



COLORADO
Department of Transportation
Statewide Bridge and Tunnel Enterprise

COLORADO DEPARTMENT OF TRANSPORTATION

SCOPE OF WORK

STATEWIDE BRIDGE AND TUNNEL ENTERPRISE PROGRAM SUPPORT SERVICES

January 12, 2023

SCOPE OF WORK

1. BACKGROUND / OVERVIEW / GOALS

The legacy Colorado Bridge Enterprise program was formed in 2009 by the FASTER legislation (Senate Bill 09-108) to accelerate the repair, reconstruction, and replacement of rapidly deteriorating bridge infrastructure throughout the state. Subsequently, the passage of a landmark transportation bill (Senate Bill 21-260) renamed the Colorado Bridge Enterprise as the Statewide Bridge and Tunnel Enterprise (BTE or Enterprise) and expanded the scope of the Enterprise to include tunnel projects in 2021. Per C.R.S. 43-4-805, the BTE operates as an autonomous government-owned business within the Department charged with financing, repairing, reconstructing, and replacing any designated (poor-rated) bridge in the state and completing tunnel projects. Pursuant to the Statute, the BTE is governed by its Board of Directors which is composed of the 11 commissioners who serve on the Transportation Commission.

The Statewide Bridge and Tunnel Enterprise intends to retain the services of a consultant to provide program support to BTE in carrying out its statutory responsibilities with respect to financing, repair, reconstruction, replacement and maintenance of designated bridges and completion of tunnel projects. The consultant will work in a support capacity under the supervision of Bridge and Tunnel Enterprise staff and provide “as needed” support services for asset management, program management, and planning activities.

2. SCOPE ELEMENTS

Asset Management

Per the Colorado Revised Statutes, the Bridge and Tunnel Enterprise is authorized to acquire bridge assets that are replaced or rehabilitated through the program and is charged with maintaining these assets based on inter-governmental agreements between the Colorado Department of Transportation (CDOT or Department) and BTE. Currently, if a bridge replacement or rehabilitation is performed using Enterprise funding, the bridge becomes an asset of the BTE. Approximately 4% of the statewide on-system major structure inventory is currently BTE-owned and projections show that potentially as much as 8% to 10% of this inventory could be BTE-owned by 2030.

A significant number of “poor” bridges were replaced by BTE through the various financing programs implemented shortly after program inception. These structures now have reached or are nearing 10 years in age. Due to its dedicated revenue sources, BTE has a unique opportunity to develop and implement a new asset management approach based on industry best practices to proactively maintain BTE-owned bridges. The consultant will support BTE staff with the development and implementation of a BTE asset management program, which will perform timely, low-cost bridge asset maintenance treatments that provide a high return of investment, curtail the need to perform higher cost treatments in the future, and extend the service life of BTE-owned bridges. This program will be developed in close coordination

and collaboration with the Staff Bridge Branch, Division of Maintenance and Operations, Region staff, and other internal stakeholders.

This program may be expanded beyond BTE and adopted at a statewide level, contingent on the success of this pilot and future availability of resources.

The following scope items are anticipated to develop and implement the new BTE asset management program:

- Establish a baseline for the condition of the BTE-owned asset inventory by quantifying the existing program deferred maintenance and repair needs.
- Analyze the condition of the BTE-owned asset inventory and/or larger statewide bridge inventory to identify potential trends or patterns in deterioration. Trends or patterns may be used to classify bridges into groups or categories for asset management treatment recommendations.
- Recommend asset management treatments for the BTE-owned inventory based on industry best practices and benefits of these treatments (improve condition or operating state, increased service life, etc.) and identify the type, timing/trigger, and estimated cost of treatment based on various factors that could influence bridge deterioration (such as bridge construction type, location, detailing of the bridge deck and joints, etc.), with consideration given to existing CDOT bridge maintenance and asset management practices.
- Memorialize the methodology for determining recommended asset management treatments in a guidance document intended to complement with CBE Strategies for Enhancing Bridge Service Life guidance document.
- Support with the development and implementation of a strategy to have a preventative maintenance plan in place for all existing BTE-funded bridges. For bridges funded through the Enterprise in the future, the intent is to have preventative maintenance plans which are submitted to CDOT/BTE along with the final project plans, specifications, and estimate (PS&E) package.
- Create bridge-specific preventative maintenance plans (or “owner’s manuals”) identifying the type, timing/trigger, and estimated cost of future preventative maintenance treatments for typical bridge groupings or categories. These preventative maintenance plans will be a supplement or appendix to the guidance document.
- Create a bridge-specific preventative maintenance plan (or “owner’s manual”) template for non-typical bridges.
- Create a forecast to approximate future repair and maintenance needs for BTE-owned structures, including estimated budget needs by fiscal year.
- Develop a programmatic approach to efficiently and effectively address outstanding maintenance and repair needs and plan for future needs. Work under this scope item includes but is not limited to:
 - Coordinate and collaborate with internal stakeholders
 - Support or lead workshops
 - Identify and recommend logical groupings of bridges which can be bundled or packaged into larger projects. Consideration also may be given to cross-asset bundling.
 - Propose innovative contracting solutions to streamline and optimize the delivery of asset management treatments.

