BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-15\_\_\_\_\_\_

DOCKET NO. UG-15\_\_\_\_\_\_

DIRECT TESTIMONY OF

JAMES M. KENSOK

REPRESENTING AVISTA CORPORATION

##### I. INTRODUCTION

Q. Please state your name, employer and business address.

A. My name is James M. Kensok. I am employed by Avista Corporation as the Vice-President and Chief Information and Security Officer (CISO). My business address is 1411 E. Mission Avenue, Spokane, Washington.

**Q. Mr. Kensok, please provide information pertaining to your educational background and professional experience.**

A. I am a graduate of Eastern Washington University with a Bachelor of Arts Degree in Business Administration, majoring in Management Information Systems, and a graduate of Washington State University with an Executive MBA. I have experience through direct application and management of Information Services over the course of my 32-year information technology career. I joined the Company in June of 1996. Over the past 18 plus years, I have spent approximately one year in Avista’s Internal Audit Department as an Information Systems Auditor with involvement in performing internal information systems compliance and technology audits. I have been in the Information Services Department for approximately 17 years in a variety of management roles directing and leading information technology and systems, planning, operations, system analysis, complex communication networks, cyber security, applications development, outsourcing agreements, contract negotiations, technical support, cost management, data management and strategic development. I was appointed Vice-President and CIO in January of 2007 and Chief Security Officer in January of 2013.

**Q. What is the scope of your testimony?**

A. My testimony will describe the costs associated with Avista’s Information Service/Information Technology (IS/IT) programs and projects. These costs include the capital investments for a range of systems used by the Company, including the replacement of the Company’s legacy Customer Information and Work and Asset Management System (“Project Compass”), Avistautilities.com WEB replacement, and several more important applications.

I also describe the additional IS/IT expenses required to support a range of new and updated applications and systems for cyber security, the operation of the new Customer Information and Work and Asset Management Systems, the Asset Facilities Management application, Advanced Metering Infrastructure (AMI), etc.

As explained by Company witness Ms. Andrews, the Company is basing its electric and natural gas revenue increase requested in this case on its electric and natural gas attrition studies. However, as a “cross check” to the Company’s request based on the electric and natural gas attrition studies, Company witness Ms. Smith has prepared electric and natural gas Pro Forma Cross Check Studies, which incorporate Washington’s share of the pro forma 2016 rate year adjustments for expenses and capital additions described further in my testimony.

A table of contents for my testimony is as follows:

Description Page

I. Introduction 1

II. IS/IT Operating Expenses 3

III. IS/IT Capital Projects 13

IV. Customer Information and Work and Asset Management

System Replacement (Project Compass) 18

Q. Are you sponsoring any exhibits in this proceeding?

A. Yes. I am sponsoring Exhibit Nos.\_\_\_(JMK-2) - \_\_\_(JMK-5). Exhibit No. \_\_\_(JMK-2) includes an update reports on the timing and cost of Avista’s Project Compass. An overview of the communication plan related to the “Go Live” of Project Compass is provided as Exhibit No.\_\_\_(JMK-3), and a timeline showing the individual communication activities is provided as Exhibit No.\_\_\_(JMK-4). An example of the direct-mail communication is provided as Exhibit No.\_\_\_(JMK-5).

##### II. IS/IT OPERATING EXPENSES

Q. What are the primary business needs supported by Avista’s Information Services Department?

A.With advancements in the utility industry, the use of operating, information, and customer-application technologies is increasingly prevalent in day-to-day business operations. The Information Services department provides the technology support required by all Company operations, both internal as well as customer-facing. Examples include field operations, engineering, transmission & distribution operations, power supply, finance, treasury, legal, human resources, customer solutions, customer services, and regulatory functions. Types of support include the design, engineering, implementation, and support of cyber security, computer hardware, application software, data and voice systems and networks, application integration, business continuity and disaster recovery, and data management and mobility. Our customers will be provided with mobile solutions for transacting business with Avista that are available 24 hours per day, in addition to having more data and information about their energy use and tools to manage their consumption of energy. Records management is increasing for both natural gas and electric infrastructure, and Avista is experiencing continued growth in the use of its networks by customers and our employees who are increasingly using mobile, real-time systems to transact business and deliver safe and reliable energy services. These technologies are foundational to Avista’s efforts to keep pace with the service expectations of our customers, to fulfill our regulatory requirements, and to achieve cost savings through prudent technology deployments.

Q. What are the primary drivers increasing IS/IT expenses?

A.There are four key areas, the first of which is the expense associated with the replacement of obsolete systems, such as the Company’s legacy Customer Information and Work Management systems, which will be explained in detail later in my testimony.

The second area is the increasing cyber and physical security requirements to protect Company infrastructure. Our industry is increasingly a target from malicious entities, and in order to protect Avista and its customers, we have been required to increase staffing, deploy new security systems, advance employee training, and deploy more sophisticated business-continuity recovery programs. Meeting expanding regulatory requirements, such as those supporting electric transmission reliability, is also driving cost increases in security compliance.

A third focus is the sensor technology and the associated data networks required by the industry’s modernization of the electric grid and the improved reliability of our natural gas distribution system. Though there are many advantages for customers and the Company associated with the deployment of these new systems, the expenses to support them are an increasing portion of the costs of providing efficient, safe, reliable, and cost-effective energy services.

