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

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

3   A.   My name is James M. Kensok. I am employed by Avista Corporation as the

4   Vice-President and Chief Information and Security Officer (CISO). My business address is

5   1411 E. Mission Avenue, Spokane, Washington.

6   **Q.   Mr. Kensok, please provide information pertaining to your educational**

7   **background and professional experience.**

8   A.   I am a graduate of Eastern Washington University with a Bachelor of Arts

9   Degree in Business Administration, majoring in Management Information Systems, and a

10 graduate of Washington State University with an Executive MBA. I have experience

11 through direct application and management of Information Services over the course of my

12 32-year information technology career. I joined the Company in June of 1996. Over the

13 past 18 plus years, I have spent approximately one year in Avista's Internal Audit

14 Department as an Information Systems Auditor with involvement in performing internal

15 information systems compliance and technology audits. I have been in the Information

16 Services Department for approximately 17 years in a variety of management roles directing

17 and leading information technology and systems, planning, operations, system analysis,

18 complex communication networks, cyber security, applications development, outsourcing

19 agreements, contract negotiations, technical support, cost management, data management

20 and strategic development. I was appointed Vice-President and CIO in January of 2007 and

21 Chief Security Officer in January of 2013.

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

2   A.   My testimony will describe the costs associated with Avista's Information

3   Service/Information Technology (IS/IT) programs and projects. These costs include the

4   capital investments for a range of systems used by the Company, including the replacement

5   of the Company's legacy Customer Information and Work and Asset Management System

6   ("Project Compass"), Avistautilities.com WEB replacement, and several more important

7   applications.

8   I also describe the additional IS/IT expenses required to support a range of new and

9   updated applications and systems for cyber security, the operation of the new Customer

10   Information and Work and Asset Management Systems, the Asset Facilities Management

11   application, Advanced Metering Infrastructure (AMI), etc.

12   As explained by Company witness Ms. Andrews, the Company is basing its electric

13   and natural gas revenue increase requested in this case on its electric and natural gas attrition

14   studies. However, as a "cross check" to the Company's request based on the electric and

15   natural gas attrition studies, Company witness Ms. Smith has prepared electric and natural

16   gas Pro Forma Cross Check Studies, which incorporate Washington's share of the pro forma

17   2016 rate year adjustments for expenses and capital additions described further in my

18   testimony.

1   A table of contents for my testimony is as follows:

8

9   **Q.   Are you sponsoring any exhibits in this proceeding?**

10   A.   Yes. I am sponsoring Exhibit Nos.___(JMK-2) - ___(JMK-5). Exhibit No.

11   ___(JMK-2) includes an update reports on the timing and cost of Avista's Project Compass.

12   An overview of the communication plan related to the "Go Live" of Project Compass is

13   provided as Exhibit No.___(JMK-3), and a timeline showing the individual communication

14   activities is provided as Exhibit No.___(JMK-4).   An example of the direct-mail

15   communication is provided as Exhibit No.___(JMK-5).

16

17   **II. IS/IT OPERATING EXPENSES**

18   **Q.   What are the primary business needs supported by Avista's Information**

19   **Services Department?**

20   A.   With advancements in the utility industry, the use of operating, information,

21   and customer-application technologies is increasingly prevalent in day-to-day business

22   operations. The Information Services department provides the technology support required

23   by all Company operations, both internal as well as customer-facing. Examples include

24   field operations, engineering, transmission & distribution operations, power supply, finance,

25   treasury, legal, human resources, customer solutions, customer services, and regulatory

1   functions. Types of support include the design, engineering, implementation, and support of

2   cyber security, computer hardware, application software, data and voice systems and

3   networks, application integration, business continuity and disaster recovery, and data

4   management and mobility. Our customers will be provided with mobile solutions for

5   transacting business with Avista that are available 24 hours per day, in addition to having

6   more data and information about their energy use and tools to manage their consumption of

7   energy. Records management is increasing for both natural gas and electric infrastructure,

8   and Avista is experiencing continued growth in the use of its networks by customers and our

9   employees who are increasingly using mobile, real-time systems to transact business and

10   deliver safe and reliable energy services. These technologies are foundational to Avista's

11   efforts to keep pace with the service expectations of our customers, to fulfill our regulatory

12   requirements, and to achieve cost savings through prudent technology deployments.

