



**Washington Metropolitan Area Transit Authority**

---

## Task Order Groups

**IT Staff Augmentation  
RFP FQ15124**

# Table of Contents

3. TASK ORDER GROUPS (TOG)..... 5

3.1. TOG 1: PROJECT MANAGEMENT OPERATIONS (PMO)..... 5

3.1.1. Business Analyst..... 5

3.1.2. Technical Writer ..... 5

3.1.3. Trainer..... 6

3.1.4. IT Quality Assurance Analyst..... 7

3.1.5. Project Manager ..... 8

3.1.6. Change Communication Subject Matter Expert..... 9

3.1.7. Financial and Business Modeling IT Analyst ..... 10

    APPLICATIONS DEVELOPMENT AND OPERATIONS (APPS) ..... 11

3.1.8. Application Systems Tester ..... 11

3.1.9. Database Administrator..... 12

3.1.10. Information Systems Support Specialist..... 13

3.1.11. ROCS Group Client/Server Consultant..... 14

3.1.12. Oracle WebLogic Web Service Specialist ..... 15

3.1.13. Data Warehouse Specialist..... 15

3.1.14. Cognos Analyst/Developer ..... 16

3.1.15. Cognos System Administrator ..... 17

3.2. TOG 2: MAINTENANCE AND MATERIALS MANAGEMENT (3Ms)..... 19

3.2.1. Maintenance and Materials Management (3Ms) Developer ..... 19

3.2.2. Maintenance and Materials Management (3Ms) Specialist ..... 20

3.2.3. Maximo Integration Specialist..... 23

3.2.4. Maintenance and Materials Management (3Ms) Functional Specialist..... 24

3.2.5. Maintenance and Materials Management (3Ms) Engineer ..... 25

3.2.6. Maintenance and Materials Management (3Ms) Data Specialist..... 27

**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY**

**SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

**3.3. TOG 3: PEOPLESFT ERP APPLICATION DEVELOPMENT AND OPERATIONS.....29**

3.3.1. PeopleSoft Enterprise Resource Planning (ERP) Product Expert .....29

3.3.2. Senior PeopleSoft ERP Product Specialist .....30

3.3.3. Senior PeopleSoft Analyst/Designer..... 31

3.3.4. Senior PeopleSoft Modeler/Developer.....32

3.3.5. PeopleSoft Senior Developer .....33

3.3.6. PeopleSoft Functional Analyst .....33

  

**3.4. TOG 4: NETWORK AND COMMUNICATIONS.....35**

3.4.1. Senior Network Engineer.....35

3.4.2. Senior Wireless Network Engineer .....36

DATA CENTER AND INFRASTRUCTURE.....37

3.4.3. Senior Solutions Engineer .....37

3.4.4. Senior Helpdesk Technician (HDT).....38

3.4.5. Infrastructure Project Manager (PM)..... 40

  

**3.5. TOG 5: INTERNET, INTRANET SERVICES.....42**

3.5.1. Web Developer ..... 42

3.5.2. Web Application Developer..... 43

3.5.3. Web Software Engineer..... 44

3.5.4. Senior IT Specialist ..... 45

3.5.5. Senior Business Analyst..... 46

3.5.6. Web Designer .....47

3.5.7. SharePoint Developer ..... 48

3.5.8. Mobile Application Specialist..... 48

  

**3.6. TOG 6: GEOGRAPHIC INFORMATION SYSTEMS (GIS).....50**

3.6.1. GIS Manager.....50

3.6.2. GIS Architect..... 51

3.6.3. Geographic Information System (GIS) Administrator .....53

3.6.4. GIS Application Developer ..... 54

3.6.5. GIS Data Coordinator.....55

**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY**

**SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

3.6.6. Geographic Information Systems (GIS) Analyst.....57

3.6.7. Geographic Information Systems (GIS) Technician .....58

**3.7. TOG 7: ENTERPRISE ARCHITECTURE AND BUSINESS PROCESS RE- ENGINEERING .....59**

3.7.1. Business Process Reengineering (BPR) Analyst .....59

3.7.2. Enterprise Architect.....60

3.7.3. Application Architect..... 61

3.7.4. Infrastructure Architect.....63

3.7.5. Enterprise Architecture Repository Tool Specialist..... 64

3.7.6. Metadata Manager and Modeler .....66

SERVICE-ORIENTED ARCHITECTURE .....67

3.7.7. Service-Oriented Architecture BizTalk Developer.....67

3.7.8. Service-Oriented Architecture SharePoint Developer.....68

3.7.9. Service-Oriented Architecture Technical Lead.....69

**3.8. TOG 8: IT SECURITY.....71**

3.8.1. Cyber Security Design Engineer..... 71

3.8.2. Cyber Security Risk Assessor .....72

3.8.3. Cyber Security Operations Engineer .....73

3.8.4. Application Security Engineer.....74

3.8.5. Information Security Program Manager .....75

3.8.6. Cyber Threat Engineer.....76

\*\*\*

**3. TASK ORDER GROUPS (TOG)**

**3.1. TOG 1: PROJECT MANAGEMENT OPERATIONS (PMO)**

**3.1.1. Business Analyst**

**3.1.1.1. Responsibilities**

- 3.1.1.1.1. Design and improve processes
- 3.1.1.1.2. Define requirements for software tools for developmental staff
- 3.1.1.1.3. Test against requirements
- 3.1.1.1.4. Integrate systems and manage projects of selected development efforts
- 3.1.1.1.5. Review designs
- 3.1.1.1.6. Use software tools to gather requirements, analyze needs, identify risk, propose designs, write documentation and conduct financial analysis

**3.1.1.2. Minimum Requirements**

- 3.1.1.2.1. Demonstrated skills in software-aided business process capture
- 3.1.1.2.2. Demonstrated skills in analyzing processes and identifying opportunities for enhancements
- 3.1.1.2.3. Demonstrated experience in a project leadership role
- 3.1.1.2.4. Demonstrated experience establishing strong relationships with operational, IT and financial management
- 3.1.1.2.5. Experience in data analysis
- 3.1.1.2.6. Excellent communication skills, both verbal and written
- 3.1.1.2.7. Proficiency with Microsoft Excel, Word, Visio and PowerPoint

**3.1.1.3. Experience Levels**

- 3.1.1.3.1. Mid-level, with four (4) to seven (7) years' experience
- 3.1.1.3.2. Senior level, with eight (8) or more years' experience

**3.1.2. Technical Writer**

**3.1.2.1. Responsibilities**

- 3.1.2.1.1. Create, edit and design content
- 3.1.2.1.2. Update and enhance documentation, adhering to WMATA's format and style guidelines
- 3.1.2.1.3. Ensure content is accurate when completed

3.1.2.2. **Minimum Requirements**

- 3.1.2.2.1. Proficiency in Microsoft Word
- 3.1.2.2.2. Demonstrated experience in technical writing
- 3.1.2.2.3. Experience with Imaging Software (Corel Draw, Photoshop or Paint Shop Pro) for screen capturing
- 3.1.2.2.4. Excellent organizational skills
- 3.1.2.2.5. Demonstrated ability to grasp complex software requirements
- 3.1.2.2.6. Demonstrated ability to communicate effectively both orally and in writing
- 3.1.2.2.7. Bachelor's degree in a field relevant to the work to be performed

3.1.2.3. **Experience Levels**

- 3.1.2.3.1. Level 1: Grant Writer, with four (4) to seven (7) years' experience
- 3.1.2.3.2. Level 2: Documentation Lead, with eight (8) or more years' experience

3.1.3. **Trainer**

3.1.3.1. **Responsibilities**

- 3.1.3.1.1. Deliver classroom training in IT related areas
- 3.1.3.1.2. Create training materials in IT related areas
- 3.1.3.1.3. Manage training programs in IT related areas
- 3.1.3.1.4. Facilitate remote sessions in IT related areas
- 3.1.3.1.5. Collaborate with team members in IT related areas
- 3.1.3.1.6. Perform client coaching and solution services in IT related areas

3.1.3.2. **Minimum Requirements**

- 3.1.3.2.1. Demonstrated experience in a professional training role involving software applications
- 3.1.3.2.2. Demonstrated experience in graphic creation or graphic management using Photoshop, Adobe Illustrator, Flash, ActionScript and HTML
- 3.1.3.2.3. Experience in writing, marketing and designing training for business application systems
- 3.1.3.2.4. Proficiency in PowerPoint

3.1.3.3. **Experience Levels**

- 3.1.3.3.1. Senior level, Eight (8) or more years' experience

**3.1.4. IT Quality Assurance Analyst**

**3.1.4.1. Responsibilities**

- 3.1.4.1.1. Provide quality assurance standards, performance and functionality for enterprise-wide IT projects
- 3.1.4.1.2. Actively contribute to the team effort to maintain the vision and direction of the IT Quality Assurance team
- 3.1.4.1.3. Provide creative and practical solutions to meet WMATA's goals
- 3.1.4.1.4. Create test plans, test scripts and plan projects based on the analysis of IT technical specifications
- 3.1.4.1.5. Review IT functional specifications and create/review test cases
- 3.1.4.1.6. Document, track and communicate test results, and analyze unresolved problems
- 3.1.4.1.7. Efficiently and effectively communicate status of assigned tasks to the WMATA developers/engineers, and management
- 3.1.4.1.8. Contribute to review and inspection meetings by providing input on requirements and design documents
- 3.1.4.1.9. Identify, analyze and document IT hardware/software defects, questionable functions, errors, and inconsistencies and deviations from standards and suggest options to conform to standards, individually and in a team environment
- 3.1.4.1.10. Instruct, direct and review IT Quality Assurance of the work of others and/or act as an internal consultant to management on complex application projects, software, work methods or procedures

**3.1.4.2. Minimum Requirements**

- 3.1.4.2.1. Bachelor's degree in Computer Science or related field
- 3.1.4.2.2. Experience with HP automated testing toolkit
- 3.1.4.2.3. Experience with black box and white box testing
- 3.1.4.2.4. Knowledge and experience in database technology and writing test scripts including SQL, queries and creating test data
- 3.1.4.2.5. Experience in all phases of Application Life cycle including systems analysis, design, coding, testing, debugging, implementation and maintenance
- 3.1.4.2.6. Experience in development, deployment and enforcement of IT Quality Assurance procedures and standards
- 3.1.4.2.7. Experience in developing IT test criteria, IT test plans and conducting application testing with expert level experience in designing, implementing and documenting IT test plans and IT test cases
- 3.1.4.2.8. Experience in Windows, LINUX, UNIX
- 3.1.4.2.9. Ability to scope, plan and schedule activities related to software quality assurance, testing and configuration management

3.1.4.3. **Experience Levels**

- 3.1.4.3.1. Mid-level, with four (4) to seven (7) years' experience
- 3.1.4.3.2. Senior level, with eight (8) or more years' experience

3.1.5. **Project Manager**

3.1.5.1. **Responsibilities**

- 3.1.5.1.1. Provide task tracking, resource allocation, quality assurance, technology review, research, budget monitoring and weekly status reports
- 3.1.5.1.2. Manage functional teams, assist with budgets, manage vendor/ client relationships and provide work plans for developmental projects
- 3.1.5.1.3. Implement network functions
- 3.1.5.1.4. Provide support services
- 3.1.5.1.5. Identify and manage risk
- 3.1.5.1.6. Act as liaison between government management and contractors to define work needed to ensure work is accomplished as required

3.1.5.2. **Minimum Requirements**

- 3.1.5.2.1. Two or more years' experience performing the duties identified above in an information technology operations of the same or larger magnitude
- 3.1.5.2.2. Bachelor's degree in Computer Science, Information Technology, Management Information Systems or related field; or a current PMP Certification

3.1.5.3. **Preferred Requirements**

- 3.1.5.3.1. Hold both a relevant Bachelor's degree and a PMP certification
- 3.1.5.3.2. Demonstrated ability to perform Earned Value (EV) analysis on large multiyear IT projects

3.1.5.4. **Experience Levels**

- 3.1.5.4.1. Level 1: one (1) to three (3) years' experience (Deliverable Manager, QA Manager, Implementation Manager, Customer Support Manager, Critical Events Manager, Technical Project Manager, Wireless Manager, Network Operations Manager, Construction Manager, and Facilities Improvement)
- 3.1.5.4.2. Level 2: four (4) to seven (7) years' experience (Senior Project Managers)
- 3.1.5.4.3. Level 3: eight (8) or more years' experience (Program Manager, Engagement Manager)



**3.1.6. Change Communication Subject Matter Expert**

**3.1.6.1. Responsibilities**

- 3.1.6.1.1. Execute organizational change management initiatives in coordination with IT projects
- 3.1.6.1.2. Organize and track delivery of change management communication and training campaigns in Microsoft Excel and/or Microsoft Project
- 3.1.6.1.3. Guide communication of the business case for change
- 3.1.6.1.4. Align messages of organizational change management initiatives with WMATA strategic positioning and IT strategic plan
- 3.1.6.1.5. Produce flow charts, printed communications, emails, PowerPoint documents, training materials, context diagrams, and other tools to communicate change decisions and components
- 3.1.6.1.6. Meet one-on-one and in group settings to present strategies, tactics and rationales for change and communicate business cases to decision makers
- 3.1.6.1.7. Work with IT programs and projects to ensure change communications are synchronized with IT plans

**3.1.6.2. Minimum Requirements**

- 3.1.6.2.1. Exceptional verbal and written communication skills
- 3.1.6.2.2. Group presentation experience
- 3.1.6.2.3. Bachelor's degree in related field or equivalent experience
- 3.1.6.2.4. Experience using Microsoft Excel to perform basic tracking of communications and training programs
- 3.1.6.2.5. Expert knowledge of Word and PowerPoint
- 3.1.6.2.6. Proven ability to implement IT change management initiatives
- 3.1.6.2.7. Proven ability to co-ordinate and plan IT training initiatives

**3.1.6.3. Preferred Requirements**

- 3.1.6.3.1. Experience in communicating rationale and business impact of IT projects and working with technical teams
- 3.1.6.3.2. Experience in training
- 3.1.6.3.3. Formal training in organization development, complex systems analysis, group facilitation, or information systems requirements analysis
- 3.1.6.3.4. Experience in managing or coordinating with User Acceptance Testing (UAT) efforts for software application projects
- 3.1.6.3.5. Experience with gathering business data and user preference information from end users for use by technical teams in implementation of software application or ERP projects
- 3.1.6.3.6. Experience in transit industry software application change management projects
- 3.1.6.3.7. Experience in PeopleSoft ERP change management initiatives

3.1.6.4. **Experience Levels**

3.1.6.4.1. Senior level, nine (9) or more years' experience (Change Management Expert)

3.1.7. **Financial and Business Modeling IT Analyst**

3.1.7.1. **Responsibilities**

- 3.1.7.1.1. Perform forward and backward looking financial analysis in support of IT projects, programs and capital planning
- 3.1.7.1.2. Develop business models to better evaluate financial impacts of IT acquisition and public/private partnership decisions
- 3.1.7.1.3. Perform risk and Monte Carlo analysis of options for IT projects and programs
- 3.1.7.1.4. Produce charts, spreadsheets, context diagrams, assumption based business models and other tools to support sound financial decision making around IT projects
- 3.1.7.1.5. Prepare budgets and cost estimates for IT initiatives
- 3.1.7.1.6. Work with IT programs to collect, normalize and harmonize financial, budget and program data across initiatives to allow for enterprise program visibility
- 3.1.7.1.7. Guide the work of business case analysts and documentation specialists

3.1.7.2. **Minimum Requirements**

- 3.1.7.2.1. Exceptional analytic, math and financial skills
- 3.1.7.2.2. Strong verbal and written communication skills
- 3.1.7.2.3. Experience in financial and business modeling
- 3.1.7.2.4. Bachelor's degree in Business, Finance, Economics or related field or equivalent experience
- 3.1.7.2.5. Experience using Microsoft Excel to perform advanced financial analysis
- 3.1.7.2.6. Familiarity with Word and PowerPoint
- 3.1.7.2.7. Proven ability to perform financial analysis in an IT environment

3.1.7.3. **Preferred Requirements**

- 3.1.7.3.1. Experience working with IT planning and working with development teams
- 3.1.7.3.2. Experience in with PeopleSoft Financials
- 3.1.7.3.3. Experience with Crystal Reports
- 3.1.7.3.4. Experience with Cognos
- 3.1.7.3.5. Experience in government IT budgeting and financial tracking
- 3.1.7.3.6. Experience in the transit industry

3.1.7.4. **Experience Levels**

3.1.7.4.1. Senior level, ten (10) or more years' experience (Financial Expert)

APPLICATIONS DEVELOPMENT AND OPERATIONS (APPS)

3.1.8. Application Systems Tester

3.1.8.1. Responsibilities

- 3.1.8.1.1. Evaluate and test - new or modified software programs and software development procedures used to verify program functions according to user requirements and conform to establishment guidelines
- 3.1.8.1.2. Write, revise and verify quality standards and test procedures for program design
- 3.1.8.1.3. Evaluate products to attain quality and status of software
- 3.1.8.1.4. Review new or modified programs and provide documentation, diagrams and flow charts to determine if the program will perform according to user requirements and guidelines
- 3.1.8.1.5. Recommend program improvements or corrections to programmers, review computer operating logs to identify program processing errors, and enter instructions into computer to test programs for validity of results, accuracy, reliability and conformance to establishment standards
- 3.1.8.1.6. Monitor systems during program testing to detect error codes or interruption of programs and correct errors
- 3.1.8.1.7. Identify differences between establishment standards and user applications and suggest modifications to conform to standards
- 3.1.8.1.8. Test programs to locate and correct program operating errors following installation of programs
- 3.1.8.1.9. Conduct compatibility tests with vendor-provided programs to monitor program performance and prevent reoccurrence of program operating problems, ensuring efficiency of operations
- 3.1.8.1.10. Provide documentation to describe program evaluation, testing and required corrections
- 3.1.8.1.11. Propose software or software enhancements for feasibility
- 3.1.8.1.12. Develop utility programs to test software, track and verify defects in software programs
- 3.1.8.1.13. Devise and/or modify procedures to solve complex problems regarding computer equipment capacity, limitations, operating time and desired results to meet WMATA's business needs
- 3.1.8.1.14. Prepare detailed specifications of application software packages
- 3.1.8.1.15. Design, code, test, debug, document and maintain complex applications
- 3.1.8.1.16. Write programs to create new procedures or modify existing procedures

3.1.8.2. Minimum Requirements

- 3.1.8.2.1. Bachelor's degree in Computer Science or related field with coursework in such areas as mathematics, statistics, accounting, and/or business administration
- 3.1.8.2.2. Experience in all phases of Application Life Cycle Management including systems analysis, design, coding, testing, debugging, implementation and maintenance

