# Citywide On-Call Traffic Engineering

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# Bohannan A Huston

SPEED LIMIT 30

APRIL 1, 2020 PROJECT NO. 7020

7500 Jefferson St. NE Albuquerque, NM 87109-4335

www.bhinc.com

April 1, 2020

City of Albuquerque One Civic Plaza NW 7th Floor, Room 7057 Albuquerque, NM 87102

Re: Citywide On-Call Traffic Engineering – Project No. 7020

Dear Selection Committee:

The City of Albuquerque has long taken advantage of on-call contracting to enable its staff to access specialized services from the consulting community to help solve engineering challenges with innovative solutions. We are proud to say that Bohannan Huston, Inc., (BHI) has been among the City's most-trusted engineering consultants for providing these solutions. Emphasizing quick response, attentive project coordination, effective task order management, and innovative solutions, BHI teams have maxed-out our most recent on-call contracts with the City and stand prepared to assist you again under this on-call.

As you consider the qualifications of the many engineering firms who have responded to this RFP, we hope that you will consider the following aspects of the BHI team that set us apart from the pack:

- Locally Owned, Locally Grown Commitment: BHI was founded in Albuquerque in 1959 and has been committed to serving our city and state for over 60 years and counting. Headquartered in Albuquerque, BHI employs 180 personnel who live in the greater metro area. The people you will be working with on this contract are members of your community, with a personal stake in delivering quality projects in a cost-effective manner. We raise our families here, we pay our taxes here, and we invest in our community here. When we work for the City, we are working for our home.
- Record of Responsiveness: As mentioned above, the City has been able to max out several on-call contracts with the BHI team in the past few years. Our highly qualified team has been available to quickly respond to the City's needs and provide top-quality service for every task order in a short period of time. Many task orders were completed on a fast-track schedule. You can count on us to turn around quick responses to task order requests with an accurate scope and fee as well as be a team that has the immediate capacity to work on your projects right away.
- Concept-to-Complete Services: Few firms can match both the depth of locally based personnel and the breadth of locally-provided services that BHI offers the City under one roof. Our Albuquerque staff members provide you with expertise at any stage of your potential projects, from concept development and initial spatial data collection, to studies and strategic plans, to preliminary and final design, to bidding support and construction management services. When you need support at any stage of your project, BHI has people right down the street who can come to your office, roll up our sleeves, and work with you to guide your project to reality.

We have a proven track record of working with the City, and we are eager to partner with you again on this Citywide Engineering Services contract and further grow our relationship with you. If you have any questions, please feel free to contact me by phone 505.823.1000 or via email at athomas@bhinc.com.

Sincerely,

1.LM.

Albert M. Thomas, PE (NM #11476) Senior Vice President

voice: 505.823.1000 facsimile: 505.798.7988 toll free: 800.877.5332

Engineering ▲ Spatial Data ▲ Advanced Technologies ▲

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# I. GENERAL INFORMATION

### **1. FIRM CONTACT**

### INFORMATION

**Established in 1959** as Bohannan and Stephenson Civil Engineers, we became **Bohannan Huston**, **Inc**., (BHI) in 1977.

Address: 7500 Jefferson St. NE Phone: 505.823.1000 Website: www.bhinc.com

### **2. FIRM EMPLOYEE** INFORMATION

Through this contract, the City of Albuquerque will have access to BHI's 200 current staff who provide Traffic and Transportation as well as the full depth of related support services. The key team member who will work directly with your Project Manager for this contract is Albert M. Thomas, PE (NM PE# 11476). He is the Principal-in-Charge (PIC) and Project Manager for this contract.

### 3. LOCATION FOR WORK PERFORMED

All of the services our team provides for this contract will be performed in our local Albuquerque office.

### **3. TEAM MEMBER** QUALIFICATIONS

Our well-trained professionals offer detailed knowledge of all aspects of the engineering

# **II. PROJECT TEAM MEMBERS**

BHI is a local firm that is nationally recognized as a service provider for both private and public sectors in the areas of engineering, planning, surveying, and mapping. Our diverse staff and service offerings allow us to provide the City of Albuquerque with the on-call expertise you need from under one roof.

### **1. ORGANIZATION PLAN FOR MANAGEMENT**

We understand the need for rapid response to your on-call task orders, and we are motivated to continue providing creative problem solving and real-time solutions to the challenges you face. In this proposal, we placed one of our most experienced project leaders, Albert (Bert) M. Thomas, PE, in the role of Principalin-Charge and Project Manager. Bert is very familiar with the City and its operations. He assisted City Project Managers on numerous projects and has managed several past City on-call contracts. He has also managed countless other on-calls with agencies like NMDOT, MRCOG, Santa Fe County, Sandoval County, and Bernalillo County. Bert and the BHI team have been contracted for many on-call contracts around the state that include Las Cruces, Clovis, Santa Fe, Farmington, Rio Rancho, Moriarty, Gallup, and Bloomfield, also the Pueblos of Isleta, Laguna, and Santa Ana.

### 2. CONSULTANTS TO BE USED ON PROJECT

We do not anticipate the need for any subconsultants on this project. The organizational chart below shows the highly qualified BHI team we are proposing to use for this on-call contract, as well as our specialized in-house support staff should the need arise to use them. You will be able to rely on Bert as your primary point of contact and constant advisor for work under this contract. He brings his wealth of on-call contract management experience to serve you.



field and bring a range of experience levels. Our senior staff members bring decades of knowledge to the table, and their expertise is complemented by younger and newer personnel who bring fresh perspectives and innovative ideas to our project work. Bringing individuals with differing experience levels together on our project teams provides the City with the best of both worlds: integrity through a wealth of proven expertise combined with ingenuity that comes from fresh ideas.