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

14   A.   There are four key areas, the first of which is the expense associated with the

15   replacement of obsolete systems, such as the Company's legacy Customer Information and

16   Work Management systems, which will be explained in detail later in my testimony.

17   The second area is the increasing cyber and physical security requirements to protect

18   Company infrastructure. Our industry is increasingly a target from malicious entities, and in

19   order to protect Avista and its customers, we have been required to increase staffing, deploy

20   new security systems, advance employee training, and deploy more sophisticated business-

21   continuity recovery programs. Meeting expanding regulatory requirements, such as those

22   supporting electric transmission reliability, is also driving cost increases in security

23   compliance.

1   A third focus is the sensor technology and the associated data networks required by

2 the industry's modernization of the electric grid and the improved reliability of our natural

3 gas distribution system. Though there are many advantages for customers and the Company

4 associated with the deployment of these new systems, the expenses to support them are an

5 increasing portion of the costs of providing efficient, safe, reliable, and cost-effective energy

6 services.

7   The fourth driver of Avista's costs is related to the growth in usage of applications,

8 data, and our data networks. As customer expectations and business and compliance

9 requirements continue to grow, they drive the need for new and expanded technology

10 solutions. Although these new solutions provide the most cost-effective way to meet these

11 growing needs, they also increase costs for application licensing, maintenance and support,

12 and for the computer hardware and networks required to enable them.

13   **Q.**   **As Information Services requirements have increased, has Avista**

14 **focused on managing its overall technology expenses for the benefit of its customers?**

15   A.   Yes. Over the past several years, Avista has focused on reducing customer

16 transaction costs through the prudent deployment of technology. Along with meeting

17 customer needs, Avista works continuously to minimize its costs and to maximize employee

18 efficiency through the use of appropriate technology and staffing.

19   Beginning in 2015, the Information Services Department has reduced the blended

20 hourly rate per technical contracted position supporting the new customer information and

21 work and asset management applications by approximately 50%. Further labor cost

22 reductions were achieved through realignment of legacy custom application labor skills with

23 contemporary commercial application skills resulting in a $213,000 reduction in application

1 system labor. See "Application Systems – Net Labor Additions" section below for

2 additional information on these labor reductions.

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

4   A.   Table No. 1 below summarizes the net increase in IS/IT expenses for 2016.

5 A brief description of each item is provided following Table No. 1.

6

TABLE NO. 1 IS/IT Incremental Expense Increases	
	2016 System
New Expense From Projects	
Advanced Metering Infrastructure (AMI) Support Costs	$ 150,000
Asset Facilities Management Application Support Costs	150,000
Project Compass Support Costs	235,272
Data Warehouse Support Costs	150,000
Enterprise Document Management	42,000
Enterprise Voice Portal Application Support Costs	242,417
Financial Forecast Model	21,000
iFactor Application Support Costs	147,325
Mobility in the Field	60,000
Visibility Support Costs	36,120
NetInsight Software Support Costs	93,000
Next Generation Radio Hardware/Software Maintenance	139,062
Nucleus Application Upgrade Support Costs	100,000
Radio Telephone Communications Console System Support Costs	61,048
Security Systems - Non Labor Additions	150,000
Trove Software Applications Support Costs	60,000
Total New Expense From Projects	$ 1,837,244
Other Expenses: (incremental expense)	
Applications Systems - Net Labor Reduction	$ (213,092)
ESRI Software Maintenance	179,183
IntelliResponse Software Maintenance	17,635
Microsoft System Maintenance	301,449
Network Systems - Non-Labor Additions	317,905
Network Systems - Net Labor Additions	186,472
Oracle System Maintenance	113,043
Security Systems - Net Labor Additions	125,383
Smart Circuits Support Costs	287,756
Total Other Expenses: (incremental expense)	$ 1,315,734
Total Increase in 2016 Expenses	**$ 3,152,978**

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] 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.

---

[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.