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.1.8.2.3. Experience in development, deployment and enforcement of quality assurance procedures and standards
- 3.1.8.2.4. Experience in developing test criteria, test plans and conducting application testing with expert level experience in designing, implementing and documenting test plans and test cases
- 3.1.8.2.5. Experience in using, maintaining and administration of HP Quick Test Pro and Quality Center with specific experience developing automated test scripts
- 3.1.8.2.6. Experience in developing load and stress testing scripts using LoadRunner
- 3.1.8.2.7. Ability to scope, plan and schedule activities related to software quality assurance, testing and configuration management
- 3.1.8.2.8. Knowledge and experience in of IT basics, including installing operating systems, ghosting/imaging, VMware, network troubleshooting, and the ability to analyze and troubleshoot operating system error logs
- 3.1.8.2.9. Strong understanding of internet technologies (web servers, application servers, JavaScript, HTML, XML, web services)
- 3.1.8.2.10. Experience with PeopleSoft HR/Payroll or Finance modules with specific experience testing PeopleSoft applications

#### 3.1.8.3. **Experience Levels**

- 3.1.8.3.1. Mid-level, with four (4) to seven (7) years' experience
- 3.1.8.3.2. Senior level, with eight (8) or more years' experience

### 3.1.9. **Database Administrator**

#### 3.1.9.1. **Responsibilities**

- 3.1.9.1.1. Plan, organize and implement projects in support of WMATA's growing information demands
- 3.1.9.1.2. Ensure the effective use of WMATA resources
- 3.1.9.1.3. Contribute to policies for effective process planning as it relates to new requirements
- 3.1.9.1.4. Expert knowledge of the SQL environment with particular emphasis on planning, analysis, design and implementation of reports and report interfaces intended for the end user
- 3.1.9.1.5. Participate in short-term tactical planning implementation
- 3.1.9.1.6. Contribute to long-term strategic planning

#### 3.1.9.2. **Minimum Requirements**

- 3.1.9.2.1. Proficient in the development of business information interfaces
- 3.1.9.2.2. Expert knowledge of SQL
- 3.1.9.2.3. Experienced with large volumes of data
- 3.1.9.2.4. Knowledge of OLTP & OLAP and Oracle SQL Servers
- 3.1.9.2.5. Understanding of standard AIX, Linux Tools and PHP
- 3.1.9.2.6. Excellent verbal and written communication skills

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

3.1.9.2.7. Ability to represent WMATA's interests to other contractors

3.1.9.2.8. Bachelor degree in Computer Science

3.1.9.3. **Preferred Requirements**

3.1.9.3.1. Hold an advanced degree in Computer Science

3.1.9.4. **Experience Levels**

3.1.9.4.1. Senior level, eight (8) or more years' experience (Senior DBA)

### 3.1.10. Information Systems Support Specialist

3.1.10.1. **Responsibilities**

3.1.10.1.1. Provide full user support for WMATA's standard application software in order to meet needs

3.1.10.1.2. Conduct training in order to develop WMATA personnel's skills in the operations and capabilities of applications and systems

3.1.10.1.3. Implement system security measures such as backups, access control, system accounting and disaster recovery in order to maintain system integrity and availability

3.1.10.1.4. Install and configure internal hardware components such as memory, disk and tape drives in multi-user, personal computers (PCs) and WMATA servers in order to maintain or enhance system operation and capabilities

3.1.10.1.5. Perform troubleshooting and fault isolation on PCs, servers, LANs or related system components in simple configurations in order to maintain system availability

3.1.10.2. **Minimum Requirements**

3.1.10.2.1. Experience troubleshooting computer problems (hardware and/or software)

3.1.10.2.2. Associate degree from an accredited educational institution in Computer Science, Information Systems or a directly related field

3.1.10.3. **Preferred Requirements**

3.1.10.3.1. Bachelor's degree from an accredited educational institution in Computer Science, Information Systems or a directly related field

3.1.10.4. **Experience Levels**

3.1.10.4.1. Level 1: one (1) to three (3) years' experience (Search Engine Administrator, Application Administrator, System Administrator, Active Directory Administrator, Server Administrator, Desktop Technicians, UNIX Administrator, and NMS Administrator, Information System Support)

3.1.10.4.2. Level 2: four (4) to seven (7) years' experience (Search Engine Administrator, Application Administrator, System Administrator, Active Directory

Administrator, Server Administrator, UNIX Administrator, and NMS Administrator, Information Systems Support Specialist)

3.1.10.4.3. Level 3: eight (8) or more years' experience (Senior System Administrator)

### 3.1.11. ROCS Group Client/Server Consultant

#### 3.1.11.1. Responsibilities

- 3.1.11.1.1. Coordinate with IT Rail Operations Computer Support (ROCS) projects with project management, engineering, maintenance, QA, and risk management
- 3.1.11.1.2. Plan, coordinate, and monitor IT ROCS project activities
- 3.1.11.1.3. Develop technical applications to support users
- 3.1.11.1.4. Develop, implement, maintain and enforce documented standards and procedures for the design, development, installation, modification, and documentation of assigned systems
- 3.1.11.1.5. Provide training for system products and procedures; Perform application upgrades
- 3.1.11.1.6. Perform, monitoring, maintenance, or reporting on real-time databases, real-time network and serial data communications, and real-time graphics and logic applications
- 3.1.11.1.7. Troubleshoot problems in SCADA systems
- 3.1.11.1.8. Maintain Automatic Train Supervisory System, Passenger Information Display System, Rail Performance Monitoring System, and predictors
- 3.1.11.1.9. Ensure project life-cycle is in compliance with WMATA standards and procedures

#### 3.1.11.2. Minimum Requirements

- 3.1.11.2.1. Experience with highly technical applications software development work in support of real-time information systems implemented in the Windows and UNIX environments
- 3.1.11.2.2. Senior-level professional knowledge with technical experience and project leadership in the design, development and maintenance of a real-time computer system critical to Rail Operations
- 3.1.11.2.3. Thorough knowledge of C/C++, system programming on UNIX and/or Windows Cluster on a high availability system designed for real-time processing
- 3.1.11.2.4. Experience in .NET programming languages, design, web technologies, web-based computing environments and testing methodologies
- 3.1.11.2.5. Knowledge of the full product life cycle with experience in requirements analysis, test plan and test case development
- 3.1.11.2.6. Experience using Visual Studio, .NET, VB.NET, XML/XSL and SQL
- 3.1.11.2.7. Strong Oracle, Microsoft SQL Server 2008/2012 skills with in-depth knowledge of Microsoft Windows Networking, ADS, Microsoft Clustering, TCP/IP, HTTP and Microsoft IIS
- 3.1.11.2.8. Experience in test automation and build management tools (Vault, etc.)

3.1.11.2.9. Relevant experience in a senior technical role

3.1.11.3. **Experience Levels**

3.1.11.3.1. Senior level, with six (6) or more years of progressively responsible experience in the development of large scale application systems in a client/server environment

3.1.12. **Oracle WebLogic Web Service Specialist**

3.1.12.1. **Responsibilities**

- 3.1.12.1.1. Install WebLogic on IBM AIX OS or other WMATA systems
- 3.1.12.1.2. Establish domains and clusters and cluster-to-cluster communications
- 3.1.12.1.3. Deploy Java applications
- 3.1.12.1.4. Create deployment plans
- 3.1.12.1.5. Install SSL Certifications
- 3.1.12.1.6. Monitor applications, employ hot deployments and understand how Java applications work at a high level
- 3.1.12.1.7. Mentor developers to ensure continuity of service and provide practical WebLogic administration, clustering and deployment techniques
- 3.1.12.1.8. Work with the production team and developers ensure best method for migration to WebLogic

3.1.12.2. **Minimum Requirements**

- 3.1.12.2.1. Five years of WebLogic system administration experience
- 3.1.12.2.2. Three years of web service design and development experience
- 3.1.12.2.3. Proficient with WebLogic installations, configuration, deployment, tuning, troubleshooting and SSL

3.1.12.3. **Experience Levels**

3.1.12.3.1. As this is a Senior Consultant position, candidates must be of the expert level, with five (5) or more years' experience in WebLogic administration

3.1.13. **Data Warehouse Specialist**

3.1.13.1. **Responsibilities**

- 3.1.13.1.1. Perform difficult and complex technical assignments regarding the modification and/or development of complex data warehousing initiatives to align information technology solutions with business initiatives
- 3.1.13.1.2. Contribute to the requirements analysis, data design, database architecture, metadata and repository creation for the data warehouse
- 3.1.13.1.3. Design and develop the most complex Extract-Transform-Load (ETL) processes for the data warehouse

- 3.1.13.1.4. Quality review data loaded into the warehouse
- 3.1.13.1.5. Trouble-shoot and tune existing data warehouse applications

3.1.13.2. **Minimum Requirements**

- 3.1.13.2.1. Eight (8) years related experience performing difficult and complex data engineering activities regarding the design and development of existing and new data marts
- 3.1.13.2.2. Demonstrated experience in Oracle data warehouse development
- 3.1.13.2.3. Complex ETL design and development experience using PL/SQL and ETL tools
- 3.1.13.2.4. Bachelor's degree in Computer Science/Systems, Information Systems/Technology, Engineering/Engineering Technology, Software Engineering/Programming
- 3.1.13.2.5. Experience with transit data warehousing is a plus

3.1.13.3. **Experience Levels**

- 3.1.13.3.1. Senior level, eight (8) or more years' experience

3.1.14. **Cognos Analyst/Developer**

3.1.14.1. **Responsibilities**

- 3.1.14.1.1. Analyze requirements for business intelligence reports and dashboards
- 3.1.14.1.2. Analyze data sources for mapping to Business Intelligence (BI) requirements
- 3.1.14.1.3. Work closely with customers to determine best approach for user community
- 3.1.14.1.4. Use Cognos Studios to develop reports, dashboards and widgets; create and execute test plans; coordinate lifecycle activities from development to production
- 3.1.14.1.5. Create and maintain Framework Manager Models to support requirements
- 3.1.14.1.6. Determine best approach for data delivery depending on data sources and requirements
- 3.1.14.1.7. Develop spreadsheets and Microsoft Access databases as needed to support interim strategies for data delivery

3.1.14.2. **Minimum requirements**

- 3.1.14.2.1. Bachelor's degree in Computer Science, Information Science, Engineering, or related discipline
- 3.1.14.2.2. Experience in business process analysis
- 3.1.14.2.3. Experience in data analysis
- 3.1.14.2.4. Experience in software requirements analysis
- 3.1.14.2.5. At least three years' experience using Cognos Studios and Framework Manager to create models and develop reports, dashboards and widgets
- 3.1.14.2.6. At least six months experience using the version of Cognos currently employed at WMATA



3.1.14.2.7. Excellent communication skills

3.1.14.3. **Preferred requirements**

3.1.14.3.1. Experience with one or more of the following systems: Maximo, PeopleSoft, PeopleSoft EPM, NextFare, Trapeze

3.1.14.3.2. Experience in the transit industry

3.1.14.4. **Experience levels**

3.1.14.4.1. Level 1: 3 to 5 years Cognos experience

3.1.14.4.2. Level 2: 5 to 7 years Cognos experience

3.1.14.4.3. Level 3: more than 7 years Cognos experience

3.1.15. **Cognos System Administrator**

3.1.15.1. **Responsibilities**

3.1.15.1.1. Maintain the Cognos software and server configuration according to WMATA standards and good industry practices, perform upgrades, patches, and installations

3.1.15.1.2. Coordinate with the Cognos Project Manager, Cognos Architect, database administrators and others to expeditiously troubleshoot service failures

3.1.15.1.3. Create and maintain appropriate monitoring procedures and reports

3.1.15.1.4. Manage the product migration from development to production

3.1.15.1.5. Provide clear, accurate communication regarding planned and unplanned, service outages according to WMATA standards

3.1.15.1.6. Create and maintain accurate, up-to-date documentation regarding the Cognos environment, standards, and procedures

3.1.15.1.7. Use Cognos Studios to develop reports, dashboards and widgets; create and execute test plans; coordinate lifecycle activities from development to production

3.1.15.1.8. Stay current on the latest Cognos components, upgrades, patches and releases

3.1.15.2. **Minimum requirements**

3.1.15.2.1. Bachelor's degree in Computer Science, Information Science, Engineering, or related discipline

3.1.15.2.2. Experience in Cognos system administration

3.1.15.2.3. Experience with server configuration for the Cognos environment;

3.1.15.2.4. Experience using the Cognos Studios to develop reports, dashboards, and widgets

3.1.15.2.5. Experience in software requirements analysis

3.1.15.2.6. At least six months experience using the version of Cognos currently employed at WMATA

3.1.15.2.7. Excellent communication skills

3.1.15.3. **Preferred requirements**

- 3.1.15.3.1. Experience with one or more of the following systems: Maximo, PeopleSoft, PeopleSoft EPM, NextFare, Trapeze
- 3.1.15.3.2. Experience in the transit industry

3.1.15.4. **Experience levels**

- 3.1.15.4.1. Senior level, with more than 7 years with main responsibility for Cognos system administration

### 3.2. TOG 2: MAINTENANCE AND MATERIALS MANAGEMENT (3Ms)

#### 3.2.1. Maintenance and Materials Management (3Ms) Developer

##### 3.2.1.1. Responsibilities

- 3.2.1.1.1. Analyze, design, develop, implement and support enterprise complex projects
- 3.2.1.1.2. Interface with other offices, consult with and inform user departments on system requirements, resolve problems and operating difficulties for the current and future enhancements to WMATA's system
- 3.2.1.1.3. Participate in problem resolution related to system design and implementation review
- 3.2.1.1.4. Recommend approval of functional and technical design documents and implementation of systems, program enhancements and updates of applications
- 3.2.1.1.5. Analyze and evaluate system changes to determine feasibility, alternative solutions and back-up procedures
- 3.2.1.1.6. Work on the development of new systems, upgrades and enhancements to existing systems and ensure systems are in compliance with approved standards
- 3.2.1.1.7. Develop complex programs and reports in database query language

##### 3.2.1.2. Minimum Requirements

- 3.2.1.2.1. Experience with report generators and user interface design
- 3.2.1.2.2. Experience with SQL statements tuning
- 3.2.1.2.3. Knowledge of theories, principles and standard practices in Intelligent Transportation System (ITS) as used in transit agencies, including certifying compliance of National ITS Architecture in the areas of maintenance, materials, purchasing and warehouse management
- 3.2.1.2.4. Knowledge of the methods, tools and techniques used to evaluate, select, develop, test, implement, integrate and troubleshoot systems software and hardware of all types
- 3.2.1.2.5. Knowledge of the functions of Maximo application modules and business processes including Work Management, Preventive Maintenance, Materials Management, Service Management, Asset Management, Purchasing, Contract Management, KPI and Workflow
- 3.2.1.2.6. Knowledge of Maximo database design
- 3.2.1.2.7. Experience with HTML, Java, Java 2 Enterprise Edition Technology (J2EE), JSP, Extensible Markup Language (XML), JavaScript, C++ and Object Oriented analysis and design, relational database programming and administration of programming/ application development systems
- 3.2.1.2.8. Knowledge of multi -tiered applications including web services, Maximo service-oriented architecture, database servers, application servers and report servers

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- 3.2.1.2.9. Extensive experience customizing Maximo Business Objects
- 3.2.1.2.10. Experience customizing Maximo UI and developing custom java class files for the User Interface (UI)
- 3.2.1.2.11. Experience developing Automation Scripts
- 3.2.1.2.12. Experience with Rules Manager
- 3.2.1.2.13. Understand implementation of IBM WebSphere on AIX or Windows platform
- 3.2.1.2.14. Comprehensive knowledge of Maximo design, setup, and administration, including administration module, security module, configuration module, financial module, application designer, workflow and Maximo applications cloning methodology
- 3.2.1.2.15. Graduate degree or equivalent from an accredited college or university with a Bachelor's degree in Management Information Science, Computer Science, Mathematics, Finance, Business or Public Administration, or related field
- 3.2.1.2.16. Demonstrated progressive responsibility with diversified technical level information systems and data processing management
- 3.2.1.2.17. Comprehensive knowledge and in-depth experience in one or more of these systems: Maximo and its integration tools, Bentley ORIM, FleetWatch, GOTRS and Warehouse Management systems

#### 3.2.1.3. **Preferred Requirements**

- 3.2.1.3.1. Knowledge of Data Warehouse design

#### 3.2.1.4. **Experience Levels**

- 3.2.1.4.1. Level 1: one (1) to three (3) years' experience
- 3.2.1.4.2. Level 2: four (4) to seven (7) years' experience
- 3.2.1.4.3. Level 3: eight (8) or more years' experience

### 3.2.2. **Maintenance and Materials Management (3Ms) Specialist**

#### 3.2.2.1. **Responsibilities**

- 3.2.2.1.1. Support Program and Project Management Tasks and document generation, as directed by the WMATA's Maximo Project Manager, to support WMATA SDLC methodology and various Asset Management related projects including, but not limited to: Maximo Warehouse Management, Maximo Functional Enhancements, Maximo High Availability, Maximo SCCD, Spatial, Single Sign-on, and Mobile
- 3.2.2.1.2. Provide expertise and guidance in Maximo data archiving strategy and warehouse management
- 3.2.2.1.3. Provide expertise and design in implementing Maximo high availability at all layers of the Maximo application
- 3.2.2.1.4. Provide design and implementation guidance in Maximo for IT based industry best practices
- 3.2.2.1.5. Provide both functional and technical Maximo support and process improvement

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.2.2.1.6. Analyze, design, develop, implement and support enterprise complex projects
- 3.2.2.1.7. Provide problem resolution to system design and implementations.
- 3.2.2.1.8. Review functional and technical design documents, and implement systems, program enhancements, and updates to applications
- 3.2.2.1.9. Provide quality assurance, quality control and risk management; schedule activities; work new systems and enhancements from development to production; and ensure compliance with approved standards
- 3.2.2.1.10. Provide business requirements analysis and data integration studies using Intelligent Transportation Standards (ITS)
- 3.2.2.1.11. Analyze and evaluate system changes to determine feasibility, alternative solutions and back-out procedures
- 3.2.2.1.12. Conduct cost/benefit analysis
- 3.2.2.1.13. Stay informed and provide guidance on current developments in the field of information technology
- 3.2.2.1.14. Present oral/written reports/recommendations
- 3.2.2.1.15. Provide and share knowledge of the methods, tools and techniques used to evaluate, select, develop, test, implement, integrate and troubleshoot systems software and hardware of all types
- 3.2.2.1.16. Manage projects as assigned
- 3.2.2.1.17. Prepare 3Ms responses to internal and external audits, and develop plans to implement audit recommendations
- 3.2.2.1.18. Provide Rules Management design and expertise
  
