumes 9 plan sheets for 2 intersections, including General Notes, Legend, and applicable details.
- Assumes 1 FIR Review and Comment Response period.

ERO Resources Corporation
Scope of Work for Environmental Services for
Littleton Broadway Intersection Improvements

document the general site setting, such as current use(s) of the project area and adjoining properties, and general hydrogeologic and topographic features. ERO will provide a general description of structures and other improvements and identify the following site conditions, if they are observed during the site inspections:

- The quantity, type, and storage system for hazardous substances and petroleum products in connection with identified uses.
- Tanks, containers, drums, barrels, and other systems used for storing hazardous substances and petroleum products not connected to identified uses.
- Aboveground and underground storage tanks.
- Pits, ponds, lagoons, and other features potentially used for storage and/or disposal of hazardous substances and petroleum products.
- Odors, pools of liquids, stained soils and pavement, and stressed vegetation.
- Electrical equipment potentially containing polychlorinated biphenyls (PCBs).
- Potential lead-based paint (samples may need to be taken at additional cost).
- A cursory inspection of the project area for potential asbestos-containing materials.

The following issues are specifically excluded from the ISAs: radon and lead in drinking water.

ERO will also conduct a search of records and files from a variety of sources and compile information pertaining to current and past environmental conditions. These searches may include the following information:

- Topographic, land use, and environmental resource maps.
- Aerial photographs.
- County and city records.
- State and federal databases.

Based on the information gathered during this record search and site inspections, ERO will compile the information and findings into two detailed written reports, including an ISA Checklist, that includes the site descriptions, records reviews, site reconnaissance, and conclusions. The ISA reports will be submitted as a draft to the Client for review and comment prior to being submitted to CDOT.

Assumptions

- The Client will obtain written permission to access the project areas.
- The Client will provide all required engineering plans, and specifications.
- One round of revisions for the ISA reports based on CDOT's comments is included in this SOW and no other revisions will be needed.

Deliverables

- Draft ISA reports delivered to the Client via email.
- Final ISA reports emailed as PDF documents

Task 1b. Lead-Based Paint Surveys

ERO will subcontract with DS Environmental Consulting (DS) to provide a Certified Lead-Based Paint (LBP) Inspector to perform limited LBP screenings of accessible painted structures, signs, and poles within the project areas using a hand-held X-Ray fluorescence (XRF) analyzer, per the manufacturer's specifications.

Assumptions

- DS will only test materials that can be safely accessed without additional equipment (eg. man lifts, fall protection, traffic control equipment); and
- No paint chip samples, to be analyzed by a laboratory for lead by flame atomic absorption, will be collected as part of this limited field screening.

Deliverables

- DS will prepare and submit two separate final reports and provide necessary consulting regarding the results of the limited screening.

Task 2. Archaeology and History

Compliance with Section 106 of the National Historic Preservation Act (NHPA) and with the Colorado State Register Act (CRS 24-80.1 and 8 CCR 1504-5) is required as part of the NEPA documentation and CatEx process. In coordination with CDOT, ERO will conduct a formal file search and literature review of the CDOT-defined area of potential effects (APE) to assist in determining whether the project has the potential to cause effects on historic properties. Sources include Historic Street Cars of Colorado, CDOT's Historic Sites Viewer, historical aerial photography, U.S Geological Survey quadrangles and highway maps, county assessor records, and the Office of Archaeology and Historic Preservation's (OAHP) Compass database.

Based on a preliminary review of historical records, no previously resources are present and there is no potential for unknown archaeological or historical resources within the area of potential effect (APE). Because the project is located in disturbed areas in the road right-of-way and the project will not require new ROW or easements, ERO will compile the file search and literature review results into two memoranda (one for archaeological resources and one for historical resources) to CDOT recommending no further work.

Assumptions:

- Based on current wait times, ERO assumes the OAHP will return file search results within 15-20 business days. A rush order may be requested for an additional \$300 fee.
- CDOT will require a .25 mile buffer of the APE.
- The project does not require right-of-way or easement acquisition. If ROW acquisitions or easements are needed from any parcels containing historical buildings or structure 45 years or older, ERO will contact the Client to negotiate a new cost estimate.
- One round of edits on the draft technical memoranda if requested by the CDOT reviewer.

ERO Resources Corporation
 Scope of Work for Environmental Services for
 Littleton Broadway Intersection Improvements

- In the event CDOT determines fieldwork and reporting for consultation with the State Historic Preservation Officer (SHPO) is necessary, ERO will conduct these tasks under a revised scope of work.

Deliverables:

- Draft and final technical memoranda (2) recommending no further work emailed to the Client and CDOT.

Task 3. Project Management and Coordination

This task includes items associated with project coordination such as project start-up documentation, health and safety plan compliance, monthly invoicing, communication through emails and phone calls, and quality assurance. ERO will attend up to three virtual meetings to include (but not be limited to) the CDOT Environmental Scoping, FIR, and FOR meetings. ERO will coordinate with the Client on schedule, design, and other project-related matters via telephone and email. ERO will ensure all documents and figures are reviewed for technical and editorial accuracy.

Scope of Work Assumptions

- Changes to the project area boundary after environmental tasks have begun will require additional effort and ERO will coordinate with the Client to determine if changes in the scope or budget are necessary.
- The Client will provide all base maps and aerial photographs required by ERO for mapping and field surveys.
- The Client will arrange and provide written permission to access the project area.
- Biological, paleontological resources, air quality, noise, farmland protection, SB40, and Section 4(f) and 6(f) clearances will not be needed or will be completed by the Client or CDOT.
- No on-site or in-person meetings are included in this SOW. All project communication would take place through virtual meetings (assumes three), emails, and phone calls.
- This SOW does not include additional work required in the event any currently unknown significant resource is located in the project area.
- One round of revisions for all reports based on CDOT’s comments is included in this SOW and no other revisions will be needed.

Estimated Costs

The above Tasks 1 through 3 will be completed on a time-and-materials basis for a cost not to exceed \$00.00 (see below for breakout), including expenses billed at cost plus 8%.

Task 1.	Hazmat – Initial Site Assessment (ISA)	\$10,309.00
Task 1a.	Lead-Based Paint Survey	\$4,899.00
Task 2.	Archaeology and History	\$3,756.00
Task 3.	Project Management	\$3,512.00
	Total	\$22,476.00

ERO Cost Proposal - Littleton Broadway Intersection Improvements

Labor Category	2023/ Unit Rate	Task 1. ISA (for two separate intersections)	Task 1a. LBP Survey	Task 2. Archaeological Resources	Task 3. History	Task 4. Project Management	Labor Hours Total	Totals
Project Principal	\$197.00	8	2				10	\$1,970
Senior Environmental Planner	\$185.00	2	1	1	1	16	21	\$3,885
Staff Geoscientist	\$110.00	60					60	\$6,600
GIS/Graphics Specialist	\$125.00	4		2	2		8	\$1,000
Senior Cultural Resource Specialist	\$135.00			1			1	\$135
Staff Cultural Resource Specialist I	\$96.00			4			4	\$384
Architectural Historian I	\$126.00				15		15	\$1,890
Word Processing/Editor	\$109.00	4			2		6	\$654
Administrative Staff	\$92.00					6	6	\$552
Total Labor Hours		78	3	8	20	22	131	
Total Labor		\$9,482	\$579	\$954	\$2,543	\$3,512		\$17,070
Expenses	Unit Rate	Task 1. ISA (for two separate intersections)	Task 1a. LBP Survey	Task 2. Archaeological Resources	Task 3. History	Task 4. Project Management	Totals Quantities	Totals
Mileage	\$0.655	100					100	\$66
File search fee	\$60.00				4		4	\$240
Env. DB Report	\$350.00	2					2	\$700
Subconsultant	\$2,000.00		2				2	\$4,000
Total Expenses		\$766	\$4,000	\$0	\$240	\$0		\$5,006
8% markup		\$61	\$320	\$0	\$19	\$0		\$400
Total estimated costs		\$10,309	\$4,899	\$954	\$2,802	\$3,512		\$22,476

SCOPE OF WORK

2023 BROADWAY & LITTLETON BOULEVARD INTERSECTION AND BROADWAY & MINERAL AVENUE INTERSECTION IMPROVEMENT PROJECT LITTLETON, COLORADO

Project Description

We understand that the City of Littleton intends to improve the safety of the following two intersections: (a) Broadway & Littleton Boulevard and (b) Broadway & Mineral Avenue. Michael Baker International (MBI) has requested that Shannon & Wilson (SW) provide geotechnical and pavement design services for the proposed improvements.

Field Explorations and Laboratory Testing

The extent of the proposed pavement improvements is unknown at this time. However, based on the project RFP and discussions with MBI, we assume pavement improvements will be required in approximately 500 feet of roadway in each leg of each intersection (2,000 feet of roadway in each intersection, for a total of 4,000 feet of roadway). SW proposes to complete the following subsurface exploration program at each intersection:

- One 25-foot deep boring to support design of new signal poles and to support pavement design for the improvements.
- Six 5-foot deep and one 10-foot deep borings to support pavement design for the improvements.

Total drilling footage is estimated to be 130 feet. A geologist or geotechnical engineer from our staff will log the borings and collect samples for classification and laboratory testing. If necessary, additional explorations may be completed as the design develops and the extents of pavement improvements are determined.

In addition to drilling, we propose to conduct a laboratory testing program consisting of moisture content, grain size analysis, Atterberg limits, swell/collapse testing, swell/collapse, and corrosion testing, as appropriate.

Analysis and Reporting

A geotechnical engineer will analyze the data generated during the subsurface exploration program and develop geotechnical recommendations for the project:

- Evaluation of the applicability CDOT S-Standards for signal pole design for both intersections. If the S-Standards are not applicable, we will provide site-specific deep foundation design parameters.
- Recommendations for pavement patching, subgrade treatment, and pavement design for roadway widening at each intersection. The pavement design will be completed in accordance with the City of Littleton Design Standards and Construction Specifications, and Metropolitan Government Pavement Engineers Councils (MGPEC) design standards.

The report will be signed and sealed by a professional engineer registered in the State of Colorado. We will prepare a draft version of the report for review by the project team. After receiving and incorporating comments, we will finalize the report.

Assumptions

We made the following assumptions in preparing this proposal:

- Will obtain right-of-way permits from the City of Littleton as applicable.
- All borings will require traffic control consisting of a single lane closure.
- We assume working hours of 9am to 3pm. We assume five days of drilling will be required.
- Borings will be staked using site features and a hand-held recreational grade GPS device; surveying of boring locations is not included or will be provided by others.
- Borings will be drilled with hollow-stem or solid-stem auger methods.
- Groundwater will be measured during drilling; no monitoring wells or piezometers will be installed.
- Cuttings and groundwater generated during drilling are not contaminated, are non-hazardous, and will not require disposal as hazardous materials. No waste profiling of investigative derived waste will be performed.
- Borings will be backfilled with flow fill mixed onsite. Excess cuttings will be removed from the site. Pavement will be patched with hot mix asphalt.
- At the completion of drilling, SW will stake/mark the boring location. Survey of the boring location will be completed by others.
- The SW project manager will attend 6 hours of meetings (two hours for FIR review, two hours for FOR review, and 2 hours for team meetings).
- We included 2 hours to assist with review of project specifications.
- Project plans will be developed by others.



- Utility clearing will be performed only to the extent to safely perform geotechnical drilling.
- Hydrovac excavation of utilities is not required (utility potholing).
- We have not accounted for any delays due to inclement weather.
- A traffic study for the pavement design analysis will be conducted by others.
- A life cycle cost analysis for the paving materials is not required.
- One geotechnical report deliverable will be prepared for both intersection improvements.
- All work will be completed during calendar year 2023.
- Soil sample collected from our geotechnical investigation will be disposed after the final, stamped report has been provided or within 1-year of the completion of the geotechnical investigation.

GEOTECHNICAL FEE ESTIMATE
2023 BROADWAY & LITTLETON BOULEVARD INTERSECTION AND
BROADWAY & MINERAL AVENUE INTERSECTION IMPROVEMENT PROJECT
LITTLETON, COLORADO

SHANNON & WILSON, INC.

