INFORMATION SYSTEMS TECHNICAL ANALYST SERIES

FLSA Status: I – IV Covered / V-VI Exempt
Union Representation: Professional and Technical Employees (PTE)

NOTE: This is a deep classification as provided in the HR Administrative Rules, 8.5 – Classification: Deep Classification Series and incumbents may be reclassified in accordance with that Rule.

SERIES DEFINITION
Information Systems Technical Analysts support, develop and maintain computer systems. The series covers six job levels and is used in several functional areas within the Bureau of Technology Services (BTS). Most functional area work is described within the generalist descriptions, but some areas have their own specialized descriptions (specialties) as needed. Some elements of the general classifications may apply to the specialty descriptions.

While all jobs in this series have both technical and analytical work, the proportion of technical to analytical changes as you progress through the levels of the job family. Technical work tends to be clearer, more defined, have precedents, procedures, guidelines that can be followed, situations that are more predictable with options and solutions more clear. Analytical work requires the ability to resolve situations you haven't seen before by applying knowledge from similar situations, to conduct research, to incorporate a bigger picture into your thinking, to consider implications on other areas. The percentage of work time spent on analysis increases in moving from lower to higher levels in the job series. The level of technical knowledge used to do that analysis also increases. The higher levels of the series have greater technical knowledge and greater analysis requirements.

The functional areas that use this series include, but are not limited to: desktop support, network, telecommunications (voice, data and cellular), security, quality assurance, database, help desk, server support, data center, enterprise storage and project management. Not all knowledge, skills, abilities and duties apply to every position. Duties and skills may relate to specific functional areas. The level of work, analysis, communication, problem solving, etc. is described, with specific functional tasks and Knowledge, Skills and Abilities (KSAs) provided as examples to clarify and distinguish the levels. Since IT is a rapidly evolving field, this class spec will be frequently updated to reflect changes in technology and terminology.

Programming functions, such as application development, are typically classified to the Applications Analyst job series, but Information Systems Technical Analyst (ISTA) incumbents may do some work that could be considered scripting or programming.

Note on document format: The levels in this document build on each other. The KSAs have been grouped into categories. All categories appear in each level, but there are only details within them if there are differences from the prior level. To get the full picture of the higher levels, you would need to incorporate an understanding of the KSAs for the lower levels.

WORKING CONDITIONS
Physical Conditions: May require maintaining physical condition necessary for sitting for prolonged periods of time; extensive use of computer keyboard; extensive verbal and electronic communication with system users; near visual acuity for performing programming or software installation functions. Some positions require the ability to lift, carry and move computer equipment weighing up to 50 pounds.

ISTA Classification Series

Information Systems Technical Analyst I   30000198

This is the entry level of the job family. Incumbents are learning the information systems profession, may be in or have recently completed a training or education program, and are learning the hands-on application of that knowledge. Specific certifications are not required, but it is expected that the employee will be working towards technical certification.

Examples of Work

1. Addresses individual work station issues; reviews Help Desk tickets; contacts customer via phone or in person to clarify and view situation.

2. Performs simple installs of standard software (such as MS Office Suite) in standard situations; escalates complications or issues encountered during installs.

3. Assists customers by walking them through/working through predefined steps, providing some explanations of process and context; escalates issues outside predefined processes to more senior analysts.

4. Documents and records incidents and issues; enters relevant data into various systems; modifies basic information, such as passwords.

5. Understands information systems terminology, follows predefined steps and relays information on results back to more senior staff; addresses situations that may be variable, but in predictable ways and with generally known solutions and fairly clear instructions; performs repetitive tasks assigned by more senior team member.

Knowledge, Skills and Abilities

Information Systems -- General knowledge & experience
- Knowledge of current office procedures, methods and equipment
- Basic knowledge of BTS processes and procedures
- Basic knowledge of personal computer hardware and software components
- Basic knowledge of web browsers and web-based applications
- Knowledge of operational characteristics of various computer software packages
- Basic exposure to technology trends

Operating systems
- Basic knowledge of at least one current computer operating system

Analysis/ Problem Solving/ Customer Service
- Knowledge of basic methods and techniques used in troubleshooting various computer applications' problems
- Knowledge of principles and practices of customer service
- Ability to analyze and find solutions for routine problems
- Ability to assess the symptoms of a problem and identify the appropriate solution
- Ability to establish and maintain effective working relationships with those contacted in the course of work

Projects/ Leadership

Research/ Documentation/ Training
- Ability to follow written procedural documentation

Servers / Networks
- Knowledge of operational characteristics of a variety of communications equipment and devices
- Knowledge of basic methods and techniques used in troubleshooting various communications equipment and devices
- Basic knowledge of TCP/IP networking

Hardware
Data
- Ability to enter and record incidents and customer requests; modify information about incidents and customer requests; change passwords, modify documentation

Security / Quality Assurance

License or Certificate
Specific certifications are not required, but it is expected that the employee will be working towards technical certification.

Specialties:
Positions in this class are assigned to one of the following specialties: Generalist (GEN). Positions assigned to the Generalist specialty are defined in the Examples of Work section of the class specification.

Classification History:
Adopted: 12-16-98 Class created as a result of IT Classification and Compensation Study 1997-1998.
Revised:
June 2009 - Change Job Class number from 2522 to 30000198, due to system change.
August 2012 – Update of series and re-titled from IS Technicians and IS Analysts to combined series of Information Systems Technical Analyst. This level formerly titled Information Systems Technician I.
July 2017 – Updated union name from COPPEA to PTE

Information Systems Technical Analyst II   30000199

The ISTA II duties include all of the duties of ISTA I and are distinguished by the following additional responsibilities:
This is beyond entry level. Incumbents have developed knowledge in the technology and typically have a minimum of two years of practical, on the job experience and/or specific technical certifications and demonstrated technical competence. Typically has a college degree or equivalent technical certifications.

Examples of Work:
1. Performs PC hardware and software troubleshooting; resolves routine/common problems; performs limited research on more complex problems.

2. Assists customers by walking them through/working through predefined steps and some additional steps based on results of initial steps; explains process and context to customers.

3. Deploys workstations; sets up new users; installs new images.

4. Monitors production runs; reports system problems to higher level staff; prints and distributes reports.

5. Remains current in technical field; maintains knowledge of technical trends.

6. May perform research on new technologies as requested by more senior technical staff.

Knowledge, Skills and Abilities -- **In addition to technical knowledge and training of ISTA I,**

Information Systems -- General knowledge & experience
- Familiarity with BTS policies; ability to locate, review and apply BTS policies
- Working knowledge of BTS processes and procedures
- Knowledge of principles and practices of computer science and information systems
- Knowledge of personal computers and laptops
- Knowledge of methods and techniques of computer system design
- Knowledge of methods and techniques of computer software installation

Operating systems
- Working knowledge of at least one computer operating system
- Basic understanding of differences between workstations and servers
- Ability to install, configure, update and troubleshoot at least one current operating system

Analysis / Problem Solving/ Customer Service
- Knowledge of principles and practices of troubleshooting hardware and software issues in communications and computer systems
- Working knowledge of customer service techniques and practices
- Ability to utilize electronic testing and diagnostic tools and equipment
- Ability to provide customer service, determine and understand customer's issues and attempt to manage/defuse the situation
- Ability to resolve routine problems/issues that have been seen before

Projects/ Leadership
- Ability to work independently on small work projects

Research/ Documentation/ Training
- Ability to perform limited research to look at root cause and solve problems at the source.
- Basic operation of research tools, such as TechNet, MS Knowledgebase, etc.
- Ability to prepare technical documentation and training materials for assigned area

Servers / Networks
- Knowledge of methods and techniques of communications system design, programming and software installation
- Knowledge of communication service methods, terminology, and requirements
- Knowledge of basic tools for troubleshooting network issues
- Knowledge of operational characteristics of local and wide area network systems
- Knowledge of electronic communications cabling and wiring systems
- Skill in understanding how a network fits together and utilizing that to locate the source of a problem
- Skill in basic hardware and software troubleshooting
- Ability to monitor, manage, and schedule jobs in accordance with written procedures
- Ability to perform basic troubleshooting of operational issues
- Ability to escalate issues with appropriate level of detail and pertinent information

Hardware
- Basic knowledge of peripherals, such as printers and smartphones

Data
- Knowledge of database principles
- Knowledge of storage system principles

Security / Quality Assurance

License or Certificate
Technical certifications as determined by BTS or equivalent knowledge and experience. Examples of certification are: A+ and/or MCTS (Windows 7 certification) and/or hardware vendor certifications.