### **Team Member Qualifications**

Name	Yrs. Exp. / Education	Registration	Affiliations
Albert Thomas	35 / BS Civil Engineering	Professional Engineer: NM #11476,	ITE, ACEC,
		Value Engineering Certification Module 1: NM	ASCE, AGC
Roy Gibson	18 / BS Civil Engineering	Professional Engineer: NM #18772,	ASCE,
		TX #126277, AZ #56745, CO #45813	NMSPE
Logan	10 / BS Civil Engineering	Professional Engineer: NM #23908	ITE, ASCE
leanette	35 / MS/BS Civil Engineering: Certificate Pedestrian	Professional Engineer: NM #11243_CO #44161	ASCE ITE
Walther	Facility Design	Professional Traffic Operations Engineer #907	100E, 11E
Eric Wrage	33 / MS/BS Civil Engineering	Professional Engineer: NM #13705, TX	ITE, ASCE
5	5 5	#128335, CO #46354, AZ #53540, UT	
		#10491939, Professional Traffic Operations	
		Engineer #896	
Melanie Bishop	5 / MCRP Community and Regional Planning;		
	BA Mass Communication; Anthropology		
Kurt Thorson	28 / BS Civil Engineering	Professional Engineer: NM #13310, CO #43081	ITE, ASCE
Carl Vermillion	5 / BS Civil Engineering	Professional Engineer: NM #25650	ASCE, ITE
Denise Aten	30 / MS Environmental Planning;	American Institute of Certified Planners #023292	APA, ACEC,
	BA Mathematics and Economics		AICP
Aaron	11 / MCRP Community and Regional Planning;	American Institute of Certified Planners #025266	APA, ULI,
Sussiliali			АІСР
Cluster	SUPPORTING S	Defroites	
Skylar DeWeese	To / BS CIVII Engineering; Certificates: Concrete Field Testing Technician: Hot Mix Asnhalt Materials Testing:	Professional Engineer: NM #22316	ACI, TICP,
Demeese	Aggregate Materials Testing; Soil Materials Testing;		AGC, ACINIVI
	Nuclear Moisture Density Gauge and		
	Radiological Safety		
Lee Lommler	1 / Certificates: Concrete Strength Testing Technician;	(Cont.) Certificates: Construction Materials	ACI, TTCP,
	Concrete Laboratory/Field Testing Technician;	Testing Concrete/Asphalt; Construction	ACNM, AGC
	Concrete Transportation Construction Inspector;	Materials Testing Solis; Hot-Mix Aspital Material	
	Aggregate resting and Lab rechnician, Diffied Shart	Operator	
Alandren	13 / MS Hydraulics and Water Resources. Civil	Professional Engineer: NM #19995	ΝΜΕΜΔ
Etlantus	Engineering: BS Civil Engineering	TX #127565_CO #45563. Certified Floodplain	AWRA SWF
		Manager: NM #NM-13-00335	
Marie	7 / BS Civil Engineering	Professional Engineer: NM #25033	
VanDerGeest		3	
Dennis Sandin	31 / BS Mechanical Engineering	Registered Professional Photogrammetrist:	NMFIC,
		OR #80711RPP	ASPRS
Alan Benham	26 / BS Survey Engineering; BS Civil Engineering	Professional Engineer: NM #14940	IRWA, NMPS
		Professional Surveyor: NM #15700, WY #13418,	
		CA #8700; NV #19554, TX #5814 CO #37976,	
		#4/283, BLM/CFedS Certification #1013	
Sean Melville	24 / MS/BS Civil Engineering (Structural Emphasis)	Protessional Engineer: NM #17400, CO #45516,	SEA, ASCE,
A			
Amanda White	15 / IVIS/BS CIVII Engineering (Structural Emphasis); Certificate of Completion Comprehensive Bridge	Professional Engineer: NM #19215, CO #51396	ASCE, SEA,
	Inspection Training School		ACI

### 4. UNIQUE TEAM MEMBER KNOWLEDGE

Our team leaders bring substantial knowledge of working with the City on on-call projects. We are one of New



roadway signing and striping, and traffic signal and street lighting design. He has extensive experience in street lighting analysis and both conventional and ornamental lighting design.

studies in New Mexico and Colorado. Her specialties

involvement, and socio-economic evaluations.

include transportation planning, land use planning, public

We have been fortunate to work on

many City projects, and the City has

been able to count on our depth of resources to produce high-quality

outcomes regardless of the size or

schedule. Many of the City projects we

have been a part of required fast-track

responded to your urgent needs quickly.

responses, and we have consistently

# **III. RESPONDENT EXPERIENCE**

As you will see from the projects listed in this section, BHI has the capabilities to perform projects of all sizes, from small feasibility studies, local roadway engineering, and parking lot designs to large transportation corridor and bridge replacement projects. In addition to providing you with on-call services, our team will also draw from our work on the Paseo Del Norte Interchange Reconstruction project, as well as other interchanges and roadway improvement projects within the Albuquerque metropolitan area.

**1. PREVIOUS PROJECTS** 

Our mission as your consultant is about solving problems, turning challenges into solutions that fulfill the project requirements, and meet or exceed client expectations. BHI staff have both the expertise and creativity to devise the right solutions and we take advantage of a broad suite



of technological tools to ensure that these solutions are created efficiently and accurately. As you can see from our experience on the following City projects, we understand the broad range of services that the City requires, and we are committed to delivering implementable solutions to meet your engineering challenges.

