5. SECTION B - SCOPE OF SERVICES:

5.1 BACKGROUND

The Montgomery County Department of Transportation (MCDOT) is soliciting technical proposals to provide a wide range of transit operations, planning, engineering, and policy development support services for their transit capital and operating projects. It is the expectation of the County to enter into contracts with experienced and qualified firms to provide a wide range of these services.

Public transportation is seen as a key component of MCDOT's strategy for providing multimodal transportation solutions to the residents, businesses, and visitors of Montgomery County. MCDOT is advancing this vision with Flash, the County's planned Bus Rapid Transit (BRT) network. More information can be found at Flash Bus Rapid Transit System Project - Home - Montgomery County, MD . FLASH corridors are currently in operations, planning, design, or construction stages in support of the *Montgomery County Transit Corridors Functional Master Plan*, which identifies over 100 miles of FLASH service. In addition to these FLASH corridor projects, MCDOT's transit work also includes changes to regular Ride On fixed-route service, services such as Ride On Extra and Flex, enhancements to the associated Information Technology (IT) systems and other capital infrastructure, such as Transit Centers and Operations and Maintenance Facilities. This solicitation seeks to identify firms to provide the necessary services to help MCDOT advance the Flash BRT program as well as transit more broadly.

Contractor services will be for the development of various Capital Improvements Program (CIP) projects, transit operations support, or related services, on an as-needed basis, as directed by the Contract Administrator or approved representative of MCDOT. More information about Capital Projects and Budgets can be found at Montgomery County Maryland Transportation Capital Budget. The County will issue task orders that will vary in size and scope. The County reserves the right to evaluate and negotiate all task orders. The Contractor's proposal must include submission of sufficient data to allow review of cost factors (overhead, general and administrative, direct expenses, fee, etc.).

It is the intent of this Request for Proposals (RFP) for the County to contract with experienced and qualified transportation planning, engineering, and operations firms, to conduct on the basis of fixed hourly rates only, a variety of services as listed in the Scope of Services. Actual task orders with specifically defined scope of work are not available and will be developed when needed. There is no guarantee to any contractor that it will be awarded any task order; a specific number of task orders; or a total dollar value of work.

The County intends to issue individual Task Orders for various assignments/projects as funding appropriations permit. In accordance with the terms of any contract issued as a result of this RFP, the County reserves the right to decide if/when Task Orders are issued. The County may require contract holders to compete for certain Task Orders. The County will identify tasks for competitive bidding and, at its discretion, may select certain contract holders to compete for a task. Criteria for selection for the Task Order may vary between tasks. The County will provide task specific selection criteria for each contract holder selected to compete for a Task Order. The County will review Task Order proposals against the selection criteria and will award the task to the most qualified contract holder that best addresses the selection criteria.

Any task order issued before, but delivered after, the effective termination date of a contract resulting from this solicitation, must be honored with all terms, conditions, and prices of the contract in effect until the task order is completed and accepted by the Contract Administrator.

5.2 SCOPE OF SERVICES

The Contractor(s) shall provide professional services for individual projects or component projects that may derive from but not be limited to; the following categories included in the County's BRT and transit program:

- Policy and Guidance Support, Feasibility, Planning and Conceptual Design, and Environmental Review
- Architecture and Engineering
- Public Engagement and Stakeholder Coordination
- Grant Strategy, Funding and Financing, and Delivery Methodology
- Program Management
- Transit Service Initiation
- Transit Scheduling, Operations Analysis, and Network Planning

5.2.1 Policy and Guidance, Feasibility, Planning and Conceptual Design, and Environmental Review

5.2.1.1 Policy and Guidance Support

The Contractor shall provide broad policy and guidance support to facilitate the development of transit projects and programs. This includes but is not limited to:
Policy and guidance development assistance for transit specific policies. Examples of potential policy topics include but are not limited to fare level, fare collection/enforcement, service standards, safety and security, operator training, transit priority, travel demand management (TDM), on demand transit service, micromobility, shared mobility, and transit network companies (TNCs), etc.