- 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,

1 reducing the business risk of decisions made from bad or misinterpreted data. Further value
2 comes with the new insights into Avista's business through the metadata and combined with
3 third party data. With the continual cost decline of parallel computing, predictive and
4 prescriptive analytics can now be achieved with marginal increased costs to the Data
5 Warehouse.
6
7 The data warehouse software will help Avista's financial forecasting group accurately and
8 efficiently include complex ad-hoc "what-if" scenarios in their daily analysis, which aid
9 senior management and others in their decision-making. Another example of efficiency and
10 cost savings for our customers comes from the reduced waste of having to manually re-key
11 data from multiple systems and reports and having to calculate financial summaries in a
12 spreadsheet form that manually gathered data. Avista Senior Management relies on these
13 summary reports for key decision making. Currently that data has to be double and triple
14 checked for accuracy before presenting. With Avista's data warehouse, accuracy can be
15 maintained through our SOX based software controls process.
16
17 **Enterprise Document Management Support Costs – $42,000**
18 This cost is for software maintenance for a new application used in managing invoice
19 processing and archiving. Currently, documents (i.e., invoices) in various departments are
20 maintained on paper, and are processed manually. The new application allows Avista to
21 scan invoices for electronic storage, processing, and approval, providing for more efficient
22 and timely processing and access to stored documents.
23
24 **Enterprise Voice Portal Application Upgrade Support Costs – $242,417**
25 Avista's current automated telephone system will no longer be supported after 2014. The
26 system manages all customer calls for reporting outages, automated bill pay and billing
27 inquiries, and other types of customer self-service options for our customers. These
28 expenses support the services agreement, providing for software maintenance and
29 management for the replacement voice portal system.
30
31 **Financial Forecast Model Support Costs – $21,000**
32 Avista has chosen to replace the Impact software, which is no longer supported, with the
33 UIPlanner financial model. UI Planner will provide all existing capabilities as well as
34 efficiency gains and enhancements. The software will help the financial forecasting group
35 accurately and efficiently forecast the financial position of the company, including complex
36 "what-if" scenarios which aid senior management and others in their decision-making. This
37 cost supports the application maintenance for the replacement software.
38
39 **iFactor Application Support Costs – $147,325**
40 For certain customer facing web and mobile technologies Avista has decided to not
41 customize as part of its customer web portal refresh of Avistautilities.com (Project Phoenix),
42 but rather integrate to a commercial software platform from iFactor Consulting using two of
43 their modules. The first called iFactor Storm Center, a web and mobile GIS map-based
44 outage communications software for utilities. Storm Center communicates power outage
45 information to the public using a map interface for web and for mobile natively on iPhone
46 and Android smart phone devices. The second called Notifi, a proactive and interactive

1 customer communications platform designed specifically for utilities, with standard
2 interfaces to utility back-end systems (i.e., Customer Care and Billing CC&B). With
3 automated outbound event processing and preference management for customers, Notifi
4 pushes information to Avista customers, over the channel they want to receive it, including
5 mobile text, email, social media and voice natively on iPhone and Android smart phone
6 devices.
7
8 **Mobility in the Field Support Costs – $60,000**
9 The Mobility in the Field program is designed to increase the Company's use of field mobile
10 dispatch for service employees equipped with mobile devices. This cost supports the
11 software maintenance agreements that will need to be in place in order to maintain the new
12 system.
13
14 **Visibility Project On-Going Support Costs – $36,120**
15 The Visibility Project was completed as part of the Mobility in the Field program to reduce
16 paper processes in the field through implementing mobile technology. This expense is for
17 data cost and maintenance of hardware and software used for new mobile technology
18 deployed to over 20 Leak Surveyors in the field. This new technology improves processes
19 through reducing a previous paper process and enabling the data collection to occur
20 electronically. A data plan is activated for each tablet computer to operate the software
21 application in order to collect the data in the field electronically.
22
23 **NetInsight Refresh Support Costs – $93,000**
24 Web analytics is the measurement, collection, analysis and reporting of web data for
25 purposes of understanding and optimizing web usage and customer transactions. Web
26 analytics is not just a tool for measuring web traffic but can be used as a tool for business
27 and customer research, and to assess and improve the effectiveness of a website. Avista is
28 refreshing its current web analytics system as it has come to end of life by its vendor (IBM).
29 Web analytics will be applied to Avista's upgraded customer web portal and its upgraded
30 Intranet portal, which is used by Avista employees.
31
32 **Next Generation Radio Hardware and Software Maintenance – $139,062**
33 These costs support the maintenance contract for the hardware and software infrastructure
34 required to effectively own and operate Avista's Land Mobile Radio System (LMR) (Next
35 Generation Radio system). Avista maintains a private LMR system because no public
36 communications provider is capable of covering all of our service territory including the
37 rural and remote areas. Our LMR system is also designed to operate independent of public
38 providers and to be resilient in the event of disasters that affect other means of
39 communication. The LMR system ensures efficient and effective communications.
40
41 **Nucleus Application Upgrade Support Costs – $100,000**
42 Avista will upgrade its 10+ year old custom energy resource optimization application built
43 on Oracle Forms which is no longer a supported technology. This cost supports the
44 incremental application license support and maintenance fees associated with the new
45 application. Nucleus is a large and robust custom platform that is critical to Avista's Energy
46 Resources Department. The risks and expense of continuing with an unsupported

