Metropolitan Transit Authority of Harris County

Advance Procurement Notice

Professional Engineering Services

5-23-2023

METRORAPID UNIVERSITY PROFESSIONAL ENGINEERING SERVICES PRE-RFQ NOTICE

1.0 Purpose

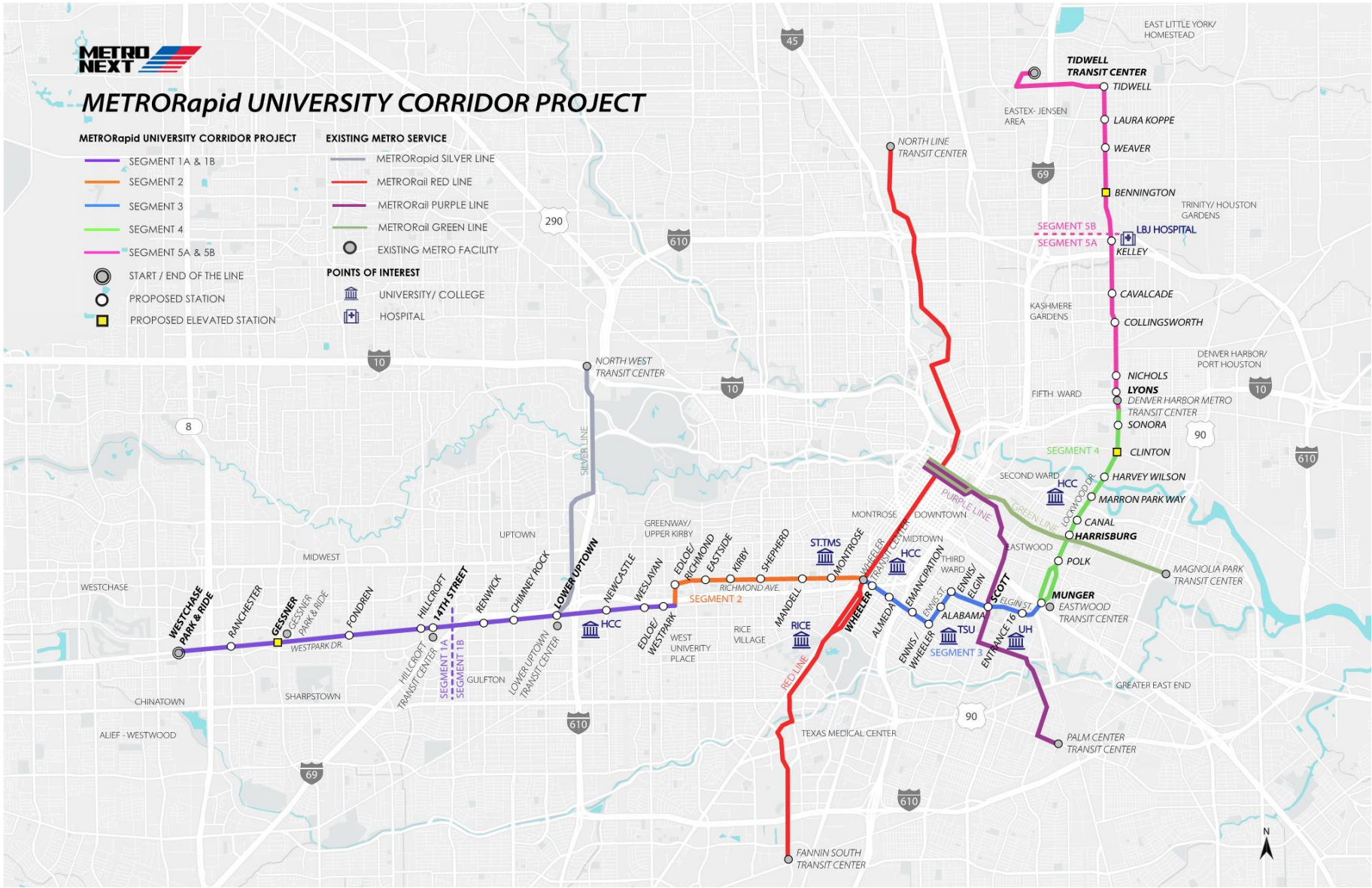
The Metropolitan Transit Authority of Harris County (METRO) is seeking to hire qualified consulting firms to perform the final design for the METRORapid University Line Bus Rapid Transit (ULBRT) Project. Interested parties will receive an RFQ for Professional Engineering Services for the project(s) in June 2023 on METRO's Bonfire Procurement platform. The work to be performed by the prime design firms will be under METRO's Professional Engineering Services Contract and require close coordination with METRO, other design consultants, and future construction contractors. The intended contract type is Lump Sum (LS) with mutually agreed upon allowances. Prime design consultants and subconsultants will be required to carry Professional Liability Insurance to cover their scope of work assigned under these contracts. Prime design consultants will also be required to commit to the Small Business goal and Small Business Enterprise Program requirements.