The fourth driver of Avista’s costs is related to the growth in usage of applications, data, and our data networks. As customer expectations and business and compliance requirements continue to grow, they drive the need for new and expanded technology solutions. Although these new solutions provide the most cost-effective way to meet these growing needs, they also increase costs for application licensing, maintenance and support, and for the computer hardware and networks required to enable them.

**Q. As Information Services requirements have increased, has Avista focused on managing its overall technology expenses for the benefit of its customers?**

A. Yes. Over the past several years, Avista has focused on reducing customer transaction costs through the prudent deployment of technology. Along with meeting customer needs, Avista works continuously to minimize its costs and to maximize employee efficiency through the use of appropriate technology and staffing.

Beginning in 2015, the Information Services Department has reduced the blended hourly rate per technical contracted position supporting the new customer information and work and asset management applications by approximately 50%. Further labor cost reductions were achieved through realignment of legacy custom application labor skills with contemporary commercial application skills resulting in a $213,000 reduction in application system labor. See “Application Systems – Net Labor Additions” section below for additional information on these labor reductions.

**Q. Please summarize the increases in expenses for the 2016 rate year.**

A. Table No. 1 below summarizes the net increase in IS/IT expenses for 2016. A brief description of each item is provided following Table No. 1.



**Advanced Metering Infrastructure (AMI) Estimated Support Costs – $150,000**

The Company has entered the initial planning phase of a program to deploy advanced meters for its electric and natural gas customers in its Washington service area. The Washington advanced metering project will build on the Company’s experience with automated meter reading in Idaho and Oregon, and advanced metering in Pullman, Washington, to provide direct customer and operational benefits to all of Avista’s Washington operations. The project, which will encompass approximately six years, will deploy advanced meters[[1]](#footnote-1) to approximately 253,000 electric customers, and 155,000 natural gas customers. There will be on-going technology support costs associated with the Washington AMI project. This program is described in the testimony of Company witness Mr. Kopczynski.

**Asset Facilities Management Application Replacement (Project Atlas)** **Support Costs – $150,000**

Project Atlas will replace the Company’s obsolete, custom Facilities Management system, and will consist of three applications with new commercial~~-~~off-the-shelf applications. The project includes replacement of the natural gas /electric Construction Design application, Edit Tool Application and the Company’s proprietary Outage Management Application. There will be new incremental on-going technology support costs associated with the new applications. These applications aid in the engineering and design of Avista’s electric and gas infrastructure, which costs would increase without the aid of this technology. In addition to supporting design, the Outage Management Application allows the Company to quickly isolate the likely cause of system outages, to communicate proactively with customers, and to quickly and accurately dispatch Avista crews for service restoration.

**Project Compass Support Costs - $235,272**

There will be a net increase of $235,272 over current operating expenses associated with the deployment of the Company’s new Customer Service and Work and Asset Management Systems implemented as part of Project Compass. The total for new operating expenses required to support these new Systems is $2,592,942, however, there is a corresponding offset in the approximate amount of $2,357,670, which reflects the annual expense reduction in contract services and mainframe computer costs associated with the retirement of the Company’s Legacy Customer Service and Work Management Systems. The new costs are for the annual license and maintenance fees associated with the new replacement applications (IBM Maximo and Oracle Customer Care & Billing) and ancillary supporting applications. Costs also include the professional services associated with the real-time operation and maintenance of the applications, and the labor expense supporting management reporting for the new Systems. A brief description of each of these costs is provided below:

Oracle Customer Care & Billing (CC&B) and IBM Maximo Applications

* Application Maintenance Fee paid to IBM. This fee supports ongoing application maintenance, enhancements and updates.
* Application Maintenance Fee paid to Oracle for system maintenance, enhancements and updates.
* Application Maintenance Fee for IBM’s Tivoli batch scheduling software, which automates, aggregates and executes batch system functions each day (e.g. customer billing, credit and collections, letters and notices).
* License and Maintenance Fee for the Oracle Database System.
* License and Maintenance Fee for the Oracle Data Integrator (ODI) Application, which performs the extraction, transfer and loading of data for management reporting.
* License and Maintenance Fee for the WebLogic Application, the middleware application layer that is the underlying Java application engine that CC&B and Oracle Utility Analytics (OAU) require to operate.

Shared Support

* License and Maintenance Fee for HP’s “Quality Center” Application, which is used to automate the routine user testing of the integrated software systems.
* HP services (labor) supporting management reporting for the Maximo and Customer Care & Billing Applications.
* IBM Application Management Services, providing technical resource support for maintaining and managing the real-time availability and performance of the Customer Care & Billing and Maximo application systems for Avista.
* License and Maintenance Fee for the GoldenGate Application, a component of the Oracle Utility Analytics (OUA) reporting solution for both Oracle CC&B and IBM Maximo.

**Data Warehouse Support Costs – $150,000**

These costs are to support Avista’s enterprise Data Warehouse. Data is extracted periodically from Avista’s commercial and custom applications that support business processes including customer data and data from Avista's Advanced Metering Infrastructure (AMI). The data is translated using a common data model and loaded onto specialized and dedicated computers running a commercial database management system (DBMS). As part of the translation process it is validated, reformatted, reorganized, summarized, restructured, and supplemented with data from other sources, including third party data such as weather or commercially available consumer data. New data is also calculated and derived from the raw data and stored as real data in the warehouse (called Metadata).

The resulting Data Warehouse becomes the main source of information for the business, including but not limited to: historical report generation, analysis, predictive analytics, prescriptive analytics, and data science all presented through ad hoc reports, portals, dashboards (business intelligence and analytics). Various business intelligence and analytics applications, custom and commercial, can access the Data Warehouse directly or through application programming interfaces to utilize the data.

