



Avista Corp.

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November 16, 2015

Via Electronic Filing, Huddle and Overnight Mail

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE, Suite 100
Salem, OR 97301-3612

RE: UG 288 – Reply Testimony of Avista Corporation

Attached are an original and one copy of the Reply Testimony of Avista Corporation, dba Avista Utilities, in Docket No. UG-288.

Please note that Exhibit No. 1401 is too large to send to the Commission via email, and therefore is included on the CD that is accompanying the hardcopy filing.

In addition, Avista's CONFIDENTIAL Exhibit Nos. 1502, 1503, 1504, and page 28 of Exhibit No. 1701, are being provided under sealed separate envelopes, marked CONFIDENTIAL.

Please direct any questions regarding this filing to Patrick Ehrbar at (509) 495-8620 or Jennifer Smith at (509) 495-2098.

Sincerely,

A handwritten signature in black ink, appearing to read "David J. Meyer", is written over a horizontal line.

David J. Meyer
Vice President and Chief Counsel for Regulatory
and Governmental Affairs

Enclosure

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this day served Confidential Reply Exhibits in the Oregon Natural Gas General Rate Case Filing of Avista Utilities, a division of Avista Corporation, (UG-288) upon the parties listed below by mailing a copy thereof, postage prepaid and/or by electronic mail.

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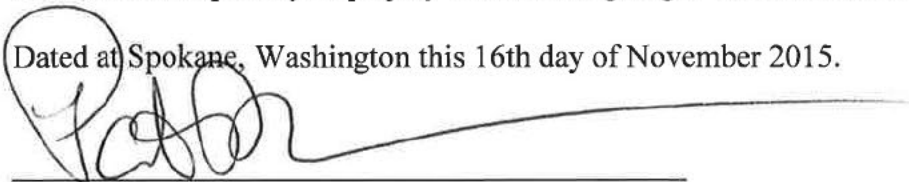
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I declare under penalty of perjury that the foregoing is true and correct.

Dated at Spokane, Washington this 16th day of November 2015.



Patrick Ehrbar
Manager, Rates & Tariffs

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF JENNIFER S. SMITH
REPRESENTING AVISTA CORPORATION

Overview of Reply Testimony and Response to Certain Expense Adjustments

1 **I. INTRODUCTION**

2 **Q. Please state your name, business address, and present position with Avista**
3 **Corporation.**

4 A. My name is Jennifer S. Smith. I am employed by Avista Corporation as a Senior
5 Regulatory Analyst in the State and Federal Regulation Department. My business address is
6 1411 East Mission, Spokane, Washington.

7 **Q. Have you previously provided direct testimony in this Case?**

8 A. Yes. My testimony and exhibits in this proceeding covered the accounting and
9 financial data in support of the Company's need for the proposed increase in rates. In my
10 previous testimony, I explained the 2016 test year operating results, including expense and rate
11 base adjustments made to the 2014 base year operating results and rate base. I also provided the
12 Company's restated 2014 net plant, and planned 2015 and 2016 capital additions adjustments
13 and the revenue load adjustment. My testimony also included an overview of the Company's
14 system and jurisdictional allocation methodologies that have been in place for several years.

15 **Q. What is the scope of your Reply Testimony in this proceeding?**

16 A. My testimony will summarize the components included in the Partial Settlement
17 Stipulation ("Stipulation")¹, between Avista, Staff, CUB, and NWIGU. This summary will
18 include the following: the agreed-upon adjustments to the revenue requirement, agreement on
19 the implementation of a natural gas decoupling mechanism, and the transition of the Company's
20 energy efficiency programs to the Energy Trust of Oregon, as well as issues affecting rate

¹ On November 6, 2015 the Company filed an All Party Partial Settlement Stipulation in this Docket. The Parties to the Stipulation include Avista (the "Company"), the staff of the Public Utility Commission of Oregon ("Staff"), the Citizens' Utility Board of Oregon ("CUB"), and the Northwest Industrial Gas Users ("NWIGU"), collectively the "Parties".

1 design. In addition, my testimony will summarize my understanding of the Parties revised
2 litigation position revenue requirements, after taking into consideration the agreed-upon
3 components of the Stipulation. Finally, I will address specific adjustments related to wages and
4 salaries and medical benefits, in response to the testimony of Mr. Bahr (Staff) and Mr. Gorman
5 (NWIGU/CUB).

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

7	<u>Description</u>	<u>Page</u>
8	I. INTRODUCTION	1
9	II. OTHER COMPANY WITNESSES	2
10	III. PARTIAL SETTLEMENT STIPULATION.....	4
11	A. Adjustments to Revenue Requirement and Rate Base	4
12	B. Natural Gas Decoupling Mechanism	6
13	C. Energy Trust of Oregon and Energy Efficiency Charge	6
14	D. Rate Design	7
15	IV. REVISED LITIGATION POSITION REVENUE REQUIREMENTS OF ALL	
16	PARTIES	7
17	V. CONTESTED ADJUSTMENTS.....	9
18	A. Return on Equity and Capital Structure	9
19	B. Information Technology Related to Project Compass	11
20	C. Plant Investment.....	11
21	D. Wages and Salaries – Bonus & Incentives.....	12
22	E. Medical Benefits	13
23	F. Pension Expenses	18
24	G. Post Retirement Medical Expenses	18
25	H. Bonus Depreciation.....	19

26
27

28 **II. OTHER COMPANY WITNESSES**

29 **Q. Would you please provide a brief summary of the Reply Testimony of the**
30 **other witnesses representing Avista in this proceeding?**

31 A. Yes. The following additional witnesses are presenting Reply Testimony on
32 behalf of Avista:

1 Mr. Mark Thies, Senior Vice President and Chief Financial Officer, will reply to the
2 direct testimony of witnesses for Staff, NWIGU, and CUB with respect to the Company’s
3 proposed capital structure (50 percent common equity), the return on equity (9.9 percent) and the
4 overall rate of return (7.71 percent). His testimony, coupled with that of Company witness,
5 Adrien Mckenzie, demonstrates that the capital structure, return on equity (“ROE”), and overall
6 rate of return requested by Avista are reasonable and the Commission should reject the capital
7 structures and return on equity proposed by Mr. Muldoon (Staff) and Mr. Gorman
8 (NWIGU/CUB). In addition, Mr. Thies will respond to the testimony of Staff related to the level
9 of capital investment for our Oregon operations. Finally, he, along with the reply testimony of
10 Ms. Shelly Heier, will demonstrate that the Company is prudently managing its pension
11 investment.

12 Mr. Adrien M. McKenzie, Vice President of Financial Concepts and Applications
13 (FINCAP), Inc., demonstrates that the return on equity recommendations of Mr. Muldoon and
14 Mr. Gorman are simply too low, and fail to satisfy the requirements for establishing a return on
15 equity that is competitive with other businesses of comparable risk.

16 Ms. Shelly J. Heier, President and Chief Operating Officer of Verus Advisory, Inc., will
17 present her independent evaluation of Avista’s pension investment strategy, explaining why
18 Avista’s “de-risking” of its pension investment strategy is reasonable and prudent.

19 Ms. Karen Schuh, Senior Regulatory Analyst, will reply to the testimony of Staff and
20 other Parties, as it relates to the Company’s investment in utility plant. Her testimony will
21 demonstrate that the level of rate base proposed by the Parties, significantly understates the
22 investment that will be in place serving customers in the 2016 rate year.

1 Mr. Jeffrey A. Webb, Manager of Gas Engineering and Measurement, will discuss the
2 methods used to prioritize the completion of plant investments, and will speak specifically about
3 the Company’s East Medford Reinforcement and Ladd Canyon Gate Station Upgrade projects;
4 the timing of which have been challenged by other Parties.

5 Mr. Don Falkner, Director of Tax, will reply to the testimony of NWIGU and CUB
6 regarding the proposed Bonus Depreciation adjustment, and demonstrates that it is not
7 appropriate to reduce rate base for 2016, because the Company did not have the benefit of lower
8 tax payments to the IRS during 2015.

9 Mr. James Kensok, Vice President and Chief Information Officer, contrary to the claims
10 of Staff witness Ms. Johnson, demonstrates that the timeline and costs required to complete
11 Project Compass were reasonable, and the Company made prudent decisions in managing the
12 Project, including the performance of its many contractors.

13 Mr. Joseph Miller, Senior Regulatory Analyst, provides the Company’s response to the
14 long-run incremental cost (“LRIC”) of service studies prepared by both Staff and NWIGU, as
15 well as responds to CUB’s assertion that the Company’s LRIC Study is flawed.

16 Mr. Patrick Ehrbar, Manager, Rates and Tariffs, demonstrates that the spread of the
17 revised annual margin/revenue increase among the Company’s natural gas service schedules is
18 reasonable, as it is supported by each of the three LRIC studies.

19

20 **III. PARTIAL SETTLEMENT STIPULATION**

21 **A. Adjustments to Revenue Requirement and Rate Base**

22 **Q. Have you prepared a summary table that reflects the adjustments to revenue**
23 **requirement and rate base agreed to within the Partial Settlement Stipulation?**

A. Yes, I have. Table No. 1, below, provides a summary of the adjustments to the Company's direct filed natural gas revenue requirement and rate base, as agreed to with all Parties, in the Stipulation presented to the Commission for approval.

Table No. 1:

SUMMARY OF ADJUSTMENTS TO REVENUE REQUIREMENT AND RATE BASE AS AGREED TO BY PARTIES IN PARTIAL SETTLEMENT STIPULATION			
000s of Dollars			
	Rev. Req. Incr / (Dec)	Rate Base Incr / (Dec)	
Revenue Requirement As Filed by Avista	\$ 8,557	\$ 217,824	
Cost of Debt	(23)	-	
State Effective Tax Rate	(41)	-	
Uncollectibles	(7)	-	
Working Cash	(116)	(1,090)	
State Taxes	(1,353)	-	
Depreciation	(278)	112	
D&O Insurance	(52)	-	
Various A&G Expenses	(31)	-	
Wages & Salaries	(65)	-	
Property Tax	(69)	-	
Prepaid Pension Asset	(605)	(5,655)	
Other Revenues - Miscellaneous Revenue	(34)	-	
Load Forecasting	867	-	
Cost Allocations	(9)	-	
Summary Total of Adjustments to Revenue Requirement (1)	(1,816)	(6,633)	
Adjusted Revenue Requirement and Rate Base: (1)	\$ 6,741	\$ 211,191	
(1) Per Partial Settlement Stipulation filed on November 6, 2015			

Q. In Table No. 1, above, you have shown items agreed to in the Partial Settlement Stipulation. Could you please briefly explain the overall impact on the Company's filed revenue requirement?

A. Yes. The Stipulation adjusts revenue requirement for various reductions to expense and rate base, as well as one increase to revenue requirement, related to the updated load

1 forecast. The net impact of all of these agreed-upon adjustments reduced the overall natural gas
2 revenue requirement by \$1,816,000, and reduced rate base by \$6.633 million. The Stipulation
3 and Joint Testimony filed in Support of the Stipulation (“Joint Testimony”) provide an
4 explanation for each of the specific adjustments.

5 **B. Natural Gas Decoupling Mechanism**

6 **Q. You noted above that the Partial Settlement Stipulation resulted in**
7 **agreement on the implementation of a natural gas decoupling mechanism. Please briefly**
8 **describe the agreed-upon Natural Gas Decoupling Mechanism.**

9 A. Decoupling is a mechanism designed to break the link between a utility's revenues
10 and a consumer's energy usage. The Company's actual revenue, based on therm sales, will vary,
11 up or down, from the level set by the Commission. This could be due to changes in
12 conservation, weather or the economy.

13 The Parties have agreed upon a Revenue-Per-Customer decoupling mechanism for its
14 natural gas operations. The mechanism will compare actual decoupled revenues to allowed
15 decoupled revenues determined on a per-customer basis, with any differences deferred for later
16 rebate or surcharge. The Stipulation and Joint Testimony provide a detailed account of the key
17 components of the natural gas decoupling mechanism.

18 **C. Energy Trust of Oregon and Energy Efficiency Charge**

19 **Q. What did the Parties agree to related to the Company moving its energy**
20 **efficiency programs to the Energy Trust of Oregon (“ETO”)?**

21 A. The Parties agreed that Avista would establish a separate natural gas energy
22 efficiency tariff to collect costs, through current rates (as is currently used for Avista’s energy
23 efficiency programs), for administering and delivering energy efficiency programs. In 2016,

1 Avista will work with the ETO and the Parties on the transition of the Company's energy
2 efficiency programs to the ETO, such that the ETO will administer all programs, except for
3 Avista's low income energy efficiency programs, effective January 1, 2017. Additional details
4 regarding the transfer of the energy efficiency programs are included in the Stipulation and Joint
5 Testimony.

6 **D. Rate Design**

7 **Q. Please provide a brief summary of Rate Design, which was agreed to within**
8 **the Partial Settlement Stipulation.**

9 A. For Residential Service Schedule 410, the monthly customer basic charge will be
10 increased by \$1 per month, from \$8.00 to \$9.00 per month. The monthly customer charge for
11 General Service Schedule 420 will be increased by \$3.00 per month, from \$14.00 to \$17.00. The
12 monthly customer charge for the Large General Service Schedule 424 and Transportation
13 Service Schedule 456 will remain unchanged. Mr. Ehrbar has incorporated the agreed-upon rate
14 design changes on page 2 of his Exhibit Avista/1901.

15

16 **IV. REVISED LITIGATION POSITION REVENUE REQUIREMENTS OF ALL**
17 **PARTIES**

18 **Q. Prior to the Stipulation, each party provided testimony regarding**
19 **adjustments to the Company's filed revenue requirement. Please summarize the proposals**
20 **by each party.**

1 A. Staff proposed a total natural gas base revenue decrease of \$227,000², as
2 compared to the Company's originally filed natural gas revenue increase \$8,557,000. Staff
3 arrived at its proposed decrease by accepting or rejecting various adjustments in the Company's
4 revenue requirement, and by proposing additional adjustments.

5 NWIGU/CUB jointly proposed a decrease of \$4,630,000 to the Company's filed natural
6 gas revenue requirement (from \$8,557,000 to \$3,927,000³), by accepting or rejecting various
7 adjustments in the Company's Revenue requirement, as well as proposing additional
8 adjustments.

9 Although NWIGU and CUB filed joint testimony with a proposed revenue requirement,
10 CUB also proposed a reduction to plant investment related to the timing of the Ladd Canyon gate
11 station. This reduction to plant investment reduces CUB's proposed revenue requirement by an
12 additional \$218,000.

13 **Q. Have you prepared a summary table that shows Avista's understanding of**
14 **the Parties' revised litigation position for its natural gas revenue requirement after**
15 **reflecting the adjustments agreed to within the Stipulation?**

16 A. Yes, I have. Table No. 2, below provides a summary of the Parties' revised
17 natural gas revenue requirement, after taking into consideration the adjustments agreed to within
18 the Stipulation:

19

² Exhibit No. Staff/100, Gardner/4, Table A

³ Exhibit No. NWIGU-CUB/100, Gorman/2, Table 1

Table No. 2:

SUMMARY OF ADJUSTED LITIGATION POSITION REVENUE REQUIREMENT				
000s of Dollars				
	Avista Rev. Req. Incr / (Dec)	OPUC Staff Rev. Req. Incr / (Dec)	NWIGU / CUB Rev. Req. Incr / (Dec)	CUB Rev. Req. Incr / (Dec)
Revenue Requirement As Filed by Avista	\$ 8,557	\$ 8,557	\$ 8,557	\$ 8,557
Agreed Upon Adjustments: (1)	(1,816)	(1,816)	(1,816)	(1,816)
Adjusted Revenue Requirement (1)	<u>6,741</u>	<u>6,741</u>	<u>6,741</u>	<u>6,741</u>
Contested Adjustments				
A. Return on Equity and Capital Structure	-	(1,541)	(1,400)	(1,400)
B. Information Technology Related to Project Compass	-	(132)	-	-
C. Plant Investment	-	(3,194)	-	(218)
D. Wage & Salaries - Bonus & Incentives	-	(329)	-	-
E. Medical Benefits	-	(181)	-	-
F. Pension Expense	-	(361)	(340)	(340)
G. Post Retirement Medical Expenses	-	(25)	-	-
H. Bonus Depreciation	-	-	(667) ⁽²⁾	(667) ⁽²⁾
Total of Contested Adjustments	<u>-</u>	<u>(5,763)</u>	<u>(2,407)</u>	<u>(2,625)</u>
Adjusted Litigation Position Revenue Requirements	<u>\$ 6,741</u>	<u>\$ 978</u>	<u>\$ 4,334</u>	<u>\$ 4,116</u>

(1) Per Partial Settlement Stipulation filed on November 6, 2015
(2) Mr. Gorman's total proposal related to state income tax (SIT) and bonus depreciation was \$2.02 million (SIT of \$1.22 million and \$.8 million Bonus Depreciation). The \$667,000 reflects the difference between the \$2.02 million and the agreed-upon SIT adjustment in the Stipulation of \$1.353.

V. CONTESTED ADJUSTMENTS

Q. Staff, CUB, and NWIGU proposed several adjustments, which were not resolved as part of the Stipulation. Please identify each of these adjustments and explain why Avista is rejecting their proposals.

A. Table No. 2 above lists the additional adjustments proposed by the Parties. Each of these adjustments, which are contested by Avista, are identified below.

A. Return on Equity and Capital Structure

Q. As part of the Stipulation, all Parties agreed to the Cost of Debt, however, Parties proposed adjustments to the Company's filed Return on Equity and Capital Structure. Please summarize each of the Parties proposed Cost of Capital after reflecting the agreed-upon cost of debt.

1 A. Table No. 3 below shows the Parties' proposed Cost of Capital after reflecting the
2 agreed-upon cost of debt.

3 **Table No. 3:**

AVISTA CORPORATION			
Proposed Cost of Capital			
	<u>Proposed</u> <u>Structure</u>	<u>Cost</u>	<u>Weighted</u> <u>Cost</u>
Debt	50.00%	5.515%	2.76%
Common Equity	50.00%	9.90%	4.95%
TOTAL	<u>100.00%</u>		<u>7.71%</u>

STAFF			
Proposed Cost of Capital ⁽¹⁾			
	<u>Proposed</u> <u>Structure</u>	<u>Cost</u>	<u>Weighted</u> <u>Cost</u>
Debt	50.14%	5.515%	2.77%
Common Equity	49.86%	9.11%	4.54%
TOTAL	<u>100.00%</u>		<u>7.31%</u>

NWIGU and CUB			
Proposed Cost of Capital ⁽²⁾			
	<u>Proposed</u> <u>Structure</u>	<u>Cost</u>	<u>Weighted</u> <u>Cost</u>
Debt	51.50%	5.515%	2.84%
Common Equity	48.50%	9.35%	4.53%
TOTAL	<u>100.00%</u>		<u>7.37%</u>

(1) Staff/200, Muldoon/1, lines 13-15.

