



## Request for Proposal RFP-4966-21-KH

### Professional Engineering Services for Horizon Dr. & G Road Roundabout

#### **RESPONSES DUE:**

December 3, 2021 Prior to 2:00 PM Local Time

**Accepting Electronic Responses Only**

**Responses Only Submitted Through the Rocky Mountain E-Purchasing System  
(RMEPS)**

**<https://www.rockymountainbidsystem.com/default.asp>**

(Purchasing Representative does not have access or control of the vendor side of RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline. 800-835-4603)

#### **PURCHASING REPRESENTATIVE:**

Kassy Hackett, Buyer

**[kassyh@gjcity.org](mailto:kassyh@gjcity.org)**

970-244-1546

**NOTE: All City solicitation openings will continue to be held virtually.**

This solicitation has been developed specifically for a Request for Proposal intended to solicit competitive responses for this solicitation, and may not be the same as previous City of Grand Junction solicitations. All offerors are urged to thoroughly review this solicitation prior to submitting. Submittal by **FAX, EMAIL or HARD COPY IS NOT ACCEPTABLE** for this solicitation.

# **REQUEST FOR PROPOSAL**

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## REQUEST FOR PROPOSAL

### **SECTION 1.0: ADMINISTRATIVE INFORMATION & CONDITIONS FOR SUBMITTAL**

- 1.1 Issuing Office:** This Request for Proposal (RFP) is issued by the City of Grand Junction. All contact regarding this RFP is directed to:

**RFP QUESTIONS:**

Kassy Hackett, Buyer

[kassyh@gjcity.org](mailto:kassyh@gjcity.org)

The City would like to remind all Contractors, Sub-Contractors, Vendors, Suppliers, Manufacturers, Service Providers, etc. that (with the exception of Pre-Bid or Site Visit Meetings) all questions, inquiries, comments, or communication pertaining to any formal solicitation (whether process, specifications, scope, etc.) must be directed (in writing) to the Purchasing Agent assigned to the project, or Purchasing Division. Direct communication with the City assigned Project Managers/Engineers is not appropriate for public procurement, and may result in disqualification.

- 1.2 Purpose:** The purpose of this RFP is to obtain proposals from qualified and professional engineering firms to perform the necessary tasks to prepare detailed construction plans, specifications, cost estimates, and pre-construction bidding support necessary for permitting & construction of roundabout improvements at the intersection of Horizon Drive and G Road/27 ½ Road. The project is planned to be funded in part by a grant from the Highway Safety Improvement Program administered by the Colorado Department of Transportation (CDOT) and will need to comply with the CDOT Local Agency project process.
- 1.3 The Owner:** The Owner is the City of Grand Junction, Colorado and is referred to throughout this Solicitation. The term Owner means the Owner or his authorized representative.
- 1.4 Pre-Proposal Meeting:** An **optional** pre-proposal meeting is required for all prospective offerors. The purpose of this visit will be to inspect and to clarify the contents of this Request for Proposal (RFP). Meeting location shall be at City Hall Auditorium at 250 N. 5<sup>th</sup> Street, Grand Junction, CO on November 10, 2021 at 2:00pm.
- 1.5 Compliance:** All participating Offerors, by their signature hereunder, shall agree to comply with all conditions, requirements, and instructions of this RFP as stated or implied herein. Should the Owner omit anything from this packet which is necessary to the clear understanding of the requirements, or should it appear that various instructions are in conflict, the Offeror(s) shall secure instructions from the Purchasing Division prior to the date and time of the submittal deadline shown in this RFP.
- 1.6 Submission:** Please refer to section 5.0 for what is to be included. **Each proposal shall be submitted in electronic format only, and only through the Rocky Mountain E-Purchasing website (<https://www.rockymountainbidsystem.com/default.asp>).** *This site offers both "free" and "paying" registration options that allow for full access of the*

Owner's documents and for electronic submission of proposals. (Note: "free" registration may take up to 24 hours to process. Please Plan accordingly.) Please view our "Electronic Vendor Registration Guide" at <http://www.gjcity.org/business-and-economic-development/bids/> for details. For proper comparison and evaluation, the City requests that proposals be formatted as directed in Section 5.0 "Preparation and Submittal of Proposals." Submittals received that fail to follow this format may be ruled non-responsive. (Purchasing Representative does not have access or control of the vendor side of RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline. **800-835-4603**).

Please join Solicitation Opening, Professional Engineering Services for Horizon Dr. & G Road Roundabout RFP-4966-21-KH on GoTo from your computer using the Chrome browser. <https://app.goto.com/meet/827328477>  
You can also dial in using your phone.

**Dial-In**

(646) 749-3335

**Access Code**

827-328-477

- 1.7 **Altering Proposals:** Any alterations made prior to opening date and time must be initialed by the signer of the proposal, guaranteeing authenticity. Proposals cannot be altered or amended after submission deadline.
- 1.8 **Withdrawal of Proposal:** A proposal must be firm and valid for award and may not be withdrawn or canceled by the Offeror for sixty (60) days following the submittal deadline date, and only prior to award. The Offeror so agrees upon submittal of their proposal. After award this statement is not applicable.
- 1.9 **Acceptance of Proposal Content:** The contents of the proposal of the successful Offeror shall become contractual obligations if acquisition action ensues. Failure of the successful Offeror to accept these obligations in a contract shall result in cancellation of the award and such vendor shall be removed from future solicitations.
- 1.10 **Addenda:** All questions shall be submitted in writing to the appropriate person as shown in Section 1.1. Any interpretations, corrections and changes to this RFP or extensions to the opening/receipt date shall be made by a written Addendum to the RFP by the City Purchasing Division. Sole authority to authorize addenda shall be vested in the City of Grand Junction Purchasing Representative. Addenda will be issued electronically through the Rocky Mountain E-Purchasing website at [www.rockymountainbidsystem.com](http://www.rockymountainbidsystem.com) and <https://co-grandjunction.civicplus.com/501/Purchasing-Bids>. Offerors shall acknowledge receipt of all addenda in their proposal.
- 1.11 **Exceptions and Substitutions:** All proposals meeting the intent of this RFP shall be considered for award. Offerors taking exception to the specifications shall do so at their own risk. The Owner reserves the right to accept or reject any or all substitutions or alternatives. When offering substitutions and/or alternatives, Offeror must state these exceptions in the section pertaining to that area. Exception/substitution, if accepted, must meet or exceed the stated intent and/or specifications. The absence of such a list shall indicate that the Offeror has not taken exceptions, and if awarded a contract, shall hold the

Offeror responsible to perform in strict accordance with the specifications or scope of work contained herein.

- 1.12 Confidential Material:** All materials submitted in response to this RFP shall ultimately become public record and shall be subject to inspection after contract award. **“Proprietary or Confidential Information”** is defined as any information that is not generally known to competitors and which provides a competitive advantage. Unrestricted disclosure of proprietary information places it in the public domain. Only submittal information clearly identified with the words **“Confidential Disclosure”** and uploaded as a separate document shall establish a confidential, proprietary relationship. Any material to be treated as confidential or proprietary in nature must include a justification for the request. The request shall be reviewed and either approved or denied by the Owner. If denied, the proposer shall have the opportunity to withdraw its entire proposal, or to remove the confidential or proprietary restrictions. Neither cost nor pricing information nor the total proposal shall be considered confidential or proprietary.
- 1.13 Response Material Ownership:** All proposals become the property of the Owner upon receipt and shall only be returned to the proposer at the Owner’s option. Selection or rejection of the proposal shall not affect this right. The Owner shall have the right to use all ideas or adaptations of the ideas contained in any proposal received in response to this RFP, subject to limitations outlined in the entitled “Confidential Material”. Disqualification of a proposal does not eliminate this right.
- 1.14 Minimal Standards for Responsible Prospective Offerors:** A prospective Offeror must affirmably demonstrate their responsibility. A prospective Offeror must meet the following requirements.
- Have adequate financial resources, or the ability to obtain such resources as required.
  - Be able to comply with the required or proposed completion schedule.
  - Have a satisfactory record of performance.
  - Have a satisfactory record of integrity and ethics.
  - Be otherwise qualified and eligible to receive an award and enter into a contract with the Owner.
- 1.15 Open Records:** Proposals shall be received and publicly acknowledged at the location, date, and time stated herein. Offerors, their representatives and interested persons may be present. Proposals shall be received and acknowledged only so as to avoid disclosure of process. However, all proposals shall be open for public inspection after the contract is awarded. Trade secrets and confidential information contained in the proposal so identified by offer as such shall be treated as confidential by the Owner to the extent allowable in the Open Records Act.
- 1.16 Sales Tax:** The Owner is, by statute, exempt from the State Sales Tax and Federal Excise Tax; therefore, all fees shall not include taxes.
- 1.17 Public Opening:** opened virtually immediately following the proposal deadline. Offerors, their representatives and interested persons may be present. Only the names and locations on the proposing firms will be disclosed.

## SECTION 2.0: GENERAL CONTRACT TERMS AND CONDITIONS

- 2.1. Acceptance of RFP Terms:** A proposal submitted in response to this RFP shall constitute a binding offer. Acknowledgment of this condition shall be indicated on the Letter of Interest or Cover Letter by the autographic signature of the Offeror or an officer of the Offeror legally authorized to execute contractual obligations. A submission in response to the RFP acknowledges acceptance by the Offeror of all terms and conditions including compensation, as set forth herein. An Offeror shall identify clearly and thoroughly any variations between its proposal and the Owner's RFP requirements. Failure to do so shall be deemed a waiver of any rights to subsequently modify the terms of performance, except as outlined or specified in the RFP.
- 2.2. Execution, Correlation, Intent, and Interpretations:** The Contract Documents shall be signed by the Owner and Contractor. By executing the contract, the Contractor represents that they have familiarized themselves with the local conditions under which the Work is to be performed, and correlated their observations with the requirements of the Contract Documents. The Contract Documents are complementary, and what is required by any one, shall be as binding as if required by all. The intention of the documents is to include all labor, materials, equipment, services and other items necessary for the proper execution and completion of the scope of work as defined in the technical specifications and drawings contained herein. All drawings, specifications and copies furnished by the Owner are, and shall remain, Owner property. They are not to be used on any other project.
- 2.3. Permits, Fees, & Notices:** The Contractor shall secure and pay for all permits, governmental fees and licenses necessary for the proper execution and completion of the work. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work. If the Contractor observes that any of the Contract Documents are at variance in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be adjusted by approximate modification. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner, he shall assume full responsibility and shall bear all costs attributable.
- 2.4. Responsibility for those Performing the Work:** The Contractor shall be responsible to the Owner for the acts and omissions of all his employees and all other persons performing any of the work under a contract with the Contractor.
- 2.5. Payment & Completion:** The Contract Sum is stated in the Contract and is the total amount payable by the Owner to the Contractor for the performance of the work under the Contract Documents. Upon receipt of written notice that the work is ready for final inspection and acceptance and upon receipt of application for payment, the Owner's Project Manager will promptly make such inspection and, when they find the work acceptable under the Contract Documents and the Contract fully performed, the Owner shall make payment in the manner provided in the Contract Documents. Partial payments will be based upon estimates, prepared by the Contractor, of the value of Work performed and materials placed in accordance with the Contract Documents. The work performed by Contractor shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of work in the applicable community. The work and services to be performed by

Contractor hereunder shall be done in compliance with applicable laws, ordinances, rules and regulations.

