

Truman Connected – Phase 1 Scope of Services

Services to be Provided by Engineer

Project Description

This project includes the implementation of multi-modal improvements to major streets in Independence. This project will be the first phase of the Truman Connected plan, which starts at Bess Truman Parkway and ends at Sterling Ave. The project includes sidewalk improvements, dedicated bike lanes, shared use paths, curb & gutter, landscaping, streetscaping, and other associated improvements. Design services are being split into two phases: Right-of-Way Design Services and Final Design Services. This contract scope includes services related to the Final Design Services only. An estimate of contract costs is included in Attachment B of this document.

Project Limits/Scope

Permanent improvements will be limited in design to Bess Truman Parkway from Highway 24 to Spring Street, Spring Street from College Street to White Oak Street, White Oak Street from Spring Street to Main Street, Main Street from White Oak Street to Lexington Avenue, Lexington Avenue from Main Street to Winner Road, and Winner Road from Chrysler Avenue to Sterling Avenue.

The improvements will closely follow the improvements outlined in the Truman Connected Plan, April 2020. The facilities will be constructed in the same configuration (shared use path or sidewalk adjacent to cycle track) as shown in the plan and on the same side of the street indicated in the plan unless extenuating circumstances exist that require deviation from the plan. Only design necessary to construct this facility will be included in the scope of this project. Design for improvements not essential to the implementation of the Truman Connected facility is excluded from this contract.

Additional details regarding the project limits and scope include:

- Sidewalks adjacent to any improvements on the same side of the roadway as the Truman Connected facility will be designed to bring those sidewalks into compliance with the Americans with Disabilities Act. This may include reconstruction of curb ramps

and spot reconstruction of sidewalks. This will not include complete reconstruction of all sidewalks along the project limits.

- Where the Truman Connected facility is designed on one side of the road, design of all improvements for the opposite side of the roadway are excluded from this contract. Where the Truman Connected facility is designed in the median of the roadway, design of all improvements outside the extent of the median are excluded from this contract. This includes improvements to sidewalks for compliance with the Americans with Disabilities Act.
- Improvements designed for the Square area (Main Street from Maple Avenue to Lexington Avenue, Lexington Avenue from Main Street to Liberty Street) will only include those improvements necessary to construct the cycle track shown in the Truman Connected Plan, April 2020. Improvements to sidewalks, curbs, pavement marking, signing, landscaping, streetscaping, streetlights, and other utilities are excluded from this contract in this area. This includes improvements to sidewalks for compliance with the Americans with Disabilities Act. A separate project is planned for design in and around the Square area which will include design of these elements.
- Design of streetlight replacement/relocation will be performed only where streetlights must be relocated to aid the construction of the Truman Connected facility. Design for streetlight replacement not essential to the construction of the Truman Connected facility is excluded from this contract.
- Traffic control plans may require advanced temporary signage, pavement marking, and devices beyond the areas noted above.

Scope Assumptions

- Permits/Environmental - All permits and environmental documentation and permitting will be prepared by City staff. All permit preparation and submittal are excluded from this contract.
- Geotechnical – Geotechnical work will not be provided with the base contract scope. If geotechnical work is deemed necessary, a request for a contract modification will be submitted to the City.
- All public engagement will be coordinated by City staff and is excluded from this contract.

Final Design Services Tasks

Project Management and Administration

- Project Management
 - Project Management Plan - Update Project Management Plan (PMP) to include Risk Management, Project Safety Plan, and Document Control for final design services.
 - Kick-off Meeting – Participate in a kick-off meeting with the engineer team and City staff.
 - Agency Coordination - Coordinate with City and MoDOT for LPA documentation. Assumes two meetings with meeting minutes provided. MoDOT's Local Public Agency (LPA) Policy along with the documents listed in the design criteria will generally be followed throughout the design phases of the project.
- Project Administration – Provide internal systems and communication for the internal and external administration of the project working as a partner with the City of Independence. Provide monthly progress reports and management of subconsultant tasks.
- Quality Management – Provide updates to the Quality Management Plan (QMP). QA to be provided for each deliverable confirming QC was completed per QMP. QC tasks to be included in the various tasks below.

Base Mapping

- Topographic Mapping – Mobile LiDAR will be utilized to capture topographic information for additional survey areas not previously collected supplemented with GPS-enabled total station as needed. The areas to be collected include:
 - East half of Lexington Avenue to edge of ROW from approximately 200 feet south of Elm Street to 200 feet of Elm Street
 - East half of Lexington Avenue to edge of ROW from approx. 200' south of Walnut Street to Bowen Street
 - South half of Lexington Avenue to edge of ROW from approx. 200' west of Union St to Pleasant St.