Specialties:
Positions in this class are assigned to one of the following specialties: Generalist (GEN). Positions assigned to the Generalist specialty are defined in the Examples of Work sections of the class specification.

Classification History:
Adopted: 12-16-98 Class created as a result of IT Classification and Compensation Study 1997-1998.
This class is composed of the following classes:

      2540   Adopted: 08-17-84 (Assistant Management Information Systems Analyst)
              Revised: 01-14-88; 07-01-92 (Class revised, title and job class number changed as a result of Nonrepresented Classification & Compensation Study, 1991-92)
      2510   Adopted: 02-25-85 Revised: 07-01-92
              (Class revised and job class number changed as a result of Nonrepresented Classification & Compensation Study, 1991-92)

Revised:
June 2009 - Change Job Class number from 2523 to 30000199, due to system change.
August 2012 – Update of series and re-titled from IS Technicians and IS Analysts to combined series of Information Systems Technical Analyst. This level formerly titled Information Systems Technician II.
July 2017 – Updated union name from COPPEA to PTE

Information Systems Technical Analyst III   30000200

The ISTA III duties include all of the duties of lower ISTA levels and are distinguished by the following additional responsibilities:
This level uses advanced methods and techniques and a moderate level of research and analysis to perform computer system work. Typically has a minimum of 3 years of progressive and varied experience and a college degree and/or multiple certifications. Focus is still more on individual desktop or workgroup technology or support issues (vs. global issues across the organization).

Examples of Work
1. Deploys workstations; sets up new users; installs new images.

2. Performs installs of standard software and addresses complications that may arise; performs some troubleshooting, but escalates complex issues.

3. Utilizes advanced customer service capabilities; provides in-depth assessment of customer issues and concerns; defuses/addresses customer service situations; explains technical issues to customer and offers solutions; escalates customer issues as needed.

4. Resolves moderately complex technical issues.

5. Independently performs basic analysis of issues and problems that have not been personally encountered before and finds solutions.

6. Performs moderate level of research to determine root cause and solve problems at source.

7. Stays current on technological trends, developments, progress.

8. May lead a small project effort usually of limited duration (a few days or weeks) and with a small number of other people involved.

Knowledge, Skills and Abilities --   In addition to technical knowledge and training of ISTA I and II,

Information Systems -- General knowledge & experience
- Thorough knowledge of BTS processes and procedures
- General knowledge of BTS policies; ability to locate, review and apply BTS policies
- Knowledge of principles and practices of software troubleshooting
- Knowledge of advanced principles and practices of computer science and information systems
- Knowledge of advanced techniques and methods for analyzing network and desktop design, and software installation
- Knowledge of theories of computer sciences

Operating systems
- Knowledge of operational characteristics of mainframe and network operating systems
- Ability to install, configure, upgrade and troubleshoot one or more current operating systems

Analysis / Problem Solving/ Customer Service
- Skill in troubleshooting software issues

- Ability to understand logical path to resolution and follow as far as possible, escalating as needed
- Ability to go beyond pre-defined processes; assess/analyze situations and look for solutions; escalate to more senior analyst as needed
- Ability to resolve more complex technical issues; take extra steps to determine how/where to escalate
- Ability to participate effectively in process and procedure discussions and recommend process improvements
- Ability to perform a small amount of research related to troubleshooting and document that research

Projects/ Leadership
- Ability to lead a small project effort of limited duration

Research/ Documentation/ Training
- Ability to review and recommend improvements to written documentation

Servers / Networks
- Full knowledge of TCP/IP
- Knowledge of current technology of wired and wireless voice and networked data communications
- Ability to troubleshoot basic network issues

Hardware
- Skill in troubleshooting PCs, laptops, and peripherals, such as printers and scanners

Data
Security / Quality Assurance

License or Certificate
Multiple technical current certifications as determined by BTS or equivalent knowledge and experience. For examples: A+ and MCTS (Windows 7 certification) and/or hardware vendor certifications.

Specialties:
Positions in this class are assigned to one of the following specialties: Generalist (GEN), Telecommunications (TCOM). Positions assigned to the Generalist specialty are defined in the Examples of Work sections of the class specification.

Classification History:

Information Systems Technician III:
Adopted: 12-16-98 Class created as a result of IT Classification and Compensation Study 1997-1998.
Revised: June 2009 - Changed Job Class number from 2524 to 30000200, due to system change.

Information Systems Analyst I:
Adopted: 12-16-98 Class created as a result of IT Classification and Compensation Study 1997-1998.
This class is composed of the following classes:
    2540   Adopted: 08-17-84 (Assistant Management Information Systems Analyst) Revised: 01-14-88; 07-01-92 (Class revised, title and job class number changed as a result of Nonrepresented Classification & Compensation Study, 1991-92)
Revised:
02-27-01 (Added Telecomm Specialty)
June 2009 - Change Job Class number from 2541 to 30000208 (GEN), due to system change.
June 2009 - Change Job Class number from 2541 to 30000209 (TCOM), due to system change.

Information Systems Technical Analyst III
August 2012 – Update of series and re-titled from IS Technicians and IS Analysts to combined series of Information Systems Technical Analyst. This level is a combination of two classes, formerly titled Information Systems Technician III and Information Systems Analyst I.
July 2017 – Updated union name from COPPEA to PTE

ISTA III – Telecommunications Specialty (TCOM)   30000209

Summary:
This is specialized work performing system administration of the City's voice and data telecommunication utility. Positions assigned to the specialty are responsible for coordinating the implementation and ongoing operation of the City's system. Work involves evaluating problems and identifying solutions, selecting and supervising vendors for system repairs and installations, coordinating the installation of cable, responding to customer requests for service; training customers on use of equipment and systems, and related duties as assigned.

Examples of Work:
1. Manages telephone equipment moves, changes, upgrades and repairs by documenting and evaluating service requests, programming moves within the system, selecting and supervising vendors, and performing some installation of equipment.

2. Manages installation and cutover of voice telecommunications service; prepares cost estimates and schedules work.

3. Activates or modifies voice mailboxes; orders service for and monitors several data networks using on-line systems.

4. Monitors telecommunications traffic and network systems within the City's utility.

5. Assists customers by assessing equipment capabilities and identifying and acquiring appropriate telecommunications equipment.