- 2.6. Protection of Persons & Property:** The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. Contractor shall erect and maintain, as required by existing safeguards for safety and protection, and all reasonable precautions, including posting danger signs or other warnings against hazards promulgating safety regulations and notifying owners and users of adjacent utilities. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct by the Contractor in the execution of the work, or in consequence of the non-execution thereof by the Contractor, they shall restore, at their own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or it shall make good such damage or injury in an acceptable manner.
- 2.7. Changes in the Work:** The Owner, without invalidating the contract, may order changes in the work within the general scope of the contract consisting of additions, deletions or other revisions. All such changes in the work shall be authorized by Change Order/Amendment and shall be executed under the applicable conditions of the contract documents. A Change Order/Amendment is a written order to the Contractor signed by the Owner issued after the execution of the contract, authorizing a change in the work or an adjustment in the contract sum or the contract time.
- 2.8. Minor Changes in the Work:** The Owner shall have authority to order minor changes in the work not involving an adjustment in the contract sum or an extension of the contract time and not inconsistent with the intent of the contract documents.
- 2.9. Uncovering & Correction of Work:** The Contractor shall promptly correct all work found by the Owner as defective or as failing to conform to the contract documents. The Contractor shall bear all costs of correcting such rejected work, including the cost of the Owner's additional services thereby made necessary. The Owner shall give such notice promptly after discover of condition. All such defective or non-conforming work under the above paragraphs shall be removed from the site where necessary and the work shall be corrected to comply with the contract documents without cost to the Owner.
- 2.10. Acceptance Not Waiver:** The Owner's acceptance or approval of any work furnished hereunder shall not in any way relieve the proposer of their present responsibility to maintain the high quality, integrity and timeliness of his work. The Owner's approval or acceptance of, or payment for, any services shall not be construed as a future waiver of any rights under this Contract, or of any cause of action arising out of performance under this Contract.
- 2.11. Change Order/Amendment:** No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All amendments to the contract shall be made in writing by the Owner.

- 2.12. Assignment:** The Offeror shall not sell, assign, transfer or convey any contract resulting from this RFP, in whole or in part, without the prior written approval from the Owner.
- 2.13. Compliance with Laws:** Proposals must comply with all Federal, State, County and local laws governing or covering this type of service and the fulfillment of all ADA (Americans with Disabilities Act) requirements. Contractor hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good standing, required by law.
- 2.14. Debarment/Suspension:** The Contractor hereby certifies that the Contractor is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Governmental department or agency.
- 2.15. Confidentiality:** All information disclosed by the Owner to the Offeror for the purpose of the work to be done or information that comes to the attention of the Offeror during the course of performing such work is to be kept strictly confidential.
- 2.16. Conflict of Interest:** No public official and/or Owner employee shall have interest in any contract resulting from this RFP.
- 2.17. Contract:** This Request for Proposal, submitted documents, and any negotiations, when properly accepted by the Owner, shall constitute a contract equally binding between the Owner and Offeror. The contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral, including the Proposal documents. The contract may be amended or modified with Change Orders, Field Orders, or Amendment.
- 2.18. Project Manager/Administrator:** The Project Manager, on behalf of the Owner, shall render decisions in a timely manner pertaining to the work proposed or performed by the Offeror. The Project Manager shall be responsible for approval and/or acceptance of any related performance of the Scope of Services.
- 2.19. Contract Termination:** This contract shall remain in effect until any of the following occurs: (1) contract expires; (2) completion of services; (3) acceptance of services or, (4) for convenience terminated by either party with a written *Notice of Cancellation* stating therein the reasons for such cancellation and the effective date of cancellation at least thirty days past notification.
- 2.20. Employment Discrimination:** During the performance of any services per agreement with the Owner, the Offeror, by submitting a Proposal, agrees to the following conditions:
- 2.20.1. The Offeror shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, disability, citizenship status, marital status, veteran status, sexual orientation, national origin, or any legally protected status except when such condition is a legitimate occupational qualification reasonably necessary for the normal operations of the Offeror. The Offeror agrees to post in conspicuous places, visible to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.



- 2.20.2. The Offeror, in all solicitations or advertisements for employees placed by or on behalf of the Offeror, shall state that such Offeror is an Equal Opportunity Employer.
- 2.20.3. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

- 2.21. Immigration Reform and Control Act of 1986 and Immigration Compliance:** The Offeror certifies that it does not and will not during the performance of the contract employ illegal alien workers or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986 and/or the immigration compliance requirements of State of Colorado C.R.S. § 8-17.5-101, *et.seq.* (House Bill 06-1343).
- 2.22. Ethics:** The Offeror shall not accept or offer gifts or anything of value nor enter into any business arrangement with any employee, official, or agent of the Owner.
- 2.23. Failure to Deliver:** In the event of failure of the Offeror to deliver services in accordance with the contract terms and conditions, the Owner, after due oral or written notice, may procure the services from other sources and hold the Offeror responsible for any costs resulting in additional purchase and administrative services. This remedy shall be in addition to any other remedies that the Owner may have.
- 2.24. Failure to Enforce:** Failure by the Owner at any time to enforce the provisions of the contract shall not be construed as a waiver of any such provisions. Such failure to enforce shall not affect the validity of the contract or any part thereof or the right of the Owner to enforce any provision at any time in accordance with its terms.
- 2.25. Force Majeure:** The Offeror shall not be held responsible for failure to perform the duties and responsibilities imposed by the contract due to legal strikes, fires, riots, rebellions, and acts of God beyond the control of the Offeror, unless otherwise specified in the contract.
- 2.26. Indemnification:** Offeror shall defend, indemnify and save harmless the Owner and all its officers, employees, insurers, and self-insurance pool, from and against all liability, suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the Offeror, or of any Offeror's agent, employee, subcontractor or supplier in the execution of, or performance under, any contract which may result from proposal award. Offeror shall pay any judgment with cost which may be obtained against the Owner growing out of such injury or damages.
- 2.27. Independent Firm:** The Offeror shall be legally considered an Independent Firm and neither the Firm nor its employees shall, under any circumstances, be considered servants or agents of the Owner. The Owner shall be at no time legally responsible for any negligence or other wrongdoing by the Firm, its servants, or agents. The Owner shall not withhold from the contract payments to the Firm any federal or state unemployment taxes, federal or state income taxes, Social Security Tax or any other amounts for benefits to the Firm. Further, the Owner shall not provide to the Firm any insurance coverage or other benefits, including Workers' Compensation, normally provided by the Owner for its employees.

- 2.28. Nonconforming Terms and Conditions:** A proposal that includes terms and conditions that do not conform to the terms and conditions of this Request for Proposal is subject to rejection as non-responsive. The Owner reserves the right to permit the Offeror to withdraw nonconforming terms and conditions from its proposal prior to a determination by the Owner of non-responsiveness based on the submission of nonconforming terms and conditions.
- 2.29. Ownership:** All plans, prints, designs, concepts, etc., shall become the property of the Owner.
- 2.30. Oral Statements:** No oral statement of any person shall modify or otherwise affect the terms, conditions, or specifications stated in this document and/or resulting agreement. All modifications to this request and any agreement must be made in writing by the Owner.
- 2.31. Patents/Copyrights:** The Offeror agrees to protect the Owner from any claims involving infringements of patents and/or copyrights. In no event shall the Owner be liable to the Offeror for any/all suits arising on the grounds of patent(s)/copyright(s) infringement. Patent/copyright infringement shall null and void any agreement resulting from response to this RFP.
- 2.32. Venue:** Any agreement as a result of responding to this RFP shall be deemed to have been made in, and shall be construed and interpreted in accordance with, the laws of the City of Grand Junction, Mesa County, Colorado.
- 2.33. Expenses:** Expenses incurred in preparation, submission and presentation of this RFP are the responsibility of the company and can not be charged to the Owner.
- 2.34. Sovereign Immunity:** The Owner specifically reserves its right to sovereign immunity pursuant to Colorado State Law as a defense to any action arising in conjunction to this agreement.
- 2.35. Public Funds/Non-Appropriation of Funds:** Funds for payment have been provided through the Owner's budget approved by the City Council for the stated fiscal year only. State of Colorado statutes prohibit the obligation and expenditure of public funds beyond the fiscal year for which a budget has been approved. Therefore, anticipated orders or other obligations that may arise past the end of the stated Owner's fiscal year shall be subject to budget approval. Any contract will be subject to and must contain a governmental non-appropriation of funds clause.
- 2.36. Collusion Clause:** Each Offeror by submitting a proposal certifies that it is not party to any collusive action or any action that may be in violation of the Sherman Antitrust Act. Any and all proposals shall be rejected if there is evidence or reason for believing that collusion exists among the proposers. The Owner may or may not, at the discretion of the Owner Purchasing Representative, accept future proposals for the same service or commodities for participants in such collusion.
- 2.37. Gratuities:** The Contractor certifies and agrees that no gratuities or kickbacks were paid in connection with this contract, nor were any fees, commissions, gifts or other

considerations made contingent upon the award of this contract. If the Contractor breaches or violates this warranty, the Owner may, at their discretion, terminate this contract without liability to the Owner.

- 2.38. Performance of the Contract:** The Owner reserves the right to enforce the performance of the contract in any manner prescribed by law or deemed to be in the best interest of the Owner in the event of breach or default of resulting contract award.
- 2.39. Benefit Claims:** The Owner shall not provide to the Offeror any insurance coverage or other benefits, including Worker's Compensation, normally provided by the Owner for its employees.
- 2.40. Default:** The Owner reserves the right to terminate the contract in the event the Contractor fails to meet delivery or completion schedules, or otherwise perform in accordance with the accepted proposal. Breach of contract or default authorizes the Owner to purchase like services elsewhere and charge the full increase in cost to the defaulting Offeror.
- 2.41. Multiple Offers:** If said proposer chooses to submit more than one offer, THE ALTERNATE OFFER must be clearly marked "Alternate Proposal". The Owner reserves the right to make award in the best interest of the Owner.
- 2.42. Cooperative Purchasing:** Purchases as a result of this solicitation are primarily for the Owner. Other governmental entities may be extended the opportunity to utilize the resultant contract award with the agreement of the successful provider and the participating agencies. All participating entities will be required to abide by the specifications, terms, conditions and pricings established in this Proposal. The quantities furnished in this proposal document are for only the Owner. It does not include quantities for any other jurisdiction. The Owner will be responsible only for the award for our jurisdiction. Other participating entities will place their own awards on their respective Purchase Orders through their purchasing office or use their purchasing card for purchase/payment as authorized or agreed upon between the provider and the individual entity. The Owner accepts no liability for payment of orders placed by other participating jurisdictions that choose to piggy-back on our solicitation. Orders placed by participating jurisdictions under the terms of this solicitation will indicate their specific delivery and invoicing instructions.
- 2.43. Definitions:**
- 2.43.1. "Offeror" and/or "Proposer" refers to the person or persons legally authorized by the Consultant to make an offer and/or submit a response (fee) proposal in response to the Owner's RFP.
  - 2.43.2. The term "Work" includes all labor, materials, equipment, and/or services necessary to produce the requirements of the Contract Documents.
  - 2.43.3. "Contractor" is the person, organization, firm or consultant identified as such in the Agreement and is referred to throughout the Contract Documents. The term Contractor means the Contractor or his authorized representative. The Contractor shall carefully study and compare the General Contract Conditions of the Contract, Specification and Drawings, Scope of Work, Addenda and Modifications and shall at once report to the Owner any error, inconsistency or omission he may discover. Contractor shall not be liable to the Owner for any damage resulting from such errors, inconsistencies or omissions. The Contractor

shall not commence work without clarifying Drawings, Specifications, or Interpretations.

