Labor Category	**Knowledge/Skills/Capabilities**
Applications Developer	• Designs programming applications from requirements to execution; lays out data structure, optimizes code • Designs, develops, enhances, debugs, and implements software. Troubleshoots production problems related to software applications. • Researches, tests, builds, and coordinates the conversion and/or integration of new products based on client requirements. Designs and develops new software products or major enhancements to existing software. • Addresses problems of systems integration, compatibility, and multiple platforms. • Consults with project teams and end users to identify application requirements. • Performs feasibility analysis on potential future projects to management. • Assists in the evaluation and recommendation of application software packages, application integration and testing tools. • Resolves problems with software and responds to suggestions for improvements and enhancements. • Acts as team leader on projects. • Instructs, assigns, directs, and checks the work of other software developers on development team. • Participates in development of software user manuals.
Applications Systems Analyst	• Formulates/defines system scope and objectives. • Devises or modifies procedures to solve complex problems considering computer equipment capacity and limitations, operating time, and form of desired results. • Prepares detailed specifications for programs. Assists in the design, development, testing, implementation, and documentation of new software and enhancements of existing applications. • Works with project managers, developers, and end users to ensure application designs meet business requirements • Formulates/defines specifications for complex operating software programming applications or modifies/maintains complex existing applications using engineering releases and utilities from the manufacturer. • Designs, codes, tests, debugs, and documents those programs. • Provides overall operating system, such as sophisticated file maintenance routines, large telecommunications networks, computer accounting, and advanced mathematical/scientific software packages.

	• Assists all phases of software systems programming applications. • Evaluates new and existing software products.
Building Information Model Manager	• Provides Configuration Management for all LaRC BIM projects. • Provides technical guidance hands on support/training to LaRC project managers. • Ensures BIM specifications for all projects reflect lessons learned and best practices for the industry.
Computer Scientist	• Provides support to mission and mission-support organizations. • Acts as a consultant in complex or mission critical client requirements. • Develops, modifies, and applies computer modeling and programming applications to analyze and solve mathematical, scientific, and business problems affecting system and program performance. • Participates in IT support to all phases of scientific and engineering and mission-support projects, such as research, design, development, testing, modeling, simulating, training, and documentation.
Database Administrator	• Provides all activities related to the administration of computerized databases. • Projects long-range requirements for database administration and design in conjunction with other managers in the information systems function. • Designs, creates, and maintains databases in a client/server environment. • Conducts quality control and auditing of databases in a client/server environment to ensure accurate and appropriate use of data. • Advises users on access to various client/server databases. Designs, implements, and maintains complex databases with respect to JCL, access methods, access time, device allocation, validation checks, organization, protection and security, documentation, and statistical methods. • Applies knowledge and experience to relational databases (both commercial and open source), database management, and database administration for SQL database systems including Oracle and MySQL. Performs database programming and supports systems design. • Performs maintenance of database dictionaries, overall monitoring of standards and procedures, file design and storage, and integration of systems through database design.
Database Analyst	• Designs and builds relational databases. Performs data access analysis design, and archive/recovery design and

	implementation. • Develops strategies for data acquisitions, archive recovery, and implementation of a database. • Works in a data warehouse environment, which includes data design, database architecture, and metadata repository creation. • Translates business needs into long-term architecture solutions. • Defines, designs, and builds dimensional databases. • Develops data warehousing blueprints, evaluating hardware and software platforms, and integrating systems. • Reviews and develops object and data models and the metadata repository to structure the data for better management and quicker access.
Facility Data Analyst	• Ensures accuracy of data in Center's Master Facility List (MFL). • Coordinates improvements to MFL web tool. • Conducts gap analysis between MFL and Space Utilization and coordinates suggested correction of data. • Provides training for tool operation • Supports requests for reports to address facilities related tools (based on corporate knowledge of LaRC facilities and processes)
Field Surveyor / Dig Permit Support	• Provides support to Dig Permit requests for LaRC and adjoining Air Force Base. • Marks existing utilities, creates maps, and issues dig permits. • Conducts precision survey of new utility/facility features. • Integrates survey data into GIS database. • Supports field measurements such as stakeout, alignment, and deformation measurement.
Geographic Information System (GIS) Analyst/Programmer	• Demonstrates proficiency in GIS analysis and data modeling. • Demonstrates and maintains proficiency with current and developing technologies and software related to geographic analysis. • Coordinates, manages, administers, and develops the Geographic Information Systems. • Develops various types of GIS maps and related data sets. • Designs and implements GIS analytical procedures. • Performs analysis and maintenance of GIS systems.
GIS and Remote Sensing Analyst	• Provides high level spatial data analyst support, especially in the area OF digital elevation model and contours. • Ensures proper cartography exists within LaRC maps. • Ensures coordination and integration of remote sensing data. • Provides expertise for procuring and processing data such as Aerial, LiDAR, and Thermal.
Lead Programmer /	• Ensures an optimum architecture exists for spatial data