METRO is seeking to design and construct the Project in part with funds from **The Federal Transit Administration** (FTA) and is, therefore, subject to federal oversight. METRO falls under the authority of FTA **Region 6**, which has enlisted a **Project Management Oversight Contractor** (PMOC) to ensure the Project meets FTA's requirements for receiving a **Capital Investment Grant** (CIG) and ongoing oversight of the project through the project lifecycle.

2.0 Project Overview, Segmentation and Packaging

The proposed BRT alignment extends 25.3 miles from the Westchase District to northeast Houston. The alignment uses METRO-owned right-of-way from Westchase Park & Ride to IH 610 (West Loop), after which it transitions to the center of streets owned and maintained by the City of Houston. The alignment is divided into five segments (with new subsegments) as shown in Figure 2-1 and Table 2.1.

Figure 2-1: METRORapid University Line: Project Alignment, Major Connections and Activity Centers



From its origin at Westchase Park & Ride, proposed alignment travels east in METRO-owned right-of-way parallel to Westpark Tollway and Westpark Drive until IH 610, where it transitions to the center of Westpark Drive. From Westpark Drive, the alignment turns north on Edloe Street to cross IH 69/US 59, then turns east on Richmond Avenue. From Main Street, where Richmond Avenue becomes Wheeler Avenue, the line continues east on Wheeler Avenue to Ennis Street, then turns north on Ennis Street and east on Elgin Street, which curves north underneath IH 45 and becomes Lockwood Drive.
The line remains on Lockwood Drive for almost nine miles before turning west on Tidwell Road, north on Jensen Drive, and east on Turner Drive to reach its terminus at Tidwell Transit Center.

Table 2-1: Representative Alignment Segment Boundaries

SEGMENT	FROM	TO	MILES
1A	Westchase Park and Ride	West of IH 69/US 59 south Frontage Road	4.1
1B	West of IH 69/US 59 south Frontage Road	Westpark Drive and Edloe Street Intersection	3.6
2	Westpark Drive and Edloe Street Intersection	Richmond Avenue, east of Spur 527	3.4
3	Richmond Avenue, east of Spur 527	S Lockwood Drive at I-45 NB (Eastwood Transit Center)	3.6
4	S Lockwood Drive at I-45 NB (Eastwood Transit Center)	South of IH 10 EB Frontage Road	3.5
5A	South of IH 10 EB Frontage Road	North of Kelley Street	3.1
5B	North of Kelley Street	Tidwell Transit Center	3.9

3.0 Selection Process

This RFQ is being solicited in anticipation that the FTA will authorize METRO Entry into Engineering. METRO's intent is to select design teams, negotiate design fee, and be ready to enter into Contracts with selected design teams, pending the FTA authorization to Enter into Engineering.