### CITY OF ALBUQUERQUE: CITY WIDE ON-CALL ENGINEERING SERVICES (#7537.00)

RELEVANCE TO THIS CONTRACT: BHI's six decades of success speaks to our ability to provide the City with 1) a wide range of services for varied task order requests; 2) responsive, dedicated staff who make your work a priority; 3) effective task and schedule management on your time-critical projects; and 4) quality final projects that meet your needs.

Contacts: Melissa Lozoya, Bridgette Garrett, Jennifer	BHI Team Members: Bert Thomas, Craig Hoover, Denise
Kubica, Josef Jansen, Debbie Bauman, John Mackenzie,	Aten, Aaron Sussman, Alandren Etlantus, Alan Benham,
Dustin Davidson, Jill Cuppernell	Marie VanDerGeest
Years of Services: 2018 – present	Construction Cost: NA – varies

**Contract Overview:** BHI was awarded a general on-call engineering contract with the City of Albuquerque in 2018. There have been 14 task orders to date, including a combination of BHI's diverse range of engineering services and pass-through services to subconsultant partners. Task orders included:

- University Bikeway Phase II Independent Assurance Construction Materials Testing
- Quaker Heights Fire Protection Bid Phase Services
- Zuni Road Improvements (Washington St. to Central)
- 2019 Albuquerque Bicycle Map Update
- University Blvd. and Tijeras Arroyo Bridges
   Monitoring
- I-25 Bicycle Accessibility Study
- Media Advertising, Placement, Design and Production Services for Bike to Work Day 2019

- Storm Drain Analysis in the Area of 90th and Eucariz SW
- Matthew Ave. Topographic Mapping and ROW Determination
- West Central Median Landscaping Independent Assurance Construction Materials Testing
- Hendrix/Madeira Intersection Pedestrian Improvements
- 2020 ABQ Bike Map Updates
- Central at Lomas Median Modification
- Matthew Avenue Design

### CITY OF ALBUQUERQUE: ON-CALL ENGINEERING SERVICES (#6200.00)

RELEVANCE TO THIS CONTRACT: The BHI team successfully executed a variety of task orders under this general on-call. Services included structural, drainage, and traffic engineering; along with public involvement, graphic design, survey, and planning services.

Contacts: Jim Hamel, Stacy Herrera, Melissa Lozoya, Ron	BHI Team Members: Bert Thomas, Kurt Thorson, Alandren
Romero, Richard Zita, John MacKenzie, Robert Ramirez,	Etlantus, Marie VanDerGeest, Eric Wrage, Sean Melville,
David Harrison, Kevin Daggett, Eric Michalski, Susannah	Alan Benham
Abbey, Jeanne Young	
Years of Services: 2015 – 2018	Construction Cost: NA – varies

**Contract Overview:** BHI was awarded a general on-call engineering contract with the City of Albuquerque in 2015. There were 15 task orders issued drawing upon the diverse range of BHI's engineering services. The task orders assigned under this contract include those listed below.

#### **Overhead Sign Structural Analysis**

 Provided analysis of overhead sign structure on Louisiana near I-40 in order to increase the size of the signs.

#### Detailed Hydraulic Analysis of South Broadway Drainage

- Conducted field survey and records research to complete detailed hydraulic modeling
- Mile High Little League
- Performed drainage analysis of on-site storm drain and ponds to verify capacity and flows
- Developed revised drainage concept to develop a pond that does not interfere with baseball field activities
- Incorporated MS4 requirements into new storm drain and pond solution

#### Load Rating of Existing Singer Bridge

- Inspected existing structure
- Evaluated structures to determine load capacity. Speed Counts on Indian School
- Collected traffic volume and speed counts
- Documented speeding and crash history
- Inspected the corridor
- Considered it as a candidate for road diet

#### Zone Map Amendment Assistance

- Processed all documents through City process
- Notified neighborhood, facilitated public outreach meeting, and attended EPC public hearings

#### Lobo Little League Expansion

- Reviewed architect's redesign of the existing field
- Assisted City in developing a feasible design solution for the drainage conveyance that is acceptable to AMAFCA

#### **Fire Station Driveway Assessment**

 Evaluated driveways at all City Fire Stations to determine needed repairs, estimate construction cost, and assisting City with a prioritization plan to use for funding requests

#### CABQ Fire Academy Parking Lot

Developed final design for revisions to the existing parking lot at the Fire Academy

#### 5<sup>th</sup> and Copper Parking Garage

- Redesigned entrance to be perpendicular to Copper Ave.
- Modified drive pad to be accessible
- Installed new electrical for attendant booth, equipment, and future security cameras.

#### Annual CABQ Bike Map Updates

Created and updated annually by Bohannan Huston's Images Plus group since 2005, the City of Albuquerque Bicycle Map is a colorful and vividly illustrated map that provides information for bicyclists in the Albuquerque metropolitan area. Albuquerque features over 540 miles of bicycle facilities and multi-use trails. BHI's lead graphic designer updates and refreshes the map annually, as facilities and landmarks of the City are everchanging.

Using a combination of Adobe Creative Cloud software with GIS, the designer established a workflow to meet our client's needs. The map is produced entirely in Adobe Illustrator and Photoshop CC by integrating CAD, shape filesg and imagery provided by the City. Our technical ability with mapping data, combined with our creativity and the latest software and techniques, has resulted in an accurate product that exceeds the City's expectations and provides guidance to bicyclists in the greater metro area.



### **CITY OF ALBUQUERQUE: ON-CALL ENGINEERING SERVICES FOR TRANSPORTATION &** DRAINAGE (#7854.00)

RELEVANCE TO THIS CONTRACT: The BHI team completed a broad range of services on fast track, accelerated schedules. Innovative designs were developed, and technical teams supported City staff to reach project goals.