2.43.4. "Sub-Contractor is a person or organization who has a direct contract with the Contractor to perform any of the work at the site. The term sub-contractor is referred to throughout the contract documents and means a sub-contractor or his authorized representative.

**2.44. Public Disclosure Record:** If the Proposer has knowledge of their employee(s) or sub-proposers having an immediate family relationship with an Owner employee or elected official, the proposer must provide the Purchasing Representative with the name(s) of these individuals. These individuals are required to file an acceptable "Public Disclosure Record", a statement of financial interest, before conducting business with the Owner.

### SECTION 3.0: INSURANCE REQUIREMENTS

**3.1 Insurance Requirements:** The selected Firm agrees to procure and maintain, at its own cost, policy(s) of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by the Firm pursuant to this Section. Such insurance shall be in addition to any other insurance requirements imposed by this Contract or by law. The Firm shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to this Section by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

Firm shall procure and maintain and, if applicable, shall cause any Subcontractor of the Firm to procure and maintain insurance coverage listed below. Such coverage shall be procured and maintained with forms and insurers acceptable to The Owner. All coverage shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by the Firm pursuant to this Section. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Minimum coverage limits shall be as indicated below unless specified otherwise in the Special Conditions:

(a) Worker Compensation insurance to cover obligations imposed by applicable laws for any employee engaged in the performance of work under this Contract, and Employers' Liability insurance with minimum limits of:

ONE MILLION DOLLARS (\$1,000,000) each accident,  
ONE MILLION DOLLARS (\$1,000,000) disease - policy limit, and  
ONE MILLION DOLLARS (\$1,000,000) disease - each employee

(b) General Liability insurance with minimum combined single limits of:

ONE MILLION DOLLARS (\$1,000,000) each occurrence and  
ONE MILLION DOLLARS (\$1,000,000) per job aggregate.

The policy shall be applicable to all premises, products and completed operations. 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, products, and completed operations. The policy shall include

coverage for explosion, collapse, and underground (XCU) hazards. The policy shall contain a severability of interests provision.

(c) Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than:

ONE MILLION DOLLARS (\$1,000,000) each occurrence and  
ONE MILLION DOLLARS (\$1,000,000) aggregate

This policy shall provide coverage to protect the contractor against liability incurred as a result of the professional services performed as a result of responding to this Solicitation.

With respect to each of Consultant's owned, hired, or non-owned vehicles assigned to be used in performance of the Work. The policy shall contain a severability of interests provision.

- 3.2 Additional Insured Endorsement:** The policies required by paragraphs (b), and (c) above shall be endorsed to include the Owner and the Owner's officers and employees as additional insureds. Every policy required above shall be primary insurance, and any insurance carried by the Owner, its officers, or its employees, or carried by or provided through any insurance pool of the Owner, shall be excess and not contributory insurance to that provided by Contractor. The Contractor shall be solely responsible for any deductible losses under any policy required above.

## SECTION 4.0: SPECIFICATIONS/SCOPE OF SERVICES

- 4.1. General/Background:** The purpose of this RFP is to obtain proposals from qualified and professional engineering firms to perform the necessary tasks to prepare detailed construction plans, specifications, cost estimates, and pre-construction bidding support necessary for permitting & construction of roundabout improvements at the intersection of Horizon Drive and G Road/27 ½ Road.

The City of Grand Junction worked with the Horizon Drive Business Improvement District in 2012-2013 to complete a public engagement process focused on developing a vision for the Horizon Drive corridor that would improve traffic flow, increase safety, improve aesthetics, and support economic development. The results of these planning efforts led to the construction of interchange improvements at I-70 that were constructed in 2015-2016 by CDOT. Subsequent corridor improvements included the need for crosswalks (completed in 2019), pedestrian improvements, access control, and intersection improvements at G Road / 27 ½ Road.

In 2020, the City of Grand Junction worked with Mead & Hunt to further develop the conceptual design for the Horizon Drive & G Road / 27 ½ Road Intersection. This included completing an operational analysis for the intersection and developing the horizontal geometry for a roundabout configuration that would address the capacity & safety needs of the corridor. The City of Grand Junction has secured grant assistance through the Highway Safety Improvement Program administered through CDOT for the construction of the roundabout project with a tentative AD date for construction in February of 2023.

The conceptual geometry of the proposed roundabout identified the need to acquire right-of-way from private properties on all four corners of the intersection. The City has a contract with Transportation Resource Services (TRS) to assist with right-of-way acquisition services on this project that are specific to property owner negotiations and real estate services.

#### **4.2. Special Conditions/Provisions:**

**4.2.1. Pre- Proposal Meeting:** An **optional** pre-proposal meeting is required for all prospective offerors. The purpose of this visit will be to inspect and to clarify the contents of this Request for Proposal (RFP). Meeting location shall be at City Hall Auditorium at 250 N. 5<sup>th</sup> Street, Grand Junction, CO on November 10, 2021 at 2:00pm.

**4.2.2. Price:** Project pricing shall be all inclusive, to include, but not be limited to: labor, materials, equipment, travel, design, drawings, engineering work, shipping/freight, licenses, permits, fees, etc.

The Owner shall not pay nor be liable for any other additional costs including but not limited to: taxes, shipping charges, insurance, interest, penalties, termination payments, attorney fees, liquidated damages, etc.

Provide a not to exceed cost using Solicitation Response Form found in Section 7, accompanied by a complete list of costs breakdown and rates sheets.

All fees will be considered by the Owner to be negotiable.

**4.2.3. Laws, Codes, Rules, and Regulations:** Contractor shall ensure that all services provided meet all Federal, State, County, and City laws, codes, rules, regulations, and requirements for providing such services.

#### **4.3. Specifications/Scope of Services:**

The general scope of services to be obtained as a result of this RFP shall include the following:

##### **Project Management and Coordination**

**CDOT Local Agency Project Process:** The consultant shall coordinate with CDOT and other appropriate regulatory agencies to obtain any required permits required to comply with the CDOT Local Agency project process. The Consultant shall initiate communication with State and Federal agencies regarding the intent of the project and shall submit appropriate permit applications on behalf of the City. This shall include providing technical support in obtaining CDOT clearances for design, ROW, environmental, and utilities.

The Consultant shall include City PM on all correspondence with regulatory agencies and must copy City PM on all email correspondence.

**Project Initiation:** Develop and prepare a project schedule to meet the proposed

construction time frame and assign tasks. The schedule shall show individual tasks described in the scope of work for the project and identify key milestone dates. The Consultant Project Manager (Consultant PM) shall maintain and update the project schedule as the work proceeds. The Consultant's PM will be assigned to this project for the duration of the work.

**Work Task Coordination:** The Consultant PM shall assign and coordinate all work tasks being accomplished, including those performed by sub-consultants, to ensure project work is completed on schedule.

**Project Team Coordination:** The City PM and the Consultant PM shall maintain ongoing communication about the project on a frequent and regular basis. Each PM shall provide the other with:

- Written synopsis of their respective contacts (both telephone or in person) with others
- Copies of pertinent written communications, including electronic (email) correspondence
- Early identification of potential problems

**Progress Meetings:** The City and Consultant shall meet, either in person or by virtual conference calls (Zoom or similar video) at regularly scheduled Project Working Group Meetings held at regular intervals throughout the project. Meetings shall include Consultant PM, City PM and other stakeholders as identified and required during the design progress. The Project Working Group meetings shall be used to coordinate the work effort and resolve any outstanding issues or problems. The Meetings shall focus on the following topics:

- Activities completed since last meeting
- Problems encountered or anticipated
- Late activities or activities slipping behind schedule
- Solutions for unresolved or newly identified problems
- Schedule of upcoming activities
- Information on items required, or comments from State and Federal agencies.

The Consultant PM shall prepare a written summary report of the general discussion held, including all action items assigned.

**Reporting Requirements:** The Consultant PM shall provide the following on a routine basis:

- Monthly status reports (percent of design components complete) and monthly billings.

### **Preliminary Design Plans (FIR)**

**Data Collection:** The City of Grand Junction completed a preliminary field survey of the project intersection in 2017 as part of the conceptual planning efforts. The City will

perform additional field survey work necessary to capture updated field conditions and provide a survey/base mapping for the design. The Consultant shall be responsible for additional utility investigation and collecting any other data necessary for the project.

**Preliminary Design Deliverables:** The Consultant will prepare preliminary/conceptual design plans at a 30% complete level and, at a minimum, will include the following:

- Roadway plans, drainage plans, utility plans, cross sections, removal plans, summary of approximate quantities and other notes & details in compliance with CDOT standards.
- Construction Phasing Plan
- Stormwater Management Plan
- Subsurface Utilities Engineering in accordance with current laws (utility conflicts must be identified and relocation/removal plans must be coordinated through the appropriate utility company).
- Preliminary ROW Plans
- Plans shall be in CDOT format with City of Grand Junction title block
- Engineer's Opinion of Probable Cost for each design alternative.
- City Provided Materials: The City will provide the following:
  - Survey, Base mapping and existing plan files
  - Geotechnical Investigation Report

**Conduct FIR Meeting:** The Consultant shall conduct a CDOT Field Inspection Review (FIR) meeting to review the preliminary design plans with City and CDOT Specialty Staff. The Consultant shall document all issues identified at the FIR to be resolved during final design.

**Public Engagement:** The proposed intersection improvements are intended to implement the vision from previous public engagement efforts completed by the City of Grand Junction and Horizon Drive Business Improvement District. The preliminary design phase shall include one (1) public outreach event to present the intersection plans to the community. The Consultant shall include attending and providing graphics / technical support for the public outreach event. Any additional public outreach will be completed by the City and/or Horizon Drive Business Improvement District.

### **Final Design Plans and Project Specifications**

**FOR Plans:** Prior to submittal of final design, Consultant shall provide 90% design review plans for Final Office Review (FOR). FOR plans shall include an updated Engineers Opinion of Probable Cost for the proposed design. The Consultant shall conduct a FOR meeting with the City and CDOT, and shall document any unresolved issues.

**Final Design Deliverables:** The Final Design documents shall include final design drawings and specifications, Engineers Opinion of Probable Cost, and a bid schedule that can be incorporated into the Advertisement for Construction Documents. Final design shall include obtaining all permitting and CDOT clearances necessary for project advertisement.



Advertisement for Construction should be published on or about February 28, 2023 to allow for the majority of construction to be completed during the summer of 2023.

**Authentication:** The Consultant's Professional Engineer responsible for the project shall affix their stamp and signature to the final drawings, bid documents and design report.

### **Construction Phase Services**

**Bidding Phase:** After completion of the plans, the City will advertise the project for construction, however the consultant shall be available for technical questions and provide to the City appropriate addenda. Consultant shall participate in the pre-bid meeting, however presence at the bid opening is not required.

**Construction Phase:** The City will provide onsite, full-time inspection for the project. Resident engineering shall be provided by the Consultant on an as-needed basis, but no less than once every month. Consultant resident engineer shall also assist in reviewing and approving all shop drawings, materials submittals, etc. The selected Consultant shall also complete as-built plans and assist the City PM with design change requests.