(2) NWIGU-CUB/100, Gorman/2, lines 6-7 and 3, lines 6-9

1 **Q. Does the Company agree with either of the Parties' proposed Capital**
2 **Structures or ROE?**

3 A. No, it does not. Therefore the Company continues to support an ROE of 9.9
4 percent and 50 percent common equity layer. Mr. Thies provides Reply Testimony in response
5 to the Parties' proposals regarding Capital Structure, and Mr. McKenzie's Reply Testimony
6 addresses ROE.

7 **B. Information Technology Related to Project Compass**

8 **Q. On pages 2 through 5 of Staff witness Ms. Johnson's Reply Testimony,**
9 **(Staff/300, Johnson), Staff proposes an adjustment to reduce rate base by a total of \$1.243**
10 **million, relating to the Company's new information technology system known as Project**
11 **Compass. What is Avista's response to Staff's adjustment?**

12 A. Company witness Mr. Kensok provides Reply Testimony in support of full
13 recovery of the Company's investment in Project Compass and explains that the Project was
14 prudently managed and successfully implemented.

15 **C. Plant Investment**

16 **Q. Commission Staff and CUB rejected the Company's pro forma capital**
17 **additions adjustment, each proposing their own adjustments. What is the Company's**
18 **response to the proposals of these Parties?**

19 A. Ms. Schuh specifically addresses the adjustments related to capital additions
20 proposed by Staff and CUB, and why their methods do not fairly reflect the level of rate base
21 that will be in place serving customers during the rate year. The adjustments as proposed by
22 Staff, which reduced the Company's natural gas revenue requirement by \$3,194,000 and rate
23 base by \$30,003,003, should be rejected. An additional adjustment proposed by CUB, relating to

1 the Ladd Canyon Gate Station, would reduce the Company's natural gas revenue requirement
2 \$218,000, and rate base by \$1.6 million. That adjustment should also be rejected, as testified to
3 by Company witness Mr. Webb.

4 **D. Wages and Salaries – Bonus & Incentives**

5 **Q. Please explain the Company's Short Term Incentive Plan adjustment.**

6 A. The Company's Short Term Incentive Plan adjustment adjusted actual incentives
7 in the Company's 2014 base year to reflect a six-year average of payout percentages. The
8 adjustment reduced overall Oregon expense by approximately \$0.2 million in the Company's
9 filed case. Long-term incentives based on financial metrics (i.e. performance shares), and those
10 short-term incentives based on earnings per share are borne by shareholders and are already
11 excluded from the revenue requirement in this case.. In addition, an amount of short-term
12 incentive compensation proportionate to non-utility labor expense has been charged to non-
13 utility accounts, and is therefore excluded from the case.

14 **Q. Staff's incentive compensation adjustment proposes to disallow 100 percent**
15 **of officer incentives, 75 percent of performance-based incentives and 50 percent of merit-**
16 **based incentives for all union and non-union employees citing previous Commission policy.**
17 **What is the Company's response to Staff's proposal?**

18 A. Previous Commission orders related to incentive compensation, including those
19 referenced by Staff, contained incentive compensation disallowances for plans with metrics
20 related to the financial performance of the Company. For example, in Order No. 97-171, three
21 incentive plans for US West Communications ("USWS") were reviewed in Docket No. UT-125.
22 Two of USWS's plans contained both financial metrics and customer-focused metrics, and one
23 plan was based entirely on financial metrics. This order states:

1 “Staff notes that in the past, the Commission has not allowed a utility’s revenue
2 requirement to include employee bonuses that were based on the *utility’s financial results*
3 *of operations.*” (emphasis added) (Order at page 69)
4

5 In a recent Portland General Electric general rate case proceeding (Docket No. UE 283)
6 cited in Staff testimony⁴ states the rationale for disallowance is based on increased earnings or
7 financial metrics. The Testimony states:

8 “In accordance with Commission policy, Staff proposed to disallow 100 percent of
9 officers’ bonuses because they are *based on increased earnings* (Order 99-033 at 62;
10 Order 97-171 at 74-76)” (emphasis added)
11

12 The costs associated with incentive plans included in Avista’s case⁵, however, are based
13 entirely on metrics related to ratepayers – O&M cost per customer; customer satisfaction,
14 reliability and response time. None of the metrics included in the Company’s adjustment are
15 based on the utility’s financial results or common stock performance. All incentive pay related
16 to these financial metrics have already been removed from this case by the Company. Therefore,
17 past precedent actually supports recovery of the incentive-related costs Avista has included in
18 this case. This incentive pay is part of total compensation for employees and is not extra
19 compensation above what is competitive with other similar utilities.

20 **E. Medical Benefits**

21 **Q. Please describe the Medical Benefit adjustment proposed by the Company?**

22 A. The Company’s direct filed case included an adjustment to increase medical and
23 post-retirement medical expense for Oregon customers by approximately \$178,000. The
24 Company updated the post-retirement medical portion of the adjustment based on new expense

⁴(Staff/100, Gardner/3 section S-13

⁵ Avista/501 Smith, Adjustment 2.12 Incentive

1 estimates received from the Company’s actuary company Towers Watson, resulting in a revised
2 expense adjustment of approximately \$202,542.

3 **Q. Staff proposes an adjustment to reduce medical expense by \$94,000, for a**
4 **decrease to revenue requirement of approximately \$98,000⁶, based on information**
5 **contained within the Kaiser Family Report “2014 Health Benefits” to reflect an employee**
6 **premium sharing amount of 18% single and 29% family for non-union employees. Is it**
7 **reasonable to assume this sharing percentage for the Company?**

8 A. No. Staff is reviewing only one component of the overall compensation package,
9 and neglecting to address other changes that would need to be made to other components of
10 employees’ total compensation in order to maintain a total compensation package (salaries and
11 benefits) that would be competitive with that of other similar companies.

12 Further, the basis for the recommendation for premium sharing of 81/19
13 (employer/employee), from the Kaiser Family Foundation “Employer Health Benefits 2014
14 Summary of Findings”, is not an appropriate basis for determining the amount of premium
15 contributions employees should make to Avista’s medical plan. The report is not specific to
16 geographic location, lacks information pertinent to the utility industry and more specifically to
17 those companies within which we compete for talent.

18 In fact, the report itself acknowledges there can be wide variations between not only
19 premiums, but other components within overall health care costs. In relation to overall
20 premiums, the report at page 1 states:

21 “Premiums vary significantly around the averages for single and family coverage,
22 resulting from differences in benefits, cost sharing, covered population, and geographical
23 location”. (STAFF/802, Bahr/19)

⁶ STAFF/800, Bahr/14, lines 20 – 21.

1
2 The report also goes on to discuss employee premium sharing, providing information as
3 to the distribution of premiums paid by covered workers based on company size and type of
4 medical plan (among other things). In relation to premium sharing, the report again references
5 significant variances, which can occur, stating at page 1:

6 “As with total premiums, the share of premiums contributed by workers varies
7 considerably among firms” (emphasis added)

8
9 If the Company were to change the premium sharing component, as proposed by Staff,
10 co-pays, out-of-pocket minimums, etc. would need to be likewise adjusted in order to maintain
11 an overall salary and benefits package that is competitive with that offered by other similar
12 utilities.

13 **Q. Please briefly describe the role Medical benefits plays within the Company’s**
14 **overall Compensation Philosophy.**

15 A. The Company is committed to providing a total compensation program that will
16 attract and retain qualified people required to meet the needs and expectations of all utility
17 stakeholders, including but not limited to, customers, shareholders and regulators. Medical
18 benefits are only one portion of a carefully balanced overall compensation package, which also
19 includes base salaries, performance-based award programs and retirement benefits that are
20 competitive in the marketplace as benchmarked against other similar-sized companies in regional
21 and national markets.⁷ The various components within the medical plan (co-pays, deductibles,
22 premium sharing, etc.) are carefully weighed in order to maintain an appropriate level of medical
23 benefits relative to the overall benefit package and ultimately overall compensation package

⁷ Medical benefits are combined with other Benefits and benchmarked against a peer group with similar revenues and industry characteristics. This study, the BENVAl Study, is performed by an independent consultant Towers Watson, bi-annually.

1 **Q. Staff Witness Mr. Bahr recommends premium sharing of 81/19 for non-**
2 **union employees⁸. Does he recommend a different sharing percentage for union**
3 **employees?**

4 A. Yes. In testimony Mr. Bahr states⁹:

5 “Staff typically proposes no adjustment to sharing between the Company and its
6 bargaining employees unless the sharing percentage is deemed unreasonable upon
7 review. These rates are negotiated between the Company and the union, include a wide
8 range of total compensation elements and are difficult to adjust without upsetting the
9 carefully negotiated compensation balance.” (emphasis added)

10

11 **Q. Does the Company also take into account “a wide range of total**
12 **compensation elements” to determine a balanced level of compensation for non-union**
13 **employees?**

14 A. Yes, as noted above, medical benefits are only one portion of the overall benefit
15 package intended to recruit and retain employees, whether they are union or non-union. Once
16 the appropriate amount of medical benefit is determined, each component (premium, co-pays,
17 out-of-pocket maximums, etc.) is carefully considered in order to maintain its balance within the
18 benefit package and ultimately within the total compensation package. Finally, there is no basis
19 for distinguishing between union and non-union in this regard. It is appropriate for both union
20 and non-union employees to share premiums with the Company in a 90/10 ratio.

21 **Q. Did Mr. Bahr take into account his recommendation of 90/10 premium**
22 **sharing for union employees when making his proposed adjustment reducing overall**
23 **medical expenses?**

⁸ Staff/800, Bahr/14 at 22

⁹ Staff/800, Bahr/15 at 14-19

1 A. No. While Mr. Bahr stated his support for a 90/10 premium sharing for union
2 employees, it appears he inadvertently did not reflect that in his proposed adjustment. Correcting
3 for this error would change Staff's adjustment related to premium sharing from a reduction of
4 \$94,000 to \$42,000. We believe this was an oversight and the revised medical adjustment
5 related to premium sharing should be a reduction to medical expense of approximately \$52,000.

6 **Q. Staff also recommends a second adjustment to reduce medical expense by**
7 **\$81,000, for a decrease to revenue requirement of \$83,000, based on a 2011-2014 trend**
8 **analysis. What is the Company's response to this adjustment?**

9 A. The best estimate for the Company's medical expenses is provided by an
10 independent compensation consultant, Mercer, taking into consideration factors such as claims
11 experience, medical trend, member demographics, geographical location and the impact of health
12 care reform. Staff's use of purely historical information lacks information on known changes
13 occurring within the health care industry, such as health care reform, much less the other factors
14 compensation consultants take into account. Staff's method is not an appropriate method to
15 determine costs for the 2016 rate year.

16 **Q. What is the net effect of Staff's proposed adjustments to medical expense?**

17 A. The net effect of the adjustments to medical expense for both the premium
18 sharing and the trend analysis is a reduction medical expense of \$175,000, for a decrease to
19 revenue requirement of approximately \$182,000. This adjustment should be rejected as
20 explained above.

21

1 **F. Pension Expenses**

2 **Q. Staff proposed an adjustment to reduce the pension expense. What is**
3 **the Company's response?**

4 A. Staff proposed a reduction in the Company's pension expense of \$348,000, to
5 reflect the difference between using a 7 percent expected return on asset ("EROA") versus a 5.5
6 percent EROA. Staff's adjustment, however, was inadvertently calculated to include both O&M
7 and Capital amounts. Based on conversations with Staff, it was their intent to correct this
8 adjustment to reflect approximately 57.27% of this amount, for a corrected adjustment of
9 approximately \$199,000. It was simply an oversight that their testimony did not reflect this
10 updated calculation.

11 NWIGU/CUB also make an adjustment to pension expense related to the difference in
12 EROA assumptions, basing their calculation on the difference between a 5.3% and 6.6% EROA
13 for a total expense adjustment of \$340,000.

14 The Company does not agree with these proposed adjustments, as explained in the Reply
15 Testimony of Mr. Thies and Ms. Heier.

16 **G. Post Retirement Medical Expenses**

17 **Q. Staff recommends an adjustment to Post Retirement Medical expense due to**
18 **the Company's return on assets assumption, similar to the Pension Plan adjustment. Does**
19 **the Company agree with this adjustment?**

20 A. No, we do not, Mr. Thies provides Reply Testimony related to this issue. Avista
21 rejects Staff's \$25,000 adjustment.

22

1 **H. Bonus Depreciation**

2 **Q. NWIGU/CUB proposed an adjustment to reduce rate base and revenue**
3 **requirement related to bonus depreciation and the associated Accumulated Deferred**
4 **Federal Income Tax (ADFIT). Does the Company agree with this proposed adjustment?**

5 A. No. NWIGU/CUB proposed to remove \$7.541 million of rate base for ADFIT
6 related to the recognition of bonus depreciation and the additional tax depreciation for 2015 and
7 2016 plant additions, which they state results in additional ADFIT. This adjustment reduces the
8 Company's filed revenue requirement by approximately \$805,000. Company witness Mr.
9 Falkner provides Reply Testimony to address this issue.

10 **Q. Does this conclude your Reply Testimony?**

11 A. Yes.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

RESPONSE TESTIMONY OF MARK T. THIES
REPRESENTING AVISTA CORPORATION

Capital Structure, Capital Investment, Pension Expense

I. INTRODUCTION

Q. Please state your name, business address, and present position with Avista Corp.

A. My name is Mark T. Thies. My business address is 1411 East Mission Avenue, Spokane, Washington. I am employed by Avista Corporation as Senior Vice President and Chief Financial Officer.

Q. Are you the same Mark T. Thies who sponsored prefiled direct testimony, on behalf of Avista Corporation (Avista)?

A. Yes, I sponsored direct testimony and exhibits, Avista/200-204, in this Docket.

Q. Please summarize the purpose of your Reply Testimony.

A. My testimony responds to the direct testimony of Matt Muldoon and Brian Bahr, Staff/200 and Staff/800, witnesses for the Staff of the Public Utility Commission of Oregon (“OPUC”) and Michael P. Gorman, NWIGU-CUB/100, witness for the Northwest Industrial Gas Users (“NWIGU”) and the Citizens’ Utility Board of Oregon (“CUB”), respectively, with respect to capital structure, capital investment, and pension costs. This Reply Testimony, coupled with the Reply Testimony of Adrien Mckenzie, demonstrates that the Commission should accept the capital structure, return on equity, and overall rate of return requested by Avista, and reject the capital structures and return on equity proposed by Mr. Muldoon and Mr. Gorman. My testimony also responds to the testimony of Staff related to the level of capital investment for our Oregon properties. Additionally, along with the Reply Testimony of Shelly Heier, I will demonstrate Avista’s prudent and reasonable approach to managing our pension fund.

In brief, I will provide information that shows:

- A 50.0 percent common equity ratio is appropriate, consistent with the methodology used in prior years in Oregon, and provides a reasonable balance between safety and economy.

- Utility plant investments in the Oregon jurisdiction are not burdening customers with sharp rate increases as suggested by the Staff witness.
- The Company's management of its pension fund is reasonable and consistent with accepted practice. In particular, this testimony will address the Expected Return on Assets (EROA) that witnesses of Staff and NWIGU/CUB have challenged.
- The Staff's proposal to reduce allowed post-retirement medical costs are not reasonable.

Q. Will you be addressing return on equity in your testimony?

A. No. Mr. Adrien McKenzie, on behalf of Avista, provides Reply Testimony related to the appropriate return on equity for Avista.

A table of contents for my testimony is as follows:

<u>Description</u>	<u>Page</u>
I. INTRODUCTION	1
II. CAPITAL STRUCTURE	2
III. RATE OF RETURN.....	7
IV. PLANT INVESTMENT	8
V. RETURN ON PENSION ASSETS	10

II. CAPITAL STRUCTURE

Q. As context for responding to the testimony of Mr. Muldoon and Mr. Gorman, please summarize Avista's proposed capital structure.

A. See Illustration No.1 below for Avista's proposed capital structure.

Illustration No. 1:

AVISTA CORPORATION			
Proposed Cost of Capital			
	Proposed Structure	Cost	Weighted Cost
Debt	50.0%	5.515%	2.76%
Common Equity	50.0%	9.90%	4.95%
Total	100.0%		7.71%

1 **Q. Is the cost of capital provided in Illustration No. 1 different from that**
2 **originally presented by the Company?**

3 A. Yes. The only change to the cost of capital presented above is the cost of debt
4 component, which was agreed upon in the Partial Settlement Stipulation. All other elements are
5 consistent with what was originally filed.

6 **Q. What is Avista’s recent actual capital structure?**

7 A. The Company’s actual capital structure at September 30, 2015 is shown in
8 Illustration No. 2 below.

9 **Illustration No. 2:**

AVISTA CORPORATION	
Actual Capital Structure	
September 30, 2015	
	Actual Structure
Debt	49.25%
Common Equity	<u>50.75%</u>
Total	<u>100.00%</u>

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18 As shown in Illustration No. 2, Avista’s actual equity layer is above 50%. However, over
19 the course of the next year, Avista plans to move the equity component down to 50% through its
20 debt and equity financing.

21 **Q. Why is a 50.0 percent equity ratio appropriate?**

22 A. Maintaining a 50.0 percent common equity ratio has several benefits for
23 customers. We are dependent on raising funds in capital markets throughout all business cycles.
24 These cycles include times of contraction and expansion. A solid financial profile will assist us

1 in accessing debt capital markets on reasonable terms in both favorable financial markets and
2 when there are disruptions in the financial markets.

3 Additionally, a 50.0 percent common equity ratio solidifies our current credit ratings and
4 supports our long-term goal of moving our corporate credit rating from BBB to BBB+. We rely
5 on credit ratings in order to access capital markets on reasonable terms. The requested 50.0
6 percent equity ratio appropriately balances safety and economy for customers.

7 **Q. Please summarize your review of Mr. Muldoon's testimony regarding capital**
8 **structure.**

9 A. Mr. Muldoon proposes a 49.86 percent equity capital structure in his testimony¹
10 which, when rounded, is consistent with the Company's 50 percent equity capital structure level.
11 A 50 percent equity layer is very similar to Mr. Muldoon's, but is more reflective of the
12 Company's current actual structure. Additionally, Mr. Muldoon infers a degree of certainty in
13 his equity level of 49.86 percent by the precision of his calculation, which he recognizes is
14 simply "my best estimate of capital structure at the end of 2016".² The 50 percent equity layer is
15 more appropriate because the current equity layer is above 50 percent, and the Company will
16 transition during 2016 toward 50 percent.

17 **Q. Please summarize your review of Mr. Gorman's testimony regarding capital**
18 **structure?**

19 A. Mr. Gorman proposes a 48.5 percent equity capital structure.³ Mr. Gorman uses
20 calculations and a methodology that are inconsistent with previous rate proceedings in Oregon
21 and uses capital structures calculated under different methodologies from other jurisdictions for

¹ Staff/200, Muldoon/2, line 9

² Staff/200, Muldoon/3, line 1

³ NWIGU-CUB/100, Gorman/3, line 8

1 purposes of comparison. The Commission should reject Mr. Gorman's proposed capital
2 structure.

