

**Town of Johnstown**  
**Scope of Work**  
**SH 60 I-25 to Johnstown**  
**Task 1 – Administration & Data Gathering**

**May 4, 2022**

**INTRODUCTION**

The BENESCH Team will provide engineering services to JWO Engineering (CLIENT) for the segment of SH 60 from I-25 to Parish Avenue in the Town of Johnstown (OWNER).

The items contained within this scope of work define the required services for project administration and data gathering in preparation for a system feasibility study of SH 60. It is assumed this work will be developed and completed within a 2-month duration. The system feasibility study will be scoped in subsequent tasks.

Tasks by the BENESCH Project Team include the following:

**A. PROJECT INITIATION AND CONTINUING REQUIREMENTS**

As part of the project initiation and continuing requirements, BENESCH will perform the following:

1. Initial Project Meetings. The team will conduct an internal project kick-off meeting in accordance with our quality management requirements. Select team members will attend a CLIENT/OWNER meeting.
2. Project Schedule. Develop a project schedule and assign tasks that detail the project milestones and completion dates. Update this schedule as-needed and submit to CLIENT accordingly.
3. Progress Meetings. The CLIENT and BENESCH Project Team will meet biweekly virtually as required. A total of 4 progress meetings are assumed in this scope of work. These progress meetings will be used to coordinate and track the work effort and resolve problems. The meetings will review the following:
  - a. Activities required to be completed since the last meeting
  - b. Problems encountered and effectiveness of previous meeting
  - c. Late activities
  - d. Activities required to be completed by the next meeting
  - e. Solutions proposed for unresolved and anticipated issues
  - f. Information or items required from other agencies

- g. Project meeting minutes shall be completed and provided to the CLEINT within one week of the actual meeting.
4. Project Management. BENESCH will coordinate the work tasks being accomplished by the entire BENESCH Project Team to ensure project work completion stages are on schedule. Project staffing and assigning of tasks, scheduling and invoicing are included within this task.

**B. DATA COLLECTION**

1. Data Collection and Document Review. BENESCH will gather, compile, organize and review the following information:
  - a. As-built roadway and intersection plans, as available from the OWNER and CDOT.
  - b. Traffic signal timing plans (to be supplied by OWNER and/or CDOT).
  - c. Structure data and reports.
  - d. Digital aerial photography, property lines and GIS layers (to be obtained from OWNER, Weld County or other public sources).
  - e. Crash reports - last 5 years (to be supplied by OWNER and/or CDOT).
  - f. FEMA floodplain and floodway mapping.
  - g. Future development plans and comprehensive plans (to be supplied by the OWNER).
  - h. Previous environmental and corridor documents (to be supplied by CLIENT).
2. BENESCH will conduct intersection turning movement traffic counts. All Traffic Data will collect and supply count reports at the following intersections:
  - SH 60 & High Plains Blvd
  - SH 60 & Carlson Blvd
  - SH 60 & Colorado Blvd
  - SH 60 & Meadow Lark Dr/Zack Pl
  - SH 60 & Rolling Hills Ranch Dr
  - SH 60 & Telep Ave
  - SH 60 & Greeley Ave
  - SH 60 & County Acres Dr/Estes Ave
  - SH 60 & Johnstown Center Dr/Raymond Ave
  - SH 60 & Rutherford Ave

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- SH 60 & Parish Ave
  - Johnstown Center Dr & Parish Ave
3. Project Site Review. BENESCH will conduct an on-site review of the project corridor, roadways, features, utilities and traffic patterns for the study area.

**C. EXCLUSIONS**

*The following are not included in this scope and their inclusion is subject to a change in scope, schedule and/or fee: Public meetings, Value Engineering workshops/studies, environmental studies and reports, geotechnical investigations, pavement design, topographic survey, right-of-way plans, utility coordination/design, drainage design, roadway design, structural design, and permit applications. These will be included in subsequent task orders.*

**END OF SCOPE OF WORK**

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**Task 2 – SH 60 System Feasibility Study**

**May 4, 2022**

**INTRODUCTION**

The BENESCH Team will provide engineering services to JWO Engineering (CLIENT) for a system feasibility on SH 60 from I-25 to Parish Avenue in the Town of Johnstown (OWNER).