TASKS/SUBTASKS	HOURS							DOLLARS						SUB TOTAL	ODC	TOTAL	
	PIC	PM	GEOL	ENG	CAD/TECH	CLR	Total	PIC	PM	GEOL	ENG	CAD/TECH	CLR				
								\$260	\$190	\$115	\$135	\$115	\$100				
1 SUBSURFACE EXPLORATIONS																\$14,750	\$14,750
1.1 Boring Layout and Site Visit		0.5	4.0				4.5		\$95	\$460					\$555		\$555
1.2 Coordinate with Subcontractors and Permitting		1.0	6.0				7.0		\$190	\$690					\$880		\$880
1.3 Utility Locates		1.0	12.0				13.0		\$190	\$1,380					\$1,570		\$1,570
1.4 Drilling and Logging		3.0	40.0				43.0		\$570	\$4,600					\$5,170		\$5,170
2 LABORATORY TESTING																\$5,954	\$5,954
2.1 Assign Laboratory Testing		1.0	2.0	2.0			5.0		\$190	\$230	\$270				\$690		\$690
2.2 Finalize Boring Logs			3.0	2.0		4.0	9.0			\$345	\$270		\$400	\$1,015		\$1,015	
3 PAVEMENT DESIGN	1.5	4.0		20.0			25.5	\$390	\$760		\$2,700			\$3,850		\$3,850	
4 SIGNAL POLE FOUNDATIONS	0.5	1.0		8.0			9.5	\$130	\$190		\$1,080			\$1,400		\$1,400	
6 GEOTECHNICAL REPORT																\$725	\$725
6.1 Draft Report	2.0	4.0	8.0	28.0	6.0	3.0	51.0	\$520	\$760	\$920	\$3,780	\$690	\$300	\$6,970		\$6,970	
6.2 Final Report	1.0	2.0	1.0	8.0	2.0	1.0	15.0	\$260	\$380	\$115	\$1,080	\$230	\$100	\$2,165		\$2,165	
7 MEETINGS		6.0					6.0		\$1,140					\$1,140		\$1,140	
8 SPEC REVIEW		2.0					2.0		\$380					\$380		\$380	
9 PM		2.0				4.0	6.0		\$380				\$400	\$780		\$780	
TOTAL	5.0	27.5	76.0	68.0	8.0	12.0	196.5	\$1,300	\$5,225	\$8,740	\$9,180	\$920	\$1,200	\$26,565	\$21,429	\$47,994	

LABORATORY TESTING				
Water Content	32	tests	\$12	\$ 384
Gradation Analysis	4	tests	\$125	\$ 500
R-Value	2	tests	\$500	\$ 1,000
% Passing	12	tests	\$60	\$ 720
Atterberg Limits (3 point)	4	tests	\$135	\$ 540
Atterberg Limits (1 point)	12	tests	\$100	\$ 1,200
Corrosion Suite	2	tests	\$220	\$ 440
Sulfate Content	2	tests	\$65	\$ 130
Swell	8	tests	\$130	\$ 1,040
TOTAL				\$ 5,954

SUBCONTRACTORS			
Drilling Subcontractor			
Mob/Demob	8	hrs	\$150 \$ 1,200
Truck Mounted Hollow-Stem Auger	10	hr	\$205 \$ 2,050
Truck Mounted Solid-Stem Auger	20	hr	\$180 \$ 3,600
Pavement Repair	16	ea.	\$20 \$ 320
Coring	16	ea.	\$20 \$ 320
Flow Fill	130	ft	\$8 \$ 1,040
Support Truck	4	day	\$305 \$ 1,220
Traffic Control Subcontractor			
Single Lane Lane Closure and Traffic Control Plans	4	day	\$1,250 \$ 5,000
TOTAL			\$ 14,750

Other Expenses				
Vehicle	7	days	\$35	\$ 245
Pavement M-E Software License	-	LS	\$500	\$ -
Brass Modified California Liners	35	liners	\$8	\$ 280
Sample Jars	5	box	\$20	\$ 100
Field/Office Expenses	1	LS	\$100	\$ 100
TOTAL				\$ 725

COST ESTIMATE - SUMMARY			
Labor			\$ 26,565
Laboratory Testing			\$ 5,954
Subcontractors			\$ 14,750
Other Expenses			\$ 725
TOTAL			\$47,994

August 30, 2023

Brett Higgins
Traffic Manager
Michael Baker International
165 South Union Blvd, Suite 1000
Lakewood, CO 80228

RE: City of Littleton Broadway Intersection Improvements

Dear Brett,

All Traffic Data Services is pleased to submit the scope of work and fee estimate to complete the City of Littleton Broadway Intersection Improvements traffic data counts that you have requested.

Please find attached our *Scope of Work* and *Fee Estimate* for the project.

Please call me at 720-660-4048 if you have any questions or would like to discuss this proposal in further detail.

Respectfully,



Nathan Warren
(720) 660-4048
Regional Manager

SCOPE OF WORK AND FEE ESTIMATE

Task 1:

Turning Movement Counts

Turning movement counts will be collected for a total of 7 hours (7a-9a, 11a-1p, and 3p-6p) during a representative weekday. Data will be collected for each turning movement and binned in 15-minute increments, separated by light vehicles, heavy vehicles, bicycles and pedestrians. The one-hour peak for each period will be calculated and summarized on a turning movement diagram.

Deliverables: Diagrams showing daily turning movement counts by movement in excel and PDF format.

Task 2:

Queue Observations

Cameras are to be deployed at each leg of the following intersections (Broadway & Littleton and Broadway & Mineral). Recording times will be for the same hours as the TMCs above but only 1-hour of each peak will be processed. Processed observations are to include max number of vehicles queued per 15minutes.

Deliverables: Excel table including max number of vehicles queued (and approximate distance) per approach per 15-minute interval over an hour span during specified AM/MD/PM recordings.

Fee Estimate:

Description	Sites	Hours	Rate	Sub-Total
Task 1: TMC Counts (7 Total hours each site)	16	112	\$100/site/hour	\$11,200
Task 2: Queue Observations	2	24	\$50/approach/hour	\$1,200
			Total:	\$12,400

We look forward to the opportunity to assist with this project. If you have any questions please feel free to reach out to me directly.

Respectfully,



Nathan Warren
(720) 660-4048
Regional Manager

**2023 BROADWAY & LITTLETON BOULEVARD AND BROADWAY & MINERAL
AVENUE INTERSECTION IMPROVEMENT PROJECT
PHASE 2**

Prepared by Michael Baker International

November 13, 2023

BACKGROUND AND DESCRIPTION

This scope defines services to be provided by Michael Baker International referred to as “MBI” or “Consultant” and their subconsultants for a grant funded Highway Safety Improvement Project (HSIP) administered by the Colorado Department of Transportation (CDOT) and managed by the City of Littleton (City). This project includes engineering services to analyze and design safety improvements for all modes of transportation at the intersections of Broadway and Littleton Blvd and Broadway and Mineral Ave including all approaches. This phase 2 scope of work is a continuation of services provided in Phase 1 and includes consultant services include Final Design – 90%/Field Office Review (FOR), 100% AD Plans, Specification, Engineer’s estimates of probably construction cost (PS&E) and contractor bid support during advertisement. **At the time of this scope of work, the preferred alternative for final design has not been determined. The assumptions for elements that will be advanced into final design within this scope are outlined here within, including subconsultants scopes and are subject to change and renegotiation once the preferred alternative is chosen.**

TASK 1: PROJECT MANAGEMENT AND MEETINGS

This task shall include general administration, coordination, documentation, scheduling, reporting, and related activities for the overall successful completion of the project. The consultant Project Manager will work directly for and support the City’s Project Manager in the management and administration of the project.

The consultant will provide general project management for their scope elements. This includes providing the City with monthly invoices for an assumed Phase 2 duration of 6 months, based on actual monthly expenditures and services, and a progress report that contains a brief review of the past month’s progress/services rendered. This also includes coordinating with the City on the project schedule and providing updates throughout the duration of the project. The consultant will also:

- Complete general project management activities including team coordination and periodic and informal coordination with subconsultants: David Evans and Associates (DEA), Triunity, ERO Resource Corporation, Shannon & Wilson and All Traffic Data.
- Prepare and submit to the City a Project Management Plan (PMP), to include a Project Specific Quality Management Plan; adhere to the QA/QC process throughout the project and for each deliverable.

- Develop and maintain a project contact list.
- Develop and maintain a project schedule.
- DEA will develop and administer a Quality Assurance and Quality Control plan including specific names and locations of technical reviewers and a commitment to adhering to the QA/QC plan. The Consultant will have QA/QC check sets for technical reports, plans, and specifications available upon request and will provide comment resolution documentation for each review.
 - Refer to DEA's scope for more detailed information.

Task 1 Assumptions:

- Consultant will attend the following meetings:
 - Up to twelve (12) bi-weekly Coordination and Progress Meetings (virtual) with the City
 - Up to six (6) monthly project team meetings (internal with consultant team)
 - One (1) 90% (FOR) Review Meeting with the City and CDOT (virtual)
 - One (1) 100% / AD Review Meeting with the City and CDOT (virtual)
 - One (1) Right-of-Way Plans Review (ROWPR) Meeting with the City and CDOT (virtual)
 - One (1) Pre-Bid Meeting with the City (in-person)
 - One (1) site visit meeting with City staff 90% (FOR) design to verify assumptions in the field
- Up to four (4) attendees from the MBI team at major milestone meetings (PM, Drainage, Traffic and Lighting) and as needed for coordination and progress meetings. Subconsultants will also attend as needed.

Task 1 Deliverables:

- Project Management Plan
- Project Schedule
- Meeting agendas, supporting materials and minutes

TASK 2 – SUPPLEMENTAL SURVEY AND RIGHT-OF-WAY (ROW)

David Evans Associates (DEA) will perform additional topographic survey data collection as requested by authorized project staff. For the purposes of this proposal, DEA will estimate approximately four ten-hour days (40 hours) of a two-person survey crew for this work. Should the amount of supplemental work requested exceed this hourly estimate, then the fees for the additional work will be addressed via change order.

Task 2.2 – Right-Of-Way

DEA will subcontract with HC Peck for the research of recorded documents archives and procure documents in support of the following items related to Right-Of-Way (ROW):

- Locate documents which transfer title and prove ownership
- Prepare chain of title
- Look for encumbrances, liens and releases
- Make physical inspection of property and note any physical evidence of apparent easements, wells, ditches, ingress or egress
- Check for and obtain latest subdivisions plats and vacations of streets

After analysis, a Right-of-Way base map will be generated and integrated into the final ROW plan set described in Task 2.4.

Task 2.3 – Ownership Map

Based upon the information procured in research, DEA will generate an ownership base map to be integrated into the final ROW plan set as described in Task 2.4. This task will be composed of both office and field tasks in support of determining ownership and ROW locations throughout the project areas.

Task 2.4 – Right-Of-Way Plan Set

Once the Right-Of-Way and Ownership base maps are complete, a full Right-Of-Way plan set will be generated.

Task 2.5 – Legal Descriptions

DEA will generate one (1) set of legal descriptions for all acquisition and temporary easements. Approximately thirty-four (34) legals have been identified within the limits of the two project areas (see Attachments 2A and 2B for assumptions). These legal descriptions will be signed and sealed by a Colorado Licensed Professional Land Surveyor.

See attached scopes of work from DEA for more detailed information.

TASK 3 – ENVIRONMENTAL CLEARANCE

Task 3.1 – Update Phase 1 Environmental Resource Reports

DEA will perform updates to the Phase 1 environmental resource reports (4f/6f and biological resources) and Section 4(f) Owner with Jurisdiction letters, as needed, to account for any design changes from the FOR design that affect project impacts and mitigation. DEA will coordinate with the City and CDOT on final notes and specifications to include the plans.

See attached scopes of work from DEA for more detailed information.

