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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION) CASE NO. AVU-E-15-05
OF AVISTA CORPORATION FOR THE) CASE NO. AVU-G-15-01
AUTHORITY TO INCREASE ITS RATES)
AND CHARGES FOR ELECTRIC AND)
NATURAL GAS SERVICE TO ELECTRIC) DIRECT TESTIMONY
AND NATURAL GAS CUSTOMERS IN THE) OF
STATE OF IDAHO) JAMES M. KENSOK
)

FOR AVISTA CORPORATION

(ELECTRIC AND NATURAL GAS)

1 I. INTRODUCTION

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

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

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

11 A. I am a graduate of Eastern Washington University
12 with a Bachelor of Arts Degree in Business Administration,
13 majoring in Management Information Systems, and a graduate
14 of Washington State University with an Executive MBA. I
15 have experience through direct application and management
16 of Information Services over the course of my 32-year
17 information technology career. I joined the Company in
18 June of 1996. Over the past 18 plus years, I have spent
19 approximately one year in Avista's Internal Audit
20 Department as an Information Systems Auditor with
21 involvement in performing internal information systems
22 compliance and technology audits. I have been in the
23 Information Services Department for approximately 17 years
24 in a variety of management roles directing and leading

1 information technology and systems, planning, operations,
2 system analysis, complex communication networks, cyber
3 security, applications development, outsourcing
4 agreements, contract negotiations, technical support, cost
5 management, data management and strategic development. I
6 was appointed Vice-President and CIO in January of 2007
7 and Chief Security Officer in January of 2013.

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

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

17 I also describe the additional IS/IT expenses
18 required to support a range of new and updated
19 applications and systems for cyber security, such as the
20 operation of Project Compass, and the Asset Facilities
21 Management application.

22

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

2	<u>Description</u>	<u>Page</u>
3	I. Introduction	1
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6	IV. Customer Information and Work and Asset	23
7	Management System Replacement	
8	(Project Compass)	

9 **Q. Are you sponsoring an exhibit in this**
10 **proceeding?**

11 A. Yes. I am sponsoring Exhibit No. 10, Schedules
12 1 through 6. A report providing an overview of the
13 Company project implemented to replace its legacy customer
14 information system (named Project Compass), is provided in
15 Schedule 1. Schedule 2 is an update report on the timing
16 and cost of Avista's Project Compass. An overview of the
17 communication plan related to the "Go Live" of Project
18 Compass is provided as Schedule 3, and a timeline showing
19 the individual communication activities is provided as
20 Schedule 4. An example of the direct-mail communication
21 is provided as Schedule 5. Schedule 6 is a high-level
22 summary of the launch of Project Compass including
23 customer service metrics showing performance of the new
24 systems over the first five weeks of operation.

25

1 II. IS/IT OPERATING EXPENSES

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

4 A. With advancements in the utility industry, the
5 use of operating, information, and customer-application
6 technologies is increasingly prevalent in day-to-day
7 business operations. The Information Services department
8 provides the technology support required by all Company
9 operations, both internal as well as customer-facing.
10 Examples include field operations, engineering,
11 transmission & distribution operations, power supply,
12 finance, treasury, legal, human resources, customer
13 solutions, customer services, and regulatory functions.
14 Types of support include the design, engineering,
15 implementation, and support of cyber security, computer
16 hardware, application software, data and voice systems and
17 networks, application integration, business continuity and
18 disaster recovery, and data management and mobility. Our
19 customers are provided with mobile solutions for
20 transacting business with Avista that are available 24
21 hours per day, in addition to having more data and
22 information about their energy use and tools to manage
23 their consumption of energy. Records management is
24 increasing for both electric and natural gas

1 infrastructure, and Avista is experiencing continued
2 growth in the use of its networks by customers and our
3 employees who are increasingly using mobile, real-time
4 systems to transact business and deliver safe and reliable
5 energy services. These technologies are foundational to
6 Avista's efforts to keep pace with the service
7 expectations of our customers, to fulfill our regulatory
8 requirements, and to achieve cost savings through prudent
9 technology deployments.

10 **Q. What are the primary drivers of increasing IS/IT**
11 **expenses for 2016 and beyond?**

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

17 The second area is the increasing cyber and physical
18 security requirements to protect Company infrastructure.
19 Our industry is increasingly a target from malicious
20 entities, and in order to protect Avista and its
21 customers, we have been required to increase staffing,
22 deploy new security systems, advance employee training,
23 and deploy more sophisticated business-continuity recovery
24 programs. Meeting expanding regulatory requirements, such

1 as those supporting electric transmission reliability, is
2 also driving cost increases in security compliance.

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

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

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

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

10 As an example, labor cost reductions were achieved
11 through realignment of legacy custom application labor
12 skills with contemporary commercial application skills.
13 This resulted in a \$924,000 reduction in contract labor
14 for applications operations and delivery, which was
15 partially offset by an increase of \$711,000 as a result of
16 the conversion of nine contract positions to Avista
17 employee positions, for a net reduction in labor costs of
18 \$213,000. See "Applications Systems - Net Labor
19 Reduction" section below for additional information on
20 these labor reductions.

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

3 A. Table No. 1 below summarizes the net increase in
4 IS/IT expenses for 2016.¹ A brief description of each item
5 is provided following Table No. 1.

TABLE NO. 1	
Information Services Incremental Expense Increases (2016 vs. Test Period)	
	System Expense
New Expense From Projects	
Asset Facilities Management Application Migration Replacement	\$ 68,437
Project Compass	\$ 663,188
Embotics - Data Center Server Management Software Tool	\$ 16,940
Enterprise Document Management	\$ 42,000
Financial Forecast Model	\$ 21,000
iFactor - Outage Reporting and Viewing, and Mobile Capabilities	\$ 304,360
Mobility in the Field - Gas Compliance	\$ 60,000
Visibility - Gas Compliance	\$ 36,120
NetInsight Refresh	\$ 93,000
Next Generation Radio System (Dispatch Radio System)	\$ 139,062
Radio Telephone Communications Console System Refresh	\$ 8,658
Security Systems - Non Labor Additions	\$ 80,000
Data Analytics Software Application	\$ 60,000
Total New Expense From Projects	\$ 1,592,765
Other Expenses: (incremental expense)	
Applications Systems - Net Labor Additions	\$ (213,092)
Adobe Creative Cloud Suite Software-as-a-Service	\$ 52,176
ESRI Geographic Information System	\$ 188,796
Microsoft System Maintenance	\$ 301,449
Network Systems - Non-Labor Additions	\$ 317,905
Network Systems - Net Labor Additions	\$ 186,472
Oracle System (Financial Application & Data) Maintenance	\$ 113,043
Security Systems - Net Labor Additions	\$ 125,383
Total Other Expenses: (incremental expense)	\$ 1,072,132
TOTAL (New Expense from Project and Other Expenses)	\$ 2,664,896

32 **Asset Facilities Management Application Replacement**
33 **(Project Atlas) Support Costs - \$68,437**

34 Project Atlas will replace the Company's obsolete
35 Facilities Management system, and will consist of three
36 applications with new commercial-off-the-shelf
37 applications. The project includes replacement of the
38 electric and natural gas Construction Design application,

¹ Although the Company anticipates increased expenses in 2017 above those in 2016, Company witness Ms. Andrews has not included these expenses in her 2017 pro forma adjustments. See 2017 IS/IT capital additions discussion later in my testimony.

1 Edit Tool Application, and the Company's proprietary
2 Outage Management Application. There will be new
3 incremental on-going technology support costs associated
4 with the new applications. These applications aid in the
5 engineering and design of Avista's electric and natural
6 gas infrastructure, which costs would increase without the
7 aid of this technology. In addition to supporting design,
8 the Outage Management Application allows the Company to
9 quickly isolate the likely cause of system outages, to
10 communicate proactively with customers, and to quickly and
11 accurately dispatch Avista crews for service restoration.
12

13 **Project Compass Support Costs - \$663,188**

14 There will be a net increase of \$663,188 over current
15 operating expenses associated with the deployment of the
16 Company's new Customer Service and Work and Asset
17 Management Systems implemented as part of Project Compass.
18 The total for new operating expenses required to support
19 these new Systems is \$3,020,858, however, there is a
20 corresponding offset in the amount of \$2,357,670, which
21 reflects the annual expense reduction in contract services
22 and mainframe computer costs associated with the
23 retirement of the Company's Legacy Customer Service and
24 Work Management Systems. The new costs are for the annual
25 license and maintenance fees associated with the new
26 replacement applications (IBM Maximo and Oracle Customer
27 Care & Billing) and ancillary supporting applications.
28 Costs also include the professional services associated
29 with the real-time operation and maintenance of the
30 applications, and the labor expense supporting management
31 reporting for the new systems. A brief description of
32 each of these costs is provided below:
33

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

- 36 • Application Maintenance Fee paid to IBM. This fee
37 supports ongoing application maintenance,
38 enhancements and updates.
- 39 • Application Maintenance Fee paid to Oracle for
40 system maintenance, enhancements and updates.
- 41 • Application Maintenance Fee for IBM's Tivoli batch
42 scheduling software, which automates, aggregates
43 and executes batch system functions each day (e.g.
44 customer billing, credit and collections, letters
45 and notices).
- 46 • License and Maintenance Fee for the Oracle Database
47 System.