- Northern quadrant of Bess Truman Pkwy & Spring Street (northbound Bess Truman Pkwy exit and Southbound Spring Street entry)
- Intersection of Delaware Street and St. Charles Street
- Eastern half of Bess Truman Pkwy to edge of ROW from south edge of US-24 bridge to south end of Delaware Street intersection
- The following tasks will be conducted:
 - Establish a horizontal and vertical control network based on State Plane Coordinates, Missouri West Zone U.S. State Plane 1983 Coordinate System.
 - Establish three (3) primary control points and provide reference ties.
 - Recover section corners and existing right-of-way monumentation.
 - Recover right-of-way monumentation of intersecting streets.
 - Locate culverts, pipes, headwalls, manholes, and inlets.
 - Mapping limits will not extend beyond the front face of the buildings.
 - Final survey will show the location of existing buildings, sidewalks, fence lines, pavement material, location of changes in pavement material, pavement striping, street signs, location and size of trees larger than three inches (3”), shrubs, bushes, landscaping, drip lines will be shown on groups of ten (10) or more trees, and property pins, located within the project area.

Final Plans

- Roadway Design – Update horizontal and vertical alignments of proposed improvements, update 3d model of proposed surfaces in areas where needed, update driveway profiles for up to 40 driveways, finalize layout of sidewalk/share-use/cycle track locations, finalize horizontal and vertical geometry of up to 300 linear feet of proposed retaining walls, ADA ramp design, and signing design. Updates will be made to the preliminary design developed in the Right of Way Plans phase. Details regarding the roadway design include:
 - Retaining Wall Details - It is assumed that retaining walls will be required to minimize the impacts to the properties and utilities. The type and material of the walls will be determined with input from the City of Independence. It is assumed that the height of the walls will be limited to such that geotechnical analysis will not be required and handrails will not be required. Retaining walls

shall be considered landscaping walls and not structural walls. Standard details will be utilized for design. Structure retaining wall calculations are excluded from this contract.

- ADA Ramps - Standard details will be utilized for the construction of ADA ramps. Additional details will be provided for up to 10 ADA ramps where standard details referenced in the design criteria do not provide a proposed ramp type.
- Traffic Signal Design - Three traffic signals exist along the Truman Connected alignment at Lexington Avenue and Walnut Street, Winner Road and Chrysler Avenue, and Winner Road and Sterling Avenue. No traffic signal improvements are anticipated at the signals at Winner Road and Chrysler Avenue, and Winner Road and Sterling Avenue. Improvements anticipated at Lexington Avenue and Walnut Street only involve improvements to the pedestrian push-buttons on the west leg crosswalk. Design of all other traffic signal modifications is excluded from this contract.
- Storm/Sanitary Sewer Design - Storm and sanitary sewer structures modifications and relocations will be finalized in the plan set if needed. It is anticipated that only limited modifications will be necessary including modification of manhole and structure tops and modification of inlet flumes. Hydraulic and hydrology calculations are excluded from this contract. Structural design is excluded from this contract.
 - Erosion Control - City of Independence erosion control standards will be followed.
 - Stormwater Pollution Protection Plan (SWPPP) – Development of a SWPPP is excluded from this contract. If it is identified that a SWPPP is necessary for the project, a request for a contract modification to add this scope to the contract will be made to the City of Independence.
- Streetlight Design - Lighting Analysis and design will be limited to streetlight relocations and will exclude installation of new streetlights where relocation is not necessitated by the Truman Connected improvements. Engineer will provide streetlight relocation design for up to 15 light poles. Design of streetlight relocation is excluded in locations where streetlight luminaires are currently affixed to overhead electrical poles and the overhead electrical poles require relocation. Lighting plan sheets, standards, specifications, and quantities to be provided.
- Lexington Avenue Bridge Modifications – The Lexington Avenue bridge over the Union Pacific railroad will be converted from a motor vehicle bridge to an exclusive bicycle and

pedestrian bridge. If the need for structural modifications is identified in the Right-of-Way Plan phase, structural engineering design will be necessary with the Final Plans phase. Structural design related to the bridge is excluded from the Final Plans phase with this contract. If structural design is needed for this bridge, a request for a contract modification to add this scope to the contract will be made to the City of Independence.