The items contained within this scope of work define the required services for the system feasibility study. It is assumed this work will be developed and completed within a 4-month duration.

Tasks by the BENESCH Project Team include the following:

**A. PROJECT INITIATION AND CONTINUING REQUIREMENTS**

As part of the project initiation and continuing requirements, BENESCH will perform the following:

1. Initial Project Meetings. The team will conduct an internal project kick-off meeting in accordance with our quality management requirements. Select team members will attend a CLIENT/OWNER meeting.
2. Project Schedule. Develop a project schedule and assign tasks that detail the project milestones and completion dates. Update this schedule as-needed and submit to CLIENT accordingly.
3. Progress Meetings. The CLIENT and BENESCH Project Team will meet biweekly virtually as required. A total of 8 progress meetings are assumed in this scope of work. These progress meetings will be used to coordinate and track the work effort and resolve problems. The meetings will review the following:
  - a. Activities required to be completed since the last meeting
  - b. Problems encountered and effectiveness of previous meeting
  - c. Late activities
  - d. Activities required to be completed by the next meeting
  - e. Solutions proposed for unresolved and anticipated issues
  - f. Information or items required from other agencies
  - g. Project meeting minutes shall be completed and provided to the CLIENT within one week of the actual meeting.

4. Project Management. BENESCH will coordinate the work tasks being accomplished by the entire BENESCH Project Team to ensure project work completion stages are on schedule. Project staffing and assigning of tasks, scheduling and invoicing are included within this task.

**B. SYSTEM FEASIBILITY STUDY**

1. Data Review. Review data gathered during the Task 1 Data Gathering phase and previous studies.
2. Identify Design Criteria. Review and develop design criteria, and discuss with CLIENT/OWNER to gain consensus.
3. Traffic Study and Analysis. BENESCH will develop trip generation and corridor traffic models, evaluate alternatives and prepare conceptual design recommendations for SH 60 from I-25 to Parish Avenue. This task includes coordination with CLIENT and OWNER.
  - a. Future traffic projections. Horizon year traffic volume projections for the corridor and a trip generation model will be developed based on available traffic data and provided development plans.
  - b. SYNCHRO traffic models will be prepared for the corridor for the current and long-term traffic conditions of potential alternatives.
  - c. Based on SYNCHRO results and design criteria, functional design requirements for the corridor and intersections will be developed.
  - d. Geometric recommendations will be provided to The Project Team for further design development.
4. Concept Layout of Alternatives
  - a. Review of design criteria and traffic analysis results.
  - b. Base file creation. Develop CAD files depicting existing conditions to the extent data is available, including aerial imagery, property lines (GIS-based), utilities (visual based) and floodplains.
  - c. Development of conceptual geometric alignment alternatives. These alternatives will include horizontal layout of corridor options including widening, turn lanes, sidewalks and medians. It is assumed up to 2 corridor cross section alternatives will be developed and 2 alternatives at each major intersection will be developed. A separate cross section alternative will be developed for the segment from Telep Avenue to Parish Avenue. The alternatives will be developed on available aerial imagery.
  - d. Create exhibits of the developed alternatives.
  - e. A summary of alternatives and associated pros/cons/impacts will be created.

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5. Preferred Alternative. BENESCH will present the results of the traffic study and concept layouts to the CLIENT and OWNER staff for consideration. Based upon the feedback a recommended alternative will be selected.
6. Conceptual Design Report.
  - a. A report will be developed summarizing the traffic analysis, conceptual alternatives and recommended alternative that will be the basis for future environmental documents.
  - b. The report will be submitted to OWNER staff and, if requested, BENESCH will attend a town board meeting regarding the report.

**C. EXCLUSIONS**

*The following are not included in this scope and their inclusion is subject to a change in scope, schedule and/or fee: Public meetings, Value Engineering workshops/studies, environmental studies and reports, geotechnical investigations, pavement design, right-of-way plans, utility coordination/design, drainage design, structural design, and permit applications. These will be included in subsequent task orders.*

**END OF SCOPE OF WORK**

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Task 3 – SH 60 & Carlson Blvd Signal Design**

**May 4, 2022**

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## **INTRODUCTION**

The BENESCH Team will provide traffic engineering services to JWO Engineering (CLIENT) for a traffic signal installation project at SH 60 and Carlson Blvd in the Town of Johnstown (OWNER).