Policy guidance for regulatory, local, and regional agencies. This may include developing responses for pending legislation. It may also include but not be limited to providing guidance for coordination with local and regional bodies/agencies.

Policy support to respond to technology advancements. This may include developing a policy framework for consideration of autonomous vehicles or integration of artificial intelligence (AI), This may also include developing a policy framework to consider new transit technologies or new transit propulsion technologies.

Development of design guidelines for transit infrastructure. These could include but are not limited to bus/BRT stations/stops, bus/BRT guideways, bus/BRT support facilities including but not limited to storage and maintenance facilities.

Development of toolboxes for various relevant treatments of transportation facilities. This may include but not be limited to transit priority treatments, station templates, roadway treatments or other infrastructure treatments.

Development of evaluation methodologies. This may include the development of evaluation methodologies for a variety of treatments or conditions to be completed prior to implementation that may warrant the need of a treatment. It may also evaluate conditions that follow implementation of treatments. Treatments that may need evaluation methodologies may include but not be limited to transit priority treatments, lane repurposing, transit treatments, roadway treatments, infrastructure, traffic operations, or transit operations.

5.2.1.2 Feasibility, Planning, and Conceptual Design

The Contractor shall complete feasibility assessments, planning efforts, and conceptual designs for a variety of types of projects as well as for transit system needs.

Transit Facilities

Feasibility, planning, and conceptual design for capacity, alternative analysis, and access enhancements for existing and /or expanded transit facilities to at minimum include:

- Bus/BRT stations/stops,
- Bus/BRT routes/alignments,
- Bus/BRT guideways,
- Managed lanes
- Transit centers or transit facilities
- Retrofits of existing facilities
- Park & Ride locations

Station/Stop Access

Provide feasibility, planning and conceptual design support for station/stop access enhancements. Tasks could include, but are not limited to any or all of the following:

- Pedestrian and bicycle facility enhancements (e.g. sidewalks, multi-use trails, bike racks/lockers, bike stations, bikeshare docking stations, dockless bikeshare/scooter corrals).
- Circulation enhancements for pedestrians, bicycles, buses, shuttles, and private automobiles.
- Signage and wayfinding enhancements.

Transit Priority Treatments

Provide services to plan and develop tactical transit priority improvements. While there are a variety of types of infrastructure treatment that prioritize transit, there are also tactical, often referred to as quick-build treatments, that also prioritize transit. These treatments require minimal changes to roadway or transit infrastructure but improve bus operations. The Contractor shall provide services to identify appropriate tactical transit priority treatments then analyze, plan, and design those treatments. These treatments may include but not be limited to:

- Lane repurposing through adjustments in signing and striping to create queue jumps and bus lanes
- Bus stops islands
- Traffic signal timing adjustments
- Transit signal priority treatment

While transit priority treatments may be tactical in nature, some of these treatments may also be included as elements of larger infrastructure projects as well.

System Needs

The Contractor shall provide services to identify a variety of system needs such as fleet needs, vehicle storage needs, and maintenance facility needs. The Contractor shall develop or complete at minimum the following elements:

- Identify appropriate vehicle technologies for rolling stock. Evaluate the feasibility and utility of new technologies. This includes the evaluation of facilities to support the integration of potentially new propulsion technologies.
- Develop and update fleet management plans that identify the number of vehicles needed for service. This is inclusive of efforts to plane for zero emission vehicle fleet needs.
- Develop and update fleet transition plans to integrate zero emission vehicles into the Agency fleet.
- Identify and plan for support facilities including but not limited to storage and maintenance facilities, equipment, and operation facilities. Specifically consider the needs for battery electric and hydrogen infrastructure.