#### **4.4. Attached Documents:**

Appendix A: Roundabout Operational Analysis Memorandum

#### **4.5. RFP Tentative Time Schedule:**

- |  |                     |
|--|---------------------|
| • Request for Proposal Available                 | October 29, 2021    |
| • Optional Site Visit Meeting/Briefing           | November 10, 2021   |
| • Inquiry deadline, no questions after this date | November 17, 2021   |
| • Addendum Posted                                | November 22, 2021   |
| • Submittal deadline for proposals               | December 3, 2021    |
| • Owner evaluation of proposals                  | December 6-10, 2021 |
| • Interviews (if required)                       | December 17, 2021   |
| • Final selection                                | December 20, 2021   |
| • City Council Approval (if required)            | January 19, 2022    |
| • Contract execution                             | January 20, 2022    |

#### **4.6. Questions Regarding Scope of Services:**

Kassy Hackett, Buyer  
[kassyh@gjcity.org](mailto:kassyh@gjcity.org)

## SECTION 5.0: PREPARATION AND SUBMITTAL OF PROPOSALS

**Submission:** Each proposal shall be submitted in electronic format only, and only through the Rocky Mountain E-Purchasing website (<https://www.rockymountainbidsystem.com/default.asp>). This site offers both “free” and “paying” registration options that allow for full access of the Owner’s documents and for electronic submission of proposals. (Note: “free” registration may take up to 24 hours to process. Please Plan accordingly.) Please view our “**Electronic Vendor Registration Guide**” at <http://www.gjcity.org/BidOpenings.aspx> for details. (Purchasing Representative does not have access or control of the vendor side of RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline **800-835-4603**). For proper comparison and evaluation, the City requests that proposals be formatted as directed in Section 5.0 “Preparation and Submittal of Proposals.” Offerors are required to indicate their interest in this Project, show their specific experience and address their capability to perform the Scope of Services in the Time Schedule as set forth herein. For proper comparison and evaluation, the Owner requires that proposals be formatted **A to F**:

- A. Cover Letter:** Cover letter shall be provided which explains the Firm’s interest in the project. The letter shall contain the name/address/phone number/email of the person who will serve as the firm's principal contact person with Owner’s Contract Administrator and shall identify individual(s) who will be authorized to make presentations on behalf of the firm. The statement shall bear the signature of the person having proper authority to make formal commitments on behalf of the firm. By submitting a response to this solicitation the Contractor agrees to all requirements herein.
- B. Qualifications/Experience/Credentials:** Proposers shall provide their qualifications for consideration as a contract provider to the City of Grand Junction and include prior experience in similar projects.
- C. Strategy and Implementation Plan:** Describe your (the firm’s) interpretation of the Owner’s objectives with regard to this RFP. Describe the proposed strategy and/or plan for achieving the objectives of this RFP. The Firm may utilize a written narrative or any other printed technique to demonstrate their ability to satisfy the Scope of Services. The narrative should describe a logical progression of tasks and efforts starting with the initial steps or tasks to be accomplished and continuing until all proposed tasks are fully described and the RFP objectives are accomplished. Include a **time schedule** for completion of your firm’s implementation plan and an estimate of time commitments from Owner staff.
- D. References:** A minimum of three (3) **references** with name, address, telephone number, and email address that can attest to your experience in projects of similar scope and size.
- E. Fee Proposal:** Provide a not to exceed cost using Solicitation Response Form found in Section 7, accompanied by a complete list of costs breakdown. **Firm shall provide Fee Proposal electronically with their bid submission as a separate electronic file titled “Fee Proposal.”**
- F. Additional Data (optional):** Provide any additional information that will aid in evaluation of your qualifications with respect to this project.

## SECTION 6.0: EVALUATION CRITERIA AND FACTORS

- 6.1 Evaluation:** An evaluation team shall review all responses and select the proposal or proposals that best demonstrate the capability in all aspects to perform the scope of services and possess the integrity and reliability that will ensure good faith performance.
- 6.2 Intent:** Only respondents who meet the qualification criteria will be considered. Therefore, it is imperative that the submitted proposal clearly indicate the firm's ability to provide the services described herein.

Submittal evaluations will be done in accordance with the criteria and procedure defined herein. The Owner reserves the right to reject any and all portions of proposals and take into consideration past performance. The following parameters will be used to evaluate the submittals (**with weighted values**):

|  |
|--|
| The following collective criteria shall be worth 90%   |
| <ul style="list-style-type: none"><li>• <b>Responsiveness of Submittal to the RFP (5)</b><br/>(Firm has submitted a proposal that is fully comprehensive, inclusive, and conforms in all respects to the Request for Proposals (RFP) and all of its requirements, including all forms and substance.)</li><li>• <b>Understanding of the Project and Objectives (25)</b><br/>(Firm's ability to demonstrate a thorough understanding of the City's goals pertaining to this specific project.)</li><li>• <b>Experience (30)</b><br/>(Firm's proven proficiency in the successful completion of similar projects.)</li><li>• <b>Strategy &amp; Implementation Plan (30)</b><br/>(Firm has provided a clear interpretation of the City's objectives in regard to the project, and a fully comprehensive plan to achieve successful completion. See Section 5.0 Item C. – Strategy and Implementation Plan for details.)</li></ul> |

|  |
|--|
| The following criteria shall be worth 10%                          |
| <ul style="list-style-type: none"><li>• <b>Fees (10)</b></li></ul> |

Owner also reserves the right to take into consideration past performance of previous awards/contracts with the Owner of any vendor, contractor, supplier, or service provider in determining final award(s).

The Owner will undertake negotiations with the top rated firm and will not negotiate with lower rated firms unless negotiations with higher rated firms have been unsuccessful and terminated.

- 6.3 Oral Interviews:** The Owner may invite the most qualified rated proposers to participate in oral interviews.
- 6.4 Award:** Firms shall be ranked or disqualified based on the criteria listed in Section 6.2. The Owner reserves the right to consider all of the information submitted and/or oral presentations, if required, in selecting the project Firm.

**SECTION 7.0: SOLICITATION RESPONSE FORM  
RFP-4966-22-KH**

**“Professional Engineering Services for Horizon Dr. & G Road Roundabout”**

*Offeror must submit entire Form completed, dated and signed.*

- 1. All inclusive, not to exceed cost to provide professional engineering services for Horizon Dr. & G Road Roundabout.**

**NOT TO EXCEED COST \$** \_\_\_\_\_

**WRITTEN:** \_\_\_\_\_ **dollars.**

-----  
*The Owner reserves the right to accept any portion of the work to be performed at its discretion*  
-----

The undersigned has thoroughly examined the entire Request for Proposals and therefore submits the proposal and schedule of fees and services attached hereto.

This offer is firm and irrevocable for sixty (60) days after the time and date set for receipt of proposals.

The undersigned Offeror agrees to provide services and products in accordance with the terms and conditions contained in this Request for Proposal and as described in the Offeror's proposal attached hereto; as accepted by the Owner.

Prices in the proposal have not knowingly been disclosed with another provider and will not be prior to award.

- Prices in this proposal have been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition.
- No attempt has been made nor will be to induce any other person or firm to submit a proposal for the purpose of restricting competition.
- The individual signing this proposal certifies they are a legal agent of the offeror, authorized to represent the offeror and is legally responsible for the offer with regard to supporting documentation and prices provided.
- Direct purchases by the City of Grand Junction are tax exempt from Colorado Sales or Use Tax. Tax exempt No. 98-903544. The undersigned certifies that no Federal, State, County or Municipal tax will be added to the above quoted prices.
- City of Grand Junction payment terms shall be Net 30 days.
- Prompt payment discount of \_\_\_\_\_ percent of the net dollar will be offered to the Owner if the invoice is paid within \_\_\_\_\_ days after the receipt of the invoice. The Owner reserves the right to consider any such discounts when determining the bid award that are no less than Net 10 days.

RECEIPT OF ADDENDA: the undersigned Contractor acknowledges receipt of Addenda to the Solicitation, Specifications, and other Contract Documents.

State number of Addenda received: \_\_\_\_\_.

It is the responsibility of the Proposer to ensure all Addenda have been received and acknowledged.

\_\_\_\_\_  
Company Name – (Typed or Printed)

\_\_\_\_\_  
Authorized Agent – (Typed or Printed)

\_\_\_\_\_  
Authorized Agent Signature

\_\_\_\_\_  
Phone Number

\_\_\_\_\_  
Address of Offeror

\_\_\_\_\_  
E-mail Address of Agent

\_\_\_\_\_  
City, State, and Zip Code

\_\_\_\_\_  
Date

# **Appendix A**

## Roundabout Operational Analysis Memorandum



## Technical Memorandum

To: Lee Cooper, PE - City of Grand Junction  
Ken Haley, PE – City of Grand Junction

From: *Troy Pankratz, PE*

Date: September 9, 2021

Subject: Horizon Drive and G Road / 27 ½ Road Roundabout  
Grand Junction, CO  
Roundabout Operational Analysis

## Introduction and Background

Mead & Hunt has completed a traffic analysis study for the proposed roundabout to be located at the intersection of Horizon Drive and G Road / 27 ½ Road in the City of Grand Junction, Colorado.

## Traffic Volumes and Analysis Inputs

The existing traffic turning movement counts for the weekday AM and PM peak periods were collected on February 18, 2021 and provided by the City of Grand Junction. Peak hours were identified as 8:15 AM to 9:15 AM and 4:30 PM to 5:30 PM. City engineering staff provided a 2.0% value for the annual growth projections. Future traffic volumes for the year 2043 were predicted for the intersection by applying this 2.0% annual growth rate linearly for 22 years. A total percentage of 3% articulated trucks was estimated for all approaches utilizing the intersection. See Attachment A for the raw counts and Attachment B for the 2043 forecasted peak hour volumes.

## Capacity Analysis

The operation of the roundabout was analyzed with Highway Capacity Software (HCS) Roundabouts Version 7.9.5 which relies on the Highway Capacity Manual procedures for traffic analysis. The HCS capacity analysis data is documented in Attachment C.