- 3.2.2.2. **Minimum Requirements**
  - 3.2.2.2.1. Experience and comprehensive knowledge must include Maximo 7.5, Transportation, Asset Configuration Manager, and Everyplace
  - 3.2.2.2.2. IBM Certified Advanced Deployment Professional - IBM Service Management Asset Management V5
  - 3.2.2.2.3. Experience with Maximo Mobile Solutions, Maximo Anywhere and Informer
  - 3.2.2.2.4. Experience with Maximo Smart Cloud Control Desk
  - 3.2.2.2.5. Solid understanding of IT Service Management business processes; and experience in implementing ITIL processes
  - 3.2.2.2.6. ITIL V3 Expert Level Certification
  - 3.2.2.2.7. Thorough knowledge of Maximo database design
  - 3.2.2.2.8. Comprehensive experience with HTML, Java, Java 2 Enterprise Edition Technology (J2EE), JSP, Extensible Markup Language (XML), JavaScript, C++ and Object Oriented analysis and design, relational database programming and Administration of Programming/ Application Development Systems
  - 3.2.2.2.9. Experience with multi-tiered applications including web services, Maximo service-oriented architecture, database servers, application servers and report servers
  - 3.2.2.2.10. Experience implementing IBM WebSphere on AIX or Windows platform
  - 3.2.2.2.11. Experience with Maximo design, setup and administration, including Administration Module, Security Module, Configuration Module, Financial

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- Module, Application Designer, Workflow and Maximo Applications Cloning Methodology
- 3.2.2.2.12. Comprehensive knowledge and experience integrating, purchasing, Documents Receipt Management and bus and rail mileage reimbursements
  - 3.2.2.2.13. Experience with Maximo Integration Framework (MIF), and Cron tasks setup, or data exchange programs
  - 3.2.2.2.14. Experience designating and implementing Maximo High Availability at all levels of the Maximo infrastructure (Database, Application, WebSphere...)
  - 3.2.2.2.15. Experience with Oracle Exadata Architecture
  - 3.2.2.2.16. Solid understanding and experience in IBM P7 and P8 hardware
  - 3.2.2.2.17. Experience with Maximo Disaster Recovery and IT Continuity of Operations
  - 3.2.2.2.18. Experience conducting cost/benefit analysis related to Maximo and its supporting systems
  - 3.2.2.2.19. Experience conducting business analyses, fit-gap analyses, and business process improvements related to Maximo
  - 3.2.2.2.20. Experience with Maximo Rules Manager
  - 3.2.2.2.21. Experience with best practices for license compliance using different Maximo licensing models utilizing available licenses, and predicting licensing needs
  - 3.2.2.2.22. Program and Project Management experience, including oversight of large programs
  - 3.2.2.2.23. Project Management Professional (PMP) certification
  - 3.2.2.2.24. Solid understanding of accounting and finance principles and recording of accounting transactions
  - 3.2.2.2.25. Solid understanding and experience with Enterprise Resource Planning (ERP) end-to-end business processes
  - 3.2.2.2.26. ERP Certification
  - 3.2.2.2.27. Experience integrating Maximo and PeopleSoft
  - 3.2.2.2.28. Experience integrating Maximo with Cognos
  - 3.2.2.2.29. Experience with Maximo security models for both end user connection as well as system integration
  - 3.2.2.2.30. Experience with Warehouse Management processes
  - 3.2.2.2.31. Experience and comprehensive knowledge of FastPic Architecture, its functionality, its data structure, and integration mechanisms
  - 3.2.2.2.32. Demonstrated Experience integrating Maximo and FastPic5
  - 3.2.2.2.33. Graduate degree or equivalent from an accredited college or university with a Bachelor's degree in Management Information Science, Computer Science, Mathematics, Finance, Business, Accounting or Public Administration, or related field
  - 3.2.2.2.34. Experience preparing responses to internal and external audits, and developing plans to implement audit recommendations
  - 3.2.2.2.35. At least ten (10) years of progressively responsible diversified technical experience with complex information systems and data processing management in a large organization
  - 3.2.2.2.36. Experience with multiple transit Agencies

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.2.2.2.37. Solid understanding of Transit business processes including, but not limited to Materials, Rail Car, Bus, and Service Vehicles Maintenance, Incident Management and Facility Management
- 3.2.2.2.38. Comprehensive knowledge and in-depth experience with the following systems: Maximo and its integration tools, Bentley ORIM, FleetWatch, GOTRS, RPM, and Warehouse Management

#### 3.2.2.3. **Preferred Requirements**

- 3.2.2.3.1. Experience implementing Maximo in different industries/markets
- 3.2.2.3.2. Knowledge of Data Warehouse design

### 3.2.3. **Maximo Integration Specialist**

#### 3.2.3.1. **Responsibilities**

- 3.2.3.1.1. Analyze, design, develop, implement and support complex enterprise projects
- 3.2.3.1.2. Work in conjunction with clients to resolve problems related to system design and implementation
- 3.2.3.1.3. Review functional and technical design documents, systems implementation, program enhancements and application updates
- 3.2.3.1.4. Provide quality assurance, quality control, risk management; and schedule activities
- 3.2.3.1.5. Work on the development-to-production of new systems and enhancements to existing systems
- 3.2.3.1.6. Ensure compliance with approved standards
- 3.2.3.1.7. Develop web services to integrate Maximo with other systems via Oracle ESB
- 3.2.3.1.8. Modify Web Service responses to meet technical designs and requirements
- 3.2.3.1.9. Provide business requirements analysis and data integration studies using Intelligent Transportation Standards (ITS)
- 3.2.3.1.10. Analyze and evaluate system changes to determine feasibility, alternative solutions and back-out procedures
- 3.2.3.1.11. Maintain and share current knowledge of developments in the field of information technology
- 3.2.3.1.12. Develop and present oral/written reports/recommendations within the areas of assigned responsibility and provide recommendations based on in-depth knowledge of the methods, tools and techniques used to evaluate, select, develop, test, implement, integrate, and troubleshoot systems software and hardware

#### 3.2.3.2. **Minimum Requirements**

- 3.2.3.2.1. Comprehensive knowledge and experience with Maximo Application Modules and business processes including Work Management, Preventive Maintenance, Materials Management, Service Management, Asset Management, Purchasing, Contract Management, KPI and Workflow
- 3.2.3.2.2. Comprehensive knowledge and experience with Maximo database design

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.2.3.2.3. Comprehensive knowledge and experience with Maximo MIF design, setup and administration, including JMS Queues Setup, MIF Configuration and customization using all available methods and tools (Exit Classes, Handlers, Processing Classes, XLS)
  - 3.2.3.2.4. Experience in developing inbound and outbound web services, using several available Maximo tools, including, but not limited to Web services based on object structures, enterprise services, published channels, Java, invocation channel, etc.
  - 3.2.3.2.5. Experience in modifying web service responses
  - 3.2.3.2.6. Experience with SOAP, REST, and OSLC
  - 3.2.3.2.7. Experience in utilizing Maximo Web Services with Oracle Enterprise Service Bus (ESB)
  - 3.2.3.2.8. Experience in integrating purchasing, Documents Receipt Management, and mileage processing
  - 3.2.3.2.9. Experience with multi-tiered applications including web services, Maximo service-oriented architecture, database servers, application servers and report servers
  - 3.2.3.2.10. Comprehensive knowledge and experience with the implementation of IBM WebSphere on AIX or Windows platform
  - 3.2.3.2.11. Experience with HTML, Java, Java 2 Enterprise Edition Technology (J2EE), JSP, Extensible Markup Language (XML), JavaScript, C++, object oriented analysis and design, relational database programming and administration of programming/application development systems
  - 3.2.3.2.12. At least ten (10) years of progressively responsible diversified technical experience with complex information systems and data processing management in a large organization
- 3.2.3.3. **Preferred Requirements**
- 3.2.3.3.1. Experience with multiple transit agencies
  - 3.2.3.3.2. Experience developing custom adapters to integrate external applications with Maximo

### **3.2.4. Maintenance and Materials Management (3Ms) Functional Specialist**

- 3.2.4.1. **Responsibilities**
- 3.2.4.1.1. Gather requirements, develop specifications, and functional design documents
  - 3.2.4.1.2. Conduct Fit Gap analyses
  - 3.2.4.1.3. Lead business improvement efforts; develop as-is business process and to-be business processes based on best practices in Transit Asset and Materials Asset Management
  - 3.2.4.1.4. Develop report and integration specifications to support to be business processes
  - 3.2.4.1.5. Develop test plans, test scenarios, and test scripts



## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- 3.2.4.1.6. Lead User Acceptance Testing (UAT) efforts
- 3.2.4.1.7. Develop training plans, and training material
- 3.2.4.1.8. Conduct training
- 3.2.4.1.9. Provide Maximo support for issue resolution

#### 3.2.4.2. **Minimum Requirements**

- 3.2.4.2.1. Comprehensive knowledge and experience with Maximo Application Modules and business processes including Work Management, Preventive Maintenance, Materials Management, Service Management, Asset Management, Purchasing, Contract Management, KPI, and Workflow
- 3.2.4.2.2. Maximo 7.5 certification required
- 3.2.4.2.3. Experience with Maximo Transportation and Maximo Asset Configuration Management
- 3.2.4.2.4. Experience with Transit Specific Assets Management processes - Assets include, Bus, Rail, Communications, Facilities, Service Vehicles, Communication Equipment, Bus Stops, etc.
- 3.2.4.2.5. Experience with Materials Management Processes
- 3.2.4.2.6. Experience with Maximo warranty processes
- 3.2.4.2.7. Experience with maintenance processes in multiple transit agencies
- 3.2.4.2.8. Experience managing large projects
- 3.2.4.2.9. At least ten (10) years of progressively responsible diversified technical experience with complex information systems and data processing management in a large organization

#### 3.2.4.3. **Preferred Requirements**

- 3.2.4.3.1. Experience with PeopleSoft ERP System

### 3.2.5. **Maintenance and Materials Management (3Ms) Engineer**

#### 3.2.5.1. **Responsibilities**

- 3.2.5.1.1. Install Maximo and all 3MS supporting software in Windows, AIX, and LINUX environments
- 3.2.5.1.2. Implement Maximo Security and Single Sign-on
- 3.2.5.1.3. Support Maximo High Availability Phase including: AIX, F5, WebSphere, IHS, MIF, BROS, and Database.
- 3.2.5.1.4. Administer Maximo development environments for: Maximo Functional Enhancements - Phase II, Maximo for IT, Data Archiving, Maximo High Availability, Asset Configuration Manager, GIS/Spatial, and Maximo Security and Single Sign-on.
- 3.2.5.1.5. Provide support for F5, AIX Scripting, monitor server performance and perform configuration/tuning of Maximo development environments.
- 3.2.5.1.6. Production issue resolution

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- 3.2.5.1.7. Advise and implement methods to proactively monitor Maximo infrastructure to increase/maintain system availability and optimal performance.
  - 3.2.5.1.8. Analyze and evaluate system changes to determine feasibility, alternative solutions and back-out procedures.
  - 3.2.5.1.9. Stay informed and share knowledge of current developments in the field of information technology
  - 3.2.5.1.10. Provide and share knowledge of the methods, tools and techniques used to evaluate, select, develop, test, implement, integrate and troubleshoot systems software and hardware of all types
- 3.2.5.2. **Minimum Requirements**
- 3.2.5.2.1. Comprehensive knowledge and experience with Maximo 7.5, Transportation, Asset Configuration Manager, Everyplace, and Maximo Smart Cloud Control Desk
  - 3.2.5.2.2. IBM Certified Advanced Deployment Professional - IBM Service Management Asset Management V5
  - 3.2.5.2.3. IBM Maximo Asset Management V7.5 Infrastructure Implementation required
  - 3.2.5.2.4. Experience with Maximo mobile solutions, Maximo Anywhere and Informer
  - 3.2.5.2.5. Comprehensive experience with HTML, Java, Java 2 Enterprise Edition Technology (J2EE), JSP, Extensible Markup Language (XML), JavaScript, C++ and object oriented analysis and design, relational database programming and administration of programming/ application development systems
  - 3.2.5.2.6. Experience integrating Maximo security and single sign-on
  - 3.2.5.2.7. Maximo Security related certification
  - 3.2.5.2.8. Expert level knowledge with software applications including IBM AIX, Windows servers, IBM WebSphere, IBM HTTP Server, IBM Plug-in, Apache Web Server, Apache mod\_proxy, Tomcat Servlet/JSP Engine, WASadmin script, Python script and JavaScript
  - 3.2.5.2.9. Experience implementing IBM WebSphere on AIX in a multi cell, multi node federated model. IBM WebSphere Administration Certification required
  - 3.2.5.2.10. Experience with Maximo Integration Framework (MIF) setup in a highly available environment
  - 3.2.5.2.11. Experience with Maximo Rules Manager
  - 3.2.5.2.12. Experience with Maximo security models for both end user connection and system integrations
  - 3.2.5.2.13. Experience with multiple Transit Agencies
  - 3.2.5.2.14. Experience implementing Maximo High Availability at all levels of the Maximo infrastructure (Database, Application, WebSphere...)
  - 3.2.5.2.15. Experience with Maximo Disaster Recovery
  - 3.2.5.2.16. Solid understanding and experience with network layers and Maximo communication (including F5)
  - 3.2.5.2.17. Network related certification
  - 3.2.5.2.18. Experience automating administrative tasks
  - 3.2.5.2.19. Scripting certification
  - 3.2.5.2.20. Experience with AIX administration

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- 3.2.5.2.21. At least ten (10) years of progressively responsible diversified technical experience with complex information systems and data processing management in a large organization
- 3.2.5.2.22. Bachelor's degree in Management of Information Systems (MIS), Computer Science, Mathematics, Finance, Business, Accounting, Public Administration or related field

### 3.2.6. Maintenance and Materials Management (3Ms) Data Specialist

#### 3.2.6.1. Responsibilities

- 3.2.6.1.1. Perform data mapping and data conversion for: Maximo Functional Enhancements – Phase II, Bus Stop and GIS Integration, and FastPic5 and Maximo Integration
- 3.2.6.1.2. Design and implement database high availability and real time fail over for the Maximo database and application servers
- 3.2.6.1.3. Implement Maximo data archiving
- 3.2.6.1.4. Configure EXADATA to support Maximo High Availability project; support Rail and Bus related integrations such as FleetWatch, OrbCad, and RPM System administration (AIX, scripting, SAN administration) and database administration and support on Oracle 11g and 12c
- 3.2.6.1.5. Provide both functional and technical Maximo support and process improvement
- 3.2.6.1.6. Develop and maintain Maximo integrations including, but not limited to mileage processing, RPM, and PeopleSoft
- 3.2.6.1.7. Develop advanced Maximo migration scripts during upgrades to minimize downtime

#### 3.2.6.2. Minimum Requirements

- 3.2.6.2.1. Comprehensive knowledge and experience with Maximo 7.5, Transportation, Asset Configuration Manager, and Everyplace
- 3.2.6.2.2. Expert knowledge and experience in Maximo table structure and meta data
- 3.2.6.2.3. Experience developing migration scripts for Maximo upgrades
- 3.2.6.2.4. Experience with automating Maximo Administrative tasks such as error handling
- 3.2.6.2.5. IBM Certified Deployment Professional - Maximo Asset Management V7 Certification
- 3.2.6.2.6. Expertise in Maximo, WebSphere, and Oracle architectures
- 3.2.6.2.7. Expert knowledge of Oracle Development and administration
- 3.2.6.2.8. Oracle Certified Professional (OCP) 11g Certification
- 3.2.6.2.9. Experience with Oracle 12C new features
- 3.2.6.2.10. Experience with Oracle advanced techniques & products including, but not limited to: Data Guard, Active Data Guard, RAC, Golden Gate, and application continuity
- 3.2.6.2.11. Experience with Database High Availability concepts leveraging Oracle EXADATA

**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY**

**SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.2.6.2.12. Experience with FastPic5 data structure and database
- 3.2.6.2.13. Experience with enterprise systems related to transit such as: GOTRS, RPM, PeopleSoft, SCADA, and FleetWatch
- 3.2.6.2.14. Experience with TRM Rules Manager
- 3.2.6.2.15. Advanced level AIX usage and administration
- 3.2.6.2.16. Experience with PL/SQL
- 3.2.6.2.17. At least ten (10) years of progressively responsible diversified technical experience with complex information systems and data processing management in a large organization
- 3.2.6.2.18. Bachelor's degree in Management of Information Science (MIS), Computer Science, Mathematics, Finance, Business, Accounting, Public Administration or related field

### 3.3. TOG 3: PEOPLESOFT ERP APPLICATION DEVELOPMENT AND OPERATIONS

#### 3.3.1. PeopleSoft Enterprise Resource Planning (ERP) Product Expert

##### 3.3.1.1. Responsibilities

- 3.3.1.1.1. Provide in-depth knowledge and experience with specific PeopleSoft products or families of enterprise applications, such as PeopleSoft modules, and associated applications interface technologies
- 3.3.1.1.2. Develop standards and best practices for the use of enterprise products and applications
- 3.3.1.1.3. Determine of technical inadequacies and deficiencies that affect functional area's ability to meet organizational goals
- 3.3.1.1.4. Work with information technology professionals to provide insight and advice to senior managers and executives, concerning the strategic direction and applicability of enterprise-based products
- 3.3.1.1.5. Create technical strategies for enhanced operations to improve productivity across WMATA
- 3.3.1.1.6. Educate WMATA staff with regard to product-specific best practices
- 3.3.1.1.7. Participate in technical assessments and reviews to validate the technical approach and associated work product, such as ERP implementations
- 3.3.1.1.8. Provide guidance and direction to other professionals, and act in a consulting or advisory capacity
- 3.3.1.1.9. Coordinate resolution of highly complex problems and tasks
- 3.3.1.1.10. Operate under the pressure of deadlines

##### 3.3.1.2. Minimum Requirements

- 3.3.1.2.1. Ten (10) years of General IT experience including formal training and two (2) years' experience in Business Process Re-engineering (BPR) methods, plus formal training and one (1) year experience in enterprise applications
- 3.3.1.2.2. Possess technical area expertise to assess the operational and/or technical baseline of an organization as specifically associated with its functional components
- 3.3.1.2.3. Bachelor's degree in Computer Science/Systems, Information Systems/Technology, Engineering/Engineering Technology, Software Engineering/Programming, Management, Natural Sciences, Mathematics or Business/Finance. Experience requirements may be substituted with a Master's degree (in subjects described above) and six (6) years' experience; a PhD Degree (in subjects described above) and four (4) years of General IT experience. Three (3) years of additional applicable experience may substitute for a Bachelor's degree

3.3.1.3. **Experience Level**

- 3.3.1.3.1. Expert level, with ten (10) years of General IT experience, including formal training, and two (2) years' experience in BPR methods, plus formal training and one (1) year experience in enterprise applications

3.3.2. **Senior PeopleSoft ERP Product Specialist**

3.3.2.1. **Responsibilities**

- 3.3.2.1.1. Assess, select, manage and implement enterprise application components to ensure that technical solutions solve the business problem and meet functional baselines
- 3.3.2.1.2. Brief senior managers and end users on applications integration/functionality within WMATA
- 3.3.2.1.3. Determine technology inadequacies and deficiencies that affect organizational goals
- 3.3.2.1.4. Provide technical strategies that will improve productivity across functional areas within WMATA
- 3.3.2.1.5. Educate WMATA staff with regard to product-specific best practices
- 3.3.2.1.6. Lead enterprise applications integration efforts and oversee the validation of associated work product
- 3.3.2.1.7. Ensure accuracy of services to meet established deadlines