5.2.1.3 **Environmental Review**

The Contractor shall assist the County in preparing submissions for all local, State and Federal permits and approvals as needed to implement capital projects. The contractor shall also support the County in conducting the necessary environmental analyses to fulfill MEPA, NEPA, Section 106 of the National Historic Preservation Act (NHPA), Section 4F, and Title VI, and prepare the required documentation for all relevant resources including but not limited to:

- Zoning
- Traffic and Parking Evaluations and Impacts
- Noise and vibration
- Air
- Water Quality
- Floodplains
- Natural resources including wetlands, forest stand conservation and endangered species
- Environmental justice
- Hazardous Materials
- Historic, cultural, and archeological resources

5.2.1.4 **Data Collection and Analysis to Support Planning and Environmental Evaluation**

The Contractor shall complete a variety of types of planning analysis as part of planning and environmental reviews. Analysis may include but not be limited to the following:

Data Collection

- Collection of a variety of data including but not limited to turn movement counts, 24-hour vehicle counts, survey data, transit running data, demographics data, travel probe data, and a variety of other data.
- Collection of crowd-sourced data.
- Collection of transit on board surveys addressing transit travel volumes, origin-destination analysis, customer satisfaction, and Title VI.

Demographics Analysis

- Analysis of populations using various data sources. This will include the development of relevant mapping using GIS and other graphics packages.

Data Analytics

- Analysis of a variety of large data sets that may be utilized in various analyses. This analysis may require analysis using various analysis software packages.
- Real-time data analysis for service performance and operational efficiency.

Environmental Analysis

- Analysis of all relevant resource areas necessary to complete an environmental process to address NEPA, Section 106, Sectoin4(f) or other relevant environmental process requirements.

Traffic Operations Analysis

- Analysis of travel delay, queue length, and volume to capacity ratios for intersections.
- Development of travel forecasts. Travel demand modeling may be utilized to develop relevant existing and future year forecast volumes.
- Microsimulation of vehicle and transit operations using advanced packages such as VISSIM.

Transit Operations Analysis

- Perform analysis of Automated Passenger Count (APC) and Automatic Vehicle Location (AVL) data to evaluate ridership patterns, crowd-sourced datasets and surveys, stop-level activity, route load profiles, schedule adherence, and travel time reliability in support of service planning and corridor performance improvements.

Transit Ridership Analysis

- Analysis of transit on board data to identify ridership patterns and volumes, origin-destination patterns, customer satisfaction, and customer demographics.
- Predictive modeling of transit demand and ridership patterns using various methods and tools, such as the traditional four-step travel model and the Simplified Trips-on-Project Software (STOPS).

Site Analysis

- Site analysis and planning for various operations, storage, and maintenance facility needs, including site feasibility assessments, circulation analysis, and utility investigations.

Analysis Using Artificial Intelligence (AI)

- The contractor should note where they have the ability to incorporate Artificial Intelligence (AI) tools and methodologies into the transit analysis component of the project and program.

5.2.1.5 **Assessment of Transit Improvements**

The Contractor shall assess transit infrastructure and bus priority improvements for effectiveness. Following implementation, the Contractor shall evaluate the effectiveness of the project. Criteria should consider but not be limited to:

- Impact on travel times for all modes
- Operational efficiency
- User experience and accessibility

5.2.2 **Architecture and Engineering**

The Contractor shall develop designs and provide architectural services compliant with the most current versions of applicable standards and guidelines, including but not limited to:

- Montgomery County Department of Transportation (MCDOT) Design Criteria and Standard Details
- Maryland Department of Transportation State Highway Administration (MDOT SHA) guidelines
- Federal Transit Administration (FTA) BRT guidance and design best practices
- American Association of State Highway and Transportation Officials (AASHTO) publications, including the Green Book and Guide for the Development of Bicycle Facilities
- National Association of City Transportation Officials (NACTO) Urban Street Design Guide and Transit Street Design Guide
- Americans with Disabilities Act (ADA) Accessibility Guidelines
- Any additional local, state, or federal requirements applicable to transit infrastructure and multimodal design