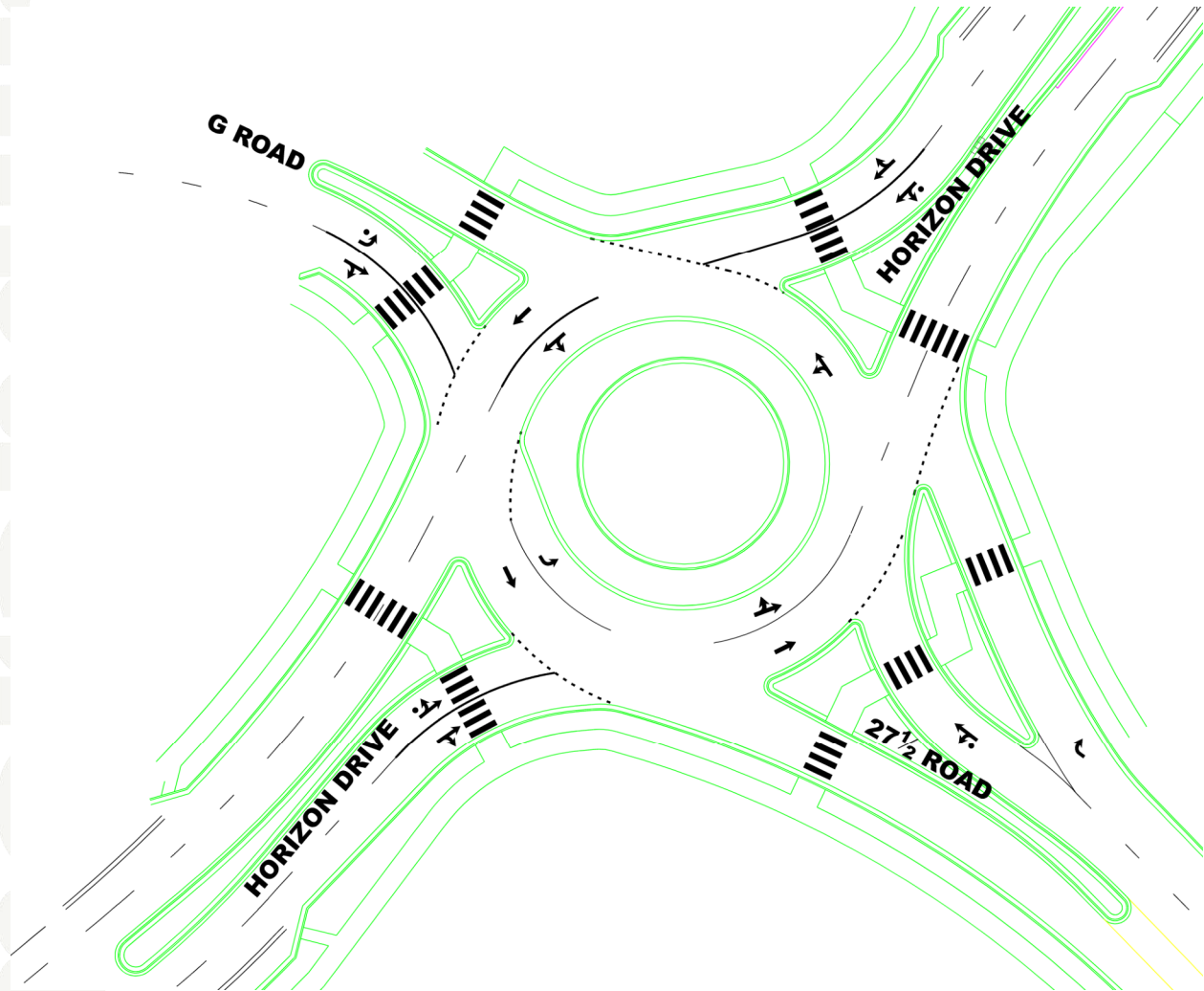
The layout of the roundabout intersection would provide two lane entries on the Horizon Drive roadway to accommodate traffic volumes and maintain continuity with the corridor lanes. The G Road approaches were tested as single lane entries but did not provide acceptable operations in the 2043 design year.

### Proposed Geometry

The proposed lane configuration consists of two lane entries on both Northbound and Southbound Horizon Drive, a thru/right lane & a left turn lane on Eastbound G Road, and a thru/left & a partial right-

turn bypass lane on Westbound G Road. A conceptual layout of the proposed lane configuration is shown in Figure 1. A summary of the operations for the G Road single lane test and for the proposed lane configuration is shown in Table 1.

**Figure 1 – Proposed Lane Configuration**





**Table 1 – Operational Analysis Summary**

|   | Approach               | 2043 AM Peak Hour |                             |  | 2043 PM Peak Hour |                             |  |
|---|------------------------|-------------------|-----------------------------|--|-------------------|-----------------------------|--|
|   |                        | LOS               | Average Vehicle Delay (sec) | 95 <sup>th</sup> Percentile Queue (veh)* | LOS               | Average Vehicle Delay (sec) | 95 <sup>th</sup> Percentile Queue (veh)* |
| Roundabout w/ Single Lane Entries on G Road                             | Eastbound G Road       | B                 | 14.9                        | 3.0                                      | F                 | 69.5                        | 11.0                                     |
|   | Westbound G Road       | F                 | 78.5                        | 24.3                                     | E                 | 45.7                        | 12.8                                     |
|   | Northbound Horizon Dr. | A                 | 7.8                         | 1.2                                      | D                 | 32.5                        | 7.6                                      |
|   | Southbound Horizon Dr. | A                 | 8.4                         | 2.6                                      | B                 | 14.0                        | 6.9                                      |
|   | Overall                | D                 | 34.2                        |  | D                 | 30.8                        |  |
| Roundabout w/ Two Lane Entry on EB G Road & Partial Bypass on WB G Road | Eastbound G Road       | B                 | 10.1                        | 1.3                                      | D                 | 26.4                        | 4.9                                      |
|   | Westbound G Road       | C                 | 24.2                        | 10.6                                     | C                 | 18.7                        | 5.6                                      |
|   | Northbound Horizon Dr. | A                 | 7.8                         | 1.2                                      | D                 | 32.5                        | 7.6                                      |
|   | Southbound Horizon Dr. | A                 | 8.4                         | 2.6                                      | B                 | 14.0                        | 6.9                                      |
|   | Overall                | B                 | 14.1                        |  | C                 | 20.9                        |  |

\*Maximum queue length shown if multiple lane entries analyzed

**Attachment A. Raw 2021 Traffic Counts**

# City of Grand Junction

333 West Avenue  
Grand Junction, CO, 81501  
*Transportation Engineering*

City of Grand Junction  
2021 Horizon Dr AM-PM TM's

File Name : 2021 Turning Movements  
Site Code : 04444411  
Start Date : 2/18/2021  
Page No : 1

## Groups Printed- All Vehicles

| Start Time    | From North |      |      |      |            | From East |      |      |      |            | From South |      |      |      |            | From West |      |      |      |            | Int. Total |
|---------------|------------|------|------|------|------------|-----------|------|------|------|------------|------------|------|------|------|------------|-----------|------|------|------|------------|------------|
|               | Right      | Thru | Left | Peds | App. Total | Right     | Thru | Left | Peds | App. Total | Right      | Thru | Left | Peds | App. Total | Right     | Thru | Left | Peds | App. Total |            |
| 07:15 AM      | 6          | 50   | 32   | 0    | 88         | 77        | 26   | 4    | 0    | 107        | 6          | 35   | 1    | 0    | 42         | 0         | 10   | 12   | 0    | 22         | 259        |
| 07:30 AM      | 12         | 84   | 52   | 0    | 148        | 88        | 28   | 13   | 0    | 129        | 1          | 53   | 0    | 0    | 54         | 1         | 38   | 15   | 0    | 54         | 385        |
| 07:45 AM      | 8          | 116  | 48   | 0    | 172        | 120       | 34   | 19   | 0    | 173        | 4          | 72   | 0    | 0    | 76         | 1         | 27   | 27   | 0    | 55         | 476        |
| Total         | 26         | 250  | 132  | 0    | 408        | 285       | 88   | 36   | 0    | 409        | 11         | 160  | 1    | 0    | 172        | 2         | 75   | 54   | 0    | 131        | 1120       |
| 08:00 AM      | 14         | 118  | 50   | 0    | 182        | 132       | 42   | 8    | 0    | 182        | 8          | 92   | 1    | 0    | 101        | 1         | 39   | 23   | 0    | 63         | 528        |
| *** BREAK *** |            |      |      |      |            |           |      |      |      |            |            |      |      |      |            |           |      |      |      |            |            |
| Total         | 14         | 118  | 50   | 0    | 182        | 132       | 42   | 8    | 0    | 182        | 8          | 92   | 1    | 0    | 101        | 1         | 39   | 23   | 0    | 63         | 528        |
| *** BREAK *** |            |      |      |      |            |           |      |      |      |            |            |      |      |      |            |           |      |      |      |            |            |
| 04:30 PM      | 17         | 114  | 99   | 1    | 231        | 66        | 27   | 10   | 0    | 103        | 10         | 90   | 5    | 1    | 106        | 4         | 38   | 15   | 0    | 57         | 497        |
| 04:45 PM      | 18         | 100  | 101  | 3    | 222        | 60        | 23   | 9    | 1    | 93         | 21         | 122  | 2    | 1    | 146        | 0         | 40   | 15   | 1    | 56         | 517        |
| Total         | 35         | 214  | 200  | 4    | 453        | 126       | 50   | 19   | 1    | 196        | 31         | 212  | 7    | 2    | 252        | 4         | 78   | 30   | 1    | 113        | 1014       |
| 05:00 PM      | 19         | 107  | 90   | 1    | 217        | 68        | 27   | 9    | 0    | 104        | 20         | 116  | 5    | 0    | 141        | 1         | 40   | 21   | 0    | 62         | 524        |
| 05:15 PM      | 24         | 130  | 132  | 1    | 287        | 57        | 24   | 10   | 0    | 91         | 20         | 121  | 1    | 0    | 142        | 6         | 38   | 19   | 0    | 63         | 583        |
| Grand Total   | 118        | 819  | 604  | 6    | 1547       | 668       | 231  | 82   | 1    | 982        | 90         | 701  | 15   | 2    | 808        | 14        | 270  | 147  | 1    | 432        | 3769       |
| Apprch %      | 7.6        | 52.9 | 39   | 0.4  |            | 68        | 23.5 | 8.4  | 0.1  |            | 11.1       | 86.8 | 1.9  | 0.2  |            | 3.2       | 62.5 | 34   | 0.2  |            |            |
| Total %       | 3.1        | 21.7 | 16   | 0.2  | 41         | 17.7      | 6.1  | 2.2  | 0    | 26.1       | 2.4        | 18.6 | 0.4  | 0.1  | 21.4       | 0.4       | 7.2  | 3.9  | 0    | 11.5       |            |



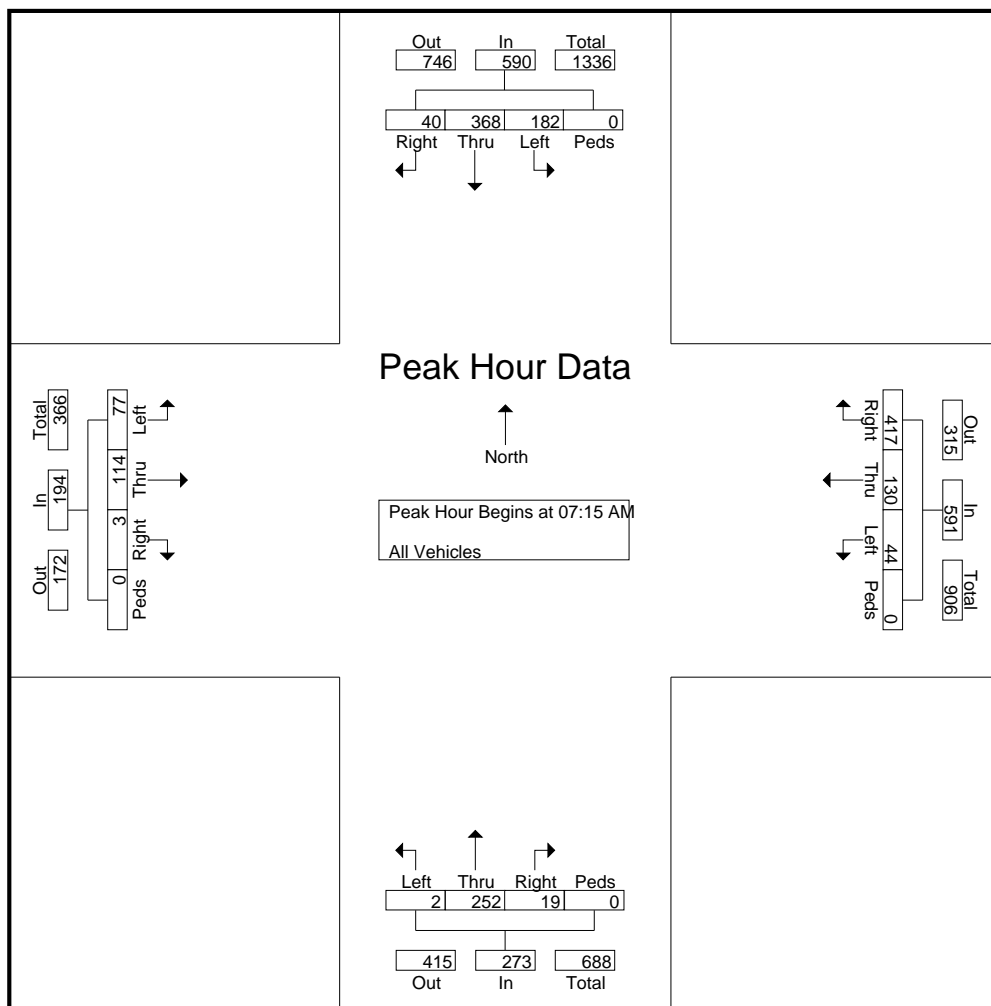
# City of Grand Junction

333 West Avenue  
Grand Junction, CO, 81501  
*Transportation Engineering*

City of Grand Junction  
2021 Horizon Dr AM-PM TM's

File Name : 2021 Turning Movements  
Site Code : 04444411  
Start Date : 2/18/2021  
Page No : 2