TASK 4 – 90% (FOR) AND FINAL 100% DESIGN PLANS, SPECIFICATIONS AND ESTIMATE (PS&E)

The consultant team will prepare 90% (FOR) and 100% final design plans, drainage report, specifications, estimates and an anticipated construction schedule for the proposed HSIP project. The design will conform and adhere to the standards identified in Phase 1. All plan sheets are assumed to be 11"x17" and will be completed in AutoCAD Civil 3D 2023, or latest accepted version.

MBI will coordinate with CDOT and the City for the 90% (FOR) milestone & ROWPR meeting. DEA and Triunity will attend the FOR meeting to provide support and answer any design related questions.

DEA will attend the ROWPR meeting with MBI to provide support and answer any design related questions.

Task 4.1 – 90% (FOR) Design Plans, Specifications and Estimate (PS&E)

After resolution of comments and acceptance of 30% (FIR) plans prepared in Phase 1, the Consultant team will complete and submit the 90% (FOR) design, plans, drainage report, specifications, OPCC and anticipated construction schedule to the City and CDOT for review and comment. Comments received will be incorporated into 100% final design plans.

Technical specifications and standard details will be prepared based on City of Littleton standards and specifications; however, the bid package will need to include CDOT Project Special Provisions (PSP's) and Standard Special Provisions (SSP's). CDOT specifications and pay items will be used as the basis for the quantities, cost estimates and bid items.

A 90% (FOR) plan review meeting will be conducted as described in Task 1.

The following is an estimation of the sheets that will be included in this scope for the 90% (FOR) submittal but is not all-inclusive. All sheets are to be created by MBI unless otherwise noted:

- Title Sheet
- Standard Plans List
- General Notes – by MBI, DEA and Triunity
- Geometric Layout – by DEA
- Survey Control – by DEA
- Survey Control Tabulations – by DEA
- Summary of Approximate Quantities – by MBI, DEA & Triunity
- Tabulation Sheets – by MBI, DEA & Triunity
- Typical Sections – by DEA
- Construction Details – by DEA
- Removal and Reset Plans – by DEA
- Roadway Plans – by DEA
- Curb Ramp Construction Details – by DEA
- Curb Return and Flowline Profiles – by DEA
- Sidewalk Construction Details – by DEA

- Median Profiles and Construction Details – by DEA
- Intersection Grading Plan – by DEA
- Erosion Control / Stormwater Management Plans (SWMP)
- Drainage Plans and Profiles
- Drainage and Water Quality Details
- Signing and Striping Plans and Details
- Traffic Signal Plans
- ITS Interconnect Plans – by Triunity
- Construction Phasing and Traffic Control Plans
- Lighting Plans
- SUE and Utility Coordination Plans – by Triunity

Task 4.1 Deliverables:

- 90% (FOR) Plans
- 90% (FOR) Project Technical Specifications
- 90% (FOR) Drainage Report
- 90% (FOR) Opinion of Probable Construction Cost Estimate (OPCC)
- 90% (FOR) Anticipated Construction Schedule
- 90% (FOR) Utility Matrix – by Triunity
- 90% (FOR) Comment Resolution Matrix

See attached scopes of work from DEA and Triunity for more detailed information.

Task 4.2 – 100% Final Design Plans, Specification and Estimate (PS&E)

After resolution of comments and acceptance of 90% (FOR) plans, the Consultant team will complete the final design 100% plans, drainage report, specifications, OPCC and proposed construction schedule. Final 100% (PS&E) plans, specifications and OPCC will be submitted to the City and CDOT for inclusion in the advertisement bid package.

Task 4 Deliverables:

- Final 100% Plans
- Final 100% Project Technical Specifications
- Final 100% Opinion of Probable Construction Cost Estimate (OPCC)

- Final 100% Anticipated Construction Schedule
- Final 100% SUE plans – by Triunity
- Final 100% Utility Matrix – by Triunity
- Final 100% Comment Resolution Matrix
- Final 100% Right-of-Way Plans
- Electronic Files

See attached scopes of work from DEA and Triunity for more detailed information.

Tasks 2 and 4 Assumptions and Clarifications:

SUPPLEMENTAL SURVEY AND RIGHT-OF-WAY (ROW)

DEA will identify the right-of-way and/or permanent or temporary construction easements required for construction. DEA will also prepare the legal descriptions and exhibits for any right-of-way or easements required for the project and prepare right-of-way plans per CDOT requirements. Right-of-way clearance shall be coordinated and obtained from CDOT ROW by DEA.

A ROWPR meeting will be conducted as described in Task 1.

See attached scope of work from DEA for more detailed information.

ENVIRONMENTAL CLEARANCE

DEA will perform updates to the Phase 1 environmental resource reports (4f/6f and biological resources) and Section 4(f) Owner with Jurisdiction letters, as needed, to account for any design changes from the 90% (FOR) design that affect project impacts and mitigation. DEA will coordinate with the City and CDOT on final notes and specifications to include the plans.

See attached scope of work from DEA for more detailed information.

SUBSURFACE UTILITY ENGINEERING (SUE) PLANS

The design will provide new, upgraded, or relocated existing utilities as necessary. Triunity will prepare utility mapping for use in coordination of new utilities. All utilities that are potentially impacted by the project will require potholing. The consultant will prepare final utility plans including the pothole information and field locates. Final utility plans will identify utility conflicts and provide a suggested relocation plan as required. Triunity will coordinate with the utility companies for final relocation plans and specifications. Utility clearance letters will be required from all utility owners within the project limits. Utility clearance will be coordinated and obtained from CDOT Utilities by Triunity.

Utilities will be located by potholes at each potential utility conflict point and proposed traffic signal foundation location. Assume 30 potholes will be required. All design activities and plans shall be compliant with Colorado Senate Bill 18-167 quality level A/B.

See attached scope of work from Triunity for more detailed information.

EROSION CONTROL FEATURES

The construction plans shall incorporate temporary and permanent erosion control features that meet the City and CDOT stormwater quality and drainage standards.

STORM WATER DISCHARGE PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITY (CDPS)

During construction, if one acre or more of earth disturbance is anticipated, a CDPS permit is required. A Storm Water Management Plan (SWMP) is one of the requirements for the CDPS permit. All SWMP's must be approved by CDOT Region 1 Environmental. MBI will prepare a SWMP. CDOT must approve any seeding mix used for re-vegetation within CDOT right-of way.

See attached scope of work from DEA and ERS for more detailed information regarding the CDPS permit.

DRAINAGE AND WATER QUALITY

MBI will prepare a drainage report and plans for this project following the requirements of the City's Storm Drainage Design and Technical Criteria. The drainage analysis shall include an evaluation of existing conditions using survey, available as-builts and drainage reports, and an assessment after preliminary roadway design.

Hydraulic analysis of the existing storm sewer main lines is required. It is assumed drainage reports for surrounding developments are available and will be provided to MBI by the City to help define the tributary watershed(s). Detention for this project may be required and a capacity analysis will be included in the hydraulic analysis. The consultant will evaluate the need for permanent water quality Best Management Practices (BMP's) in order to meet Water Quality standards and specifications.

SIGNING AND STRIPING

MBI will provide final signing and striping designs necessary to safely conduct all modes of traffic. Design plans will be in conformance with the latest edition of the MUTCD, the City of Littleton design standards and CDOT's S-Standards. MBI will conduct a field review to inventory the condition of the existing signs to determine age and condition. Michael Baker will coordinate with the City to review which signs are recommended to remain and which should be removed and/or replaced. These plans shall include removal of existing signs and pavement markings, proposed signs and pavement markings. Any potential impacts to RTD bus stop signage shall be coordinated with RTD and conform to RTD standards.

TRAFFIC SIGNAL DESIGN

MBI will provide final traffic signal design plans for the reconstruction of the existing traffic signals at the Broadway & Littleton Blvd and Broadway & Mineral intersections. These designs assume full traffic signal replacement (all new signal poles, controllers, cabinets, signal heads, wire, and associated equipment). Signal plans will include removal of existing signal equipment, proposed signal pole locations (i.e. - northing, easting, top of caisson elevations) proposed signal equipment layouts (signal heads type, mounting locations, head alignments), approximate proposed pull box locations and conduit runs, phasing diagrams, proposed electrical point of service (if necessary) and proposed service meter

location. At the time of this scope, the two existing intersections do not have service meter pedestals which will be included in the proposed design along with one-line diagrams per CDOT S-613 Standard Plans. It is assumed the City's traffic signal pole standards will be provided and CDOT S-Standard 614-40 and 614-40A signal pole caissons standards will be used for this project.

ITS DESIGN

At the time this scope is written, the City has an existing fiber backbone at Broadway and Littleton Blvd, but does not have a fiber backbone along Broadway at Mineral Ave. It is our understanding the City was recently awarded grant funding for the design and construction to extend their fiber backbone along Broadway from Arapahoe Rd to C-470. Triunity will provide final ITS design plans for the fiber interconnect / splice from the City's mainline fiber backbone along Broadway to the proposed redesigned traffic signals at Broadway and Littleton Blvd and Broadway and Mineral Ave. Should the timing of the future fiber backbone not align with the signal design at Mineral Ave, a fiber interconnect plan can still be provided for future connection.

CONSTRUCTION PHASING AND TRAFFIC CONTROL

MBI will develop realistic "proof of concept" suggested construction phasing plans which will provide the contractor guidance and boundaries for how to construct the proposed design improvements. Where possible, standard construction traffic control cases from the MUTCD and CDOT's S-630 Standard plans will be utilized and referenced. Where full closures may be required, up to one (1) area-wide detour plan will be assumed for each location (Broadway/Littleton Blvd and Broadway/Mineral Ave). It is also assumed that suggested pedestrian detour routes will be identified per phase. The phasing plans will include construction phasing such that the existing traffic signal equipment can remain in use until the new equipment has been installed and is ready to be activated. It is anticipated short durations of an inoperable signal may be required while wiring to an existing or new signal cabinet is made, during which uniformed traffic control will be required. In other cases, a transfer of power connections to the new cabinet will be completed. The consultant will coordinate closely with the City on recommendations for the appropriate process and design at each location. Construction traffic control pay items will be itemized and consistent with CDOT pay items and specifications.

LIGHTING AND ELECTRICAL DESIGN

MBI will be responsible for coordinating the design of lighting with the City. MBI will show on the plans all removals, existing and proposed street lighting locations, equipment details, pole type, luminaire style and lumen output. Lighting design shall meet City of Littleton and/or CDOT spacing criteria and shall include all associated electrical engineering and components necessary for a complete and operational system.

MBI will evaluate the street lighting out to approximately 700 ft (for scoping purposes) in each direction from the intersection to determine if the existing Lighting Design meets City of Littleton and/or CDOT spacing criteria. Once preferred alternatives and their boundaries are better defined, MBI will adjust the limits of street light evaluation. If the existing system is deficient, the consultant shall include

recommendations for all associated electrical engineering and components necessary for a complete and operational system.

MBI will coordinate with Xcel Energy for the power supply and provide all design from the point of service to the lights. In this situation, the construction specifications shall require the City Project Manager to coordinate with Xcel Energy for the installation of the streetlights.

- Site visit to document existing conditions
- Establish basis of design
- Lighting design (Layout, luminaire, lighting calculations)
- Identify power source locations and coordinate with utility
- Final lighting layout and luminaire schedule
- Develop lighting details
- Electrical Design from power source to luminaires and traffic signals
 - Panel schedules
 - Lighting control centers, including feeder sizing, short circuit calculations
 - Circuiting Conduit routing, voltage drop calculations
 - Electrical details
- Utility coordination

TASK 4: BID PHASE SERVICES

MBI will provide the documents for the preparation of the project bid documents by the City which includes, but is not limited to: Construction Plans, Specifications, Reports, and Bid Tabulation.

MBI, DEA and Triunity will provide support during the advertisement phase of the project. This support shall include, but not be limited to the following services:

- Respond to bidding contractor and supplier questions during advertisement/bid periods
- Providing information necessary to prepare addendums to the bid documents,
- attend and participate in the pre-bid meeting and assisting the City in evaluating the submitted construction bids as needed.