6. Troubleshoots and resolves telecommunications problems for customers.

7. Monitors the quality of vendor installation and repair work.

8. Develops and maintains system and inventory documentation using electronic databases.

9. Trains customers in telephone equipment usage.

Knowledge, Skills and Abilities -– **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from ISTA III - Generalist:**

Information Systems -- General knowledge & experience
  ▪ Knowledge of telephone industry installation and repair practices
  ▪ Knowledge of standard telephone industry operating procedures
  ▪ Ability to organize and maintain filing systems

- Ability to interpret and apply City, County, State and/or Federal telecommunications policies, regulations and laws

Operating systems

Analysis/ Problem Solving/ Customer Service
- Ability to work under pressure, including taking complaints and resolving issues for people who are hurried, angry or confused

Projects/ Leadership

Research/ Documentation/ Training

Servers / Networks
- Knowledge of current technology of voice and data telecommunications
- Knowledge of current technology of wired and wireless voice and networked data communications
- Knowledge of operations and applications of electronic switching equipment
- Knowledge of cabling and wiring standards and codes
- Skill in the use of hand tools commonly used in the installation and repair of cable and wiring

Hardware

Data

Security / Quality Assurance

Information Systems Technical Analyst IV   30000210

The ISTA IV duties include all of the duties of lower ISTA levels and are distinguished by the following additional responsibilities:
This level installs, configures, upgrades and troubleshoots multiple operating systems, utilizing thorough knowledge and extensive experience supporting operating systems and system upgrades. Typically has a college degree, 5 years of progressive and varied experience, and multiple applicable certifications. Resolves complex technical issues requiring more in-depth analysis.

Examples of Work

1. Installs and sets up new user profiles; is aware of common issues and solves most issues without research; can recover documents; understands version compatibility issues; can install/configure more desktop software and less common desktop software; provides direction to customers on BTS policy and hardware and software exception processes.

2. Installs, configures, upgrades and troubleshoots PC's, laptops and a comprehensive span of peripherals, including printers, smartphones, scanners, plotters, etc.

3. Installs, configures, upgrades and troubleshoots desktop operating systems; performs operating system upgrades.

4. Determines workstation status, i.e.: break fix or replacement; images and replaces workstations; troubleshoots PC image issues, installs additional applications not included in image.

5. Independently analyzes problems and prescribes viable solutions; resolves complex technical issues.

6. Administers and troubleshoots server based operating systems and other enterprise systems; designs configuration and setup of servers and other enterprise systems; monitors and reports on overall system performance.

7. Utilizes a wide array of technical resources for troubleshooting.

8. Leads or coordinates projects of low complexity, risk, visibility and impact. Examples include small projects such as application enhancements, new infrastructure installations, moves, telecommunications or service upgrade projects. May assist more senior project management staff on aspects of a large or complex technology project.

9. Attends trainings and brings back information to conduct trainings for peers and lower level ISTAs.

10. Remains current on technological trends, progress and updates.

11. Researches assigned topics or project tasks; tests, evaluates, identifies options, assesses strengths and weaknesses and provides recommendations to higher level technical staff or management.

Knowledge, Skills and Abilities -- **In addition to technical knowledge and training of ISTA I, II and III,**

Information Systems -- General knowledge & experience
- Knowledge of a variety of industry/organizations' systems or a major system change in a single environment
- Knowledge of system analysis methods and techniques
- Knowledge of how complex information systems work
- Knowledge of methods of system design and development; understanding of elements
- Knowledge of report design
- Knowledge of statistical analysis
- Skill in technical specialties with a narrower focus (such as a particular application or tool)
- Ability to utilize a thorough knowledge of BTS policies and procedures; provide direction to customers and lower level ISTAs on exception processes
- Ability to install and set up new user profiles; be aware of common issues and solve most issues without research; recover documents; understand version compatibility issues; install/configure less common desktop software or a greater variety of desktop software
- Ability to take previous experience on other systems and apply it to current situations
- Ability to assess workstation status
- Ability to implement and install computer hardware and software

Operating systems
- Knowledge of server-based operating system design, administration and troubleshooting
- Ability to install, configure, upgrade and troubleshoot multiple operating systems, utilizing thorough knowledge and extensive experience supporting operating systems and system upgrades

Analysis / Problem Solving/ Customer Service
- Skill in methods and techniques used to install, troubleshoot, problem solve and maintain information systems hardware and software
- Skill in understanding the steps to be taken to resolve issues
- Skill in resolving complex technical issues

Projects/ Leadership
- Basic knowledge of principles and practices of technology project management
- Basic knowledge of documenting user needs and business analysis
- Ability to defuse difficult customer situations while applying and explaining technical situations and resolutions
- Ability to understand customer's situation and engage in developing alternatives to meet immediate needs while technical solutions are in process
- Ability to resolve issues and problems never seen before
- Ability to recognize patterns and extrapolate from those to apply knowledge to new situations
- Ability to go beyond pre-defined processes. Assess/analyze situations and look for solutions; assess what may be missing, typical sources of problems; resolves most issues
- Ability to plan, organize and manage a small technology project including developing and managing project budgets, schedule and scope
- Ability to assess customer and business needs and define requirements
- Ability to coordinate small project teams to align activities with overall project goals
- Ability to communicate clearly and concisely to technical and non-technical audiences

Research/ Documentation/ Training
- Knowledge of diverse technical resources that can be used for research and analysis
- Ability to utilize diverse sources of technical knowledge and updates, such as trade magazines, articles, chat forums and blogs, to support research and analysis work
- Ability to independently research issues, technology, and technological trends
- Ability to coordinate and organize documentation and training materials
- Ability to create technical documentation and training materials for more complex subjects

Servers / Networks
- Knowledge of server-based operating system design, administration and troubleshooting, including principles and practices
- Knowledge of server operating systems in the market
- Knowledge of server management tools and applications
- Knowledge of standard server hardware
- Knowledge of standard network hardware
- Knowledge of network technology principles and concepts
- Knowledge of OSI (Open Systems Interconnection model) basics; IP addresses, schema, how to interface with the network, connection between servers and desktops
- Ability to test and implement patches and new server Operating Systems under direction of a more senior server administrator
- Ability to monitor, maintain and administer a variety of network operating systems
- Ability to manage telecommunications network traffic and maintain network routing

Hardware
- Knowledge of some specialized hardware appliances

Data
- Knowledge of file manipulation and data validation methods and techniques
- Knowledge of data structures, design and basic programming
- Basic knowledge of common enterprise databases
- Knowledge of database principles and practices
- Knowledge of storage administration principles and practices
- Ability to perform database and storage administration tasks per established processes and procedures

Security / Quality Assurance
- Knowledge of quality assurance principles and practices for computer information systems
- Knowledge of security principles and practices for computer information systems

License or Certificates
Multiple technical current certifications as determined by BTS or equivalent knowledge and experience. For example: in addition to the A+ and MCTS (Windows 7) certification, this level will include certification such as: MCITP (Windows 7) certification, Oracle Certified Associate certification, SNIA Certified Storage Professional, and/or hardware vendor certifications.

Specialties:
Positions in this class are assigned to one of the following specialties: Generalist (GEN), Telecommunications (TCOM), Vertical GIS (GISV). Positions assigned to the Generalist specialty are defined in the Examples of Work sections of the class specification.

Classification History:
Adopted: 12-16-98 Class created as a result of IT Classification and Compensation Study 1997-1998. This class is composed of the following classes:

> 2542 Adopted: 07-01-92 Revised: 08-18-93; Revised: 07-24-97 (Class updated, revised Class Summary, Examples of Work, KSAs and Special Requirements) Class created as a result of Nonrepresented Classification & Compensation Study, 1991-92. This class is composed of positions from the following classes:0379 Assistant MIS Analyst   Adopted 08-17-84; Revised 01-14-88
> 2512 Adopted: 11-16-82 Revised: 07-01-92 (Class revised and job class number changed as a result of Nonrepresented Classification & Compensation Study, 1991-92.)