| Start Time   | From North |      |      |      |            | From East |      |      |      |            | From South |      |      |      |            | From West |      |      |      |            | Int. Total |
|--|------------|------|------|------|------------|-----------|------|------|------|------------|------------|------|------|------|------------|-----------|------|------|------|------------|------------|
|  | Right      | Thru | Left | Peds | App. Total | Right     | Thru | Left | Peds | App. Total | Right      | Thru | Left | Peds | App. Total | Right     | Thru | Left | Peds | App. Total |            |
| Peak Hour Analysis From 07:15 AM to 11:45 AM - Peak 1 of 1 |            |      |      |      |            |           |      |      |      |            |            |      |      |      |            |           |      |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |            |      |      |      |            |           |      |      |      |            |            |      |      |      |            |           |      |      |      |            |            |
| 07:15 AM   | 6          | 50   | 32   | 0    | 88         | 77        | 26   | 4    | 0    | 107        | 6          | 35   | 1    | 0    | 42         | 0         | 10   | 12   | 0    | 22         | 259        |
| 07:30 AM   | 12         | 84   | 52   | 0    | 148        | 88        | 28   | 13   | 0    | 129        | 1          | 53   | 0    | 0    | 54         | 1         | 38   | 15   | 0    | 54         | 385        |
| 07:45 AM   | 8          | 116  | 48   | 0    | 172        | 120       | 34   | 19   | 0    | 173        | 4          | 72   | 0    | 0    | 76         | 1         | 27   | 27   | 0    | 55         | 476        |
| 08:00 AM   | 14         | 118  | 50   | 0    | 182        | 132       | 42   | 8    | 0    | 182        | 8          | 92   | 1    | 0    | 101        | 1         | 39   | 23   | 0    | 63         | 528        |
| Total Volume   | 40         | 368  | 182  | 0    | 590        | 417       | 130  | 44   | 0    | 591        | 19         | 252  | 2    | 0    | 273        | 3         | 114  | 77   | 0    | 194        | 1648       |
| % App. Total   | 6.8        | 62.4 | 30.8 | 0    |            | 70.6      | 22   | 7.4  | 0    |            | 7          | 92.3 | 0.7  | 0    |            | 1.5       | 58.8 | 39.7 | 0    |            |            |
| PHF  | .714       | .780 | .875 | .000 | .810       | .790      | .774 | .579 | .000 | .812       | .594       | .685 | .500 | .000 | .676       | .750      | .731 | .713 | .000 | .770       | .780       |



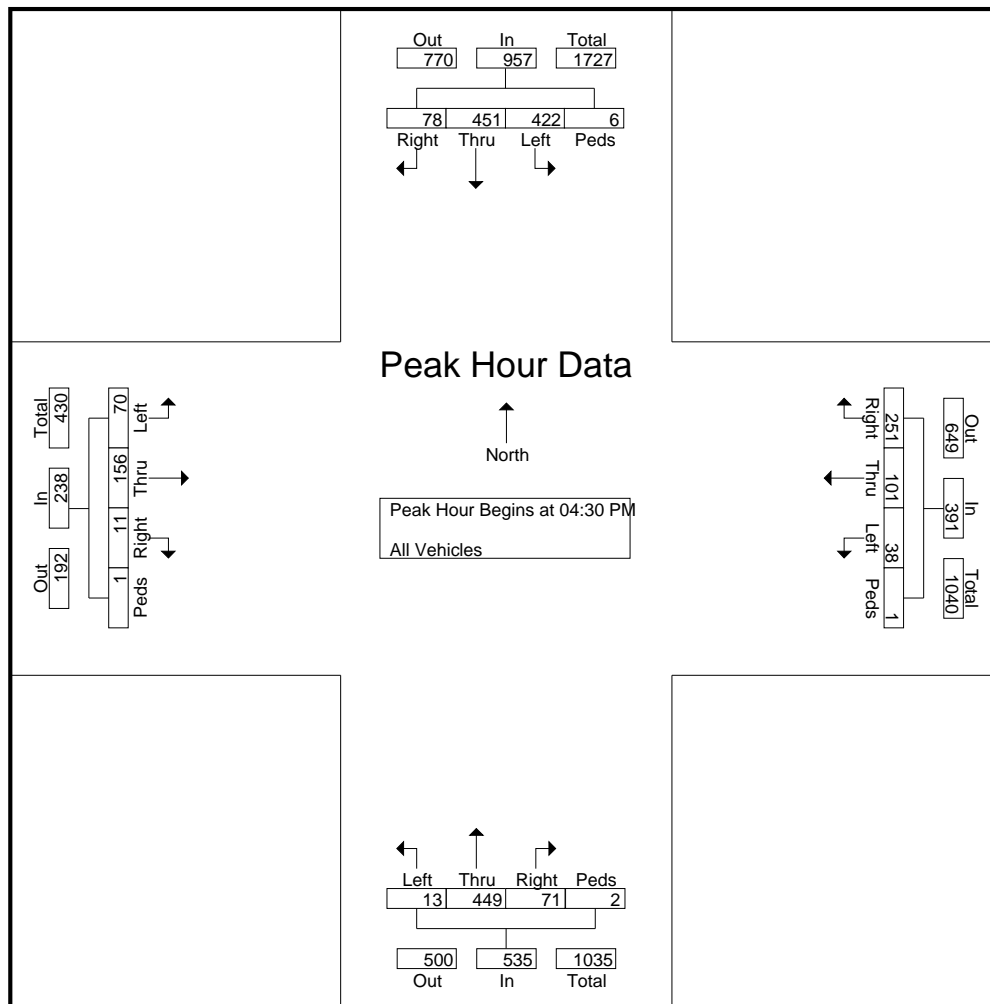
# City of Grand Junction

333 West Avenue  
 Grand Junction, CO, 81501  
*Transportation Engineering*

City of Grand Junction  
 2021 Horizon Dr AM-PM TM's

File Name : 2021 Turning Movements  
 Site Code : 04444411  
 Start Date : 2/18/2021  
 Page No : 3

| Start Time   | From North |      |      |      |            | From East |      |      |      |            | From South |      |      |      |            | From West |      |      |      |            | Int. Total |
|--|------------|------|------|------|------------|-----------|------|------|------|------------|------------|------|------|------|------------|-----------|------|------|------|------------|------------|
|  | Right      | Thru | Left | Peds | App. Total | Right     | Thru | Left | Peds | App. Total | Right      | Thru | Left | Peds | App. Total | Right     | Thru | Left | Peds | App. Total |            |
| Peak Hour Analysis From 12:00 PM to 05:15 PM - Peak 1 of 1 |            |      |      |      |            |           |      |      |      |            |            |      |      |      |            |           |      |      |      |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |            |      |      |      |            |           |      |      |      |            |            |      |      |      |            |           |      |      |      |            |            |
| 04:30 PM   | 17         | 114  | 99   | 1    | 231        | 66        | 27   | 10   | 0    | 103        | 10         | 90   | 5    | 1    | 106        | 4         | 38   | 15   | 0    | 57         | 497        |
| 04:45 PM   | 18         | 100  | 101  | 3    | 222        | 60        | 23   | 9    | 1    | 93         | 21         | 122  | 2    | 1    | 146        | 0         | 40   | 15   | 1    | 56         | 517        |
| 05:00 PM   | 19         | 107  | 90   | 1    | 217        | 68        | 27   | 9    | 0    | 104        | 20         | 116  | 5    | 0    | 141        | 1         | 40   | 21   | 0    | 62         | 524        |
| 05:15 PM   | 24         | 130  | 132  | 1    | 287        | 57        | 24   | 10   | 0    | 91         | 20         | 121  | 1    | 0    | 142        | 6         | 38   | 19   | 0    | 63         | 583        |
| Total Volume   | 78         | 451  | 422  | 6    | 957        | 251       | 101  | 38   | 1    | 391        | 71         | 449  | 13   | 2    | 535        | 11        | 156  | 70   | 1    | 238        | 2121       |
| % App. Total   | 8.2        | 47.1 | 44.1 | 0.6  |            | 64.2      | 25.8 | 9.7  | 0.3  |            | 13.3       | 83.9 | 2.4  | 0.4  |            | 4.6       | 65.5 | 29.4 | 0.4  |            |            |
| PHF  | .813       | .867 | .799 | .500 | .834       | .923      | .935 | .950 | .250 | .940       | .845       | .920 | .650 | .500 | .916       | .458      | .975 | .833 | .250 | .944       | .910       |



**Attachment B. 2021 Existing Counts and 2043 Projected Peak Hour Volumes**

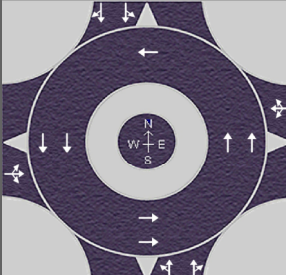
# Traffic Volumes



## **Attachment C. HCS Capacity Analysis Output**



# HCS7 Roundabouts Report

| General Information |                    |  |  | Site Information  |                            |  |                           |  |
|---------------------|--------------------|--|--|---|----------------------------|--|---------------------------|--|
| Analyst             | Mead & Hunt        |  |  |  | Intersection               |  | HORIZON DRIVE AND G RO... |  |
| Agency or Co.       | Grand Junction, CO |  |  |   | E/W Street Name            |  | G ROAD                    |  |
| Date Performed      | 8/25/2021          |  |  |   | N/S Street Name            |  | HORIZON DRIVE             |  |
| Analysis Year       | 2043               |  |  |   | Analysis Time Period (hrs) |  | 0.25                      |  |
| Time Analyzed       | AM                 |  |  |   | Peak Hour Factor           |  | 0.90                      |  |
| Project Description | 2% GROWTH 1 LANE   |  |  |   | Jurisdiction               |  |                           |  |