3 **Q. Mr. Gorman points to ratemaking capital structures in different jurisdictions**
4 **as support for his 48.5 percent common equity. Do you agree with this approach?**

5 A. No, it is not appropriate for Mr. Gorman to utilize the capital structure from the
6 Company's Washington jurisdiction⁴ to support his proposed structure for the Oregon
7 jurisdiction. As an example, short-term debt is included in capital structure calculations in the
8 Washington jurisdiction, but has not historically been included by the OPUC. Mr. Muldoon also
9 recognizes this difference, and in his testimony states that his capital structure "excludes
10 elements not historically considered long term debt by the Commission" and "my recommended
11 long-term debt portion of the capital structure excludes short term debt...consistent with ORS
12 757.415(3)".⁵

13 **Q. Does Mr. Gorman provide any arguments or rationale to support using a**
14 **methodology similar to the Washington jurisdiction?**

15 A. No. Mr. Gorman references the Washington jurisdiction's capital structure to
16 support his proposed 48.5 percent as reasonable, but fails to recognize the difference in
17 methodology in calculating the capital structure, and provides no support for why the
18 methodology applied in Washington is more appropriate than what has historically been applied
19 in Oregon.

20 **Q. Is it appropriate for Mr. Gorman to remove investments funded by common**
21 **equity that are not related to utility plant and equipment?**

22 A. No, it is not appropriate for Mr. Gorman to remove these common equity
23 investments. From a rating agency standpoint, customers benefit from the equity provided by

⁴ NWIGU-CUB/100, Gorman/11, lines 14-15

⁵ Staff/200, Muldoon/3, lines 5-9

1 these investments in subsidiaries. Both Moody's and Standard and Poor's (S&P), reflect these
2 investments in the Company's overall financial ratios, which correspondingly improves Avista
3 Corp's credit rating ratios. Stronger credit rating ratios can lead to higher credit ratings, which
4 can lead to lower debt costs for customers.

5 As discussed in my direct testimony, the capital investment related to Alaska Energy and
6 Resources Company ("AERC") and its subsidiary, Alaska Electric Light and Power, does not
7 impact the capital structure calculation proposed by the Company. Debt and equity for AERC
8 are primarily related to a separate regulated electric utility, and are excluded from the
9 calculations in Illustration Nos. 1 and 2 above.

10 **Q. In Exhibit NWIGU-CUB/103, Gorman/1, Mr. Gorman makes certain**
11 **adjustments to develop an "Adjusted Capital Structure." Are Mr. Gorman's adjustments**
12 **appropriate and accurate?**

13 A. No. Mr. Gorman's calculations are incorrect, in that he double-counts, and
14 removes items not originally included in the Company's common equity ratios. For example,
15 goodwill is presented on the Company's Securities and Exchange Commission (SEC)
16 consolidated balance sheet, but is related to the investment in AERC and, as stated earlier, is
17 already excluded from the capital structure calculation. By removing goodwill, Mr. Gorman is
18 removing the same amount twice. Furthermore, as discussed above, and in my direct testimony,
19 the Company does not include the investment in AERC in its capital structure (which was
20 approximately \$94 million at June 30, 2015). Therefore, Mr. Gorman inappropriately reduces
21 the Company's proposed equity for an investment in subsidiary that was not originally included
22 in the Company's proposed capital structure.

1 **Q. Is Avista’s methodology for calculating capital structure consistent with that**
2 **of Mr. Muldoon, and consistent that included in prior proceedings?**

3 A. Yes, both Avista and Mr. Muldoon utilize the same methodology in calculating
4 capital structure, and have recognized that this methodology is consistent with past rate case
5 proceedings before this Commission.

6 The Commission should accept the Company’s 50 percent capital structure. The
7 Company’s capital structure is calculated utilizing the same methodology as Mr. Muldoon,
8 consistent with previous rate proceedings in Oregon, and more reflective of the Company’s
9 current actual structure.

10

11

III. RATE OF RETURN

12

Q. Should the Commission approve a 9.9 percent Return on Equity?

13

A. Yes. As demonstrated by Adrien Mckenzie, a 9.9 percent return on equity is an
14 appropriate return. The cost of equity recommendations of Mr. Muldoon and Mr. Gorman are
15 simply too low and fail to reflect the risk perceptions and return requirements of real-world
16 investors in the capital markets.

17

Q. If the Commission were to approve the capital structure derived by Mr.
18 **Gorman, would this affect the Company's requested overall rate of return?**

19

A. Yes. If the Commission approved a lower equity ratio of 48.5 percent compared
20 to the Company’s 50.0 percent, Avista would require a higher return on equity in order to
21 recognize the increased leverage ratio.

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IV. PLANT INVESTMENT

Q. Staff witness Mr. Moore states “growth in rate base should happen at a measured pace so that rate-payers are not burdened with sharp rate increases”.⁶ Why has the Company increased the level of capital expenditures in recent years?

A. As discussed in my Direct testimony, three primary drivers have affected Avista’s level of capital investment: 1) the business need to fund a greater portion of the departmental requests for new capital investments that, in the past, have not been funded; 2) the need to capture investment opportunities and benefits identified by our asset management plans, and 3) a continued focus on controlling the increase in operation and maintenance (O&M) spending through prudent capital investment.

In addition, interest rates remain near all-time lows, so funding these capital projects now will result in lower long-term costs to customers, rather than waiting until interest rates and inflation rise. Furthermore, natural gas commodity costs continue to be relatively stable as compared to past years, and are expected to remain relatively stable for the near future.

Funding the additional needed capital investment projects now will result in lower overall bill impacts to customers than waiting until a time when retail rates are being driven higher by increasing commodity costs, and/or higher inflation and interest rates.

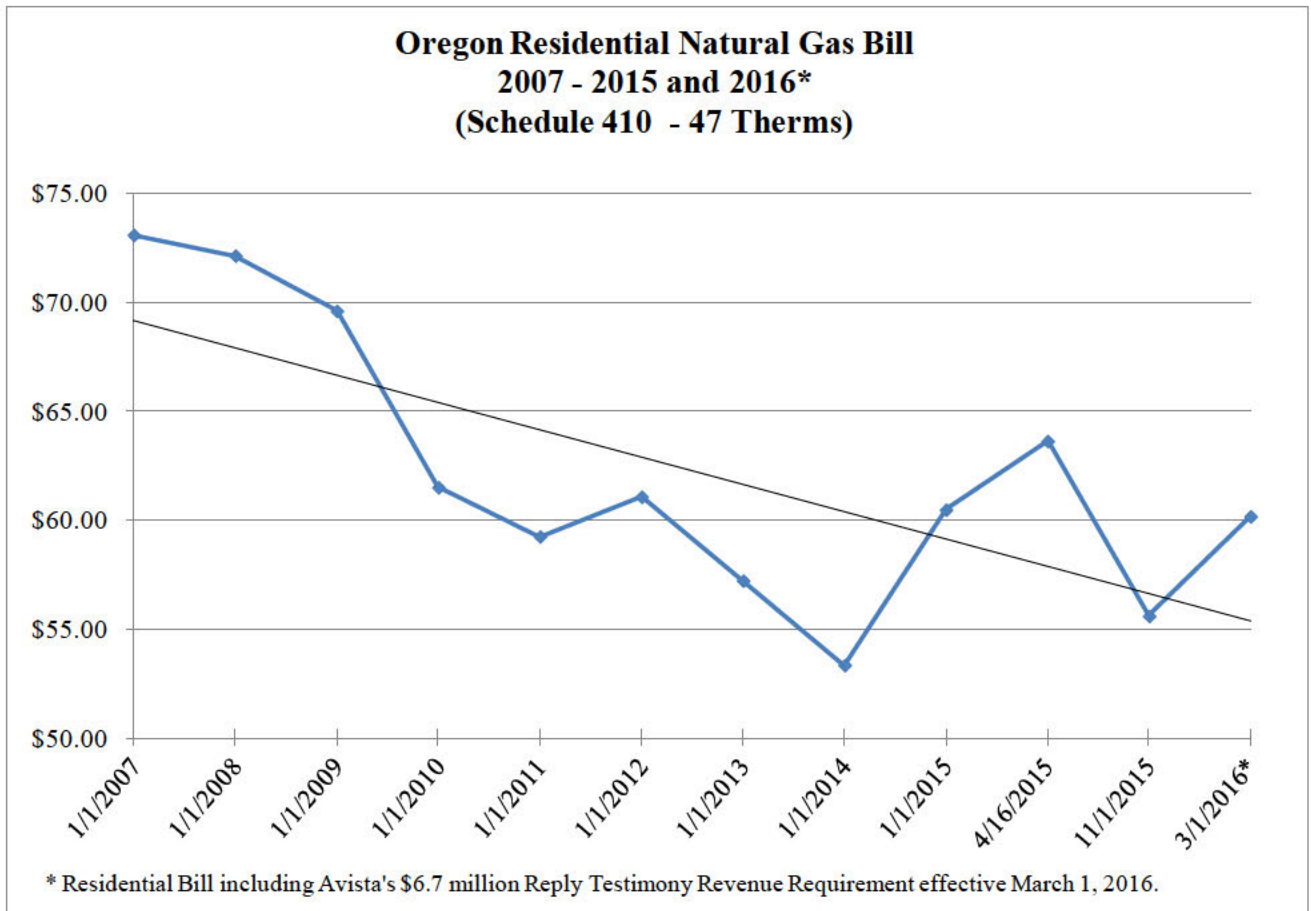
Q. What has been the change in customers’ bills in recent years?

A. Illustration No. 3 below shows the average monthly bill for an Avista residential customer served on Schedule 410 for the period January 1, 2007 through March 1, 2016. For 2007 through 2015, the Illustration provides the average monthly bill, using the rate effective January 1 for each year, for a residential customer using an average of 47 therms per month. In addition, the Illustration provides the average monthly bill including the following rate

⁶ Exhibit STAFF/600, Moore/3, lines 10-11.

1 adjustments: the April 16, 2015 general rate increase (Avista’s last general rate case Docket No.
2 UG-284), and the November 1, 2015 recently-approved Purchased Gas Cost Adjustment rate
3 reduction. Finally, the Illustration shows the average monthly bill effective March 1, 2016, with
4 the Company’s Reply Testimony proposed revenue requirement of \$6.7 million.

5 **Illustration No. 3**



19 Illustration No. 3 above demonstrates that the Company’s increased level of capital
20 expenditures in recent years, including 2015, has not led to a significant increase in customers’
21 bills. The effects of lower interest rates and natural gas commodity costs have served to offset
22 increases in capital expenditures – – capital expenditures which are necessary to continue to
23 provide safe and reliable service to our customers.

24

1 **V. RETURN ON PENSION ASSETS**

2 **Q. Staff witness Mr. Bahr⁷ and NWIGU-CUB witness Mr. Gorman⁸ proposed**
3 **reductions in Avista’s allowed employee pension costs on the basis that expected returns on**
4 **Avista’s pension fund assets are too low. Do you agree with their testimony?**

5 A. No. The Company proposed to include pension costs that are reasonable and
6 prudent. Their proposals, which impute a higher Expected Return On Assets (“EROA”), are
7 misguided. The Company is following a Liability-Driven Investment (“LDI”) approach to reduce
8 the volatility of the pension plan and provide more stability to the funded status of the plan.

9 **Q. Please briefly explain the LDI approach to managing the pension plan assets**
10 **and liabilities?**

11 A. LDI is an asset management approach in which the assets are invested in a
12 manner such that the investment return patterns – cash flow yield and/or capital gains – are
13 similar to the patterns of the liabilities. To the extent that these investment return and liability
14 patterns are closely aligned, when external events such as interest rate fluctuations or equity
15 market swings occur, the assets and liabilities would move in a similar direction and magnitude.

16 **Q. Avista is also sponsoring testimony from Ms. Shelly Heier, President of the**
17 **pension consulting firm Verus. Do you support and endorse Ms. Heier’s testimony?**

18 A. Yes. Ms. Heier and Verus have been engaged as pension investment advisors for
19 Avista’s defined benefit pension plan for several years. Their expertise and guidance are highly
20 valued as Avista manages its pension plan. Our strategic direction for a LDI approach to the
21 pension plan is closely aligned with advice and analysis from Verus. We also engage Verus as a
22 trusted advisor related to pension investment selection and performance oversight.

⁷ Staff/800, Bahr/10, line 17 through Bahr/12, line 19.

⁸ NWIGU-CUB/100, Gorman/69, lines 19-24.

1 **Q. As context to your response to Mr. Bahr's and Mr. Gorman's testimony,**
2 **please provide a brief overview of Avista's defined benefit pension plan.**

3 A. The pension plan covers certain existing employees and former employees who
4 are participants in the plan. As of December 31, 2014, the pension plan had a projected benefit
5 obligation (PBO) or liability of \$605.3 million. The market value of assets (MVA) held in trust
6 for the pension plan at that same date was \$540.1 million, representing an 89 percent funded
7 status (MVA divided by PBO). There are 2,927 participants, consisting of 1,536 active
8 employees, 220 participants with deferred benefits, and 1,171 participants receiving benefits
9 (retirees or other beneficiaries). In 2014, the Company contributed \$32 million to the plan, and
10 the plan paid \$30.2 million of benefits.

11 **Q. Has Avista taken steps to manage pension costs and volatility prior to the**
12 **LDI asset allocation in 2014?**

13 A. Yes. The Company made several pension plan changes and infused capital to
14 shrink the underfunded status in the pension plan. These steps were important prerequisites to
15 controlling long-term pension costs and the volatility of annual costs, which could then be
16 sustained with an LDI-based change to the pension fund asset allocation. The recent changes to
17 the plan are as follows:

- 18 • The benefit formula was changed for non-union employees hired on or after
19 January 1, 2006 (using 1.2 percent for each year of service compared to 1.5
20 percent for each year for employees hired prior to 2006).
- 21 • Participation in the plan was closed to non-union employees hired on or after
22 January 1, 2014, and to Oregon bargaining unit employees hired on or after April
23 1, 2014.
- 24 • The duration of fixed income investments was revised in 2010 to better match the
25 profile of the pension obligations, as explained in greater detail by Ms. Heier.
- 26 • The Company contributed \$258 million into the pension plan from 2007 through
27 2014. These contributions were \$87 million above the sum of net periodic pension
28 expense for those years. These excess contributions significantly improved the
29 funded status of the plan, which reduces future pension expense.

1 **Q. How does Avista measure its pension obligation and annual pension cost?**

2 A. Avista follows generally accepted accounting principles (GAAP). GAAP includes
3 Accounting Standards Codification (ASC) Topic 715, *Compensation-Retirement Benefits*, which
4 prescribes valuation of pension obligations, pension assets and net periodic pension cost. The
5 pension accounting standards in ASC 715 were formerly known as Statement of Financial
6 Accounting Standards 87, commonly referred to as “FAS 87”. Since the FAS 87 reference has
7 been used extensively in this proceeding, and other dockets before this Commission, we will
8 continue refer to FAS 87 instead of the newer nomenclature.

9 **Q. How does Avista recover its employee benefit costs in utility rates?**

10 A. Avista’s pension and other employee benefit costs are reflected in general rate
11 cases at the amounts recognized under GAAP, in accordance with FAS 87, with pro forma
12 adjustments to reflect changes for the rate period. The OPUC recently concluded a docket
13 regarding treatment of pension costs.⁹ The Commission affirmed its “policy of allowing a utility
14 to recover its pension contributions through Financial Accounting Standard 87 (FAS 87)
15 expense...”. The Commission noted in its Order that “...FAS 87 has been used successfully for
16 almost 30 years as part of this Commission’s overall ratemaking formula to appropriately
17 balance the interests of the utilities and customers and establish overall rates that were just and
18 reasonable.”

19 **Q. How does Avista determine the pension obligation (liability), which in turn**
20 **affects pension expense?**

21 A. Demographics of plan participants and actuarial practices establish the expected
22 amounts and years when pension payments will be made. The overall pension obligation
23 (liability) is the present value of this expected stream of payments. These future cash flows are

⁹ Docket UM 1633 “Investigation into Treatment of Pension Costs in Utility Rates”. Order 15-226 was issued August 3, 2015.

1 discounted based on the time span between the current date and the expected cash outflow dates,
2 and the appropriate discount rate.

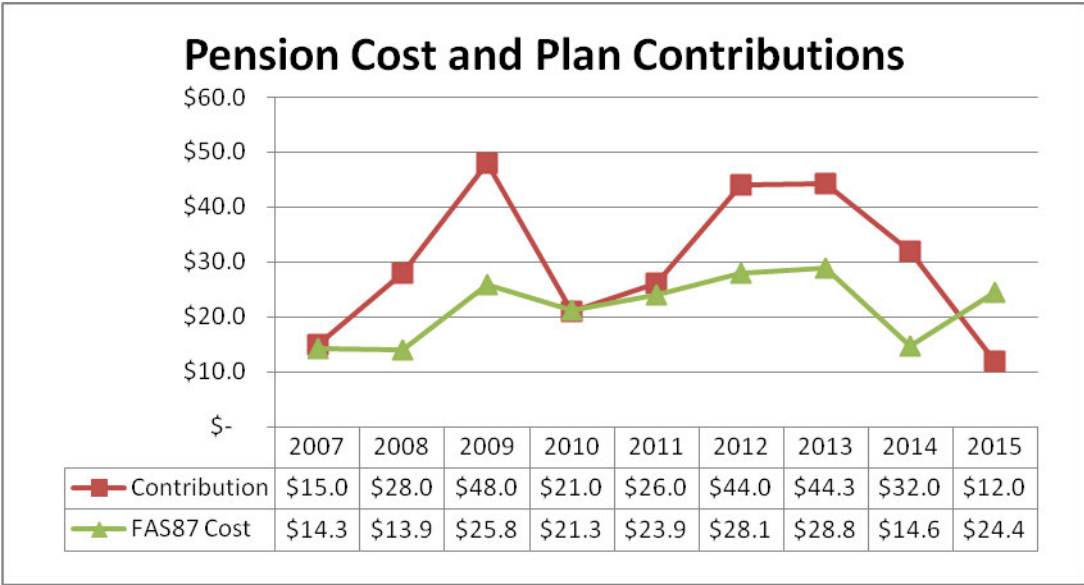
3 The accepted actuarial and GAAP method for selecting the discount rate is with a bond
4 model representing high quality corporate bonds with market-based yields as of the last day of
5 the accounting year. The discount rate on the measurement date can have a significant impact on
6 annual pension cost for the following year. I will discuss later in my testimony the important
7 relationship between the discount rate and the Expected Returns on Assets, or EROA.