- Landscaping/Streetscaping Design – Aesthetic elements will be explored during the Final Design phase in coordination with the stakeholder outreach efforts. Tasks include:
 - Conceptual Design - The Engineer will prepare design concepts for each of the showcase areas as defined by the Truman Connected Project (Bess Truman Parkway, Winner Road, and Sterling Avenue). Specific tasks shall include:
 - Preparation of two (2) alternative concepts for each showcase area.
 - Concepts will be presented to the Client for comment and selection of a preferred direction for each area.
 - After receiving comments, the Engineer will prepare a final concept for each area.
 - Final concepts will be sent to the Client for final approval.
 - Establish a Materials Palette - The Engineer will create a framework for how specific materials should be incorporated into the showcase areas, to accept special streetscape amenities. These may include signage, monuments, lighting, crosswalks, surface materials, and other pedestrian amenities. Depending on the level of visual impact, cost, and feasibility for each material, the Engineer will recommend how to strategically design with a consistent, yet practical material palette.
 - Establish a Planting Palette - Similar to the materials palette, the Engineer will outline a plant list that responds to various elements located within the adjacent area, such as, adjacent land use, roadway character, pedestrian connections, traffic, vehicular site lines, etc.
 - Landscaping/Streetscaping Final Design – these tasks will be included in the final design of the landscaping and streetscaping plans:
 - Hardscape Plans & Details. Prepare plans for special pavement areas.
 - Landscape Plans & Details - Prepare plans for plantings. Irrigation design is not included.

- Streetscape Furniture & Amenity Plans - Prepare plans illustrating furniture and amenity types and locations. This includes benches, signage and art. Custom signage or art design is not included.
 - Technical Specifications. Prepare technical specifications for Engineers portion of design.
 - Opinion of Probable Construction Cost - Prepare Opinion of cost for Final Design and PS&E submittal
- Final Plan Production – Develop final plans to include:
 - Title sheet
 - General notes and summary of quantities
 - Typical sections
 - Survey control information
 - Sheet layout
 - Plan sheets
 - Intersection and sidewalk ramp details
 - Driveway profiles and details
 - Retaining wall profiles and details
 - Storm and sanitary sewer details
 - Streetlighting plans
 - Pavement marking and signing plans
 - Traffic signal plans
 - Temporary traffic control plans
 - Landscaping and streetscaping plans
 - Erosion control plans

Updates will be made to the Right of Way Plans developed in the Right of Way Plans phase. Details regarding the roadway design include:

- Typical Sections - One set of typical sections will be developed showing existing ground, proposed surface, pavement/subgrade layers, sidewalks, shared use paths, cycle tracks, and existing/proposed right-of-way.
- Intersection and Sidewalk Ramp Details – For up to 10 intersections and 10 ADA sidewalk ramps, where the standard plan sheets are not adequate to convey the detailed design, separate detail sheets will be developed showing the geometric information. It is assumed that proposed grading can be communicated through

typical sections and details and that no special grading plans or cross sections will be developed with this project.

- Temporary Traffic Control - Through traffic will be maintained throughout the project during construction with the exception of short closures for pavement marking or other improvements crossing the roadway. It is assumed that lane closures or narrowing of lanes will be accomplished using temporary traffic control standard details. Maintenance of Traffic/Phasing plans and detour plans are excluded from this contract. Access to properties will be maintained throughout construction.
- Quantities & Opinion of Probable Cost – Develop final quantities and opinion of probable cost.

Plans, Specifications, and Estimate Submittal

- Revised Final Plan Production – Revise final plan submittal according to City staff and MoDOT comments. Updates will be made to the Final Plans developed in the Final Plans phase. All previous assumptions and exceptions apply to design and plan production in the PS&E phase.
- Specifications, Job Special Provisions (JSPs), and Project Special Provisions (PSPs) – Standard MoDOT and City of Independence specifications and JSPs will be utilized for the project. Engineer will provide documentation for any Project Special Provisions (PSPs) necessary for the project. Up to five PSPs will be prepared for the project. Preparation of project manual, bid package, and front-end specifications is excluded from this contract.
- Final Plan Quantities and Opinion of Probable Cost – Develop final quantities and opinion of probable cost.

Bidding Phase

- Bidding Phase – Assistance will be provided to the City during the bidding phase to answer any Requests for Information (RFIs) provided by the contractors and produce

any necessary addenda. Up to five RFIs will be answered with associated addenda as necessary. Other items related to bidding are excluded from this contract.

Final Design Services Deliverables

It is assumed that the following submittals will be made for this phase of design:

- Streetscaping materials pallet boards illustrating three (3) design styles to be used during project meetings with stakeholders and public to select a preferred option.
- Landscaping materials pallet boards illustrating three (3) design styles to be used during project meetings with stakeholders and public to select a preferred option.
- Final Plans
- Final Plans Opinion of Probable Cost
- Revised Final Plans for Plans, Specifications, and Estimate (PS&E) submittal
- Revised Final Plans Opinion of Probable Cost for Plans, Specifications, and Estimate (PS&E) submittal
- Up to 5 Project Special Provisions
- Response to up to five RFIs and associated addenda in the bidding phase

For each of the submittals listed above, it is assumed that PDFs will be submitted. No hard copy plans will be submitted. For plan milestones, it is assumed that comments received from reviewers will be incorporated into the following milestone submittal.