5.2.2.1 **Facilities**

The Contractor shall provide professional architectural and engineering services to support the design of capital improvements associated with the BRT program and other transit projects. The Contractor must provide related engineering services for capacity and access enhancements for existing and /or expanded transit facilities to at a minimum include:

- Bus/BRT stations/stops,
- Bus/BRT routes/alignments,
- Bus/BRT guideways, and
- Managed lanes
- Transit centers or transit facilities.
- Retrofits of existing facilities

The Contractor shall also provide architectural and engineering support for station/stop access enhancements. Tasks could include, but are not limited to any or all of the following:

- Pedestrian and bicycle facility enhancements (e.g. sidewalks, multi-use trails, bike racks/lockers, bike stations, bikeshare docking stations, dockless bikeshare/scooter corrals).
- Bus bays and park and ride enhancements.
- Circulation enhancements for pedestrians, bicycles, buses, shuttles, and private automobiles.
- Signage and wayfinding enhancements.

5.2.2.2 **Architecture and Design Elements**

The Contractor shall complete design and develop architectural drawings for component project task orders and project task orders which may include, but not be limited to:

- Project management and scheduling
- Aerial, topographic and property surveys
- Geotechnical analysis/soil borings; foundation investigation and design
- Roadway design
- Cost estimating
- Right-of-way plat preparation
- Structural design for bridges and scour analysis
- Hydrologic/ hydraulic engineering
- Environmental studies and noise analysis
- Wetland delineation, mitigation, and design
- Natural Resource Inventory/Forest Stand Delineation
- Mandatory referral review and presenting projects to M-NCPPC Planning Board
- Landscape and streetscape design
- Sediment control design
- Transit (within the right of way) design
- Transit stations
- Transit centers or transfer facilities including systems and structural design
- Traffic signal design
- Transit Signal Priority
- Signage and pavement marking plan
- Traffic control plans
- Pedestrian and Bicyclist design
- Safety impact and Vision Zero reviews
- Regulatory agency and utility company coordination
- Utility test pits
- Utility company coordination
- Preparation of general and special condition specifications for construction bid packages
- Construction baseline stakeout and as-built surveys/plans
- Shop drawing review and approval
- Review of other contractor engineer’s work
- Other related transportation engineering services

The selected Contractor shall provide comprehensive engineering design services and integrates with existing and planned infrastructure through all typical project phases including:

- Preliminary Engineering (35% Design)
- Intermediate Design (65% Design)
- Final Design (90–100% Design) along with final plans, specifications, and estimates (PS&E)

5.2.2.3 **Post Design Engineering Support**

The contractor shall provide support following completion of design to include value engineering, responding to requests for information (RFI), reviewing submittals from the construction contractor,

revising engineering drawings (redline), field reviews and inspections of facilities, developing, reviewing and certifying as-built drawings, conducting site visits, and meeting with construction contractors.

5.2.3 **Public Engagement and Stakeholder Coordination**

The Contractor shall develop and execute project and program level outreach efforts. This shall include developing project and program messaging, developing and executing outreach plans, staffing meetings, and developing materials.

5.2.3.1 **Develop Project and Program Messaging**

The Contractor shall create clear and consistent messaging that highlights the benefits of the project as well as transit/BRT. This may include develop messaging related to reduced travel times, increased reliability, and environmental sustainability. The Contractor will be expected to tailor messages to different audiences, including commuters, local businesses, community groups, and elected officials.

The Contractor shall also provide media training for County staff to equip them to present project and program materials to mass media.