Even though additional hardware and software are needed, the presence of a Data Warehouse costs less and delivers more value than a direct connection to Avista data for similar purposes. Maintenance and governance can now be centralized in one application, reducing the business risk of decisions made from bad or misinterpreted data. Further value comes with the new insights into Avista’s business through the metadata and combined with third party data. With the continual cost decline of parallel computing, predictive and prescriptive analytics can now be achieved with marginal increased costs to the Data Warehouse.

The data warehouse software will help Avista’s financial forecasting group accurately and efficiently include complex ad-hoc “what-if” scenarios in their daily analysis, which aid senior management and others in their decision-making. Another example of efficiency and cost savings for our customers comes from the reduced waste of having to manually re-key data from multiple systems and reports and having to calculate financial summaries in a spreadsheet form that manually gathered data. Avista Senior Management relies on these summary reports for key decision making. Currently that data has to be double and triple checked for accuracy before presenting. With Avista’s data warehouse, accuracy can be maintained through our SOX based software controls process.

**Enterprise Document Management Support Costs – $42,000**

This cost is for software maintenance for a new application used in managing invoice processing and archiving. Currently, documents (i.e., invoices) in various departments are maintained on paper, and are processed manually. The new application allows Avista to scan invoices for electronic storage, processing, and approval, providing for more efficient and timely processing and access to stored documents.

**Enterprise Voice Portal Application Upgrade Support Costs – $242,417**

Avista’s current automated telephone system will no longer be supported after 2014. The system manages all customer calls for reporting outages, automated bill pay and billing inquiries, and other types of customer self-service options for our customers. These expenses support the services agreement, providing for software maintenance and management for the replacement voice portal system.

**Financial Forecast Model Support Costs – $21,000**

Avista has chosen to replace the Impact software, which is no longer supported, with the UIPlanner financial model. UI Planner will provide all existing capabilities as well as efficiency gains and enhancements. The software will help the financial forecasting group accurately and efficiently forecast the financial position of the company, including complex “what-if” scenarios which aid senior management and others in their decision-making. This cost supports the application maintenance for the replacement software.

**iFactor Application Support Costs – $147,325**

For certain customer facing web and mobile technologies Avista has decided to not customize as part of its customer web portal refresh of Avistautilities.com (Project Phoenix), but rather integrate to a commercial software platform from iFactor Consulting using two of their modules. The first called iFactor Storm Center, a web and mobile GIS map-based outage communications software for utilities. Storm Center communicates power outage information to the public using a map interface for web and for mobile natively on iPhone and Android smart phone devices. The second called Notifi, a proactive and interactive customer communications platform designed specifically for utilities, with standard interfaces to utility back-end systems (i.e., Customer Care and Billing CC&B). With automated outbound event processing and preference management for customers, Notifi pushes information to Avista customers, over the channel they want to receive it, including mobile text, email, social media and voice natively on iPhone and Android smart phone devices.

**Mobility in the Field Support Costs – $60,000**

The Mobility in the Field program is designed to increase the Company’s use of field mobile dispatch for service employees equipped with mobile devices. This cost supports the software maintenance agreements that will need to be in place in order to maintain the new system.

**Visibility Project On-Going Support Costs – $36,120**

The Visibility Project was completed as part of the Mobility in the Field program to reduce paper processes in the field through implementing mobile technology. This expense is for data cost and maintenance of hardware and software used for new mobile technology deployed to over 20 Leak Surveyors in the field. This new technology improves processes through reducing a previous paper process and enabling the data collection to occur electronically. A data plan is activated for each tablet computer to operate the software application in order to collect the data in the field electronically.

**NetInsight Refresh Support Costs – $93,000**

Web analytics is the measurement, collection, analysis and reporting of web data for purposes of understanding and optimizing web usage and customer transactions. Web analytics is not just a tool for measuring web traffic but can be used as a tool for business and customer research, and to assess and improve the effectiveness of a website. Avista is refreshing its current web analytics system as it has come to end of life by its vendor (IBM). Web analytics will be applied to Avista’s upgraded customer web portal and its upgraded Intranet portal, which is used by Avista employees.

**Next Generation Radio Hardware and Software Maintenance – $139,062**

These costs support the maintenance contract for the hardware and software infrastructure required to effectively own and operate Avista’s Land Mobile Radio System (LMR) (Next Generation Radio system). Avista maintains a private LMR system because no public communications provider is capable of covering all of our service territory including the rural and remote areas. Our LMR system is also designed to operate independent of public providers and to be resilient in the event of disasters that affect other means of communication. The LMR system ensures efficient and effective communications.

**Nucleus Application Upgrade Support Costs – $100,000**

Avista will upgrade its 10+ year old custom energy resource optimization application built on Oracle Forms which is no longer a supported technology. This cost supports the incremental application license support and maintenance fees associated with the new application. Nucleus is a large and robust custom platform that is critical to Avista’s Energy Resources Department. The risks and expense of continuing with an unsupported technology platform include professional risks and technological risks. When it becomes public that a technology platform will be discontinued in the future, the resources skilled in that technology may start to look for other training and career opportunities in a more modern technology and thus creates a retention risk for Avista. In addition there are a number of technology risks with continuing with an unsupported platform beyond normal vendor helpdesk availability. This includes a lack of external system integration ability as integration technologies and standards evolve and future hardware platform technology support. In other words, as Avista refreshes other hardware and software platforms on our normal schedule, the ability for Nucleus to remain operational is greatly jeopardized.