- Develop a tracking and reporting framework to ensure that:
 - Treatments are being completed on the scheduled intervals.
 - Benefits that were realized by performing the treatment (i.e. improvement in condition, operating state, and/or bridge service life.) and the life cycle of the treatments are being tracked and reported.
 - A cost database is maintained for the treatments.
 - Other pertinent data is being collected.
- Support with the integration of asset management projects into BTE’s mid and long-range plans, the Structure Asset Management (SAM) plan, and other applicable local, regional, and statewide plans.
- Support with the development of policies, procedures, guidance documents, or other business processes required for the implementation of the program.
- Support with other deliverables and ad-hoc requests as needed.

Beyond the implementation of a new asset management program, BTE will continue to serve an integral support role in CDOT’s Transportation Asset Management (TAM) and Risk and Resilience programs as Colorado’s largest source of dedicated bridge and tunnel asset funding, and its primary bridge replacement program. The Enterprise’s role may continue to increase due to the two legislative proposals under consideration to expand BTE program eligibility to include:

- 1) Preventative maintenance treatments for bridges in good and fair condition (based on the National Bridge Inspection Standards)
- 2) Bridges in fair condition that can be bundled or packaged with bridges that are in poor condition

Passage of the preventative maintenance proposal (Proposal #1) into law would alter the Enterprise’s current investment strategy and business purpose. It would also create the need to align aspects of the BTE program more closely with the Staff Bridge Branch, Department of Maintenance and Operations (DMO), and Region Maintenance, potentially resulting in the modification of existing business processes within these entities (or creation of new business processes) to optimize the delivery of CDOT’s bridge programs.

The following scope items are anticipated to continue the BTE’s current level of support to the TAM program and provide an increased level of support should the current or future legislative proposals be signed into law:

- Provide programmatic support for the development of deliverables associated with the continued implementation SB21-260, current legislative proposals, and future legislation.
- Recommend refinements to the BTE project prioritization and selection processes as program and organizational-level goals evolve, and implement refinements approved by the BTE Steering Committee and BTE Board of Directors.
- Provide support with future updates to the CBE Strategies for Enhancing Bridge Service Life guidance document.
- Develop guidance documents to memorialize best practices for BTE-funded projects.
- Provide support to the Division of Transportation Development (DTD) and bridge and tunnel asset managers with the ongoing development of and maintenance to the

bridge and tunnel asset management models. Work under this scope item includes but is not limited to:

- Provide guidance and recommendations on model inputs, such as forecast budgets, investment strategies and treatment types, triggers/timing, costs, benefits, and deterioration curves.
- Review model outputs for reasonableness and accuracy.
- Confirm that model investment strategies are consistent with statutory requirements for the use of BTE revenues and program goals as established by Executive Management and the BTE Board of Directors.
- Support with the development of planning scenarios to evaluate the impact of proposed changes to the model, such as modified investment levels or strategies.
- Fulfill ad-hoc requests related to model development.
- Provide support to DTD for TAM Oversight Committee meetings, including the development of presentation materials, exhibits, graphics, and other information related to BTE's role in CDOT's asset management program.
- Provide support to DTD and the bridge and tunnel asset managers for the annual TAM budget-setting process and State of the Assets meeting.
- Provide DTD with an annual deliverable defining budget allocations to the bridge work types (preservation, maintenance, rehabilitation, reconstruction, initial construction, and new construction) defined in the CDOT Transportation Asset Management Plan.
- Provide other assistance as needed to support the annual TAMP progress reporting requirements.
- Recommend key performance indicators to track the implementation and progress of program initiatives and to monitor the status of the bridge and tunnel inventories and/or the performance of the program
- Support with the deployment of innovative technologies, such as non-destructive evaluation techniques, unmanned aircraft systems, or new software to optimize or improve program delivery.
- Support the Risk and Resilience program with the evaluation bridge and tunnel assets.
- Other deliverables and ad-hoc requests related to asset management as needed.