- 1 • License and Maintenance Fee for the Oracle Data
2 Integrator (ODI) Application, which performs the
3 extraction, transfer and loading of data for
4 management reporting.
- 5 • License and Maintenance Fee for the WebLogic
6 Application, the middleware application layer that
7 is the underlying Java application engine that CC&B
8 and Oracle Utility Analytics (OAU) require to
9 operate.

10
11

Shared Support

- 12 • License and Maintenance Fee for HP's "Quality
13 Center" Application, which is used to automate the
14 routine user testing of the integrated software
15 systems.
- 16 • Outside services (labor) supporting management
17 reporting for the Maximo and Customer Care &
18 Billing Applications.
- 19 • IBM Application Management Services, providing
20 technical resource support for maintaining and
21 managing the real-time availability and performance
22 of the Customer Care & Billing and Maximo
23 application systems for Avista.
- 24 • License and Maintenance Fee for the GoldenGate
25 Application, a component of the Oracle Utility
26 Analytics (OUA) reporting solution for both Oracle
27 CC&B and IBM Maximo.

28
29

**Embotics - Data Center Server Management Software Tool
Support Costs - \$16,940**

31 The current corporate virtual environment is
32 underutilized. Many servers are allocating memory they
33 are not using causing us to buy more resources to meet the
34 memory requirements. The Embotics software tool can help
35 us right-size the memory, thus allowing us to reduce our
36 current resources and avoid purchasing future resources,
37 making our virtual environment more efficient. This is
38 the software support cost of the Embotics software tool.

39
40

Enterprise Document Management Support Costs - \$42,000

41 This cost is for software maintenance for a new
42 application used in managing invoice processing and
43 archiving. Currently, documents (i.e., invoices) in
44 various departments are maintained on paper, and are
45 processed manually. The new application allows Avista to
46 scan invoices for electronic storage, processing, and

1 approval, providing for more efficient and timely
2 processing and access to stored documents.

3
4 **Enterprise Voice Portal Application Upgrade Support Costs**
5 **- \$242,417**

6 Avista's current automated telephone system is no longer
7 supported. The system manages all customer calls for
8 reporting outages, automated bill pay and billing
9 inquiries, and other types of customer self-service
10 options for our customers. These expenses support the
11 services agreement, providing for software maintenance and
12 management for the replacement voice portal system.

13
14 **Financial Forecast Model Support Costs - \$21,000**

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

25
26 **iFactor - (Outage Reporting and Viewing, and Mobile**
27 **Capabilities) Application Support Costs - \$147,325**

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

1 **Mobility in the Field Gas Compliance Support Costs -**
2 **\$60,000**

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

8
9 **Visibility Gas Compliance Project On-Going Support Costs -**
10 **\$36,120**

11 The Visibility Project was completed as part of the
12 Mobility in the Field program to reduce paper processes in
13 the field through implementing mobile technology. This
14 expense is for data cost and maintenance of hardware and
15 software used for new mobile technology deployed to over
16 20 Leak Surveyors in the field. This new technology
17 improves processes through reducing a previous paper
18 process and enabling the data collection to occur
19 electronically. A data plan is activated for each tablet
20 computer to operate the software application in order to
21 collect the data in the field electronically.

22
23 **NetInsight Refresh Support Costs - \$93,000**

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

35
36 **Next Generation Radio System (Dispatch Radio System)**
37 **Hardware and Software Maintenance - \$139,062**

38 These costs support the maintenance contract for the
39 hardware and software infrastructure required to
40 effectively own and operate Avista's Land Mobile Radio
41 System (LMR) (Next Generation Radio system). Avista
42 maintains a private LMR system because no public
43 communications provider is capable of covering all of our
44 service territory including the rural and remote areas.
45 Our LMR system is also designed to operate independent of
46 public providers and to be resilient in the event of

1 disasters that affect other means of communication. The
2 LMR system ensures efficient and effective communications.

3
4 **Radio Telephone Communications Console System Refresh**
5 **Support Costs - \$61,048**

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

20
21 **Security Systems - Non Labor Additions - \$80,000**

22 This incremental expense is for software maintenance,
23 third party vulnerability and penetration testing and for
24 new application services that monitor high-risk utility
25 targets (including both physical and cyber), software to
26 maintain compliance with changing regulations, and
27 phishing email awareness testing.

28
29 **Data Analytics Software Application Support Costs -**
30 **\$60,000**

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

1 **Applications Systems - Net Labor Reduction - (\$213,092)**

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

16
17 **ESRI Geographic Information System Software Maintenance -**
18 **\$179,183**

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

35
36 **Adobe Creative Cloud Suite Software-as-a-Service - \$52,176**

37 Creative Cloud by Adobe is a subscription based suite of
38 graphic design tools and is the only upgrade path for
39 Avista's current Adobe Creative Suite perpetual licenses.
40 Avista's creation and use of digital multi-media for
41 print, advertising, web, signage for both internal and
42 external communications relies on sharing files with
43 outside agencies and for internal Avista print and graphic
44 design personnel to all be on the same platform. Most of
45 these agencies have refreshed to Creative Cloud forcing
46 Avista to follow suit and move to Adobe's required
47 software as a service model (SaaS).

1 **Microsoft System Maintenance - \$301,449**

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

15
16 **Network Systems - Non-Labor Additions Support Costs -**
17 **\$317,905**

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

26
27 The increased utilization of Company networks has
28 resulted, in part, from the increased data associated with
29 customer access to billing and energy use data and new
30 technology supporting Avista's electric grid
31 modernization, notably feeder automation, smart
32 transformers, and faulted circuit indicator projects.

33
34 **Network Systems - Net Labor Additions - \$186,472**

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

1 **Oracle System (Financial Application & Data) Maintenance -**
2 **\$113,043**

3 Avista uses Oracle products to provide, maintain and
4 manage its primary business databases, supporting
5 financial, supply chain, operations, customer service, and
6 real-time infrastructure data. This cost covers increases
7 in recurring maintenance fees as well as incremental costs
8 associated with new Oracle databases that are being
9 licensed. In 2015 we will be introducing a new Oracle
10 tool that will allow us to keep our Java environment
11 updated to the most current supported version minimizing
12 customer complaints related to system availability.
13

14 **Security Systems - Net Labor Additions - \$125,383**

15 Due to increasing physical security threats, Avista has
16 made a strategic decision to convert an existing physical
17 security contract position to a fulltime employee. This
18 long-term position has responsibility for physical
19 security at all Avista properties.
20

21 **Smart Circuits Distribution Automation Support Costs -**
22 **\$287,756**

23 This incremental cost is for non-labor software and
24 hardware maintenance fees associated with Avista's
25 modernization of its electric grid. These fees were paid
26 previously from funds associated with the Company's
27 SmartGrid Investment Grant awarded under the American
28 Recovery and Reinvestment act of 2009. This cost-sharing
29 grant expired in January 2015, at which time the necessary
30 hardware and software maintenance fees reverted to an
31 ongoing Company expense.
32

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

34 **Q. Please describe each of the IS/IT capital**
35 **projects planned for 2015 - 2017.**

36 A. The IS/IT capital costs for projects to be
37 completed during the period from January 1, 2015 through
38 December 31, 2017 total \$220.8 million on a system basis.
39 These investments are identified by project in

1 Table No. 2, below, and each project is briefly described
 2 in the following testimony.

3

4 **TABLE NO. 2**

5 **IS/IT Capital Projects (System)**

6 Business Case Name	7 2015	8 2016	9 2017
	10 \$ (000's)	11 \$ (000's)	12 \$ (000's)
13 AvistaUtilities.com Upgrade	14 \$ 5,145	15 \$ 2,000	16 \$ -
17 Enterprise Business Continuity	18 1,043	19 450	20 450
21 Plan	22 420	23 320	24 -
25 Mobility in the Field	26 21,379	27 16,095	28 16,095
29 Technology Refresh to Sustain	30 96,685	31 -	32 -
33 Business Process	34 5,400	35 3,200	36 3,200
37 Customer Information and Work &	38 7,431	39 5,552	40 5,799
41 Asset Management System	42 -	43 -	44 15,608
Enterprise Security	1,252	415	-
Technology Expansion to Enable	4,007	-	-
Business Process	2,755	3,050	3,050
AFM COTS Migration	\$145,517	\$31,082	\$44,202
High Voltage Protection Upgrade			
Next Generation Radio Refresh			
Microwave Refresh			

25

26 **AvistaUtilities.com Upgrade - 2015: \$5,145,000; 2016:**
 27 **\$2,000,000; 2017: \$0**

28 Like many businesses today, the Company is experiencing
 29 continued growth in the use of its customer website,
 30 Avistautilities.com. The website was originally built in
 31 2006-2007, but because the technology landscape has
 32 advanced so quickly, the site does not meet current web
 33 best practices for customer usability and security. This
 34 project will update and improve the technology, overall
 35 web usability, security and customer satisfaction. The
 36 website is part of the Company's strategy to provide
 37 customers a more effective channel to meet their
 38 expectations for self-service options, including mobile,
 39 energy efficiency education, and to drive self-service as
 40 a means to lower transaction costs. The Company is also
 41 upgrading its AvaNet System (Avista Intranet), however,
 42 those costs are included in the IS/IT Technology Refresh
 43 to Sustain Business Process project, described below.