Overall architect for spatial systems design	management and integration with RDBMS. • Supports development of data management and decision support tools. • Lead programmer for scripting and desktop/web tool development. • Provides guidance and data processing support for geodetic control efforts
Measurement Technology Specialist	• Ensures Real Time Kinematic (RTK) Global Position System (GPS) equipment, Optical Total Station (OTS), Digital Level, Laser Scanners and associated measurement systems are maintained and appropriately configured for use at LaRC or other job sites. • Provides formal and on the job training to ensure correct data results from application of aforementioned technology. • Maintains currency with industry trends and suggests changes to ensure LARC is aware of state of art capabilities. • Supports field campaigns for laser scanning, geodetic control, and scientific data collection and processing efforts. • Supports dig permitting when workloads require additional manpower
On-site Project Manager / Programmer	• Provides primary interface with NASA personnel regarding requirement management. • Supports scheduling, resources estimating, cost management, and procurement. • Coordinates employee work schedules and training. • Provides supplementary programming support. • Evaluates and identifies the best options for next generation GSS.
Programmer	• Performs programming services for business, science, and research requirements. • Converts specifications (precise descriptions) about business or scientific problems into a sequence of detailed data processing instructions to solve problems. • Draws program flow charts to describe the processing of data, and develops the precise steps and processing logic which, when entered into the computer in coded language to cause the manipulation of data to achieve desired results. • Tests and corrects programs, prepares instructions for operators who control the computer during runs, modifies programs to increase operating efficiency or to respond to changes in work processes, and maintains records to document program development and revisions. • Gathers facts from users to define their business or scientific problems and investigates the feasibility of solving problems through new or modified computer programs; develops

	specifications for data inputs, flow, actions, decisions, and outputs; and participates on a continuing basis in the overall program planning along with other data processing personnel and users. • At the Master level some programming analysis must be performed as part of the programming assignment.
Project Analyst	• Provides project management leadership support for NASA projects. • Provides applications systems analysis and programming activities. • Prepares long and short-range project plans for application selection, systems development, systems maintenance, and production activities and for necessary support resources. • Provides support for all aspects of projects. • Master or Senior leads team on large projects or significant segment of large complex projects and analyzes new and complex project related problems and creates innovative solutions involving finance, scheduling, technology, methodology, tools, and solution components.
RDBMS Database Administrator/Developer	• Ensures optimum configuration exists for LaRC's Oracle RDBMS • Manages, and tunes RDBMS. • Supports integration with GIS, BIM, and Maintenance management. • Develops new desktop/web tools. • Support queries and reports to requestor's needs.
System Analyst	• Ensures optimum configuration exists for LaRC's integrated spatial and relational databases and supporting hardware. • Supports Configuration Management of overall hardware and software environment. • Ensures support scripting and batch processing are appropriately implemented and produce desired results. • Benchmarks system performance and initiates corrections to problems.

The following levels define the skills, education, and years and levels of experience and managerial capabilities for each labor category shown above. For education, degree should be in Computer Science, Computer Engineering, Engineering, Mathematics, Physical Sciences, Information Management Systems, Geographic Information Systems, or other field appropriate to the task.

Master: Provides technical/management leadership on major tasks or technology assignments. Establishes goals and plans that meet project objectives. Has domain and expert technical knowledge. Directs and controls activities for a client, having overall responsibility for financial

management, methods, and staffing to ensure that technical requirements are met. Interactions involve client negotiations and interfacing with senior management. Decision making and domain knowledge may have a critical impact on overall project implementation. May supervise others. Typically has at least a BS/BA degree and 10 years of experience in progressively complex assignments.

Senior: Possesses and applies a comprehensive knowledge across key tasks and high impact assignments. Plans and leads major technology assignments. Evaluates performance results and recommends major changes affecting short-term project growth and success. Functions as a technical expert across multiple project assignments. May supervise others. Typically has at least a BS/BA degree and 8 years of experience in progressively complex assignments.

Journeyman: Possesses and applies expertise on multiple complex work assignments. Assignments may be broad in nature, requiring originality and innovation in determining how to accomplish tasks. Operates with appreciable latitude in developing methodology and presenting solutions to problems. Contributes to deliverables and performance metrics where applicable. Typically has at least a BS/BA degree and 6 years of experience in progressively complex assignments.

Junior: Possesses and applies expertise on complex work assignments. Assignments are focused and directed in nature, requiring minimal originality and innovation in determining how to accomplish tasks. Operates with some latitude in developing methodology and presenting solutions to problems. Contributes to deliverables and performance metrics where applicable. Typically has at least a BS/BA degree and 4 years of experience in progressively complex assignments.

Entry-Level: Applies fundamental concepts, processes, practices, and procedures on technical assignments. Possesses and applies expertise on moderately complex work assignments. Assignments focused and directed in nature. Performs work that requires practical experience and training. Contributes to deliverables and performance metrics where applicable. Work is performed under supervision. Typically has an AS/AA degree and 10 years of experience in progressively complex assignments.