Contacts: Ron Romero, Melissa Lozoya, Kellie Shaw, John MacKenzie,	BHI Team Members: Bert Thomas, Kurt Thorson,
Debbie Bauman, Moby Mirza, Kevin Daggett, Martin Carrasco	Craig Hoover, Alandren Etlantus, Eric Wrage, Roy Gibson, Alan Benham, Sean Melville
Years of Services: 2014 – 2017	Construction Cost: NA – varies

Contract Overview: In 2014, BHI was awarded this COA on-call and managed 19 individual task orders under this contract. The City reached our contract value limit in a short period of time on the task orders described below.

#### Martin Luther King Enhancements Study Winter Haven Storm Drain H&H (Done in 2 months)

- Conceptual design of bicycle lanes on MLK from University to Tijeras
- Survey and right-of-way exhibit Indian School at Chelwood Roundabout **Evaluation & Intersection Median** Improvements (Done in 3 months)
- Conceptual roundabout design
- Alternative intersection improvements

#### **Coors & Fortuna South-to-West Right** Turn Lane Analysis (Done in 10 days)

Right turn lane warrant analysis Wyoming Blvd. Roadway & Sidewalk (Modesto Ave. to Eagle Rock Ave.)

- Location Survey
- Design of roadway, bicycle and pedestrian improvements

#### Eagle Rock Ave. Preliminary Roadway Improvements

- Topographic Survey •
- Preliminary roadway design
- Rio Grande/Candelaria Addtl. Services
- Traffic, bicycle, and pedestrian counts
- Analysis of predicted and actual traffic diversions due to road diet
- Design of road diet
- Before and after travel time analysis
- Fire Station coordination and flasher • design

#### 2014-2016 Bicycle Map Updates

Bike maps for the City of Albuquerque

#### Bear Canyon ROW Staking (Done in 1 week)

Right-of-way and easement staking for Bear Canyon Arroyo Trail

# Analysis

- Hydrologic and hydraulic analysis of a storm drain system with insufficient capacity
- Refined existing AHYMO model from adjacent development to characterize on- and off-site hydrology

#### Monitoring of Tijeras Arroyo Bridge

Teamed with AMEC to install instruments to monitor rotational and vertical movement of the bridge

#### QA Testing for the Pan American Project

Teamed with AMEC to provide quality assurance materials testing for the Pan American Project.

#### Martin Luther King Bike Lane Final Design

- Location survey & right-of-way mapping
- Preliminary / final design of enhanced bike lanes
- Signal modifications for PROWAG requirements and bicycle loops
- Retaining wall design
- Contract Documents and bid phase services
- Technical support during construction

#### **Central/Elizabeth Intersection Signal** Warrant Analysis (Done in 1 month)

Traffic counts & signal warrant analysis

# **MLK Bike Lanes Improvements**

Martin Luther King Jr. Blvd serves as a major connection between Innovate ABQ and UNM. With great potential to be a multi-modal corridor serving these two centers, the MLK project's main focus was to add a bike lane under I-25 and improve the entire corridor for bicycles and pedestrians. To do so, modifications to the existing roadway were necessary to make room for bicyclists and improve ADA compliance for pedestrians. Taking advantage of the momentum on the project, green thermoplastic pavement marking was added at each signalized intersection to enhance visibility of the bike lanes and any bicycles in them. The application of the green thermoplastic is the first use in the state of New Mexico and required special FHWA approval. The corridor now serves as a blueprint project for other multi-modal projects in the city.



### 2. PROJECT MANAGER'S EXPERIENCE WITH THE CITY

### ALBERT M. THOMAS, PE: PRINCIPAL / PROJECT MANAGER

Bert has been serving the City of Albuquerque for over 25 years, working closely with your staff on projects ranging in size and complexity from small intersection upgrades to large corridor improvements. Bert has been the City's go-to person for BHI's recent Citywide On-Calls.

In addition to his work directly for the City, Bert has also been involved in many other projects around the city for other clients. This includes many high-profile infrastructure improvements that have relied upon strong coordination with the City and that have become marquis, award-winning projects for the Albuquerque area.

# **IV. TECHNICAL APPROACH**

### **1. UNDERSTANDING PROJECT SCOPE**



We understand that on-call task orders are often smaller projects with challenging schedules and defined budgets, requiring quick turnaround and close coordination with City staff. BHI has a proven history of providing responsive, high-quality service and expertise to meet the City's most urgent requests under on-call contracts,



**Bert's Specialized Expertise:** 

- Client Coordination and Communication
- Expedited Project Scoping and Delivery
- Project Oversight and Technical Guidance
- Federal Coordination and Permitting
- Public Meetings and Coordination

Technical

expertise

• On-Call Contract Management

and we will live up to our reputation on this contract.

The City of Albuquerque has long been one of our preferred customers, and BHI has been fortunate to serve the City throughout the years as an on-call consultant. The City has been able to rely on BHI to provide timely, high-quality services through these on-call contracts, and we have demonstrated our commitment by providing rapid responses to your requests and giving you unimpeded access to our local office project team members. BHI is a home-grown New Mexican company that was established in Albuquerque in 1959. We are very well acquainted with COA's traffic operations and the challenges that come from serving a vibrant community such as ours. Because of our wide range of specialized expertise, our long-standing relationship with COA, and our strong local presence, we are uniquely qualified to deliver these on-call traffic engineering services.

Under our previous COA on-call contracts, we have provided a full range of professional services stretching over multiple disciplines; however, we understand that the scope of this on-call will be primarily traffic engineering support on a variety of projects and for the Neighborhood Traffic Mitigation Program (NTMP). The City's NTMP was developed for the purpose of identifying appropriate traffic calming measures in neighborhoods throughout the City. The goals of the NTMP are to address neighborhood traffic safety, preserve neighborhood character and livability, and engage the residents in dealing with traffic issues in their neighborhoods.