See attached scopes of work from DEA and Triunity for more detailed information.

TASK 5: DESIGN SERVICES DURING CONSTRUCTION

Design services during construction has been excluded from the scope at this time.

Project Name: 2023 Broadway & Littleton Blvd and Broadway & Mineral Ave Intersection Improvement Project - Phase 2
Performed By: Brett Higgins
Date: 13-Nov-23

MBI Fee Spreadsheet			1	2	3	4	5	6	7	8	9	10
WBS	Task Name	Subtotal	Principal-in-Charge Butters, Mike Group Manager II \$250.00	PM/Traffic Design Higgins, Brett Sr. Project Manager \$205.00	Cost Estimates Combs, Benjamin Sr. Engineer \$179.00	CAD & Sheet Setup CAD Tech Sr. CAD Technician \$125.00	Drainage & Water Quality East, Lucy Project Manager I \$167.00	Salay, Nick Civil Associate I \$91.00	Traffic Design Starling, Andy Civil Associate II \$101.00	Electrical & Lighting Design Yamashiro, Charles Project Manager III \$180.00	Chesnut, Michael Engineer I \$125.00	Administrative McKinney, Gidget Project Controls \$120.00
1.0 Project Management and Meetings	Project Management											
	Project Setup & Initiation	6	2	4								
	General Management, Invoicing, Status Reporting, Schedule Updates, Coord with City and Subs	36		30								6
	Project Management Plan Update	3	1	2								
	Project Schedule	5	1	4								
	Meeting Agendas, Minutes & Materials	24		24								
	Project Meetings	0										
	Coordination Meetings (bi-weekly, Assume up to 12)	26		12			4		6	4		
	Project Team Meetings (monthly, Assume up to 6)	33		6	1	4	4	4	4	4	6	
	90% FOR Review Meeting	6		2			2			2		
	100% AD Review Meeting	4		2						2		
	Post 90% (FOR) Site Visit - (1 Total) (Design Verification)	6		3			3					
	CDOT ROWPR Meeting (Assume up to 1)	2										
Subtotal 1.0 Project Management and Meetings	151	4	91	1	4	13	4	10	12	6	6	
4.1 90% (FOR) Design	90% Submittal	0										
	Title Sheet	4		1	1	2						
	Standard Plans List	6		2	2	2						
	General Notes - by MBI, DEA and Triunity	14		2	2	4	2	2	2			
	Geometric Layout - by DEA	1		1								
	Survey Control Sheet - by DEA	1		1								
	Survey Control Tabulations - by DEA	1		1								
	Summary of Approximate Quantities - by MBI, DEA and Triunity	10		2	1	2	1	2	2			
	Tabulation Sheets - by MBI, DEA and Triunity	16		2		4	2	4	4			
	Typical Sections - by DEA	1		1								
	Construction Details - By DEA	1		1								
	Removal and Reset Plans - by DEA	1		1								
	Roadway Plans - by DEA	1		1								
	Curb Ramp Construction Details - by DEA	1		1								
	Curb Return and Flowline Profile Sheets - by DEA	1		1								
	Sidewalk Construction Details - by DEA	1		1								
	Median Profiles and Construction Details - by DEA	1		1								
	Intersection Grading Plan - by DEA	1		1								
	Erosion Control / Stormwater Management Plans (SWMP)	31		1			10	20				
	Drainage Plans and Profiles	57		1			18	38				
	Signing and Striping Plans	84		20		24			40			
	Signal Plans	164		24		40			100			
	ITS Plans - by Triunity	2		2								
	Construction Phasing and Traffic Control Plans	162		32		40			90			
	Lighting Plans	161		1		40						
	SUE and Utility Coordination Plans - by Triunity	1		1						40	80	
	Project Technical Specifications	18		8			4				6	
	Project Opinion of Probable Construction Cost Estimate	9	1	2	4		1				1	
	Drainage Report	22					10		12			
	QA/QC	96	2	10		16	10	16	16	10	16	
	Construction Schedule	7	1	4	2							
Utility Matrix (By Triunity)	1		1									
90% (FOR) Comment Resolution Matrix	8		4	2		1				1		
Subtotal 4.1 90% (FOR) Design	885	4	132	14	174	59	94	254	58	96	0	
4.2 Final 100% Design	Final 100% Submittal	0										
	Final 100% Design Plans	152		30		70			40	4	8	
	Final 100% Design Specifications	7		4			1			2		
	Final 100% Design Opinion of Probable Construction Cost Estimate	6		2	2		1			1		
	QA/QC	44	2	8		10	4	6	6	4	4	
Subtotal 4.2 Final 100% Design	209	2	44	2	80	6	6	46	11	12	0	
5.0 Bid Phase Services	Respond to Contractor Questions	9	1	4			2					
	Respond and Prepare Addendums	13	1	4		8						
	Attend Pre-Bid and Bid Meetings	4		4								
Subtotal 5.0 Bid Phase Services	26	2	12	0	8	2	0	0	2	0	0	

Baker Labor Fee												
1.0 Project Management and Meetings	\$27,509.00	\$1,000.00	\$18,655.00	\$179.00	\$500.00	\$2,171.00	\$364.00	\$1,010.00	\$2,160.00	\$750.00	\$720.00	
4.1 90% (FOR) Design	\$118,817.00	\$1,000.00	\$27,060.00	\$2,506.00	\$21,750.00	\$9,853.00	\$8,554.00	\$25,654.00	\$10,440.00	\$12,000.00	\$0.00	
4.2 Final 100% Design	\$29,552.00	\$500.00	\$9,020.00	\$358.00	\$10,000.00	\$1,002.00	\$546.00	\$4,646.00	\$1,980.00	\$1,500.00	\$0.00	
5.0 Bid Phase Services	\$4,654.00	\$500.00	\$2,460.00	\$0.00	\$1,000.00	\$334.00	\$0.00	\$0.00	\$360.00	\$0.00	\$0.00	
Subtotal Labor Fee	\$180,532.00	\$3,000.00	\$57,195.00	\$3,043.00	\$33,250.00	\$13,360.00	\$9,464.00	\$31,310.00	\$14,940.00	\$14,250.00	\$720.00	

Direct Expenses				
	Rate Per Unit	Unit	Quantity	Direct Cost
Mileage	\$0.59	miles	300	\$177.00
Total Direct Expenses				\$177.00

Subconsultants			
Company	General Description of Service	Subtotal Sub	
David Evans and Associates	Roadway Design, Environmental, Survey, ROW	\$287,476.00	
Triunity	SUE, Utility Coordination, ITS Design	\$104,455.00	
Total Subconsultants		\$391,931.00	

Project Total	\$572,640.00
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DEA Subconsultant Services
**HSIP Broadway & Littleton Blvd and Broadway &
Mineral Ave Intersection Improvements**
TASK ORDER / PHASE 2
November 11, 2023

Introduction

This scope defines services to be provided by David Evans and Associates, Inc. herein referred to as “DEA” or “Consultant” for a Highway Safety Improvement Program (HSIP) project administered by the Colorado Department of Transportation (CDOT) and managed by the City of Littleton (herein referred to as the “City”). This project will analyze and design the Broadway and Littleton Boulevard intersection and the Broadway and Mineral Avenue intersection, to increase safety for all modes of transportation. This Phase 2 scope is a continuation of the services provided in Phase 1 and the work is intended to include services through Advertisement. **At the time of this scope of work the preferred alternative for final design is not yet selected. The assumptions on elements advanced into final design in this scope are seen in Attachments 1A & 1B and subject to change once the preferred alternative is selected.**

Elements of the Scope of Services

The overall scope of services for the project includes supplemental topographic data collection, right of way plans and ownership maps, final intersection design services, and bid phase services. For detail on the design assumptions please see Attachments 1A and 1B.

Task 1: Project Management and Meetings

The consultant will regularly schedule and participate in monthly project team meetings with Michael Baker. It is assumed that Michael Baker will coordinate with the City to identify, administer, and facilitate milestone meetings, and meetings with CDOT. DEA will be in attendance of the described milestone meetings with the City and CDOT to support Michael Baker. DEA will assist Michael Baker in updating the monthly schedule and project status reports (assumes 6 months). The Consultant will also:

- Complete general project management activities, including team coordination and periodic and informal coordination with Michael Baker.
- Complete monthly progress reports with invoicing.
- Develop and administer a Quality Assurance and Quality Control plan including specific names and locations of technical reviewers and a commitment to adhering to the QA/QC plan. The Consultant will have QA/QC check sets for technical reports, plans, and specifications available upon request and will provide comment resolution documentation for each review.
- Participate in bi-weekly progress meetings with Michael Baker and the City
- Participate in monthly project team meetings with Michael Baker

Task 1 Assumptions:

- Attend up to six (6) monthly project team meetings with Michael Baker
- Attend up to twelve (12) bi-weekly progress meetings with the City & Michael Baker
- Attend up to one (1) CDOT Right-Of-Way Meeting (ROWPR)
- Attend up to two (2) design review meetings with the City and CDOT (FOR & 100%)

Task 1 Deliverables:

- Monthly Invoicing and Progress Reports
- Meeting Agenda content and materials to support Michael Baker
- QA/QC Plan

Task 2: Supplemental Survey and Right-Of-Way (ROW)

Task 2.1 Supplemental Topographic Survey Collection

David Evans Associates (DEA) will perform additional topographic survey data collection as requested by authorized project staff. For the purposes of this proposal, DEA will estimate approximately four ten-hour days (40 hours) of a two-person survey crew for this work. Should the amount of supplemental work requested exceed this hourly estimate, then the fees for the additional work will be addressed via change order.

Task 2.2 Right-Of-Way

DEA will subcontract with HC Peck for the research of recorded documents archives and procure documents in support of the following items related to Right-Of-Way (ROW):

- Locate documents which transfer title and prove ownership
- Prepare chain of title
- Look for encumbrances, liens and releases
- Make physical inspection of property and note any physical evidence of apparent easements, wells, ditches, ingress or egress
- Check for and obtain latest subdivisions plats and vacations of streets

After analysis, a Right-of-Way base map will be generated and integrated into the final ROW plan set described in Task 2.4.

Task 2.2 Assumptions

- This scope of work has assumed approximately seventeen (17) parcels that will need title commitments to be generated. Attachments 2A and 2B show the assumed parcels, and is broken down below:
 - Broadway & Mineral Intersection:
 - Seven (7) Title Commitments
 - Broadway & Littleton Intersection:
 - Ten (10) Title Commitments

Task 2.3 Ownership Map

Based upon the information procured in research, DEA will generate an ownership base map to be integrated into the final ROW plan set as described in Task 2.4. This task will be composed of both office and field tasks in support of determining ownership and ROW locations throughout the project areas.

Tasks to be completed include:

- Review ownership documents
- Calculate coordinates of lot or obliterated aliquot corners using BLM guidelines
- Establish sectional subdivisions using applicable State and Federal guidelines
- Determine existing ROW limits from deeds, CDOT plans and found markers
- Determine ownerships and their property boundary locations
- Locate the intersection of said boundary locations with existing ROW
- Determine location and ownership of existing easements of record
- Reconcile overlaps and gaps in ownerships as required
- Plot Ownership Map
- Label all monuments found with description of monument and project coordinates
- Show improvements and topography within the ownerships and existing access to the adjacent road system
- Number ownerships alternately as they occur along the centerline from south to north or west to east in the same direction as the stationing
- Calculate total area of all affected ownerships including coordinates of property corners

- Different land uses within a property should be cross-hatched or shaded
- Show seal, number, and name of Professional Land Surveyor supervising the work
- Transmit finished reproducible Ownership Map, electronic drawing files, and Memoranda of Ownership along with all calculations, field notes, and supporting data.
- The ownership map will include a copy of the control and monumentation sheets

Task 2.4 Right-Of-Way Plan Set

Once the Right-Of-Way and Ownership base maps are complete, a full Right-Of-Way plan set will be generated by combining both base maps and including all other project information including:

- Title Sheet
- ROW Tabulation of Properties
- Project Control Diagram and Control Tabulation
- Survey Control Diagrams and Tabulations
- Survey Monumentation Sheet
- Right-Of-Way Plan Sheets
- Right-Of-Way Plan Sheets with Aerial Background
- Ownership Sheets

This proposal assumes up to one (1) review and revision for ownership and Right-of-Way base maps comprising the Right-Of-Way plan set. This proposal does not include time for setting of easement corners as that quantity cannot be determined at this time.