The items contained within this scope of work define the required services for preliminary and final design for the signal. It is assumed this work will be developed and completed within a 4-month duration.

Tasks by the BENESCH Project Team include the following:

### **A. PROJECT INITIATION AND CONTINUING REQUIREMENTS**

As part of the project initiation and continuing requirements, BENESCH will perform the following:

1. Initial Project Meetings. The team will conduct an internal project kick-off meeting in accordance with our quality management requirements. Select team members will attend a CLIENT/OWNER meeting.
2. Project Schedule. Develop a project schedule and assign tasks that detail the project milestones and completion dates. Update this schedule as-needed and submit to CLIENT accordingly.
3. Progress Meetings. The CLIENT and BENESCH Project Team will meet biweekly virtually as required. A total of 8 progress meetings are assumed in this scope of work. These progress meetings will be used to coordinate and track the work effort and resolve problems. The meetings will review the following:
  - a. Activities required to be completed since the last meeting
  - b. Problems encountered and effectiveness of previous meeting
  - c. Late activities
  - d. Activities required to be completed by the next meeting
  - e. Solutions proposed for unresolved and anticipated issues
  - f. Information or items required from other agencies
  - g. Project meeting minutes shall be completed and provided to the CLIENT within one week of the actual meeting.
4. Project Management. BENESCH will coordinate the work tasks being accomplished by the entire BENESCH Project Team to ensure project work completion stages are on schedule. Project staffing and assigning of tasks, scheduling and invoicing are



included within this task.

## **B. PRELIMINARY AND FINAL DESIGN**

This task includes the preliminary and final design of the signal associated with one intersection.

Assumptions:

- Field survey provided by others, as determined by CLIENT.
- There are only minor geometric changes to the intersections, pertaining to curb ramps.
- Signals will utilize CDOT S-Standard poles and equipment.
- No traffic studies, traffic counts or turn arrow warrant studies will be conducted.
- An in-progress plan set will be submitted for informal review in lieu of an F.I.R. submittal.
- F.I.R. and F.O.R. will be a combined submittal.
- R.O.W. acquisitions are not required.
- Environmental clearances and permitting are done by others.

OpenRoads CAD software will be used in the development of the design plans, utilizing CDOT CAD formatting. As part of this design, BENESCH will perform the following activities:

### 1. Investigation/Coordination. This effort includes:

- a. BENESCH will meet with CLIENT and OWNER staff at the proposed traffic signal locations to review the context of the signal installations. The investigation will include photographing the existing conditions at the location, identifying potential proposed location of signal poles and identifying any potential conflicting utilities.
- b. Local Agency Coordination. BENESCH will meet with the local agencies and coordinate needs for specifications, signing and other requirements. One office meeting at the local agencies are assumed.
- c. CDOT Coordination. Since the signal will be on SH 60, it is assumed one meeting with CDOT Region 4 will be needed for coordination prior to the FOR meeting, plus providing follow-up information.

### 2. Subsurface Utility Engineering.

- a. UMS, Inc. will conduct a subsurface utility engineering investigation including Quality Level B mapping of the intersections and Quality Level A test holing at proposed signal pole locations. See attached scope of work dated May 4, 2022.
- b. After identifying preferred locations for new signal poles, BENESCH will check for potential utility conflicts based on SUE information and field inspection.
- c. BENESCH will determine proposed signal pole locations for test holing.
- d. BENESCH will coordinate with the OWNER for any required utility notifications or clearances. It is assumed no utility relocations will be required and utility design is not included.