1. **Parties who are Eligible or Conflicted:** METRO has developed a conflict matrix for use by vendors interested in Final Design, to be consistent with information provided on prior procurements for this project. Please refer to Table 3-1. This matrix indicates current scope of work performed by existing consultants as first or second tier subcontractors during the Planning Phase of this project. If interested parties have specific questions about their eligibility for participating in Final design, please reach out to METRO Procurement and provide:
    A. Adequate detail on their role in the planning phase
    B. Intended role in the Final design.
    C. Sufficient additional information as requested by METRO

    METRO will review the information and make a determination of eligibility or conflict on a case-by-case basis.
2. **METRO Review Process:** METRO will review and determine the most qualified design teams through the following process:
    A. A METRO selection panel consisting of METRO staff will review all RFQs presented to METRO and score those submissions per the selection criteria listed in the RFQ
    B. METRO will then determine the list of most qualified design teams
    C. METRO will conduct interviews with most qualified teams as a second round of review and adjust any scores if necessary
    D. METRO will then review the relevant experience and competency of the most qualified design teams and assign them to the specific segments on the project. METRO currently plans to award seven (7) separate segment civil design contracts.
3. **Schedule for notification and contract negotiations**
    A. METRO will reach out to the selected design teams and notify them of their selection
    B. METRO will request billing rates for all positions relevant to delivering the scope of work within the segments from the prime; billing rates will be audited by METRO
    C. METRO will negotiate the rates with each qualified prime, and if necessary, issue provisional rates to allow for expedient progression of work
    D. METRO will issue a detailed scope to the selected prime consultant for that segment
    E. METRO will receive a design fee and negotiate the design fee with the selected prime consultant leading each design team
    F. METRO will prepare the intended design contracts ready to be executed.
    G. Board action on the contracts will remain pending and follow after the FTA issues Entry into Engineering to METRO on the project.

Table 3-1: Conflict Matrix

AECOM Subs	Segments					
Subcontractor	**1**	**2**	**3**	**4**	**5**	**Scope**
Armand Consulting	■	■	■	■	■	Safety and Security, Preliminary Hazards and CIL's
Aviles Engineering, Inc.	■	■	■			Geotechnical (Segments 1, 2 and 3)
Bowman					■	Segment 5 Civil Design
CivilCorp	■	■	■	■	■	Utility data collection, mapping, SUE, surveying, ROW support and coordination
CivilTech				■	■	Drainage (Segments 4 and 5)
Gauge	■	■	■			Drainage (Segments 1, 2 and 3)
Geotest				■	■	Geotechnical (Segments 4 and 5)
RDLR Architects	■	■	■	■	■	Station Architecture
Strong Strategies	■	■	■	■	■	Public Involvement
Traffic Engineers	■	■	■	■	■	Station Access Plans

HNTB Subs	Segments					
Subcontractor	**1**	**2**	**3**	**4**	**5**	**Scope**
AmaTerra	■	■	■	■	■	NEPA
ATG	■	■	■	■	■	Traffic Modeling and Analysis
Briggs	■	■	■	■	■	Real Estate Services
Citi Arts	■	■	■	■	■	Arts-in-transit
Hillday Public Relations, Inc.	■	■	■	■	■	Public Engagement
KIT Professionals Inc				■		Concept Design
	■	■	■	■	■	Concept Design - Drainage
Just Touch Interactive	■	■	■	■	■	Animations/Visuals
L.S. Gallegos & Associates	■	■	■	■	■	Project Controls / Scheduling
Olivier	■	■	■	■	■	Document Control
Omega Engineers					■	Concept Design
	■	■	■	■	■	Concept Design - Utilities
Perches Land Services, Inc.	■	■	■	■	■	Real Estate Services
Transit Safety & Security Solutions, Inc.	■	■	■	■	■	Safety and Security Management
Triunity Engineering & Management	■	■	■	■	■	Estimating
Wilson IHRIG	■	■	■	■	■	Noise and Vibration Analysis

■ Conflict (see Scope for details)

4.0 General Scope of Work

Design Paradigm for University METRORapid

The design paradigm of the METRORapid University Corridor Bus Rapid Transit (BRT) project (the "University Corridor" or the "Project") is to repurpose the use of the existing Right-of-Way (ROW) to provide maximum mobility benefit for all travel modes, while minimizing impacts. The additional mobility benefits include the use of high-capacity transit buses, wider pedestrian spaces with buffer zones, shared use pathways and an overall safer roadway design that aligns with VISION Zero Principles. The impacts considered for the Project include minimizing additional ROW needs, maintaining acceptable traffic conditions on a transit street, preserving existing trees, avoiding conflicts with major utilities, utilizing existing bridge structures with minimal modifications, and reducing the amount of additional impervious area within the ROW in order to minimize flooding potential along the corridor.