The Successful Proposer shall develop an approach to partner with BTE staff to develop and implement the new BTE asset management program and a vision for how they could support CDOT's bridge, asset management, and maintenance programs (BTE, Staff Bridge, DMO, Region Maintenance, DTD, etc.) with effectively and efficiently delivering bridge asset management projects through the BTE. Consideration should be given to leveraging existing foundational elements of CDOT's bridge programs, such as the Structure Asset Management (SAM) Plan, BTE Prioritization Plan, System for Inspection and Management of Structural Assets (SIMSA), and the Bridge Cleaning Program, to the extent possible or practical to minimize cost and reduce total implementation time. The scope of work presented Opportunities to achieve programmatic efficiencies through bridge bundling and cross-asset optimization, innovative project delivery, or other innovative strategies should also be explored.

Proposers shall also highlight their understanding of CDOT's asset management and maintenance programs and asset management best practices for transportation infrastructure

and describe how this knowledge will be leveraged to deliver the anticipated scope of work. Experience supporting public or private sector entities with the development and implementation of an asset management program should also be clearly demonstrated.

Program Management and Planning

The BTE is constituted as an Enterprise per Article X, Section 20 of the Colorado Constitution, which allows the BTE to impose a bridge safety surcharge fee, bridge and tunnel impact fee, and bridge and tunnel retail-delivery fee to accomplish its business purpose. These fee revenues provide a sustainable long-term funding source that has been successfully leveraged since the program's inception to significantly reduce the number of poor-rated bridges statewide and improve the safety and reliability of Colorado's transportation system. Enterprise status also allows the program to issue revenue bonds and enter into agreements with governmental and non-governmental agencies for loans or grants. BTE serves as the state's largest dedicated source of bridge and tunnel funding and a key strategic funding source and business partner for several key strategic projects in CDOT's 10-year Plan. Key objectives for the Enterprise moving forward will be developing and implementing a 4-year and 10-year plan focused on advancing key strategic projects and implementing a robust asset management plan for BTE-owned structures (see Asset Management scope items).

The consultant shall provide "as needed" planning and program management support services, including but not limited to, the development, implementation, and maintenance of BTE 4-year and 10-year plans; development and maintenance of various program management models; project evaluation, prioritization, and pre-scoping; constructability and peer reviews; cost estimating, scheduling, and other program controls functions; data management; compliance monitoring; performance tracking and reporting; and financial management activities. "As-needed" planning and program management support services will require close coordination and collaboration with BTE staff, Region staff, Headquarters support units, Department of Maintenance and Operations, the Department of Accounting and Finance, the Office of Financial Management and Budget, and other internal and external stakeholders and advisors. The following scope items are anticipated:

- Support with maintaining, updating, and enhancing a comprehensive cost and schedule database including all BTE eligible bridges and tunnels.
- Update and publish the monthly program schedule. This task includes collecting the requisite scheduling information (e.g., start dates, remaining durations, percent complete, etc.) from CDOT Region staff for each bridge or tunnel funded by the program. Duties will also include updating the schedule to include new projects and incorporating baseline schedule adjustments. The monthly schedule update information will be utilized to report program key performance indicators (KPIs) to the Schedule Change Control Board (SCCB).
- Support with the development of materials for the bi-monthly SCCB meeting and assembly of the SCCB packet, including summary reports of underperforming projects, project performance tracking logs, baseline schedule change request, and other presentation materials when necessary.
- Support with the integration of cost estimates and schedules from the BTE database and other sources into BTE 4-year and 10-year plans, which are to be closely coordinated with all other applicable state and local plans, including the CDOT 10-year

plan. Ongoing maintenance and updates to the plan will be performed as program and project priorities evolve and as project-level information such as cost, schedule, and cash drawdown forecasts, funding status, project delivery method, etc. is refined. The BTE 4-year plan is typically published annually with the BTE 10-year plan published on an interval determined by the Executive Management Team or BTE Board of Directors.