3.3.2.2. **Minimum Requirements**

- 3.3.2.2.1. Six (6) years of General IT experience including formal training and two (2) years' experience in BPR methods, plus formal training and one (1) year experience in enterprise applications
- 3.3.2.2.2. Expertise in enterprise application implementation with specific PeopleSoft ERP products, across functional business areas within an organization
- 3.3.2.2.3. Bachelor's degree in Computer Science/Systems, Information Systems/Technology, Engineering/Engineering Technology, Software Engineering/Programming, Management, Natural Sciences, Mathematics or Business/Finance. Experience requirements may be substituted with a Master's degree (in subjects described above) and four (4) years' experience; a PhD Degree (in subjects described above) and two (2) years of General IT experience. Three (3) years of additional applicable experience may substitute for a Bachelor's degree

3.3.2.3. **Experience Levels**

- 3.3.2.3.1. Expert level, with six (6) or more years of General IT experience including formal training and two (2) years' experience in BPR methods, plus formal training and one (1) year experience in enterprise applications

3.3.3. Senior PeopleSoft Analyst/Designer

3.3.3.1. Responsibilities

- 3.3.3.1.1. Plan tasks, assign resources to the task, monitor and track progress, and ensure project management is aware of all project activities
- 3.3.3.1.2. Perform business and technical analyst functions, including workshop facilitation, business process data validation, PeopleSoft product testing from a functional business area perspective, program development, unit testing of PeopleSoft application code from a technical perspective, work group/work session participation, and delivery of technical and business solutions
- 3.3.3.1.3. Implement databases resulting from business systems planning and data requirements planning
- 3.3.3.1.4. Provide for systems development and database administration groups for future business strategies as seen from a data point of view
- 3.3.3.1.5. Provide analysis of enterprise information system baseline and perform a "gap analysis" between the baseline, the user's operational requirements, and the operating capability of enterprise application product sets
- 3.3.3.1.6. Perform business and technical designer functions, including contributing to both the business and technical architecture components of enterprise solutions; supporting functional area business process specialists and experts; supporting architecture, product and technology specialists and experts; and assessing enterprise solution products for accuracy and consistency
- 3.3.3.1.7. Provide guidance to WMATA's staff regarding enterprise management

3.3.3.2. Minimum Requirements

- 3.3.3.2.1. Six (6) years of General IT experience, including formal training and two (2) years' experience in enterprise applications and/or including formal training and one (1) year experience in databases such as ORACLE, M204 and SYBASE
- 3.3.3.2.2. Bachelor's degree in Computer Science/Systems, Information Systems/Technology, Engineering/Engineering Technology, Software Engineering/Programming, Management, Natural Sciences, Mathematics or Business/Finance. Experience requirements may be substituted with a Master's degree (in subjects described above) and four (4) years' experience; a PhD Degree (in subjects described above) and two (2) years of General IT experience. Three (3) years of additional applicable experience may substitute for a Bachelor's degree

3.3.3.3. Experience Levels

- 3.3.3.3.1. Expert level, with six (6) or more years of General IT experience, including formal training and two (2) years' experience in enterprise applications and/or including formal training and one (1) year experience in databases such as ORACLE, M204 and SYBASE

3.3.4. Senior PeopleSoft Modeler/Developer

3.3.4.1. Responsibilities

- 3.3.4.1.1. Support the delivery of technical and business solutions based upon enterprise applications (PeopleSoft products based)
- 3.3.4.1.2. Work independently to develop enterprise-based programs of medium to high complexity
- 3.3.4.1.3. Develop, integrate and deploy enterprise solutions
- 3.3.4.1.4. Support ERP Analysts, Designers, Business Specialists and Architectural Experts with enterprise applications programming and workshops
- 3.3.4.1.5. Document required training and user support efforts to produce business solution models, technical work products, unit-test codes, instructional courseware, data structures, user interfaces, documentation and enhanced logical processes that will effectively utilize enterprise applications
- 3.3.4.1.6. Provide daily supervision and direction to support staff and ensure accuracy of the work
- 3.3.4.1.7. Operate under deadlines

3.3.4.2. Minimum Requirements

- 3.3.4.2.1. Experience with General IT requirements
- 3.3.4.2.2. Experience with enterprise applications
- 3.3.4.2.3. Experience with databases such as ORACLE, M204, SYBASE, INFORMIX and DB2
- 3.3.4.2.4. Bachelor's degree in Computer Science/Systems, Information Systems/Technology, Engineering/Engineering Technology, Software Engineering/Programming, Management, Natural Sciences, Mathematics or Business/Finance. Experience requirements may be substituted with a Master's degree (in subjects described above) and four (4) years' experience; a PhD Degree (in subjects described above) and two (2) years of General IT experience. Three (3) years of additional applicable experience may substitute for a Bachelor's degree

3.3.4.3. Experience Levels

- 3.3.4.3.1. Six (6) or more years of General IT experience comprising of the following:
  - Minimum one (1) year experience in enterprise applications and/or including formal training
  - Minimum two (2) years' experience in enterprise applications and/or including formal training
  - Minimum one (1) year experience in databases such as ORACLE, M204, SYBASE, INFORMIX and DB2



3.3.5. PeopleSoft Senior Developer

3.3.5.1. Responsibilities

- 3.3.5.1.1. Troubleshoot technical issues related to the programming or programs used by PeopleSoft, such as Peoplecode, Crystal, nVision, App Engine, App Messaging, SQR and all other technologies used and/or supported by PeopleSoft
- 3.3.5.1.2. Customize code when required to enhance systems or to fix the vendor's code
- 3.3.5.1.3. Develop complex routines in the form of bolt-on code to supplement PeopleSoft ERP to interface with other systems whether internal or external
- 3.3.5.1.4. Create technical design diagrams and present proposed solutions in design and code reviews. Keep up with new PeopleSoft development tools for programming technologies
- 3.3.5.1.5. Work with other developers and functional analysts to determine the best technical approaches

3.3.5.2. Minimum Requirements

- 3.3.5.2.1. Ten (10) years of PeopleSoft programming experience with all development technologies including, but not limited to Peoplecode, Query Manager, SQL, Crystal, nVision, App Engine, App Messaging, and SQR
- 3.3.5.2.2. Bachelor's degree, Master's degree, or a PhD in Computer Science/Systems, Information Systems/Technology, Engineering/Engineering Technology, Software Engineering/Programming, Management, Natural Sciences, Accounting, Mathematics or Business/Finance
- 3.3.5.2.3. Education requirements may be substituted with three (3) additional years of applicable experience

3.3.5.3. Experience Levels

- 3.3.5.3.1. Senior Level, with at least ten (10) years of General IT experience and the ability to work independently with no supervision

3.3.6. PeopleSoft Functional Analyst

3.3.6.1. Responsibilities

- 3.3.6.1.1. Troubleshoot functional or business process issues related to specific or designated modules within the PeopleSoft ERP
- 3.3.6.1.2. Translate product/module configuration to respective PeopleSoft users, IT staff and IT Management
- 3.3.6.1.3. Configure or reconfigure PeopleSoft for implementation purposes or to support WMATA's business processes
- 3.3.6.1.4. Develop complex queries for reporting purposes
- 3.3.6.1.5. Create functional design diagrams and present proposed solutions in the form of design reviews

**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY**

**SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.3.6.1.6. Work with other functional analysts and developers to determine the best technical approach. Learn new functionality and features of PeopleSoft as new versions are released and educate the user community
- 3.3.6.1.7. Prepare requirements documents and report mockups
- 3.3.6.1.8. Develop training materials
  
- 3.3.6.2. **Minimum Requirements**
  - 3.3.6.2.1. Five (5) years of PeopleSoft functional experience that includes product configuration, requirements gathering, and the developing of training materials
  - 3.3.6.2.2. Bachelor's degree. Education requirements may be substituted with three (3) years of additional applicable experience
  
- 3.3.6.3. **Experience Levels**
  - 3.3.6.3.1. Expert Level, with at least five (5) years of General IT experience and the ability to work independently with little or no supervision

### 3.4. TOG 4: NETWORK AND COMMUNICATIONS

#### 3.4.1. Senior Network Engineer

##### 3.4.1.1. Responsibilities

- 3.4.1.1.1. LAN and WAN Network design
- 3.4.1.1.2. Router/switch configuration
- 3.4.1.1.3. Network diagnostics
- 3.4.1.1.4. Evaluate technological alternatives
- 3.4.1.1.5. Propose technology platform and architecture
- 3.4.1.1.6. Support implementation
- 3.4.1.1.7. Estimate costs and resources
- 3.4.1.1.8. Manage projects and resources
- 3.4.1.1.9. Prepare presentations for executive management

##### 3.4.1.2. Minimum Requirements

- 3.4.1.2.1. Must have experience in the integration of wireless technologies to next-generation MPLS networks
- 3.4.1.2.2. Knowledge and experience with networking fundamentals including configuring switch ports and controller interfaces
- 3.4.1.2.3. Knowledge and experience with network infrastructure and protocols (proprietary, IMS and IP), and latest LAN/WAN/ISP protocols (MPLS, BGP, SIP), as well as latest-generation routers, telecommunications switches, and other ancillary equipment applicable to the planned data/telecommunications environment
- 3.4.1.2.4. Written communication skills including ability to author client communications, Statements of Work and strategic analyses
- 3.4.1.2.5. Public speaking and presentation skills and the ability to communicate effectively throughout all levels of an organization
- 3.4.1.2.6. Minimum 5-10 years project management experience in a client service environment
- 3.4.1.2.7. Proficiency in formal project management methods, including internal documentation and external communications
- 3.4.1.2.8. Demonstrated ability to accurately project timing and associated costs across a range of project types, scales, and complexities
- 3.4.1.2.9. Knowledge of electrical power systems design and implementation
- 3.4.1.2.10. First-hand oversight experience on Voice over IP (VoIP) technical development efforts
- 3.4.1.2.11. First-hand experience designing and managing CISCO network applications
- 3.4.1.2.12. Ability to quantify the differences between commonly used applications and technologies, and speak to their merits
- 3.4.1.2.13. Demonstrated ability to produce required contract deliverables on schedule and within budget

- 3.4.1.2.14. Knowledge and proficiency with CISCO network products and services
- 3.4.1.2.15. CCIE certification

3.4.1.3. **Experience Levels**

- 3.4.1.3.1. Minimum 15-20 years of network/communications LAN and WAN engineering, including demonstrated experience in the design, deployment and documentation of complex data networks for indoor and outdoor mission critical systems utilizing CISCO products

3.4.2. **Senior Wireless Network Engineer**

3.4.2.1. **Responsibilities**

- 3.4.2.1.1. Designing Wireless LAN and WAN Networks
- 3.4.2.1.2. Router/switch configuration
- 3.4.2.1.3. Network diagnostics
- 3.4.2.1.4. Evaluating technological alternatives
- 3.4.2.1.5. Proposing technology platforms and architecture
- 3.4.2.1.6. Supporting implementation
- 3.4.2.1.7. Estimating costs and resources
- 3.4.2.1.8. Managing resources and projects
- 3.4.2.1.9. Preparing presentations for executive management

3.4.2.2. **Minimum Requirements**

- 3.4.2.2.1. Knowledge and experience with Radio Frequency (RF) fundamentals including radio wave propagation; antenna concepts and theory; modulation types and interference causes and resolution
- 3.4.2.2.2. Knowledge and experience with integration of wireless technologies to next-generation MPLS networks
- 3.4.2.2.3. Knowledge and experience with IEEE 802.11 standards including 802.11a, 802.11b, 802.11g, 802.11i and 802.11n
- 3.4.2.2.4. Understanding of all wireless security practices and fundamentals covered in 802.11i
- 3.4.2.2.5. Knowledge and experience with deploying and configuring CISCO Wireless LAN Controllers
- 3.4.2.2.6. Knowledge and experience with configuring switch ports and controller interfaces and overall networking related tasks
- 3.4.2.2.7. Knowledge and experience with designing and implementing a CISCO 802.11 a/b/g/n network infrastructure to support various 802.11 clients
- 3.4.2.2.8. Knowledge and experience with establishing a Network Monitoring System for the 802.11 a/b/g/n wireless network infrastructure to provide real time status of wireless performance in terms of throughput and coverage
- 3.4.2.2.9. Knowledge and experience with analyzing and remediating wireless interference, coverage and throughput issues

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- 3.4.2.2.10. Knowledge and experience with Proxim wireless AP system configuration and architecture
  - 3.4.2.2.11. Knowledge and experience with performing an RF analysis to identify RF sources of interference that affect performance
  - 3.4.2.2.12. Knowledge and experience with conducting wireless site surveys for CISCO 802.11 a/b/g/n Wi-Fi infrastructure deployments and direct experience resolving interference issues
  - 3.4.2.2.13. First-hand experience in designing and developing wireless networks for mission critical systems
  - 3.4.2.2.14. Written communication skills including ability to author client communications, Statements of Work, and strategic analyses
  - 3.4.2.2.15. Public speaking and presentation skills with the demonstrated ability to communicate effectively throughout all levels of an organization
  - 3.4.2.2.16. Minimum 5 years project management experience in a client service environment
  - 3.4.2.2.17. Knowledge and proficiency with CISCO network products and services
  - 3.4.2.2.18. CCIE certification
- 3.4.2.3. **Experience Levels**
- 3.4.2.3.1. Minimum 5-10 years of Wireless Network LAN and WAN engineering, including demonstrated experience in the design, deployment and documentation of complex wireless data networks for indoor and outdoor mission critical systems utilizing CISCO products

## DATA CENTER AND INFRASTRUCTURE

### 3.4.3. Senior Solutions Engineer

#### 3.4.3.1. Responsibilities

- 3.4.3.1.1. Assisting project leadership in designing project approach, establishing a technical direction and plan, and directing developers
- 3.4.3.1.2. Writing specifications that will meet business needs and legal requirements, and comply with applicable standards
- 3.4.3.1.3. Building and managing implementation plans for projects
- 3.4.3.1.4. Responding to questions from clients and analyzing what-if scenarios
- 3.4.3.1.5. Writing and reviewing technical and design documents
- 3.4.3.1.6. Providing change management procedures and standards to define and implement various types of security (hardware, software, OS level, etc.)
- 3.4.3.1.7. Collaborating with IT infrastructure specialists to leverage infrastructure capabilities and expertise in optimizing designs and applications
- 3.4.3.1.8. Screening and mentoring team members
- 3.4.3.1.9. Creating test quality assurance plans
- 3.4.3.1.10. Managing change requests and problem reports

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.4.3.1.11. Managing Business Process Management implementation
- 3.4.3.1.12. Supporting .NET Framework preferably in C+/C++
- 3.4.3.1.13. Managing Service Oriented Architecture (SOA) and web service design and implementation; XML technologies: XSD, XSL; T-SQL, SQL Server Reporting Services; BizTalk Implementation; SharePoint Implementation; Web Security Experience: SAMC, Federated ID Management; JavaScript; DHTML; AJAX and HTML/CSS

#### 3.4.3.2. **Minimum Requirements**

- 3.4.3.2.1. Bachelor's degree from an accredited university
- 3.4.3.2.2. Systems and network support experience
- 3.4.3.2.3. Intermediate skills in computer technology, including network infrastructure, security, telecommunications, software applications, IP operations, PC and laptop hardware and peripherals
- 3.4.3.2.4. Advanced and refined computer and software troubleshooting skills
- 3.4.3.2.5. Strong, proactive client-service ethic
- 3.4.3.2.6. Certification in network operating system(s) (MCSE) and messaging systems
- 3.4.3.2.7. Experience supporting users in Microsoft Windows Server and Microsoft Exchange Server environments
- 3.4.3.2.8. Background in financial systems support
- 3.4.3.2.9. Communication skills and demonstrable experience making non-technical users comfortable with technology concepts
- 3.4.3.2.10. Strong time management and detail-oriented organizational skills

#### 3.4.3.3. **Experience Levels**

- 3.4.3.3.1. Senior level, with nine (9) or more years' experience

### 3.4.4. **Senior Helpdesk Technician (HDT)**

#### 3.4.4.1. **Responsibilities**

- 3.4.4.1.1. In conjunction with other internal IT support staff, provide first and second level technical support and troubleshooting for the staff and contractors (on-site and remote) who are our client base
- 3.4.4.1.2. Conduct diagnostics and evaluations to determine solutions and alternatives by answering questions, requests and work orders; supporting workstations and related hardware and software used within WMATA and at client sites; and ensure timely IT and AV provisioning for WMATA conferences and meetings
- 3.4.4.1.3. Create and manage escalation procedures
- 3.4.4.1.4. Ensure service levels are maintained across all of IT
- 3.4.4.1.5. Develop and maintain accurate service delivery management and monitoring tools and processes

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- 3.4.4.1.6. Ensure sound development of the enterprise-wide desktop hardware and software standards and enforce the established standards, as well as administer appropriate desktop hardware and software asset management
- 3.4.4.1.7. Manage all maintenance and support services related to desktops, laptops, printers, scanners, telecommuting technologies and monitors
- 3.4.4.1.8. Participate in the planning, installation, operation and maintenance of WMATA-wide desktop software, including workstation operating systems, off-the-shelf products (e.g. Microsoft Office, Project, Visio, Outlook) and desktop management tools
- 3.4.4.1.9. Oversee all client hardware/software purchase requests
- 3.4.4.1.10. Collaborate with the IT leadership team to select and implement cost-effective technology for WMATA
- 3.4.4.1.11. Work with IT infrastructure team to develop and implement IT strategic and operational plans
- 3.4.4.1.12. Work with enterprise technical architecture in planning, installation, operation and maintenance of all desktop hardware
- 3.4.4.1.13. Plan and coordinate large-scale application and hardware deployments
  
- 3.4.4.2. **Minimum Requirements**
  - 3.4.4.2.1. Bachelor's degree from an accredited university
  - 3.4.4.2.2. Experience in a commercial IT environment with over 5,000 users
  - 3.4.4.2.3. Intermediate skills in computer technology, including network infrastructure, security, telecommunications, software applications, IP operations, PC and laptop hardware and peripherals
  - 3.4.4.2.4. Advanced and refined computer and software troubleshooting skills
  - 3.4.4.2.5. Strong, proactive client-service ethic
  - 3.4.4.2.6. Manufacturer certification in network operating system(s) (MCSE) and messaging systems
  - 3.4.4.2.7. Experience supporting users in Microsoft Windows Server and Microsoft Exchange Server environments
  - 3.4.4.2.8. Some background in financial systems support
  - 3.4.4.2.9. Demonstrable experience making non-technical users comfortable with technology concepts
  - 3.4.4.2.10. Proficient time management skills and detail-oriented organizational skills
  - 3.4.4.2.11. Provide customer-oriented results and build an efficient end-user support environment
  - 3.4.4.2.12. Have a solid understanding of and ability to utilize performance metrics
  - 3.4.4.2.13. Comfortable with rapid changes in direction and environment
  - 3.4.4.2.14. Able to analyze and resolve complex technical problems over a wide variety of systems
  - 3.4.4.2.15. Proficient with Windows 2007 server environments and Active Directory
  - 3.4.4.2.16. Knowledge of Microsoft Office Suite
  - 3.4.4.2.17. Proven success in coordinating and leading activities
  - 3.4.4.2.18. Excellent written and verbal communication skills