METRO is committed to providing safe and inviting pedestrian spaces along the entire corridor to serve both transit patrons and communities along the corridor. As we finalize our design, we expect final designers to implement METRO's Urban Design Vision for the corridor. Our goal is to build spaces that bring people together, establish public areas, and incorporate plans from other partner agencies and organizations while collaborating with various stakeholders.

Interface with Third Parties

The Project will be constructed in METRO, the City, HCTRA, UPRR and TxDOT Right-of-Way (ROW), the Designer will need to follow the appropriate standards of the Authority Having Jurisdiction (AHJ) over each section of the alignment. The design packages shall be suitable for the bidding and awarding of multiple construction contracts as determined by METRO's packaging plan. The plans and deliverables will be reviewed by METRO, the City, and AHJ throughout the design process (60%, 90%, and Final).

Other government entities and agencies involved with the Project include, but are not limited to, the City of Houston (the City *or* COH), the Texas Department of Transportation (TxDOT), and Harris County Toll Road Authority (HCTRA), and Union Pacific Railroad (UPRR). The project also traverses through many Tax Increment Reinvestment Zones (TIRZ), Management Districts, and neighborhoods represented by Civic Associations. Close coordination with all entities will be expected from the selected vendors.

Relevant Project Documents

1. NEPA Categoric Exclusion Submitted to the FTA and associated commitments
2. METRO Bus Rapid Transit Design Criteria
3. METRO Urban Design Guidelines
4. Basis of Design Report for all Segments
5. 30% Plan Sets for Segments 1 through 5
6. Relevant portions of the Basis of Estimate
7. List of Third-Party Agreements and Status
8. Drainage Reports
9. Geotechnical Baseline Reports

10. Applicable METRO and COH Standards / Specifications

Roles and Responsibilities

METRO has assembled an Integrated Project Team to work collaboratively with the final design teams to manage the delivery of final design deliverables. Table 4-1 outlines the roles and responsibilities of different team members within the Project Team.

Table 4-1: Roles and Responsibilities

Role	Company	Responsibilities
METRO	-	• Project Sponsor • Project Oversight & Contract Administration • FTA Coordination and Reporting • Integrated Project Team (with PMC & GEC) • Procurement of Design and Construction Services • Legal / Safety / Quality Oversight • Executing Third Party Agreements • Small Business Enterprise (SBE) and Disadvantaged Business Enterprise (DBE) Programs Compliance
METRONext Program Management Consultant (PMC)	HNTB	• NEPA deliverable • Staff Extension - Integrated Project Team (with METRO & GEC) • Real Estate Support • Arts-In-Transit / Urban Design
University General Engineering Consultant (GEC)	AECOM	• 30% Design • Staff Extension - Integrated Project Team (with METRO & PMC)
Segment Civil Designers (7 total)	RFQ-June 2023	• Services described by the RFQ
Systems Designer	2023	• Final Systems Design (Communications / ITS / Central Control / Bus Charging Systems)
Stations Architect	TBD	• Standard architectural design of the station structure (anchor bolts up)
Environmental Consultant	Procurement In Progress	• Provide environmental support • Environmental field work & compliance
Construction Management Consultant	Procurement in Progress	• Constructability Reviews • Design and Construction interfaces • Pre-Construction Support

In addition, the design team will be expected to coordinate with other concurrent METRO projects that are not part of the University Line BRT but that interface with the proposed BRT system including but not limited to:

- Wheeler Transit Center Designer
- Denver Harbor Transit Center Designer
- Tidwell Transit Center Designer
- Bus Operations Facility Designers
- METRORapid Gulfton Designer
- NHHIP Team

Summary level detail of the ULBRT Corridor Alignment and Design features:

Segment 1: Approximately 7.7 miles of dedicated BRT guideway, with 2 - 11' BRT lanes (one each direction) and a 10' side path along the south side, from Westchase Park & Ride/Transit Center to the West Loop South Interchange (IH 610). Segment 1 transitions to center running BRT guideway on Westpark Dr, with one 11' BRT lane in each direction, a 6' sidewalk along the north side, and a 10' side path along the south side from IH 610 to the beginning of Segment 2.