Top three reasons why clients choose BHI time and time again.



Long term, trusted relationships

We are familiar with these goals because we helped the County of Los Alamos develop a similar traffic calming document. We can provide the full range of professional services to meet all the traffic engineering needs for the City under this contract. Complementing our capabilities are the following philosophies on how to add value to the services we provide under this contract:

**Project initiation and scoping to ensure project goals and objectives are clearly defined:** Since each on-call task is unique, it is important that our staff is in sync with the City's expectations for the individual projects. We will begin each assignment with a brief meeting and field visit to identify key concerns, understand available budget, and define the need that is driving the analysis or design on the project.



**ON-CALL TASK ORDER PROCESS** 

Where stakeholder and public support is crucial to success, we will implement context sensitive design solution methodologies and processes to gather information that will help us define the project scope and get all parties to agree on the conditions and context for the project. The key is establishing a partnership between our staff and the City to define task and project activities that we all agree are appropriate for completing the project.

**Incorporating the input and soliciting involvement from City staff is critical to the success of each and every project:** Early involvement ensures that safety, operations, and maintenance concerns are identified and properly addressed during the initial project development stages. This allows projects to be properly scoped correctly up front, helps accurately determine project costs, and aids in avoiding unexpected schedule delays.

Providing highly skilled staff and leading-edge technology in analysis and design efforts results in more efficient production and a higher quality product for the City: BHI has a longstanding commitment to specialized training. This training allows us to provide the personnel and technical resources that help streamline our production and improve the quality on your project. Leveraging technology to help us perform our services and implementing new equipment, software, or products within our designs will translate to better projects for the City. This investment in training and technology advancement is at the foundation of BHI's service-oriented values.

**Developing realistic solutions that are focused on safety, operations, and maintenance:** In urban retrofit projects, numerous design constraints and financial budgeting often preclude the ability to rebuild the facility to the level needed to meet all standards and operational expectations. However, providing realistic solutions that are within a project's budget does not mean we cannot maximize the operations of the facility and provide the public with a safe roadway and roadside environment. We will approach each challenge with ingenuity and integrity to create a balanced and sustainable outcome.

## 2. PLAN TO PERFORM SERVICES

The BHI team offers the complete suite of skills and expertise to complete all of the work requested in the RFP under this contract. The following sections discuss our expertise in traffic engineering, planning, and design. We have a team of subject matter experts that is familiar with current trends, standards, and technologies, and will

bring that expertise to address your needs on each of the project assignments. BHI's plan to perform services will be tailored to each City assignment and task order as it becomes identified. BHI uses the Ten-Step<sup>®</sup> Project Management Methodology to ensure the success of our projects. By using a standardized process with quality checks throughout the project, we are better able to manage staffing, budgets, and project schedules.

### **TRAFFIC STUDIES AND TRAFFIC COUNTS**

BHI has performed many traffic studies for the City of Albuquerque over the years, the most recent being the Indian School Road Speed Study (Rio Grande to 12<sup>th</sup> Street) and the Rio Grande Road Diet Study (Indian School to Griegos). Both studies were typical of the studies conducted by BHI and included collection of traffic counts, observation, analysis, alternative development, and documentation. The Indian School Road Study not only evaluated speed along the roadway, but also considered the typical section, roadway inspection, and crash analysis. This study found the stretch of Indian School between Rio Grande and 12th Street may be an appropriate candidate for a road diet. The Rio Grande Study, prepared for the City, evaluated the traffic impacts resulting from the Rio Grande Blvd re-striping to a reduced, road diet typical section. The study included evaluation of vehicle speeds, intersection operations, and the consideration of diverting traffic from Rio Grande Blvd to adjacent corridors, such as 2nd and 4th Streets. BHI has the experience and staff to perform just about any traffic study that would be required. BHI works with various traffic subconsultants to gather intersection turning movement counts, tube counts, speed studies, vehicle classification studies, and travel time surveys.

#### Software Available to Provide Analysis

BHI's Traffic and Transportation group uses WARRANTS to evaluate traffic signal warrants, HCS to model and optimize traffic signal timing, VISUM to forecast future traffic volumes, VISSIM for traffic analysis and simulation, HCS for roadway analysis and roundabout capacity analysis, CORSIM/TRANSMODELER for microsimulations. We also use the Civil3D Vehicle Tracker module which has helped dramatically streamline our roundabout analysis, design, and production workflow. For lighting, we utilize AUTOLUX software which allows our designers to model proposed lighting configurations utilizing actual design file geometrics as bases which are imported from AutoCAD.



### SIGNAL DESIGN

BHI has extensive expertise in signal design for the City. We work

with DMD and traffic staff to ensure that the design of the signal meets all their expectations. We have designed new signals and have also designed many signal modifications. BHI is up to date with the latest signal technologies, including adaptive signals, vehicle detection, pre-emption, and signals for rail crossings. BHI uses the latest software to analyze intersections. We can also create visual simulations of the intersections that can be used to show the public how the intersection is operating. BHI also can perform corridor-wide timing plans to facilitate progression along a corridor, which will reduce delay and frustration for drivers.



### **TRAFFIC OPERATIONS**

BHI is an Albuquerque leader in traffic operations analysis and has performed hundreds of intersection capacity analyses over the years. BHI staff is well versed in the procedures of traffic analysis and consistently has training on the latest methodologies used in traffic operations analysis. BHI uses Synchro, HCS, Sidra Intersection, and TEAPAC for traffic operations, depending on the specific type of analysis required. BHI also can utilize VISSIM for micro-simulation analysis when required (e.g., closely spaced intersections or oversaturated conditions). BHI has evaluated signalized and un-signalized intersections, roundabouts, diamond and diverging diamond interchanges, and traffic signal warrant analyses.