Revised:
12-01-04 (Changed FLSA status from exempt to covered per contract negotiations)
01-17-06 (Updated "Specialties" section from GISB specialty to GIS)
02-08-06 (Re-titled GIS specialty to Vertical GIS – GISV no modifications to description)
June 2009 - Change Job Class number from 2542 to 30000210 (GEN), due to system change.
June 2009 - Change Job Class number from 2542 to 30000211 (TCOM), due to system change.
June 2009 - Change Job Class number from 2542 to 30000212 (GISV), due to system change.
Sept 2010 – Minor housekeeping changes to KSAs.
August 2012 – Update of series and re-titled from IS Technicians and IS Analysts to combined series of Information Systems Technical Analyst. This level formerly titled Information Systems Analyst II.
July 2017 – Updated union name from COPPEA to PTE

ISTA IV - Telecommunications Specialty (TCOM)   30000211

Summary:
This is specialized work performing system design, installation and administration of the City's voice and data telecommunication utility. Employees are responsible for assisting in the creation of and changes to the design, implementation and ongoing operation of the City's systems; oversight of technical workers involved in evaluating problems and identifying solutions; selecting and supervising vendors for system design, installations and repair; advising customers in system components/design.

Examples of Work:

1. Works with customer bureaus to define project requirements, cost estimates, implementation schedules and bid specifications for communications projects and equipment.

2. Participates on large and complex communications projects simultaneously.

3. Assigns, evaluates and monitors the work of technical staff (where applicable) and contractors.

4. Establishes and maintains effective working relationships with personnel, vendors and other City employees.

5. Provides voice and data communications systems project management services.

Knowledge, Skills and Abilities –– **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from the ISTA IV - Generalist:**

Information Systems -- General knowledge & experience
- Ability to read and understand specifications
- Ability to design telecommunications systems, conduct systems analysis and problem solve
- Ability to interpret and apply City, County, State and/or Federal telecommunications policies, regulations and laws

Operating systems
- Knowledge of methods, techniques, principles and practices of integrating communications operating systems

Analysis/ Problem Solving/ Customer Service
- Ability to communicate effectively, both orally and in writing

Projects/ Leadership

Research/ Documentation/ Training

Servers / Networks
- Knowledge of operational characteristics of wide area networks
- Knowledge of methods and techniques of designing, developing, installing and maintaining wide area networks

Hardware

Data
- Knowledge of operational characteristics and capabilities of database management systems

Security / Quality Assurance

ISTA IV – Vertical GIS Specialty (GISV)   30000212

Summary:
Positions assigned to this class are responsible for working with users of GIS computer systems to develop tools and data to support business processes. Work includes interacting with a wide range of internal customers, understanding how Geographic Information System (GIS) technology can improve efficiency, and implementing systems to meet customer goals. Incumbents must demonstrate strong communication skills with a solid technical foundation; must exhibit excellent analytical skills; and function as a change agent.

Examples of Work:

1. Assists end users in using both standard GIS software and applications produced by citywide and bureau GIS staff.

2. Creates custom data and software environments to support specific business processes.

3. Customizes GIS applications to fit specific individual and group requests.

4. Works to improve the integration of spatial data with other information systems and the accuracy and completeness of GIS data sets; expands the use of GIS into new areas; develops solutions combining spatial and tabular data with appropriate software.

5. Provides support to users of GIS applications at all levels.

6. Trains users in the effective use of custom designed GIS applications and tools.

7. Answers technical questions and solves user problems.

8. Works with GIS Business Architects to gather user requirements and plan appropriate solutions.

9. Fosters relationships with user community to find new ways to apply GIS technology to improve work flows and data efficacy.

10. Evaluates vendor products needed for performing operations and developing project products.

11. Analyzes, interprets and implements GIS policies and plans.

12. Participates in planning and implementation of application development.

Knowledge, Skills and Abilities -– **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from the ISTA IV - Generalist:**

Information Systems -- General knowledge & experience
- Knowledge of the full range of GIS software tools, including hardware, software and database technologies
- Knowledge of programming frameworks and environments for customizing, integration and performing analysis with GIS systems

Operating systems
- Ability to use GIS for map production, complex analyses, and work flow integration

Analysis/ Problem Solving/ Customer Service
- Ability to support a variety of users with diverse needs and skill levels in using GIS technology

Projects/ Leadership
Research/ Documentation/ Training
- Ability to research requirements and specifications, analyze user needs, and propose solutions to both users and developers in a succinct and understandable format

Servers / Networks
Hardware
Data
Security / Quality Assurance

Information Systems Technical Analyst V   30000213

The ISTA V duties include all of the duties of lower ISTA levels and are distinguished by the following additional responsibilities:
This level typically maintains large, complex City technology systems and often serves as an ongoing team lead or in a project lead capacity on technology projects. Typically requires specialized technical knowledge and skill; a high level of experience or MCSE Microsoft Certification. Typically has a college degree, seven years of progressive and varied experience and multiple certifications such as MCSE, MCM, MCA or other equivalent types of certifications with specific expertise. Expected to be fully trained in all procedures related to assigned area of responsibility.

Examples of Work

1. Provides analysis on big picture issues; leads research effort to find best way to address issues, including the type of technology.

2. Addresses difficult, complex technical issues; performs extensive in-depth analysis; communicates issues to appropriate BTS teams to get problems resolved; maintains ownership of issues and follows through until resolved.

3. Installs, sets up new user profiles; performs extensive research of solutions to issues, including contacting the vendors; recommends image configurations.

4. Receives issues escalated from lower level ISTA's; inquires as to steps taken, results, issues already identified; resolves issues as possible; may contact vendor directly; recognizes when to escalate to management or a specialized team; helps define standard processes for team members to follow in future situations.

5. May lead hardware or software standards recommendations teams to review and recommend future standards.

6. Works with hardware vendors for problem resolutions; applies advanced understanding of standard server-based hardware, storage systems, hardware redundancy, power issues and network infrastructure.

7. Manages midsized projects of low to difficult complexity, low to medium risk and visibility, and minor impact. Typical projects may impact enterprise systems, or bureau business systems with large numbers of users or stakeholders and may span multiple BTS divisions; provides leadership of project team and has an increased level of accountability for project outcomes.

8. May serve as team lead for ongoing team; provides direction to lower level staff; assists supervisor with setting goals for team; triages incoming work and makes work assignments.

9. Provides recommendations to higher level technical and management staff.

10. Participates on task forces and committees.

11. Tests new equipment; analyzes and makes recommendations.

12. Understands BTS policies and procedures; provides guidance and direction to more junior team members on following policies; may suggest changes to policies and procedures.