Summary of proposed project components in Segment 1A: (Westchase Park and Ride to West of IH 69/US 59 south frontage Rd)

- Segment 1A is within METRO ROW and jurisdiction. The BRT interfaces with Harris County Toll Road Authority (HCTRA) as it crosses Sam Houston Toll Road and is adjacent to Westpark Tollway.
- New BRT guideway construction within METRO ROW
- New BRT bridge over Rogerdale and Sam Houston Tollway
- New pedestrian bridge over Sam Houston Tollway main line and exit/entrance ramps at Westpark Tollway
- New BRT bridge over Ranchester Dr
- New BRT Bridge over re-aligned Westpark Tollway EB exit and entrance ramps at Gessner Rd with elevated station platform
- Reconstruction of Westpark Tollway EB off ramp at Fondren Rd
- Five new BRT stations
- Upgrade Westchase Park and Ride to a Transit Center, including bus charging infrastructure
- New storm sewer trunkline and, new inlets., in-line underground detention
- Upgrade/relocate existing high power transmission towers
- Relocation of public and private utilities
- Redesign and reconstruction of existing signalized intersections. Proposed signals, if warranted, at designated unsignalized intersections where BRT guideway crosses existing streets.
- New signs and Wayfinding
- Traffic Control Plan for vehicles, pedestrians and bicyclists and for local bus service

Summary of proposed project components in Segment 1B: (West of IH 69/US 59 south frontage Rd to Westpark Drive and Edloe Intersection)

- The west half of Segment 1B is within METRO ROW and jurisdiction and the east half is within COH jurisdiction along Westpark Dr. The BRT interfaces with Harris County Toll Road Authority (HCTRA) as it is adjacent to Westpark Tollway, and interfaces with TxDOT as the BRT crosses IH 69/US 59 and at IH 610.
- New BRT guideway construction within METRO ROW and reconstruction of Westpark Dr, including a center running BRT guideway.
- New EB bridge over UPRR
- Six new BRT stations
- New storm sewer trunkline and, new inlets., in-line underground detention
- Upgrade/relocate existing high power transmission towers
- Relocation of public and private utilities
- Redesign and reconstruction of existing signalized intersections. Proposed signals, if warranted, at designated unsignalized intersections where BRT guideway crosses existing streets.
- Construction of a center running BRT guideway along Westpark Dr
- Addition of Mid-block pedestrian crossing
- New signs and wayfinding
- Traffic Control Plan for vehicles, pedestrians and bicyclists and for local bus service

Segment 2: Approximately 3.4 miles of center running BRT guideway along Edloe St, and Richmond Ave, with 2 - 11' BRT lanes (one each direction), 8' sidewalks are proposed on both sides of Richmond Ave. Segment 2 ties into Segment 3 just west of the METRORail Red Line LRT at Bute Street.

Summary of proposed project components in Segment 2:

- The majority of Segment 2 is within COH jurisdiction. The BRT interfaces with TxDOT facilities as it crosses US59/I-69 on Edloe St and under SPUR 527 along Richmond Ave.
- Reconstruction of Richmond Ave, including a center running BRT guideway
- Reconfiguration of lanes on existing Edloe St bridge
- Six new center platform BRT stations.
- New storm sewer trunkline, and new inlets.
- Relocation of public and private utilities.
- Redesign and reconstruction of existing signalized intersections. Proposed signals, if warranted, at designated unsignalized intersections where BRT guideway crosses existing streets.
- Addition of Mid-block pedestrian crossings
- New signs and wayfinding
- Traffic Control Plan for vehicles, pedestrians and bicyclists and for local bus service

Segment 3: Approximately 3.6 miles from west of METRORail Red Line LRT at Bute St. to IH 45, along Wheeler Avenue, Ennis St, and Elgin St. The typical section has 2 - 11' BRT lanes (one each direction), 2 to 4 general-purpose lanes (10' to 11' wide), and two 6' sidewalks or 10' side paths (one on each side of the street). The BRT is proposed to run in mixed flow from the University of Houston Elgin St parking garage along Elgin St from Spur 5 to IH 45. Additionally, the City has proposed dedicated on-street bike

lanes along Elgin between Cullen Blvd and the end of the alignment and shared on-street bike lanes along Wheeler between Emancipation and Ennis. Although a portion of Elgin will have 10' side paths, the bike lanes have not been included within the proposed design due to ROW and existing underpass width constraints.