3.4.4.3. **Experience Levels**

- 3.4.4.3.1. Level 1: one (1) to five (5) years' experience
- 3.4.4.3.2. Level 2: five (5) to seven (7) years' experience
- 3.4.4.3.3. Level 3: seven (7) or more years' experience

3.4.5. **Infrastructure Project Manager (PM)**

3.4.5.1. **Responsibilities**

- 3.4.5.1.1. Provides thought leadership and plans, directs and oversees the execution of the User Support Center, tiered support technicians, infrastructure and customer service tools and systems required to support the Authority's Users of information processing systems, networks and end-user computing systems
- 3.4.5.1.2. Responsible for customer satisfaction with the services and responsiveness of the IT User Support Center in meeting the daily needs of the user community
- 3.4.5.1.3. Responsible for continuous improvement of operational performance against committed service level objectives and evaluation and adaptation of service technology required to provide efficient, effective, and superior service
- 3.4.5.1.4. Responsible for organizational fiscal performance against established budgetary plan and the development, maintenance and promotion of department documentation and training
- 3.4.5.1.5. Prepare, execute and manage a detailed PC deployment plan
- 3.4.5.1.6. Mitigate and/or resolve any issues to ensure that the deployment schedule, strategy and detailed plan are met and fulfilled
- 3.4.5.1.7. Manage, orchestrate and maintain high quality activities and/or tasks related to the scheduling, staging and delivery of PC systems to the end user
- 3.4.5.1.8. Prepare and execute detailed deployment readiness procedures for the IT Coordinators and end users
- 3.4.5.1.9. Prepare detailed deployment execution procedures and train the deployment team
- 3.4.5.1.10. Manage deployment team resources; maintain and update quality of deployment procedures
- 3.4.5.1.11. Mitigate and/or resolve any issues that may arise in the delivery of PC systems to the end user, including coordination with IT Coordinators, Training and Communications, Helpdesk support staff, Server team, Network team, PC Provisioning team, Notes teams, etc.
- 3.4.5.1.12. Provide daily, weekly and monthly status reports on project progress including inventory levels - delivered, issues and resolutions
- 3.4.5.1.13. Ensure that PCs delivered to and retrieved from users are recorded and tracked
- 3.4.5.1.14. Manage and orchestrate end-to-end ordering, delivery and inventory maintenance of PC systems from the vendor



## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- 3.4.5.1.15. Document project progress, issues encountered, resolutions and lessons learned
- 3.4.5.1.16. Provide comprehensive report at project completion
  
- 3.4.5.2. **Minimum Requirements**
  - 3.4.5.2.1. Highly skilled IT professional capable of working collaboratively, but demonstrating independent judgment and decision-making to achieve stated tasks
  - 3.4.5.2.2. Knowledge and experience with Microsoft XP and MS Office 2007
  - 3.4.5.2.3. Knowledge and experience with PC imaging and package installation
  - 3.4.5.2.4. Experience with writing and executing PC deployment plans
  - 3.4.5.2.5. Experience in leading large deployment teams and coordinating deployment efforts in multiple locations within a large organization
  
- 3.4.5.3. **Experience Levels**
  - 3.4.5.3.1. Senior level - PMP Certification, 5-6 years of experience, degree in Computers or Mathematics or other closely related science, 3+ years' experience in Notes and Windows administration and user support, experience in managing PC deployment projects, with both hardware and operating system upgrades in an enterprise environment, self-motivated, detail oriented, exceptionally organized in order to prioritize a heavy workload and maintain an exceptional level of accuracy in protecting IT systems and information. Must have excellent interpersonal skills, be willing to work in a team environment and be client-oriented. Must have a minimum 5-10 years of project and client management experience, including demonstrated ability in building relationships, and cultivating them over time; a minimum 5-10 years team management experience, including leadership of a large (10+ person) cross- competency team across a suitable range of project types (tech- heavy, design-intensive, etc.) and industry verticals

### 3.5. TOG 5: INTERNET, INTRANET SERVICES

#### 3.5.1. Web Developer

##### 3.5.1.1. Responsibilities

- 3.5.1.1.1. Provide technical web development services to support content and applications on the WMATA Public Internet/Intranet
- 3.5.1.1.2. Design web interfaces, including page layout design and concept
- 3.5.1.1.3. Select, enhance or create appropriate illustrative materials
- 3.5.1.1.4. Ensure consistency, accuracy and compliance with WMATA standards
- 3.5.1.1.5. Maintain internal posting of policies, forms and related data as provided
- 3.5.1.1.6. Utilize standard web applications such as HTML, Cold Fusion, JavaScript, etc. to automate and integrate web page creations
- 3.5.1.1.7. Utilize tools such as Adobe Acrobat and Photoshop to create and publish PDFs and graphic images

##### 3.5.1.2. Minimum Requirements

- 3.5.1.2.1. A minimum of three years' experience in mid to large organization working on major IT web-based initiatives
- 3.5.1.2.2. A combination of education and training that demonstrates the ability to perform the duties and responsibilities
- 3.5.1.2.3. Progressively responsible experience in the conceptualization, design and production of graphic design and web User interfaces (UIs)

##### 3.5.1.3. Preferred Requirements

- 3.5.1.3.1. Advanced coursework in graphic design and web design
- 3.5.1.3.2. Expert proficiency in ColdFusion with the ability to design and maintain ColdFusion applications and pages

##### 3.5.1.4. Experience Levels

- 3.5.1.4.1. Senior Web Developer, with eight (8) or more years' experience

3.5.2. Web Application Developer

3.5.2.1. Responsibilities

- 3.5.2.1.1. Perform all phases of the software development life-cycle, including application design, programming and testing (unit and system level)
- 3.5.2.1.2. Debug application code
- 3.5.2.1.3. Prepare internal code documentation
- 3.5.2.1.4. Provide after-hours support for various applications on a rotating schedule

3.5.2.2. Minimum Requirements

- 3.5.2.2.1. Five years of hands-on experience designing and developing modern web applications using the following technologies: C+/C++, ASP.NET 4 (and above), ASP.NET MVC 4, ADO.NET, Web Services (WCF), JavaScript, jQuery, AJAX, ADO.Net and HTML
- 3.5.2.2.2. Three years of experience with C#, ASP.NET, Java, and OS scripting (VBS, BAT, and PowerShell)
- 3.5.2.2.3. Five years of experience developing scalable, testable, n-tier web applications
- 3.5.2.2.4. 2+ years of experience with ORMs including LINQ to SQL and Entity Framework (4.0+)
- 3.5.2.2.5. 2+ years of experience with Silverlight 3+ development
- 3.5.2.2.6. Project-based experience developing applications using Microsoft SQL Server (2008+) and Oracle (11gR2+)
- 3.5.2.2.7. Project-based experience that demonstrates ability to write complex queries, stored procedures, and functions using T-SQL (Microsoft SQL Server) and PL/SQL (Oracle)
- 3.5.2.2.8. A minimum of two years' experience with TDD; experience must be with one or more of the following testing frameworks and common testing libraries: Microsoft Unit Test Framework (MS-Test), NUnit, Moq, and Microsoft Fakes
- 3.5.2.2.9. Experience configuring IIS 7+ and Apache web servers and a working knowledge of F5/ISA load balancers/caches
- 3.5.2.2.10. Two years of experience with bug tracking and continuous integration software such as Bamboo, JIRA, Jenkins, Cruise Control .NET, and HP Quality Center

3.5.2.3. Preferred Requirements

- 3.5.2.3.1. Experience with one or more JavaScript MVC/MVVM frameworks (KnockoutJS, Backbone, AngularJS, etc.)
- 3.5.2.3.2. Experience developing mobile friendly websites and applications using one or more mobile application frameworks (jQuery Mobile, PhoneGap, Sencha Touch, etc.)
- 3.5.2.3.3. Knowledge of and execution of design principles/tools
- 3.5.2.3.4. Java/Android application development experience
- 3.5.2.3.5. Project-based experience in the development of web applications with complex business rules that support multiple, concurrent business processes

3.5.2.4. **Experience Levels**

- 3.5.2.4.1. Level 1: three (3) to four (4) years' experience as a web application developer, in addition to a Bachelor's degree in Computer Science or related technical discipline
- 3.5.2.4.2. Level 2: five (5) to six (6) years' experience as a web application developer, in addition to a Bachelor's degree in Computer Science or related technical discipline
- 3.5.2.4.3. Level 3: seven (7) or more years' experience as a web applications developer, in addition to a Master's degree in Computer Science or related technical discipline

3.5.3. **Web Software Engineer**

3.5.3.1. **Responsibilities**

- 3.5.3.1.1. Apply an enterprise-wide set of disciplines for the planning, design, and construction of business applications
- 3.5.3.1.2. Perform process and data modeling in support of planning and analysis efforts, using tools such as UML
- 3.5.3.1.3. Apply appropriate disciplines to develop migration plans and strategies

3.5.3.2. **Minimum Requirements**

- 3.5.3.2.1. Increasing levels of responsibility for information systems planning, design, functional and data requirements specification, and application programming
- 3.5.3.2.2. A Master's degree in Computer Science, Information Systems, Engineering or related technical discipline
- 3.5.3.2.3. At least three (3) relevant professional certifications
- 3.5.3.2.4. At least five (5) years of experience with process and data modeling
- 3.5.3.2.5. At least three years of experience with Test Driven Development (TDD) using accepted frameworks such as Microsoft Unit Test Framework, NUnit, Moq, and Microsoft Fakes
- 3.5.3.2.6. Two years of experience with bug tracking and continuous integration software such as Bamboo, JIRA, Jenkins, Cruise Control .NET, and HP Quality Center

3.5.3.3. **Preferred Requirements**

- 3.5.3.3.1. Experience in systems analysis, design and programming using UML, CASE, and IE Tools in a web application development environment
- 3.5.3.3.2. Proven managerial and supervisory skills demonstrated by having lead Software development project team for a minimum of 3-5 developers

3.5.3.4. **Experience Levels**

- 3.5.3.4.1. Level 1: three (3) to four (4) years of relevant experience (junior)
- 3.5.3.4.2. Level 2: five (5) to seven (7) years of relevant experience (mid-level)

3.5.3.4.3. Level 3: eight (8) or more years of relevant experience (senior)

### 3.5.4. Senior IT Specialist

#### 3.5.4.1. Responsibilities

- 3.5.4.1.1. Provide technical leadership on one or more high-level development, testing, integration, implementation, and/or engineering tasks within a large, complex application development project
- 3.5.4.1.2. Perform complex analytical tasks, develop key application modules, design database structures, manage data migration planning and execution, oversee testing and debugging
- 3.5.4.1.3. Provide after-hours support for various applications on a rotating schedule.

#### 3.5.4.2. Minimum Requirements

- 3.5.4.2.1. A minimum of six (6) years of progressive technical experience in a development team lead role in web application development projects of moderate or greater complexity
- 3.5.4.2.2. Bachelor's degree in Information Systems, Computer Science, Engineering, Computational Science, Mathematics, Physics, or relevant STEM field
- 3.5.4.2.3. At least one (1) technical certification in an area that is relevant to web application design and development
- 3.5.4.2.4. Five years of hands-on experience designing and developing modern web applications using the following technologies: C+/C++, ASP.NET 4 (and above), ASP.NET MVC 4, ADO.NET, Web Services (WCF), JavaScript, jQuery, AJAX, ADO.Net and HTML
- 3.5.4.2.5. Three years of experience with C#, ASP.NET, Java, and OS scripting (VBS, BAT, and PowerShell)
- 3.5.4.2.6. Five years of experience developing scalable, testable, n-tier web applications
- 3.5.4.2.7. 2+ years of experience with ORMs including LINQ to SQL and Entity Framework (4.0+)
- 3.5.4.2.8. 2+ years of experience with Silverlight 3+ development
- 3.5.4.2.9. Project-based experience developing applications using Microsoft SQL Server (2008+) and Oracle (11gR2+)
- 3.5.4.2.10. Project-based experience writing complex queries, procedures, and functions using T-SQL (Microsoft SQL Server) and PL/SQL (Oracle)
- 3.5.4.2.11. Extensive experience with TDD; must include expertise with one or more of the following testing frameworks and common testing libraries: Microsoft Unit Test Framework (MS-Test), NUnit, Moq, and Microsoft Fakes
- 3.5.4.2.12. Experience configuring IIS 7+ and Apache web servers and a working knowledge of F5/ISA load balancers/caches
- 3.5.4.2.13. Two years of experience with bug tracking and continuous integration software such as Bamboo, JIRA, Jenkins, Cruise Control .NET, and HP Quality Center
- 3.5.4.2.14. Certification as a Scrum Master

3.5.4.3. **Preferred Requirements**

- 3.5.4.3.1. Experience with one or more JavaScript MVC/MVVM frameworks (KnockoutJS, Backbone, AngularJS, etc.)
- 3.5.4.3.2. Experience developing mobile friendly websites using one or more mobile application frameworks (jQuery Mobile, PhoneGap, Sencha Touch, etc.)
- 3.5.4.3.3. Knowledge and execution of design principles/tools
- 3.5.4.3.4. Java/Android application development experience
- 3.5.4.3.5. Project-based experience in development of web applications with complex business rules that support multiple, concurrent business processes
- 3.5.4.3.6. Experience with HP Quality Center and LoadRunner
- 3.5.4.3.7. 4 years of experience managing a client relationship on a web application development project

3.5.4.4. **Experience Levels**

- 3.5.4.4.1. Level 1: Six (6) to Seven (7) years of relevant technical experience and four (4) years of managerial experience and a Bachelor's degree
- 3.5.4.4.2. Level 2: Eight (8) or more years of relevant technical experience and five (5) or more years of managerial experience and a Master's degree

3.5.5. **Senior Business Analyst**

3.5.5.1. **Responsibilities**

- 3.5.5.1.1. Lead the analysis of business processes and concept of operations (con ops) definition for web-based applications
- 3.5.5.1.2. Use process modeling tools and techniques to document the As-Is and To-Be automated functions
- 3.5.5.1.3. Document the functional requirements of the business application, including preparing detailed use cases and screen flow sequence diagrams using Visio and similar tools
- 3.5.5.1.4. Prepare detailed user interface design specifications
- 3.5.5.1.5. Prepare detailed test strategies, test plans and test cases, based on the functional specifications
- 3.5.5.1.6. Participate in application testing
- 3.5.5.1.7. Support User Acceptance Testing (UAT) by creating test cases, test plans and tools to capture test results
- 3.5.5.1.8. Prepare and maintain end user documentation and end user training materials

3.5.5.2. **Minimum Requirements**

- 3.5.5.2.1. Three (3) years of experience creating end user documentation for complex web-based applications

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.5.5.2.2. Responsibility for the entire business analysis function on a complex web application development project, including responsibility for managing a team of at least two (2) business analysts
- 3.5.5.2.3. A minimum of two years of experience with HP Quality Center, Test Director, and Load Runner
- 3.5.5.2.4. Experience creating functional requirements and UI design specifications for mobile applications that run on all major mobile platforms
- 3.5.5.2.5. A minimum of five (5) years of professional experience as a business analyst using process documentation and requirements tools such as UML, use case diagrams, flow diagrams, etc.
- 3.5.5.2.6. At least three (3) years of experience in a senior team lead role on a complex web application development project
- 3.5.5.2.7. A Bachelor's degree in Information Systems, Computer Science, Business, or Engineering

#### 3.5.5.3. **Preferred Requirements**

- 3.5.5.3.1. Two years of experience with bug tracking and continuous integration software such as Bamboo, JIRA, Jenkins, Cruise Control .NET
- 3.5.5.3.2. Certification as a Scrum Master

#### 3.5.5.4. **Experience Levels**

- 3.5.5.4.1. Level 1: five (5) to six (6) years of relevant experience and a Bachelor's degree
- 3.5.5.4.2. Level 2: seven (7) or more years of relevant experience, team leadership experience and a Bachelor's degree

### 3.5.6. **Web Designer**

#### 3.5.6.1. **Responsibilities**

- 3.5.6.1.1. Design and create graphics for use in WMATA website and intranet applications
- 3.5.6.1.2. Design web interfaces, including page layouts and graphical comps
- 3.5.6.1.3. Work with web program manager to conceptualize, design, and implement on a broad range of web design projects
- 3.5.6.1.4. Operate effectively as a member of the web development team to ensure consistency, accuracy, and compliance with WMATA branding, style guide, and technical standards

#### 3.5.6.2. **Minimum Requirements**

- 3.5.6.2.1. Proficient in Adobe Photoshop/Illustrator
- 3.5.6.2.2. Strong knowledge and experience with HTML and CSS
- 3.5.6.2.3. Online portfolio with multiple examples of interactive design
- 3.5.6.2.4. Experience in a web development environment

3.5.6.3. **Preferred Requirements**

- 3.5.6.3.1. Bachelor's degree in Graphic Design, Web Design, or related field, or equivalent combination of education and experience
- 3.5.6.3.2. Advanced coursework in graphic design and web design

3.5.6.4. **Experience Levels**

- 3.5.6.4.1. Senior level, eight or more years (Senior Web Designer)

**3.5.7. SharePoint Developer**

3.5.7.1. **Responsibilities**

- 3.5.7.1.1. Administer, troubleshoot, and update SharePoint 2010 Intranet site (80+ department websites; 5,000+ users)
- 3.5.7.1.2. Evaluate customer requirements and provide effective/advanced SharePoint solutions
- 3.5.7.1.3. Maintain and support SharePoint server farm environments (Dev, QA, Prod).
- 3.5.7.1.4. Provide after-hours support as necessary

3.5.7.2. **Minimum Requirements**

- 3.5.7.2.1. Experience configuring medium to large SharePoint 2007/2010 farm environments
- 3.5.7.2.2. Experience managing and migrating an enterprise level website from SharePoint 2007 to 2010
- 3.5.7.2.3. Experience troubleshooting and fixing server issues including redundancy, database mirroring, high availability, failover, and authentication

3.5.7.3. **Preferred Requirements**

- 3.5.7.3.1. Bachelor's degree in IT related field, or equivalent combination of education and experience (Junior and Mid-level)
- 3.5.7.3.2. Master's degree in IT related field, or equivalent combination of education and experience (Senior)
- 3.5.7.3.3. Microsoft SharePoint Certification
- 3.5.7.3.4. Experience with Microsoft SharePoint 2013