#### **STREET LIGHTING DESIGN**



BHI uses AGI software to analyze lighting placement and intensity. With this software, we can evaluate varying wattage and different manufacturer's lighting footprints to allow us to optimize lighting on every road. With this tool, we can ensure that street lighting will not overpower drivers, while also ensuring that the street lighting technologies including LED luminaries and adaptive lighting concepts. We are familiar with the Night Skies Act and the methodologies for designing lighting plans that provide adequate light levels for pedestrian paths and roadways while still keeping excess light from seeping into nearby residential lots. Street lighting design in neighborhoods is a delicate balancing act between meeting

recommended lighting standards and not infringing on the privacy of the adjacent properties. BHI has the experience and expertise needed to successfully complete the design.

### **SAFETY STUDIES**

BHI has performed many safety studies and has the ability to evaluate the improvements that are needed to mitigate areas of concern. We have direct access to the NMDOT and MRCOG crash databases and coordinate with them to keep the information up to date. In addition to traditional crash rate analysis and crash type evaluation, BHI has experience with the Highway Safety Manual procedures and the Interactive Highway Safety Design Model (IHSDM). These procedures utilize the latest research to evaluate existing conditions and identify potential improvements in safety that result from implementing design alternatives. This predictive modeling helps determine the most cost-effective solutions to help our clients get the most bang for their buck.

#### **PUBLIC MEETINGS**

Our team will work closely with the City to develop a public involvement process that accomplishes an appropriate level of community input and scoping directly tailored to each project need. A continual and comprehensive public outreach program can provide the public and project stakeholders meaningful opportunities to help the project team define appropriate solutions. BHI can establish a communication plan to help identify the expectations of each stakeholder and identify how project information will be disseminated to these important decision makers. A public involvement program includes a strategy for keeping the general public informed of a project and solicits comments and input that will be valuable to project development. We can include tactics such as news media coverage, flyers, mailings, group presentations, newsletters, and a project website. Our presentation materials and project brochures can include displays and graphics that accurately depict the proposed improvements in a way that is clear and understandable to the general public.

### TRAFFIC CALMING DESIGN

BHI is familiar with the City of Albuquerque Neighborhood Traffic Management Program (NTMP). BHI helped develop a similar program for Los Alamos County for use in the towns of Los Alamos and White Rock. The toolbox for both programs is the same; although, the implementation criteria are somewhat different.

BHI has effectively used the tools in the Institute of Traffic Engineers Traffic Calming State of the Practice on numerous projects for municipal and private clients. We have also collected other useful data such as research papers on the proper use of the devices. Shape and spacing are important factors when installing traffic calming devices so that they are effective and do not lead to a project that must be removed in the future.

We recently evaluated an installation of chicanes and median islands for the City of Golden, Colorado. The average speed entering the neighborhood decreased after the implementation but remained above desired levels. We determined the cause to be that the chicanes that were installed were not offset, and vehicles could drive straight through the center. On another recent project, we evaluated a series of speed humps



for the Aldea de Santa Fe Neighborhood. The project was receiving many complaints from residents due to the abrupt change in curvature of the speed humps, the spacing (which caused many drivers to speed up in between speed humps), and the improper installation on steep grades. We provided a plan to install more gradual speed humps at a preferred spacing and modify some of the existing humps instead of removing them all. In addition, other speed humps were installed on a parallel street where traffic was diverting.

#### **STREET DESIGNS**

Study and Conceptual Design – The team we have assembled for this on-call contract has significant experience in all types of transportation engineering projects, including smaller scaled street projects that could include intersection geometric modifications, turning lanes, driveway and sidewalk upgrades for ADA or concrete replacement, and roadway section changes that could be associated with a road diet or traffic calming projects. We pride ourselves in developing ideas during the study and conceptual design phase that can be feasibly implemented and reasonably constructed. Concept layouts are developed and reviewed with City staff and stakeholders. Once concepts have been vetted, design is advanced and formal submittals are made through the City's process.

**Preliminary and Final Street Design** – BHI has a comprehensive knowledge of the Design Review Committee review requirements including deadlines and required forms. Plans will be developed in accordance with the most applicable design guidelines, including the *Development Process Manual*; Complete Streets Ordinance; AASHTO A Policy on Geometric Design of Highways and Streets; AASHTO Roadside Design Guide; AASHTO Guide for the



Planning, Design, and Operation of Pedestrian Facilities; AASHTO Guide for the Development of Bicycle Facilities; NACTO Urban Bikeway Design Guide; and the United States Access Board Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG). BHI is well acquainted with traffic study procedures as defined in the MUTCD, Institute of Transportation Engineers (ITE) Traffic Engineering Handbook, and the Manual of Transportation Engineering Studies. For traffic engineering analyses, BHI is currently using the latest versions of HCS, a FHWA-funded software application that faithfully implements the procedures of the latest version of the Highway Capacity Manual.

Citywide On-Call Traffic Engineering

#### **CONTRACT DOCUMENTS & BIDDING PHASE SERVICES**



BHI will assist the City with preparing contract documentation, technical specifications, and advertisement for bid. Our assistance will include ensuring that the City of Albuquerque process is followed and establishing contract documents that are acceptable to COA Legal, including working through the COA checklist for bidding and meeting with DMD's

**contract specialist to finalize contract documents.** BHI will attend the pre-bid meeting, issue addenda, attend the bid opening, prepare bid tabulations, and provide a recommendation of award in accordance with COA guidelines. BHI can provide construction services ranging from attending the pre-construction meeting and offering technical assistance to part-time or full-time construction observation as needed.