Knowledge, Skills and Abilities -- In addition to technical knowledge and training of ISTA I, II, III AND IV,

Information Systems -- General knowledge & experience
- Additional areas of training or certification, such as security, Altiris or other technical tools
- Knowledge of advanced principles and practices of computer science and information systems
- Knowledge of advanced methods of system analysis, design, programming and software installation
- Knowledge of interaction between different layers of the technology stack
- Enterprise focus across individual technical areas
- Skill in continuous improvement
- Experience supporting multiple operating system upgrades/migrations
- Strong process and documentation skills

Operating systems
- Knowledge of operational characteristics of several operating systems and platforms
- Intermediate knowledge of current server-based operating systems in the market
- Intermediate knowledge of design, administration and troubleshooting of server-based operating systems
- Knowledge of intermediate principles and practices of server operating system troubleshooting and administration
- Skill in deploying, operating, and troubleshooting server-based operating systems
- Ability to evaluate, test and implement new server operating systems
- Ability to install, configure, upgrade and troubleshoot multiple operating systems

Analysis / Problem Solving/ Customer Service
- Advanced knowledge of, and experience using a wide array of technical resources for troubleshooting, including knowledge bases, tech net, internet chat forums, server-based operating systems and other enterprise systems
- Ability to identify technical problems that are external to the desktop or server that may impact the system
- Ability to address and resolve issues that impact the overall system or project vs the individual desktop
- Ability to review customer situation and proactively recommend solutions or improvements
- Ability to evaluate client requirements for information technology or voice and data communications
- Ability to translate technical issues and requirements into explanations for non-technical users
- Ability to research and find solutions to most advanced problems independently
- Ability to maintain and apply a larger view of problem impact and implications
- Ability to maintain ownership of issues and follow through until resolved

Projects/ Leadership
- Working knowledge of principles and practices of technology project management

- Working knowledge of documenting user needs and business analysis
- Knowledge of risk management, work breakdown structure, budget estimation and project scheduling
- Knowledge of team planning and goal setting
- Ability to plan, organize, manage and deliver mid-sized technology projects on time and on budget to meet business needs
- Ability to track risks and issues on projects to ensure that project success is not negatively affected
- Ability to analyze and document business to-be and as-is process flow
- Ability to manage mid-sized project teams to align activities with overall project goals
- Ability to communicate clearly and concisely to executive, technical and non-technical audiences
- Ability to use appropriate industry standard project management software to manage project plans and documents
- Ability to provide regular status reports to executives, committees, project sponsors, teams and stakeholders

Research/ Documentation/ Training
- Skill in conducting organized technology research efforts
- Skill in documenting advanced and more complex subjects, reviewing advanced documentation
- Ability to recognize opportunities for continuous improvement and initiate discussions with team and supervisor
- Ability to distribute work to team and report team progress on tickets or projects to supervisor
- Ability to lead, organize and review the work of professional and technical information systems staff
- Ability to cover for supervisor during absences
- Ability to assist lower level ISTAs
- Ability to work independently
- Ability to research, recommend, and document intermediate-level technical standards
- Ability to research and recommend intermediate-level technologies

Servers / Networks
- In-depth knowledge and experience of network infrastructure
- Intermediate knowledge of principles and practices of server-based hardware and software systems
- Intermediate understanding of standard server-based hardware, storage systems, hardware redundancy, power issues and network infrastructure
- Knowledge of networking protocols, standards, security and technology
- Knowledge of operational characteristics of local and wide are networks
- Knowledge of methods of design, installation, and maintenance of local and wide area networks

Hardware
- Extensive knowledge of most hardware; experience working with mobile computing devices
- Intermediate understanding of specialty appliances
- Intermediate understanding of backup systems hardware and software

Data
- Intermediate knowledge of database administration and operation

Security / Quality Assurance

License or Certificate

Multiple technical current certifications as determined by BTS or equivalent knowledge and experience. For example: A+ and MCTS (Windows 7) and MCITP (Windows 7) certifications and more advanced certifications such as: MCSE, MCM (Microsoft), MCITP SQL Server certification, MCITP Windows Server certification, Oracle Certified Master) and/or MCA (Microsoft Professional certification, HDS Certified Architect) Storage Manager, etc. Project Management Institute Certified Associate in Project Management (CAPM) or Project Management Professional (PMP) desired.

Specialties:

Positions in this class are assigned to one of the following specialties: Generalist (GEN), Project Management (PROJ), Telecommunications (TCOM), and Vertical GIS (GISV). Positions assigned to the Generalist specialty are defined in the Examples of Work sections of the class specification.

Classification History:

Adopted: 12-16-98 Class created as a result of IT Classification and Compensation Study 1997-1998. This class is composed of the following classes:

   2544 Adopted: 07-01-92 Revised: 08-18-93 Class created as a result of Nonrepresented Classification & Compensation Study, 1991-92. This class is composed of positions from the following classes: 0379 Assistant MIS Analyst   Adopted 08-17-84; Revised 01-14-88
   2520 Adopted: 11-20-84 Revised: 07-01-92 (Class revised and job class number changed as a result of Nonrepresented Classification & Compensation Study, 1991-92).

Revised:
12-19-05 - Added GIS Specialty.
02-08-06 - (Re-titled GIS specialty to Vertical GIS – GISV; no modifications to description).
June 2009 - Change Job Class number from 2543 to 30000213 (GEN), due to system change.
June 2009 - Change Job Class number from 2543 to 30000214 (GISV), due to system change.
August 2012 – Update of series and re-titled from IS Technicians and IS Analysts to combined series of Information Systems Technical Analyst. This level formerly titled Information Systems Analyst III.
October 2012 – Added Project Management Specialty.
July 2017 – Updated union name from COPPEA to PTE
April 2018 – Added TCOM Specialty

ISTA V - Project Management Specialty (PROJ)   30001933

Summary:

Under general direction, a Technology Project Manager (ITPM) is responsible for planning, organizing, managing and participating in the development and implementation of technology projects; works with project stakeholders, including project sponsor, management, subject matter experts and technical teams to manage technology projects in accordance with BTS project management methodologies and procedures; identifies and manages project risk; monitors progress and performance against project goals, budget, schedule and scope to ensure requirements are met; coordinates assigned activities with other divisions and City bureaus. Work requires project management expertise to integrate multiple interests and stakeholders in achieving successful project results. In-depth organization and process knowledge is also essential for ensuring project success. ITPM will lead project teams, which may include professional, technical and clerical staffs.

Examples of Work:

1. Manages midsized projects of low to difficult complexity and low to medium risk, visibility and impact. Typical projects may impact enterprise systems or bureau business systems with large numbers of users or stakeholders and may span multiple BTS divisions; provides leadership of project team and has an increased level of accountability for project outcomes.

2. Works with stakeholders to develop overall project scope, objectives, goals, budget and timeline; develops and implements project charters and project plans to meet project objectives; develops and manages project budget; assists in developing or recommending associated business processes; identifies and recommends solutions to project resource needs and requirements; plans, organizes, implements and evaluates work activities to meet established overall project goals and objectives;

3. As project manager, works with technical leads to assemble project teams; convenes teams and committees; coordinates the work of the multiple teams and committees; conducts management reviews of progress of project against time lines, goals and budgets; develops project reports and related materials; prepares staff reports and presentations;

4. Develops and maintains project documentation for the life of the project including: project charter, project plans, project critical path, functional requirements, technical requirements, risk management, change management, use cases, communication plan, budget estimates, work breakdown structure, timeline and status reports.

5. Manages the work of outside consultants including establishing system requirements, technology parameters and business requirements; develops and issues requests for proposals; monitors project status and progress; ensures system is developed, implemented and configured according to the specifications; ensures all activities and results are consistent with City strategic direction and standards.