8 **Q. Please briefly summarize the volatility of Avista's pension plan costs in**
9 **recent years, and the reasons for this volatility.**

10 A. The graph in Illustration No. 4 below shows the average annual net periodic
11 pension cost from 2007 through 2015 was \$21.7 million. The \$14.6 million net periodic pension
12 cost for 2014 was a relatively low point, in contrast to the average.

13 From 2007 to 2015, FAS 87 expense ranged from a low of \$13.9 million in 2008 to a
14 high of \$28.8 million in 2013. The most significant increase in a single year was the rise in 2009
15 to \$25.8 million, nearly double the 2008 net periodic cost. The combination of 2008 market
16 losses on investments and a reduced discount rate at the end of 2008 led to the large change
17 between 2008 and 2009.

1 **Illustration No. 4:**



11 **Q. What caused the change in net periodic pension cost between 2014 and 2015?**

12 A. While the concerns addressed in this Reply Testimony revolve primarily around

13 the EROA, there are other important variables that caused changes in pension costs for 2015

14 compared to 2014. Of greatest significance, the discount rate fell to 4.21 percent at the end of

15 2014 compared to 5.10 percent at the end of 2013. Hence, the one-year improvement in the

16 discount rate reduced the annual pension cost for one year, 2014, but was not sustained going

17 into 2015. A second change affecting 2015 pension cost was an update to the actuarial mortality

18 tables. The Society of Actuaries (SOA) published new mortality tables in 2014 that superseded

19 the prior tables SOA published fourteen years earlier in 2000. The new SOA mortality tables

20 indicate that pension beneficiaries are expected to have longer life spans, resulting in an increase

21 in pension obligations and cost starting with 2015. The revised mortality tables alone caused

22 Avista's pension cost to increase approximately 12 percent from 2014 to 2015.

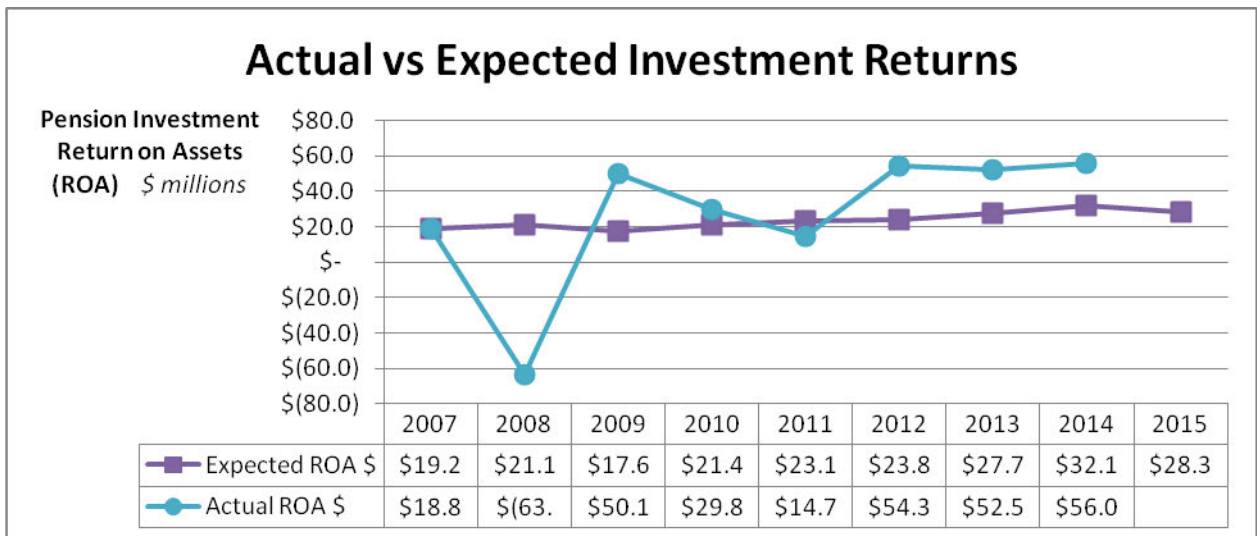
23 **Q. What actual investment performance did the pension plan experience in**

24 **recent years?**

1 A. As shown in Illustration No. 5 below, the actual return on plan assets in the eight-
 2 year span of 2007 to 2014 was \$212.6 million. Expected returns (based on the estimated long-
 3 term return on assets percentage for each year) during that same eight-year span were \$186.1
 4 million, or a difference of \$26.5 million better than expected. Notably, year by year actual
 5 returns compared to expected annual returns varied dramatically. Actual returns ranged from
 6 \$84.7 million unfavorable in 2008 to \$30.5 million favorable in 2012. Expected returns varied
 7 within the much narrower range of \$19.2 million in 2007 to \$32.1 million in 2014. The expected
 8 range varies by \$13 million, while the actual return range varied by \$115 million, or nine times
 9 as much.

10 The Company sought strategies that could reduce the volatility in expected returns, which
 11 supports the objective of reducing volatility in net periodic benefit cost. Less cost volatility is a
 12 benefit to utility customers since the annual costs are a component of retail utility rates.

13 **Illustration No. 5:**



22 **Q. How has the funded status of the pension plan changed in recent years?**

23 A. At the end of 2007, the funded status of the pension plan – the ratio of pension
 24 obligation to pension assets – was 75.1 percent. The 2008 market losses drove the funded status

1 down to 53.9 percent. By making significant contributions into the plan, the Company helped
2 improve the funded status to 85.0 percent at the end of 2014 (with a peak of 91.4 percent at the
3 end of 2013). The improved funded status helps reduce the annual cost volatility and future
4 years' pension costs.

5 The funded status was also aided by strong market performance after 2008. These
6 exceptional returns after the steep 2008 market decline, however, are not expected to continue. In
7 fact, the market experienced a correction (a drop of more than 10 percent) in the third quarter of
8 2015.

9 By moving the asset allocation to a less volatile investment mix in 2014, we expect less
10 volatility in the funded status going forward, and a more stable level of pension expense in
11 customers' rates.

12 **Q. Mr. Bahr and Mr. Gorman impute a higher EROA for Avista's pension**
13 **assets.¹⁰ What is your response to this testimony?**

14 A. The EROA value is an objective measurement developed within the rigors of FAS
15 87 standards. Avista has consistently obtained inputs for expected returns each year from three
16 sources and has applied a consistent process to average the expected return values together to
17 calculate a weighted return, the EROA.

18 Mr. Bahr simply compares Avista's expected EROA to other utility companies. Mr. Bahr
19 supports his assertion that Avista's EROA is unreasonable based on a limited set of peer
20 companies (six plan sponsors). He fails to undertake any analysis of how this peer group
21 manages its pension plans, and does not present analysis of those plans versus Avista's (e.g.,
22 funded status, closed plan vs. not closed, etc.) and provides no other support for his proposal that
23 the EROAs of those plans should dictate a similar EROA for Avista.

¹⁰ Staff/800, Bahr/10, line 17 through Bahr/12, line 19 and NWIGU-CUB/100, Gorman/69, lines 19-24.

1 Mr. Gorman proposes to use the estimated 2014 EROA of 6.6% as the basis for his
2 proposed adjustment. Mr. Gorman provides no other support as to why the 2014 EROA is
3 appropriate for the rate year.

4 **Q. What is the objective of diversifying the mix of investments within a pension**
5 **plan?**

6 A. The investment mix is designed to strike a careful balance between potential
7 returns and uncertainty of the individual investments, otherwise known as risk. The pension
8 investments are designed to fulfill the particular goal of providing promised future retirement
9 benefits to retired employees. Therefore, the investment mix is carefully designed toward that
10 goal while addressing risk to the Company, and its customers, in prudently managing costs and
11 cash flows.

12 **Q. How is the investment allocation chosen?**

13 A. The asset allocation decision is the result of considering future cash outflows,
14 investment alternatives, liquidity of assets, risk among asset types, the extent that the plan is
15 funded and future funding expectations. Investment experience results in short-term gains or
16 losses that differ from expected long-term returns. Market returns are difficult to predict in the
17 short run but there are long-term trends that tend to indicate how asset classes may perform,
18 including differences among classes in expected appreciation, income, and periodic volatility in
19 values. Our asset allocation relies on diversity among assets as a core principle. Even a strong
20 expectation that a particular asset class will outperform other choices is tempered by the potential
21 volatility in each asset class. For example, equities are widely believed to provide an opportunity
22 for greater long-term returns than fixed income investments. However, equity values are also
23 historically much more volatile than fixed income investments; i.e., their market values fluctuate
24 more widely and the risk of loss is much greater. Avista has evaluated the risk-return tradeoff,

1 given the funded status of our plan and its potential future funded status, to help guide a prudent
2 course of action and asset allocation plan.

3 **Q. What is the Company's history of changes to pension plan asset allocation?**

4 A. The asset allocation strategy is examined regularly. We consider the pension
5 obligations, investment alternatives and expected contributions into the plan and distributions
6 from the plan. The pension assets are the long-term funding source for long-term pension
7 obligations and, hence, asset allocation changes are made at infrequent intervals. A history of
8 asset allocation targets is shown Table No. 1 below. In general terms, the current asset allocation
9 targets are 27 percent equities, 58 percent fixed income and 15 percent other classes. The current
10 allocation can be contrasted to August 2013 which included 47 percent equities, 31 percent fixed
11 income and 22 percent other; or much further back to March 2006 which included 50 percent
12 equities, 30 percent fixed income and 20 percent other. A deliberate shift was implemented in
13 2014 toward a more significant allocation toward fixed income investments. Ms. Heier explains
14 the asset allocation strategy in her testimony. Avista's Board of Directors, acting through the
15 Finance Committee, adopted the most recent asset allocations in May 2014.

1 **Table No. 1:**

Asset Allocation History		Retirement Plan for Employees of Avista Corporation								
Asset Classes	May 2015	Allocation Ranges		May 2014	Aug 2013	Sep 2010	May 2009	Mar 2006	Nov 2003	
	Target ^(b)	Minimum	Maximum	Target ^(b)	Target	Target	Target	Target	Target	
US Large Cap Equities	18%	13%	23%	18%	25%	31%	31%	24%	39%	
US Small Cap Equities	1%	0%	5%	1%	5%	4%	4%	6%	10%	
Non-US Large Cap Equities	8%	3%	13%	8%	13%	12%	12%	12%	12%	
Non-US Small Cap Equities								4%		
Emerging Markets Equities	0%	0%	5%	0%	4%	4%	4%	4%		
Long Duration Fixed Income ^(a)	58%	48%	68%	58%	31%	31%	31%	30%	25%	
Emerging Markets Fixed Income	0%	0%	6%	0%	0%					
Venture Capital / Private Equity	0%	0%	4%	0%	0%	1%	1%	1%	4%	
Absolute Return	9%	8%	14%	9%	12%	10%	10%	12%	5%	
Private Real Estate	6%	0%	8%	6%	6%	5%	5%	5%	5%	
Commodities	0%	0%	6%	0%	4%	2%	2%	2%		
Cash and Cash Equivalents	0%	0%	2%							
Totals	100%			100%	100%	100%	100%	100%	100%	

Notes: Target Allocations of 0% are shown if there is an Allowed Range maximum greater than 0%. Blanks indicate unused categories. Allocation Range information is omitted except for the most recent range values.

^a Prior to May 2009, the category was simply "Fixed Income". The May 2009 Fixed Income total target of 31% was distributed across Core Fixed Income 21%, Treasury Inflation-Protected Fixed Income 5%, and High Yield Fixed Income 5%. The September 2010 revision combined these elements into "Long Duration Fixed Income".

^b The May 2015 Target is unchanged from May 2014 other than establishing a maximum for Cash and Cash Equivalents.

1 **Q. When the Company chose to move from 31 percent fixed income asset**
2 **allocation to 58 percent fixed income in May 2014, were other alternatives considered and**
3 **how was the change implemented?**

4 A. Yes. The asset allocation strategy is linked, in large part, to the pension plan's
5 funded status, as well as other factors such as the pension plan now being closed to new non-
6 union employees effective January 1, 2014. The Company considered alternative asset
7 allocations as part of a longer term plan that would evolve as the funded status changes. As the
8 plan's funded status continues to increase, we would expect to continue moving toward a higher
9 fixed income allocation, consistent with liability-driven investment concepts. In May 2014, the
10 independent consultant (Verus) recommended that Avista materially increase the fixed income
11 allocation from the existing 31 percent level to 45 percent or to 58 percent, depending on the
12 Company's preference for the derisking pace. The Board approved the move to 58 percent fixed
13 income allocation after considering the sensitivity on funded status of each alternative. The
14 sensitivity criteria included a) duration of assets in comparison to duration of the pension
15 liability, b) potential increases in interest rates and c) potential downside equity risk. The change
16 from 31 percent to 58 percent was accomplished during 2014 in two steps, moving first to a 45
17 percent intermediate level of fixed income before completing the transition to 58 percent.

18 **Q. How does the 2014 shift toward a greater allocation to fixed income**
19 **investments fit into the pension plan's historic status?**

20 A. The investment allocation shift in 2014 is a step in the process toward a LDI
21 approach. The asset allocation shift change in 2014 was adopted to limit pension cost volatility
22 and prevent erosion of the plan's improved funded status. The Company has been taking steps to
23 reduce the overall cost and volatility of the pension plan for several years, as described earlier,

1 which has led to lower overall costs to customers, and more stable pension costs reflected in
2 retail rates.

3 **Q. How is the EROA determined?**

4 A. The expected return is a ten-year forward view that is intended to represent long
5 run investment performance. The long term does not attempt to model annual ebbs and flows of
6 the markets and is also intended to avoid biases about near term market expectations.

7 The plan's EROA is the weighted average of expected returns on individual investment
8 classes and weighted by each asset class's relative proportion of the total assets. The two
9 variables that cause our expected return to vary from year to year are changes in the outlook for
10 expected returns of each asset class, and any change in allocation of overall plan assets among
11 those classes.

12 **Q. What is the relationship between the discount rate on pension obligations
13 and the EROA?**

14 A: The discount rate on pension obligations is 100 percent based on a bond portfolio
15 (fixed income instruments), while the EROA is based on an asset mix that is partially fixed
16 income investments (now 58%). The degree of correlation between changes in EROA and the
17 pension obligation discount rate is greatly impacted by the degree of similarity between the asset
18 mix of pension investments, and the 100 percent bond profile that determines the discount rate. If
19 the EROA and discount rates move in tandem, there is less volatility in annual pension cost.

20 Discount rates have a significant impact on the pension obligation and the ensuing year's
21 net periodic pension expense. Changes in the EROA and discount rates cause volatility in net
22 periodic pension cost from year to year, particularly if the EROA and discount rates are less
23 correlated.

1 **Q. Staff asserts that an EROA that is less than the rate of return (ROR) allowed**
2 **on the Company’s rate base would result in an unfair arbitrage charged to customers. Do**
3 **you agree with this assertion?**

4 A. No. Mr. Bahr’s implied relationship between EROA on pension plan assets and
5 ROR on utility rate base¹¹ is erroneous. The pension plan assets and utility rate base are
6 completely separate assets. Unlike utility rate base, the Company is not allowed a return on the
7 pension asset (through a recent utility regulatory proceeding the Commission determined that
8 utilities in Oregon would not be allowed to include prepaid pension assets in rate base¹²).
9 Avista’s funding of the pension plan, regardless of the EROA, is not an arbitrage opportunity
10 linked to the allowed ROR in setting customer rates.

11 **Q. Staff proposes a reduction to post-retirement medical benefits costs allowed**
12 **in this case¹³ based on assertions about EROA. Do you agree with this proposed reduction**
13 **to allowed expense?**

14 A. No. Mr. Bahr asserts that the EROA on post-retirement medical plan assets should
15 be set at 7 percent, similar to Staff’s proposal for pension expense. Mr. Bahr does not provide
16 any testimony, evidence, or analysis for how he determined that the EROA for post-retirement
17 medical should be 7 percent. Rather, Staff appears to use the same 7 percent derived from his
18 faulty comparison of Avista’s pension EROA to the limited set of peer companies, as described
19 earlier in my testimony. The EROA used by Avista for post-retirement medical, on the other
20 hand, is based on the input of three independent consultants, with the EROA estimates from
21 those consultants applied specifically to the post-retirement medical asset mix. Staff’s proposed

¹¹ Staff/800, Bahr/11, lines 13-18

¹² Docket UM 1633 “Investigation into Treatment of Pension Costs in Utility Rates”. Order 15-226 was issued August 3, 2015.

¹³ Staff/800, Bahr/12, lines 12-19.

1 reduction of approximately \$25,000 resulting from their 7 percent proposal is not supported and
2 should be rejected.

3 **Q. Does that conclude your Reply Testimony?**

4 **A. Yes, it does.**

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF ADRIEN M. MCKENZIE

REPRESENTING AVISTA CORPORATION

Return on Equity

REPLY TESTIMONY OF ADRIEN M. MCKENZIE

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
II.	RESPONSE TO MR. MULDOON.....	2
	A. Mr. Muldoon’s Recommendation Fails Regulatory Standards.....	3
	B. Deficiencies in Mr. Muldoon’s Proxy Group Evaluation.....	14
	C. Flaws in Mr. Muldoon’s DCF Application.....	19
	D. Mr. Muldoon’s CAPM Application is Unreliable	30
	E. No Basis for Criticisms of Risk Premium Method	35
	F. Mr. Muldoon’s Evaluation of Comparative Risk is Flawed.....	37
III.	RESPONSE TO MR. GORMAN	42
	A. Discounted Cash Flow Model.....	43
	B. Capital Asset Pricing Model	49
	C. Utility Risk Premium	55
	D. Expected Earnings Approach and Non-Utility DCF	57
	E. Flotation Costs	59

EXHIBIT NO. 1201:

Schedule AMM-15	Allowed ROE – Muldoon Proxy Group
Schedule AMM-16	Expected Earnings – Muldoon Proxy Group
Schedule AMM-17	Multi-Stage DCF Model – Muldoon Proxy Group
Schedule AMM-18	Sustainable Growth Rate – Muldoon Proxy Group
Schedule AMM-19	Risk Measures – Comparison to Avista
Schedule AMM-20	Gorman Proxy Groups – Value Line EPS Growth
Schedule AMM-21	Revised Gorman Risk Premium Analysis

1 **I. INTRODUCTION**

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

3 A. Adrien M. McKenzie, 3907 Red River, Austin, Texas, 78751.

4 **Q. Did you previously submit Direct Testimony in this case?**

5 A. Yes, I did.

6 **Q. What is the purpose of your Reply Testimony?**

7 A. My purpose is to respond to the testimony of Mr. Matt Muldoon, submitted on
8 behalf of the Staff of the Public Utility Commission of Oregon (“OPUC”), and Mr. Michael P.
9 Gorman, on behalf of Northwest Industrial Gas Users and the Citizens’ Utility Board of
10 Oregon, concerning the fair rate of return on equity (“ROE”) for the jurisdictional gas utility
11 operations of Avista Corp. (“Avista” or “the Company”).