#### **OTHER ENGINEERING DUTIES**

*LTAP Process* – BHI is experienced in navigating the NMDOT Local Technical Assistance Program (LTAP) processes required for federal reimbursement. This includes right-of-way, environmental, utility, railroad, and ITS certifications. The LTAP process has become more complicated in the last couple of years; fortunately, **BHI understands the amount of time required to meet the NMDOT requirements and can help City staff to** 

**develop a schedule to complete the process**. BHI can also assist with the necessary paperwork in order to close out Federal Aid Projects.

**Drainage Analysis and Design** – BHI's Water Resources staff are recognized experts in hydrologic and hydraulic (H&H) analysis and design. We routinely perform these services for projects that range from minor drainage studies and storm drains to large-scale drainage management plans. Our staff can bring expertise to the City under this on-call contract if it is needed to support the traffic engineering projects.

Survey & Mapping – BHI's in-house Spatial Data group, gives us the capability to acquire base data that may not be readily available to others. We have also performed mapping for Doña Ana County, City of Hobbs, the Mid-Region Council of Governments (MRCOG), and other agencies around the state. We recently were awarded a contract with MRCOG to update the mapping and the new data should be available by the end of this year. Our local survey crews can perform field surveys whenever needed, and we can combine conventional survey, LiDAR scanning, RTK, orthophotography, and photogrammetry to quickly and efficiently develop base mapping that is needed for studies and designs. Our surveyors are familiar with COA platting and NMDOT right-of-way mapping and can support any of these needs that might arise as part of this traffic engineering on-call contract.

**Construction Management and Inspection** – We are happy to offer our Construction Engineering group to help support your City staff during the construction of your projects if needed. Our staff can supplement your staff or provide full construction management and inspection services. **We also have material testing capabilities and** 







operate an AMRL- and CRRL-accredited, Albuquerque-based field and materials testing laboratory.

### 3. SPECIALIZED PROBLEM SOLVING

BHI has the staffing and resources to accomplish any engineering-related task that may be necessary for this oncall contract. **Our breadth of resources and local office allow us to respond to the City's requests on the same day if needed.** Because of our unique range of services, we can provide specialized expertise to meet even the most challenging of engineering assignments the City may request. Some of the distinctive areas that set us apart from other consultant firms include:

- Ability to Manage Multiple Assignments Simultaneously As a result of our diverse staff and depth of intown resources, we are readily available and fully capable of managing multiple tasks that might arise through an on-call contract at any given time. Our knowledgeable and especially skilled staff is experienced in maintaining project schedules and deadlines while delivering top quality products. As one of the largest New Mexico-owned engineering firms, we have excellent capacity and capability to provide abundant resources to perform any type of design work. BHI's commitment to maintaining qualified staff and depth of capacity ensures complete responsiveness to the City's project needs when they arise.
- Agency Coordination and Established Relationships Because of our longevity in Albuquerque and our long
  and varied list of projects throughout New Mexico, we have well-established relationships with City staff as
  well as many other agencies that might be encountered during this on-call contract. We work closely on a
  regular basis with AMAFCA, NMDOT, Bernalillo County, MRCOG, USACE, MRGCD, NMED, FHWA, NMFA, and
  other agencies. We are able to leverage our relationships on your behalf to effectively coordinate with these
  agencies when necessary as well as to navigate your projects through the review and approval process to
  get them ready for construction.
- Informed and Innovative Solutions We pride ourselves on thinking through all of the relevant project issues and taking extra steps to ensure responsible decision making. This enables BHI to develop thorough, yet innovative approaches to projects as well as provide the City with a technically sound project that does more than just meet the minimum requirements of the job—it creates sustainable solutions.
- Use of the Latest Technology Our primary goal is to provide the best design and engineering products at a competitive price and quality services using the latest technology available. BHI keeps abreast of the latest technology and incorporates it into our projects where applicable. For example, we have evaluated and designed several innovative intersection configurations including roundabouts, continuous flow intersections, high-tee intersections, as well as diverging diamond interchanges, single point urban interchanges, and other grade separated concepts. We are working closely with the City to develop new standards for the DPM to implement Complete Street design guidelines and updating the manual for other new design criteria.
- Knowledge of the Albuquerque Area Since being founded in 1959 as an Albuquerque-based firm, BHI has been contributing to the quality of life of Albuquerque citizens. A majority of our staff have been working for decades as employees of BHI and take pride in the projects we have completed for the community. This direct knowledge of the Albuquerque area allows us to better serve you. This is evident by the success of the recent on-call contract task orders that we completed for you, and we want to partner again with you on this on-call to accomplish more successful projects for the community.

# V. COST CONTROL



### **1. COST CONTROL AND ESTIMATING TECHNIQUES**

#### A. COST CONTROL OF THE DESIGN PROCESS

Our team understands the importance of cost control throughout the project lifecycle, and we work to control costs every step of the way, beginning with the design. For any task on our on-call, we begin by working hand-in-hand with the City to establish a thorough understanding of the needs and to develop an accurately defined scope of work for the

project. Our experts in each discipline outline the activities and develop the work hours and expenditures required to complete the necessary deliverables for the project. In addition to our accounting software, we employ our state-of-the-art, in-house-developed tool, *BHITracker™*, to facilitate effective and efficient sharing of information, coordination and communication, and project monitoring. This software is an all-encompassing design organization tool that gives us the ability to provide our clients real-time access to design documents, expedite reviews, monitor project schedule and budget, and ensure efficient, cost-effective project progression. The *BHITracker* was developed to collaborate and organize many of the key features associated with BHI's Project Management Office (including Monitoring of Project Budget, Tracking of Issues, and Change Log) while also providing a central location to access files throughout a project's duration. Of importance to many of our clients, the *BHITracker* also provides a single location of the deliverables for a project that allows team members to access the information at any point. This tool is an effective way to track all aspects of the design project, providing hands-on organized management that keeps project costs down and easily identifies potential cost overruns so that they can be avoided.