5.2.3.2 **Develop and Execute Project Public and Stakeholder Engagement Plans**

The Contractor shall develop public participation strategies and support public and stakeholder outreach activities across all phases of a project using best practices. This shall include at minimum:

- Development and distribution of informational materials, which may include flyers, FAQs, brochures, postcards, story boards etc.
- Planning and executing outreach activities prior to community events such as holding project focused pop-up events, attending community events, or canvassing within a community to ensure wide distribution of materials within the study area.
- Create Title VI plans and plan updates along with analyses related to Title VI requirements for fixed facilities.
- Conduct thorough research to understand the local context, including demographic data, travel patterns, and community concerns. Use this information to tailor messaging and engagement strategies to resonate with the local population.
- Develop meeting informational boards and presentations along with preparation of meeting activities.
- Lead public outreach meetings.
- Develop surveys or other public and stakeholder feedback mechanisms.

5.2.3.3 **Project and Program Communications**

The Contractor shall utilize a variety of communication channels, including social media, local news outlets, community newsletters, and public meetings to communicate about the project and program. This shall include at minimum:

- Incorporation of extensive online, web-based programs and social media, as well as new in-person strategies, to expand and enhance public involvement.
- Development of project web pages, project graphics, and other consumer-ready materials. Work with County staff to implement these efforts.
- Translation of materials into various languages spoken in the relevant project areas.

5.2.3.4 **Meeting Logistics**

The Contractor shall provide logistical support for public and stakeholders outreach efforts. This

shall include at minimum:

- Scheduling outreach events in each project area including the identification of event locations and times.
- Staffing of public events, including the coordination of logistics/equipment.
- Distribution and collection of comment forms and summarization of the comments received at each event. This may include administering a survey to event participants either in paper format or electronically.
- Provision of meeting translation services.

5.2.3.5 **Program Stakeholder Engagement**

The Contractor shall assist in the engagement of project and program stakeholders. This shall include at minimum:

- Assist the County in constituting and maintaining Corridor Advisory Committees as outlined in the Montgomery County Transit Corridors Functional Master Plan (December 2013).
- Assist the County in coordination with the spectrum of agencies and jurisdictions at the local, state, regional and Federal levels including constituting and maintaining Technical Advisory Committees (TAC).
- Assist the County in coordination with local stakeholders such as various interest groups or advocacy groups.
- Develop materials for stakeholder meetings and lead these meetings as appropriate.

5.2.3.6 **Marketing**

The Contractor shall develop marketing campaigns and materials to support transit projects as well as the BRT program. This shall include but not be limited to:

- Development of marketing materials.
- Development of branding standards for projects or the program, including various templates necessary to develop materials.
- Development of marketing campaigns to support project engagement or to support the program. This may be targeted to small audiences or to large audiences that may be County-wide.

5.2.4 **Grant Strategy, Funding and Financing, and Delivery Methodology**

5.2.4.1 **Grant Strategy**

The contractor shall provide support with the identification of appropriate grant programs the County may pursue to fund various types of transit infrastructure and service. This includes evaluating various types of Federal and State grants. The Contractor should note constraints related to the grants and develop a cohesive, programmatic strategy the County may adopt to pursue a variety of grants.

5.2.4.2 **Funding and Financing**

The Contractor shall evaluate various funding sources as part of efforts to identify appropriate financing of transit improvements. In addition, the Contractor shall evaluate the potential to finance transit improvements.

Funding

The Contractor shall investigate various potential funding sources that may fund various transit projects. The Contractor shall identify appropriate Federal, State, and local funding sources for the various types of projects being proposed and consider the regulatory framework for the various funding sources. Funding sources should be linked to the project types that the County is

advancing.

Financing

The Contractor shall identify and test various approaches to finance projects. This will include developing financial strategies that may be tested using models to project funding levels. It may also include providing financial insights related to borrowing funds, bonding, and various funding programs. It may also include evaluation of alternative transportation project finance strategies, including Public-Private Partnerships or Federal programs such as TIFIA.