1   technology platform include professional risks and technological risks. When it becomes
2   public that a technology platform will be discontinued in the future, the resources skilled in
3   that technology may start to look for other training and career opportunities in a more
4   modern technology and thus creates a retention risk for Avista. In addition there are a
5   number of technology risks with continuing with an unsupported platform beyond normal
6   vendor helpdesk availability. This includes a lack of external system integration ability as
7   integration technologies and standards evolve and future hardware platform technology
8   support. In other words, as Avista refreshes other hardware and software platforms on our
9   normal schedule, the ability for Nucleus to remain operational is greatly jeopardized.
10
11   **Radio Telephone Communications Console System Refresh Support Costs – $61,048**
12   Deployment of this refreshed console equipment is a prerequisite for the successful
13   implementation of the Next Generation Radio project, described above in my testimony.
14   The integrated console system provides access to the narrowband communication network
15   being deployed in the Next Generation Radio project. These costs are for maintenance fees
16   required to assure the system meets our availability and security requirements for service. In
17   particular, the maintenance fees also provide the Company access to technical support,
18   problem resolution, software patches that address security vulnerabilities, and enable
19   features and enhancements that extend the functionality of the deployed console system, and
20   provide replacement hardware for equipment that fails.
21
22   **Security Systems – Non Labor Additions – $150,000**
23   This incremental expense is for software maintenance for new application services that
24   monitor high-risk utility targets (including both physical and cyber), software to maintain
25   compliance with changing regulations, and phishing email awareness testing.
26
27   **Trove Software Applications Support Costs – $60,000**
28   This expense is for maintenance and support fees for predictive analytics software related to
29   the Trove Sunstone Platform and Energy Pre-schedule Load Forecasting Application. There
30   are third party data access fees included in the Sunstone Platform as it uses weather data and
31   other third party data as part of its predictive analytics and data science technology. The
32   Pre-Schedule Forecast application provides a precision forecast for the next day energy
33   consumption needs to help make daily resource balance decisions.   The application
34   compares its forecasts against actual performance for continuous forecast improvement.
35   The Monthly Forecast predicts monthly consumption up to 36 months in advance. It is used
36   to determine how much energy to buy in advance.
37
38   **Application Systems – Net Labor Reduction – ($213,092)**
39   We continue to employ a hybrid (in-source/outsource) labor sourcing model that maximizes
40   business value and delivers consistent customer satisfaction. As such we are transitioning
41   these positions to more closely align with the technology being managed. Nine key
42   application systems contract positions were converted to Avista employee positions in 2015:
43   1) Operational Technology Lead, 2) Customer Technology Lead, 3) Back Office
44   Technology Lead, 4) Systems Analysts (x4), 5) Product Owner, and 6) Program Manager.
45   In addition, a Product Owner will be added for oversight of application demand in Avista's

1   new Customer Information System (CIS) and Asset Management platforms (Oracle
2   Customer Care and Billing and IBM Maximo).

3

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

1   supporting Avista's electric grid modernization, notably feeder automation, smart
2   transformers, and faulted circuit indicator projects.
3
4   **Network Systems – Net Labor Additions - $186,472**
5   The Communications Technician Apprenticeship role is designed to allow individuals to
6   move into a new field and gain the training required to be proficient in a craft. We currently
7   have three existing technicians that are within four years of full eligibility for retirement. It
8   has been our practice to hire an apprentice and invest in their training so they will be fully
9   competent in the role by the time the Sr. Tech retires.
10
11   **Oracle System Maintenance – $113,043**
12   Avista uses Oracle products to provide, maintain and manage its primary business databases,
13   supporting financial, supply chain, operations, customer service, and real-time infrastructure
14   data. This cost covers increases in recurring maintenance fees as well as incremental costs
15   associated with new Oracle databases that are being licensed. In 2015 we will be
16   introducing a new Oracle tool that will allow us to keep our Java environment updated to the
17   most current supported version minimizing customer complaints related to system
18   availability.
19
20   **Security Systems – Net Labor Additions – $125,383**
21   Due to increasing physical security threats, Avista has made a strategic decision to convert
22   an existing physical security contract position to a fulltime employee. This long-term
23   position has responsibility for physical security at all Avista properties.
24
25   **Smart Circuits Support Costs – $287,756**
26   This incremental cost is for non-labor software and hardware maintenance fees associated
27   with Avista's modernization of its electric grid. These fees were paid previously from funds
28   associated with the Company's SmartGrid Investment Grant awarded under the American
29   Recovery and Reinvestment act of 2009. This cost-sharing grant will expire in January
30   2015, at which time the necessary hardware and software maintenance fees will revert to an
31   ongoing Company expense.
32

33   **III. IS/IT CAPITAL PROJECTS**

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

35   **2016.**

36   A.   The IS/IT capital costs for projects to be completed during the period October

37   2014 through December 2016 total $177.9 million on a system basis. These investments are

38   identified by project in Table No. 2, below, and each project is briefly described in the

39   following testimony.