12 **Q. Please summarize the principal conclusions of your Reply Testimony.**

13 A. Investors have many options for their funds and competition for investment
14 capital is intense. The cost of equity recommendations of Mr. Muldoon and Mr. Gorman are
15 simply too low and fail to reflect the risk perceptions and return requirements of real-world
16 investors in the capital markets. My Reply Testimony demonstrates that:

- 17 • The OPUC is charged with providing Avista with an opportunity to earn a
18 return that is competitive with other utilities, yet the allowed ROEs and
19 expected earnings for utilities in the proxy groups of Mr. Muldoon and Mr.
20 Gorman demonstrate that their recommendations are too low to meet this
21 end result test;
- 22 • There is no basis to assume that investors reference long-term forecasts of
23 gross domestic product (“GDP”) in developing their expectations for
24 utilities, and Mr. Muldoon’s and Mr. Gorman’s reference to this data
25 should be rejected;
- 26 • Mr. Muldoon’s multi-stage discounted cash flow (“DCF”) approach is
27 inconsistent with investors’ views and characterized by errors and
28 inconsistencies that undermine reliance on the resulting cost of equity

1 estimates;

- 2 • The CAPM and risk premium analyses conducted by Mr. Muldoon and Mr.
3 Gorman are flawed and incomplete, and result in cost of equity estimates
4 that are far below investors' required return;
- 5 • Mr. Muldoon's conclusion that investors would regard Avista as less risky
6 than his proxy companies is without merit and his related ROE adjustment
7 is unsupported and should be rejected;
- 8 • Mr. Gorman's failure to consider the impact of flotation costs contradicts
9 the findings of the financial literature and the economic requirements
10 underlying a fair rate of return on equity.

11 Finally, my Reply Testimony demonstrates that Mr. Muldoon's and Mr. Gorman's criticisms
12 of my alternative applications and conclusions are misguided and should be ignored.

13 **II. RESPONSE TO MR. MULDOON**

14 **Q. How did Mr. Muldoon arrive at his 9.11% recommended ROE for Avista?**

15 A. Mr. Muldoon's recommended ROE was based solely on the results of two
16 applications of the multi-stage DCF model. Specifically, Mr. Muldoon posited a three-stage
17 scenario over a 30-year time horizon. During the first stage, from 2015 through 2019, Mr.
18 Muldoon assumed that cash flows for each firm in his proxy group would be equal to the
19 annual dividend per share ("DPS") projections published by Value Line. During the second
20 stage, from 2020 through 2024, Mr. Muldoon calculated annual cash flows under the
21 assumption that individual growth rates for his proxy firms would converge to that of the
22 overall economy. For the third stage of his analysis, Mr. Muldoon assumed that all of the
23 proxy group firms would experience dividend growth equal to projected growth in GDP over
24 the years 2025-2044. Finally, Mr. Muldoon calculated a terminal price based on alternative
25 assumptions regarding the valuation of the proxy firms' stock price. Mr. Muldoon then
26 calculated the discount rate that would equate these cash flows to a current average closing
27 stock price.

Return on Equity

1 Mr. Muldoon also calculated a theoretical adjustment to his DCF results to account for
2 differences in financial risk using the “Hamada Equation,” and included a 12.5 basis point
3 adjustment for flotation costs. After incorporating these considerations, Mr. Muldoon
4 concluded that his DCF analyses produced a “full range of ROE results from 8.03 percent to
5 9.45 percent.”¹ After “narrowing the focus to Staff’s primary peers most like Avista,”² Mr.
6 Muldoon recommended an ROE range of 8.76% to 9.45% and selected the midpoint of 9.11%
7 as his ROE recommendation.

8 **A. Mr. Muldoon’s Recommendation Fails Regulatory Standards**

9 **Q. Is it widely accepted that a utility’s ability to attract capital must be**
10 **considered in establishing a fair rate of return?**

11 A. Yes. This is a fundamental standard underlying the regulation of public
12 utilities. The Supreme Court’s *Bluefield* and *Hope* decisions established that a regulated
13 utility’s authorized returns on capital must be sufficient to assure investors’ confidence and
14 adequate, under efficient and economical management, to maintain and support a utility’s
15 credit and enable it to raise money necessary to provide safe and reliable service to its
16 customers.³

17 Beyond these standards, one fundamental requirement that any ROE recommendation
18 must satisfy before it can be considered reasonable is that it must grant Avista the opportunity
19 to earn an ROE comparable to contemporaneous returns available from alternative

¹ Staff/200, Muldoon/23, line 14.

² *Id.*, lines 17-18.

³ *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm’n*, 262 U.S. 679, 694 (1923) (“*Bluefield*”);
FPC v. Hope Natural Gas Co., 320 U.S. 591, 603 (1944) (“*Hope*”).

1 investments of similar risk if they are to maintain its financial flexibility and ability to attract
2 capital.

3 **Q. Have other regulators recently recognized the importance of these**
4 **fundamental standards in evaluating a fair ROE?**

5 A. Yes. The Federal Energy Regulatory Commission (“FERC”) recently affirmed
6 that its “ultimate task is to ensure that the resulting ROE satisfies the requirements of *Hope*
7 and *Bluefield*.”⁴ While FERC looks initially to the DCF methodology when evaluating a fair
8 ROE, it has also made clear that it is the result reached, not the method used, that determines
9 whether an ROE is just and reasonable.⁵ As FERC observed:

10 [W]e also understand that any DCF analysis may be affected by potentially
11 unrepresentative financial inputs to the DCF formula, including those produced
12 by historically anomalous capital market conditions. Therefore, while the DCF
13 model remains the Commission’s preferred approach to determining allowed
14 rate of return, the Commission may consider the extent to which economic
15 anomalies may have affected the reliability of DCF analyses in determining
16 where to set a public utility’s ROE within the range of reasonable returns . . .⁶

17 FERC concluded that due to anomalous capital market conditions, a mechanical
18 application of the DCF model using GDP growth would result in an ROE that was insufficient
19 to meet regulatory standards, and that “it is necessary and reasonable to consider additional
20 record evidence, including evidence of alternative benchmark methodologies and state
21 commission-approved ROEs,” to determine a just and reasonable ROE.⁷ In Opinion No. 531,
22 FERC found that risk premium, CAPM, and expected earnings methodologies directly

⁴ *Coakley v. Bangor Hydro-Electric Co.*, Opinion No. 531, 147 FERC ¶ 61,234 at P 144 (2014) (“Opinion No. 531”).

⁵ *See, e.g.*, Opinion No. 531 at P 142.

⁶ *Id.* at P 41. Application of the two-step DCF method without the “mid-point of the upper half of the range” adjustment would have resulted in an ROE of only 9.39%, a value FERC found unreasonable. *Id.* at P 142.

⁷ Opinion No. 531 at P 145 (2014).

1 comparable to those applied in my Direct Testimony in this case were informative and relied
2 on these analyses to set the just and reasonable point ROE at the upper end of the DCF range.

3 **Q. Does Mr. Muldoon’s ROE recommendation meet these fundamental**
4 **standards?**

5 A. No. While Mr. Muldoon correctly recognized the importance of these
6 underlying economic and legal standards,⁸ the end-result of his analyses fails to meet these
7 requirements. For example, allowed ROEs provide one gauge of reasonableness for the
8 outcome of a cost of equity analysis.⁹ In considering utilities with comparable risks, investors
9 will always prefer to provide capital to the opportunity with the highest expected return. If a
10 utility is unable to offer a return similar to that available from other investment opportunities
11 posing equivalent risks, investors will become unwilling to supply the utility with capital on
12 reasonable terms. While the ROEs approved in other jurisdictions do not constrain the
13 OPUC’s decision-making in this proceeding, it is important to understand that there would be
14 a disincentive for investors to provide equity capital to Avista if the Commission were to
15 apply an unreasonably low ROE, compared to entities of comparable risk.

16 The ROE proposed by Mr. Muldoon falls short of average returns authorized for other
17 gas utilities. Table No. 1 presents the average allowed ROEs for gas utilities reported by
18 Regulatory Research Associates (“RRA”) over the last four quarters:

⁸ Staff/200, Muldoon/5-6.

⁹ Mr. Muldoon noted that his evaluation “was informed by authorized ROEs in other parts of the country.”
Staff/200, Muldoon/45, lines 3-4.

1 **Table No. 1: Authorized ROE – Gas Utilities**

Q4 - 2014	10.28%
Q1 - 2015	9.47%
Q2 - 2015	9.43%
Q3 - 2015	<u>9.75%</u>
Average	9.73%

2

3 Meanwhile, as shown on Exhibit Avista/1201, Schedule AMM-15, data reported by *AUS*
4 *Utility Reports* indicates that the average authorized ROE for the firms in Mr. Muldoon's
5 proxy group is 9.96%.¹⁰ In other words, allowed ROEs for the utilities that Mr. Muldoon
6 characterizes as "a close proxy for Avista"¹¹ indicate that his recommended ROE is too low to
7 meet regulatory standards. Indeed, Mr. Muldoon grants that the results of his analyses "are
8 low compared with regulated U.S. utilities' authorized return on capital."¹²

9

Q. Are expected earned rates of return also a valid benchmark for evaluating

10 **Mr. Muldoon's ROE recommendation?**

11

A. Yes. Expected earned rates of return for other utilities provide another useful

12

measure to gauge the reasonableness of Mr. Muldoon's ROE recommendation. Reference to

13

expected earnings is predicated on the comparable earnings test, which developed as a direct

14

result of the Supreme Court decisions in *Bluefield* and *Hope*. This test recognizes that

15

investors compare the allowed ROE with returns available from other alternatives of

16

comparable risk.

¹⁰ As indicated later, Mr. Muldoon's proxy group actually consists of just two companies (Northwest Natural Gas Company and Piedmont Natural Gas Company). The average allowed ROE for Mr. Muldoon's two proxy companies is 10.10%.

¹¹ Staff/200, Muldoon/48, line 11.

¹² Staff/200, Muldoon/29, lines 7-8.

1 **Q. Has the expected earnings approach been recognized as a valid ROE**
2 **benchmark?**

3 A. Yes. A textbook prepared for the Society of Utility and Regulatory Analysts
4 points out that the comparable earnings method is “easily understood” and firmly anchored in
5 the regulatory economics underlying the *Bluefield* and *Hope* cases,¹³ and notes that the
6 amount of subjective judgment required to implement this method is “minimal,” particularly
7 when compared to the DCF and CAPM methods.¹⁴ Similarly, *New Regulatory Finance*
8 concluded that, “because the investment base for ratemaking purposes is expressed in book
9 value terms, a rate of return on book value, as is the case with Comparable Earnings, is highly
10 meaningful.”¹⁵ More recently, FERC concluded that the expected earnings approach “can be
11 useful in validating our ROE recommendation . . . given its close relationship to the
12 comparable earnings standard that originated in *Hope*, and the fact that it is used by investors
13 to estimate the ROE that a utility will earn in the future.”¹⁶

14 **Q. Do expected earned rates of return for Mr. Muldoon’s proxy group also**
15 **demonstrate that his ROE recommendation is too low?**

16 A. Yes. The year-end returns on common equity projected by Value Line over its
17 forecast horizon for the firms in Mr. Muldoon’s proxy group are shown on Avista/1201,
18 Schedule AMM-16. Once adjusted to mid-year,¹⁷ reference to expected earnings implied an

¹³ *Id.*

¹⁴ Parcell, David C., *THE COST OF CAPITAL – A PRACTITIONER’S GUIDE* at 115-116 (2010).

¹⁵ Morin, Roger A., “New Regulatory Finance,” *Public Utilities Reports, Inc.* at 395 (2006).

¹⁶ Opinion No. 531 at P 147 (2014). The Virginia Corporation Commission is required by statute (Virginia Code § 56-585.1.A.2.a) to consider the earned returns on book value of electric utilities in its region. Another example is the Idaho Public Utilities Commission, which has confirmed the relevance of return on book equity evidence. *See, e.g.*, Order No. 29505, Case No. IC-E-03-13 at 38 (Idaho Public Utilities Commission, May 25, 2004).

¹⁷ Because Value Line reports end-of-year book values, an adjustment factor was incorporated to compute an average rate of return over the year, which is consistent with the theory underlying this approach. Use of an

1 annual average cost of equity for the utilities referenced by Mr. Muldoon of 10.7%. These
2 book return estimates are an “apples to apples” comparison to Mr. Muldoon’s ROE
3 recommendation. If Avista is only allowed the opportunity to earn a 9.11% return on the book
4 value of its equity investment, as recommended by Mr. Muldoon, while other comparable
5 utilities are expected to earn an average of 10.7%, the implications are clear – Avista’s
6 investors will be denied the ability to earn a return that is comparable to those available from
7 investments with comparable risk.

8 **Q. What other evidence indicates that Mr. Muldoon’s recommended ROE**
9 **fails to meet regulatory standards?**

10 A. As discussed in my Direct Testimony,¹⁸ expected rates of return for firms in the
11 competitive sector of the economy are also relevant in determining the appropriate return to
12 be allowed for rate-setting purposes. The idea that investors evaluate utilities against the
13 returns available from other investment alternatives – including the low-risk companies in my
14 Non-Utility Group – is a fundamental cornerstone of modern financial theory. Aside from this
15 theoretical underpinning, any casual observer of stock market commentary and the investment
16 media quickly comes to the realization that investors’ choices are almost limitless. It follows
17 that utilities must offer a return that can compete with other risk-comparable alternatives, or
18 capital will simply go elsewhere.

19 In fact, returns in the competitive sector of the economy form the very underpinning
20 for utility ROEs because regulation purports to serve as a substitute for the actions of

average return in developing the sustainable growth rate is well supported. *See, e.g.,* Morin, Roger A., “New Regulatory Finance,” *Public Utilities Reports, Inc.* at 305-306 (2006), which discusses the need to adjust Value Line’s end-of-year data. FERC has affirmed the need for this adjustment to “r” in *Bangor Hydro-Elec. Co.*, 122 FERC ¶ 61,265 (2008).

¹⁸ Avista/300, McKenzie/58-61.

1 competitive markets. The Supreme Court has recognized that the degree of risk, not the
2 nature of the business, is relevant in evaluating an allowed ROE for a utility.¹⁹ The cost of
3 capital is based on the returns that investors could realize by putting their money in other
4 alternatives, and the total capital invested in utility stocks is only the tip of the iceberg of total
5 common stock investment.

6 **Q. Does Mr. Muldoon recognize this principal and consider non-utility stocks**
7 **relevant to determining the cost of capital?**

8 A. Yes. While Mr. Muldoon is apparently dismissive of any reference to
9 “companies such as those that make jams and jellies,”²⁰ his testimony is replete with
10 comparisons between Avista and firms in other sectors of the economy. For example, in
11 evaluating Avista’s risks, Mr. Muldoon makes reference to “other potential investments” and
12 “the average publicly traded U.S. stock,”²¹ and he specifically cites the implications of risks in
13 the commercial real estate and mining industries.²² Similarly, Mr. Muldoon notes that Avista’s
14 ROE should be “commensurate with that of other utilities *and other investment opportunities*
15 *with risk exposure similar to Avista’s.*”²³ In other words, Mr. Muldoon recognized that
16 investors gauge their required returns from utilities against those available from non-utility
17 firms of comparable risk. My reference to a low-risk Non-Utility Group is entirely consistent
18 with the guidance of the Supreme Court and the principles outlined in Mr. Muldoon’s own
19 testimony.

¹⁹ *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

²⁰ Staff/200, Muldoon/33, line 5.

²¹ Staff/200, Muldoon/14, 40.

²² Staff/200, Muldoon/50, lines 18-19.

²³ Staff/200, Muldoon/6, lines 5-6.

1 **Q. Did Mr. Muldoon present any objective evidence that would support a**
2 **finding that your Non-Utility Proxy Group is riskier than Avista or the companies in his**
3 **proxy group?**

4 A. No. Mr. Muldoon presented no meaningful evidence to rebut the results for
5 my Non-Utility Group, or otherwise demonstrate that my Non-Utility Group is riskier than
6 Avista or his proxy group of gas and water utilities. Instead, he simply alluded to the obvious
7 fact that there are distinctions in the operating circumstances and degree of regulation
8 between utilities and firms in the competitive sector, including those that make jams and
9 jellies.

10 But my Direct Testimony did not contend that the operations of the companies in the
11 Non-Utility Group are comparable to those of utilities. Clearly, operating a worldwide
12 enterprise in the beverage, pharmaceutical, retail, or food industry involves unique
13 circumstances that are as distinct from one another as they are from a gas utility. But as the
14 Supreme Court recognized, investors consider the expected returns available from all these
15 opportunities in evaluating where to commit their scarce capital. The simple observation that
16 a firm operates in non-utility businesses says nothing at all about the overall investment risks
17 perceived by investors, which is the very basis for a fair rate of return. So long as the risks
18 associated with the Non-Utility Group are comparable to Avista and other utilities the
19 resulting DCF estimates provide a meaningful benchmark for the cost of equity.²⁴ As
20 demonstrated in my Direct Testimony, a comparison of objective risk measures demonstrates

²⁴ As shown in Table No. 9 to Avista/300, McKenzie/61, average DCF cost of equity estimates for the Non-Utility Group ranged from 9.6% to 10.4%.

1 conclusively that the Non-Utility Group is regarded as less risky than Avista, making it a
2 conservative benchmark for a fair ROE in this case.²⁵

3 **Q. Does the fact that utilities are regulated somehow invalidate this**
4 **comparison of objective risk indicators?**

5 A. Absolutely not. While I agree that utilities operate under a regulatory regime
6 that differs from firms in the competitive sector, any risk-reducing benefit of regulation is
7 already incorporated in the overall indicators of investment risk presented in Table No. 8 to
8 my Direct Testimony. The impact of regulation on a utility's investment risks is one of the
9 key elements considered by credit rating agencies and investment advisory services, such as
10 Standard & Poor's Corporation ("S&P") and Value Line, when establishing corporate credit
11 ratings and other risk measures. As a result, the impact of regulatory protections is already
12 reflected in my risk analysis. Meanwhile, the beta values supported by modern financial
13 theory are premised on stock price volatility relative to the market as a whole, and are not
14 dependent on an assessment of firm-specific considerations. As a result, the impact of
15 regulatory differences on investment risk is accounted for in the published risk indicators
16 relied on by investors and cited in my Direct Testimony.

17 **Q. What do these benchmarks you discuss imply with respect to Mr.**
18 **Muldoon's ROE recommendation?**

19 A. As set forth above, objective consideration of regulatory standards and
20 alternative benchmarks demonstrate that the 9.11% ROE recommended by Mr. Muldoon is
21 too low and violates the economic and regulatory standards underlying a fair ROE.

²⁵ Table No. 8 at Avista/300, McKenzie/60.