Truman Connected Phase 1 - Final Plan Design

Design Engineering Services

Phase Discipline Task #	Item of Work	Project Manager	Project Accountant	Senior Engineer	Bike/Ped Design Advisor	Traffic/ Lighting Lead	Senior Water/ Stormwater Engineer	Quality Assurance	Technician	Total
Project Management, Administration, and Public Communication										
1010.01	Project Management									0
	Project Set-up (Risk Management, Safety, Document Control)	8	10	2						20
	Agency Coordination, Meetings and Minutes	12		12						24
1020.01	Project Administration									0
	Monthly Accounting & Progress Reporting	12	12							24
	Subconsultant Management	6	6							12
1510.01	Quality Management									0
	Quality Assurance (Quality Control is included within individual tasks)	4						16		20
	Project Management and Administration Subtotal	42	28	14	0	0	0	16	0	100
Final Plans										
4030.01	Roadway Design									0
	Update Horizontal Design	4		20	5					29
	Driveways	2		40						42
	Refine Model of Proposed Surfaces	4		32						36
	Sidewalk and Shared Use Path Layouts	4		20	8					32
	Non-Standard ADA Ramp (Up to 10)	8		30						38
	Retaining Walls	2		8						10
	Traffic Signals	12		12	24					48
	Signing and Pavement Marking	24		8	24					56
	Curb Returns/Intersection Design	6		40						46
4030.02	Storm Sewer Analysis and Design									0
	Verify preliminary design and data						4			4
	Curb Inlet Modification Details						16			16
	Erosion Control Design						8			8
	Final revisions						24			24
	Quantities						4			4
4030.03	Streetlight Design									0
	Lighting Analysis					8				8
	Lighting Plan Sheets			15		16			40	71
	Lighting Standards			2		2			4	8
	Lighting Specifications			2		2			4	8
	Lighting Quantities			4		6				10
	Quality Control Review							8		8
4030.04	Final Plan Production									0
	Finalize Title Sheet	1		4					4	9
	General Notes and Recap of Quantities	2		8					8	18
	Finalize Typical Sections	2		8					4	14
	Finalize Plan Sheets	16		16				8	24	64
	Entrance/Driveway Profiles & Details	2		4					8	14
	Intersection Details	4		24					12	40
	ADA Ramp Details	4		16					24	44
	Retaining Wall Profiles & Details	2		16					16	34
	Temporary Traffic Control Plans	8		40					24	72
	Finalize Pavement Marking Plans	16		32	8			8	8	72

Phase Discipline Task #	Item of Work	Project Manager	Project Accountant	Senior Engineer	Bike/Ped Design Advisor	Traffic/ Lighting Lead	Senior Water/ Stormwater Engineer	Quality Assurance	Technician	Total
	Traffic Signal Modification Plans	12		4	24				16	56
	Signing Plans & Details	4		16					16	36
	Landscaping & Streetscaping Review	4		8						12
	Erosion Control Plans & Details	2			16				16	34
	4030.05 Utility Coordination									0
	Relocation Coordination and Update Proposed Utility File	4		20	10				4	38
	4030.06 PS&E/Bid Documents									0
	Address Final Plan Comments	1		40	4				40	85
	Final Quantities	2		8	24					34
	Specifications, Job Special Provisions, and Project Special Provisions	20		20						40
	Opinion of Probable Construction Cost	4		8				4		16
	4020.07 Quality Control									0
	Quality Control	20		20				40		80
	Final Plans Subtotal	196	0	545	147	34	56	68	272	1318
Bidding Phase										
	4040.01 Bidding Phase									0
	Respond to Contractor RFIs	20		20						40
	Bidding Phase Subtotal	20	0	20	0	0	0	0	0	40
Final Design Services Labor Summary		216	0	565	147	34	56	68	272	1358
	Raw Labor Rate	\$ 64	\$ 37	\$ 47	\$ 61	\$ 81	\$ 54	\$ 77	\$ 41	
	Loaded Labor Rate (137.73% Overhead)	\$ 152	\$ 88	\$ 112	\$ 145	\$ 193	\$ 128	\$ 183	\$ 97	
	Final Plans Direct Labor	\$ 32,864	\$ -	\$ 63,129	\$ 21,317	\$ 6,547	\$ 7,189	\$ 12,448	\$ 26,512	\$ 170,005.48
									Fixed Fee (12%)	\$ 20,400.66
									Total Labor	\$ 190,406.13
Final Design Services Expenses Summary										
									Subconsultants:	\$ 56,850.00
									Vireo (Landscaping/Streetscaping Plans)	\$ 40,165.00
									Powell CWM (Survey and Mapping)	\$ 11,685.00
									WSP Canada (Technical Reveiw)	\$ 5,000.00
									Expenses:	\$ 200.00
									Travel	\$ 200.00
									Total Expenses	\$ 57,050.00

Truman Connected Phase 1 Final Design Fee = \$ 247,456.13