44

1 **Enterprise Business Continuity Plan - 2015: \$1,043,000;**
2 **2016: \$450,000; 2017: \$450,000**

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

14
15 **Mobility in the Field - 2015: \$420,000; 2016: \$320,000;**
16 **2017: \$0**

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

26
27 **Technology Refresh to Sustain Business Process - 2015:**
28 **\$21,379,000; 2016: \$16,095,000; 2017: \$16,095,000**

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

37
38 The technology refresh business case is organized by
39 technology type. The major categories are Applications,
40 Network Systems, Communication Systems, Central
41 (Compute/Storage) Systems, Distributed Systems and
42 Environmental (Power, HVAC, Fire, etc.) Systems. Each
43 category of technology has a steering committee for
44 governance. The steering committees are members of Avista
45 leadership team. Steering committee members not only
46 provide oversight on program scope, schedule and budget,
47 they also monitor project priority for business value and

1 the risk associated with product obsolescence. Funding
2 approval by the Capital Planning Group is routinely set
3 below the business case requested level.

4
5 The business case program generally has over one hundred
6 active projects each year. The scope spans technology
7 solutions for back office, customer facing, energy
8 operating and control systems. A sample of the 2015
9 project scope is as follows: Enterprise Voice Portal
10 (IVR), Office Communicator & Voicemail, Communication
11 Management System, Metropolitan Area Network Transport,
12 Avista Intranet, Financial Forecast Model, Claims System,
13 Java 1.7x, Nucleus, Oracle Database 12c, Internet Explorer
14 11, Citrix Platform, HP CAE/Radia, MS Office 2013, Rugged
15 Computers, and TWACS telemetry. Each project has formal
16 project management and adheres to our Project Management
17 Office (PMO) process.

18
19 **Customer Information and Work and Asset Management System**
20 **- 2015: \$96,685,000**

21 The Company's legacy Customer Information and Work and
22 Asset Management System had been in service for twenty
23 years and has been replaced in a multi-year effort named
24 "Project Compass." The major applications replaced
25 include the Company's Customer Service System, Work
26 Management System, and the Electric and Gas Meter
27 Application. The primary replacement systems are Oracle's
28 Customer Care & Billing application and IBM's Maximo work
29 and asset management application. A portion of the Maximo
30 system was enabled in the fall of 2013, and the full
31 System entered service in February 2015. I describe the
32 detail of this significant technology project later in my
33 testimony.

34
35 **Enterprise Security - 2015: \$5,400,000; 2016: \$3,200,000;**
36 **2017: \$3,200,000**

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

42
43 Cyber Security

44 The security of our electric and natural gas
45 infrastructure is a significant priority at a
46 national and state level, and is of critical
47 importance to Avista. Threats from cyber space,

1 including viruses, phishing, and spyware, continue to
2 test our industry's capabilities. And while these
3 malicious intentions are often unknown, it is clear
4 the methods are becoming more advanced and the
5 attacks more persistent. In addition to these
6 threats, the vulnerabilities of hardware and software
7 systems continue to increase, especially with
8 industrial control systems such as those supporting
9 the delivery of energy. For these reasons, Avista
10 continues to advance its cyber security program by
11 investing in security controls to prevent, detect,
12 and respond to these increasingly frequent and
13 sophisticated attacks. Examples of projects that
14 fall under this category include a secure electronic
15 file transfer system for inbound and outbound files;
16 network access control to monitor, detect, and
17 enforce rules for wired and wireless devices
18 connecting to the network; and a website filtering
19 solution to reduce intentional and unintentional
20 malware found on internet sites.

21 22 Physical Security

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

41 42 Regulatory Obligations

43 Advancing cyber threats continue to drive change in
44 the regulatory landscape faced by the Company. Early
45 in 2013, President Obama issued the Executive Order
46 "Improving Critical Infrastructure Cyber security."
47 The Order directed the National Institute of

1 Standards and Technology to work with stakeholders in
2 developing a voluntary framework for reducing cyber
3 risks to critical infrastructure. The framework
4 consists of standards, guidelines, and best practices
5 to promote the protection of critical infrastructure.
6 The Federal Energy Regulatory Commission also issued
7 Order 791 on November 22, 2013, approving the North
8 American Electric Reliability Corporation Critical
9 Infrastructure Protection Standards, Version 5.
10 Therefore, we continue to invest in capital assets to
11 comply with these requirements and continue to
12 improve the security of our infrastructure.
13 Additionally, these activities will increase our
14 security-related operating costs (as discussed
15 earlier in my testimony) because they require the
16 Company's security controls and processes to conform
17 to new standards, guidelines, and best practices.
18 Examples of projects that fall under this category
19 include improvements to physical security at the
20 Noxon Rapids facility and the refresh of our Security
21 Incident and Event Management System, which is an
22 analytic system that alerts and reports on security
23 incidents and anomalous activity.

24
25 **Technology Expansion to Enable Business Process - 2015:**
26 **\$7,431,000; 2016: \$5,552,000; 2017: \$5,799,000**

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

36
37 **AFM COTS Migration - 2015: \$0; 2016: \$0; 2017: \$15,608,000**

38 The project replaces the Company's obsolete, custom
39 Facilities Management system (Project Atlas) with a
40 commercial, off-the-shelf application. The project
41 includes replacement of the natural gas and electric
42 Construction Design Tool, Edit Tool, and the Company's
43 proprietary Outage Management Tool. These applications
44 aid in the engineering and design of Avista's electric and
45 gas infrastructure, which costs would increase without the
46 aid of this technology. In addition to supporting design,
47 the Outage Management allows the Company to quickly

1 isolate the likely cause of system outages, to communicate
2 proactively with customers, and to quickly and accurately
3 dispatch Avista crews for service restoration. Also
4 included in the project scope are field mobility
5 applications including a version upgrade to the Ventyx/ABB
6 mobile workforce management system and the addition of
7 mobile tools. These applications will work with the
8 Construction Design, Edit and Outage Management
9 applications to deliver work electronically to field
10 personnel and return completion results electronically to
11 the initiating systems improving the timeliness and
12 accuracy of the work results.

13
14 **High Voltage Protection Upgrade - 2015: \$1,252,000; 2016:**
15 **\$415,000; 2017: \$0**

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

26
27 **Next Generation Radio Refresh - 2015: \$4,007,000; 2016:**
28 **\$0; 2017: \$0**

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

40
41 **Microwave Refresh - 2015: \$2,755,000; 2016: \$3,050,000;**
42 **2017: \$3,050,000**

43 The company manages an ongoing program to systematically-
44 replace aging and obsolete technology under "refresh
45 cycles" that are timed to optimize hardware/software
46 system changes. This project will replace aging microwave
47 communications technology with current technology to

1 provide for high speed data communications. These
2 communication systems support relay and protection schemes
3 of the electrical transmission system. Reducing Avista's
4 risk of failure of these critical communication systems
5 will have a significant beneficial impact on Avista's
6 transmission capacity and ability to serve our customers
7 electrical needs.

8

9 **IV. CUSTOMER INFORMATION AND WORK AND ASSET MANAGEMENT**

10 **SYSTEM REPLACEMENT - PROJECT COMPASS**

11 **Q. Please summarize the replacement project for**
12 **Avista's Customer Information and Work and Asset**
13 **Management systems.**

14 A. In 2010, Avista began the research and planning
15 for replacing its legacy Customer Information and Work
16 Management System. Named "Project Compass," the Project
17 replaced the Company's legacy applications with Oracle's
18 'Customer Care & Billing' solution, and IBM's 'Maximo'
19 work and asset management application. An overview of
20 Project Compass, containing a detailed project narrative
21 of the early stages of implementation, as well as
22 supporting documentation, is attached as Exhibit No. 10,
23 Schedule 1.

24 **Q. Can you provide a synopsis of the importance of**
25 **these systems and the magnitude of the replacement effort**
26 **undertaken by the Company?**

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

21 Customer information and work and asset management
22 systems are central to enabling an organization's daily
23 operations. For Avista, they support functions ranging
24 from customer calls, to automated service on the phone

1 system or web, storage and access of electric and natural
2 gas asset information, customer billing, outage
3 management, customer work scheduling, ordering
4 construction materials, and managing customer account
5 information. Together, these two systems enable over 200
6 individual work processes requiring over 3,500 individual
7 process steps. They support the work of over 700
8 individual employees, and the new work processes and tools
9 required a significant training effort. Avista's training
10 staff delivered over 40 different instructor-led courses
11 (each delivered several times to different groups of end
12 users), in training sessions that ranged from two hours to
13 175 hours per course. Avista employees received over
14 30,000 hours of training for the new systems under this
15 program. At the close of April 2015, Avista employees had
16 worked just over 299,500 hours on Project Compass; this is
17 in addition to the staff effort of the 37 contract
18 companies that supported the Project.

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

20 A. Yes. The first day of service for the new
21 systems (the "Go Live") was February 2, 2015, and, as
22 explained later, the deployment of these new systems was
23 very successful.