5.2.4.3 **Delivery Methodology**

The contractor shall provide support in the assessment and selection of delivery approaches for the BRT Program and other transit projects. This should at least include the evaluation of, design-bid-build, design-build, CMAR, and progressive design-build methods. The contractor shall compare advantages, risks, cost implications, and schedule impacts of each approach and provide recommendations on the most suitable delivery strategy for achieving program goals and ensuring successful outcomes and delivery.

The Contractor shall provide contract support for advancing projects towards implementation, including preparing contract documents and providing support during procurement of those projects. Contract support may continue past the initial planning and/or environmental clearance evaluation into implementation. Tasks could include any or all of the following:

- Assisting the County in the preparation of the contract package.
- Expert review of contracts.
- Supporting the County during the contract solicitation phase by helping the County to answer questions from the bidding community.
- Supporting the County through negotiation of contract terms and conditions.

5.2.5 **Program Management**

The Contractor shall provide program management services to advance individual projects as well as programs. The Contractor shall provide staff that may be dedicated to the project, as well as a wide variety of technical, policy, and process expertise to advance a project or program.

5.2.5.1 **Project and Program Leadership**

The Contractor shall provide experienced project management services to lead tasks, projects, and programs. These may include project managers and other relevant staff to provide leadership and direction for various technical areas. The Contractor shall also lead a variety of sub-tasks related to the project or program and develop comprehensive Project Management Plans (PMP) detailing the scope, timeline, budget, stakeholder engagement, risk management, quality assurance, contract management, and security measures, ensuring compliance with all regulatory requirements and alignment with project objectives.

5.2.5.2 **Dedicated Staffing**

- The Contractor shall provide staffing to manage projects, support tasks, or provide technical expertise. Staffing may be for short- or long-term assignments and may include senior staff to lead program management efforts as well as junior staff.

5.2.5.3 **Administrative Support**

- The Contractor shall provide administrative support as needed to include but not limited document control, processing documentation, budgeting tracking, etc.
- The Contractor shall document all project activities and decisions to maintain a detailed record of project activities.

- The Contractor shall work with the project team to develop, maintain, and oversee project or program schedules.

5.2.5.4 **Grant Pursuit**

The contractor shall provide support with grant application development for potential discretionary grant opportunities. This may include a variety of federal discretionary grants including but not limited to BUILD grants and FTA CIG grants. The Contractor should be able to support the pursuit of Federal Transit Administration (FTA) Capital Improvement Grants (CIG). These efforts include but are not limited to:

- Completing FTA compliant ridership forecasts.
- Evaluating land use and economic development potential in the project area.
- Developing project management plans.
- Developing financial plans.
- Developing documentation necessary to enter Project Development.
- Completing Readiness evaluation.
- Provide additional analysis to support a CIG grant.
- Support reporting on compliance with the requirements of the various grants.

5.2.5.5 **Agency Coordination and Third Parties**

- The Contractor shall coordinate with federal, state, regional, and local stakeholders, including Federal Transit Administration (FTA), WMATA, Maryland Department of Transportation, State Highway Administration (MDOT SHA), MDOT, Maryland Transit Administration (MTA), MWCOG, cities, utility providers, emergency services, and affected municipalities.
- The Contractor shall lead coordination with all relevant third parties and develop third party agreements. This includes identifying stakeholders, facilitating meetings, tracking agreement processes, pursuing permits and utility relocations, supporting right-of-way coordination, and ensuring timely communication and documentation.
- The Contractor shall develop a coordination plan, maintain logs of key activities, and provide regular updates to the Agency to ensure alignment with project goals and schedules.

5.2.5.6 **Right-of-Way (ROW) Support**

- The contractor shall assist in the process of acquiring ROW. This may include a broad variety of tasks including but not limited to completing land surveys, land appraisals, developing documentation to acquire ROW, direct coordination with property owners, and other professional services to facilitate property acquisitions.