3.5.7.4. **Experience Levels**

- 3.5.7.4.1. Mid-level, with 4 to 7 years (Mid-level SharePoint Developer)
- 3.5.7.4.2. Senior level, with eight or more years (Senior SharePoint Developer)

**3.5.8. Mobile Application Specialist**

3.5.8.1. **Responsibilities**



## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.5.8.1.1. Perform full life cycle development of complex mobile apps in native languages and/or hybrid frameworks
- 3.5.8.1.2. Provide technical expertise in mobile application development to technical team
- 3.5.8.1.3. Collect mobile app requirements and demonstrate developed mobile apps
- 3.5.8.1.4. Review and contribute to mobile app standards
  
- 3.5.8.2. **Minimum Requirements**
  - 3.5.8.2.1. Five (5) years related experience performing difficult and complex mobile app development with technologies listed under experience required
  - 3.5.8.2.2. Expertise in:
    - Languages: XHTML5, HTML5, CSS3, JavaScript, Java, C+/C++, .NET
    - Frameworks: Java Android SDK, Phonegap /Apache Cordova, Visual Studio, Eclipse, Xcode
    - Oracle SQL
    - Google maps and/or GIS ESRI Mobile SDK
  - 3.5.8.2.3. Demonstrate mobile apps that have been developed by him/her on either on Google Play (Android) or Windows Store or Apple Store
  - 3.5.8.2.4. Bachelor's degree in Computer Science, Computer Engineering, or related field. Experience developing transit mobile applications is a plus
  - 3.5.8.2.5. Excellent written and verbal communication skills
  - 3.5.8.2.6. Excellent analytical and problem solving skills
  
- 3.5.8.3. **Experience Levels**
  - 3.5.8.3.1. Senior level, with six (6) or more years' experience

**3.6. TOG 6: GEOGRAPHIC INFORMATION SYSTEMS (GIS)****3.6.1. GIS Manager****3.6.1.1. Responsibilities**

- 3.6.1.1.1. Perform a broad range of administrative, technical and managerial tasks necessary for the development and operation of Metro's Geographic Information System, including but not limited to ensuring state-of-the-art database management and technology, applying general goal and policy statements, and resolving organizational and product delivery problems
- 3.6.1.1.2. Work with managers, staff, and contractors throughout Metro in the design, development and implementation of GIS and related products
- 3.6.1.1.3. Manage design and implement production standards and procedures for development of GIS databases and products; Formulate and recommend policies and procedures for integration of GIS services with other Metro departments, governmental jurisdictions, and agencies; represent WMATA GIS in negotiating interdepartmental and inter-jurisdictional data agreements to assure development of GIS with maximum benefit to users
- 3.6.1.1.4. Represent GIS to user committees, and initiate related coordination and cooperative efforts to advance the implementation of GIS
- 3.6.1.1.5. Administer and manage GIS operations, including software and hardware acquisition, standards compliance, system and database administration, and related system analysis and programming
- 3.6.1.1.6. Supervise professional and technical consultants, and contractors; assign, schedule, and coordinate workloads in accordance with project requirements and priorities; provide performance evaluation and necessary corrective action
- 3.6.1.1.7. Prepare comprehensive reports of GIS development and activities to Executive Leadership Team (ELT) and other departments; prepare, and monitor section budget and expenditures; and prepare of required governmental records and reports
- 3.6.1.1.8. Research new developments and applications in GIS; implement strategic directions for WMATA's GIS; and evaluate GIS capacity and requirements. Develop creative solutions to enhance GIS development through data modeling and conversion; application development; system interfaces; equipment configurations and software changes

**3.6.1.2. Minimum Requirements**

- 3.6.1.2.1. ArcGIS enterprise management experience showing the following knowledge, skills, and abilities, as required for the task/assignment
- 3.6.1.2.2. Knowledge and experience with the principles, theories and methods of management as applied to Geographic Information Systems
- 3.6.1.2.3. Knowledge and experience of GIS principles, concepts, practices, and emerging issues; spatial data management concepts and structures; current

developments, trends, and technologies within the GIS field; structure, systems, and functions of local governments

3.6.1.2.4. Knowledge and experience of principles and methods of budget preparation, monitoring, and forecasting; project, procurement, and personnel management; solving problems related to complex enterprise GIS management; and coordination of systems, functions, and personnel to meet user needs and produce cost-effective products

3.6.1.2.5. Ability to relate project planning, applications development, spatial database administration, and system requirements with the creation of products and services. Development and implementation of GIS policies and procedures, data analysis and recommended courses of action

3.6.1.3. **Preferred Requirements**

3.6.1.3.1. Experience with GIS transit, transportation, and asset management modeling and applications

3.6.1.3.2. Familiarity with public rail and bus transit, para-transit, and related support operations

3.6.1.4. **Experience Levels**

3.6.1.4.1. Twelve (12) years' progressively responsible experience in large-scale, diversified geographic information system, including experience in managing data processing, technical, or architecture initiatives. This requirement includes ten (10) years progressively responsible GIS project management experience, and six (6) years progressively responsible GIS program management experience

3.6.1.4.2. Education may be substituted for relevant experience as follows: Master's degree in Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for two (2) years of relevant experience. Bachelor's degree in Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for one (1) year of relevant experience

3.6.2. **GIS Architect**

3.6.2.1. **Responsibilities**

3.6.2.1.1. Research, evaluate, manage and implement a broad range of enterprise GIS design, planning, implementation, administration, and evaluation tasks related to GIS architectural design deployment, and operation; enterprise GIS system design and specifications; enterprise GIS operations planning and system administration; geographic data modeling; geographic data and database management; GIS applications and web service definition, design and specifications; GIS project planning, scoping, and cost estimation; and GIS data publishing

3.6.2.1.2. May include a broad range of tasks related to or involved in defining, designing, planning, implementing, administering or evaluating project metrics

3.6.2.2. **Minimum Requirements**

- 3.6.2.2.1. Proven enterprise ArcGIS architect experience
- 3.6.2.2.2. Knowledge, skills and abilities in principles, practices, and tools for designing and managing enterprise GIS architectures, including service-oriented architecture products and web enterprise architectures, in the context of large-scale, complex enterprise IT architectures
- 3.6.2.2.3. Knowledge, skills and abilities in principles, practices, and tools for needs analysis, business process analysis (BPA) and business process reengineering (BPR), strategic planning, implementation planning, and logical design as they relate to enterprise GIS integration and deployment
- 3.6.2.2.4. Knowledge, skills and abilities in principles and practices of geographic information management and information technology systems, including systems design and development
- 3.6.2.2.5. Knowledge, skills and abilities in ESRI GIS 9x software product line, including ArcServer Advanced Enterprise; ArcGIS desktop and all extensions; mobile GIS products, and developer tools; and Oracle, Oracle Spatial, and ArcSDE-Oracle interface and interoperability issues and techniques
- 3.6.2.2.6. Knowledge, skills and abilities in principles, practices, and tools of geographic data modeling, database design and implementation, and data documentation, especially as applied to transportation and transit operations and management
- 3.6.2.2.7. Knowledge, skills and abilities in principles, practices and tools for GIS system design in the context of large scale, complex, enterprise IT systems, especially as applied to transportation and transit operations and management. Skill with relevant development tools and programming languages for environment, including database design and development, web application development, and enterprise applications integration middleware
- 3.6.2.2.8. Knowledge, skills and abilities in standards, principles, practices and tools for geographic data and metadata maintenance, QA/QC, and documentation, and their incorporation into GIS architectures, systems, databases, applications, and operations
- 3.6.2.2.9. Knowledge, skills and abilities in geographic information management and geographic information technologies, including major computer systems development, and computer hardware and software
- 3.6.2.2.10. Knowledge, skills and abilities in all phases of GIS project management and lifecycle development, including Commercial Off-the-Shelf Software (COTS) evaluation and vendor selection, and formal project management methods

3.6.2.3. **Preferred Requirements**

- 3.6.2.3.1. Familiarity with public rail and bus transit, para-transit, and related support operations
- 3.6.2.3.2. Experience with GIS transit, transportation and asset management modeling and applications

3.6.2.4. **Required Education**

3.6.2.4.1. Bachelor's degree from an accredited college or university in Computer Science, Geography, or related field

**3.6.2.5. Experience Levels**

3.6.2.5.1. Expert level, with twelve (12) years' progressively responsible experience in large-scale, diverse and complex geographic information system, data processing management, and technical or architecture initiatives, and

3.6.2.5.2. Ten (10) years GIS project management experience, and

3.6.2.5.3. Six (6) years designing or implementing GIS enterprise architectures, including service-oriented architectures, framework data architectures and web enterprise architectures, and

3.6.2.5.4. Education may be substituted for relevant experience as follows: Master's degree in a relevant discipline such as Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for two (2) years' experience. Bachelor's degree in a relevant discipline such as Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for one (1) year experience

**3.6.3. Geographic Information System (GIS) Administrator**

**3.6.3.1. Responsibilities**

3.6.3.1.1. Implement, manage, and maintain GIS software, network infrastructure, database, applications and computer systems; interpret, analyze, recommend and implement geographic information systems; install and implement computer software application programs and systems for user departments; assist application developers and GIS analysts to deliver GIS datasets, GIS applications and services

3.6.3.1.2. Implement, manage and maintain a versioned, distributed geodatabase environment; provide support for multi-user-editing of GIS data transaction processes

3.6.3.1.3. Manage ArcGIS products serving production feeds, administer Oracle databases and manage GIS web services, develop and support new GIS solutions, and incorporating hardware and software solutions within the GIS architecture

3.6.3.1.4. Design, develop, implement, maintain and monitor GIS databases, databases schemas, tables, views, documentation, and reports

3.6.3.1.5. Create custom ESRI enhanced databases using Oracle running on Windows

3.6.3.1.6. Manage user logins, backups, archives, SDE loading and tuning, patches, troubleshooting, and data sharing

3.6.3.1.7. Resolve highly complex database integrity, access and use issues

3.6.3.1.8. Recommend changes to systems, standards and specifications

3.6.3.1.9. Resolve multi-dimensional client and technical issues

3.6.3.1.10. Provide GIS web service design, development, implementation, maintenance, and documentation; expansion, testing, and upgrading; monitoring, security

and troubleshooting; license management; and server maintenance for web data

3.6.3.2. **Minimum Requirements**

- 3.6.3.2.1. Proven enterprise ArcGIS administration experience
- 3.6.3.2.2. Possess knowledge, skills and abilities in ArcGIS Server administration, Oracle database administration and administration of related products in Windows/Oracle 11g environment
- 3.6.3.2.3. Possess knowledge, skills and abilities in administration of ArcServer and related products, including ArcGIS services and related web mapping applications and full ArcMap desktop suite and other primary applications
- 3.6.3.2.4. Proficient in relevant programming languages applicable to GIS; Datum's, projections, and coordinate reference systems; networks and linear referencing systems, and geocoding techniques
- 3.6.3.2.5. Experience in creation, implementation and maintenance of geo databases and shape files
- 3.6.3.2.6. Experience in personal, file and SDE geo database creation, implementation, versioning, and maintenance; geo referencing layers; data conversion; raster and grid storage, compression, and distribution; and spatial and network analysis
- 3.6.3.2.7. Experience in managing an enterprise GIS system with a versioned, distributed geodatabase environment; experience in creating, maintaining versions and replications of an enterprise SDE database

3.6.3.3. **Experience Levels**

- 3.6.3.3.1. Eight (8) or more years GIS applications system administration experience, including three (3) years task management and self-supervisory experience
- 3.6.3.3.2. Education may be substituted for relevant experience as follows: Master's degree in a relevant discipline such as Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for two (2) years' experience
- 3.6.3.3.3. Bachelor's degree in a relevant discipline such as Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for one (1) year experience

3.6.4. **GIS Application Developer**

3.6.4.1. **Responsibilities**

- 3.6.4.1.1. Plan, develop, enhance and support GIS software, database and web applications, interfaces, productivity tools, desktop tools, and server and client utilities and operations in the context of WMATA's enterprise GIS
- 3.6.4.1.2. May involve any or all of the duties described in the GIS Analyst position description

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.6.4.1.3. Integrate the enterprise GIS with other enterprise systems consistent with WMATA's enterprise architecture
- 3.6.4.1.4. Develop, support, update, and perform GIS desktop, server and mobile applications and administrative processes in various business areas
- 3.6.4.1.5. Provide support, analysis, or management services in the specialties of application system administration, database administration, web administration, or data management

#### 3.6.4.2. **Minimum Requirements**

- 3.6.4.2.1. Proven enterprise ArcGIS application development experience
- 3.6.4.2.2. Knowledge, skills, ability and proficiency with relevant ArcGIS and Oracle products, data structures, architectures, development tools and environments, and relational database management systems
- 3.6.4.2.3. Considerable knowledge, skills, ability and proficiency with relevant programming languages, programming tools, and development platforms to support geo-relational application and data development. Experience in a managed data environment, including relational databases and storage area networks
- 3.6.4.2.4. Considerable knowledge, skills, ability and proficiency with software development methodologies and project management methodologies and practices
- 3.6.4.2.5. Proven ESRI GIS application development experience showing the knowledge, skills and abilities needed for the specific task assignment

#### 3.6.4.3. **Experience Levels**

- 3.6.4.3.1. Six (6) years of GIS application development experience using functional and non-functional requirements within a specified architecture, or with development of server jobs and tools for the maintenance of large, complex enterprise GIS, GIS databases or GIS applications; two (2) years' task management and self-supervisory experience; including progressive experience in managing complex tasks
- 3.6.4.3.2. Education may be substituted for development experience as follows: Master's degree in a relevant discipline such as Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for two (2) years of GIS application development experience. Bachelor's degree in Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for one (1) year of GIS application development experience

### 3.6.5. **GIS Data Coordinator**

#### 3.6.5.1. **Responsibilities**

- 3.6.5.1.1. Manage the provision of GIS data products online and in hardcopy, related metadata and web service documentation
- 3.6.5.1.2. Design, create, and deliver GIS training courses and materials

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.6.5.1.3. Publish GIS web content on WMATA intranet and public website
  - 3.6.5.1.4. Create content and edit GIS web services data
  - 3.6.5.1.5. Maintain and publish GIS metadata, and documentation relating to GIS web services
  - 3.6.5.1.6. Design, test, and administer of spatial data QA, QC, and quality audit tasks and applications
  - 3.6.5.1.7. Create content, provisioning of WMATA GIS maps and other products in accordance with WMATA standards and policies
  - 3.6.5.1.8. Design, produce, and convert GIS products to desktop publishing formats such as Adobe Portable Document Format (PDF), Adobe Photoshop, etc.
  - 3.6.5.1.9. Design, produce and deliver GIS data products for digital or hardcopy formats
  - 3.6.5.1.10. Create, organize and maintain GIS report libraries, including change documentation
  - 3.6.5.1.11. Develop publications and documentation regarding GIS products, metadata and spatial data, and manage their publication
  - 3.6.5.1.12. Conduct metadata operations and maintenance
  - 3.6.5.1.13. Manage printing, including printing of maps
  - 3.6.5.1.14. Support users in solving GIS graphics and analytical problems
- 3.6.5.2. **Minimum Requirements**
- 3.6.5.2.1. Enterprise ArcGIS data coordinator experience
  - 3.6.5.2.2. Knowledge, skills and abilities in the principles, practices, concepts and methods relating to use of GIS desktop tools and web services in web browsers, especially as applied to transportation, transit, facilities management, planning, and crime analysis
  - 3.6.5.2.3. Proficient with ArcGIS desktop tools, desktop publishing tools, spatial (GIS) metadata standards and industry maintenance tools
  - 3.6.5.2.4. ArcGIS data and metadata management experience
  - 3.6.5.2.5. ArcGIS data quality auditing and QA experience
- 3.6.5.3. **Experience Levels**
- 3.6.5.3.1. Eight (8) or more years' experience, five (5) years of experience with GIS metadata, publishing GIS documents, and GIS data development or warehousing; and three (3) years task management and self-supervisory experience
  - 3.6.5.3.2. Education may be substituted for relevant experience as follows: Master's degree in a relevant discipline such as Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for two (2) years' experience. Bachelor's degree in a relevant discipline such as Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for one (1) year experience



3.6.6. Geographic Information Systems (GIS) Analyst

3.6.6.1. Responsibilities

- 3.6.6.1.1. Plan, coordinate, execute, and supervise projects and operations that support WMATA's enterprise GIS database, applications, and services
- 3.6.6.1.2. Determine, create and deploy appropriate GIS applications and methods to meet WMATA needs in complex WMATA enterprise GIS
- 3.6.6.1.3. Support strategic analysis and planning for existing and planned GIS initiatives
- 3.6.6.1.4. Support planning, administration, design, development implementation, or operation of WMATA's enterprise Geographic Information System, including:
  - 3.6.6.1.4.1. Apply GIS to specific end-user problems, needs or processes
  - 3.6.6.1.4.2. Employ business problem/process analysis, spatial solutions identification and assessment, requirements analysis, GIS project management, GIS data analysis, QA\QC, display, and output
  - 3.6.6.1.4.3. Define, develop, assess, implement and document GIS standards, policies and procedures
  - 3.6.6.1.4.4. Support GIS interface and application integration
  - 3.6.6.1.4.5. Assess new technology and implement as needed
  - 3.6.6.1.4.6. Provide GIS technical and user support
  - 3.6.6.1.4.7. Provide GIS training and design/creation of training materials
  - 3.6.6.1.4.8. Interface GIS with different database systems such as Oracle and Microsoft Access
  - 3.6.6.1.4.9. Provide GIS quality control and quality assurance (QA\QC) functions
  - 3.6.6.1.4.10. Assist users in solving GIS systems and analytical problems
  - 3.6.6.1.4.11. Strong analytical, personal and communication skills

3.6.6.2. Minimum Requirements

- 3.6.6.2.1. ArcGIS Analyst experience
- 3.6.6.2.2. Knowledge, skills and abilities in the principles, practices and methods related to successful planning, implementation, application, and management of enterprise GIS systems, operations, tools, utilities and databases, especially as applied to transportation, transit, facilities management, planning, and crime analysis
- 3.6.6.2.3. Proficiency with ArcGIS and other GIS tools, utilities and databases; advanced GIS modeling, spatial analysis, and spatial application development techniques and geographic data design; data structures; and spatial database design, construction, and implementation
- 3.6.6.2.4. Experience with geo-relational data development in a managed data environment, including versioned relational databases and storage area networks
- 3.6.6.2.5. Knowledge of database and system development lifecycles, including policies, procedures and project management and practices

3.6.6.3. **Experience Levels**

3.6.6.3.1. Six (6) or more years' experience with GIS project management, business analysis, spatial analysis, and GIS development, applications, and operations support in the context of a large, complex enterprise GIS; two years' task management and self-supervisory experience, including progressive experience in managing complex tasks.