1 **Q. Please describe the Company's legacy Customer**
2 **Information System?**

3 A. Avista's legacy Customer Information System
4 (System) served the Company and our customers well from
5 1994 to 2015. That longevity was unusual in the industry,
6 and was achieved by linking the system over time with
7 commercial and Avista-developed applications that added
8 functionality to the original architecture. This
9 technology strategy was the foundation of Avista's
10 customer service program for many years. While extending
11 the life of the System delivered value for customers, our
12 ability to continue to add new functionality was
13 constrained, and there was mounting business and service
14 risk associated with the many older technologies on which
15 the system depended. Technical assessments of the System
16 highlighted these risks and identified the need for its
17 replacement.

18 **Q. Please describe the systems that were replaced**
19 **as part of Project Compass.**

20 A. Avista's legacy Customer Information System was
21 composed of three highly-connected applications, which
22 included:

- 23 • Customer Service System - this application supported
24 the traditional utility business functions of meter
25 reading, customer billing, payment processing,

1 credit, collections, field requests and customer
2 service orders;

- 3 • Work Management System - this application was used to
4 create orders for service and emergency calls and for
5 construction jobs for customers and Company
6 operations; and
- 7 • Electric & Gas Meter Application - this application
8 hosted the data for the Company's in-service electric
9 and gas meters.

10
11 Together, these three applications, also referred to
12 as the Avista "Workplace", were connected over time with
13 many other applications and systems required to conduct
14 all aspects of our customer service and gas and electric
15 business operations.

16 **Q. What were the factors driving the need for**
17 **replacement of Avista's Customer Information System?**

18 A. The rapid evolution of information science
19 technologies impacts the life cycle availability of older
20 software and hardware products and services, and eroded
21 the underlying capabilities of our legacy technology. At
22 the same time, each new generation of technology gives
23 software systems more flexibility and functionality than
24 our legacy system could have easily provided. This dual
25 impact added cost, complexity and risk to the ongoing
26 operation of our legacy technology, and helped drive the
27 ever-increasing service expectations of customers for all
28 businesses they use, including their utility.

1 The Company's legacy system was supported by a
2 network of older technologies, many of which were
3 expensive to operate and/or were no longer sold,
4 maintained or supported. As a result, Avista and its
5 primary support contractor (Hewlett-Packard) employed many
6 technical 'workarounds' required to continue using the
7 legacy System. Key limitations associated with those
8 technologies are briefly described below:

9 Platform - The Company's Customer Information System
10 was dependent on a mainframe-computing platform because it
11 used databases and program applications developed for that
12 environment. While a mainframe was the only platform with
13 enough power to support the System when it was designed,
14 it is more expensive to operate today than mid-range
15 computers having ample capability. Because mainframe
16 platforms had become far less common, the available
17 expertise required to manage, maintain and update these
18 systems had become more limited. In addition to the
19 realtime execution of programs on the mainframe, required
20 by the Workplace applications, the programs and data
21 stored there had to be updated every night in what was
22 known as a 'batch' program. The batch updated base data
23 and performed other functions such as producing customer
24 bills.

1 Computer Languages - Avista's Workplace applications
2 were written in COBOLv2, a version of the programming
3 language that had not been used in applications, or sold
4 or supported for many years.

5 Another computer language key to Avista's legacy
6 system was known as Smalltalk. This language was used to
7 generate the display information on network computers used
8 by our customer service representatives. And like
9 COBOLv2, Smalltalk was also no longer commercially sold or
10 supported.

11 Supporting Applications -Avista's legacy applications
12 were generated using a case tool known as ADW (Application
13 Development Workbench), and the applications were
14 difficult to change without using the ADW tool. Avista's
15 version of ADW was no longer manufactured or supported,
16 and, in addition, it could only run on an OS/2 operating
17 system that likewise had not been sold or supported for
18 many years.

19 Technical Resources - Maintaining the Company's
20 legacy system required training and support of technical
21 staff competent in these older programming languages,
22 applications, and computer operating systems. The Avista-
23 Hewlett-Packard support staff, many of whom grew up with
24 those legacy technologies when they were mainstream, had

1 either retired, or were anticipated to do so in the next
2 few years. Replacing knowledgeable staff had become
3 extremely difficult because there was no longer technical
4 training or schooling available for these old languages,
5 applications and systems. Younger technicians had to be
6 trained in-house, and in addition, it was difficult to
7 channel these employees into career tracks that had very-
8 limited and diminishing future application.

9 **Q. Were there risks associated with the continued**
10 **operation of the Company's legacy system?**

11 A. Yes, as described above, many of the obsolete
12 elements of the Customer Information System were supported
13 by very-specialized applications, which themselves were
14 obsolete and no longer supported, or by complex technology
15 workarounds. Each of these introduced a level of risk
16 that was greater than that associated with contemporary
17 hardware, operating systems, technical support, and
18 business applications. And because these risks increased
19 as the technology continued to age, the cumulative risk to
20 the Company grew as the longevity of the System was
21 extended.

22 **Q. Were these risks unique to Avista's legacy**
23 **system?**

1 A. No, this discussion illustrates the general
2 technology principle shared by many legacy systems like
3 the Company's. Even though they may continue to perform
4 their intended functions, they are subject to greater and
5 greater risk over time, and consequently, are considered
6 to be problematic.

7 **Q. Beyond increasing business risks, were there**
8 **other considerations for replacing the system?**

9 A. Yes, there were several which I describe below:
10 System Modifications - The legacy architecture of the
11 Company's System made it cumbersome and expensive to
12 modify or to add new functionality. That arose because
13 the linkages between the applications of Avista's
14 Workplace, along with the software applications that
15 connected Workplace with the many other applications and
16 systems required to support the Company's operations, were
17 'hardwired' together. The result was that a programming
18 change made to one application often required
19 complementary changes in both the connecting software and
20 the other applications themselves. Because the system had
21 been stretched over time so far beyond its original design
22 considerations, these layers of changes had geometrically
23 increased the complexity of the entire system. Finally,
24 because the legacy System was used only by Avista, these

1 application development costs had to be borne entirely by
2 our customers.

3 System Replacement Costs - Continuing to add
4 complexity to the legacy System could have made its
5 eventual replacement more expensive. This was because the
6 functionality that was programmed into the legacy System
7 also had to be programmed or 'configured' in the new
8 replacement applications when they were installed.
9 Generally, as the complexity of the legacy System
10 increased, then the cost, complexity and technical
11 competence required to install the replacement system
12 increased as well.

13 Constrained Capability - In addition to the risks and
14 costs of extending its service life, the ultimate
15 flexibility of the platform had been largely exhausted.
16 Designed as a meter-based billing system, the Company had
17 cost-effectively expanded its capability by seamlessly
18 integrating technologies barely imagined when the system
19 was designed; home computers were uncommon, the internet
20 was in its infancy, there were no e-mail services, few
21 cell phones, no text or SMS messaging, and no mobile
22 computing, as supported by contemporary smart phones and
23 tablets. However, while the System had been able to
24 accommodate many significant developments over time, it

1 still lacked the fundamental capabilities required today
2 to support the new service options viewed by customers as
3 'basic service', or the many utility product offerings
4 becoming more common in our region and around the Country.

5 **Q. Did the Company consider other options to**
6 **reinforce its legacy System, short of replacement?**

7 A. Yes. Periodically, Avista and its support
8 partner, EDS/Hewlett-Packard, evaluated the System's
9 capabilities as well as options for its possible
10 modernization. In 2002, as some of the technologies
11 supporting Avista's System, such as ADW, were becoming
12 unsupported, an assessment was made of the feasibility of
13 moving the Company's system from the mainframe platform to
14 a contemporary mid-range platform and operating system.
15 The benefits of such a process, commonly known as
16 'replatforming', were forecast over time and were compared
17 with the estimated costs for completing the work. Results
18 of this work indicated that replatforming the System at
19 that time was not cost-effective, and as a result, this
20 work did not proceed.

21 The next assessment was made in 2003 and focused on
22 ways to reduce the risk associated with the ADW
23 application, at the time running on aging desktop
24 computers using the OS/2 operating system. The project

1 report recommended Avista purchase specialized software to
2 emulate the OS/2 system on contemporary computers and
3 operating systems. This recommendation was implemented.

4 The legacy System was reviewed again in 2006 as part
5 of a larger information technology review conducted for
6 the entire Company. The report noted the Company's
7 Customer Information System as a 'high risk' application
8 that was a candidate for either replacement or
9 "refactoring." The latter refers to a process of changing
10 the internal structure of the existing application code to
11 reduce its complexity and improve its readability. While
12 this process helps reduce the risk associated with legacy
13 software, it does not markedly change its basic properties
14 or performance. Refactoring of the Customer Service System
15 was not evaluated further at that time.

16 Most recently, in 2010, the Company again considered
17 reinvesting in its legacy System as a means to delay its
18 ultimate replacement. As a prelude to requesting vendor
19 proposals to support such an effort, the Company sent a
20 Request for Information to several major information
21 technology vendors to describe the legacy System, and to
22 gauge their interest in participating in next steps. As
23 Avista continued to weigh the possibility of this approach
24 being feasible, as a way to delay the replacement of its

1 System, it ultimately determined that commencing with the
2 research and planning for the replacement project was a
3 prudent course of action.