Task 2.5 Legal Descriptions

DEA will generate one (1) set of legal descriptions for all acquisition and temporary easements. Approximately thirty-four (34) legals have been identified within the limits of the two project areas (see Attachments 2A and 2B for assumptions). These legal descriptions will be signed and sealed by a Colorado Licensed Professional Land Surveyor. One round of revisions will be included. Legal Descriptions will consist of:

- A title sheet identifying the grantor and grantee of the easement
- A legal description of the property being conveyed
- Attached Right-of-Way Plans as prepared in Task 2.4

Task 3: Environmental Clearance

Task 3.1 Update Phase 1 Environmental Resource Reports

DEA will perform updates to the Phase 1 environmental resource reports (4f/6f and biological resources) and Section 4(f) Owner with Jurisdiction letters, as needed, to account for any design changes from the FOR design that affect project impacts and mitigation. DEA will coordinate with the City and CDOT on final notes and specifications to include the plans.

Task 3.1 Deliverables: Final 4f/6f Memo, Owner with Jurisdiction letters, and Biological Resources Report

Task 4: Pre-Final 90% (FOR) Design & Final 100% (PS&E) Design Phase Services

DEA will prepare pre-final 90% (FOR) and 100% final design plans, specifications and estimates for the proposed HSIP project. The design will conform and adhere to the standards identified in Phase 1. All plan sheets are assumed to be 11"x17" and will be completed in AutoCAD Civil 3D 2023, or latest accepted version.

It is assumed that Michael Baker will coordinate with CDOT and the City for the FOR milestone & ROWPR meeting. DEA will attend the FOR and ROWPR meeting to provide support and answer any design related questions.

Task 4.1 Pre-Final Design 90% (FOR)

After resolution of comments and acceptance of 30% plans, prepared in Phase 1, DEA will complete the pre-final 90% (FOR) design, plans, specifications and OPCC. Pre-final 90% (FOR) plans, specifications and OPCC will be submitted to the City and CDOT for review and comment. Comments received will be incorporated into 100% final design plans.

A plan review meetings will be conducted as described in Task 1.

This scope anticipated the Pre-final 90% (FOR) plan set to include the following sheets:

- General Notes (review and content for civil improvements)
- Geometric Layout
- Survey Control
- Survey Control Tabulations
- Summary of Approximate Quantities/Tabulation of Quantities
- Typical Sections
- Construction Details
- Removal and Reset Plan
- Roadway Plan
- Curb Ramp Construction Details (assumes up to 18)
- Curb Return and Flowline Profiles
- Sidewalk Construction Details
- Median Profiles and Construction Details (including up to 5 access/driveway designs)
- Intersection Grading Plan
- Existing and Proposed Utility Plan (coordination & incorporation into civil plans)
- SUE Plans (coordination & incorporation into civil plans)

It is assumed the following sheets will be prepared by Michael Baker:

- Title Sheet
- General Notes
- Stormwater Management Plan (Michael Baker)
- Drainage Plan and Profile (Michael Baker)
- Signing and Striping Plan
- Signal Plan
- Electrical One-Line Diagram
- Construction Phasing and Traffic Control Plan
- Lighting Plan

It is assumed the following sheets will be prepared by Triunity:

- Existing and Proposed Utility Plans
- ITS Interconnect Plan
- SUE Plan

Task 4.1 Deliverables:

- Pre-Final 90% (FOR) Plans
- Pre-Final 90% (FOR) Specifications
- Pre-Final 90% (FOR) OPCC
- Pre-Final 90% (FOR) Utility Matrix (Triunity)
- Pre-Final 90% (FOR) Comment Resolution Matrix

Task 4.2 Final Design 100% Plans, Specifications and Estimate (PS&E)

After resolution of comments and acceptance of 90% plans, DEA will complete the final design 100% plans, specifications and OPCC. Final 100% (PS&E) plans, specifications and OPCC will be submitted to the City and CDOT for inclusion in the advertisement bid package.

Additionally, prior to the completion of the 100% plans a site visit will be conducted to confirm the final design decisions in the field.

Task 4.2 Deliverables:

- Final 100% (FOR) Plans
- Final 100% (FOR) Specifications
- Final 100% (FOR) OPCC
- Final 100% (FOR) Utility Matrix (Triunity)
- Final 100% (FOR) Comment Resolution Matrix

Task 4 Assumptions and Clarifications:

- Roadway:
 - It is assumed the mainline profiles will not be adjusted, and the existing curb and gutters will horizontally stay in place.
 - The extents of the anticipated curb line improvements can be found in Attachment 1A and 1B
 - It is anticipated asphalt patching will be required; however, full intersection reconstruction is not anticipated or included in this scope of work at this time.
 - For assumed curb ramps see Attachments 1A and 1B.
 - For assumed modifications to driveways and access points see Attachment 1A and 1B.
- Landscaping & Irrigation
 - Assumes landscaping and irrigation to be excluded from this scope of work

Task 5: Bid Phase Services

DEA will assist the City during the bid phase of the project up to 30 hours, as requested, including but not limited to the following services:

- Responding to bidding contractor and supplier questions during bid periods
- Prepare addenda and answers to clarification questions during bid periods
- Participation in pre-bid and bid opening meetings

Task 6: Construction Phase Services

Construction phase services has been excluded from the scope at this time.

Project Schedule

DEA will begin work on Phase 2 of this HSIP project upon notice to proceed. Total Task Order duration is assumed to be 6 months from NTP. 100% design plans, specifications and estimate are anticipated to be completed in Summer of 2025.

Project Fee

The total amount requested for this Task Order in **\$287,476**. See attached fee estimate for DEA's totals.

Please let me know if you have any concern or questions. I can be contacted directly at (305) 951-5442 or sarah.rachal-dormand@deainc.com

Sincerely,

DAVID EVANS AND ASSOCIATES, INC.

Sarah Rachal-Dormand, PE

Project Manager

Cc: Contract File, Sara Ciasto, Velvet Kuesel

Attachments:

- Attachment A= Fee Estimate
- Attachment B= Work Breakdown
- Attachment 3A & 3B= Project Area Assumptions
- Attachment 4A & 4B= ROW and TE Assumptions

ATTACHMENT A- Fee Estimate **DRAFT**

David Evans and Associates

Classification	Hourly Rate	Hours	Total
Senior Project Manager	\$ 250.00	19	\$ 4,750.00
Project Manager	\$ 212.00	280	\$ 59,360.00
Engineer II	\$ 155.00	405	\$ 62,775.00
Designer	\$ 125.00	225	\$ 28,125.00
Junior Planner	\$ 110.00	4	\$ 440.00
Planning Task Leader	\$ 205.00	35	\$ 7,175.00
Project Accountant	\$ 135.00	12	\$ 1,620.00
Project Coordinator	\$ 125.00	25	\$ 3,125.00
Survey Manager	\$ 230.00	82	\$ 18,860.00
Project Surveyor	\$ 160.00	129	\$ 20,640.00
GPS Surveyor	\$ 138.00	327	\$ 45,126.00
Survey Technician II	\$ 132.00	140	\$ 18,480.00
Expenses			\$17,000
	DEA Subtotal	\$	287,476.00

Attachment B: Work Hour Breakdown (for information only) 1 of 2

City of Littleton
 Base Project: Labor Hours and Costs David Evans and Associates
Broadway & Mineral and Broadway & Littleton Blvd Intersection Improvements
Task Order/Phase 2
 9/8/2023

DRAFT

Task	DEA															DEA Hours	DEA Labor Cost	DEA Direct Cost
	Civil Design & Utilities				Enviro		Survey and ROW					Administrative						
	\$ 250	\$ 212	\$ 155	\$ 125	\$ 110	\$ 205	\$ 230	\$ 160	\$ 138	\$ 138	\$ 138	\$ 132	\$ 135	\$ 125				
Senior PM	Project Manager	Engineer II	Designer	Jr Planner	Planning Task Leader	Survey Manager	Project Surveyor	GPS Surveyor	GPS Surveyor	GPS Surveyor	Survey Tech II	Project Accountant	Project Coordinator					
Task 1- Project Management and Meetings																		
Project Management																		
Project Management, invoicing & progress reports	2	10				1							12	25	50	\$	7,570	
Project Schedule		3													3	\$	636	
Meeting Agendas, minutes & materials		12	6	2		2									22	\$	4,134	
General Project Management		24													24	\$	5,088	
Project Meetings																		
Project Team Meetings (Assumes up to 6)		8	4			2									14	\$	2,726	
Bi-Weekly Progress Meetings (Assumes up to 12)		12	6												18	\$	3,474	
CDOT ROWPR Meeting (Assumes up to 1)		2					2								4	\$	884	
Deisgn review meetings (Assumes up to 2)		16	8			3									27	\$	5,247	
SUBTOTAL	2	87	24	2	0	8	2	0	0	0	0	0	12	25	162	\$	29,759	\$ -
Task 2- Data Collection and Alternatives Analysis																		
Task 2.1 Supplemental Topographic Survey Collection																		
Data Collection (field)											40	40			80	\$	10,800	
Processing & Extraction (office)							8				4				12	\$	1,832	
Professional Review							4								4	\$	920	
Task 2.2 Right of Way																		
Title Commitments (HC Peck and office)							34								34	\$	5,440	\$ 17,000
Right-Of-Way Data collection (field)											50	50			100	\$	13,500	
Right-Of-Way Data processing & extraction (office)															0	\$	-	
Right-Of-Way Drafting (office)									40						40	\$	5,520	
QAQC Review							20								20	\$	4,600	
Task 2.3 Ownership Map																		
Ownership Research (HC Peck and office)							34								34	\$	5,440	
Ownership Data collection (field)											50	50			100	\$	13,500	
Ownership Data processing & extraction (office)															0	\$	-	
Ownership Drafting (office)									40						40	\$	5,520	
QAQC Review							20								20	\$	4,600	
Task 2.4 Right-Of-Way Plan Set																		
Preparation of Plans									50						50	\$	8,000	
QAQC Review									16							\$	3,680	
Task 2.5 Legal Descriptions																		
Legal Description (Assumes up to 34 w/one (1) revision each)							20			100					120	\$	18,400	
SUBTOTAL	0	0	0	0	0	0	80	126	180	0	144	140	0	0	534	\$	101,752	\$ 17,000
Task 3- Environmental Clearance																		
Update Phase 1 Environmental Resource Reports					4	16									20	\$	3,720	
SUBTOTAL	0	0	0	0	4	16	0	0	0	0	0	0	0	0	20	\$	3,720	
Task 4- Pre-Final 90% (FOR) Design & Final 100% (PS&E) Design																		
Task 4.1 Pre-Final Design 90% (FOR)																		
Pre-Final 90% Roadway Design	3	35	60	35											133	\$	21,845	
Pre-Final 90% (FOR) Plans															0	\$	-	
General Notes (civil notes only)		2				2									4	\$	834	
Geometric Layout			10	8											18	\$	2,550	
Survey Control								2		3					5	\$	734	
Survey Tabulations								1							1	\$	160	
Summary of Approximate Quantities/Tabulation of Quantities		4	10	8											22	\$	3,398	
Typical Sections		1	2	12											15	\$	2,022	