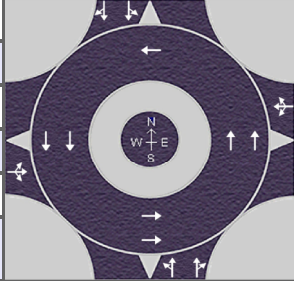
| Volume Adjustments and Site Characteristics |      |     |     |   |      |    |     |     |      |   |     |    |      |     |     |    |
|---|------|-----|-----|---|------|----|-----|-----|------|---|-----|----|------|-----|-----|----|
| Approach                                    | EB   |     |     |   | WB   |    |     |     | NB   |   |     |    | SB   |     |     |    |
|   | U    | L   | T   | R | U    | L  | T   | R   | U    | L | T   | R  | U    | L   | T   | R  |
| Number of Lanes (N)                         | 0    | 0   | 1   | 0 | 0    | 0  | 1   | 0   | 0    | 0 | 2   | 0  | 0    | 0   | 2   | 0  |
| Lane Assignment                             | LTR  |     |     |   | LTR  |    |     |     | LT   |   | TR  |    | LT   |     | TR  |    |
| Volume (V), veh/h                           | 0    | 111 | 164 | 4 | 0    | 63 | 187 | 600 | 0    | 3 | 363 | 27 | 0    | 262 | 530 | 58 |
| Percent Heavy Vehicles, %                   | 3    | 3   | 3   | 3 | 3    | 3  | 3   | 3   | 3    | 3 | 3   | 3  | 3    | 3   | 3   | 3  |
| Flow Rate (v <sub>PCE</sub> ), pc/h         | 0    | 127 | 188 | 5 | 0    | 72 | 214 | 687 | 0    | 3 | 415 | 31 | 0    | 300 | 607 | 66 |
| Right-Turn Bypass                           | None |     |     |   | None |    |     |     | None |   |     |    | None |     |     |    |
| Conflicting Lanes                           | 2    |     |     |   | 2    |    |     |     | 2    |   |     |    | 1    |     |     |    |
| Pedestrians Crossing, p/h                   | 0    |     |     |   | 0    |    |     |     | 0    |   |     |    | 0    |     |     |    |

| Critical and Follow-Up Headway Adjustment |      |        |        |      |        |        |        |        |        |        |        |        |  |
|---|------|--------|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Approach                                  | EB   |        |        | WB   |        |        | NB     |        |        | SB     |        |        |  |
|   | Left | Right  | Bypass | Left | Right  | Bypass | Left   | Right  | Bypass | Left   | Right  | Bypass |  |
| Critical Headway (s)                      |      | 4.3276 |        |      | 4.3276 |        | 4.6453 | 4.3276 |        | 4.5436 | 4.5436 |        |  |
| Follow-Up Headway (s)                     |      | 2.5352 |        |      | 2.5352 |        | 2.6667 | 2.5352 |        | 2.5352 | 2.5352 |        |  |

| Flow Computations, Capacity and v/c Ratios |      |       |        |      |       |        |      |       |        |      |       |        |  |
|--|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|--|
| Approach                                   | EB   |       |        | WB   |       |        | NB   |       |        | SB   |       |        |  |
|  | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |  |
| Entry Flow (v <sub>e</sub> ), pc/h         |      | 320   |        |      | 973   |        | 211  | 238   |        | 457  | 516   |        |  |
| Entry Volume, veh/h                        |      | 311   |        |      | 945   |        | 205  | 231   |        | 444  | 501   |        |  |
| Circulating Flow (v <sub>c</sub> ), pc/h   | 979  |       |        | 545  |       |        | 615  |       |        | 289  |       |        |  |
| Exiting Flow (v <sub>ex</sub> ), pc/h      | 519  |       |        | 283  |       |        | 1229 |       |        | 684  |       |        |  |
| Capacity (C <sub>PCE</sub> ), pc/h         |      | 618   |        |      | 894   |        | 767  | 842   |        | 1092 | 1092  |        |  |
| Capacity (c), veh/h                        |      | 600   |        |      | 867   |        | 744  | 817   |        | 1060 | 1060  |        |  |
| v/c Ratio (x)                              |      | 0.52  |        |      | 1.09  |        | 0.28 | 0.28  |        | 0.42 | 0.47  |        |  |

| Delay and Level of Service      |      |       |        |      |       |        |      |       |        |      |       |        |  |
|---------------------------------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|--|
| Approach                        | EB   |       |        | WB   |       |        | NB   |       |        | SB   |       |        |  |
|                                 | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |  |
| Lane Control Delay (d), s/veh   |      | 14.9  |        |      | 78.5  |        | 8.0  | 7.5   |        | 7.9  | 8.8   |        |  |
| Lane LOS                        |      | B     |        |      | F     |        | A    | A     |        | A    | A     |        |  |
| 95% Queue, veh                  |      | 3.0   |        |      | 24.3  |        | 1.1  | 1.2   |        | 2.1  | 2.6   |        |  |
| Approach Delay, s/veh           | 14.9 |       |        | 78.5 |       |        | 7.8  |       |        | 8.4  |       |        |  |
| Approach LOS                    | B    |       |        | F    |       |        | A    |       |        | A    |       |        |  |
| Intersection Delay, s/veh   LOS | 34.2 |       |        |      |       |        | D    |       |        |      |       |        |  |

# HCS7 Roundabouts Report

| General Information |                    |  |  | Site Information  |                            |  |                           |  |
|---------------------|--------------------|--|--|---|----------------------------|--|---------------------------|--|
| Analyst             | Mead & Hunt        |  |  |  | Intersection               |  | HORIZON DRIVE AND G RO... |  |
| Agency or Co.       | Grand Junction, CO |  |  |   | E/W Street Name            |  | G ROAD                    |  |
| Date Performed      | 8/25/2021          |  |  |   | N/S Street Name            |  | HORIZON DRIVE             |  |
| Analysis Year       | 2043               |  |  |   | Analysis Time Period (hrs) |  | 0.25                      |  |
| Time Analyzed       | PM                 |  |  |   | Peak Hour Factor           |  | 0.91                      |  |
| Project Description | 2.0% GROWTH 1 LANE |  |  |   | Jurisdiction               |  |                           |  |

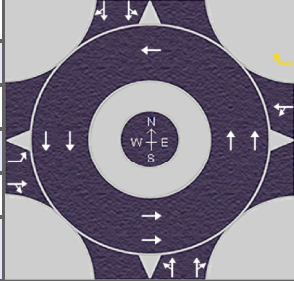
| Volume Adjustments and Site Characteristics |      |     |     |    |      |    |     |     |      |    |     |     |      |     |     |     |
|---|------|-----|-----|----|------|----|-----|-----|------|----|-----|-----|------|-----|-----|-----|
| Approach                                    | EB   |     |     |    | WB   |    |     |     | NB   |    |     |     | SB   |     |     |     |
|   | U    | L   | T   | R  | U    | L  | T   | R   | U    | L  | T   | R   | U    | L   | T   | R   |
| Number of Lanes (N)                         | 0    | 0   | 1   | 0  | 0    | 0  | 1   | 0   | 0    | 0  | 2   | 0   | 0    | 0   | 2   | 0   |
| Lane Assignment                             | LTR  |     |     |    | LTR  |    |     |     | LT   |    | TR  |     | LT   |     | TR  |     |
| Volume (V), veh/h                           | 0    | 101 | 225 | 16 | 0    | 55 | 145 | 361 | 0    | 19 | 647 | 102 | 0    | 608 | 649 | 112 |
| Percent Heavy Vehicles, %                   | 3    | 3   | 3   | 3  | 3    | 3  | 3   | 3   | 3    | 3  | 3   | 3   | 3    | 3   | 3   | 3   |
| Flow Rate (v <sub>PCE</sub> ), pc/h         | 0    | 114 | 255 | 18 | 0    | 62 | 164 | 409 | 0    | 22 | 732 | 115 | 0    | 688 | 735 | 127 |
| Right-Turn Bypass                           | None |     |     |    | None |    |     |     | None |    |     |     | None |     |     |     |
| Conflicting Lanes                           | 2    |     |     |    | 2    |    |     |     | 2    |    |     |     | 1    |     |     |     |
| Pedestrians Crossing, p/h                   | 2    |     |     |    | 2    |    |     |     | 3    |    |     |     | 9    |     |     |     |

| Critical and Follow-Up Headway Adjustment |      |        |        |      |        |        |        |        |        |        |        |        |  |
|---|------|--------|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Approach                                  | EB   |        |        | WB   |        |        | NB     |        |        | SB     |        |        |  |
|   | Left | Right  | Bypass | Left | Right  | Bypass | Left   | Right  | Bypass | Left   | Right  | Bypass |  |
| Critical Headway (s)                      |      | 4.3276 |        |      | 4.3276 |        | 4.6453 | 4.3276 |        | 4.5436 | 4.5436 |        |  |
| Follow-Up Headway (s)                     |      | 2.5352 |        |      | 2.5352 |        | 2.6667 | 2.5352 |        | 2.5352 | 2.5352 |        |  |

| Flow Computations, Capacity and v/c Ratios |      |       |        |      |       |        |      |       |        |      |       |        |  |
|--|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|--|
| Approach                                   | EB   |       |        | WB   |       |        | NB   |       |        | SB   |       |        |  |
|  | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |  |
| Entry Flow (v <sub>e</sub> ), pc/h         |      | 387   |        |      | 635   |        | 408  | 461   |        | 729  | 822   |        |  |
| Entry Volume, veh/h                        |      | 376   |        |      | 617   |        | 397  | 447   |        | 707  | 798   |        |  |
| Circulating Flow (v <sub>c</sub> ), pc/h   | 1485 |       |        | 868  |       |        | 1057 |       |        | 248  |       |        |  |
| Exiting Flow (v <sub>ex</sub> ), pc/h      | 1058 |       |        | 313  |       |        | 1255 |       |        | 815  |       |        |  |
| Capacity (C <sub>PCE</sub> ), pc/h         |      | 402   |        |      | 679   |        | 511  | 578   |        | 1133 | 1133  |        |  |
| Capacity (c), veh/h                        |      | 390   |        |      | 659   |        | 496  | 561   |        | 1091 | 1091  |        |  |
| v/c Ratio (x)                              |      | 0.96  |        |      | 0.94  |        | 0.80 | 0.80  |        | 0.65 | 0.73  |        |  |

| Delay and Level of Service      |      |       |        |      |       |        |      |       |        |      |       |        |  |
|---------------------------------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|--|
| Approach                        | EB   |       |        | WB   |       |        | NB   |       |        | SB   |       |        |  |
|                                 | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |  |
| Lane Control Delay (d), s/veh   |      | 69.5  |        |      | 45.7  |        | 34.4 | 30.9  |        | 12.4 | 15.3  |        |  |
| Lane LOS                        |      | F     |        |      | E     |        | D    | D     |        | B    | C     |        |  |
| 95% Queue, veh                  |      | 11.0  |        |      | 12.8  |        | 7.5  | 7.6   |        | 5.0  | 6.9   |        |  |
| Approach Delay, s/veh           | 69.5 |       |        | 45.7 |       |        | 32.5 |       |        | 14.0 |       |        |  |
| Approach LOS                    | F    |       |        | E    |       |        | D    |       |        | B    |       |        |  |
| Intersection Delay, s/veh   LOS | 30.8 |       |        |      |       |        | D    |       |        |      |       |        |  |

# HCS7 Roundabouts Report

| General Information |                    |  |  | Site Information  |                            |                           |  |  |
|---------------------|--------------------|--|--|---|----------------------------|---------------------------|--|--|
| Analyst             | Mead & Hunt        |  |  |  | Intersection               | HORIZON DRIVE AND G RO... |  |  |
| Agency or Co.       | Grand Junction, CO |  |  |   | E/W Street Name            | G ROAD                    |  |  |
| Date Performed      | 8/25/2021          |  |  |   | N/S Street Name            | HORIZON DRIVE             |  |  |
| Analysis Year       | 2043               |  |  |   | Analysis Time Period (hrs) | 0.25                      |  |  |
| Time Analyzed       | AM                 |  |  |   | Peak Hour Factor           | 0.90                      |  |  |
| Project Description | 2.0% GROWTH 2 LANE |  |  |   | Jurisdiction               |                           |  |  |