4 **Q. Why did Avista consider the timing of the**
5 **replacement project to be appropriate?**

6 A. The decision on timing was influenced by many
7 factors, including, among other considerations: the window
8 of availability of employee and contract technical
9 resources; the timing of the expiration of the long-term
10 services contract with Hewlett - Packard for System
11 support; the continued accumulation of business and
12 service risks associated with operating the legacy System;
13 the increasing complexity and replacement costs associated
14 with its continued operation, and the very-limited
15 capability of the legacy System to deliver additional
16 customer service options, both present, and into the
17 future.

18 **Q. Was the Company's replacement project unique**
19 **among peer utilities?**

20 A. No. Nationwide, many utilities had undertaken
21 the same effort in replacing their Customer Information
22 Systems, and many were replacing systems installed around
23 the year 2000, a technology 'generation' newer than
24 Avista's. Several utilities in the Northwest were among

1 those engaged in some phase of a major replacement
2 project.

3 **Q. Did the Company assess the experience of others**
4 **to help avoid some of the pitfalls associated with**
5 **replacing these large information technology Systems?**

6 A. Yes. The Company took advantage of shared
7 industry knowledge, reviewed case studies, and conducted
8 its own in-depth interviews with several peer utilities to
9 gather a base of 'lessons learned.' This pre-project
10 research helped Avista identify and incorporate key
11 measures into the design and management of its replacement
12 project, to both circumvent and help mitigate these
13 challenges.

14 **Q. What initial steps did the Company take in**
15 **researching and evaluating potential replacement software**
16 **solutions?**

17 A. An early step involved retaining a firm with
18 proven expertise in this discipline to assist the Company
19 with the complex process of developing a detailed list of
20 business requirements and then evaluating and selecting
21 the right combination of products and vendors to best meet
22 them. A detailed request for proposals was developed from
23 this initial work and sent to leading application and

1 services vendors in September 2010. Avista selected Five
2 Point Partners² from those firms submitting proposals.

3 **Q. What additional activities were required to**
4 **support this evaluation?**

5 A. Avista and Five Point spent two months working
6 with employee teams to develop a detailed inventory of the
7 range and complexity of the Company's business processes.
8 This inventory was used to develop the "Current State Map"
9 that included every work process in the business, and
10 every technology requirement needed to support it. These
11 results were included in the technical specifications that
12 accompanied the Request for Proposals sent to vendors.
13 The current-state map included over 200 work processes and
14 approximately 3,500 individual process steps or system
15 requirements.

16 **Q. Please list the vendors who responded to the**
17 **Request for Proposals**

18 A. Avista received responses from vendors on
19 October 28, 2011, and immediately began the review and
20 evaluation process. Below is a list of the vendors who
21 responded and the solutions and roles they proposed for

² Five Point Partners is a consulting organization serving the utility, mining, revenue management, and transportation industries, offering a full life cycle of highly-focused enterprise consulting services from IT assessment and analysis, to implementation and post go-live support services.

1 delivering a solution set to Avista. A detailed
 2 description of the proposal solicitation and review
 3 process, as well as the final evaluation and selection of
 4 vendors is provided in Exhibit No. 10, Schedule 1,
 5 beginning on page 27.

6	Vendor	Product or Service Offering	Customer Information System Application	Enterprise Asset Management Application	Mobile Work Management Application	Other Vendors
7						
8						
9	IBM	Systems Integration	SAP Customer Relationship & Billing (CR&B)	SAP Enterprise Asset Management (EAM)	ClickSoft Mobile Work Management (MWM)	---
10	IBM	Systems Integration & Software Applications	SAP CR&B	IBM Maximo Asset Management	---	---
11						
12	EP2M	Systems Integration	Oracle Customer Care & Billing (CC&B)	Oracle Asset Management	Oracle MWM	---
13	Wipro	Systems Integration	Oracle CC&B	IBM Maximo	Ventyx Service Suite	---
14	HCL AXON	Systems Integration	SAP CR&B	SAP EAM	ClickSoft MWM	Technology Associates
15	HCL AXON	Systems Integration	SAP CR&B	Meridium Asset Management	ClickSoft MWM	Technology Associates
16	HCL AXON	Systems Integration	SAP CR&B	IBM Maximo	ClickSoft MWM	Technology Associates
17	Sparta	Integration Services	SAP CR&B	SAP EAM	Ventyx Service Suite	Vesta Partners
18	Logica	Software Application	---	Logica Asset Management	---	---
19	Meridium	Software Application	---	Meridium Asset Management	---	Partners with Wipro
20	HPES	Systems Integration	---	---	---	General Services Only

21 **Q. How were the proposals evaluated?**

22 A. In its initial review, Avista's Project Compass
 23 team evaluated and scored each proposal according to

1 detailed criteria, grouped under four global Project
2 criteria:

3 **Functionality** - Assessment of the proposals as meeting
4 Avista's Minimum Requirements, Functional Capabilities,
5 Project Drivers, Customer Service Fit, Enterprise Asset
6 Management Fit, Mobile Work Management Fit, and
7 Technical Fit.

8
9 **Technology** - Evaluation of the technical hardware and
10 software needs and costs, and technology implications of
11 the proposals, with respect to Avista's core information
12 technology strategies.

13
14 **Implementation Partner** - Assessment of the vendor's
15 implementation strategy, installation approach,
16 capabilities, timeliness, staffing, and compatibilities
17 with Avista's project plans.

18
19 **Cost** - Evaluation of the vendor's proposed cost as an
20 element of the initial screening.

21

22 **Q. What replacement applications did Avista select?**

23 A. Avista continued its detailed evaluation of
24 proposals, interviewed prospective vendors, and evaluated
25 various possible combinations of application solutions and
26 vendors, in the process of making its final selections.
27 Oracle's Customer Care & Billing application was chosen to
28 replace Avista's legacy Customer Service module, and IBM's
29 Maximo asset and work management application was selected

1 to replace the Company's Work Management System and its
2 Electric and Gas Meter Application. In addition to the
3 applications, Avista retained the services of EP2M and IBM
4 to support the installation and integration of the new
5 Systems. Having completed the selection/procurement phase,
6 Avista commenced with the activities of implementing the
7 new Systems.

8 **Q. What were the early activities of the**
9 **Implementation Phase?**

10 A. They focused on installing and configuring the
11 new Oracle and IBM applications, and the custom
12 programming required to support application extensions and
13 integrations. Before this work could begin, however,
14 Avista had to complete an eight-month effort known as
15 "design," in which the business processes inventoried in
16 the Current State Map were mapped into the new Systems.
17 This was performed by cross-functional teams of employees
18 who were also responsible for identifying the
19 applications, data and integrations with all other systems
20 that were required to perform each step of every business
21 process. This work produced a detailed list of technical
22 system requirements for each process step. The technical
23 capabilities of the Customer Care & Billing application
24 and the Maximo application were then evaluated against

1 these detailed lists of technical requirements. In the
2 majority of cases, the applications were able support the
3 requirements of a process step within their off-the-shelf
4 capabilities. For these processes, the Company was able to
5 move directly to the work of application configuration.

6 **Q. Please describe the work of configuring the**
7 **applications.**

8 A. Configuring the application initially involves
9 selecting parameters, embedding algorithms, or entering
10 data to enable the logic of the application to perform the
11 functions in sequence required by the Company's various
12 work processes. The applications are designed with a
13 series of input tables that organize the process of
14 setting configuration parameters. Each input table, which
15 could represent one particular type of customer service
16 agreement, for example, may have up to 100 individual,
17 flexible, and configurable fields. Configuring each field
18 requires entering from one to several individual values,
19 instructions, or algorithms to establish the future of the
20 new base System. Each field in each table is often cross-
21 linked with content in dependent fields in complementary
22 tables, creating a complex of dependencies between many
23 multiples of tables and fields. This initial work
24 requires the person entering the configuration settings on

1 a particular table to work iteratively and sequentially in
2 configuring the dependent fields in the other tables in
3 one integrated work flow. As one example of the workload
4 involved, it required one technician working full-time
5 over six months to configure the existing rate tariff
6 settings into the new System for each of the 142 different
7 Avista service agreements across our jurisdictions.
8 Considering the Customer Care & Billing application has
9 1,686 configuration tables, containing 12,158 configurable
10 fields, the magnitude and complexity of this task is
11 quickly evident.

12 **Q. What was the value of using off-the-shelf**
13 **applications when they required so much specialized**
14 **configuration?**

15 A. Today's commercial off-the-shelf computer
16 applications offer many advantages to the alternative of
17 developing proprietary, customized software. First, even
18 though configuration is labor intensive, it is only a
19 fraction of the labor that was expended by the vendor to
20 develop the programming code of the base application
21 itself. The next significant advantage, is that the cost
22 of developing the base application is shared among all of
23 the vendor's user client companies, like Avista. These
24 applications are also compatible with the "enterprise

1 service bus" architecture of today's information
2 technology systems, and are designed to be integrated with
3 other enterprise applications and systems (e.g. customer
4 service, financial, and supply-chain applications).
5 Client users are also part of a "users community" where
6 they can share their experience with the application,
7 identify problem areas and glitches, and suggest system
8 modifications and enhancements. Finally, the vendor
9 provides periodic technical updates of the applications
10 for its client users, driven in part by the input shared
11 in the user forums, and at a very reasonable shared cost.
12 While these periodic system updates provide high value at
13 low cost, the value can be substantially diluted by the
14 additional complexity and work required to support
15 customized programming for system extensions.