1 **Q. Does the March 10, 2015 report from Moody’s Investors Service**
2 **(“Moody’s”) cited by Mr. Muldoon support a dramatic drop in Avista’s allowed return**
3 **from those currently being authorized for comparable utilities?**

4 A. No. The Moody’s report discusses only very generally the impacts of a “slow”
5 decline in utilities’ authorized ROEs, and how regulators may lower authorized ROEs without
6 harming utilities’ cash flow, such as by “targeting depreciation.” The Moody’s report does not
7 identify a cost of equity for regulated utilities at all, much less discuss a cost of equity for
8 Avista, which is not even mentioned in the report. In my view, the Moody’s report offers no
9 relevant information about a fair ROE in this proceeding, and it certainly does not support the
10 values recommended by the other parties to this case.

11 **Q. Does the Moody’s report indicate that equity investors would not be**
12 **concerned if Avista’s ROE was lowered to the level recommended by the other parties to**
13 **this case?**

14 A. No. I believe no one can make such an inference based on this report.²⁶ First,
15 it is important to note that the primary mission of credit rating agencies like Moody’s is to
16 provide debt holders with an accurate benchmark of the relative risks of default associated
17 with long-term bonds and other debt securities. As the report cited by Mr. Muldoon clearly
18 observes, Moody’s evaluation is premised “from the perspective of a probability of a default
19 and expected loss given default.”

20 Bondholders, the constituency represented by Moody’s, do not share in a utility’s net
21 income or profits. As a result, Moody’s focus is on cash flows, which are viewed “as a more

²⁶ Moody’s Investors Service, “Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles,”
Sector In-Depth (March 2015); Cited at Muldoon Direct at 51.

1 important rating driver.”²⁷ On the other hand, equity investors are intensely focused on the
2 ability of the utility to generate earnings, dividends and growth. This difference in the
3 characteristics and priorities between debt and equity securities gives rise to the considerable
4 distinction in the risks faced by debt holders and equity investors. While a moderate and
5 gradual downturn in ROEs may not pose an immediate threat to the cash flow protection
6 underlying the credit ratings on a utility’s debt, it would have an immediate, negative impact
7 on returns to common stockholders.

8 **Q. Do you agree with Mr. Muldoon’s attempt to reconcile his**
9 **recommendation with the 9.5% ROE established in Avista’s last general rate**
10 **proceeding?**

11 A. No. Mr. Muldoon links his lower ROE recommendation to a decline in
12 expected economic growth and his contention that Avista’s investment risks have moderated
13 due to frequent rate case filings. As I demonstrate later, both of these contentions are without
14 merit. Meanwhile, since the time that Mr. Muldoon filed testimony in support of the 9.5%
15 ROE under the settlement in Docket No. UG 284,²⁸ yields on utility bonds corresponding to
16 Avista’s Baa rating have increased approximately 103 basis points.²⁹ Considering the inverse
17 relationship between equity risk premiums and interest rates,³⁰ this implies a current ROE for
18 Avista on the order of 10.0%.³¹

²⁷ *Ibid.*

²⁸ *Staff Testimony in Support of the Stipulation Resolving All Issues*, Docket No. UG 284, Exhibit Staff/102 (Jan. 29, 2015).

²⁹ Moody’s reported average yields on Baa utility bonds of 4.39% and 5.42% for January 2015 and September 2015, respectively.

³⁰ *New Regulatory Finance* noted that, taken together, studies in the financial literature imply that a 100 basis point change in bond yields would imply a 50 basis point increase in the equity risk premium. Morin, Roger A., “New Regulatory Finance,” *Public Utilities Reports, Inc.* at 129 (2006).

³¹ $9.5\% + (5.42\% - 4.39\%) / 2$.

1 **B. Deficiencies in Mr. Muldoon's Proxy Group Evaluation**

2 **Q. Do you agree with Mr. Muldoon that the nature of a utility's assets is a**
3 **valid criterion in selecting a proxy group for Avista?**

4 A. No. Mr. Muldoon argued for the elimination of companies if less than 80% of
5 total assets were attributable to regulated operations.³² However, Mr. Muldoon failed to
6 demonstrate how this subjective criterion translates into differences in the investment risks
7 perceived by investors, and comparisons of objective indicators demonstrates that investment
8 risks for the firms in my proxy groups are relatively homogeneous and comparable to Avista.

9 **Q. Did Mr. Muldoon demonstrate any nexus between a subjective criterion**
10 **based on regulated assets and objective measures of investment risk?**

11 A. No. Under the regulatory standards established by *Hope*³³ and *Bluefield*³⁴, the
12 salient criterion in establishing a meaningful proxy group to estimate investors' required
13 return is relative risk, not the nature of the asset base or the source of the revenue stream. Mr.
14 Muldoon presented no evidence to demonstrate a connection between the subjective asset
15 criterion that he employed and the views of real-world investors in the capital markets.

16 Due to differences in business segment definition and reporting between utilities, it is
17 often impossible to accurately apportion financial measures, such as revenues and total assets,
18 between regulated and non-regulated sources. As a result, even if one were to ignore the fact
19 that there is no clear link between the nature of a utility's assets or revenues and investors'
20 risk perceptions, it is generally not possible to accurately and consistently apply asset or
21 revenue-based criteria. In fact, other regulators have rebuffed these notions, with FERC

³² Staff/200, Muldoon/20, line 14.

³³ *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

³⁴ *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n*, 262 U.S. 679 (1923).

1 specifically rejecting arguments that utilities “should be excluded from the proxy group given
2 the risk factors associated with its unregulated, non-utility business operations.”³⁵

3 **Q. Apart from its lack of a sound economic basis, are there other apparent**
4 **inconsistencies and practical problems associated with Mr. Muldoon’s implementation of**
5 **this criterion?**

6 A. Yes. While Mr. Muldoon’s testimony indicates that his proxy group was
7 determined based on the proportion of regulated assets, his evaluation appears to have focused
8 on regulated revenues, as reported on Exhibit Staff/202 Muldoon/2.³⁶ In addition, while Mr.
9 Muldoon reports regulated revenues for NiSource Inc. (“NiSource”) of 50%,³⁷ NiSource’s
10 2014 Form 10-K report indicates that revenues from gas distribution (\$3,593.9 million) and
11 electric utility activities (\$1,347.2 million) actually accounted for 81.4% of total consolidated
12 revenues (\$6,470.6).³⁸ Further, Mr. Muldoon would apparently exclude all but three of the
13 companies included by Value Line in its natural gas utility industry group based on his
14 subjective test.³⁹ Considering the comparability of objective risk measures documented in my
15 Direct Testimony, and the fact that the investment community regards this group of gas
16 utilities to be representative of the industry, there is no basis to narrow the proxy group.

³⁵ *Bangor Hydro-Elec. Co.*, 117 FERC ¶ 61,129 at PP 19, 26 (2006).

³⁶ While Avista endeavored to verify Mr. Muldoon’s reference to a breakdown of assets between regulated and non-regulated sources through discovery, Staff declined to provide the values relied on by Mr. Muldoon to apply this test. *Staff Response to Avista Data Request 19*.

³⁷ Staff/202, Muldoon/2.

³⁸ The case of NiSource illustrates the impracticality of Mr. Muldoon’s subjective screening criterion. Apart from gas distribution and electric utility operations, NiSource’s only other business segment is its Columbia Pipeline Group, which also encompasses regulated gas transportation operations, among other activities.

³⁹ Again, while it is unclear whether Mr. Muldoon based his evaluation on revenues or assets, Southwest Gas, which appears to have failed Mr. Muldoon’s criterion based on regulated operations, reported that gas utility assets make up 89% of the consolidated total. Southwest Gas Annual Report at 77.

1 Finally, restricting the proxy group to only three potential gas distribution utilities based on
2 Mr. Muldoon’s subjective criterion also increases the potential for measurement error.⁴⁰

3 **Q. Do you agree with Mr. Muldoon’s implementation of his criterion based**
4 **on mergers and acquisitions?**

5 A. No. While I don’t disagree that ongoing participation in a major acquisition or
6 merger is a legitimate consideration in evaluating proxy companies, Mr. Muldoon apparently
7 argues for excluding any company that has been involved in a merger-related transaction at
8 any time during the past four years (Exhibit Staff/202 Muldoon/2).⁴¹ Analytical methods used
9 to estimate the cost of equity – including the multistage DCF model favored by Mr. Muldoon
10 – are forward-looking and based on investors’ future expectations, not on data over an
11 arbitrary four -year historical period. Current stock prices and expected growth rates already
12 incorporate the investment community’s assessment of completed mergers and acquisitions.
13 Because there is no reason to expect that past transactions, which are well understood by the
14 investment community, would lead to distortion in the inputs to quantitative methods such as
15 the DCF model, there is no basis to exclude potential proxy companies on this basis.

16 **Q. Mr. Muldoon also required that his peer companies have a capital**
17 **structure composed of less than 56% long-term debt.⁴² Is this criterion justified?**

18 A. No. Mr. Muldoon’s focus on capital structure, and the relative risk associated
19 with debt leverage, ignores the fact that this is only one facet of a company’s overall

⁴⁰ Considered together, Mr. Muldoon’s criteria reduce his proxy group to just two companies (Staff/202, Muldoon/2), one of which (Piedmont Natural Gas Company) is now the subject of a merger transaction. Mr. Muldoon conducts “sensitivities” by adding back gas and water utilities to his analysis.

⁴¹ For example, Mr. Muldoon noted that Laclede Group “failed” his merger and acquisition criterion, presumably because of the purchase of Alagasco, which was completed in September 2014.

⁴² Staff/200, Muldoon/20, line 15. While Mr. Muldoon does not apparently exclude potential proxy companies on this basis, the long-term debt ratio of 56.5% reported by Value Line for NiSource Inc. exceeds Mr. Muldoon’s threshold. The Value Line Investment Survey at 546 (Sep. 4, 2015).

1 investment risk. An assessment of a utility's risk relative to a proxy group should be based on
2 the utility's overall risk, not one aspect of risk such as relative capital structure. For example,
3 consider the credit ratings assigned to a utility by S&P and Moody's, which encompass a
4 comprehensive evaluation of the utility's overall business and financial risks. The evaluation
5 of financial risk involves an examination of financial data concerning earnings protection,
6 capital structure, cash flow adequacy, and financial flexibility. Because the net impact of the
7 financial risks associated with a utility's capital structure is already reflected in corporate
8 credit ratings, there is no basis for Mr. Muldoon to focus on this single consideration, to the
9 exclusion of all others.⁴³ As a result, there is simply no basis for the capital-structure related
10 criterion proposed by Mr. Muldoon.

11 **Q. Mr. Muldoon elected to focus on water utilities, rather than the**
12 **combination electric and gas utilities examined in your Direct Testimony. Do you agree**
13 **with Mr. Muldoon that water utilities provide “a better fit for Avista’s profile than the**
14 **Company’s peers?”⁴⁴**

15 A. No. The only support Mr. Muldoon offers for his reference to water utility
16 companies is a cryptic assertion that water utilities “closely track average gas utility
17 performance.”⁴⁵ But considering the fact that Avista is principally engaged in providing
18 regulated electric and gas utility service, the combination utilities examined in my Direct
19 Testimony provide a more comparable benchmark for investors' expectations and
20 requirements. Moreover, Mr. Muldoon has presented no evidence that would indicate that the

⁴³ Mr. Muldoon granted that financial risks associated with a utility's capital structure ratios are considered in establishing credit ratings. *Staff Response to Avista Data Request 9-B.*

⁴⁴ Staff/200, Muldoon/41, lines 9-10.

⁴⁵ Staff/200, Muldoon/23, line 12.

1 investment community would view water companies as a superior benchmark to combination
2 utilities when evaluating an investment in Avista. For example, while Moody's has
3 determined that there are sufficient similarities between electric and gas utilities to warrant a
4 combined approach to credit analysis under a shared framework, it explicitly excludes water
5 utilities from this common ratings methodology:

6 This methodology pertains to regulated electric and gas utilities and excludes
7 the following types of issuers, which are covered by separate rating
8 methodologies: Regulated Networks, Unregulated Utilities and Power
9 Companies, Public Power Utilities, Municipal Joint Action Agencies, Electric
10 Cooperatives, *Regulated Water Companies*, and Natural Gas Pipelines.⁴⁶

11 Finally, other factors also impinge on the relevance of the water utilities included in
12 Mr. Muldoon's analysis. For example, with respect to The York Water Company included in
13 his proxy group, Value Line noted that this company "is the smallest regulated utility in the
14 water industry,"⁴⁷ and observed that:

15 Most institution accounts don't like owning more than 3% to 5% of any one
16 company's stock for diversification reasons. A market cap of around \$275
17 million just isn't large enough to take a position.⁴⁸

18 This indicates that the investment community is unlikely to regard this small water company
19 as a potential substitute for an investment in Avista's common stock, and further undermines
20 Mr. Muldoon's reference to water utilities in his analysis.

⁴⁶ Moody's Investors Service, "Regulated Electric and Gas Utilities," *Ratings Methodology* (Dec. 23, 2013) (emphasis added).

⁴⁷ The Value Line Investment Survey at 1789 (Oct. 16, 2015).

⁴⁸ *Id.*

1 **C. Flaws in Mr. Muldoon's DCF Application**

2 **Q. What are the primary misconceptions underlying Mr. Muldoon's**
3 **reference to GDP growth?**

4 A. There are several:

- 5 1. Practical application of the DCF model does not require a long-term
6 growth estimate over a horizon of 30 years and beyond – it requires a
7 growth estimate that matches investors' expectations.
- 8 2. Evidence supports the conclusion that investors do not reference long-term
9 GDP growth in evaluating expectations for individual common stocks,
10 including those in the utility industry.
- 11 3. The theoretical proposition that growth rates for all firms converge to
12 overall growth in the economy over the very long horizon does not guide
13 investors' views, and growth rates for utilities can and do exceed GDP
14 growth.
- 15 4. There is no evidence that investors' growth expectations for regulated gas
16 utilities have begun to converge to that of the economy.

17 **Q. Does the multi-stage form of the DCF model used by Mr. Muldoon provide**
18 **a better guide to investors' requirements?**

19 A. No. While multi-stage analyses, such as that used by Mr. Muldoon, can be
20 used to estimate the cost of equity, these approaches increase the number of inputs that must
21 be estimated and add to the computational difficulties. This makes the results of non-constant
22 growth DCF applications sensitive to changes in assumptions, and therefore subject to greater
23 controversy in a rate case setting. Just as importantly, to the extent that each of these time-
24 specific suppositions about future cash flows do not reflect what real-world investors actually
25 anticipate, the resulting cost of equity estimate will be biased. Indeed, the benchmark for

1 growth in a DCF model is what investors expect when they purchase stock. We can only infer
2 investors' required return if we can replicate the expectations that are behind observable
3 market prices. In practice, applying a non-constant model such as Mr. Muldoon's three-stage
4 DCF would lead to error unless there is reason to believe that investors' expectations match
5 the growth pattern assumed in the model.

6 **Q. Are there times when a multi-stage DCF model could fit investors'**
7 **expectations?**

8 A. Yes. For example, in the 1990s when investors thought the electric utility was
9 transitioning to non-regulated markets, two-stage models did fit investors' expectations. The
10 first stage was based on expectations of growth rates under regulation and the second stage
11 would be more akin to non-utility growth rates. A number of experts presented two-stage
12 models based on investors' expectations of a transition and a number of regulatory agencies
13 found these models to be reasonable. For example, Mr. Muldoon cites the OPUC's 2001
14 decision in Docket No. UE 115 as support for his sole reliance on the three-stage DCF model,
15 which specifically highlighted the significance of "the ongoing restructuring of the electric
16 industry."⁴⁹ But expectations of widespread deregulation have waned and Mr. Muldoon has
17 presented no evidence that his three-stage model fits the expectations that investors currently
18 build into utility stock prices.

19 **Q. Is there any evidence to conclude that Mr. Muldoon's multi-stage DCF**
20 **model currently reflects the expectations of real-world investors?**

21 A. No. There is no basis to assume that the growth scheme of Mr. Muldoon's
22 three-stage DCF model is at all related to the expectations that investors have when they

⁴⁹ *Public Utility Commission of Oregon*, Order No. 01-777 at 27 (2001).

1 purchase stock. While Mr. Muldoon asserts that his multi-stage rendition of the DCF model is
2 "more realistic,"⁵⁰ he has not shown that investors view the future the way he has constructed
3 it in his model. That is, Mr. Muldoon's DCF analysis is a mechanistic approach that ignores
4 the expectations and requirements of capital markets. While the complexity of multi-stage
5 DCF models may impart an aura of accuracy, the fact remains that the investment community
6 does not look to 20-year GDP growth rates ten years hence when evaluating an investment in
7 one of Mr. Muldoon's comparable utilities, and investors' current view of gas utilities does
8 not anticipate a series of discrete, clearly defined stages. As a result, there is no discernable
9 transition that would support use of the multi-stage DCF approach.

10 **Q. The DCF model is based on the assumption of an infinite stream of cash**
11 **flows. Why wouldn't Mr. Muldoon's multi-stage model using GDP growth make sense?**

12 A. This view confuses the theory underlying the DCF model with the
13 practicalities of its application in the real world. Analytical models such as the DCF model
14 are inherently abstractions of reality. The underlying theory requires any number of
15 assumptions, many of which differ considerably from the situation that confronts actual
16 investors in the capital markets. For example, apart from a constant growth rate into
17 perpetuity, the theoretical model requires that dividends, earnings, and stock prices grow at
18 exactly the same rate forever. This is contrary to practical experience where growth rates in
19 dividends, earnings, dividends, book value, and price diverge from each other and change
20 over different time horizons.

21 Apart from the fact that such strict assumptions are never met in practice, investors do
22 not believe they can forecast any financial parameter beyond the foreseeable horizon. In

⁵⁰ Staff/200, Muldoon/30, line 6.

1 practice, the only relevant growth rate is the growth rate used by investors, whether it is
2 “intermediate” or not. Investors do not have clarity to see far into the future, and Mr.
3 Muldoon presents no evidence that investors evaluate the future based on the assumptions and
4 data sources that were required to apply his three-stage model. There is simply no evidence to
5 conclude that investors agree with or use the multi-stage approach outlined by Mr. Muldoon.

6 **Q. Are long-term GDP growth rates commonly referenced as a direct guide to**
7 **future expectations for specific firms, such as gas utilities?**

8 A. No. Certainly investors consider broad secular trends in economic activity as
9 one foundation for their expectations for a particular industry or firm. But the idea that
10 investment advisory services view GDP growth as a direct guide to long-term expectations for
11 a particular firm – much less every firm in an entire industry – is not borne out by evidence.

12 In contrast to this notion, a brief perusal of the *Wall Street Journal* or a few minutes
13 watching CNBC confirm that in the financial media there are many references to 3-5 year
14 earnings growth forecasts for individual companies and very few references to very long-term
15 GDP forecasts. Long-term GDP growth rates are simply not discussed within the context of
16 establishing investors’ expectations for individual firms. For example, Value Line reports are
17 routinely relied on as an important guide to apply the DCF model to utilities.⁵¹ But despite
18 Staff’s suggestion that GDP has a fundamental role in shaping investors’ growth estimates,
19 Value Line does not even mention trends in GDP in its evaluation of the firms in the gas,
20 electric, or water utility industries. Value Line’s singleness of purpose is to inform investors
21 of the pertinent factors that impact future expectations specific to each of the common stocks

⁵¹ As noted in *New Regulatory Finance*, “Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors.” Morin, Roger A., “New Regulatory Finance,” *Public Utilities Reports, Inc.* at 71 (2006).