**Radio Telephone Communications Console System Refresh Support Costs – $61,048**

Deployment of this refreshed console equipment is a prerequisite for the successful implementation of the Next Generation Radio project, described above in my testimony. The integrated console system provides access to the narrowband communication network being deployed in the Next Generation Radio project. These costs are for maintenance fees required to assure the system meets our availability and security requirements for service. In particular, the maintenance fees also provide the Company access to technical support, problem resolution, software patches that address security vulnerabilities, and enable features and enhancements that extend the functionality of the deployed console system, and provide replacement hardware for equipment that fails.

**Security Systems – Non Labor Additions** **– $150,000**

This incremental expense is for software maintenance for new application services that monitor high-risk utility targets (including both physical and cyber), software to maintain compliance with changing regulations, and phishing email awareness testing.

**Trove Software Applications Support Costs – $60,000**

This expense is for maintenance and support fees for predictive analytics software related to the Trove Sunstone Platform and Energy Pre-schedule Load Forecasting Application. There are third party data access fees included in the Sunstone Platform as it uses weather data and other third party data as part of its predictive analytics and data science technology. The Pre-Schedule Forecast application provides a precision forecast for the next day energy consumption needs to help make daily resource balance decisions. The application compares its forecasts against actual performance for continuous forecast improvement. The Monthly Forecast predicts monthly consumption up to 36 months in advance. It is used to determine how much energy to buy in advance.

**Application Systems – Net Labor Reduction – ($213,092)**

We continue to employ a hybrid (in-source/outsource) labor sourcing model that maximizes business value and delivers consistent customer satisfaction. As such we are transitioning these positions to more closely align with the technology being managed. Nine key application systems contract positions were converted to Avista employee positions in 2015: 1) Operational Technology Lead, 2) Customer Technology Lead, 3) Back Office Technology Lead, 4) Systems Analysts (x4), 5) Product Owner, and 6) Program Manager. In addition, a Product Owner will be added for oversight of application demand in Avista’s new Customer Information System (CIS) and Asset Management platforms (Oracle Customer Care and Billing and IBM Maximo).

**ESRI Software Maintenance – $179,183**

ESRI is the core product suite for Avista’s geospatial system. In 2015 we are planning on a refresh of this platform. Throughout the system refresh process and beyond we will need access to ESRI development staff, via a more robust support agreement. This improved support agreement grants us access to level 2 and level 3 ESRI developers to assist us with incident and problem resolution across the ESRI suite of tools. Further, Avista plans to increase access to its own geospatial information system (GIS) data, through the use of ESRI’s client / server software model. This model requires additional licensing for server software but allows easier access to GIS data through browser based custom and commercial applications. An example of value this increased access will bring to our customers is public publishing of waterway access, closures and repairs.

**IntelliResponse Software Maintenance – $17,635**

This cost is for maintenance fees for a new technology that will improve the effectiveness of customer self-service on Avista’s web portal. When a customer using the web has a question, they can select the IntelliResponse application, which employs a Question and Answer directory to quickly answer the customer’s question. In addition to providing a better customer experience, the application will also reduce operating expenses by reducing calls to the Contact Center. Over 18,000 customer questions were handled by this application between April and November 2013, and over 90% of the questions were answered accurately according to a post-question survey. From January through December 2014 there were over 53,000 total questions asked with a 98% correct answer rate.

**Microsoft System Maintenance – $301,449**

The incremental increase in maintenance fees reflects vendor price increases for existing systems, as well as costs associated with the deployment of new systems. One such new system is “desktop virtualization,” which provides a highly flexible and much-more secure desktop computer environment. In addition, this approach supports a more complete desktop disaster recovery strategy, as all components are essentially saved in the data center and backed up through traditional redundant maintenance systems. In addition, because no data is saved to the user's device there is much less chance that any critical data can be retrieved and compromised in the event a device is lost.

**Network Systems – Non-Labor Additions Support Costs – $317,905**

This cost is for service and maintenance fees paid to network providers such as AT&T and Verizon for increased network capacity and system support. As network capacity is increased the electronics that move data/voice traffic over the networks must be upgraded. The upgraded electronics require maintenance and service contracts to keep them current on security patches, firmware upgrades and general performance tuning and support.

The increased utilization of Company networks has resulted, in part, from the increased data associated with customer access to billing and energy use data and new technology supporting Avista’s electric grid modernization, notably feeder automation, smart transformers, and faulted circuit indicator projects.

**Network Systems – Net Labor Additions - $186,472**

The Communications Technician Apprenticeship role is designed to allow individuals to move into a new field and gain the training required to be proficient in a craft. We currently have three existing technicians that are within four years of full eligibility for retirement. It has been our practice to hire an apprentice and invest in their training so they will be fully competent in the role by the time the Sr. Tech retires.

**Oracle System Maintenance – $113,043**

Avista uses Oracle products to provide, maintain and manage its primary business databases, supporting financial, supply chain, operations, customer service, and real-time infrastructure data. This cost covers increases in recurring maintenance fees as well as incremental costs associated with new Oracle databases that are being licensed. In 2015 we will be introducing a new Oracle tool that will allow us to keep our Java environment updated to the most current supported version minimizing customer complaints related to system availability.