3.6.6.3.2. Education may be substituted for development experience as follows: Master's degree in a relevant discipline such as Computer Science or Geography, or in any discipline, but with specialization in GIS technology, may substitute for two (2) years of analyst experience, and a Bachelor's degree in Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for one (1) year of analyst experience.

3.6.7. **Geographic Information Systems (GIS) Technician**

3.6.7.1. **Responsibilities**

3.6.7.1.1. Provide task-level support for projects and operations that support WMATA's enterprise Geographic Information Systems database, applications and services; that determine, create or deploy appropriate GIS applications and methods to meet complex agency needs; or that support strategic analysis for current and planned GIS initiatives.

3.6.7.2. **Minimum Requirements**

3.6.7.2.1. Understanding of fundamental GIS concepts, principles, and practices

3.6.7.2.2. ArcGIS experience showing the knowledge, skills and abilities needed

3.6.7.3. **Experience Levels**

3.6.7.3.1. Six (6) or more years of relevant GIS experience

3.6.7.3.2. Education may be substituted for development experience as follows: Bachelor's degree in a relevant discipline such as Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for two (2) years of experience. Associate Degree in Computer Science or Geography, or in any discipline but with specialization in GIS technology, may substitute for one (1) year of experience

### 3.7. TOG 7: ENTERPRISE ARCHITECTURE AND BUSINESS PROCESS RE- ENGINEERING

#### 3.7.1. Business Process Reengineering (BPR) Analyst

##### 3.7.1.1. Responsibilities

- 3.7.1.1.1. Apply process and organizational improvement concepts to assist WMATA teams responsible for developing comprehensive IT business designs in specific functional areas
- 3.7.1.1.2. Manage business case for change, including coordinating work to prevent overlap and ensure alignment
- 3.7.1.1.3. Produce flow charts, context diagrams, problem analyses, mind maps and other tools to capture and communicate design decisions and components
- 3.7.1.1.4. Apply gap analysis techniques to define the nature and extent of needed change and communicate business case to decision makers
- 3.7.1.1.5. Understand and explain the relationship between process design and information capture and retrieval, especially with respect to performance measurement
- 3.7.1.1.6. Work with IT architects to ensure business goals are supported by IT plans
- 3.7.1.1.7. Guide the work of business systems/business case analysts and documentation specialists

##### 3.7.1.2. Minimum Requirements

- 3.7.1.2.1. Exceptional verbal and written communication skills
- 3.7.1.2.2. Group facilitation experience
- 3.7.1.2.3. Bachelor's degree in Business, Computer Science, Communications, Finance, or related field or equivalent experience
- 3.7.1.2.4. Experience using Microsoft Excel to perform basic financial analysis of business processes
- 3.7.1.2.5. Familiarity with MS Word and MS PowerPoint
- 3.7.1.2.6. Proven ability to implement process improvements

##### 3.7.1.3. Preferred Requirements

- 3.7.1.3.1. Experience coordinating software requirements and working with development teams
- 3.7.1.3.2. Experience in data modeling
- 3.7.1.3.3. Formal training in organization development, complex systems analysis, group facilitation, or information systems requirements analysis
- 3.7.1.3.4. Experience in the transit industry

3.7.1.4. **Experience Levels**

- 3.7.1.4.1. Level 1: one (1) to five (5) years' experience. (Process Analyst)
- 3.7.1.4.2. Level 2: five (5) to ten (10) years' experience. (Process Reengineering Consultant)
- 3.7.1.4.3. Level 3: ten (10) or more years' experience. (Process Reengineering Expert)

3.7.2. **Enterprise Architect**

3.7.2.1. **Responsibilities**

- 3.7.2.1.1. Apply concepts of enterprise architecture to align IT transitional processes with business priorities, strategic goals and standards
- 3.7.2.1.2. Apply concepts of service-oriented architecture to support implementation of WMATA's IT strategic plan
- 3.7.2.1.3. Guide construction of the business case for IT transitional processes
- 3.7.2.1.4. Produce flow charts, context diagrams, problem analyses, system connect diagrams and other artifacts to capture and communicate architectural decisions and components
- 3.7.2.1.5. Apply industry standard architectural frameworks (such as FEAF, TOGAF, and ITS) to the WMATA enterprise to guide and update the creation of the Metro Enterprise Architecture framework
- 3.7.2.1.6. Guide the configuration of the WMATA enterprise architecture repository to maintain alignment with the Metro Enterprise Architecture Framework
- 3.7.2.1.7. Work with IT programs to maintain and support standardization of technology toolsets across the WMATA IT enterprise

3.7.2.2. **Minimum Requirements**

- 3.7.2.2.1. Exceptional verbal and written communication skills
- 3.7.2.2.2. Enterprise Architecture Certification
- 3.7.2.2.3. Group facilitation experience
- 3.7.2.2.4. Bachelor's degree, in related field or equivalent experience
- 3.7.2.2.5. Experience as an enterprise architect using the Federal Enterprise Architecture Framework
- 3.7.2.2.6. Experience with enterprise architecture repositories
- 3.7.2.2.7. Experience interviewing and documenting stakeholder inputs to enterprise architecture projects
- 3.7.2.2.8. Experience using Microsoft Excel to perform basic financial analysis of business processes
- 3.7.2.2.9. Familiarity with MS Word and MS PowerPoint
- 3.7.2.2.10. Proven ability to implement IT governance process improvements

3.7.2.3. **Preferred Requirements**

- 3.7.2.3.1. Experience coordinating software and hardware requirements and working with development teams
- 3.7.2.3.2. Experience in implementation of cross-boundary service-oriented architecture projects or Business Process Management projects using web services integration
- 3.7.2.3.3. Experience in implementation of Microsoft BizTalk and/or SharePoint projects
- 3.7.2.3.4. Formal training in organization development, complex systems analysis, group facilitation, or information systems requirements analysis
- 3.7.2.3.5. Experience in the transit industry

3.7.2.4. **Experience Levels**

- 3.7.2.4.1. Senior Enterprise Architect: Six (6) or more years' experience

**3.7.3. Application Architect**

3.7.3.1. **Responsibilities**

- 3.7.3.1.1. Apply concepts of application architecture and service orientation to assist customer teams responsible for developing application requirements in specific functional areas
- 3.7.3.1.2. Coordinate work to prevent overlap and ensure alignment with WMATA Enterprise Architecture Framework, IT strategy, Software Development Life Cycle (SDLC), strategic drivers and standards
- 3.7.3.1.3. Apply gap analysis techniques to define the nature and extent of application scope changes and communicate business case to decision makers
- 3.7.3.1.4. Prepare as-is and to-be application architecture artifacts including system connect diagrams, application reference models, software requirements documents, interface descriptions, data dictionaries and application staging plans
- 3.7.3.1.5. Work with data and infrastructure architects and software program managers to ensure integrity of application systems and plans with overall Enterprise Architecture
- 3.7.3.1.6. Guide the work of business systems/business case analysts and documentation specialists

3.7.3.2. **Minimum Requirements**

- 3.7.3.2.1. Exceptional application architecture, Service Oriented Architecture (SOA) and software development skills
- 3.7.3.2.2. Strong analytical verbal and written communication skills
- 3.7.3.2.3. Bachelor's degree in Business, Computer Science, Communications, Finance, or in related field or equivalent experience
- 3.7.3.2.4. Experience using Microsoft Visio or other data or application visualization software to document application architecture
- 3.7.3.2.5. Experience using Microsoft Excel to perform basic software requirements documentation

## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### SUPPLY AND SERVICE CONTRACT

**RFP FQ15124**

- 3.7.3.2.6. Familiarity with MS Word and MS PowerPoint
- 3.7.3.2.7. Experience coordinating software requirements and working with development teams
- 3.7.3.2.8. Proven ability to plan and deploy custom, Commercial Off-The-Shelf Software (COTS) and middleware application programs and process improvements
- 3.7.3.2.9. Experience managing teams of programmers for deployment of large government multi-agency applications
- 3.7.3.2.10. Experience performing the application Architecture function, from conception to deployment, of a large government multi-agency solution
- 3.7.3.2.11. Experience with implementation and architecture of one or more of the following technology sets: message oriented middleware, composite application frameworks, Enterprise Service Bus, Master Data Management, Enterprise Mash-Ups, or Business Process Management
- 3.7.3.2.12. Experience using an Enterprise Architecture repository such as Telelogic, Metis or Abacus to document relationship of application architectures to an enterprise architecture
  
- 3.7.3.3. **Preferred Requirements**
  - 3.7.3.3.1. Experience using the Abacus Enterprise Architecture repository to document relationship of application architectures to and enterprise architecture
  - 3.7.3.3.2. Formal training in organization development, complex systems analysis, group facilitation or information systems requirements analysis
  - 3.7.3.3.3. Experience in the transit industry
  - 3.7.3.3.4. Experience integrating more than four legacy applications or data sources across a J2EE, MS .NET, and/or legacy mainframe or mini environment
  - 3.7.3.3.5. At least three (3) years' experience, including architecture, in managing applications for message-oriented middleware such as Webmethods, WebSphere, Seebeyond or BizTalk
  - 3.7.3.3.6. Experience planning and deploying a COTS portal framework as a presentation layer for enterprise applications such as SharePoint, AcquLogic Portal or Oracle Portal
  - 3.7.3.3.7. Hands-on experience planning identity management solutions with application architectures
  - 3.7.3.3.8. Experience planning and deploying either a business process management solution and/or a workflow engine within a large, enterprise software deployment
  
- 3.7.3.4. **Experience Levels**
  - 3.7.3.4.1. Senior Application Architect: nine (9) or more years' experience

3.7.4. Infrastructure Architect

3.7.4.1. Responsibilities

- 3.7.4.1.1. Apply IT infrastructure architecture concepts to assist WMATA teams responsible for developing infrastructure requirements in specific functional areas
- 3.7.4.1.2. Coordinate work to prevent overlap and ensure alignment with WMATA Enterprise Architecture Framework, IT strategy, strategic drivers and standards
- 3.7.4.1.3. Apply gap analysis techniques to define the nature and extent of IT infrastructure scope changes and communicate business case to decision makers
- 3.7.4.1.4. Prepare as-is and to-be IT infrastructure components including schematics to describe datacenters, networks, redundancy, failover, disaster recovery, storage, messaging, monitoring and other IT infrastructure components
- 3.7.4.1.5. Work with data and infrastructure architects and software program managers to ensure integrity of IT infrastructure systems and plans with overall Enterprise Architecture
- 3.7.4.1.6. Guide the work of technical systems/data analysts and documentation specialists
- 3.7.4.1.7. Recommend and support rationale for standards in the IT infrastructure arena

3.7.4.2. Minimum Requirements

- 3.7.4.2.1. Exceptional IT infrastructure architecture, systems administration, hardware deployment and planning skills
- 3.7.4.2.2. Strong analytical, verbal and written communication skills
- 3.7.4.2.3. Bachelor's degree in Business, Computer Science, Communications, Finance, or related field or equivalent experience
- 3.7.4.2.4. Experience using Microsoft Visio or other data or application visualization software to document IT infrastructure architectures
- 3.7.4.2.5. Experience using Microsoft Excel to perform basic hardware requirements and deployment documentation
- 3.7.4.2.6. Familiarity with MS Word and MS PowerPoint
- 3.7.4.2.7. Experience coordinating IT infrastructure requirements with application development teams to plan infrastructure support requirements
- 3.7.4.2.8. Proven ability to plan and deploy robust IT infrastructures to support a wide array of platforms including AIX, zOS, Unix and Microsoft
- 3.7.4.2.9. Experience performing the IT Infrastructure Architecture function, from conception to deployment in large organization
- 3.7.4.2.10. Experience with implementation and architecture of one or more of the following technology sets: virtualization, cloud computing, Identity Management, LDAP authentication, or mainframe migration

3.7.4.3. **Preferred Requirements**

- 3.7.4.3.1. Experience using the Abacus Enterprise Architecture repository to document relationship of IT infrastructure architectures to an enterprise architecture
- 3.7.4.3.2. Formal training in organization development, complex systems analysis, group facilitation or information systems requirements analysis
- 3.7.4.3.3. Experience in the transit industry
- 3.7.4.3.4. Experience in deploying IT infrastructure to support Service-Oriented Architectures (SOA) that integrate legacy applications across a J2EE, MS .NET, and/or legacy mainframes or mini environments
- 3.7.4.3.5. Experience in managing and planning infrastructure support and deployment for message-oriented middleware such as Webmethods, WebSphere, Seebeyond or BizTalk
- 3.7.4.3.6. Experience in managing and planning in managing infrastructure support and deployment for a Commercial Off The Shelf Software (COTS) portal framework such as SharePoint, AcquLogic Portal or Oracle Portal
- 3.7.4.3.7. Hands-on experience planning IT infrastructures supporting authentication or identity management solutions for large secure organizational enterprises
- 3.7.4.3.8. Large-scale network architecture experience
- 3.7.4.3.9. Large-scale IT security architecture experience

3.7.4.4. **Experience Levels**

- 3.7.4.4.1. Senior Infrastructure Architect: nine (9) or more years' experience

3.7.5. **Enterprise Architecture Repository Tool Specialist**

3.7.5.1. **Responsibilities**

- 3.7.5.1.1. Develop, populate, update and maintain as-is and to-be views using WMATA's Enterprise Architecture repository
- 3.7.5.1.2. Under the direction of the Chief Enterprise Architect, configure the WMATA Enterprise Architecture repository to reflect WMATA's Enterprise Architecture framework and meta-model
- 3.7.5.1.3. Assist customer teams responsible for IT projects in mapping their IT project components to the WMATA enterprise architecture framework and importing the component data and relationships into the repository
- 3.7.5.1.4. Coordinate work to ensure alignment of IT projects with WMATA Enterprise Architecture Framework, IT strategy, System Development Life Cycle (SDLC), strategic drivers and standards
- 3.7.5.1.5. Prepare as-is and to-be application architecture artifacts including system connection diagrams, application reference models, software requirements documents, interface descriptions, data dictionaries and application staging plans using the enterprise architecture repository modeling capabilities
- 3.7.5.1.6. Prepare as-is and to-be IT infrastructure artifacts including schematics to describe datacenters, networks, redundancy, failover, disaster recovery, storage, messaging, monitoring and other IT infrastructure components and environments using enterprise architecture repository modeling capabilities



## WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

### **SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.7.5.1.7. Gather enterprise architecture data and information from IT and business stakeholders through interviews, data imports, IT governance processes and IT asset inventory reports
  
- 3.7.5.2. **Minimum Requirements**
  - 3.7.5.2.1. Exceptional enterprise architecture repository development and configuration skills
  - 3.7.5.2.2. Exceptional enterprise architecture repository population, modeling and diagrammatic skills
  - 3.7.5.2.3. Strong analytical, verbal and written communication skills
  - 3.7.5.2.4. Bachelor's degree in Business, Computer Science, Communications, Finance, or related field or equivalent experience
  - 3.7.5.2.5. Experience using Microsoft Visio or other data or application visualization software to document enterprise architectures
  - 3.7.5.2.6. Experience using Microsoft Excel to perform basic software requirements documentation
  - 3.7.5.2.7. Familiarity with MS Word and MS PowerPoint
  - 3.7.5.2.8. Experience coordinating software requirements and working with development teams
  - 3.7.5.2.9. Experience as an Enterprise Architecture repository subject matter expert using the FEAF or TOGAF for a large organization
  - 3.7.5.2.10. Experience using an Enterprise Architecture repository such as Telelogic, Metis or Abacus to document enterprise architecture transition plans
  
- 3.7.5.3. **Preferred Requirements**
  - 3.7.5.3.1. Experience using the Abacus Enterprise Architecture repository to document relationship of application architectures to enterprise architecture
  - 3.7.5.3.2. Formal training in organization development, complex systems analysis, group facilitation or information systems requirements analysis
  - 3.7.5.3.3. Experience in the transit industry
  - 3.7.5.3.4. Experience with the ITS architecture framework
  - 3.7.5.3.5. Experience with the Gartner ERP architecture framework

3.7.5.4. **Experience Levels**

- 3.7.5.4.1. Senior level, with nine (9) or more years' experience (EA Tool Expert)

3.7.6. **Metadata Manager and Modeler**

3.7.6.1. **Responsibilities**

- 3.7.6.1.1. Create and maintain WMATA's enterprise metadata repository
- 3.7.6.1.2. Create and maintain data models (logical and physical) at the enterprise level and lower
- 3.7.6.1.3. Use modeling and metadata tools to reverse engineer database structures
- 3.7.6.1.4. Support the definition and decision process to designate conformed dimensions for the enterprise data warehouse
- 3.7.6.1.5. Support WMATA's Enterprise Architect, Information Architect, Application Architect, and Cognos Architect in the proper allocation and usage of data sources
- 3.7.6.1.6. Create and maintain extensive metadata documentation
- 3.7.6.1.7. Create and disseminate informational materials regarding the data management function at WMATA
- 3.7.6.1.8. Support data stewards and other WMATA stakeholders as needed

3.7.6.2. **Minimum Requirements**

- 3.7.6.2.1. Bachelor's degree in Computer Science, Information Science, Engineering, or related discipline
- 3.7.6.2.2. Experience in entity relationship modeling
- 3.7.6.2.3. Experience in dimensional and DMR modeling
- 3.7.6.2.4. Experience with metadata management for large (200 or more entities) models
- 3.7.6.2.5. Experience creating and maintaining enterprise data models
- 3.7.6.2.6. Experience assisting development teams and database administrators in creating, understanding and using enterprise metadata
- 3.7.6.2.7. Experience implementing and maintaining the metadata and modeling tool(s) currently in use at WMATA (at this writing, ERwin 7.4)
- 3.7.6.2.8. Excellent communication skills

3.7.6.3. **Preferred Requirements**

- 3.7.6.3.1. Experience creating or maintaining an enterprise data warehouse and/or related data marts
- 3.7.6.3.2. Experience with one or more of the following systems: Maximo, PeopleSoft, PeopleSoft EPM, NextFare, Trapeze
- 3.7.6.3.3. Experience in the transit industry
- 3.7.6.3.4. Publication as a technical writer in a technical or corporate journal or similar publication

3.7.6.4. **Experience Levels**

- 3.7.6.4.1. Senior level, with more than 7 years with major responsibility for metadata management and modeling

SERVICE-ORIENTED ARCHITECTURE

3.7.7. **Service-Oriented Architecture BizTalk Developer**

3.7.7.1. **Responsibilities**

- 3.7.7.1.1. Develop, document, implement and test the BizTalk integrations envisioned for the WMATA integration projects