1 it covers. If the trajectory of GDP growth out to the year 2044 and beyond had direct
2 relevance in investors' evaluation of utility common stocks, it would be logical to assume that
3 Value Line or other securities analysts would give at least passing mention to this fact. But
4 they do not.

5 **Q. How much confidence would investors be likely to place on long-term**
6 **GDP projections?**

7 A. Very little. Investors understand the complexities and inherent inaccuracies
8 involved in forecasting, and that such uncertainties are significantly compounded for a long-
9 term time horizon. Consider the example of IHS Global Insight, which is perhaps the world's
10 foremost econometric forecasting service. IHS Global Insight currently publishes GDP
11 projections for the U.S. economy through 2044, but for other important economic variables
12 (e.g., bond yields) their forecast simply holds projected values constant after a five-year
13 horizon. As a result, in addition to the fact that there is no evidence to suggest that common
14 stock investors reference GDP growth rates in their analysis of a specific utility's prospects,
15 the difficulties in making long-term forecasts suggest they would be of questionable value.

16 **Q. Is there evidence that long-term GDP growth rates understate investors'**
17 **expectations for utilities?**

18 A. Yes. Actual historical growth rates for individual firms in Mr. Muldoon's own
19 proxy group refute the notion that long-term growth for utilities is constrained by GDP. For
20 example, Value Line reports that New Jersey Resources Corporation and South Jersey
21 Industries, Inc. achieved earnings growth over the last 10 years of 6.5% and 8.0%,

1 respectively, while Southwest Gas Corporation had a 10-year EPS growth rate of 8.5%.⁵²
2 These values for Mr. Muldoon's own proxy firms indicate that utilities can and do achieve
3 growth over extended periods far in excess of the GDP growth rate he suggests as a proxy in
4 the multi-stage DCF model.

5 **Q. Do expectations for the utility industry support a trend towards GDP**
6 **growth?**

7 A. No. Growth rates for utilities are not expected to collapse beyond the next three to
8 five years. At least in part, growth in the utility industry is created by additional infrastructure
9 investment. Contrary to the assumption that growth trends will somehow mirror GDP,
10 investors recognize that the utility industry is facing the prospect of a long-term commitment
11 to infrastructure investment. Gas utilities are facing significant investments for line
12 replacements and other modernizations in order to meet capacity needs and enhance reliability
13 and customer safety, as Ms. Karen K. Schuh discussed in her Direct Testimony (Avista/600,
14 Schuh/5-6). These expectations suggest higher – not lower – long-term growth, and again
15 confirm that GDP growth estimates almost certainly understate investors' expectations for
16 utilities.

17 **Q. Did the founder of the DCF approach support the use of a generic long-**
18 **term growth rate, such as the GDP growth under Mr. Muldoon's multi-stage approach?**

19 A. No. Professor Myron J. Gordon, who originated the DCF approach, concluded
20 that reference to a generic long-term growth rate, such as Mr. Muldoon advocates, was
21 unsupported.⁵³ More specifically, Dr. Gordon concluded that any assumption of a single time

⁵² The Value Line Investment Survey (Sep. 4, 2015).

⁵³ Gordon, Myron J., "The Cost of Capital to a Public Utility," *MSU Public Utilities Studies*, at 100-01 (1974).

1 horizon for a transition to a generic long-term growth rate was highly questionable and failed
2 to reduce error in DCF estimates. Instead, Dr. Gordon specifically recognized that, “it is the
3 growth that investors expect that should be used” in applying the DCF model, and he
4 concluded:

5 A number of considerations suggest that investors may, in fact, use earnings
6 growth as a measure of expected future growth.”⁵⁴

7 Similarly, a recent study reported in the *Journal of Investing* determined that there is no
8 correlation between stock market returns or earnings growth and GDP, suggesting that
9 investors’ expectations built into observable share prices are driven by valuation measures,
10 and not expected economic growth.⁵⁵

11 **Q. Have other regulators recognized that applying the DCF method using**
12 **GDP growth rates results in cost of equity estimates that fail to reflect investors’**
13 **expectations for utilities?**

14 A. Yes. FERC recently concluded that a 9.39% cost of equity estimate produced
15 by a multi-stage DCF model predicated on GDP growth is insufficient to meet regulatory
16 standards under *Hope* and *Bluefield*.⁵⁶ FERC determined that a cost of equity of this
17 magnitude “does not represent a just and reasonable outcome” or “appropriately represent the
18 utilities’ risks.”⁵⁷ In particular, FERC concluded that historically anomalous capital market
19 conditions are leading to unrepresentative financial inputs to the DCF formula, which in turn

⁵⁴ *Id.* at 89.

⁵⁵ Klement, Joachim, “What’s Growth Got to Do with It? Equity Returns and Economic Growth,” *Journal of Investing*, Vol. 24, No. 2 (Summer 2015): 74:78.

⁵⁶ Opinion No. 531 at P 142 (2014).

⁵⁷ *Id.* at P 144.

1 results in a cost of equity “that does not satisfy the requirements of *Hope* and *Bluefield*.”⁵⁸ In
2 order to evaluate a fair and reasonable point-estimate ROE, FERC endorsed consideration of
3 the results of the same risk premium, CAPM, and expected earnings approaches presented in
4 my testimony in this case.⁵⁹ In addition, FERC stressed the relevance of ROEs allowed by
5 state regulatory commissions in its evaluation of a fair ROE from within the zone of
6 reasonableness.⁶⁰ Based on this evidence, FERC determined that a 10.57% ROE from the top
7 end of the DCF zone of reasonableness was warranted for electric transmission operations.

8 **Q. Are there also apparent computational errors affecting Mr. Muldoon’s**
9 **multi-stage DCF cost of equity estimates?**

10 A. Yes. First, while Mr. Muldoon assumed a first stage of his multi-stage DCF
11 model to be the period 2015-2019,⁶¹ his analyses appear to have wrongly incorporated
12 historical dividend payments based on data for 2014.⁶² Under the assumptions of the DCF
13 model used by Mr. Muldoon, current stock prices are a function of expected future cash flows
14 discounted at investors’ cost of equity, and historical dividend payments during past periods
15 are irrelevant. Second, Mr. Muldoon’s analyses failed to incorporate growth in dividend cash
16 flows between 2018 and 2019,⁶³ with his assumed dividend payments being equal in these
17 two years. Third, Mr. Muldoon failed to reflect the impact of a two-for-one stock split on the
18 market price for South Jersey Industries, Inc. (“SJI”). As a result, there is a mismatch
19 between the projected dividend payments from Value Line, which incorporate the stock split,

⁵⁸ *Id.* at P 142.

⁵⁹ *Id.* at P 146.

⁶⁰ *Id.* at P 148-49.

⁶¹ Staff/200, Muldoon/17, Lines 4-5.

⁶² Staff/203, Muldoon/3.

⁶³ *Id.* The 2018-2019 period corresponds to Mr. Muldoon’s “end-of-year” cash flow assumption. For his “beginning-of-year” analysis, dividend payments were held constant in 2017-2018.

1 and the “Recent Price” used as the basis to apply Mr. Muldoon’s internal rate of return
2 calculations. This error results in an understated estimate of the cost of equity for SJI under
3 his multi-stage DCF model.

4 **Q. Are there alternative ways of applying the multi-stage DCF model to Mr.**
5 **Muldoon’s proxy group that confirm the reasonableness of the 9.9% ROE requested by**
6 **Avista?**

7 A. Yes. Exhibit Avista/1201, Schedule AMM-17 presents the results of a multi-
8 stage DCF analysis patterned after the methodology accepted by the OPUC in its Order No.
9 01-777,⁶⁴ which Mr. Muldoon cited in his testimony. There, the OPUC accepted a three-stage
10 DCF model using Value Line’s forecast of dividends for the coming year for the first stage, a
11 second stage based on the growth rate implied by Value Line’s three-to-five year dividend
12 projections, and a terminal growth rate based on the $br+sv$ sustainable growth rate that is
13 consistent with the theoretical assumptions of the DCF model.

14 The sustainable growth rate is calculated by the formula, $g = br+sv$, where “b” is the
15 expected retention ratio, “r” is the expected earned return on equity, “s” is the percent of
16 common equity expected to be issued annually as new common stock, and “v” is the equity
17 accretion rate. Under DCF theory, the “sv” factor is a component of the growth rate designed
18 to capture the impact of issuing new common stock at a price above, or below, book value.
19 The sustainable, “ $br+sv$ ” growth rates for each firm in Mr. Muldoon’s proxy group are
20 presented on Exhibit Avista/1201, Schedule AMM-18.

⁶⁴ *Public Utility Commission of Oregon*, Order No. 01-777 at 25-26, 35-36 (2001).

1 **Q. What were the results of this multi-stage DCF analysis?**

2 A. As shown on Exhibit Avista/1201, Schedule AMM-17, after excluding one
3 illogical estimate that falls below the current yield on public utility bond yields, applying this
4 multi-stage approach to the firms in Mr. Muldoon's proxy group produced cost of equity
5 estimates ranging from 7.5% to 12.4%. With respect to the gas utilities included in Mr.
6 Muldoon's analyses, the average cost of equity implied by this approach was 9.8% after
7 making Mr. Muldoon's recommended adjustments for financial risk and flotation costs.
8 Considered along with the allowed and expected returns for Mr. Muldoon's proxy companies
9 presented in Exhibit Avista/1201, Schedule AMM-15 and Schedule AMM-16, this multi-stage
10 DCF result confirms the reasonableness of the 9.9% ROE requested by Avista.

11 **Q. Mr. Muldoon contends that it is necessary to remove an equal number of**
12 **high and low estimates when evaluating DCF results.⁶⁵ Is his position justified?**

13 A. No. As discussed in my Direct Testimony, low-end outliers were evaluated
14 against the observable returns available from long-term utility bonds. But the fact that there
15 are results that fail this test of reasonableness says nothing about the validity of estimates at
16 the upper end of the range of results, and there is no basis to discard an equal number of
17 values from the top of the range. Consider DCF estimates of 4.0%, 4.5%, 8.7%, 9.8%, 10.2%,
18 and 11.5%. Of these six estimates, only two—4.0% and 4.5%—are illogical, because they
19 fall below the yields on utility bonds. But Mr. Muldoon is implying that removing these two
20 values requires a symmetrical narrowing of the two highest DCF estimates, even though there
21 is no basis to believe that these values are illogical. Rather than eliminating bias, such an
22 approach would distort the conclusions because valid estimates would be eliminated without

⁶⁵ Staff/200, Muldoon/32-22.

1 any economic basis. Indeed, while Mr. Muldoon criticized my elimination of illogical low
2 end DCF estimates as one-sided, he also argued for “removal of the lower end of the
3 modeling results” in performing his own analyses.⁶⁶

4 **Q. Mr. Muldoon likens your approach to a “wet finger in the wind.”⁶⁷ How**
5 **do you respond?**

6 A. First, contrary to Mr. Muldoon’s portrayal, reference to observable bond yields
7 provides a concrete measure as to both the direction and magnitude of capital costs. As I
8 pointed out in my Direct Testimony,⁶⁸ other regulators have recognized that utility bond yields
9 provide a sound basis on which to evaluate DCF estimates and that it is appropriate to
10 disregard values that fail this fundamental risk-return tradeoff test. Second, it is important to
11 recognize that an evaluation of a fair ROE necessarily involves informed judgment, as Mr.
12 Muldoon readily grants.⁶⁹ While Mr. Muldoon attempts to portray his DCF application as
13 inherently “more predictive,”⁷⁰ mechanical reliance on one theoretical analysis does not
14 confer accuracy.⁷¹

15 In fact, there is only a tenuous relationship between the results of Mr. Muldoon’s DCF
16 analyses and his ultimate recommendation. For example, Mr. Muldoon’s 9.11% ROE is
17 above all of the results produced by his “Model X” application and exceeds all but five of the
18 30 DCF results summarized on Exhibit Staff/203 Muldoon 1. The fact that Mr. Muldoon was

⁶⁶ Staff/200, Muldoon/24, line 1.

⁶⁷ Staff/200, Muldoon/32, line 18.

⁶⁸ Avista/300, McKenzie/37.

⁶⁹ Staff/200, Muldoon/23, lines 13-21.

⁷⁰ Staff/200, Muldoon/34, line 2.

⁷¹ Expanding on Mr. Muldoon’s analogy, the U.S. team was well on its way to losing the 2013 America’s Cup race because of their reliance on a predictive computer model. Only when they abandoned this approach and relied instead on the collective input from the skipper and crew were they able to clinch the race. The “wet finger in the wind” of an experienced sailor can be more informative than the output of a complex model based on inaccurate assumptions.

1 compelled to ignore the vast majority of his own modeling results contradicts his conclusion
2 that “Staff’s results are unbiased and reasonable.”⁷²

3 **D. Mr. Muldoon’s CAPM Application is Unreliable**

4 **Q. Does Mr. Muldoon’s CAPM application provide a credible benchmark in**
5 **evaluating the results of his DCF analyses?**

6 A. No. The CAPM analyses conducted by Mr. Muldoon is not reliable for the
7 purpose of evaluating his DCF results because he does not employ a methodology that is
8 consistent with the underlying assumptions of this approach. Like the DCF model, the CAPM
9 is an *ex-ante*, or forward-looking, model based on expectations of the future. As a result, in
10 order to produce a meaningful estimate of investors’ required rate of return, the CAPM must
11 be applied using estimates that reflect the expectations of actual investors in the market.

12 However, Mr. Muldoon’s application of the CAPM approach was based entirely on
13 backward-looking historical data over 85 years of history.⁷³ The primacy of current
14 expectations was recognized by *Morningstar*:

15 The cost of capital is always an expectational or forward-looking concept.
16 While the past performance of an investment and other historical information
17 can be good guides and are often used to estimate the required rate of return on
18 capital, the expectations of future events are the only factors that actually
19 determine cost of capital.⁷⁴

20 By failing to look directly at the returns investors are currently requiring in the capital
21 markets, as I did in my Direct Testimony, Mr. Muldoon arrived at CAPM results that
22 significantly understate investors’ required rate of return. As Mr. Muldoon’s own source

⁷² Staff/200, Muldoon/24, lines 16-17.

⁷³ Staff/200, Muldoon/36, lines 19-20.

⁷⁴ *Morningstar*, “Ibbotson SBBI, 2012 Valuation Yearbook,” at 21.

1 noted, “Forecasting future [equity risk premiums] by extrapolating past excess returns is ...
2 fraught with peril.”⁷⁵

3 **Q. Did Mr. Muldoon fail to consider other important factors in evaluating the**
4 **CAPM?**

5 A. Yes. As noted in my Direct Testimony,⁷⁶ empirical research indicates that the
6 CAPM does not fully account for observed differences in rates of return attributable to firm
7 size. To account for this, *Morningstar* has developed size premiums that need to be added to
8 the theoretical CAPM cost of equity estimates to account for the level of a firm’s market
9 capitalization in determining the CAPM cost of equity.

10 **Q. Have other regulators relied on a forward-looking CAPM approach**
11 **similar to the one presented in your Direct Testimony?**

12 A. Yes. I based my CAPM approach on the methods used by the Staff at the
13 Illinois Commerce Commission, whose witnesses have routinely relied on a forward-looking
14 market rate of return estimate to apply the CAPM. For example, Illinois Staff witness
15 Rochelle Langfeldt employed an expected market return based on an analysis analogous to the
16 approach described in my Direct Testimony:

17 Q. How was the expected rate of return on the market portfolio estimated?

18 A. The expected rate of return on the market was estimated by conducting a
19 DCF analysis on the firms composing the S&P 500 Index (“S&P 500”). ...
20 Firms not paying a dividend as of June 28, 2001, or for which neither
21 Zacks nor IBES growth rates were available were eliminated from the
22 analysis. The resulting company-specific estimates of the expected rate of
23 return on common equity were then weighted using market value data from
24 Salomon Smith Barney, Performance and Weights of the S&P 500:

⁷⁵ Arnott, Robert D., “Equity Risk Premium Myths,” *Rethinking the Equity Risk Premium*, Research Foundation of the CFA Institute at 81 (2011).

⁷⁶ Avista/300, McKenzie/44-45.

1 Second Quarter 2001. The estimated weighted averaged expected rate of
2 return for the remaining 365 firms composing 78.31% of the market
3 capitalization of the S&P 500 equals 15.31%.⁷⁷

4 More recently, FERC rejected the historical CAPM approach relied on by Mr. Muldoon and
5 adopted the same size adjusted, forward-looking CAPM application that I have proposed in
6 this proceeding.⁷⁸

7 **Q. Is the 4.50% market risk premium cited by Mr. Muldoon an accurate**
8 **depiction of what is actually reflected in the complete historical record?**

9 A. No. First, the source relied on by Mr. Muldoon stated that “In the 85 years
10 covered by the Ibbotson data, stocks delivered a real return of 6.6 percent, against 2.1 percent
11 for bonds,”⁷⁹ from which Mr. Muldoon derived his 4.5% equity risk premium. But this *ad*
12 *hoc* observation does not accurately reflect the historical record. In the same publication
13 referenced by Mr. Muldoon, Roger G. Ibbotson reports arithmetic mean returns for large
14 company stocks and long-term government bonds of 11.9% and 5.9%, respectively, which
15 implies a historical risk premium of 6.0%.⁸⁰ *Morningstar*, which now updates and publishes
16 the historical rate of return data formerly compiled by Dr. Ibbotson, reported a more current
17 long-horizon risk premium of 7.0% based on historical realized rates of return from 1926
18 through 2014.⁸¹

⁷⁷ Direct Testimony of Rochelle Langfeldt, Illinois Commerce Commission Docket No. 01-0423 at 23-24 (2001).

⁷⁸ *Coakley v. Bangor Hydro-Elec. Co.*, Opinion No. 531-B, 150 FERC ¶ 61,165 at P 108-119 (2015) (“Opinion No. 531-B”).

⁷⁹ Arnott, Robert D., “Equity Risk Premium Myths,” *Rethinking the Equity Risk Premium*, Research Foundation of the CFA Institute at 81 (2011).

⁸⁰ Ibbotson, Roger G., “The Equity Risk Premium,” *Rethinking the Equity Risk Premium*, Research Foundation of the CFA Institute at 19 (2011). This actually understates the risk premium under Dr. Ibbotson’s historical approach, which is more accurately calculated using the arithmetic mean income return on long-term government bonds of 5.2%. See, e.g., *Morningstar*, “Ibbotson S&P 500 2011 Valuation Yearbook” at Table 2-1 & 55.