**Security Systems – Net Labor Additions – $125,383**

Due to increasing physical security threats, Avista has made a strategic decision to convert an existing physical security contract position to a fulltime employee. This long-term position has responsibility for physical security at all Avista properties.

**Smart Circuits Support Costs – $287,756**

This incremental cost is for non-labor software and hardware maintenance fees associated with Avista’s modernization of its electric grid. These fees were paid previously from funds associated with the Company’s SmartGrid Investment Grant awarded under the American Recovery and Reinvestment act of 2009. This cost-sharing grant will expire in January 2015, at which time the necessary hardware and software maintenance fees will revert to an ongoing Company expense.

III. IS/IT CAPITAL PROJECTS

**Q. Please describe each of the IS/IT capital projects planned for 2014 - 2016.**

A. The IS/IT capital costs for projects to be completed during the period October 2014 through December 2016 total $177.9 million on a system basis. These investments are identified by project in Table No. 2, below, and each project is briefly described in the following testimony.



**AvistaUtilities.com Upgrade – 2014: $1,538,000; 2015: $4,125,000; 2016: $2,000,000**

Like many businesses today, the Company is experiencing continued growth in the use of its customer website, Avistautilities.com. The website was originally built in 2006-2007, but because the technology landscape has advanced so quickly, the site does not meet current web best practices for customer usability and security. This project will update and improve the technology, overall web usability, security and customer satisfaction. The website is part of the Company’s strategy to provide customers a more effective channel to meet their expectations for self-service options, including mobile, energy efficiency education, and to drive self-service as a means to lower transaction costs. The Company is also upgrading its AvaNet System (Avista Intranet), however, those costs are included in the IS/IT Technology Refresh to Sustain Business Process project, described below.

**Enterprise Business Continuity Plan - 2014: $121,000; 2015: $450,000; 2016: $450,000**

Avista has developed and maintains an Enterprise Business Continuity Plan (Plan) to support the Company’s emergency response, and to ensure the continuity of its critical business systems under crisis conditions. The framework includes the key areas of technology recovery, alternate facilities, and overall business processes. The effort of developing and continuously improving the Plan ensures the readiness of systems, procedures, processes, and people required to support our customers and our communities any time we are required to operate under critical emergency conditions.

**Mobility in the Field – 2014: $189,000; 2015: $450,000; 2016: $320,000**

This program is designed to increase the Company’s use of field mobile dispatch for service employees equipped with mobile devices. Avista has documented 30 field opportunities to apply mobile technology, and has selected those with the greatest benefit and savings for implementation in a five-year program, named “Visibility in the Field.” This effort primarily supports the functions of Leak Survey and Gas Service Dispatch by enabling the use of facility maps on a mobile device.

**Technology Refresh to Sustain Business Process – 2014: $5,421,000; 2015: $18,595,000; 2016: $16,095,000**

The Company manages an ongoing program to systematically-replace aging and obsolete technology under “refresh cycles” that are timed to optimize hardware/software system changes or industry trends.  An example of technology managed under this program is the fleet of personal computers and other computing devices used by field operations, power plant operators, call centers, and our general office employees.

The technology refresh business case is organized by technology type.  The major categories are Applications, Network Systems, Communication Systems, Central (Compute/Storage) Systems, Distributed Systems and Environmental (Power, HVAC, Fire, etc.) Systems.  Each category of technology has a steering committee for governance.  The steering committees are members of Avista leadership team.  Steering committee members not only provide oversight on program scope, schedule and budget, they also monitor project priority for business value and the risk associated with product obsolescence.  Funding allocation is routinely set below the business case manager requested level.

The business case program generally has over one hundred active projects each year.  The scope spans technology solutions for back office, customer facing, energy operating and control systems.   A sample of the 2015 project scope is as follows:  Enterprise Voice Portal (IVR), Office Communicator & Voicemail, Communication Management System, Metropolitan Area Network Transport, Avista Intranet, Financial Forecast Model, Claims System, Java 1.7x, Nucleus, Oracle Database 12c, Internet Explorer 11, Citrix Platform, HP CAE/Radia, MS Office 2013, Rugged Computers, and TWACS telemetry.  Each project has formal project management and adheres to our Project Management Office (PMO) process.

**Customer Information and Work and Asset Management System – 2015: $95,108,000**

The Company’s legacy Customer Information and Work and Asset Management System has been in service for twenty years and is currently being replaced in a multi-year effort named “Project Compass.” The major applications being replaced include the Company’s Customer Service System, Work Management System, and the Electric and Gas Meter Application. The primary replacement systems are Oracle’s Customer Care & Billing application and IBM’s Maximo work and asset management application. A portion of the Maximo system was enabled in the fall of 2013, and the full System entered service in February 2015. I describe the detail of this significant technology project later in my testimony.

**Enterprise Security – 2014: $666,000; 2015: $3,800,000; 2016: $3,200,000**

There are three primary drivers of the increasing costs for Enterprise Security: cyber security, physical security and regulatory standards. Each plays a critical role in supporting our delivery of safe and reliable energy to our customers.

Cyber Security

The security of our electric and natural gas infrastructure is a significant priority at a national and state level, and is of critical importance to Avista. Threats from cyber space, including viruses, phishing, and spyware, continue to test our industry’s capabilities. And while these malicious intentions are often unknown, it is clear the methods are becoming more advanced and the attacks more persistent. In addition to these threats, the vulnerabilities of hardware and software systems continue to increase, especially with industrial control systems such as those supporting the delivery of energy. For these reasons, Avista must continue to advance its cyber security program and invest in security controls to prevent, detect, and respond to these increasingly frequent and sophisticated attacks.