6. Performs other special assignment work as required.

Knowledge, Skills and Abilities -– **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from the ISTA V - Generalist:**

Information Systems -- General knowledge & experience
- Knowledge of principles and practices of computerized systems analysis, design and development
- Knowledge of contract management practices, standards, processes and requirements
- Ability to represent the City effectively in meetings on a variety of technology issues
- Ability to present proposals and recommendations clearly and logically
- Ability to prepare clear, concise and comprehensive correspondence, reports, studies and other written materials appropriate to both technical and non-technical audiences
- Ability to understand, interpret, explain and apply City, state, and federal policy, law, regulation and court decisions applicable to areas of responsibility
- Ability to enforce technological standards

Operating systems
Analysis/ Problem Solving/ Customer Service

- Knowledge of methods and techniques of evaluating business needs and developing information system solutions
- Ability to exercise sound, expert independent judgment within general policy guidelines
- Ability to exercise tact and diplomacy in dealing with sensitive, complex and confidential issues and situations
- Ability to establish and maintain effective working relationships with all levels of City management, other governmental officials, consultants, vendors, employees, the public and others encountered in the course of work
- Ability to assess customer and business needs and define requirements
- Ability to establish and maintain effective working relationships with co-workers, customers, vendors and others contacted in course of work
- Ability to communicate with co-workers, managers and vendors including written communication, leading and facilitating task force committees, and making presentations in management meetings
- Ability to collaboratively identify technical problems and solutions
- Ability manage consulting contracts

Projects/ Leadership
- Knowledge of principles and practices of information systems or telecommunication systems project management, development and administration
- Skill in providing lead direction to staff including assigning and reviewing their work
- Ability to plan, organize and manage a large and complex information technology project including developing and managing project budgets, work plans, process flow diagrams, use cases and timelines
- Ability to use project management tools and techniques to ensure projects are completed on time and budget
- Ability to coordinate and direct a variety of committees and work groups, maximizing staff effectiveness and aligning activities with overall project goals
- Ability to analyze and assess project outcomes in relation to operational needs and make appropriate adjustments
- Ability to identify and respond to organizational issues, concerns and needs

Research/ Documentation/ Training
Servers / Networks
Hardware
Data
Security / Quality Assurance

ISTA V – Telecommunications Specialty (TCOM)   30002608

Summary:

This is specialized work performing system design, installation and administration of the City's voice and data telecommunication utility. Employees are responsible for the creation of and changes to the design, implementation and ongoing operation of the City's systems; oversight of technical workers involved in evaluating problems and identifying solutions; selecting and supervising vendors for system design, installations and repair; advising customers in system components and design; team lead for daily operations and technical project management of large, complex telecommunications projects.

Examples of Work:

1. Partners with customer bureaus to define project requirements, cost estimates, implementation schedules and bid specifications for communications projects and equipment.

2. Identifies system and application roadmap for telecommunications infrastructure.

3. Leads large and complex communications projects simultaneously.

4. Leads, assigns, evaluates and monitors the work of technical staff and contractors.

5. Establishes and maintains effective working relationships with personnel, vendors and other City employees.

6. Provides voice and data communications systems project management services.

Knowledge, Skills and Abilities - **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from the ISTA V - Generalist:**

Information Systems -- General knowledge & experience
- Ability to read and understand telecommunication specifications and industry standards
- Ability to design telecommunications systems, conduct systems analysis and problem solve
- Ability to interpret and apply City, County, State and/or Federal telecommunications policies, regulations and laws

Operating systems
- Knowledge of methods, techniques, principles and practices of integrating communications operating systems with virtual systems and applications

Analysis/ Problem Solving/ Customer Service
- Ability to communicate effectively, both orally and in writing

Projects/ Leadership
- Skill in providing lead direction to staff including assigning and reviewing their work
- Ability to plan, organize and manage a large and complex information technology project including developing and managing project budgets, work plans, process flow diagrams, use cases and timelines
- Ability to use project management tools and techniques to ensure projects are completed on time and budget

Research/ Documentation/ Training

Servers / Networks
- Knowledge of operational characteristics of wide area networks and IP voice communications
- Knowledge of methods and techniques of designing, developing, installing and maintaining wide area networks and IP voice communication systems

Hardware

Data
- Knowledge of operational characteristics and capabilities of database management systems
- Knowledge of virtual appliance architecture for voice applications and systems

Security / Quality Assurance

ISTA V – Vertical GIS Specialty (GISV)   30000214

Summary:
Positions assigned to this class are responsible for working with users of GIS to develop tools and data to support business processes including integrating GIS data and tools with other applications and data. Work involves interacting with a wide range of internal customers, understanding how GIS technology can improve business efficiency, and implementing systems to meet customer goals. Position incumbents must demonstrate strong communication skills, advanced skills in the design and development of GIS software and databases, and analytical skills and function as a change agent. Position incumbents may serve as project lead and may provide direction to assigned project staff.

Examples of Work:
1. Participate in the development and implementation of GIS policies, plans and procedures.

2. Assists end users in using standard GIS software and applications produced by citywide and bureau GIS staff. Troubleshoot and resolve identified problems as appropriate.

3. Create custom data and software applications to support specific business processes.

4. Customizes GIS environments to fit specific individual and group requests.

5. Works to improve the integration of spatial data and tools with other information systems and expand the use of GIS into new functional areas; develops solutions combining spatial and tabular data with appropriate software.

6. Provides support to users of GIS applications.

7. Performs configuration, implementation and support of custom designed GIS applications and tools.

8. Trains users in the use of standard GIS tools and specific GIS applications developed by bureau and corporate GIS staff.

9. Answers technical questions and solve user problems.

10. Fosters relationships with user community to find new ways to apply GIS technology to improve workflows and data quality and efficiency.

11. Evaluates and makes recommendations for vendor products needed to perform operations and develop products.

12. Plans, designs and programs bureau wide GIS applications.

13. Migrates GIS tools and applications to later releases of GIS software and databases as appropriate.

14. Serves as technical lead on projects.

<u>Knowledge, Skills and Abilities</u> - **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from the ISTA V - Generalist:**

Information Systems -- General knowledge & experience
Operating systems
- Advanced knowledge of GIS principles, methods and applied concepts
- Thorough knowledge and experience using ESRI GIS software such as the ArcGIS Desktop and ArcGIS Server
- Thorough knowledge of relational database products such as Microsoft SQL Server
- Advanced knowledge and experience using the full range of GIS software tools, including hardware, software and database technologies
- Advanced use of GIS for map production, complex analyses, and work flow integration
- Ability to automate ArcGIS tasks and models using the ArcPy framework

Analysis/ Problem Solving/ Customer Service
- Skill in supporting a variety of users with diverse needs and skill levels in using GIS technology
- Skill in providing user training in GIS tools and applications

Projects/ Leadership
Research/ Documentation/ Training
- Ability to research user requirements and specifications and propose solutions to both users and developers in a succinct and understandable format

Servers / Networks
Hardware
Data
Security / Quality Assurance

Information Systems Technical Analyst VI   30000215

The ISTA VI duties include all of the duties of lower ISTA levels and are distinguished by the following additional responsibilities:
This level requires specialized technical knowledge and skill with much higher level of experience and certification. Typically has a college degree, nine years of progressive experience, and multiple certifications such as MCSE, MCM, MCA or other equivalent types of certifications with specific expertise. Positions require leadership skills and often serve in a team lead role.

Examples of Work

1. Resolves issues escalated from lower level technical support; takes issues to vendors and works with vendors to resolve the most complex issues; researches and finds resolution to the most difficult problems independently.

2. Addresses the most difficult complex technical problems; performs extensive, in-depth research and analysis to resolve issues.

3. Serves as team lead for projects dealing with enterprise systems and/or critical systems; scale of project effort larger; focused on enterprise systems in the area and scope of what they will research; able to make decisions on resolving issues and problems, within authority.

4. Leads and drives projects; puts plans together and manages to the plan; oversees people on the team; discusses project problems with customers; recommends solution paths to management.

5. Acts as a project manager on large, difficult and complex enterprise technology projects; projects could involve medium to high risk and visibility, business requirements that are difficult to understand and/or have complicated solution components; leads large cross functional project teams including BTS, customers and vendors to deliver projects on time and on budget to meet business needs; appropriately manages project risk and escalates issues accordingly; acts independently showing good judgment and discretion; prepares and presents clear and concise communications to executives such as bureau directors and elected officials, project sponsors and stakeholders.