3.7.7.2. **Minimum Requirements**

- 3.7.7.2.1. Exceptional BizTalk development skills and a proven track record of effectively delivering results in a fast-paced, flexible environment
- 3.7.7.2.2. Demonstrated expertise in a variety of application development technology concepts, practices, and procedures
- 3.7.7.2.3. Bachelor's degree in Business, Computer Science, Communications, Finance, or related field or equivalent experience
- 3.7.7.2.4. Experience using Microsoft Excel to perform basic analysis of user requirements
- 3.7.7.2.5. Familiarity with MS Word and MS PowerPoint
- 3.7.7.2.6. Demonstrated use of .NET application development technologies as well as a solid understanding and practical use of other Microsoft development technologies such as C+/C++, .NET, VB.NET, XML, SQL, SOA and SharePoint
- 3.7.7.2.7. Ability to establish trust and credibility while gathering requirements from WMATA personnel in departments receiving integration services
- 3.7.7.2.8. Excellent written communication and verbal communication

3.7.7.3. **Preferred Requirements**

- 3.7.7.3.1. Expertise in BizTalk Server 2006/2004: XML schemas, maps, messaging solutions, custom BizTalk component developments, advanced Orchestration patterns
- 3.7.7.3.2. Experience in enterprise-wide, heterogeneous systems integrations focused on BizTalk; design, planning, development, deployment and production maintenance in a leadership role
- 3.7.7.3.3. Experience with .NET 2.0, 3.0, 3.5, including developing and consuming WCF services
- 3.7.7.3.4. Experience with SharePoint 2007: planning, design, development, extending, integration
- 3.7.7.3.5. Experience with K2 BlackPearl
- 3.7.7.3.6. Experience in the transit industry
- 3.7.7.3.7. Excellent technical development and design skills

- 3.7.7.3.8. Ability to mentor others to improve their skills
- 3.7.7.3.9. Experience with Iterative/Agile Development approaches

3.7.7.4. **Experience Levels**

- 3.7.7.4.1. Senior BizTalk Developer, with eight (8) or more years' experience

3.7.8. **Service-Oriented Architecture SharePoint Developer**

3.7.8.1. **Responsibilities**

- 3.7.8.1.1. Develop, document, implement and test the SharePoint integrations envisioned for the WMATA integration projects

3.7.8.2. **Minimum Requirements**

- 3.7.8.2.1. Exceptional SharePoint development skills and a proven track record of effectively delivering results in a fast-paced, flexible environment
- 3.7.8.2.2. Demonstrated expertise in a variety of application development technology concepts, practices and procedures
- 3.7.8.2.3. Bachelor's degree in Business, Computer Science, Communications, Finance, or related field or equivalent experience
- 3.7.8.2.4. Experience using Microsoft Excel to perform basic analysis of user requirements
- 3.7.8.2.5. Familiarity with MS Word and MS PowerPoint
- 3.7.8.2.6. Demonstrated use of .NET application development technologies as well as a solid understanding and practical use of other Microsoft development technologies such as C+/C++, .NET, VB.NET, XML, SQL, SOA and BizTalk
- 3.7.8.2.7. Ability to establish trust and credibility while gathering requirements from WMATA personnel in departments receiving integration services
- 3.7.8.2.8. Excellent written communication and verbal communication

3.7.8.3. **Preferred Requirements**

- 3.7.8.3.1. Expertise in most recent SharePoint Server (2007) implementations: XML schemas, maps, composite application solutions, custom SharePoint component developments, advanced Orchestration patterns
- 3.7.8.3.2. Experience in Enterprise-wide, heterogeneous systems integrations focused on SharePoint: design, planning, development, deployment and production maintenance in a leadership role
- 3.7.8.3.3. Experience with .NET 2.0, 3.0, 3.5, including developing and consuming WCF services
- 3.7.8.3.4. Experience with BizTalk 2006/2004: planning, design, development, extending, integration
- 3.7.8.3.5. Experience with K2 BlackPearl
- 3.7.8.3.6. Experience in the transit industry
- 3.7.8.3.7. Excellent technical development and design skills

- 3.7.8.3.8. Ability to mentor others to improve their skills
- 3.7.8.3.9. Experience with Iterative/Agile Development approaches

3.7.8.4. **Experience Levels**

- 3.7.8.4.1. Senior SharePoint Developer, with eight (8) or more years' experience

3.7.9. **Service-Oriented Architecture Technical Lead**

3.7.9.1. **Responsibilities**

- 3.7.9.1.1. Assist project leadership in designing the approach for SOA projects, including selection of technologies, setting technical directions, estimating/planning and directing developers
- 3.7.9.1.2. Assist Service Oriented Architecture (SOA) developers in resolving problems, finding solutions and writing specifications that will meet the business needs and requirements, and comply with applicable standards
- 3.7.9.1.3. Collaborate with enterprise architects and IT program managers to enhance existing business applications and facilitate solutions to meet business requirements
- 3.7.9.1.4. Build solutions and manage implementation aspects of projects
- 3.7.9.1.5. Create and/or review manuals, how-to procedures, and related documentation in a variety of formats. Ensure documentation is targeted to the appropriate audience
- 3.7.9.1.6. Respond to questions from WMATA personnel and analyze what-if scenarios
- 3.7.9.1.7. Review technical and design documentation
- 3.7.9.1.8. Write technical and design documents
- 3.7.9.1.9. Provide technical ability screening for new team members
- 3.7.9.1.10. Create testing and quality assurance plans
- 3.7.9.1.11. Manage and prioritize change requests and problem reports

3.7.9.2. **Minimum Requirements**

- 3.7.9.2.1. Excellent application development skills and proven track record delivering well-designed complex enterprise class systems
- 3.7.9.2.2. Proven communication and leadership skills
- 3.7.9.2.3. Demonstrated advanced experience with object oriented design and development techniques using Microsoft technologies and service- oriented architecture
- 3.7.9.2.4. Demonstrated use of .NET application development technologies as well as a solid understanding and practical use of other Microsoft development technologies such as C+/C++, .NET, VB.NET, XML, SQL, SOA, BizTalk and SharePoint
- 3.7.9.2.5. A proven track record of effectively delivering results in a fast-paced, rapidly changing environment while managing multiple priorities
- 3.7.9.2.6. Hands-on professional experience in .Net and/or MS integration technology

**WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY**

**SUPPLY AND SERVICE CONTRACT**

**RFP FQ15124**

- 3.7.9.2.7. Excellent planning and organizational skills, especially with regard to test and quality assurance planning
- 3.7.9.2.8. Experience with SOA and web service design and implementation
  
- 3.7.9.3. **Preferred Requirements**
  - 3.7.9.3.1. Bachelor's degree in Computer Science
  - 3.7.9.3.2. Good analytical, written and verbal communication skills
  - 3.7.9.3.3. Experience with Iterative/Agile Development approaches
  - 3.7.9.3.4. Implementation experience of BPM project using Microsoft BizTalk
  - 3.7.9.3.5. Implementation in the .NET Framework preferably in C+/C++
  - 3.7.9.3.6. Experience with XML technologies: XSD, XSL
  - 3.7.9.3.7. Experience with T-SQL, SQL Server Reporting Services
  - 3.7.9.3.8. Experience with BizTalk Implementation
  - 3.7.9.3.9. Experience with SharePoint Implementation
  - 3.7.9.3.10. Experience with Web service Security: SAMC, Federated ID Management
  - 3.7.9.3.11. Experience with JavaScript, DHTML, AJAX, HTMLICSS
  
- 3.7.9.4. **Experience Levels**
  - 3.7.9.4.1. SOA Technical Lead, with eight (8) or more years' experience

## TASK ORDER GROUPS

## TOG 8

## 3.8. TOG 8: IT SECURITY

## 3.8.1. Cyber Security Design Engineer

## 3.8.1.1. Responsibilities

- 3.8.1.1.1. Develops and recommends technical solutions to support clients requirements in solving moderately complex network, platform and system security problems
- 3.8.1.1.2. Responsibilities include secure systems engineering and development. This includes systems security requirements analysis and secure system definition and specification development based on systems security and systems engineering best practice
- 3.8.1.1.3. Develops systems security engineering project plans based on systems engineering best practices that document system key performance parameters aligned with risk countermeasures and reliability & resiliency needs

## 3.8.1.2. Minimum Requirements

- 3.8.1.2.1. Experience with design and development of secure enterprise communications systems
- 3.8.1.2.2. Experience with the analysis, systems design, implementation and testing of secure enterprise information systems
- 3.8.1.2.3. Experience in Network engineering with emphasis in design, implementation, operations and maintenance of a variety of Windows Services & AIX/UNIX Services, Application and Database servers, relevant Network Security appliances and Endpoint Security products

## 3.8.1.3. Experience Levels

- 3.8.1.3.1. Level 1: Junior level - Associates degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 2+ years of related systems engineering experience
- 3.8.1.3.2. Level 2: Intermediate level - Bachelor's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 5+ years of related systems engineering experience
- 3.8.1.3.3. Level 3: Expert level - Master's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 8+ years of related systems engineering experience

3.8.2. Cyber Security Risk Assessor

3.8.2.1. Responsibilities

- 3.8.2.1.1. Serves as a lead cyber and information security consultant to the project team by conducting security risk assessments and providing guidance on securing information systems, applications, and networks
- 3.8.2.1.2. Provides technical guidance and expertise in the areas of secure applications development, security risk management and assessment, security policies and standards, security architectures and implementations, and effective security risk assessment practices
- 3.8.2.1.3. Performs application and technology design reviews, security risk assessments, requirements analysis, security testing oversight, risk remediation planning, and security project management
- 3.8.2.1.4. Develops, reviews, and implements security risk management policies, standards, and practices
- 3.8.2.1.5. Defines security and policy compliance requirements in supporting the acquisition and deployment of security software, systems, and services
- 3.8.2.1.6. Provides guidance on the development and integration of a security development lifecycle (SDL) to include secure development, testing, and configuration of application and web architectures
- 3.8.2.1.7. Review and assess vendors information security solutions and deliverables, including technologies and architectures, security controls and procedures, and contract documentation

3.8.2.2. Minimum Requirements

- 3.8.2.2.1. Experience with design and development of secure enterprise communications systems
- 3.8.2.2.2. Experience with the analysis, systems design, implementation and testing of secure enterprise information systems
- 3.8.2.2.3. Experience in Network engineering with emphasis' in design, implementation, operations and maintenance of a variety of Windows Services, Application and Database servers, relevant Network Security appliance and Endpoint Security products

3.8.2.3. Experience Levels

- 3.8.2.3.1. Level 1: Junior level - Associates degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 2+ years of related technical experience
- 3.8.2.3.2. Level 2: Intermediate level - Bachelor's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 5+ years of related technical experience
- 3.8.2.3.3. Level 3: Expert level - Master's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 8+ years of related technical experience



3.8.3. Cyber Security Operations Engineer

3.8.3.1. Responsibilities

- 3.8.3.1.1. Cyber Security Operations Engineers work on all systems and/or projects within WMATA responsible for providing network defense utilizing network and host based computer network defense tools, appliances and end point products
- 3.8.3.1.2. Conduct proof of concept testing and support of current infrastructure
- 3.8.3.1.3. Design, test, and integration of new security products as directed by leadership and ensure all Network Defense capabilities are kept current, patched, and securely configured
- 3.8.3.1.4. Monitor key security infrastructure elements, identifying security events, performing analysis, and initiating response activities
- 3.8.3.1.5. Integrate security products, including designs for all organizational networks as well as designing, engineering, integrating, configuring, testing and deploying
- 3.8.3.1.6. Maintain system baselines and configuration management items, including security event monitoring "policies" in a manner determined and agreed to by the program management
- 3.8.3.1.7. Provide engineering documentation and interaction with Analysts and Operations and Maintenance (O&M) personal to ensure a complete and functioning system that meets requirements. Software testing (patches, other updates)
- 3.8.3.1.8. Experience and knowledge of OSI layers and TCP/IP troubleshooting techniques
- 3.8.3.1.9. Experience with Firewall and VPN techniques and protocols, site to site and SSLVPN design concepts and implementations

3.8.3.2. Minimum Requirements

- 3.8.3.2.1. Technical experience in cyber security, information assurance, network security, computer information systems, computer science, or management information systems
- 3.8.3.2.2. Knowledge and experience of OSI layers and TCP/IP troubleshooting techniques
- 3.8.3.2.3. Knowledge and experience with Firewall and VPN techniques and protocols, site to site and SSLVPN design concepts and implementations
- 3.8.3.2.4. Knowledge and experience of network security concepts
- 3.8.3.2.5. Knowledge and experience of Security Information and Event Management (SIEM) systems
- 3.8.3.2.6. Knowledge and experience of Intrusion Detection/Protection, firewalls, and anti-virus systems
- 3.8.3.2.7. Knowledge and experience of network protocols
- 3.8.3.2.8. Knowledge and experience of Microsoft and Linux hosting and systems Administration

3.8.3.3. **Experience Levels**

- 3.8.3.3.1. Level 1: Junior level - Associates degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 2+ years of related technical experience
- 3.8.3.3.2. Level 2: Intermediate level - Bachelor's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 5+ years of related technical experience
- 3.8.3.3.3. Level 3: Expert level - Master's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience with 8+ years of related technical experience

3.8.4. **Application Security Engineer**

3.8.4.1. **Responsibilities**

- 3.8.4.1.1. Develop Security Development Practices
- 3.8.4.1.2. Responsible for Creating, Maintaining and Monitoring new Application Security Practice
- 3.8.4.1.3. Perform application security penetration testing and code review in order to identify application vulnerabilities
- 3.8.4.1.4. Develop new applications for use by the cyber security offices to maintain and improve our operations
- 3.8.4.1.5. Develop new toolkits and examples for new Security Initiatives at such as SSO, Encryption Key Management, OWASP practices and library usage
- 3.8.4.1.6. Design test scenarios and support testing of new and enhanced software products

3.8.4.2. **Minimum Requirements**

- 3.8.4.2.1. Experience in software engineering with specialized experience in designing, developing/programming security related efforts
- 3.8.4.2.2. Experience with application layer vulnerability detection tools and threat analysis both at coding development stage and authorization deployment testing
- 3.8.4.2.3. Experience in enterprise applications
- 3.8.4.2.4. Experience in JAVA, C+/C++, .NET, and secure coding best practices

3.8.4.3. **Experience Levels**

- 3.8.4.3.1. Level 1: Junior level - Associates degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 2+ years of related technical experience
- 3.8.4.3.2. Level 2: Intermediate level - Bachelor's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of

education, technical training, or work/military experience 5+ years of related technical experience

- 3.8.4.3.3. Level 3: Expert level - Master's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 8+ years of related technical experience

### 3.8.5. Information Security Program Manager

#### 3.8.5.1. Responsibilities

- 3.8.5.1.1. Provide task tracking, resource allocation, ticket management, requirements review, budgeting, project status reports, coordinate Business Project Intake (BPI), Process and SOP management
- 3.8.5.1.2. Develop schedules and project plans to ensure timely completion, including identification of scope changes, critical path items, dependencies, etc.
- 3.8.5.1.3. Work with technical and operational staff to resolve information security tasks and projects
- 3.8.5.1.4. Ensure that compliance requirements and documentation are followed for all projects
- 3.8.5.1.5. Proactively identify project issues and risks, and work with the project team for timely resolutions
- 3.8.5.1.6. Coordinate with appropriate stakeholder to identify process improvement opportunities
- 3.8.5.1.7. Coordinate technical and administrative teams, manage vendor, and customer relationships
- 3.8.5.1.8. Implement and coordinate security operational tasks and projects
- 3.8.5.1.9. Provide support services
- 3.8.5.1.10. Identify and manage risks to information security tasks and project

#### 3.8.5.2. Minimum Requirements

- 3.8.5.2.1. Two or more years of experience performing the duties identified above in a large information technology operations
- 3.8.5.2.2. Technical experience in cyber security, information assurance, network security, computer information systems, computer science, or management information systems
- 3.8.5.2.3. Bachelor's degree in Computer Science, Information Technology, Management Information Systems or related field; or a current PMP Certification
- 3.8.5.2.4. Knowledge and understanding of security requirements and provisioning to enable tasks routing according to WMATA's security needs

3.8.5.3. **Experience Levels**

- 3.8.5.3.1. Level 1: Junior level - Associates degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 2+ years of related technical experience
- 3.8.5.3.2. Level 2: Intermediate level - Bachelor's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 5+ years of related technical experience
- 3.8.5.3.3. Level 3: Expert level - Master's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 8+ years of related technical experience

3.8.6. **Cyber Threat Engineer**

3.8.6.1. **Responsibilities**

- 3.8.6.1.1. Cyber Threat Engineer will work on all systems and/or projects within the organization responsible for providing Cyber Security Threat detection utilizing network and host based Computer Security tools, appliances and end point products
- 3.8.6.1.2. Perform analysis of all security systems log files, review and keep track of triggered events, research current and future cyber threats, reconcile correlated cyber security events, develop and modify new and current cyber security correlation rule sets, and operate security equipment and technology
- 3.8.6.1.3. Document security incidents as identified in the incident response rules and escalate to management as required
- 3.8.6.1.4. Monitor key security infrastructure elements, identify security events, perform analysis, and initiate response activities
- 3.8.6.1.5. Perform packet analysis by identifying malformed packets and the payload of the packet
- 3.8.6.1.6. Integrate security products, including designs for all organizational networks as well as designing, engineering, planning, integrating, configuring, testing and deploying
- 3.8.6.1.7. Maintain system baselines and configuration management items, including security event monitoring "policies" in a manner determined by the program management
- 3.8.6.1.8. Provide documentation and interaction with other analysts and Operations and Maintenance (O&M) personnel to ensure a complete and functioning system that meets requirements
- 3.8.6.1.9. Perform software testing (patches, other updates)
- 3.8.6.1.10. Troubleshoot OSI layer and TCP/IP related problems

3.8.6.2. **Minimum Requirements**

- 3.8.6.2.1. Technical experience in cyber security, information assurance, network security, computer information systems, computer science, or management information systems
- 3.8.6.2.2. Knowledge and experience with Anti-Virus, Intrusion Detection Systems, Firewalls, Active Directory, Vulnerability Assessment tools and other security tools found in large network environments; along with experience working with Security Information and Event Management (SEIM) solutions
- 3.8.6.2.3. Understanding of common network services (DNS, web, mail, FTP, etc.), network vulnerabilities, and network attack patterns
- 3.8.6.2.4. Understanding and familiarity with Security Information and Event Management (SIEM) systems
- 3.8.6.2.5. Familiarity with intrusion detection / protection, firewalls, and anti-virus systems
- 3.8.6.2.6. Knowledge and experience of managing network protocols
- 3.8.6.2.7. Microsoft and Linux hosting and systems Administration experience

3.8.6.3. **Experience Levels**

- 3.8.6.3.1. Level 1: Junior level - Associates degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 2+ years of related technical experience
- 3.8.6.3.2. Level 2: Intermediate level - Bachelor's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 5+ years of related technical experience
- 3.8.6.3.3. Level 3: Expert level - Master's degree in Computer Science, Engineering or a related technical discipline, or the equivalent combination of education, technical training, or work/military experience 8+ years of related technical experience