Physical Security

While considerable attention is focused on cyber security, physical security also remains a concern for our industry. Physical security encompasses the aspects of employee safety and the protective security of our facilities and critical infrastructure. Acts of theft, vandalism, and sabotage of critical infrastructure not only results in property losses, but can also directly impact our ability to serve customers. Securing remote unmanned or unmonitored critical infrastructure is difficult, especially when traditional tools such as perimeter fencing by itself are not adequate. In response to these challenges, the Company has focused its resources on additional physical security protection (i.e., lighting and crash barriers), remote detection and response technology, which is creating the need for additional physical security items, expertise and technology.

Regulatory Obligations

Advancing cyber threats continue to drive change in the regulatory landscape faced by the Company. Early in 2013, President Obama issued the Executive Order “Improving Critical Infrastructure Cyber security.” The Order directed the National Institute of Standards and Technology to work with stakeholders in developing a voluntary framework for reducing cyber risks to critical infrastructure. The framework consists of standards, guidelines, and best practices to promote the protection of critical infrastructure. The Federal Energy Regulatory Commission also issued Order 791 on November 22, 2013, approving the North American Electric Reliability Corporation Critical Infrastructure Protection Standards, Version 5. Both of these activities will increase our security-related operating costs because they require the Company’s security controls and processes to conform to new standards, guidelines, and best practices.

**Technology Expansion to Enable Business Process – 2014: $1,662,000; 2015: $6,069,000; 2016: $5,552,000**

This program facilitates technology growth throughout the Company, including technology expansion for the entire workforce, business process automation and increased technology to support efficient business processes. For example; when trucks are added to the fleet, communication equipment needs to be added to the truck; as the Company hosts more customer data, disk storage needs to be expanded, as customers expand their use of the website, additional computing capacity is needed.

**High Voltage Protection Upgrade – 2014: $485,000; 2015: $719,000; 2016: $415,000**

Telecommunication facilities, including Phone, Communication Switches, SCADA, and Metering & Monitoring systems, are commonly co-located inside the Company’s high voltage substations. This requires communications technicians to work in close association with our high-voltage electrical equipment. The Company has implemented new high-voltage protection & isolation standards designed to lower potential risks to our personnel and equipment. This project will implement the clearance changes required to meet the new standards.

**Microwave Refresh – 2014: $653,000; 2015: $2,363,000; 2016: $3,050,000**

The company manages an ongoing program to systematically-replace aging and obsolete technology under “refresh cycles” that are timed to optimize hardware/software system changes. This project will replace aging microwave communications technology with current technology to provide for high speed data communications. These communication systems support relay and protection schemes of the electrical transmission system. Reducing Avista's risk of failure of these critical communication systems will have a significant impact on Avista's transmission capacity and ability to serve our customers electrical needs.

**Next Generation Radio Refresh – 2015: $4,200,000**

This project is refreshing Avista’s 20-year-old Land Mobile Radio system. The Company maintains this private system because no public provider is capable of supporting communications throughout our rural service territory. And, since our systems comprise a portion of our nation’s critical infrastructure, Avista is required to have a communication system that will operate in the event of a disaster. This project fulfills a mandate from the Federal Communications Commission that all licensees in the Industrial/Business Radio Pool migrate to spectrum efficient narrowband technology.

##### IV. CUSTOMER INFORMATION AND WORK AND ASSET MANAGEMENT SYSTEM REPLACEMENT – PROJECT COMPASS

**Q. Please summarize the replacement project for Avista’s Customer Information and Work and Asset Management systems.**

A. In 2010 Avista began the research and planning for replacing its legacy Customer Information and Work Management System. Named “Project Compass,” the project replaced the Company’s legacy applications with Oracle’s ‘Customer Care & Billing’ solution, and IBM’s ‘Maximo’ work and asset management application.

**Q. Can you provide a synopsis of the magnitude of the effort?**

A. Yes. While it’s common for a business to install one major enterprise software system at a time, such as a customer service, financial management, supply chain, or asset management system, Project Compass installed two major systems simultaneously. This was necessary because our legacy system contained a customer service module and a work management module that were highly integrated and were both in need of replacement. The effort required not only that these two systems be installed and integrated, but that together, they be integrated with approximately 100 other applications and systems required to perform the Company’s integrated business operations. Some of these systems include the Avista customer website, the Company’s various internal systems (such as financial applications, varied databases, supply chain, crew dispatch, outage management reporting), systems of outside financial institutions used by the Company and our customers, and the many vendors who support our delivery of natural gas and electric service, such as bill printing and presentment.

Customer information and work and asset management systems are central to enabling an organization’s daily operations. For Avista, they support functions ranging from customer calls, to automated service on the phone system or web, storage and access of natural gas and electric asset information, customer billing, outage management, customer work scheduling, ordering construction materials, and managing customer account information. Together, these two systems enable over 200 individual work processes requiring over 3,500 individual process steps. They support the work of over 700 individual employees, and the new work processes and tools required a significant training effort. Avista’s training staff delivered over 40 different instructor-led courses (each delivered several times to different groups of end users), in training sessions that ranged from two hours to 175 hours per course. Avista employees received over 30,000 hours of training for the new systems under this program. As of December 31, 2014, Avista employees had worked just over 263,000 hours on Project Compass; this is in addition to the staff effort of the 24 contract companies that supported the Project.