- Support Region staff with the development of a budgeting plan and cash flow schedules for each project in the BTE 4-year plan to be integrated into the program's financial models.
- Perform scenario analysis to support the ongoing evaluation of funding and financing solutions to deliver the BTE 4-year plan. Analyses will evaluate the trade-offs of completing planned projects through the pay-as-you-go program vs. various financing vehicles, such as weighing the short and long-term impacts of increasing program debt service obligations vs. the need to accelerate projects that are critical for the safety and operations on the transportation network.
- Support with the communication of BTE 4-year and 10-year plans to internal and external stakeholders and tracking of performance against the plan. Develop presentation materials, such as PowerPoint slides, spreadsheets, exhibits, graphics, and other references as needed in support of this effort.
- Support with adjustments to the program's plans to account for the continuing refinement of program and project priorities and need to establish the balance between maintaining the FY2023+ program delivery schedule, future pay-as-you-go program capacity, and debt financing.
- Support with the coordination, programming, and authorization of all Bridge and Tunnel Enterprise projects through the Statewide Transportation Improvement Program (STIP) and Transportation Improvement Program (TIP) through coordination with the CDOT Office of Financial Management and Budget.
- Support with the management of the monthly BTE budget supplement process and development of requisite materials to the BTE Board. Work under this scope item includes but is not limited to:
 - Review of the timeliness, reasonableness, accuracy, and completeness of the budget supplement request and all supporting materials.
 - Review the budget supplement request for alignment with the BTE 4-year plan and the STIP and TIP.
 - Review the budget supplement request for consistency with the BTE Eligibility Review, BTE Policy and Procedural Directives, BTE guidance documents, and statutory requirements.
 - Develop a narrative and any other requested information providing justification for the budget supplement request.
- Maintain the program funding allocation plan. The allocation plan matches bridge ID numbers to their respective SAP project numbers and identifies project preconstruction and construction budgets, including funding source, projected allocation of bond proceeds (if applicable), and key schedule milestones.
- Maintain the program management models tracking available budget resources vs. actual and planned budget allocations by fiscal year.
- Maintain the program cash flow model, which includes all forecast BTE revenues, project expenditures, and non-project expenditures (debt service, operational costs, bridge maintenance obligations, etc.).

- Support BTE staff with updating the BTE Program Management Plan as needed to incorporate industry best practices and reflect changes to BTE and CDOT policies, procedures, and processes since the creation of the existing plan.
- Support BTE staff with the semi-annual development of the BTE Bridge Prioritization Plan. Work under this scope item includes but is not limited to:
 - Collection of data through various sources (Staff Bridge “Poor” Bridge List, Online Transportation Information System (OTIS), Structure Inventory and Appraisal Reports, etc.)
 - Coordinate with Region staff and other CDOT support units to collect other data used in the development of the plan
 - Prepare detailed meeting minutes
 - Compilation of data
 - Prepare, post, and distribute the BTE Bridge Prioritization Plan
 - Maintain and update the BTE bridge prioritization model
 - Perform ad-hoc investigations to review bridge prioritization rankings and various planning scenarios
- Collaborate with CDOT Region Staff, Staff Bridge, and other subject matter experts to perform structure assessments that identify the appropriate corrective action (replacement, rehabilitation, repair, no action, etc.) for BTE eligible structures. Recommendations from the structure assessment will be confirmed through the structure selection report.
- Support with the preparation of eligibility reviews for projects funded through the BTE program to evaluate the scope of the project and validate and quantify funding eligibility as it relates to the appropriate usage of BTE revenue sources and adherence to program goals. Work under this scope item includes but is not limited to:
 - Meeting with project teams, contracted design consultants, FHWA personnel, and other project stakeholders; and attending relevant project milestone, progress, and coordination meetings
 - Reviewing design documents (plans and specifications)
 - Reviewing other relevant background information (studies, NEPA documentation, etc.)
 - Reviewing project cost estimates and schedules
 - Identification and quantification of potential TABOR impacts
- Develop a quarterly progress report. Report elements may include:
 - Narrative highlighting work complete to date and key milestones and accomplishments
 - Program status/progress summary
 - Project cost and schedule information
 - Overview of upcoming and ongoing strategic initiatives
 - Program financial update
 - An itemization of issues or challenges facing the program
 - Key program performance indicators (or KPI’s) comparing planned vs. actual performance
 - Other items as requested by management or the Board of Directors
- Develop a Fiscal Year End Newsletter and/or annual reports that outline ongoing program activities and recent program successes and initiatives.