Attachment B: Work Hour Breakdown (for information only) 2 of 2

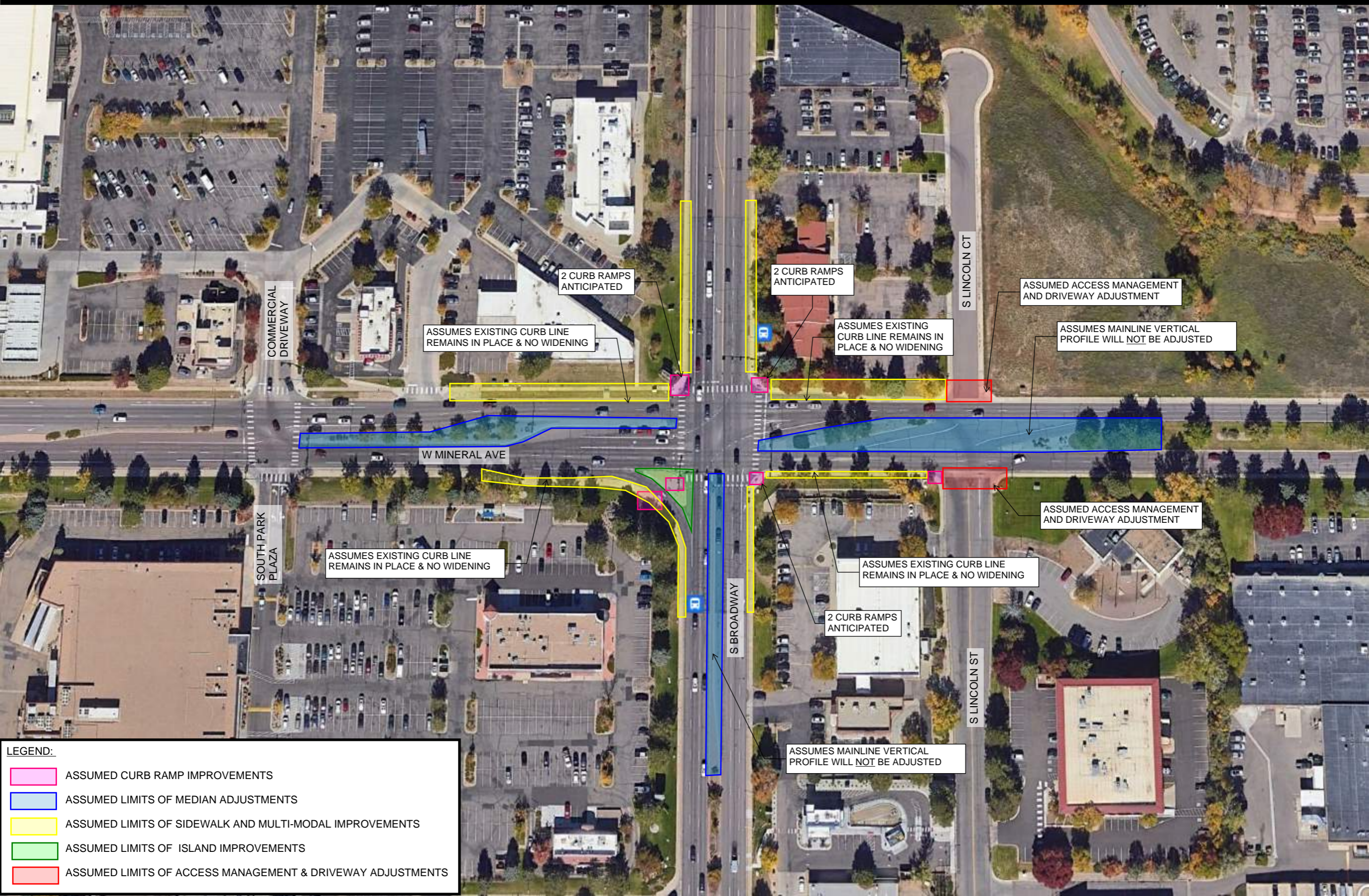
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Task	DEA															DEA Hours	DEA Labor Cost	DEA Direct Cost
	Civil Design & Utilities				Enviro		Survey and ROW						Administrative					
	\$ 250	\$ 212	\$ 155	\$ 125	\$ 110	\$ 205	\$ 230	\$ 160	\$ 138	\$ 138	\$ 138	\$ 132	\$ 135	\$ 125				
Senior PM	Project Manager	Engineer II	Designer	Jr Planner	Planning Task Leader	Survey Manager	Project Surveyor	GPS Surveyor	GPS Surveyor	GPS Surveyor	Survey Tech II	Project Accountant	Project Coordinator					
Construction Details		2	4	12											18	\$ 2,544		
Removal and Reset Plan		2	4	10											16	\$ 2,294		
Roadway Plan		12	30	12											54	\$ 8,694		
Curb Ramp Construction Details (assumes up to 16)		20	50	25											95	\$ 15,115		
Curb Return and Flowline Profiles		8	30												38	\$ 6,346		
Sidewalk Construction Details		4	10	10											24	\$ 3,648		
Median Profiles and Construction Details (includes up to 7 driveway/access designs)		25	40	40											105	\$ 16,500		
Intersection Grading Plan	1	4	8												13	\$ 2,338		
Proposed Utility Plan (coordination & incorporation into civil plan)		1	3												4	\$ 677		
SUE Plan (review & incorporation)		2	1												3	\$ 579		
Pre-Final 90% (FOR) Specifications		8	10			4									22	\$ 4,066		
Pre-Final 90% (FOR) Quantities & OPCC			12	10											22	\$ 3,110		
Pre-Final 90% (FOR) QAQC		10	20	15											45	\$ 7,095		
Pre-Final 90% (FOR) Comment Resolution Matrix		2		6											8	\$ 1,174		
Task 4.2 Final 100% Design, Spec & Estimate (PS&E)																		
Final 100% Site Visit (PS&E) Design Plans		1	2												3	\$ 522		
Final 100% (PS&E) Design Plans	2	20	40	20											82	\$ 13,440		
Final 100% (PS&E) Specifications	3	7	3			2									15	\$ 3,109		
Final 100% (PS&E) Quantities & OPCC	3	3	8												14	\$ 2,626		
Final 100% (PS&E) QAQC	3	10	12			2									27	\$ 5,140		
SUBTOTAL	15	183	369	223	0	10	0	3	0	3	0	0	0	0	806	\$ 130,560	\$ -	
Task 5- Bid Phase Services																		
Respond to contractor questions	1	4	2			1									8	\$ 1,613		
Respond and Prepare Addendums	1	2	6												9	\$ 1,604		
Attend Pre-Bid and Bid Meetings		4	4												8	\$ 1,468		
SUBTOTAL	2	10	12	0	0	1	0	0	0	0	0	0	0	0	25	\$ 4,685	\$ -	
TOTAL LABOR HOURS	19	280	405	225	4	35	82	129	180	3	144	140	12	25	1547			
TOTAL DEA COST	\$ 4,750	\$ 59,360	\$ 62,775	\$ 28,125	\$ 440	\$ 7,175	\$ 18,860	\$ 20,640	\$ 24,840	\$ 414	\$ 19,872	\$ 18,480	\$ 1,620	\$ 3,125		\$ 270,476	\$ 17,000	

TOTAL COST \$ 287,476

Attachment 3A- PHASE 2- Project Area Assumptions

S BROADWAY AND W MINERAL AVE



LEGEND:

- ASSUMED CURB RAMP IMPROVEMENTS
- ASSUMED LIMITS OF MEDIAN ADJUSTMENTS
- ASSUMED LIMITS OF SIDEWALK AND MULTI-MODAL IMPROVEMENTS
- ASSUMED LIMITS OF ISLAND IMPROVEMENTS
- ASSUMED LIMITS OF ACCESS MANAGEMENT & DRIVEWAY ADJUSTMENTS