**Q. Have these new systems been placed into service?**

A. Yes. The first day of service for the new systems (the “Go Live”) was February 2, 2015, and as explained later, the new systems were successfully deployed.

**Q. Under Avista’s initial project plan, completed in 2012, when did it expect to place these new systems into service?**

A. A portion of the Maximo asset management application was placed in service in the fall of 2013, and Avista initially targeted the third quarter of 2014 for the Go Live of the remainder of the Maximo application and the Customer Care & Billing system. Subsequently, in June of 2014, the decision was made to extend the Go Live operation until the first quarter of 2015.

**Q. Did the Company also revise the project budget in conjunction with the re-forecasted timeline?**

A. Yes it did. In June of 2014, the Company revised the capital cost for the Project to $100 million. In November 2014, the Project budget was revised to approximately $107 million. The Company’s Board of Directors authorized a spending limit of $110 million.

**Q. Has Avista described the factors responsible for adjustments to the Go Live date and project budget?**

A. Yes. The discussion is contained in a June 2014 report attached to this testimony as Exhibit No.\_\_\_(JMK-2). As explained in the report, the process of coding extensions for the applications was more complex than initially expected. In addition, the process of remediating defects in the code required more time than was allotted in the initial project plan.

**Q. Was the Company surprised by the need to move the Go Live to a later date?**

A. No, it was not. While the Go Live target date is an important project planning and management tool, its successful accomplishment is dependent on every major project activity reaching a critical and timely state of completion. The major implementation activities, which are highly-interdependent and were being executed in parallel tracks, were in and of themselves large and complex undertakings. In setting the initial Go Live target date, Avista was cognizant of the compounding nature of the challenges associated with launching such a large and complex system, and of the consequences of proceeding to Go Live before the systems were ready. As the Company has stated in previous testimony before this Commission, if it were to determine there was a critical lag in any of the primary implementation activities, it would move out the Go Live operation to ensure a successful launch of the systems.

**Q. Does Avista consider the decision to push out the Go Live date, or to approve spending beyond the initially-estimated project budget to be a failure in the delivery of the new System?**

A. No. The basis for this conclusion lies in the Company’s efforts to research and understand the root causes of the failed projects of other utilities, in its systematic application of those learnings to the design of the project, and the efforts it has made to aggressively control the project toward its target scope, timeline and budget. In short, Avista is confident it selected the best-optimized solution for the Company and its customers, and that it was delivered at the least cost, irrespective of whether the initial project planning targets for the timeline and budget were explicitly met.

**Q. Please briefly describe the preparations associated with the Go Live for Project Compass?**

A. The process of taking new application systems live involves the execution of hundreds of highly-coordinated tasks that must be accomplished within a very short window of time, typically two to three days. In the first steps, the legacy systems are locked from use and the new applications are initialized in what’s referred to as the “production” or operating environment. The new applications and their many integrations are then subjected to a final round of comprehensive system tests. Then, the process of extracting, transforming, and moving data from the legacy databases and systems to the new application systems begins, along with the process of validating the data. During this process, referred to as the “Cutover,” neither the Company’s legacy systems nor the new applications are available to support its normal business operations. As a result, and as customers continue to conduct business with Avista during this period, several thousand transactions have to be logged manually for later entry into the new systems. Finally, the new systems are enabled and available for service in the Go Live step, while the Company’s legacy systems are disabled from service.

**Q. Please provide an overview of the communication program Avista developed to familiarize its customers with the new systems?**

A. The process began with the identification of changes associated with the new systems (such as the assignment of a new account number) that had the potential to impact customers. An employee team was chartered to accomplish this assessment and it identified 61 points of change, grouped under 13 different categories. The team also developed initial recommendations for each change area that included the need for and timing of customer communications, as well as communication channels. An initial customer communication plan was developed and included key project messages and strategies and timelines for communicating with customers. The Company then organized a customer focus group for participants to review and provide input on the draft communication plan and customer materials. The plan was refined using this feedback and was executed through diverse communication channels that included residential and commercial/industrial customer newsletters, a bill insert, a direct mailing to all customers with special envelope messaging, a billing envelope for two months with special messaging, on-bill messages, social media including Twitter and Facebook, and additional communications to targeted customer segments via email and direct mail. A key communications channel is Avista’s website (avistautilities.com), which provides flexibility in disseminating information to customers in a dynamic environment prior to, during, and following the Cutover and Go Live. The website messaging included a home page banner and targeted landing page with special content, including a video for customers on how to read their new bill. Other customer communication channels included the automated phone system with on-hold messaging. An overview of the communication plan is provided as Exhibit No.\_(JMK-3), and a timeline showing the individual communication activities is provided as Exhibit No.\_(JMK-4). An example of the direct-mail communication is provided as Exhibit No.\_(JMK-5).

**Q. Please give a high-level overview of the activities associated with Post-Go Live support.**

A. Post-Go Live Support is composed of two principal activities that begin immediately following the Go Live to help ensure the successful implementation of the new systems. **Project stabilization** refers to the work of making needed changes to the application Configurations, Extension code, and Integration code, and then updating the operating applications through new releases to production. **Project support** is focused on providing technical assistance to new users of the new applications, and on processing any application or work process issues that are identified during the course of operations. Both of these support activities are expected to be in service for several months following the Go Live; at the end of which time the support will transition to work teams having the long-term responsibility for operating and maintaining the systems.