5.2.5.7 **Safety and Security**

- The Contractor shall provide services to support the FTA required safety and security certification of newly initiated service. This includes guidance through the FTA process of certification as well as all technical and process input necessary to achieve certification.
- All proposed activities must comply with Federal Transit Administration (FTA) requirements for safety and security in federally funded transit projects. The selected contractor will be responsible for supporting documentation and implementation of safety and security measures in accordance with applicable FTA guidelines.
- The Contractor shall assess safety concerns related to operations of the fleet, specifically considering zero emission vehicle needs.
- The contractor shall also assess safety concerns from customer interaction with the system both at stations and on vehicles.

5.2.5.8 **Strategic Guidance**

- The Contractor shall provide access to a variety of senior staff who can provide policy, project, and program level guidance and advice across a variety of topic areas. These staff will provide guidance across a variety of areas including but not limited to funding approach, capital funding grants pursuit approach, project delivery strategy, program development along with other critical topics.

5.2.5.9 **Risk Management**

- The Contractor shall assess and manage risk for the tasks, projects and programs. The Contractor may be asked to develop a Risk Management Plan that shall identify schedule, cost, and integration risks, with mitigation strategies and a maintained risk register.

5.2.5.10 **Quality Management**

- The Contractor shall develop and implement a quality assurance and quality control program for the tasks, projects and programs. The Contractor may be asked to develop and implement a quality assurance program that complies with Federal, State, or local requirements and approved Quality Management Plan incorporating inspections, material testing, and independent audits.

5.2.5.11 **Technical Review**

- The Contractor shall review various analyses, technical drawings, and documentation related to the planning, design, environmental, construction, or service initiation processes. The Contractor shall provide experts to review the types of tasks that may follow from the scope of work.

5.2.6 **Transit Service Initiation**

The Contractor shall provide services to assist the County in bringing the capital project into operation. These services may include developing plans for the bus fleet, integrating a variety of systems, developing various standard operating procedures and plans, acceptance of infrastructure as well as fleet, and preparing the agency to safely operate a new service.

5.2.6.1 **Fleet**

The Contractor shall provide services to support procurement of vehicles, accept vehicles, and initiate service. The Contractor shall develop or complete at minimum the following elements:

- Support the procurement process to purchase rolling stock.
- Inspect, test, and accept new vehicles. Initiate service on the road.

5.2.6.2 **Infrastructure Acceptance**

The Contractor shall support the County and the State in the acceptance and integration of infrastructure into the County or State's control. As needed, the Contractor may assist in processes necessary to transfer facilities to SHA or another third party.

5.2.6.3 **Systems Integration**

The contractor shall identify systems needed to support a transit system including fare collection, real-time passenger information, communications, operations control, safety and security, and maintenance systems. The contractor shall assess functional requirements, integration needs, and industry best practices to inform system selection and implementation strategy.

The Contractor shall be responsible for the integration of infrastructure, rolling stock, and central management facilities with each other and with existing systems. This includes but is not limited to all ITS components, automated fare collection (AFC), real-time passenger information (TPI), and transit signal priority (TSP). This includes integration with MCDOT, MDOT SHA, and regional transit systems, with end-to-end integration testing completed prior to acceptance.

5.2.6.4 **Communication and Technology**

The Contractor shall identify communications and technology needs to facilitate communications between rolling stock, the signal system, and a central dispatching system and specific facilities. This may also include designing various communication architectures for the transit system. The Contractor shall develop, design, and/or support at minimum the following elements:

- Evaluate, set parameters for, and support the implementation of a transit signal priority (TSP) system.
- Identify necessary technology and connections for future fare collection and fare media.
- Identify CAD/AVL system needs.
- Bus arrival system.