16 **Q. What is meant by "Customization" and**
17 **"Extensions"?**

18 A. As described above, while there is considerable
19 flexibility within the application's off-the-shelf
20 capabilities to accommodate a range of business processes,
21 many were complex enough that they required programming of
22 software code outside the application itself. This
23 programming is referred to as "customization," and the
24 work-process capability enabled by this custom code is

1 referred to as an "enhancement" or "extension." All of the
2 customized programming required to support Avista's use of
3 the vendor applications was referred to as application
4 "development." The process of development is complex and
5 labor intensive, and began with a description of the
6 process steps that a particular extension would perform
7 (its system requirements). Each set of requirements
8 proceeded to the contractors' offshore development staff
9 where it was translated into a technical specification
10 used to guide the development of the actual programming
11 code for the extension. Once the development staff has
12 written the code, the contractor performed what is known
13 as unit testing. The code, along with defects identified
14 in unit testing, were returned to the development staff
15 for analysis and repair. When those defects were
16 repaired, the code was again subjected to unit testing and
17 the next tranche of defects was identified and returned
18 for repair. Because the initial base program code was
19 extremely complex, this iterative process was very labor
20 intensive and time consuming.

21 **Q. Did Avista anticipate that extensions would be**
22 **necessary at the time it decided to purchase the Customer**
23 **Care and Maximo applications?**

1 A. Yes. Even though the Company went through an
2 exhaustive process, as described above, to ensure the
3 selected applications had the capabilities necessary to
4 support Avista's business needs, the Company was fully
5 aware that any application it selected would require the
6 development of extensions.

7 **Q. Did Avista make an effort to manage the number**
8 **of extensions required?**

9 A. Yes. The Company was committed to capturing the
10 value delivered by implementing off-the-shelf
11 applications, and accordingly, our goal was to optimize
12 the number of extensions required. To accomplish this,
13 the Company evaluated each circumstance where the need for
14 an extension was identified, and determined if it could be
15 avoided by changing Avista's work process. In some
16 instances, it was either impossible or not cost effective
17 to change the work process. But in others, the need for
18 an enhancement was eliminated by redesigning the work
19 process so the steps could be accomplished within the
20 capabilities of the application. The effort required to
21 change work processes was significant, however, because
22 each process often impacted the workflow of many
23 departments across the Company. For each process that was
24 changed, Avista organized individual employee teams,

1 representing the multiple departments affected, to
2 redesign the structure to be effective for customers and
3 the Company, and compatible with the applications.

4 **Q. What were some of the other key Implementation**
5 **activities?**

6 A. In addition to configuring the applications, and
7 developing the coding required for the extensions, the
8 Project team engaged in the work of integrating the
9 applications, and began performing conversions of all
10 necessary data.

11 **Q. What is involved in the work of applications**
12 **integration?**

13 A. Integration requires the development of custom
14 programming code that functionally connects the Maximo and
15 Customer Care & Billing applications with each other, and
16 with the approximately 100 systems that support the
17 Company's customer service and business operations. An
18 'integration' refers to the connection between separate
19 computer applications that allows them to work in concert
20 to perform allied functions. Integrations involve
21 exchanges of data, transmission of instructions or changes
22 in state, performance of computations and other
23 algorithms, and myriad other shared functions. In addition
24 to integration connections between applications, this work

1 also encompassed the development of the Company's
2 "enterprise service bus." The latter is essentially an
3 integration network shared by the integrated applications.
4 Some of the systems integrated with the Maximo and
5 Customer Care & Billing applications, include the Avista
6 customer website, the Company's various internal systems
7 such as financial applications and databases, supply
8 chain, crew dispatch and outage management reporting,
9 systems from a range of financial institutions used by the
10 Company and our customers, and the many vendors who
11 support our delivery of natural gas and electric service,
12 such as bill printing and presentment.

13 **Q. What was involved in the data conversion**
14 **process?**

15 A. All of the Company's existing data, whether
16 customer account information, energy use history, electric
17 and natural gas facilities data of all types, mapping
18 system information, and regulatory and compliance
19 information, etc., had to be transferred from existing
20 computer hardware and data bases, such as the Company's
21 mainframe systems, to new data formats, databases, and
22 computer platforms that are connected with the new
23 applications. First, the data in Avista's existing
24 databases was mapped according to where it would

1 eventually reside in the new database systems. The data
2 were then extracted and loaded into the new systems, and
3 the integrity of the loaded data was validated for
4 accuracy. Defects in data conversion were identified in
5 the process, defects were repaired, and the data
6 load/validation exercise was repeated.

7 **Q. Please describe the work of testing the new**
8 **application Systems.**

9 A. There are three major areas of System testing
10 that all played a critical role in the successful
11 implementation of the new applications. These are known
12 as "System Testing," "Systems Integration Testing," and
13 "User Acceptance Testing."

14 When the work of configuration was complete, Avista
15 and its contractors commenced with System Testing. The
16 purpose was to ensure the applications performed properly
17 *as they had been configured* to support Avista's business
18 processes. Testing focused on identifying and repairing
19 the technical defects that arose during configuration of
20 such a large and complex System. The process simulated
21 individual business functions, each known as a "test
22 case," and tracked the defects reported during the
23 exercise. System Testing for the Customer Care & Billing
24 application required Company employees and contractors to

1 write and test over 4,300 individual test-case scenarios.
2 A similar set of approximately 3,800 test cases unique to
3 the Maximo application also had to be developed and
4 tested. In the testing process, defects were identified
5 and analyzed, the root cause was isolated and repaired,
6 and the test case was run again until it was defect free.

7 Systems Integration Testing occurred next in the
8 sequence and was similar to the process used in System
9 Testing. But instead of focusing on configurations, it
10 tested the custom integration code to ensure the new
11 applications performed properly with all of the other
12 integrated systems. The number of System Integration test
13 cases developed for the Customer Care & Billing
14 application was over 2,400. These test cases were
15 completely different from those developed for the System
16 Testing. Approximately 800 unique test cases were
17 developed for testing the system integrations with the
18 Maximo application. The process of identifying and
19 remediating defects and conducting re-testing was similar
20 to the process used for System Testing.

21 In the final testing phase, User Acceptance Testing,
22 Avista employees who would be using the new System to
23 serve our customers, performed mock business transactions
24 on the completed System as it would function when

1 implemented. User Acceptance Testing had the twin
2 objectives of scrubbing the Systems further to identify
3 and repair any critical defects, and to identify and
4 implement changes to the Systems that would make them more
5 user friendly and function more smoothly and efficiently.
6 Over 11,000 individual test cases were developed and
7 executed during the course of testing for the Project.

8 **Q. Very briefly, what was the purpose of creating**
9 **the reporting templates?**

10 A. A diverse set of management reports is produced
11 by departments across the Company, on a daily, weekly,
12 monthly, quarterly, and annual basis, to meet a broad
13 range of financial, regulatory, and managerial
14 requirements. A specific application is required to
15 produce each of these reports. Because Project Compass was
16 changing the organization and storage of the Company's
17 data, its customer, asset and work management applications
18 and systems, and the ways these systems were integrated,
19 all of the applications that produced these management
20 reports had to be re-developed. There were 155 separate
21 reports that had to be produced relying principally on
22 information from the Customer Care & Billing application,
23 and 60 reports that had to be produced using data
24 primarily from Maximo. The program coding required to

1 produce each individual report, along with the
2 verification of the data conversion, had to be tested and
3 repaired in the same iterative manner described for the
4 other configuration and enhancement testing procedures.

5 **Q. Please describe the training programs associated**
6 **with Implementation.**

7 A. Like testing of the new Systems, timely and
8 comprehensive employee training for the new applications
9 and new work processes was critical to successful
10 implementation. Avista and its contractor designed the
11 content of the training modules, and training sessions
12 commenced in the second quarter of 2014.

13 **Q. What was Avista's initial capital budget for the**
14 **overall replacement project?**

15 A. A budget of \$80 million was approved on December
16 6, 2012 for the capital replacement costs associated with
17 Project Compass. That initial budget allocation among key
18 Project activities is provided in Exhibit No. 10,
19 Schedule 1, Attachment 15.