TABLE NO. 2 IS/IT Capital Projects (System)			
Business Case Name	**October - December 2014 $ (000's)**	**2015 $ (000's)**	**2016 $ (000's)**
AvistaUtilities.com Upgrade	$ 1,538	$ 4,125	$ 2,000
Enterprise Business Continuity Plan	121	450	450
Mobility in the Field	189	450	320
Technology Refresh to Sustain Business Process	5,421	18,595	16,095
Customer Information and Work & Asset Management System		95,108	
Enterprise Security	666	3,800	3,200
Technology Expansion to Enable Business Process	1,662	6,069	5,552
Trove Sunstone Integration	245		
High Voltage Protection Upgrade	485	719	415
Microwave Refresh	653	2,363	3,050
Next Generation Radio Refresh		4,200	
Total Enterprise Technology Capital Projects	**$ 10,980**	**$ 135,879**	**$ 31,082**

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.

1   Cyber Security
2   The security of our electric and natural gas infrastructure is a significant priority at a
3   national and state level, and is of critical importance to Avista. Threats from cyber
4   space, including viruses, phishing, and spyware, continue to test our industry's
5   capabilities. And while these malicious intentions are often unknown, it is clear the
6   methods are becoming more advanced and the attacks more persistent. In addition to
7   these threats, the vulnerabilities of hardware and software systems continue to
8   increase, especially with industrial control systems such as those supporting the
9   delivery of energy. For these reasons, Avista must continue to advance its cyber
10   security program and invest in security controls to prevent, detect, and respond to
11   these increasingly frequent and sophisticated attacks.
12
13   Physical Security
14   While considerable attention is focused on cyber security, physical security also
15   remains a concern for our industry. Physical security encompasses the aspects of
16   employee safety and the protective security of our facilities and critical
17   infrastructure. Acts of theft, vandalism, and sabotage of critical infrastructure not
18   only results in property losses, but can also directly impact our ability to serve
19   customers. Securing remote unmanned or unmonitored critical infrastructure is
20   difficult, especially when traditional tools such as perimeter fencing by itself are not
21   adequate. In response to these challenges, the Company has focused its resources on
22   additional physical security protection (i.e., lighting and crash barriers), remote
23   detection and response technology, which is creating the need for additional physical
24   security items, expertise and technology.
25
26   Regulatory Obligations
27   Advancing cyber threats continue to drive change in the regulatory landscape faced
28   by the Company. Early in 2013, President Obama issued the Executive Order
29   "Improving Critical Infrastructure Cyber security." The Order directed the National
30   Institute of Standards and Technology to work with stakeholders in developing a
31   voluntary framework for reducing cyber risks to critical infrastructure. The
32   framework consists of standards, guidelines, and best practices to promote the
33   protection of critical infrastructure. The Federal Energy Regulatory Commission
34   also issued Order 791 on November 22, 2013, approving the North American
35   Electric Reliability Corporation Critical Infrastructure Protection Standards, Version
36   5. Both of these activities will increase our security-related operating costs because
37   they require the Company's security controls and processes to conform to new
38   standards, guidelines, and best practices.
39
40   **Technology Expansion to Enable Business Process – 2014: $1,662,000; 2015:**
41   **$6,069,000; 2016: $5,552,000**
42   This program facilitates technology growth throughout the Company, including technology
43   expansion for the entire workforce, business process automation and increased technology to
44   support efficient business processes. For example; when trucks are added to the fleet,
45   communication equipment needs to be added to the truck; as the Company hosts more