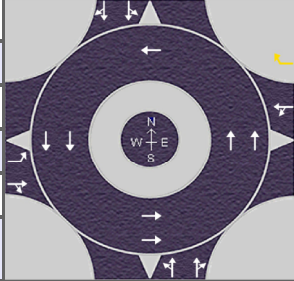
| Volume Adjustments and Site Characteristics |      |     |     |   |          |    |     |     |      |   |     |    |      |     |     |    |
|---|------|-----|-----|---|----------|----|-----|-----|------|---|-----|----|------|-----|-----|----|
| Approach                                    | EB   |     |     |   | WB       |    |     |     | NB   |   |     |    | SB   |     |     |    |
|   | U    | L   | T   | R | U        | L  | T   | R   | U    | L | T   | R  | U    | L   | T   | R  |
| Number of Lanes (N)                         | 0    | 1   | 1   | 0 | 0        | 0  | 1   | 0   | 0    | 0 | 2   | 0  | 0    | 0   | 2   | 0  |
| Lane Assignment                             | L    |     | TR  |   |          |    |     |     | LT   |   | TR  |    | LT   |     | TR  |    |
| Volume (V), veh/h                           | 0    | 111 | 164 | 4 | 0        | 63 | 187 | 600 | 0    | 3 | 363 | 27 | 0    | 262 | 530 | 58 |
| Percent Heavy Vehicles, %                   | 3    | 3   | 3   | 3 | 3        | 3  | 3   | 3   | 3    | 3 | 3   | 3  | 3    | 3   | 3   | 3  |
| Flow Rate (v <sub>PCE</sub> ), pc/h         | 0    | 127 | 188 | 5 | 0        | 72 | 214 | 687 | 0    | 3 | 415 | 31 | 0    | 300 | 607 | 66 |
| Right-Turn Bypass                           | None |     |     |   | Yielding |    |     |     | None |   |     |    | None |     |     |    |
| Conflicting Lanes                           | 2    |     |     |   | 2        |    |     |     | 2    |   |     |    | 1    |     |     |    |
| Pedestrians Crossing, p/h                   | 0    |     |     |   | 0        |    |     |     | 0    |   |     |    | 0    |     |     |    |

| Critical and Follow-Up Headway Adjustment |        |        |        |      |        |        |        |        |        |        |        |        |  |
|---|--------|--------|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Approach                                  | EB     |        |        | WB   |        |        | NB     |        |        | SB     |        |        |  |
|   | Left   | Right  | Bypass | Left | Right  | Bypass | Left   | Right  | Bypass | Left   | Right  | Bypass |  |
| Critical Headway (s)                      | 4.6453 | 4.3276 |        |      | 4.3276 | 4.9763 | 4.6453 | 4.3276 |        | 4.5436 | 4.5436 |        |  |
| Follow-Up Headway (s)                     | 2.6667 | 2.5352 |        |      | 2.5352 | 2.6087 | 2.6667 | 2.5352 |        | 2.5352 | 2.5352 |        |  |

| Flow Computations, Capacity and v/c Ratios |      |       |        |      |       |        |      |       |        |      |       |        |  |
|--|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|--|
| Approach                                   | EB   |       |        | WB   |       |        | NB   |       |        | SB   |       |        |  |
|  | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |  |
| Entry Flow (v <sub>e</sub> ), pc/h         | 127  | 193   |        |      | 286   | 687    | 211  | 238   |        | 457  | 516   |        |  |
| Entry Volume, veh/h                        | 123  | 187   |        |      | 278   | 667    | 205  | 231   |        | 444  | 501   |        |  |
| Circulating Flow (v <sub>c</sub> ), pc/h   | 979  |       |        | 545  |       |        | 615  |       |        | 289  |       |        |  |
| Exiting Flow (v <sub>ex</sub> ), pc/h      | 519  |       |        | 283  |       |        | 542  |       |        | 684  |       |        |  |
| Capacity (C <sub>PCE</sub> ), pc/h         | 548  | 618   |        |      | 894   | 794    | 767  | 842   |        | 1092 | 1092  |        |  |
| Capacity (c), veh/h                        | 533  | 600   |        |      | 867   | 771    | 744  | 817   |        | 1060 | 1060  |        |  |
| v/c Ratio (x)                              | 0.23 | 0.31  |        |      | 0.32  | 0.87   | 0.28 | 0.28  |        | 0.42 | 0.47  |        |  |

| Delay and Level of Service      |      |       |        |      |       |        |      |       |        |      |       |        |  |
|---------------------------------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|--|
| Approach                        | EB   |       |        | WB   |       |        | NB   |       |        | SB   |       |        |  |
|                                 | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |  |
| Lane Control Delay (d), s/veh   | 9.9  | 10.3  |        |      | 7.7   | 31.0   | 8.0  | 7.5   |        | 7.9  | 8.8   |        |  |
| Lane LOS                        | A    | B     |        |      | A     | D      | A    | A     |        | A    | A     |        |  |
| 95% Queue, veh                  | 0.9  | 1.3   |        |      | 1.4   | 10.6   | 1.1  | 1.2   |        | 2.1  | 2.6   |        |  |
| Approach Delay, s/veh           | 10.1 |       |        | 24.2 |       |        | 7.8  |       |        | 8.4  |       |        |  |
| Approach LOS                    | B    |       |        | C    |       |        | A    |       |        | A    |       |        |  |
| Intersection Delay, s/veh   LOS | 14.1 |       |        |      |       |        | B    |       |        |      |       |        |  |

# HCS7 Roundabouts Report

| General Information |                    |  |  | Site Information  |                            |                           |  |  |
|---------------------|--------------------|--|--|---|----------------------------|---------------------------|--|--|
| Analyst             | Mead & Hunt        |  |  |  | Intersection               | HORIZON DRIVE AND G RO... |  |  |
| Agency or Co.       | Grand Junction, CO |  |  |   | E/W Street Name            | G ROAD                    |  |  |
| Date Performed      | 8/25/2021          |  |  |   | N/S Street Name            | HORIZON DRIVE             |  |  |
| Analysis Year       | 2043               |  |  |   | Analysis Time Period (hrs) | 0.25                      |  |  |
| Time Analyzed       | PM                 |  |  |   | Peak Hour Factor           | 0.91                      |  |  |
| Project Description | 2.0% GROWTH        |  |  |   | Jurisdiction               |                           |  |  |

| Volume Adjustments and Site Characteristics |      |     |     |    |          |    |     |     |      |    |     |     |      |     |     |     |
|---|------|-----|-----|----|----------|----|-----|-----|------|----|-----|-----|------|-----|-----|-----|
| Approach                                    | EB   |     |     |    | WB       |    |     |     | NB   |    |     |     | SB   |     |     |     |
|   | U    | L   | T   | R  | U        | L  | T   | R   | U    | L  | T   | R   | U    | L   | T   | R   |
| Number of Lanes (N)                         | 0    | 1   | 1   | 0  | 0        | 0  | 1   | 0   | 0    | 0  | 2   | 0   | 0    | 0   | 2   | 0   |
| Lane Assignment                             | L    |     | TR  |    |          |    |     |     | LT   |    | TR  |     | LT   |     | TR  |     |
| Volume (V), veh/h                           | 0    | 101 | 225 | 16 | 0        | 55 | 145 | 361 | 0    | 19 | 647 | 102 | 0    | 608 | 649 | 112 |
| Percent Heavy Vehicles, %                   | 3    | 3   | 3   | 3  | 3        | 3  | 3   | 3   | 3    | 3  | 3   | 3   | 3    | 3   | 3   | 3   |
| Flow Rate (v <sub>PCE</sub> ), pc/h         | 0    | 114 | 255 | 18 | 0        | 62 | 164 | 409 | 0    | 22 | 732 | 115 | 0    | 688 | 735 | 127 |
| Right-Turn Bypass                           | None |     |     |    | Yielding |    |     |     | None |    |     |     | None |     |     |     |
| Conflicting Lanes                           | 2    |     |     |    | 2        |    |     |     | 2    |    |     |     | 1    |     |     |     |
| Pedestrians Crossing, p/h                   | 2    |     |     |    | 2        |    |     |     | 3    |    |     |     | 9    |     |     |     |

| Critical and Follow-Up Headway Adjustment |        |        |        |      |        |        |        |        |        |        |        |        |  |
|---|--------|--------|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Approach                                  | EB     |        |        | WB   |        |        | NB     |        |        | SB     |        |        |  |
|   | Left   | Right  | Bypass | Left | Right  | Bypass | Left   | Right  | Bypass | Left   | Right  | Bypass |  |
| Critical Headway (s)                      | 4.6453 | 4.3276 |        |      | 4.3276 | 4.9763 | 4.6453 | 4.3276 |        | 4.5436 | 4.5436 |        |  |
| Follow-Up Headway (s)                     | 2.6667 | 2.5352 |        |      | 2.5352 | 2.6087 | 2.6667 | 2.5352 |        | 2.5352 | 2.5352 |        |  |

| Flow Computations, Capacity and v/c Ratios |      |       |        |      |       |        |      |       |        |      |       |        |  |
|--|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|--|
| Approach                                   | EB   |       |        | WB   |       |        | NB   |       |        | SB   |       |        |  |
|  | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |  |
| Entry Flow (v <sub>e</sub> ), pc/h         | 114  | 273   |        |      | 226   | 409    | 408  | 461   |        | 729  | 822   |        |  |
| Entry Volume, veh/h                        | 111  | 265   |        |      | 219   | 397    | 397  | 447   |        | 707  | 798   |        |  |
| Circulating Flow (v <sub>c</sub> ), pc/h   | 1485 |       |        | 868  |       |        | 1057 |       |        | 248  |       |        |  |
| Exiting Flow (v <sub>ex</sub> ), pc/h      | 1058 |       |        | 313  |       |        | 846  |       |        | 815  |       |        |  |
| Capacity (C <sub>PCE</sub> ), pc/h         | 344  | 402   |        |      | 679   | 582    | 511  | 578   |        | 1133 | 1133  |        |  |
| Capacity (c), veh/h                        | 334  | 390   |        |      | 659   | 565    | 496  | 561   |        | 1091 | 1091  |        |  |
| v/c Ratio (x)                              | 0.33 | 0.68  |        |      | 0.33  | 0.70   | 0.80 | 0.80  |        | 0.65 | 0.73  |        |  |

| Delay and Level of Service      |      |       |        |      |       |        |      |       |        |      |       |        |  |
|---------------------------------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|--|
| Approach                        | EB   |       |        | WB   |       |        | NB   |       |        | SB   |       |        |  |
|                                 | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass | Left | Right | Bypass |  |
| Lane Control Delay (d), s/veh   | 17.7 | 30.1  |        |      | 9.8   | 23.5   | 34.4 | 30.9  |        | 12.4 | 15.3  |        |  |
| Lane LOS                        | C    | D     |        |      | A     | C      | D    | D     |        | B    | C     |        |  |
| 95% Queue, veh                  | 1.4  | 4.9   |        |      | 1.5   | 5.6    | 7.5  | 7.6   |        | 5.0  | 6.9   |        |  |
| Approach Delay, s/veh           | 26.4 |       |        | 18.7 |       |        | 32.5 |       |        | 14.0 |       |        |  |
| Approach LOS                    | D    |       |        | C    |       |        | D    |       |        | B    |       |        |  |
| Intersection Delay, s/veh   LOS | 20.9 |       |        |      |       |        | C    |       |        |      |       |        |  |