6. Researches new technological advances utilizing expert documentation and process skills; make recommendations on models, equipment, changes in direction; performs research and makes recommendations about future operating system upgrades and technology direction; reviews and accepts research work of lower staff.

7. Utilizes thorough knowledge of BTS policies and procedures to provide guidance on following them; helps write drafts of new policies or procedures and suggests changes.

8. Researches and recommends training classes for staff.

Knowledge, Skills and Abilities -- **In addition to technical knowledge and training of ISTA I, II, III, IV and V,**

Information Systems -- General knowledge & experience
- Thorough knowledge of BTS Policies and procedures
- Expert knowledge of methods of system analysis
- Expert process skills
- Expert documentation skills

Operating systems
- Extensive experience managing and executing operating system upgrades/ migrations
- Expert knowledge of current server-based operating systems in the market
- Expert knowledge of design, administration and troubleshooting of server-based operating systems
- Ability to evaluate, test and implement new server operating systems
- Ability to integrate a variety of operating systems and applications across multiple platforms

Analysis / Problem Solving/ Customer Service

Projects/ Leadership
- Advanced knowledge of principles and practices of technology project management
- Ability to analyze and balance disparate business practices and recommend business and system approaches that address a variety of areas' needs and multiple dependencies
- Ability to manage teams from multiple BTS functional areas
- Ability to be aware of project visibility from a variety of audiences and incorporate that into communications and approaches

Research/ Documentation/ Training
- Knowledge of advanced principles of lead supervision and training
- Expert knowledge of and experience using a wide array of technical resources for troubleshooting, including knowledge bases, tech net, internet chat forums, server-based operating systems and other enterprise systems
- Skill in leading teams; able to address limited team member performance issues, such as tardiness or task delivery issues
- Skill in planning and managing projects; overseeing people on the team
- Ability to review and accept other analysts' research work
- Ability to research, recommend, and document advanced technical standards
- Ability to research and recommend advanced architectures and technologies

Servers / Networks
- Knowledge of operational characteristics of local and wide area networks
- Knowledge of networking protocol standards, security and technology
- Knowledge of network architecture
- Knowledge of expert methods and techniques of designing, developing, installing and maintaining local and wide area networks
- Knowledge of advanced principles and practices of server-based hardware and software systems
- Knowledge of advanced principles and practices of storage systems
- In-depth knowledge of network infrastructure

Hardware
- Knowledge of hardware infrastructure such as network and server equipment
- Expert understanding of standard server based hardware, RAID systems, hardware redundancy, power issues, storage area networks (SAN) and network infrastructure.

- Advanced understanding of specialty appliances
- Advanced understanding of backups system hardware and software

Data
- Knowledge of advanced principles and practices of database administration and operations

Security / Quality Assurance
- Knowledge of advanced principles and procedures of quality assurance and security related to computer information systems or telecommunication systems

License or Certificate

Multiple technical certifications as determined by BTS or equivalent knowledge and experience. For example: MCTS (Windows 7) and MCITP (Windows 7) certification, MCM and/or MCA, Oracle Certified Master certification, SNIA Certified Storage Engineer certification. Project Management Professional (PMP) desired.

Specialties:

Positions in this class are assigned to one of the following specialties: Generalist (GEN), Project Management (PROJ), Security (SECU), Vertical GIS (GISV). Positions assigned to the Generalist specialty are defined in the Examples of Work sections of the class specification.

Classification History:

Adopted: 12-16-98

Class created as a result of IT Classification and Compensation Study 1997-1998. This class is composed of the following classes:

> 2544 Adopted: 07-01-92 Revised: 08-18-93 Class created as a result of Nonrepresented Classification & Compensation Study, 1991-92. This class is composed of positions from the following classes: 0379 Assistant MIS Analyst   Adopted 08-17-84; Revised 01-14-88
> 2520 Adopted: 11-20-84 Revised: 07-01-92 (Class revised and job class number changed as a result of Nonrepresented Classification & Compensation Study, 1991-92).
> 2522 Adopted: 07-19-83 Revised: 07-01-92 (Class revised and job class number changed as a result of Nonrepresented Classification & Compensation Study, 1991-92).

Revised:

December 2004 – Added Project Management Specialty.

July 2008 – Added Security Specialty.

June 2009 - Change Job Class number from 2544 to 30000215 (GEN), due to system change.

June 2009 - Change Job Class number from 2544 to 30000216 (PROJ), due to system change.

June 2009 - Change Job Class number from 2544 to 30001003 (SECU), due to system change.

November 2010 – Added Vertical GIS Specialty.

August 2012 – Update of series and re-titled from IS Technicians and IS Analysts to combined series of Information Systems Technical Analyst. This level formerly titled Information Systems Analyst IV.

November 2013 – Update to certification references in Security specialty

July 2017 – Updated union name from COPPEA to PTE

ISTA VI - Project Management Specialty (PROJ)   30000216

Summary:

Under general direction, a Technology Project Manager (ITPM) is responsible for planning, organizing, managing and participating in the development and implementation of technology projects; monitors progress and performance against project goals, budget, schedule and scope to

ensure requirements are met; serves on a variety of committees; coordinates assigned activities with other divisions and City bureaus. Work requires project management expertise to integrate multiple interests and stakeholders in achieving successful project results. In-depth organization and process knowledge is also essential for ensuring project success. ITPM will lead project teams, which may include professional, technical and clerical staffs. Work may include all types of technology based projects.

Examples of Work:

1. For assigned projects a Technology Project Manger may assesses bureau's needs; coordinates the design requirements, development, acquisition and implementation of computer system software, hardware, and data communications solutions; ensures migration of data from current system to new system, oversee staff training, system performance, security, maintenance, connectivity and documentation needs have been effectively addressed.

2. Assists in formulating overall project scope, objectives, goals, budget and schedule; researches, develops and implements project charters and project plans to meet goals and service objectives; develops, recommends and manages project budget; assists in developing or recommending associated operating and administrative procedures; identifies and recommends solutions to project resource needs and requirements; plans, organizes, implements and evaluates work activities to meet established overall project goals and objectives; analyzes alternative methods or processes to meet service delivery goals, including conducting cost benefit and resource requirement analyses; ensures program compliance with all applicable City and outside agency requirements.

3. As project manager, works with technical leads to assemble project teams; convenes technical, user and other appropriate task teams and committees; develops agendas and facilitates meetings; coordinates the work of the multiple teams and committees; leads and participates in the analysis and redesign of complex work processes associated with project; conducts management reviews of progress of project against time lines, goals and budgets; develops project reports and related materials; prepares staff reports and presentations; communicates project objectives, progress and issues to bureau managers. Serves as a member, or facilitates the work of an executive steering committee comprised of city budget and financial executives that provides citywide guidance for the project.

4. Evaluates the effectiveness of project activities and makes or recommends project modifications; ensures that performance, maintenance, connectivity and security issues are addressed; prepares narrative and statistical project performance reports and recommendations.

5. Manages the work of outside consultants including establishing system requirements, technology parameters and business requirements; develops and issues requests for proposals; leads the selection process, negotiates terms and conditions, monitors project status and progress; authorizes work and payments; ensures system is developed, implemented and configured according to the specifications; ensures all activities and results are consistent with City strategic direction and standards.

6. Confers with other divisions and bureaus; coordinates and integrates project activities; participates on related boards, commissions and committees; develops project partnerships.