2 CURB RAMPS ANTICIPATED

ASSUMES EXISTING CURB LINE REMAINS IN PLACE & NO WIDENING

2 CURB RAMPS ANTICIPATED

ASSUMES EXISTING CURB LINE REMAINS IN PLACE & NO WIDENING

ASSUMED ACCESS MANAGEMENT AND DRIVEWAY ADJUSTMENT

ASSUMES MAINLINE VERTICAL PROFILE WILL NOT BE ADJUSTED

ASSUMES EXISTING CURB LINE REMAINS IN PLACE & NO WIDENING

ASSUMED ACCESS MANAGEMENT AND DRIVEWAY ADJUSTMENT

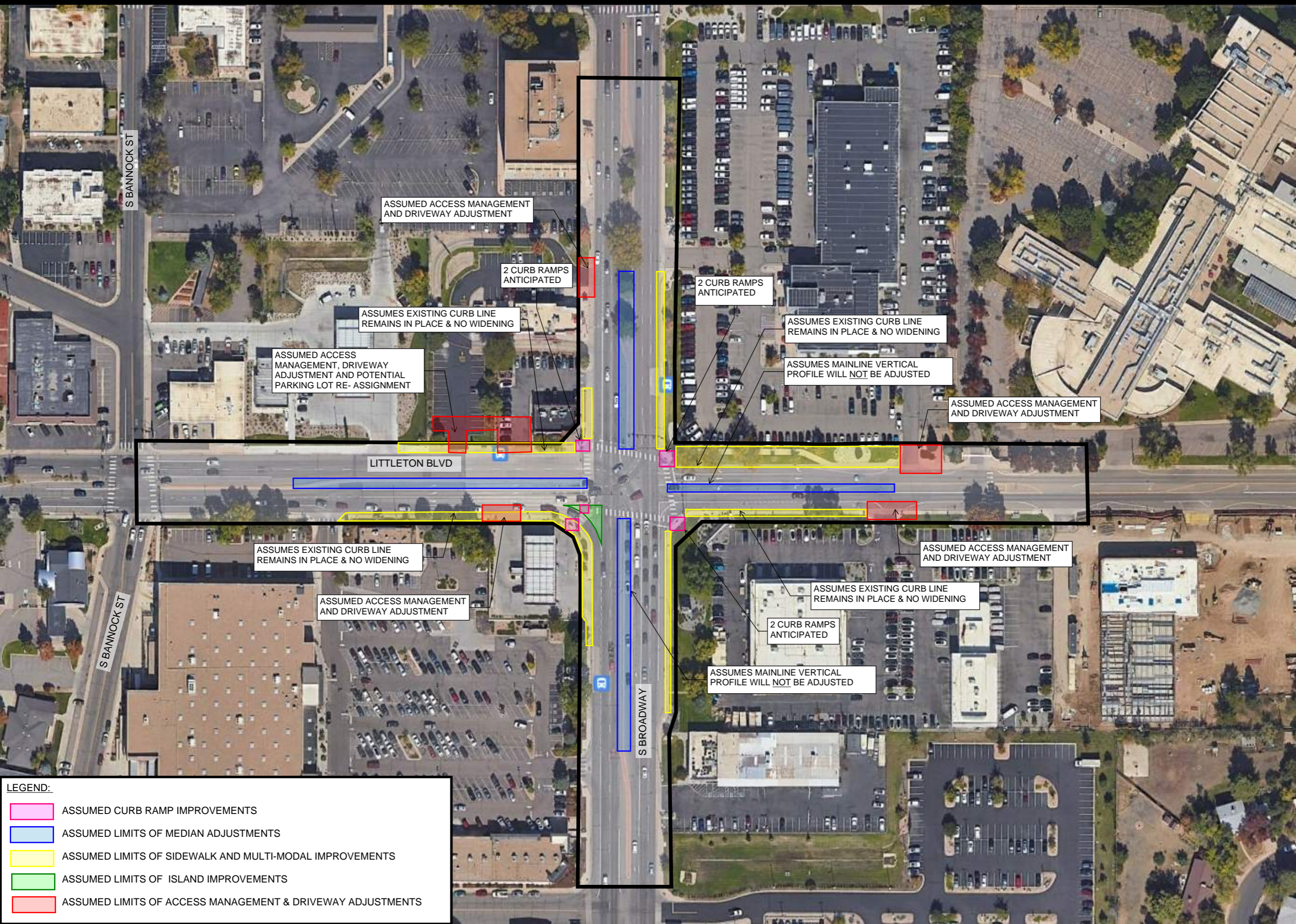
ASSUMES EXISTING CURB LINE REMAINS IN PLACE & NO WIDENING

2 CURB RAMPS ANTICIPATED

ASSUMES MAINLINE VERTICAL PROFILE WILL NOT BE ADJUSTED

Attachment 3B- PHASE 2- Project Area Assumptions

S BROADWAY AND LITTLETON BLVD



ASSUMED ACCESS MANAGEMENT AND DRIVEWAY ADJUSTMENT

2 CURB RAMPS ANTICIPATED

ASSUMES EXISTING CURB LINE REMAINS IN PLACE & NO WIDENING

ASSUMED ACCESS MANAGEMENT, DRIVEWAY ADJUSTMENT AND POTENTIAL PARKING LOT RE- ASSIGNMENT

LITTLETON BLVD

ASSUMES EXISTING CURB LINE REMAINS IN PLACE & NO WIDENING

ASSUMED ACCESS MANAGEMENT AND DRIVEWAY ADJUSTMENT

2 CURB RAMPS ANTICIPATED

ASSUMES EXISTING CURB LINE REMAINS IN PLACE & NO WIDENING

ASSUMES MAINLINE VERTICAL PROFILE WILL NOT BE ADJUSTED

ASSUMED ACCESS MANAGEMENT AND DRIVEWAY ADJUSTMENT

ASSUMED ACCESS MANAGEMENT AND DRIVEWAY ADJUSTMENT

ASSUMES EXISTING CURB LINE REMAINS IN PLACE & NO WIDENING

2 CURB RAMPS ANTICIPATED

ASSUMES MAINLINE VERTICAL PROFILE WILL NOT BE ADJUSTED

S BROADWAY

S BANNOCK ST

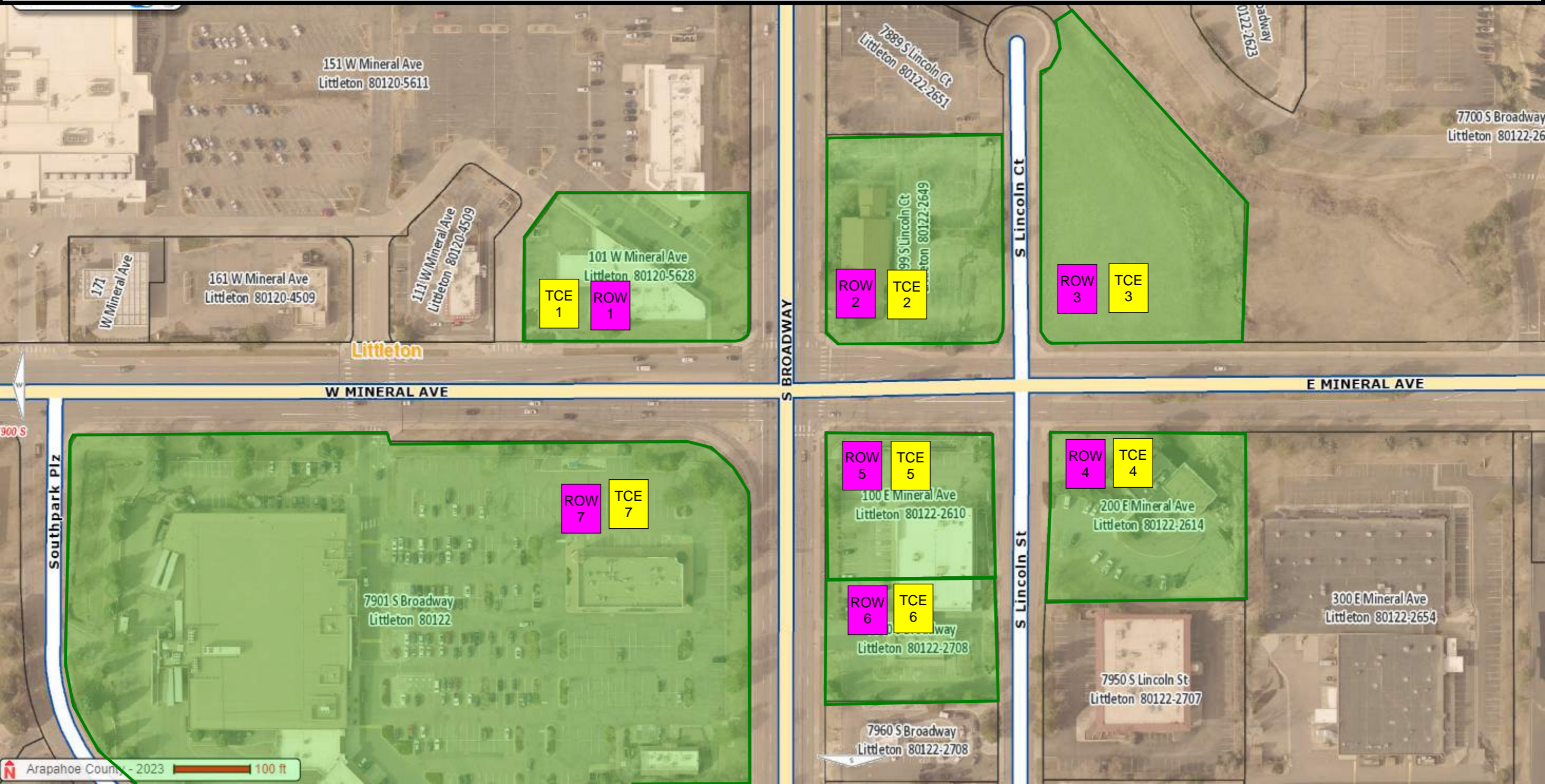
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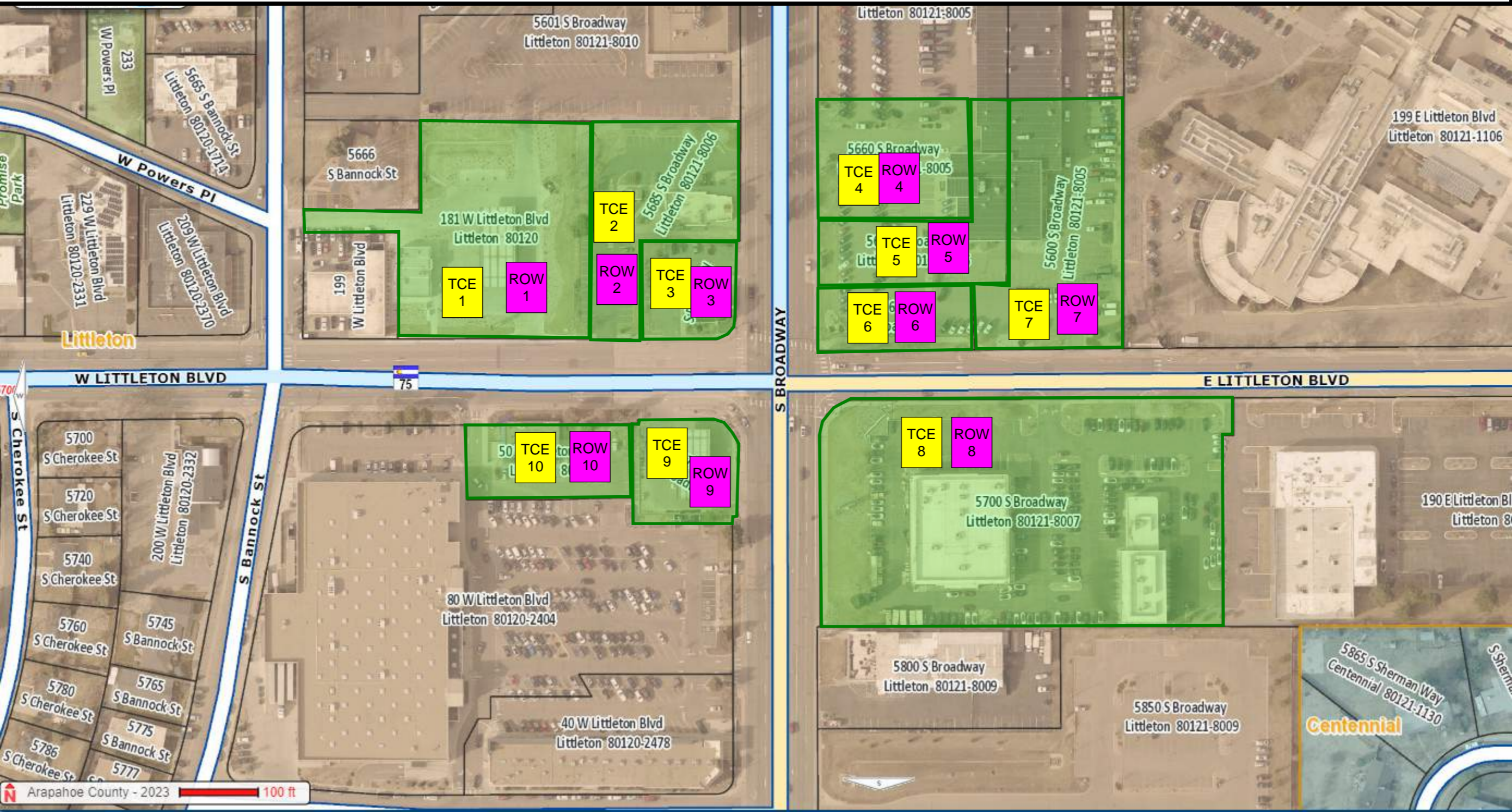
- ASSUMED CURB RAMP IMPROVEMENTS
- ASSUMED LIMITS OF MEDIAN ADJUSTMENTS
- ASSUMED LIMITS OF SIDEWALK AND MULTI-MODAL IMPROVEMENTS
- ASSUMED LIMITS OF ISLAND IMPROVEMENTS
- ASSUMED LIMITS OF ACCESS MANAGEMENT & DRIVEWAY ADJUSTMENTS

Attachment 4A- ROW and TE Assumptions

S BROADWAY & W MINERAL AVE



Attachment 4B- ROW and TE Assumptions S BROADWAY & E LITTLETON



SCOPE OF WORK – UTILITIES (PHASE 2 – FINAL DESIGN)

Triunity anticipates the following tasks in support of the Final Design effort (Phase 2) of the Broadway & Littleton Blvd and Broadway & Mineral Ave Intersection Reconstruction Project with the following Scope of Work elements as taken from the Request for Qualifications:

Task 1: Project Management & Meetings (Final Design)

Triunity anticipates attending the following meetings:

- Twice monthly project meetings remotely, up to 10 bi-weekly meetings for Final Design phase. Assumes 6-month Final Design Phase, however, utilities will not be discussed at every bi-weekly meeting.
- Up to 2 stakeholder meetings.
- Coordination meetings with CDOT, City of Littleton, and Consultant Team for the FOR and possible PS&E meetings.

Exclusions/Assumptions:

- Meeting agendas and meeting minutes will be prepared by others.

Task 4: 90% (FOR) and Final 100% Design Plans, Specifications and Estimate (PS&E)

Triunity anticipates the following tasks as part of Final Design:

- Develop SUE Plans in combination with Utility Coordination Plans.
- Prepare a test hole location plan for the design selected to move to Final Design, for review by City of Littleton and the Design Team. Test holes anticipated where conflicts warrant a Quality Level A designation.
- Perform up to 30 Quality Level A test holes, including oversight, traffic control, and permits as required, prior to Final Design development.
- Incorporate test hole data into the SUE Plans.
- Prepare the final SUE Report.
- Coordinate with utility companies during the Final design phase of this project.
 - Host up to 24-1 hour coordination meetings with 6 utility owners including agendas and meetings minutes.
- Produce Utility Specifications for FOR (90%) and PS&E (100%/Bid) submittals.
- Prepare Utility Matrix for FOR (90%) and PS&E (100%/Bid) submittals.
- Prepare cost estimate for FOR (90%) and PS&E (100%/Bid) submittals for any project costs regarding utility impacts.
- Prepare and submit the Utility Clearances/Sign Off Agreements per CDOT Standards, and request Utility Clearance Certification from CDOT.