5.2.6.5 **Operations and Maintenance**

The Contractor shall support the development of operations and maintenance standards and protocols. The Contractor shall have the resources and expertise for the following:

- Develop vehicle deployment protocols.
- Complete operator training.
- Complete incident responses.
- Development of standard operating procedures for various activities.
- Development of key performance indicators (KPIs) for travel time, headway adherence, on-time performance, and system uptime along with ongoing reporting protocols.
- Creation of a preventive maintenance program to address vehicles, stations, guideway infrastructure, and ITS assets, incorporating sustainability measures such as zero-emission propulsion, zero-emission, sustainable facilities and infrastructure, renewable energy station systems, and energy-efficient lighting.

5.2.7 **Transit Scheduling, Operations Analysis, and Network Planning**

Transit Route Scheduling Support and Analysis

The Contractor shall develop transit routes and schedules for new and adjusted transit routes. Efforts may include but not be limited to:

- Compile and analyze existing transit, roadway, demographic, and land use data.
- Assess travel demand, origin-destination patterns, and ridership potential.
- Runtime, recovery/layover, dead-head analysis, depot assignments
- Interlining analysis and recommendations
- Route definition, trip building, blocking, run-cutting, and other similar activities
- Development of transit schedules and run-cutting
- Creation of GTFS files

Comprehensive Operations Analysis

The Contractor shall evaluate and report on various metrics including but not limited to:

- Passengers per revenue day, time band, hour, mile, trip.
- Segment-based route analysis, alternate routing and truncation recommendations
- On-Time Performance
- Bus Stop Rebalancing
- Run-Time Analysis, Bus Priority and Transit Enhancement Recommendations

Network Refinement and Development

The Contractor shall develop transit network refinements that may include updating the entire transit network or sub-areas of the network. Tasks may include but not be limited to:

- Planning in support of transit service plans, network redesigns and route restructuring, transit development plans, comprehensive operational analyses.
- Conduct analysis of transit travel demand using large data sources that may include cell phone data, travel demand modeling, or ridership-specific models such as FTA's STOPS model.

- Develop performance metrics including travel time savings, ridership forecasts, and cost implications.
- Develop transit networks and basic transit operating plans that are integrated across the existing transit network.
- Produce GIS-based maps, schematics, and technical drawings of the proposed network.
- Calculate existing and future travel demand by transit and compare to passenger vehicle throughput for evaluating transit enhancement and lane repurposing
- Prepare cost estimates, phasing strategies, and supporting technical documentation.

5.3 CONTRACTOR QUALIFICATIONS

5.3.1 Project Managers must possess, at a minimum, a 4-year college degree in a relevant field and ten years' experience as a project manager on transit-related projects.

5.3.2 All staff must communicate effectively in the English language both orally and in writing. Communications with County personnel, elected officials, contractors, and the general public by oral presentation may be required at any time during the contract term.

5.3.3 All staff must be able to effectively work in a team environment and perform efficiently in a collaborative workflow, in person and virtually.

5.3.4 Project Managers and staff must have a working knowledge and experience with the following:

- Montgomery County Department of Transportation design standards
- MD State Highway Administration, *Standard and Supplemental Specifications for Construction and Material*
- MD State Highway Administration, *Book of Standards for Highway & Incidental Structures*
- Federal Transit Administration regulations, policies, procedures, guidance, funding, and programs, including but not limited to FTA Circulars, Grant Programs, and federal rulemaking.

5.4 CONTRACTOR'S RESPONSIBILITIES

5.4.1 The contractor must maintain sufficient resource levels to meet scheduling requirements and avoid delays to Task Orders.

5.4.2 The contractor personnel must conduct field activities in a safe manner at all times and are responsible for observing the safety regulations of local, state and federal safety agencies.

5.5 COUNTY'S RESPONSIBILITIES

5.5.1 The County is responsible for providing clear scope and expected schedules for each task order, actively leading the decision-making process, and conducting timely reviews to ensure adherence to schedules.

5.6 REPORTS AND DELIBERABLES

5.6.1 The deliverables will be identified for each individual task order.

6. SECTION C - PERFORMANCE PERIOD