- Support with the development of new policy and procedural directives and guidance documents to streamline program delivery and align with programmatic and organizational level initiatives, goals, and directives.
- Support with revisions to existing policy and procedural directives and guidance documents to reflect evolving BTE and CDOT processes and goals.
- Support with development of materials such as memorandums, spreadsheets, graphics, dashboards, presentations, booklets, reports, design drawings, exhibits, and other items requested by BTE, CDOT, the BTE Board of Directors, and internal and external program stakeholders.
- Provide public information/public relations support by providing timely and accurate information for media releases from the Department.
- Support with the development of materials for the monthly Transportation Commission/BTE Board of Directors Meeting Packets.
- Develop and maintain materials for the BTE website. Work under this scope item includes but is not limited to:
 - Update the list of BTE eligible structures including location information, structure ID, project status, year added to BTE program, and other relevant information on a quarterly basis
 - Update completion statistics for the BTE eligible inventory on a quarterly basis
 - Provide BTE and CDOT staff with the necessary data to update the interactive GIS-based map of eligible BTE structures on a quarterly basis
 - Support with the development of a BTE performance dashboard or other proposed enhancements to the website
- Provide support for the planning and development of grant applications for discretionary funding opportunities. Services requested may range from strategic advisory services and planning to full turn-key applications. All work to be heavily coordinated with the Office of Policy and Government Relations.
- Develop pre-scoping reports for planned BTE eligible projects in collaboration with Region staff.
- Perform peer or constructability reviews for BTE funded projects.
- Attend and provide support to BTE staff at internal and external meetings and with CDOT Headquarters and Region staff and other stakeholders. Prepare meeting minutes.
- Maintain a database tracking the release of residual project budgets and encumbrance after project substantial completion to monitor program compliance with SB 16-122.
- Develop and maintain other financial models as necessary to support efficient and effective delivery of the program.
- Assist the Division of Accounting and Finance (DAF) with the development of the annual BTE financial statements and support DAF with responding to questions and findings from the annual audit of the financial statements.
- Provide support to CDOT and BTE for future internal and external audits of the program.
- There is no definitive plan for a BTE debt issuance(s), however, it is possible that financing will be leveraged to deliver strategic projects with BTE eligible items from the CDOT 10-year Plan as needed to maintain project schedules and program cash flow. Financing may also be utilized for other future program initiatives. Should BTE

determine that financing is necessary, the Consultant will provide support for the debt issuance. Work under this scope item includes but is not limited to:

- Collect pertinent project level data, such as cost estimates, schedules, and cash drawdown forecasts from Region staff.
- Perform scenario analysis to support the ongoing evaluation of funding and financing solutions to deliver high-priority BTE eligible projects.
- Develop or produce background narrative, financial data, and other requisite information to support the planning and execution of the debt issuance.
- Develop a bond delivery plan and track and report bond program performance against established key performance indicators (KPIs) using periodic reports, dashboards, or other mechanisms.
- Support with other program deliverables and ad-hoc requests related to program management and planning as needed.

The Successful Proposer shall present an approach for the development and implementation of BTE 4-year and 10-year plans. Capacity to allow for the timely delivery of CDOT 10-year plan projects should be provided, however, consideration should be also given other programmatic needs, such as operational costs, debt service obligations, and funding for asset management and safety critical bridge projects outside of the CDOT 10-year plan. The potential for current legislative proposals to increase BTE's role in CDOT's bridge asset management program should also be considered, as well as financing and other innovative solutions.

The Successful Proposer shall also highlight their understanding of the Enterprise and how it operates within the Colorado Department of Transportation, as well as their understanding of the other divisions, branches, and support units that BTE works closely with to fulfill its business purpose. The proposer shall describe how this knowledge will be leveraged to deliver the anticipated scope of work efficiently and effectively. Experience supporting public or private sector entities with the management of a major mission critical program should also be clearly demonstrated. Support services activities will require competency in Microsoft Office Suite, Microsoft Visio, Microsoft Project, Primavera P6, SAP, Adobe InDesign, Bluebeam, PMWeb, and Bentley Projectwise.