Summary of proposed project components in Segment 3:

- Reconstruction of Wheeler Ave, Ennis St, and Elgin St, including center running BRT guideway and localized widening of the roadways in the vicinity of the new BRT stations.
- The BRT interfaces with TxDOT facilities as it crosses under existing US 59/I-69 (over NHHIP), SH-288, Spur 5 and I-45
- Nine new BRT stations
- Relocation of public and private utilities
- Redesign and reconstruction of existing signalized intersections. Proposed signals, if warranted, at designated unsignalized intersections where BRT guideway crosses existing streets.
- Addition of Mid-block pedestrian crossings
- New signs and wayfinding
- Traffic Control Plan for vehicles, pedestrians and bicyclists and for local bus service

Segment 4: Approximately 3.5 miles of center running BRT guideway on Lockwood Dr, with one 11’ BRT lane in each direction, 6’ sidewalks SB and 10’ side paths NB between IH 45 and Polk St, 10’ side paths in each direction between Polk St and Clinton Dr, 8’ side paths in each direction between Clinton Dr and north of Margarita St, and 6’ sidewalks along Ernestine St in each direction.

Summary of proposed project components in Segment 4:

- Reconstruction of Lockwood Dr, including center running BRT guideway and localized widening of the roadways in the vicinity of the new BRT stations.
- Conversion of Ernestine St on the west side of the couplet from one-way to bi-directional between WB I-45 (Gulf Fwy) and Leeland St.
- Conversion of Lockwood Dr on the east side of the couplet from one-way to bi-directional between WB I-45 (Gulf Fwy) and Polk St.
- New BRT and pedestrian underpass including flood gate under new UPRR bridge and new local access U-turn bridge between Park Dr and Harrisburg Blvd.
- New BRT bridge over Clinton Dr and UPRR including elevated station
- Retrofit and reconfiguration of lanes on existing Buffalo Bayou Bridge.
- Eight new BRT stations
- Relocation of public and private utilities.
- New storm sewer trunkline and, new inlets, in-line underground detention
- Redesign and reconstruction of existing signalized intersections. Proposed signals, if warranted, at designated unsignalized intersections where BRT guideway crosses existing streets.
- Addition of Mid-block pedestrian crossings
- New signs and wayfinding
- Traffic Control Plan for vehicles, pedestrians and bicyclists and for local bus service

Segment 5: Located at the northern terminus of the University Line BRT Project. Segment 5 extends approximately 7.0 miles from south of IH 10 EB Frontage Road on Lockwood Dr, passing through the Fifth Ward Denver Harbor Transit Center, to the Tidwell Transit Center. The alignment runs north on Lockwood Drive, turns west on Tidwell Road, turns north on Jensen Drive, and turns east on Turner Drive to the Tidwell Transit Center. The BRT connects the relocated Denver Harbor Transit Center to the Tidwell Transit Center. These two transit centers will be executed as individual projects.

Summary of proposed project components in Segment 5A: (South of IH 10 EB Frontage Road to North of Kelley Street)

- Reconstruction of Lockwood Dr, including center running BRT guideway and localized widening of the roadways in the vicinity of new BRT stations.
- Five new BRT stations
- The BRT crosses three existing bridges in Segment 5A; TxDOT Lockwood at I-10, UPRR Englewood multi-modal facility, and Hunting Bayou. Under a separate project, the City and TxDOT are in the process of designing a replacement bridge over UPRR Englewood multi-modal facility that will include the BRT lanes.
- The BRT interfaces with TxDOT facilities as it crosses under existing Loop 610 along Lockwood Drive.
- Relocation of public and private utilities.
- New storm sewer trunkline and, new inlets, in-line underground detention, and detention ponds
- Redesign and reconstruction of existing signalized intersections. Proposed signals, if warranted, at designated unsignalized intersections where BRT guideway crosses existing streets.
- New signs and wayfinding
- Traffic Control Plan for vehicles, pedestrians and bicyclists and for local bus service