### B. COST CONTROL OF THE CONSTRUCTION COST

The internal communication of project scope is critical to successfully controlling the cost of construction. We are devoted to ensuring that estimates of probable construction costs meet both the project scope and the City's budget. These budgets include all costs necessary to design and construct the project. A construction cost estimate is prepared at the onset of the project and revised at key milestones. The estimate is compared to your budget to determine whether it meets your expectations. The design team also performs informal value engineering reviews to look for opportunities to reduce construction costs. Any potential cost-saving methods will be reviewed with City staff prior to implementation. Because we have construction engineering staff in house, we also have a senior staff member provide a constructability review to identify where potential issues could impact the ease of construction, and thus the cost. If the cost estimates exceed the budgeted amount and cannot be reduced through design efforts, we notify the City immediately and either adjust the project scope or assist the City in seeking additional funding.

### C. COST ESTIMATING TECHNIQUES

Estimating probable project construction costs is dependent on three main factors: 1) an accurate tabulation of all items and quantities to be incorporated into the final constructed product; 2) an understanding of market conditions and materials in the construction industry; and 3) the use of current bid prices from broad-based information sources. Our bid sources include a database of projects that we have bid recently, the City's unit prices for contract items, current NMDOT compiled unit bid prices, and a collection of private sector construction bid prices.

### 2. COMPARISONS OF PREVIOUS BID AWARDS AND COST ESTIMATES

Below is a comparison of recent bids to the final cost estimate for projects designed by BHI during the past 2 years. BHI takes pride in our ability to estimate accurately the construction cost of projects and in our ability to provide accurate and complete plans. Here, we have included a cost breakdown of selected previous projects, our estimates, and actual construction costs.

PROJECT	MM/YY Bid	# of Bids	Final Cost Est.	Bid Award
Rio Grande/Candelaria Roundabout	1/18	3	\$1,432,780	\$1,912,455
AMAFCA Calabacillas GCS 1a1	02/18	6	\$ 1,416,159	\$ 995,849
Martin Luther King/Sandoval Street	09/18	2	\$849,127	\$897,858



## **VI. CERTIFICATIONS**

City of Albuquerque Capital Implementation Program

### Agreement and Insurance Certification

We have reviewed the standard agreement for Engineering orArchitectural or Landscape Architectural Services that are required for the project listed below, and hereby certify that we will, if selected for the project, enter into this standard agreement for this project and meet all insurance requirements listed therein.

This Certification is intended for the use of the City of Albuquerque only, in conjunction with the award of the Engineering or Architectural or Landscape Architectural Services Agreement for Project:

Project Name	Citywide On-Call Traffic Engineering
Project Numb	er 7020
Date April	1, 2020 Firm Name Bohannan Huston, Inc.
Signature	allet m. 2
Title Seni	or Vice President
STATE OF N	EW MEXICO )
	) 58
COUNTY OF	BERNALILLO)
The above Ce	rtification was subscribed before me, the undersigned authority, by: M. J. Heman
who swore up	on oath that this Certification was signed of free act and deed, on this
23 nd day of	March ,2020
Kim	Kiense
(Notary Public)	

My commision expires: Noumber 16, 2022



#### Pay Equity Reporting Form PE10-249

Company name:	Bohannan Huston, Inc.
Mailing address line 1:	7500 Jefferson Street NE
Mailing address line 2:	0
City, state, zip code:	Albuquerque, NM 87109
Phone:	505.823.1000
E-mail address:	mail@bhinc.com
FEIN number:	85-0202170
EAN number:	02-7612-4
SHARE vendor number	0
Reporting calendar year:	2019

Job Category	No. Females	No. Males	Gap (Absolute %)
1 - Officers and Managers	4	26	12.99%
2 - Professionals	34	49	10.52%
3 - Technicians	9	53	9.79%
4 - Sales Workers	0	0	N/A
5 - Office and Admin. Support	17	3	4.22%
6 - Craft Workers (Skilled)	0	0	N/A
7 - Operatives (Semi-Skilled)	0	0	N/A
8 - Laborers (Unskilled)	0	0	N/A
9 - Service Workers	.0	0	N/A
Total # Job Categories With No Employees	5		
Total # Female Only Job Categories	0		
Total # Male Only Job Categories	0		
Total # Females (all categories)	64		
Total # Full Time Females	43		
Total # Part Time Females	21		
Total # Males (all categories)	131		
Total # Full Time Males	118		
Total # Part Time Males	13		
Total # Employees	195		
Female % Workforce	32.82%		
Male % Workforce	67.18%		

PO# Bruce Stidworthy - President and CEO Name and title, printed 4/12/2019 Date Sia



	STATE OF NEW MEXICO	
	TAXATION AND REVENUE DEPARTMENT	
	RESIDENT BUSINESS CERTIFICATE Issued to: BOHANNAN-HUSTON, INC. DBA: BOHANNAN-HUSTON, INC. 7500 JEFFERSON ST NE ALBUQUERQUE, NM 87109-4338 Expires: 02-Nov-2020	
Certificate Num	ber: L0351576880 THIS CERTIFICATE IS NOT TRANSFERABLE	
ALB /		