1 customer data, disk storage needs to be expanded, as customers expand their use of the
2 website, additional computing capacity is needed.
3
4 **High Voltage Protection Upgrade – 2014: $485,000; 2015: $719,000; 2016: $415,000**
5 Telecommunication facilities, including Phone, Communication Switches, SCADA, and
6 Metering & Monitoring systems, are commonly co-located inside the Company's high
7 voltage substations. This requires communications technicians to work in close association
8 with our high-voltage electrical equipment. The Company has implemented new high-
9 voltage protection & isolation standards designed to lower potential risks to our personnel
10 and equipment. This project will implement the clearance changes required to meet the new
11 standards.
12
13 **Microwave Refresh – 2014: $653,000; 2015: $2,363,000; 2016: $3,050,000**
14 The company manages an ongoing program to systematically-replace aging and obsolete
15 technology under "refresh cycles" that are timed to optimize hardware/software system
16 changes. This project will replace aging microwave communications technology with
17 current technology to provide for high speed data communications. These communication
18 systems support relay and protection schemes of the electrical transmission system.
19 Reducing Avista's risk of failure of these critical communication systems will have a
20 significant impact on Avista's transmission capacity and ability to serve our customers
21 electrical needs.
22
23 **Next Generation Radio Refresh – 2015: $4,200,000**
24 This project is refreshing Avista's 20-year-old Land Mobile Radio system. The Company
25 maintains this private system because no public provider is capable of supporting
26 communications throughout our rural service territory. And, since our systems comprise a
27 portion of our nation's critical infrastructure, Avista is required to have a communication
28 system that will operate in the event of a disaster. This project fulfills a mandate from the
29 Federal Communications Commission that all licensees in the Industrial/Business Radio
30 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

1 customer calls, to automated service on the phone system or web, storage and access of

2 natural gas and electric asset information, customer billing, outage management, customer

3 work scheduling, ordering construction materials, and managing customer account

4 information. Together, these two systems enable over 200 individual work processes

5 requiring over 3,500 individual process steps. They support the work of over 700 individual

6 employees, and the new work processes and tools required a significant training effort.

7 Avista's training staff delivered over 40 different instructor-led courses (each delivered

8 several times to different groups of end users), in training sessions that ranged from two

9 hours to 175 hours per course. Avista employees received over 30,000 hours of training for

10 the new systems under this program. As of December 31, 2014, Avista employees had

11 worked just over 263,000 hours on Project Compass; this is in addition to the staff effort of

12 the 24 contract companies that supported the Project.

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

14 A.   Yes.   The first day of service for the new systems (the "Go Live") was

15 February 2, 2015, and as explained later, the new systems were successfully deployed.

16 **Q.   Under Avista's initial project plan, completed in 2012, when did it expect**

17 **to place these new systems into service?**

18 A.   A portion of the Maximo asset management application was placed in service

19 in the fall of 2013, and Avista initially targeted the third quarter of 2014 for the Go Live of

20 the remainder of the Maximo application and the Customer Care & Billing system.

21 Subsequently, in June of 2014, the decision was made to extend the Go Live operation until

22 the first quarter of 2015.

1   **Q.   Did the Company also revise the project budget in conjunction with the**

2   **re-forecasted timeline?**

3   A.   Yes it did. In June of 2014, the Company revised the capital cost for the

4   Project to $100 million.   In November 2014, the Project budget was revised to

5   approximately $107 million. The Company's Board of Directors authorized a spending

6   limit of $110 million.

7   **Q.   Has Avista described the factors responsible for adjustments to the Go**

8   **Live date and project budget?**

9   A.   Yes. The discussion is contained in a June 2014 report attached to this

10   testimony as Exhibit No.___(JMK-2). As explained in the report, the process of coding

11   extensions for the applications was more complex than initially expected. In addition, the

12   process of remediating defects in the code required more time than was allotted in the initial

13   project plan.

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

15   **date?**

16   A.   No, it was not. While the Go Live target date is an important project planning

17   and management tool, its successful accomplishment is dependent on every major project

18   activity reaching a critical and timely state of completion. The major implementation

19   activities, which are highly-interdependent and were being executed in parallel tracks, were

20   in and of themselves large and complex undertakings. In setting the initial Go Live target

21   date, Avista was cognizant of the compounding nature of the challenges associated with

22   launching such a large and complex system, and of the consequences of proceeding to Go

23   Live before the systems were ready. As the Company has stated in previous testimony

1   before this Commission, if it were to determine there was a critical lag in any of the primary

2   implementation activities, it would move out the Go Live operation to ensure a successful

3   launch of the systems.