Deliverables:

- SUE/Utility Coordination Plans, Utility Specifications, and Cost Estimates for FOR and Final

Construction package submittals

- Executed Sign Off Agreements and Utility Clearance Certification

Exclusions/Assumptions:

- Quality Level A Test Holes to be completed during normal business hours. Night work will require a contract amendment.
- Engineered design of utilities is not included.
- Electrical design is not included.
- Assumes 1 FOR Review and Comment Response period.
- Assumes 1 PS&E Package submittal, with no comment response period.
- Assumes final cost estimate is split into Bid for Littleton Blvd., and Bid Alternative for Mineral Ave.
- Assumes 1 review and response period from City of Littleton and CDOT on Utility Clearance documents.

Task 5: Bid Phase Services

Triunity anticipates up to 4 hours of RFI responses during the Bid & Selection period.

Exclusions/Assumptions:

- Assumes no plan updates/addenda for SUE Plans.

Task 6: Construction Phase Services

Design services during construction have been excluded from the scope at this time.

ITS Services

Triunity anticipates the following tasks to support ITS related services for Final Design (Phase 2) of the Broadway & Littleton Blvd and Broadway & Mineral Ave Intersection Reconstruction Project.

Task 1: Project Management & Meetings (Phase 2 – Final Design)

Triunity anticipates attending the following activities as part of Task 1:

- Project kick-off meeting in person, as well as two additional in person meetings. The in-person meetings are anticipated ahead of the Final Design phase of the project.
- Up to 5 design meetings.
- Up to 1 2-hr coordination meetings with CDOT, City of Littleton, and Consultant Team for the FOR meeting.

Exclusions/Assumptions:

- Meeting agendas and meeting minutes will be prepared by others.

Task 4: 90% (FOR) and Final 100% Design Plans, Specifications and Estimate (PS&E)

Triunity anticipates the following tasks as part of Final Design:

- Develop ITS Plans.
- Produce Specifications for FOR (90%) and PS&E (100%/Bid) submittals.
- Prepare cost estimate for FOR (90%) and PS&E (100%/Bid) submittals.

Deliverables:

- Design Plans, Specifications, and Cost Estimates for FOR and Final Construction package submittals
- Perform 90% design QA/QC.

Exclusions/Assumptions:

- Electrical design is not included.
- Assumes 1 FIR Review and Comment Response period.
- Assumes 1 FOR Review and Comment Response period.
- Assumes 1 PS&E Package submittal, with no comment response period.
- Assumes final cost estimate is split into Bid for Littleton Blvd., and Bid Alternative for Mineral Ave.

Task 5: Bid Phase Services

Triunity anticipates up to 4 hours of RFI responses during the Bid & Selection period.

Exclusions/Assumptions:

- Assumes no plan updates.

Task 6: Construction Phase Services

Design services during construction has been excluded from the scope at this time.

City of Littleton - Broadway at Littleton & Mineral Intersection Improvements - Final Design (Phase 2)

Triunity, Inc.

Phase 2 Fee Estimate: 11/10/23



Phase 2: Final design (FOR & PS&E)	Classification	Subsurface Utility Engineering and Utility Coordination										ITS						
		Project Manager IV	Project Manager II	Project Engineer III	Project Engineer II	EIT III	Project Coordinator II	Administrative Support	Subtotal Hours	Utility Subtotal Cost	Project Manager IV	Project Manager II	EIT I	Project Engineer II	Subtotal Hours	ITS Subtotal Cost		
Rate		\$215.00	\$185.00	\$145.00	\$130.00	\$115.00	\$120.00	\$75.00			\$215.00	\$215.00	\$95.00	\$130.00				
1	Project Management & Meetings (Phase 2)	Notes/Assumptions																
1 7	Stakeholder Meetings		2			2				4	\$ 600.00					0	\$ -	
1 8	CDOT Coordination meetings		2			2				4	\$ 600.00					0	\$ -	
1 9	Design Coordination meetings		10							10	\$ 1,850.00	5	5		10	\$ 2,150.00		
1 10	Contract Administration		3						6	9	\$ 1,005.00					0	\$ -	
	Subtotal	0	17	0	0	4	0	6	27	\$ 4,055.00	5	5	0	0	10	\$ 2,150.00		
4	90% (FOR) and Final 100% Design Plans, Specifications and Estimate (PS&E)																	
4 1	Utility Coordination		24			36				60	\$ 8,580.00					0	\$ -	
4 2	Review and Responses to FOR Comments		4			4				8	\$ 1,200.00					0	\$ -	
4 3	QL-A Test Hole Plan		4			8				12	\$ 1,660.00					0	\$ -	
4 4	Quality Level A Test Holes - Field Support/Coordination		8		48					56	\$ 7,720.00					0	\$ -	
4 3	Incorporate Test Hole Data into SUE Plans		2			4				6	\$ 830.00					0	\$ -	
4 4	Final Utility Matrix Development	1	4			8				13	\$ 1,875.00					0	\$ -	
	Deliverables:																	
4.1 5	90% SUE/Utility Coordination Plans		4			12				16	\$ 2,120.00					0	\$ -	
4.1 6	90% Specifications		2			6				8	\$ 1,060.00					0	\$ -	
4.1 7	90% Cost Estimate		1			4				5	\$ 645.00	4			4	\$ 860.00		
4.1 8	90% Draft SUE Report		1		4	2				7	\$ 935.00					0	\$ -	
4.1 11	90% ITS Plans									0	\$ -	10	15	26	24	75	\$ 10,965.00	
4.2 5	Final SUE/Utility Coordination Plans		4			12				16	\$ 2,120.00					0	\$ -	
4.2 6	Final Specifications		2			6				8	\$ 1,060.00					0	\$ -	
4.2 7	Final Cost Estimate		1			4				5	\$ 645.00	4			4	\$ 860.00		
4.2 8	Final SUE Report		1		4	2				7	\$ 935.00					0	\$ -	
4.2 9	Utility Clearances		24			6				30	\$ 5,130.00					0	\$ -	
4.2 10	SEA									0	\$ -	5	5	5		15	\$ 2,625.00	
4.2 11	Final ITS Plans									0	\$ -	10	15	26	24	75	\$ 10,965.00	
	Subtotal	1	86	0	56	114	0	0	257	\$ 36,515.00	33	35	57	48	173	\$ 26,275.00		
5	Bid Phase Services																	
5 1	RFIs and Addenda		4							4	\$ 740.00	4	4			8	\$ 1,720.00	
	Subtotal	0	4	0	0	0	0	0	4	\$ 740.00	4	4	0	0	8	\$ 1,720.00		
	Total Labor Hours	1	107	0	56	118	0	6	288	\$ -	42	44	57	48	191	\$ -		
	Total Base Labor	\$ 215.00	\$ 19,795.00	\$ -	\$ 7,280.00	\$ 13,570.00	\$ -	\$ 450.00	\$ -	\$ 41,310.00	\$ 9,030.00	\$ 9,460.00	\$ 5,415.00	\$ 6,240.00	\$ -	\$ 30,145.00		
	Vendor Services	Notes/Assumptions																
	QL-A Utility Test Holes										\$ 33,000.00							
	Vendor Services	Subtotal - Vendor Cost																
											\$ 33,000.00						\$ -	
	Total Discipline Cost											\$ 74,310.00						\$ 30,145.00
	Total Base Scope Cost (including Vendors)																\$ 104,455.00	

Utility Notes/Assumptions:

- Assumes 6 utility owners - Up to 4 - one hour meetings each; including prep, minutes
- Survey data will be provided By Others in AutoCAD or Microstation with supporting survey data.
- Quality Level B field work, including MH measure downs, vault sizes, etc. will be completed By Others in conjunction with Triunity field engineering support
- Assume SUE plans combined with Utility Coordination Plans on 7 sheets
- Sanitary and Storm to be represented as Quality Level C; Quality Level B Sanitary Service locations are not included in this scope.
- The use of Ground Penetrating Radar is not anticipated as part of this scope but is available through our vendors if required
- Assumes up to 15 Test Holes per intersection, will be based on actuals per design with utility conflicts
- SUE Report to include Test Hole data, utility maps, and information on designating
- Locating of septic systems and leach fields is not included in this scope
- Locating of private electrical, sanitary, and water systems is not included in this scope
- Utility Plans will not be developed for the Conceptual Designs

ITS Notes/Assumptions:

- As built review and field work for fiber optic cable designs, research and confirmation
- Fiber Optic laterals, splicing and potential existing fiber relocations (NO other ITS elements)
- Splicing to backbones only. No Network architecture designs
- CDOT Standard Specifications and Details
- Internal utilities (existing) coordination with Triunity Utilities team only
- F REQUIRED: Existing SEAs to be used for SEA - Provided by prime.
- QC for Design and CAD included in quoted hours. Internal DQMP.

Task Name	2024												2025					2026			
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Project Management/Administration/Coordination	Phase 1 - Data Collection, Analysis, Conceptual Design, 30% FIR												Phase 2 - FOR, Clearances, Final Ad								
Kickoff Meeting		* Project Kickoff 5/27/2024																			
Bi-Weekly Progress Meetings		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*				
Stakeholder Meetings				*		*															
Utility Coordination & Design																					
Data Collection																					
Additional Traffic Counts, Bike/Ped Counts																					
Topo Survey/Mapping/Boundary Evidence																					
Utility Locating/SUE																					
Geotechnical/Pavement Investigation																					
Right-Of-Way																					
Title Research																					
Proposed Right-of Way and Easement Definition																					
Right-Of Way Plans																					
Environmental																					
Phase I ESA																					
Historic/Cultural Resource Investigations																					
Other Resource Determinations (T&E, Noise, Air Quality, etc.)																					
Agency Reviews/Address Comments/Complete Form 128																					
Traffic and Safety Analysis																					
Conceptual Design, up to 10 Alternatives																					
Preliminary 30%/FIR Design																					
Final Design																					
90%/FOR Design																					
Final PS&E																					
Procurement/Construction																					

Notes:
 Assume Design NTP on 5/20/2024
 Duration for design and CDOT clearances (ROW, Utilities, and Environmental) is approximately 16 months
 Project ready for Advertisement by late Fall 2025
 Duration for procurement and construction is approximately 10 months
 Completion in August 2026

Littleton Broadway Intersection Improvements Project DBE % Breakdown			
Company	Phase 1	Phase 2	Total Project
MBI	\$ 258,787.00	\$ 180,709.00	\$ 439,496.00
MBI Total	\$ 258,787.00	\$ 180,709.00	\$ 439,496.00
DEA	\$ 277,136.00	\$ 270,476.00	\$ 547,612.00
HC Peck (DBE) - Title Commitments	\$ -	\$ 17,000.00	\$ 17,000.00
DEA Total	\$ 277,136.00	\$ 287,476.00	\$ 564,612.00
ERO (DBE) - Enviro Support	\$ 22,476.00	\$ -	\$ 22,476.00
ERO Total	\$ 22,476.00	\$ -	\$ 22,476.00
Triunity	\$ 60,360.00	\$ 71,455.00	\$ 131,815.00
DBE - Traffic Control	\$ 4,000.00	\$ -	\$ 4,000.00
DBE - QL-A Test Holes / TC	\$ -	\$ 33,000.00	\$ 33,000.00
Triunity Total	\$ 64,360.00	\$ 104,455.00	\$ 168,815.00
S&W	\$ 37,244.00	\$ -	\$ 37,244.00
DBE - R-Value Testing	\$ 1,000.00	\$ -	\$ 1,000.00
DBE - Drilling	\$ 9,750.00	\$ -	\$ 9,750.00
S&W Total	\$ 47,994.00	\$ -	\$ 47,994.00
ATD	\$ 12,400.00	\$ -	\$ 12,400.00
ATD Total	\$ 12,400.00	\$ -	\$ 12,400.00
Non-DBE Total	\$ 645,927.00	\$ 522,640.00	\$ 1,168,567.00
DBE Total	\$ 37,226.00	\$ 50,000.00	\$ 87,226.00
Project Total	\$ 683,153.00	\$ 572,640.00	\$ 1,255,793.00
DBE% Total	5.4%	8.7%	6.9%

\$X,XXX = DBE Fee

Minimum Required CDOT DBE Goal = 5%