**Q. Briefly describe the work of project stabilization?**

A. During the course of testing the new applications and working through the process of Code Defect Management, the emphasis is focused on repairing defects that are known as “critical” or “blocking.” These defects have priority because the applications and integrations cannot perform properly until the defects are removed. While most of the minor defects (those that do not impair the application’s core business performance), are also repaired during the testing phase, it is common for some to be held for releases to production that occur after the Go Live.

In addition to these, there are inevitably some new defects that emerge during the early operation of the systems that were not identified during the application testing phase. Plus, the live operation of the new applications will likely identify some work process improvements that require modification of the application configurations or code. Through this process, the efficiency and performance of the new applications is improved, and important technical knowledge is transferred from the application developers to those who will have responsibility for the long-term maintenance of the systems.

**Q. What are the tasks associated with the work of project support?**

A. Several integrated technical teams were organized to support new users of the new applications. The support process begins when a user has a question or reports a problem to a group composed of subject matter experts/mentors who can address a range of technical and work process-related questions. This group can in turn rely on two technical support teams representing the Maximo and Customer Care & Billing applications. These support teams answer technical questions as well as identify the source of a reported problem (e.g. a defect in the application, the need for a work process change, or a training issue). These issues are reported to either the project stabilization group, or the team responsible for managing the Post-Go Live applications, where they are ultimately resolved.

**Q. Does the Company anticipate the possibility of a diminution in some service levels associated with the transition?**

A. Yes. Even with its comprehensive preparations, Avista understands from the experience of others that such a transition is, at best, associated with at least a short-term decline in some service levels (e.g. average customer call time). Even with sufficient preparation, the transition involves employees moving from very familiar practices to new work processes, using new software tools, and employing temporary manual work processes. In addition to changes for employees, customers need to make changes to their accounts, to become familiar with a new bill format, and will experience some process changes from those with which they are familiar. This combination can result in more customer calls and longer call-handle times as everyone becomes more familiar and efficient with the new tools and processes.

**Q. Has the Company anticipated and prepared for these effects?**

A. Yes. Avista estimated potential customer call volumes and changes in employee productivity, to anticipate and provide for likely staffing needs. In addition to staffing changes, the Company developed metrics to track its performance following the Go Live, as well as employing new tools (such as virtual hold[[2]](#footnote-2)) that will help ease and streamline transactions for customers during the transition.

**Q. How would you characterize the overall success of the Cutover activities?**

A. In short, this process was very successful. The comprehensive plan developed to coordinate the Cutover activities was very complete and was extremely useful in managing the time and resources needed to complete each of the hundreds of required tasks on a very tight timeline. The learnings from the three previous full dress rehearsals were also invaluable in completing and refining the plan. Over 300 employees were engaged in support of the Cutover activities.

**Q. Were you pleased with the first day of operation of the new systems following the Go Live operation?**

A. Yes, very much so. The new systems and work processes, along with Avista’s employees, performed very well on the first day of service to our customers. I believe the Company’s comprehensive and prudent preparations for a successful transition to the new systems were reflected in the successful Go Live operation.

**Q. What were some of the indicators of the successful launch of the new systems?**

A. At the enterprise level, the new systems performed well, not only in directly enabling the required work processes (such as accurately printing customers’ bills), but also in their smooth integration and operation with over 100 other allied applications and systems. The “system performance,” the measure of the capacity of the computer hardware and network systems to support the new applications “under load,” was also positive. In addition to these measures, there were no blocking defects identified, and there were fewer overall defects than had been anticipated; many of those were resolved before the second day of operation. Finally, there were far fewer employee calls to the technical support teams than had been expected – an indicator that the employee training program had been highly effective.

From the customer’s perspective, Company employees were well-equipped to answer questions, resolve issues and concerns, and perform the desired transactions. As anticipated, the high volume of calls to our contact centers, combined with the additional time spent on each call (associated with the new web format, revised transactions, new account numbers, and new tools and new work processes), resulted in a lower than normal grade of service, longer hold time, and longer average handling time. Even with these expected reductions in service, however, Avista was pleased with its overall performance on the first day of operation, in particular because our actual results were better than the forecast, and because the volume of calls was heavier than expected.

Results from the second day of operation were also very encouraging. The Company’s grade of service exceeded our standard (pre-Go Live) benchmark of 80%, and average handling time, which also improved from the first day, was better than had been forecasted. Performance on the third day of operation continued to improve, as reflected in a grade of service that exceeded 90%, accompanied by continued improvements in handling time.

**Q. Is the Company expecting potential variability in its service levels over the next few weeks?**

A. Yes. While we expect the overall trend in service levels to be positive, we also anticipate that some events (such as customers receiving their first new bill, or receiving additional Company communication about the project) will result in temporary increases in customer calls that could have a short-term effect on service levels. An example of other factors that could also impact our service would be the possible discovery of a blocking defect that could impair one or more critical work processes. The likelihood of this occurring diminishes with time, however, as more and more of the system functionality is exercised during the normal course of business operations.

**Q. Does this conclude your pre-filed direct testimony?**

A. Yes.

1. Implementation of advanced electric meters involves a complete replacement of the conventional electro-mechanical meter. Advanced metering for natural gas is accomplished by replacing the mechanical register on the existing natural gas meter with a new digital, communicating module. The gas meter itself is not replaced. [↑](#footnote-ref-1)
2. Virtual hold is the option an on-hold customer can select to retain their position in the call queue and receive a call back from the next available customer service representative. [↑](#footnote-ref-2)