4   **Q.   Does Avista consider the decision to push out the Go Live date, or to**

5   **approve spending beyond the initially-estimated project budget to be a failure in the**

6   **delivery of the new System?**

7   A.   No. The basis for this conclusion lies in the Company's efforts to research

8   and understand the root causes of the failed projects of other utilities, in its systematic

9   application of those learnings to the design of the project, and the efforts it has made to

10   aggressively control the project toward its target scope, timeline and budget. In short, Avista

11   is confident it selected the best-optimized solution for the Company and its customers, and

12   that it was delivered at the least cost, irrespective of whether the initial project planning

13   targets for the timeline and budget were explicitly met.

14   **Q.   Please briefly describe the preparations associated with the Go Live for**

15   **Project Compass?**

16   A.   The process of taking new application systems live involves the execution of

17   hundreds of highly-coordinated tasks that must be accomplished within a very short window

18   of time, typically two to three days. In the first steps, the legacy systems are locked from use

19   and the new applications are initialized in what's referred to as the "production" or operating

20   environment. The new applications and their many integrations are then subjected to a final

21   round of comprehensive system tests. Then, the process of extracting, transforming, and

22   moving data from the legacy databases and systems to the new application systems begins,

23   along with the process of validating the data. During this process, referred to as the

1 "Cutover," neither the Company's legacy systems nor the new applications are available to

2 support its normal business operations. As a result, and as customers continue to conduct

3 business with Avista during this period, several thousand transactions have to be logged

4 manually for later entry into the new systems. Finally, the new systems are enabled and

5 available for service in the Go Live step, while the Company's legacy systems are disabled

6 from service.

7 **Q.   Please provide an overview of the communication program Avista**

8 **developed to familiarize its customers with the new systems?**

9 A.   The process began with the identification of changes associated with the new

10 systems (such as the assignment of a new account number) that had the potential to impact

11 customers. An employee team was chartered to accomplish this assessment and it identified

12 61 points of change, grouped under 13 different categories. The team also developed initial

13 recommendations for each change area that included the need for and timing of customer

14 communications, as well as communication channels. An initial customer communication

15 plan was developed and included key project messages and strategies and timelines for

16 communicating with customers. The Company then organized a customer focus group for

17 participants to review and provide input on the draft communication plan and customer

18 materials. The plan was refined using this feedback and was executed through diverse

19 communication channels that included residential and commercial/industrial customer

20 newsletters, a bill insert, a direct mailing to all customers with special envelope messaging, a

21 billing envelope for two months with special messaging, on-bill messages, social media

22 including Twitter and Facebook, and additional communications to targeted customer

23 segments via email and direct mail. A key communications channel is Avista's website

1 (avistautilities.com), which provides flexibility in disseminating information to customers in

2 a dynamic environment prior to, during, and following the Cutover and Go Live. The

3 website messaging included a home page banner and targeted landing page with special

4 content, including a video for customers on how to read their new bill. Other customer

5 communication channels included the automated phone system with on-hold messaging. An

6 overview of the communication plan is provided as Exhibit No._(JMK-3), and a timeline

7 showing the individual communication activities is provided as Exhibit No._(JMK-4). An

8 example of the direct-mail communication is provided as Exhibit No._(JMK-5).

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

10 **Live support.**

11   A.   Post-Go Live Support is composed of two principal activities that begin

12 immediately following the Go Live to help ensure the successful implementation of the new

13 systems. **Project stabilization** refers to the work of making needed changes to the

14 application Configurations, Extension code, and Integration code, and then updating the

15 operating applications through new releases to production. **Project support** is focused on

16 providing technical assistance to new users of the new applications, and on processing any

17 application or work process issues that are identified during the course of operations. Both

18 of these support activities are expected to be in service for several months following the Go

19 Live; at the end of which time the support will transition to work teams having the long-term

20 responsibility for operating and maintaining the systems.

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

22   A.   During the course of testing the new applications and working through the

23 process of Code Defect Management, the emphasis is focused on repairing defects that are

1   known as "critical" or "blocking." These defects have priority because the applications and

2   integrations cannot perform properly until the defects are removed. While most of the minor

3   defects (those that do not impair the application's core business performance), are also

4   repaired during the testing phase, it is common for some to be held for releases to production

5   that occur after the Go Live.

6   In addition to these, there are inevitably some new defects that emerge during the

7   early operation of the systems that were not identified during the application testing phase.

8   Plus, the live operation of the new applications will likely identify some work process

9   improvements that require modification of the application configurations or code. Through

10   this process, the efficiency and performance of the new applications is improved, and

11   important technical knowledge is transferred from the application developers to those who

12   will have responsibility for the long-term maintenance of the systems.