7. Serves as an expert resource; may provide training and technical assistance to staff.

8. Performs other special assignment work as required.

Knowledge, Skills and Abilities -– **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from the ISTA VI - Generalist:**

Information Systems -- General knowledge & experience
  - Knowledge of principles and practices of computerized systems analysis, design and development
  - Knowledge of contract management practices, standards, processes and requirements
  - Ability to represent the City effectively in meetings on a variety of technology issues
  - Ability to present proposals and recommendations clearly and logically
  - Ability to prepare clear, concise and comprehensive correspondence, reports, studies and other written materials appropriate to both technical and non-technical audiences
  - Ability to understand, interpret, explain and apply City, state, and federal policy, law, regulation and court decisions applicable to areas of responsibility
  - Ability to establish and enforce technological standards

Operating systems

Analysis/ Problem Solving/ Customer Service
  - Knowledge of methods and techniques of evaluating business needs and developing information system solutions
  - Ability to exercise sound, expert independent judgment within general policy guidelines
  - Ability to exercise tact and diplomacy in dealing with sensitive, complex and confidential issues and situations
  - Ability to establish and maintain effective working relationships with all levels of City management, other governmental officials, consultants, vendors, employees, the public and others encountered in the course of work
  - Ability to assess customer and business needs and define requirements
  - Ability to establish and maintain effective working relationships with co-workers, customers, vendors and others contacted in course of work
  - Ability to communicate with co-workers, managers and vendors including written communication, leading and facilitating task force committees, and making presentations in management meetings
  - Ability to collaboratively identify technical problems and solutions
  - Ability to negotiate and manage consulting contracts

Projects/ Leadership
  - Knowledge of principles and practices of information systems or telecommunication systems project management, development and administration
  - Advanced knowledge of principles and practices of technology project management
  - Skill in providing lead direction to staff including assigning and reviewing their work
  - Ability to plan, organize and manage a large and complex information technology project including developing and managing project budgets, work plans, process flow diagrams, use cases and timelines
  - Ability to use project management tools and techniques to ensure projects are completed on time and budget
  - Ability to coordinate and direct a variety of committees and work groups, maximizing staff effectiveness and aligning activities with overall project goals

- Ability to analyze and assess project outcomes in relation to operational needs and make appropriate adjustments
- Ability to identify and respond to organizational issues, concerns and needs

Research/ Documentation/ Training
Servers / Networks
Hardware
Data
Security / Quality Assurance

ISTA VI - Security Specialty (SECU)   30001003

Summary:

Positions in this specialty are responsible for participating in or leading complex information technology security projects including analyzing security risks, installing and maintaining intrusion prevention solutions and vulnerability analysis tools; and performing a variety of complex analytical duties relative to assigned area of responsibility. Typically has formal training or industry certification related to information technology security skills. Examples include: CISSP, GIAC, CWNA or vendor-specific technology certifications, such as operating system certifications from Microsoft or Red Hat or networking certifications from Cisco or Juniper Networks.

Examples of Work:

1. Participates in or leads a project to develop information technology work processes and procedures that will comply with City security policy.

2. Installs and configures various firewalls, virtual private networking (VPN) solutions, intrusion detection or prevention solutions, log management, and vulnerability analysis tools.

3. Regularly monitors intrusion detection systems, firewalls, virus scanning and vulnerability analysis alerts for possible security incidents.

4. Analyzes application and network infrastructure risks for various City information technology projects including various web application security risks and analysis of network infrastructure of network firewalls, wireless systems and load balancers. Recommends solutions to mitigate risk.

5. Participates in project planning exercises for operating system, directory system, email, wireless systems or other network infrastructure technology implementations.

6. Participates in application security planning, review and testing.

Knowledge, Skills and Abilities – **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from the ISTA VI - Generalist:**

Information Systems -- General knowledge & experience
Operating systems

- Advanced knowledge of directory services technologies, including Microsoft Active Directory and LDAP

Analysis/ Problem Solving/ Customer Service

Projects/ Leadership

Research/ Documentation/ Training
- Ability to research security risk analysis and mitigation best practices

Servers / Networks
- Advanced knowledge of the TCP/IP protocol and various common application protocols
- Knowledge of TCP/IP routing and other networking concepts
- Intermediate knowledge of VPN protocols and their implementation

Hardware

Data

Security / Quality Assurance
- Intermediate knowledge of application layer vulnerabilities and security approaches
- Ability to implement a variety of network security technologies including but not limited to firewalls, intrusion detection and prevention systems, log management, and vulnerability analysis tools

ISTA VI – Vertical GIS Specialty (GISV)   30001510

Summary:

Under general direction, positions assigned to this class are responsible for working with users to develop GIS tools and data to support business processes. This includes integrating GIS data and tools with other tabular applications and data. Incumbents use advanced skills in the design, development and implementation of GIS software, applications, and databases.   Work involves interacting with a wide range of internal customers, understanding how GIS technology can improve business efficiency, and implementing complex systems to meet customer goals. Incumbents must exhibit excellent analytical skills. Incumbent will also use related and complex GIS tools such as ESRI ArcSDE databases, ArcGIS Server and SSRS reporting servers. May serve as project lead and may provide direction to assigned project staff.

Examples of Work:

1. Participates in the development and implementation of GIS policies, plans and procedures.

2. Assists end users in the use of standard GIS software and applications produced by city and bureau GIS staff. Provide support to users of GIS and related applications.

3. Performs systems analysis duties including the identification of bureau and workgroup requirements, the design, development, testing, implementation and support of GIS and tabular applications.

4. Using Mapworks, customizes GIS environments to fit specific individual and workgroup requests.

5. Improves the integration of spatial data and tools with other information systems, and expands the use of GIS into new functional areas. Develops solutions combining spatial and

tabular data with appropriate application software, including complex commercial off the shelf applications.

6. Answers technical questions; troubleshoots and resolves identified problems with technology including workstations, printers, servers, databases, applications and reporting tools.

7. Configures, administers and supports database and geospatial application servers including Microsoft SQL Server, ESRI ArcGIS Server and Feature Manipulation Engine(FME).

8. Fosters relationships with user community to find new ways to apply GIS technology to improve workflows and data quality and efficiency.

9. Participates in the evaluation, testing and implementation of ESRI upgrades. Installs and upgrades vendor and internally developed products to later releases of GIS. Upgrades database, reporting and application tools as required.

Knowledge, Skills and Abilities -– **In addition to technical knowledge and training of lower level ISTAs and applicable KSAs from the ISTA VI - Generalist:**

Information Systems -- General knowledge & experience
Operating systems
- Expert knowledge of GIS principles, methods and applied concepts
- Advanced knowledge and experience using ESRI GIS software including ArcGIS Desktop and ArcGIS Server
- Advanced knowledge of relational database products such as Microsoft SQLServer
- Expert knowledge and experience using the full range of GIS software tools, including hardware, software and database technologies

Analysis/ Problem Solving/ Customer Service
- Knowledge of principles and practices of computerized tabular and spatial systems analysis, design, development and deployment
- Strong written and oral communication skills
- Ability to automate complex ArcGIS tasks, models and administration using the ArcObjects and ArcPy framework
- Ability to assess customer and business needs and define requirements
- Ability to support a variety of customers with diverse needs and skill levels in the use of GIS technologies
- Ability to provide user training in GIS, reporting tools and applications
- Ability to collaboratively identify technical problems and solutions

Projects/ Leadership
- Knowledge of principles and practices of technology project management, development and administration.

Research/ Documentation/ Training
Servers / Networks
Hardware
Data
Security / Quality Assurance