20 **Q. Why didn't the Company authorize an initial**
21 **project budget at the time it decided to replace its**
22 **legacy System?**

23 A. Although Avista discussed potential costs of the
24 project early in its inception, and approved preliminary

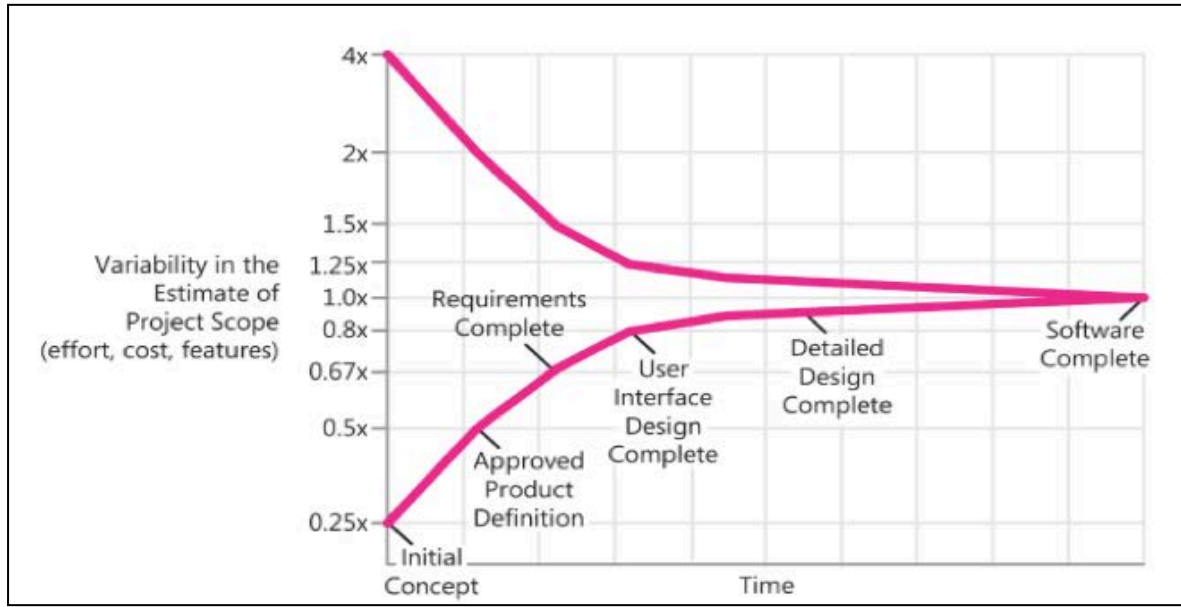
1 budgets through the course of Project development, it did
2 not establish a formal capital budget until the Project
3 was more defined. Avista had learned through its peer
4 utility interviews, and from the support and advice of
5 outside experts, that organizations commonly undermined
6 the success of their software projects by making cost
7 commitments too early in the development stages. This
8 mistake undermines predictability, increases risk and
9 project inefficiencies, and generally impairs the ability
10 to manage a project to a successful conclusion.

11 **Q. Is this typical of enterprise software projects?**

12 A. Yes. Typically, early in the scoping of a
13 software project, particular details of the application
14 being designed/installed, detailed knowledge of the
15 Company's specific business requirements, details of the
16 solution sets, as well as the management plan, identified
17 staffing needs, and many other variables are simply
18 unclear. Accordingly, estimates of the potential cost of
19 the project are highly variable. As these sources of
20 variability are further investigated and resolved, the
21 uncertainty in the project decreases; likewise, so does
22 the variability in estimates of the project cost. This
23 phenomenon, widely discussed in the literature and often

1 associated with author Steve McConnell³, is known as the
2 "Cone of Uncertainty", presented in Illustration No. 1,⁴
3 below.

4 **Illustration No. 1**



13 As illustrated above, significant narrowing of the
14 uncertainty generally occurs during the first 20-30% of
15 the total calendar time for the project. The uncertainty
16 will only decrease, however, through deliberate and active
17 project research and design, required to further define
18 the scope, requirements, implementation details and
19 estimates of component costs. And, this uncertainty must
20 continue to be constrained throughout the course of the
21 project by the use of effective project controls.

³ Software Estimation: Demystifying the Black Art. Steve McConnell, Microsoft Press, 2006

⁴ id. Figure 4.2, 96.1/751.

1 Q. In light of this cost uncertainty, how could
2 Avista determine that replacing its legacy system was
3 'cost effective' for customers well before the formal
4 project scope and budget were developed and the actual
5 final costs could be known?

6 A. The decision point for the Company in 2010 was
7 whether to significantly reinvest in its legacy technology
8 as the means to defer its ultimate replacement, or
9 instead, to invest in the planning and exploration of
10 options needed to support its replacement. The Company
11 determined, as explained in detail in Exhibit No. 10,
12 Schedule 1, that the timing was appropriate to replace its
13 legacy Customer Information System. The Company's focus
14 then was to assess its needs, evaluate options, and select
15 a set of solutions that would meet the long-term needs of
16 the Company and its customers at the lowest possible cost.
17 At that point, the Company engaged in the progressive
18 stages of project design needed to prudently define the
19 likely scope and potential cost of the replacement
20 project. Through this work, uncertainty around the project
21 was narrowed and potential costs were further refined, to
22 the point that Avista was confident purchasing the
23 selected applications and proceeding with the work of
24 implementation. Even though this was several months before

1 the budget was approved, Avista had by that time built the
2 foundation needed to initiate a successful project: the
3 ability to deliver a solution that would meet its long-
4 term customer service and business requirements in an
5 optimized approach, and in a manner that would achieve the
6 least cost for its customers.

7 While Avista believed its initial estimates of scope,
8 timeline and budget for the project were reasonable, and
9 was committed to control the Project to best meet each
10 estimate, it was also cognizant that the success of the
11 project would not be defined by whether or not each
12 estimate, including the budget, was precisely met. In
13 contrast with a 'not-to-exceed' metric, the software
14 budget is a management tool that allows senior leaders to
15 make informed enterprise-level decisions, and that
16 provides an effective tool for the project manager to
17 control project activities in an effort to meet the
18 estimates of each deliverable (timeline, scope,
19 functionality, and cost). In describing the relationship
20 between software project estimates and final results,
21 McConnell states:

22 "The primary purpose of software estimation is
23 not to predict a project's outcome; it is to
24 determine whether a project's targets are
25 realistic enough to allow the project to be

1 controlled to meet them.”⁵ “Typical project
2 control activities include removing noncritical
3 requirements, redefining requirements, replacing
4 less-experienced staff with more-experienced
5 staff, and so on.”⁶ “In practice, if we deliver
6 a project with about the level of functionality
7 intended, using about the level of resources
8 planned, in about the time frame targeted, then
9 we typically say that the project “met its
10 estimates,” despite all the analytical impurities
11 implicit in that statement. Thus, the criteria
12 for a “good” estimate cannot be based on its
13 predictive capability, which is impossible to
14 assess, but on the estimate’s ability to support
15 project success.”⁷

16 Avista believes it designed and developed such an
17 implementation plan and budget for Project Compass. By
18 this, we mean that the overall Project record would
19 demonstrate its proper research and design, robust
20 planning and estimating, effective management and
21 controls, and that its delivered scope, timeline and cost,
22 would be reasonable, cost effective and prudent.

23 **Q. When did Avista initially expect to place these**
24 **new Systems into service?**

25 A. A portion of the Maximo asset management
26 application was placed into service in the fall of 2013,
27 and Avista initially targeted September 2014 (which was
28 later revised to July 2014) for the “Go Live” of the

⁵ id. At 42/751.

⁶ id. At 39/751.

⁷ id. At 41/751.

1 remainder of the Maximo application and the Oracle
2 Customer Care & Billing System.

3 **Q. Did Avista believe that it might ultimately have**
4 **to push out the Go Live to a later date?**

5 A. Yes, it did. While the Go Live target date was
6 an important project planning and management tool, its
7 successful accomplishment was dependent on every major
8 project activity reaching a critical and timely state of
9 completion. As described above, the major implementation
10 activities, which are highly-interdependent and were being
11 executed in parallel tracks, were in and of themselves
12 large and complex undertakings. In setting the Go Live
13 target date, Avista was cognizant of the compounding
14 nature of the challenges associated with launching such a
15 large and complex system, and of the consequences of
16 proceeding to Go Live before all systems were ready.
17 Accordingly, in the event Avista were to determine there
18 was a critical lag in any of the primary implementation
19 activities, including employee training, data conversion,
20 management reporting, System Testing, Integration Testing,
21 User-Acceptance Testing, application hosting, post-Go Live
22 technical support, or customer communications, it would
23 move out the Go Live to ensure a successful launch of the
24 System.

1 **Q. Would it be uncommon for one of the key**
2 **activities to be delayed?**

3 A. Not at all. In any complex technology
4 initiative such as Avista's Project Compass, issues were
5 constantly emerging that impacted the estimated completion
6 dates of the many project activities. When this happened,
7 the Compass team had to take deliberate steps to make up
8 time or reduce costs to keep the overall Project on its
9 intended course, scope, estimated timeline, and estimated
10 budget.

11 **Q. Would Avista have considered a decision to push**
12 **out the Go Live date, or to approve spending beyond the**
13 **estimated project budget to be a failure in the delivery**
14 **of the new System?**

15 A. No. The basis for this conclusion lies in the
16 Company's efforts to research and understand the root
17 causes of the failed projects of other utilities, in its
18 systematic application of those learnings to the design of
19 the Project, and the efforts it made to aggressively
20 control the project toward its target scope, timeline and
21 budget. In short, as stated earlier in this testimony,
22 Avista was confident it has selected the best-optimized
23 solution for the Company and its customers, and that it
24 would be delivered at the least cost, irrespective of

1 whether the project planning targets for the timeline and
2 budget were explicitly met.