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

14   A.   Several integrated technical teams were organized to support new users of the

15   new applications. The support process begins when a user has a question or reports a

16   problem to a group composed of subject matter experts/mentors who can address a range of

17   technical and work process-related questions. This group can in turn rely on two technical

18   support teams representing the Maximo and Customer Care & Billing applications. These

19   support teams answer technical questions as well as identify the source of a reported

20   problem (e.g. a defect in the application, the need for a work process change, or a training

21   issue). These issues are reported to either the project stabilization group, or the team

22   responsible for managing the Post-Go Live applications, where they are ultimately resolved.

1   **Q.   Does the Company anticipate the possibility of a diminution in some**

2   **service levels associated with the transition?**

3   A.   Yes. Even with its comprehensive preparations, Avista understands from the

4   experience of others that such a transition is, at best, associated with at least a short-term

5   decline in some service levels (e.g. average customer call time). Even with sufficient

6   preparation, the transition involves employees moving from very familiar practices to new

7   work processes, using new software tools, and employing temporary manual work

8   processes. In addition to changes for employees, customers need to make changes to their

9   accounts, to become familiar with a new bill format, and will experience some process

10   changes from those with which they are familiar. This combination can result in more

11   customer calls and longer call-handle times as everyone becomes more familiar and efficient

12   with the new tools and processes.

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

14   A.   Yes. Avista estimated potential customer call volumes and changes in

15   employee productivity, to anticipate and provide for likely staffing needs. In addition to

16   staffing changes, the Company developed metrics to track its performance following the Go

17   Live, as well as employing new tools (such as virtual hold[2]) that will help ease and

18   streamline transactions for customers during the transition.

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

20   **activities?**

21   A.   In short, this process was very successful. The comprehensive plan developed

22   to coordinate the Cutover activities was very complete and was extremely useful in

---

[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.

1   managing the time and resources needed to complete each of the hundreds of required tasks

2   on a very tight timeline. The learnings from the three previous full dress rehearsals were also

3   invaluable in completing and refining the plan. Over 300 employees were engaged in

4   support of the Cutover activities.

5   **Q.** **Were you pleased with the first day of operation of the new systems**

6   **following the Go Live operation?**

7   A.   Yes, very much so. The new systems and work processes, along with

8   Avista's employees, performed very well on the first day of service to our customers. I

9   believe the Company's comprehensive and prudent preparations for a successful transition

10   to the new systems were reflected in the successful Go Live operation.

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

12   **systems?**

13   A.   At the enterprise level, the new systems performed well, not only in directly

14   enabling the required work processes (such as accurately printing customers' bills), but also

15   in their smooth integration and operation with over 100 other allied applications and

16   systems. The "system performance," the measure of the capacity of the computer hardware

17   and network systems to support the new applications "under load," was also positive. In

18   addition to these measures, there were no blocking defects identified, and there were fewer

19   overall defects than had been anticipated; many of those were resolved before the second

20   day of operation. Finally, there were far fewer employee calls to the technical support teams

21   than had been expected – an indicator that the employee training program had been highly

22   effective.

1   From the customer's perspective, Company employees were well-equipped to

2   answer questions, resolve issues and concerns, and perform the desired transactions. As

3   anticipated, the high volume of calls to our contact centers, combined with the additional

4   time spent on each call (associated with the new web format, revised transactions, new

5   account numbers, and new tools and new work processes), resulted in a lower than normal

6   grade of service, longer hold time, and longer average handling time. Even with these

7   expected reductions in service, however, Avista was pleased with its overall performance on

8   the first day of operation, in particular because our actual results were better than the

9   forecast, and because the volume of calls was heavier than expected.

10   Results from the second day of operation were also very encouraging. The

11   Company's grade of service exceeded our standard (pre-Go Live) benchmark of 80%, and

12   average handling time, which also improved from the first day, was better than had been

13   forecasted. Performance on the third day of operation continued to improve, as reflected in a

14   grade of service that exceeded 90%, accompanied by continued improvements in handling

15   time.

16   **Q.   Is the Company expecting potential variability in its service levels over**

17   **the next few weeks?**

18   A.   Yes. While we expect the overall trend in service levels to be positive, we

19   also anticipate that some events (such as customers receiving their first new bill, or receiving

20   additional Company communication about the project) will result in temporary increases in

21   customer calls that could have a short-term effect on service levels. An example of other

22   factors that could also impact our service would be the possible discovery of a blocking

23   defect that could impair one or more critical work processes. The likelihood of this

1   occurring diminishes with time, however, as more and more of the system functionality is

2   exercised during the normal course of business operations.

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

4   A.   Yes.