Summary of proposed project components in Segment 5B: (North of Kelley Street to Tidwell Transit Center)

- Reconstruction of Lockwood Dr and Tidwell Dr, including center running BRT guideway and localized widening of the roadways in the vicinity of new BRT stations.
- The BRT interfaces with TxDOT facilities as it crosses under existing US59/I-69 along Tidwell Road.
- Four BRT stations within Segment 5B. Bennington Station to be an elevated station.
- The BRT lanes will be elevated onto a new bridge over the existing at-grade railroad tracks at Bennington St on Lockwood Dr and Hirsch Rd on Tidwell Rd.
- The general-purpose lanes will remain at grade.
- The BRT crosses one existing bridge in Segment 5B, UPRR Pierce Yard
- Relocation of public and private utilities.
- New storm sewer trunkline and, new inlets, in-line underground detention, and detention ponds
- Redesign and reconstruction of existing signalized intersections. Proposed signals, if warranted, at designated unsignalized intersections where BRT guideway crosses existing streets.
- New signs and wayfinding
- Traffic Control Plan for vehicles, pedestrians and bicyclists and for local bus service

Final Design Phase:

The work to be performed by the Segment Civil Designers under this contract shall consist of providing professional engineering services for the preparation of plans, specifications, and quantities by advancing METRO/City approved 30% design through the different milestones (60%, 90%, and Final) to bid-ready construction plans. The scope of work includes, but not limited to the following:

- Additional Survey
- ROW Parcel Survey
- BRT Guideway and Roadway design
- Stations design at grade and aerial (from platform down) including civil systems and MEP
    - A separate Stations Architect contract will be let for producing a standard architectural design (see above).
- Traffic Design
    - Traffic Control Plans (Maintenance of Traffic) for vehicles, pedestrians, bicyclists and local bus service
    - Traffic Intersection Signal Design
    - Mid-block Pedestrian Crossing Design
    - Signal warrants
    - Additional traffic analysis as needed
    - Civil conduit for interfaces with ITS/BRT Communications
    - Traffic Signal timing Support
- Roadway and Sidewalk Design
    - Shared use path design
    - Signing and Pavement Marking-Roadway and Guideway
    - Street Lighting Design
    - Guideway and Pedestrian Lighting where necessary
    - BRT signage
    - Local bus/BOOST stop design
    - New signs and wayfinding
    - Emphasis on protecting existing trees including innovative design concepts to construct project elements adjacent to trees.
- Bridge Design
- At-grade Railroad Crossing Design
- UPRR Grade Crossing Submittals and Coordination Support
- Utility relocation design and coordination
    - Public Utility Relocation Designs
    - Private Utility Relocation Designs
- Tree Protection and Mitigation Plans
- Drainage Design
    - Additional hydraulic analysis as needed
    - Storm sewer design
- Additional Geotech Analysis/Reports

- Duct bank Design for BRT Communications and traffic interface
- Support for Public Engagement efforts lead by METRO
- Support for coordination with Third Parties efforts lead by METRO
- Construction Quantity takeoffs & estimates
- Construction Schedule updates in P6
- Support Build America, Buy America compliance effort by Integrated Project Team
- Technical Specifications

The following scope of work has been completed or is ongoing by the GEC/PMC and will not be performed by the Engineer under this contract:

- EIE documents
- NEPA documents
- Preliminary 30% design plan
- Traffic report
- Hydrologic and hydraulic analysis
- Traffic Signal Timing including Traffic Signal Priority (TSP) and interfaces with ITS/BRT Communications

Construction Phase:

Provide Engineering Services During Construction to support procurement of long-lead items, Early Works Packages and Civil Package Construction. The construction phase shall include, but not be limited to supporting preconstruction initiatives, monthly construction progress meetings and action items, review and disposition to submittals, requests for information, supporting the project quality process, supporting the FTA reporting requirements, and record drawings submittal.

Provide Engineering Services After Construction to consolidate the contractor(s) as-built markups (red lines), submittals, change orders, and request for information and prepare electronic as-built set of drawings in MicroStation along with pdf copies of all as-built drawings.