3 **Q. Did Avista ultimately extend the Go Live Date**
4 **during Project implementation?**

5 A. Yes. As mentioned, the Company initially
6 targeted September of 2014 for the Go Live of the
7 remainder of the Maximo application and the Customer Care
8 & Billing system. In June of 2014, the decision was made
9 to extend the Go Live operation for the Project to the
10 first quarter of 2015.

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

13 A. Yes it did. In June of 2014, the Company
14 revised the capital cost for the Project to \$100 million.
15 In November 2014, the Project budget was revised to
16 approximately \$107 million. The Company's Board of
17 Directors supported that budget amount and authorized a
18 spending limit of \$110 million.

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

21 A. Yes. The discussion is contained in a June 2014
22 report attached to this testimony as Exhibit No. 10,
23 Schedule 3. As explained in the report, the process of
24 coding extensions for the applications was more complex

1 than initially expected. Because of this complexity and
2 the volume of code that had to be tested, the process of
3 remediating defects in the code also required more time
4 than was estimated in the initial project plan.

5 **Q. As the Project approached the February 2015 Go**
6 **Live date, what preparations did the Company make to**
7 **ensure a successful launch of the new systems?**

8 A. The process of taking new application systems
9 live involves the execution of hundreds of highly-
10 coordinated tasks that must be accomplished within a very
11 short window of time, typically two to three days. In the
12 first steps, the legacy systems are locked from use and
13 the new applications are initialized in what's referred to
14 as the "production" or operating environment. The new
15 applications and their many integrations are then
16 subjected to a final round of comprehensive system tests.
17 Then, the process of extracting, transforming, and moving
18 data from the legacy databases and systems to the new
19 application systems begins, along with the process of
20 validating the data. During this process, referred to as
21 the "Cutover," neither the Company's legacy systems nor
22 the new applications are available to support its normal
23 business operations. As a result, and as customers
24 continue to conduct business with Avista during this

1 period, several thousand transactions have to be logged
2 manually for later entry into the new systems. Finally,
3 the new systems are enabled and available for service in
4 the Go Live step, while the Company's legacy systems are
5 disabled from service.

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

9 A. The process began with the identification of
10 changes associated with the new systems (such as the
11 assignment of a new account number) that had the potential
12 to impact customers. An employee team was chartered to
13 accomplish this assessment and it identified 61 points of
14 change, grouped under 13 different categories. The team
15 also developed initial recommendations for each change
16 area that included the need for and timing of customer
17 communications, as well as communication channels. An
18 initial customer communication plan was developed and
19 included key project messages and strategies and timelines
20 for communicating with customers. The Company then
21 organized a customer focus group for participants to
22 review and provide input on the draft communication plan
23 and customer materials. The plan was refined using this
24 feedback and was executed through diverse communication

1 channels that included residential and
2 commercial/industrial customer newsletters, a bill insert,
3 a direct mailing to all customers with special envelope
4 messaging, a billing envelope for two months with special
5 messaging, on-bill messages, social media including
6 Twitter and Facebook, and additional communications to
7 targeted customer segments via email and direct mail. A
8 key communications channel is Avista's website
9 (avistautilities.com), which provides flexibility in
10 disseminating information to customers in a dynamic
11 environment prior to, during, and following the Cutover
12 and Go Live. The website messaging included a home page
13 banner and targeted landing page with special content,
14 including a video for customers on how to read their new
15 bill. Other customer communication channels included the
16 automated phone system with on-hold messaging. An
17 overview of the communication plan is provided as
18 Exhibit No. 10, Schedule 3, and a timeline showing the
19 individual communication activities is provided as
20 Exhibit No. 10, Schedule 4. An example of the direct-mail
21 communication is provided as Exhibit No. 10, Schedule 5.

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

3 A. Post-Go Live Support is composed of two
4 principal activities that begin immediately following the
5 Go Live to help ensure the successful implementation of
6 the new systems. **Project stabilization** refers to the work
7 of making needed changes to the application
8 Configurations, Extension code, and Integration code, and
9 then updating the operating applications through new
10 releases to production. **Project support** is focused on
11 providing technical assistance to new users of the new
12 applications, and on processing any application or work
13 process issues that are identified during the course of
14 operations.

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

17 A. During the course of testing the new
18 applications and working through the process of Code
19 Defect Management, the emphasis is focused on repairing
20 defects that are known as "critical" or "blocking." These
21 defects have priority because the applications and
22 integrations cannot perform properly until the defects are
23 removed. While most of the minor defects (those that do
24 not impair the application's core business performance),

1 are also repaired during the testing phase, it is common
2 for some to be held for releases to production that occur
3 after the Go Live.

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

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

18 A. Several integrated technical teams were
19 organized to support new users of the new applications.
20 The support process begins when a user has a question or
21 reports a problem to a group composed of subject matter
22 experts/mentors who can address a range of technical and
23 work process-related questions. This group can in turn
24 rely on two technical support teams representing the

1 Maximo and Customer Care & Billing applications. These
2 support teams answer technical questions as well as
3 identify the source of a reported problem (e.g. a defect
4 in the application, the need for a work process change, or
5 a training issue). These issues are reported to either
6 the project stabilization group, or the team responsible
7 for managing the Post-Go Live applications, where they are
8 ultimately resolved.

9 **Q. Did the Company anticipate the possibility of a**
10 **diminution in some service levels associated with the**
11 **transition?**

12 A. Yes. Even with its comprehensive preparations,
13 Avista understood from the experience of others that such
14 a transition is, at best, associated with at least a
15 short-term decline in some service levels (e.g. call
16 center grade of service). Even with sufficient
17 preparation, the transition involves employees moving from
18 very familiar practices to new work processes, using new
19 software tools, and employing temporary manual work
20 processes. In addition to changes for employees,
21 customers were required to make changes to their accounts,
22 to become familiar with a new bill format, and experience
23 some process changes from those with which they were
24 familiar. This combination can result in more customer

1 calls and longer call-handle times as everyone becomes
2 more familiar and efficient with the new tools and
3 processes.

4 **Q. Did the Company prepare for these effects?**

5 A. Yes. Avista estimated potential customer call
6 volumes and changes in employee productivity, to
7 anticipate and provide for likely staffing needs. In
8 addition to staffing changes, the Company developed
9 metrics to track its performance following the Go Live, as
10 well as employing new tools (such as virtual hold⁸) to help
11 ease and streamline transactions for customers during the
12 transition.

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

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

⁸ 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 the plan. Over 300 employees were engaged in support of
2 the Cutover activities.

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

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

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

14 A. At the enterprise level, the new systems
15 performed well, not only in directly enabling the required
16 work processes (such as accurately printing customers'
17 bills), but also in their smooth integration and operation
18 with over 100 other allied applications and systems. The
19 "system performance," the measure of the capacity of the
20 computer hardware and network systems to support the new
21 applications "under load," was also very positive. In
22 addition to these measures, there were no blocking defects
23 identified, and there were fewer overall defects than had
24 been anticipated; many of those were resolved before the

1 second day of operation. Finally, there were far fewer
2 employee calls to the technical support teams than had
3 been expected - an indicator that the employee training
4 program had been highly effective.

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

19 Results from the second day of operation were
20 exceptionally positive. The Company's grade of service
21 exceeded our standard (pre-Go Live) benchmark of 80%, and
22 average handling time, which also improved from the first
23 day, was better than had been forecasted. Performance
24 during the remainder of the first month of operation was

1 essentially on par with the Company's pre-Go Live business
2 operations, a truly outstanding implementation
3 performance. A high-level summary of the launch of the new
4 systems, including customer service metrics for the first
5 five weeks of operation, is provided in Exhibit No. 10,
6 Schedule 6.

7 **Q. When do you expect the capital investment**
8 **required to implement the new systems to be complete?**

9 A. The last major implementation release of the new
10 applications was completed on May 17, 2015. The close out
11 of the capital investment for the Project is expected to
12 be complete in the third quarter of 2015, following
13 receipt of final invoices associated with the project.

14 **Q. What is the expected final cost for the Project?**

15 A. The Company expects the total capital investment
16 for the Project to be approximately \$107 million.

17 **Q. Are there any Project development costs that**
18 **will continue after the new Systems are in service?**

19 A. Yes. As described in the foregoing testimony and
20 schedules, the scope for Project Compass at Go Live was to
21 replace the functionality of the Company's legacy System.
22 Once the new systems were stabilized, the Company planned
23 to make additional investments to add new functionality,
24 such as the option for customers to choose their preferred

1 communication channel. Opportunities will continue to be
2 identified, over time, for adding functionality to serve
3 the evolving needs of customers, to improve the efficiency
4 or effectiveness of the new System for employees, or to
5 integrate new or modified applications and systems. As was
6 the case with the Company's Legacy System, there was
7 essentially a continuous capital development effort
8 required to support the System from its inception, to
9 accommodate changing technology, the growing needs of our
10 customers, new regulatory requirements, and the perpetual
11 effort to optimize the value of the investment.

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

14 A. Yes.