3. Hydrology/Hydraulic Engineering.
  - a. Storm Water Management Plan. Initiate a Storm Water Management Plan in accordance with: Municipal Separate Storm Sewer Systems (MS4) (if applicable); CDOT's Erosion Control and Storm Water Quality Guide; CDOT's Standard Specifications; CDOT Standard Plans; OWNER requirements; and other appropriate documents. Finalize the erosion control plans and specifications and coordinate the SWMP development. It is assumed the SWMP plans will utilize the template for projects under 1 acre of disturbance.
4. Traffic Signal Design. BENESCH will develop proposed signal and signage designs based on current MUTCD requirements.
  - a. A signal design sheet will identify the proposed traffic signal installation. The signal design will include all proposed traffic signal equipment, poles, heads, vehicle detection zones, conduit and the resulting item quantities necessary to complete traffic signal installation. Other signal plan features shown will include camera detection, pedestrian signals, new controller locations (if required), emergency vehicle preemption and proposed signing.
  - b. Striping plans for crosswalks and turn lane striping will be developed.
5. Roadway Design.
  - a. Coordinate with the concurrent SH 60 System Feasibility Study to determine the ultimate SH 60 roadway section at the intersection for purposes of determining pole locations.
  - b. Develop detail sheets for minor intersection modifications assumed to be curb ramp reconstruction.
6. Construction Traffic Control Plan. Final design of a construction traffic control plan. It is assumed the TCP will utilize CDOT S-630-1 standard cases and the developed TCP plan will consist only of a temporary traffic control device tabulation and notes.
7. Plan Preparation for the Final Office Review (assumed combined F.I.R./F.O.R.):
  - a. Coordinate the Packaging of the Plans. Collect plans from all design elements and collate the plan package. Calculate plan quantities and prepare the tabulations. The Final Office Review (FOR) plans shall include the following sheets (as appropriate):
    - Title Sheet
    - Standard Plans List
    - General Notes
    - Summary of Approximate Quantities
    - Appropriate Individual Quantity Tabulations
    - Removal Plan

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- Roadway Plans
  - Traffic Signal Plans
  - Striping Plans
  - Storm Water Management Plan
  - Construction Traffic Control Plan
  - Survey Control Diagram (prepared by others)
- b. In addition to the plan sheets, the Special Provisions shall be provided. This will consist of those unique Project Special Provisions which have to be written specifically for items, details and procedures not adequately covered by the OWNER's or CDOT's Standard Specifications and Standard Special Provisions. It is assumed special provisions will be required by the OWNER for special signal requirements. Also a list of the Standard Special Provisions which are applicable to the project shall be prepared. The Project Special Provisions shall be provided in the CDOT format and submitted with the project plans.
- c. Prepare the FOR cost estimate. Item numbers, descriptions, units and quantities shall be listed and submitted.
- d. Prepare CDOT Form 859 (construction schedule) and submit with the FOR plans.
- e. Submit the FOR plans and specifications electronically (PDF file) to the CLIENT/OWNER, and CDOT if needed, for a review 2 weeks prior to the FOR meeting.
8. Final Office Review.
- a. BENESCH will attend the FOR, prepare meeting minutes for approval by the CLIENT and distribute within one (1) week of the meeting.
- b. The FOR original plan sheets and the specifications shall be revised in accordance with the FOR meeting comments within 3 weeks after the FOR.
- c. Submit the final revision of the plans.
9. Construction Plan Package. The bid plan construction contract package shall consist of the revised FOR plans and will completely describe the work required to build the project including project dated special provisions and detailed quantities.
10. Record Plan Sets. BENESCH will coordinate the assembling of record plan sets for final design which shall bear the electronic seal of the responsible engineer on each sheet. An electronic sealed set shall be submitted to the OWNER. Hard copy sealing will not be done.
11. Advertisement Support. Provide the following when requested by the CLIENT/OWNER:

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- a. Contractor Questions. Assist with answering bidder questions on the plans and specifications during the advertisement period.
- b. Revisions Under Ad. Provide revisions to plans and specifications when clarifications or changes are required on the advertisement package.

**C. SERVICES AFTER DESIGN**

Work associated with services after bid are not included in this scope and will be subject to a separate task order.

**D. EXCLUSIONS**

*The following are not included in this scope and their inclusion is subject to a change in scope, schedule and/or fee: Public meetings, Value Engineering workshops/studies, environmental studies and reports, geotechnical investigations, pavement design, right-of-way plans, utility design, drainage design, structural design, permit applications, traffic studies, traffic counts or turn arrow warrant studies, timing studies, wiring diagrams, roadway geometric design except for curb ramps, and electrical service design and applications. Traffic counts/studies are included in Task Order 2. Other items will be included in subsequent task orders as needed.*

**END OF SCOPE OF WORK**