⁸¹ *Morningstar*, “2015 Ibbotson S&P 500 Market Report” at Table 10 (2015).

1 **Q. Does Mr. Muldoon’s 4.50% market risk premium provide any meaningful**
2 **corroboration or guidance as to investors’ required rate of return?**

3 A. No. Adding the 4.50% market risk premium used by Mr. Muldoon to his
4 3.83% risk-free rate based on 30-year Treasury bonds implies that equity returns for the stock
5 market as a whole will amount to 8.33%. This figure falls 78 basis points *below* the return
6 that Mr. Muldoon recommends for Avista in this case, which violates the fundamental
7 relationship between risk and return.

8 **Q. Do the yields on 10-year Treasury notes referenced in Mr. Muldoon’s**
9 **testimony provide an appropriate basis to estimate the cost of equity using the CAPM?**

10 A. No. Unlike debt instruments, common equity is a perpetuity. As a result, any
11 application of the CAPM to estimate the return that investors require must be predicated on
12 their expectations for the firm’s long-term risks and prospects. This does not mean that every
13 investor will buy and hold a particular common stock into perpetuity. Rather, it recognizes
14 that even an investor with a relatively short holding period will consider the long-term,
15 because of its influence on the price that he or she ultimately receives from the stock when it
16 is sold. This is also the basic assumption underpinning the DCF model, which in theory
17 considers the present value of all future dividends expected to be received by a share of stock.

18 In applying the CAPM, *Morningstar*, the source of Mr. Muldoon’s historical return
19 data, recognized that the cost of equity is a long-term cost of capital and the appropriate
20 interest rate to use is a long-term bond yield:

21 The traditional thinking regarding the time horizon of the chosen Treasury
22 security should match the horizon of whatever is being valued. ... Note that the
23 horizon is a function of the investment, not the investor. If an investor plans to
24 hold a stock in a company for only five years, the yield on a five-year Treasury

1 note would not be appropriate since the company will continue to exist beyond
2 those five years.⁸²

3 Accordingly, proper application of the CAPM should focus on long-term government
4 bonds. As Mr. Muldoon noted, “I presume a 30-year horizon is relevant for investors. ... This
5 time frame allows for investor consideration of 30-year U.S. Treasury Long Bond and other
6 alternative investment opportunities.”⁸³ Similarly, FERC recently concluded that, “30-year
7 U.S. Treasury bond yields are a generally accepted proxy for the risk-free rate in a CAPM
8 analysis, and are also considered superior to short- and intermediate-term bonds for this
9 purpose.”⁸⁴

10 **Q. Was Mr. Muldoon justified in combining unadjusted betas from Yahoo**
11 **Finance in applying the CAPM?**

12 A. No. All beta values are necessarily estimates using historical data, but unlike
13 beta values reported by Value Line, those published by Yahoo Finance have not been adjusted
14 to account for the observed tendency for beta values to converge to the market average over
15 time.⁸⁵ As a result, they reflect an inferior estimate of future risk expectations.

16 **Q. Does Mr. Muldoon provide a credible basis to ignore the results of the**
17 **ECAPM?**

18 A. No. The only rationale offered by Mr. Muldoon was his observation that he is
19 not personally familiar with the use of this method by the investment community. Of course,
20 the very same criticism could be levelled at his particular variant of the multi-stage DCF

⁸² *Morningstar*, “Ibbotson SBBI, 2013 Valuation Yearbook” at 44.

⁸³ Muldoon Direct at 17.

⁸⁴ Opinion No. 531-B at P 114 (2015).

⁸⁵ This tendency is well known and discussed in the financial literature. *See, e.g.*, Blume, M.E., “Betas and Their Regression Tendencies,” *Journal of Finance* June 1975 at 787-796.

1 model. In any event, as I documented in my Direct Testimony the ECAPM is based on the
2 findings of studies reported in the financial literature.⁸⁶ In contrast to Mr. Muldoon's
3 dismissal of this approach, the results of the ECAPM were endorsed by the Staff of the
4 Maryland Public Service Commission ("MPSC") and considered in the decision referenced in
5 Mr. Muldoon's own testimony:

6 Ms. McKenna chose to use the ECAPM result instead of the CAPM result.
7 She indicated that while her CAPM results were not sufficiently low to require
8 that they be excluded from her final analysis, she believed that the ECAPM
9 model produced a better estimate in the current economic situation.⁸⁷

10 **E. No Basis for Criticisms of Risk Premium Method**

11 **Q. What is Mr. Muldoon's primary criticism of your risk premium**
12 **approach?**

13 A. Mr. Muldoon's central criticism seems to be that historical spreads between
14 stock returns and U.S. Treasury bonds may be subject to distortion because the Federal
15 Reserve has driven interest rates to anomalously low levels through their unprecedented
16 monetary policy actions.⁸⁸

17 **Q. Do Mr. Muldoon's observations regarding Federal Reserve actions**
18 **undermine the risk premium results presented in your Direct Testimony?**

19 A. No. First, my application of the risk premium approach was predicated on
20 average yields for public utility bonds, not on the U.S. Treasury bond yields referenced in Mr.
21 Muldoon's testimony. Second, in contrast to Mr. Muldoon's suggestion, this approach does
22 not depend on the assumption of a constant risk premium over time. As explained in my

⁸⁶ Exhibit Avista/300, McKenzie/42-43.

⁸⁷ Public Service Commission of Maryland, Order No. 85374, Case No. 9299, at 52 (Feb. 22, 2013); Cited at Staff/200, Muldoon/ n.7 & 40.

⁸⁸ Staff/200, Muldoon/34, lines 6-17.

1 Direct Testimony, my risk premium analyses specifically accounts for the fact that risk
2 premiums vary with changes in interest rates and incorporated adjustments to account for
3 differences in bond yields over the study period.⁸⁹ Third, in applying the risk premium
4 approach I specifically accounted for the decrease in the equity risk premium that would be
5 implied by expectations of higher bond yields as the Federal Reserve moves to normalize its
6 monetary policies.

7 Finally, while Treasury bond yields are not a direct input to the DCF model, DCF
8 results are not immune to distortion when capital market conditions are outside the normal
9 range. As FERC concluded, for example, “any DCF analysis may be affected by potentially
10 unrepresentative financial inputs to the DCF formula, including those produced by historically
11 anomalous capital market conditions.”⁹⁰ In contrast to Mr. Muldoon’s position, *New*
12 *Regulatory Finance* concluded that DCF results may be more vulnerable to peculiarities in
13 capital market conditions than those produced by the risk premium approach:

14 One advantage of risk premium over DCF is that the former is a period-by-
15 period (time series) study of the cost of equity over the cost of debt, in contrast
16 to the latter which is a point-in-time cross-sectional estimate. In other words,
17 the risk premium approach takes a broader time-series perspective rather than a
18 snapshot point-in-time viewpoint, and is therefore less vulnerable to the
19 vagaries of any one particular capital market environment.⁹¹

20 Similarly, FERC specifically endorsed the use of a risk premium method analogous to that
21 presented in my Direct Testimony as a “check” on DCF results.⁹²

22 In contrast to Mr. Muldoon’s singular adherence to the multi-stage DCF, I believe that
23 other methodologies always should be considered when establishing an ROE. As explained in

⁸⁹ Avista/300, McKenzie/48-50.

⁹⁰ Opinion No. 531 at P 41 (2014).

⁹¹ Morin, Roger A., “New Regulatory Finance,” *Public Utilities Reports, Inc.* at 131 (2006).

⁹² Opinion No. 531 at P 174 (2014).

1 *New Regulatory Finance*, “[r]eliance on any single method or preset formula is inappropriate
2 when dealing with investor expectations because of possible measurement difficulties and
3 vagaries in individual companies’ market data.”⁹³

4 **Q. Mr. Muldoon observes that past forecasts of interest rates have not always
5 been accurate.⁹⁴ Does the fact that higher interest rates have not yet materialized alter
6 investors’ general expectation that interest rates will rise substantially in the near-term?**

7 A. No. Contrary to Mr. Muldoon’s suggestion, the fact that past forecasts of
8 higher interest rates have not come to fruition does not alter investors’ general expectation
9 that interest rates will rise substantially in the near term future. As Mr. Muldoon points out,
10 estimating the cost of equity reflects “investors’ expectations.”⁹⁵ Accordingly, it is wrong to
11 suggest that because past projections of higher bond yields have not yet become reality,
12 investors now expect the current low-rate environment to persist. It is ironic that the Mr.
13 Muldoon apparently has no qualms about relying on predictions of GDP 10-30 years into the
14 future, but balks at considering independent forecasts for interest rates over the next five
15 years.

16 **F. Mr. Muldoon’s Evaluation of Comparative Risk is Flawed**

17 **Q. Please summarize Mr. Muldoon’s position regarding Avista’s investment
18 risks relative to his proxy group of utilities.**

19 A. Based solely on his observation that Avista has made “frequent rate filings,”⁹⁶
20 Mr. Muldoon argues that investors would view Avista as less risky than his peer group.

⁹³ Morin, Roger A., “New Regulatory Finance,” *Public Utilities Reports, Inc.* at 428 (2006).

⁹⁴ Staff/200, Muldoon/35, lines 13-16.

⁹⁵ Staff/200, Muldoon/16, .

⁹⁶ Staff/200, Muldoon/6, 14, 40.

1 **Q. Does reference to the frequency of rate filings support Mr. Muldoon’s**
2 **conclusion that Avista is less risky than his peer utilities?**

3 A. No. The fact that Avista has exercised its statutory authority to file consecutive
4 rate proceedings says nothing at all with respect to investors’ perceptions of Avista’s relative
5 investment risk. In fact, a recurring shortfall between a utility’s cost of providing service and
6 the revenues it collects through rates that generally motivates repeated rate case filings is far
7 more likely to be viewed by investors as a challenge than an advantage. For example, S&P
8 observed that its risk analysis focuses on the utility’s ability to consistently earn a reasonable
9 return:

10 Notably, the analysis does not revolve around “authorized” returns, but rather
11 on actual earned returns. We note the many examples of utilities with healthy
12 authorized returns that, we believe, have no meaningful expectation of actually
13 earning that return because of rate case lag, expense disallowances, etc.⁹⁷

14 Similarly, Moody’s concluded, “we evaluate the framework and mechanisms that allow a
15 utility to recover its costs and investments and earn allowed returns. We are less concerned
16 with the official allowed return on equity, instead focusing on the earned returns and cash
17 flows.”⁹⁸

18 In evaluating competing alternatives, investors are focused on the extent to which
19 Avista has the opportunity to actually earn a return that will maintain its financial integrity,
20 facilitate capital attraction, and compensate for risk. The fact that Avista has been compelled
21 to file serial rate proceedings in order to address a chronic deterioration of actual returns
22 below the allowed ROE was recently acknowledged by Value Line:

⁹⁷ Standard & Poor’s Corporation, “Assessing U.S. Utility Regulatory Environments,” RatingsDirect (Nov. 7, 2008).

⁹⁸ Moody’s Investors Service, “Electric Utilities Face Challenges Beyond Near-Term,” *Industry Outlook* (Jan. 2010).

1 **Frequent regulatory activity is nothing new for Avista.** Due to the effects
2 of regulatory lag, the utility's earned return on equity has been unimpressive
3 for many years. So, the company must file rate cases in order to place its
4 capital spending in the rate base and recover higher operating and maintenance
5 expenses.⁹⁹

6 In other words, Mr. Muldoon's conclusion that frequent rate case filings are evidence of a
7 "unique," lower risk exposure is diametrically opposed to the views of the investment
8 community.

9 **Q. What other factors undercut the rationale behind Mr. Muldoon's relative**
10 **risk argument?**

11 A. As noted in my Direct Testimony,¹⁰⁰ other firms in the gas utility industry
12 operate under a variety of regulatory mechanisms. The majority of gas utilities benefit from
13 revenue decoupling, along with a variety of other provisions that enhance their recovery of
14 operating and capital costs on a timely basis.¹⁰¹ This ability to better match revenues with the
15 underlying cost of service serves to moderate the need for traditional rate proceedings.
16 Contrary to the conclusion that Mr. Muldoon draws, Avista's more frequent rate case filings
17 evidence a handicap in its ability to recover costs on a timely basis, relative to its gas utility
18 peers.

19 **Q. Does a comparison of objective risk measures support Mr. Muldoon's**
20 **conclusion that Avista is less risky than his peer group of utilities?**

21 A. No. Avista/1201, Schedule AMM-19 presents a risk evaluation based on the
22 same objective, published benchmarks relied on in the investment community that were

⁹⁹ The Value Line Investment Survey (Oct. 30, 2015) (emphasis in original).

¹⁰⁰ Avista/300, McKenzie/63-66.

¹⁰¹ Mr. Muldoon granted that such regulatory mechanisms decrease the "risk of and time to cost recovery." *Staff Response to Avista Data Request 8-C*.

1 discussed in my Direct Testimony.¹⁰² As shown there, the BBB corporate credit rating
2 assigned to Avista by S&P falls below every one of the companies in Mr. Muldoon’s peer
3 group. Avista’s Baa1 rating from Moody’s also indicates higher risk than the A3 rating
4 corresponding to Mr. Muldoon’s proxy group, as does its relative Safety Rank, which is Value
5 Line’s principal risk measure.¹⁰³ Considered together, a comparison of these objective
6 measures, which consider a broad spectrum of risks, including financial and business position,
7 and exposure to firm-specific factors, indicates that investors would likely conclude that the
8 overall investment risks for Avista are generally greater than those of Mr. Muldoon’s proxy
9 group. Similarly, as shown in the lower portion of Avista/1201, Schedule AMM-19, Avista’s
10 investment risks are also higher than other Oregon-jurisdictional utilities.¹⁰⁴ As a result there
11 is no justification that would support a lower ROE for Avista.

12 **Q. Does the Moody’s report referenced by Mr. Muldoon contradict his**
13 **suggestion that the frequency of Avista’s rate case filings makes it “unique” in the utility**
14 **industry?**

15 A. Yes. The Moody’s report referenced by Mr. Muldoon discusses the “robust
16 suite of cost recovery mechanisms” that has become prevalent in the utility industry in recent
17 years.¹⁰⁵ Moody’s noted that “[a]cross the U.S., we continue to see regulators approving
18 mechanisms that allow for more timely recovery of costs,” and that these mechanisms “enable
19 utilities to recoup prudently incurred operating costs, including capital investments such

¹⁰² Avista/300, McKenzie/20-22.

¹⁰³ Avista’s Financial Strength Rating indicates slightly less risk than Mr. Muldoon’s peer group, while its beta value is slightly higher.

¹⁰⁴ As shown there, Avista’s credit ratings and Value Line Safety Rank imply greater risk than for other Oregon-jurisdictional utilities.

¹⁰⁵ Moody’s Investors Service, “Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles,” *Sector In-Depth* (March 2015); Cited at Muldoon Direct at 51.

1 environmental related or infrastructure hardening expenditures.”¹⁰⁶ Indeed, in 2014 Moody’s
2 upgraded most of the bond ratings for utilities to reflect the effect of the proliferation of
3 trackers and adjustment mechanisms throughout the utility industry.¹⁰⁷ This contradicts Mr.
4 Muldoon’s contention that Avista’s efforts to reflect its costs of providing service in current
5 rates warrant a risk adjustment in evaluating a fair ROE.

6 **Q. Mr. Muldoon claims that the findings of the MPSC support his relative**
7 **risk argument.¹⁰⁸ Do you agree?**

8 A. No. The MPSC decision referenced by Mr. Muldoon did not specifically
9 address the risk implications of frequent rate case filings, nor did the MPSC impose a
10 downward adjustment to its allowed ROE based on Baltimore Gas and Electric Company’s
11 (“BGE”) regulatory activity. Meanwhile, with respect to the impact of regulatory
12 mechanisms on BGE’s risk and required return, the MPSC observed that:

13 We will not reduce [the ROE] as a result of BGE’s decoupling mechanism. No
14 party argued that the Company should have a reduced ROE for its natural gas
15 operations because of decoupling. Instead, as the parties testified, decoupling
16 provisions are common among natural gas distribution companies.¹⁰⁹

17 **Q. Is Staff’s 9.11% ROE recommendation consistent with the MPSC’s**
18 **findings in the case referenced by Mr. Muldoon?**

19 A. No. The MPSC awarded BGE an ROE of 9.6% for its jurisdictional gas utility
20 operations in the case referenced by Mr. Muldoon.¹¹⁰ Since that time, yields on utility bonds

¹⁰⁶ *Id.*

¹⁰⁷ Moody’s Investors Service, “US utility sector upgrades driven by stable and transparent regulatory frameworks,” *Sector Comment* (Feb. 3, 2014).

¹⁰⁸ Staff/200, Muldoon/n. 7.

¹⁰⁹ Public Service Commission of Maryland, Order No. 85374, Case No. 9299, at 78 (Feb. 22, 2013); Cited at Staff/200, Muldoon/ n. 7 & 40.

¹¹⁰ *Id.*

1 corresponding to Avista's Baa rating have increased approximately 68 basis points.¹¹¹
2 Considering the inverse relationship between equity risk premiums and interest rates, this
3 implies a current ROE for Avista on the order of 9.94%.¹¹²

4 **Q. Did Mr. Muldoon provide any support for his proposed reduction in ROE**
5 **he attributes to Avista's "very frequent rate cases?"**¹¹³

6 A. No. Mr. Muldoon offered no rationale at all for the magnitude of his proposed
7 ROE adjustment. Mr. Muldoon's suggestion that Avista's ROE could be lowered by 20 basis
8 points is unsubstantiated and unjustified and the OPUC should reject it.

9 **III. RESPONSE TO MR. GORMAN**

10 **Q. How did Mr. Gorman arrive at his recommended cost of equity?**

11 A. Mr. Gorman recommended an ROE of 9.35% based on his application of the
12 constant growth and multi-stage forms of the DCF model, an application of the CAPM based
13 on historical realized rates of return, and a risk premium approach based on allowed rates of
14 return for utilities. Mr. Gorman applied these methods to essentially the same proxy groups of
15 gas and combination utilities identified in my Direct Testimony. Mr. Gorman eliminated two
16 companies due to involvement in mergers and acquisitions (AGL Resources and Black Hills
17 Corporation).

18 **Q. What is your assessment of Mr. Gorman's ROE testimony and**
19 **recommendation?**

¹¹¹ Moody's reported average yields on Baa utility bonds of 4.74% and 5.42% for February 2013 and September 2015, respectively.

¹¹² $9.6\% + (5.42\% - 4.74\%) / 2$.

¹¹³ Staff/200, Muldoon/42, lines 4-5.

1 A. Mr. Gorman's recommendation is too low. It is understated because, in his
2 analysis, he applies inconsistent and incorrect approaches to reach his final ROE
3 recommendation. Several specific factors detract from Mr. Gorman's analysis. His constant
4 growth DCF results are biased downward because he includes outliers in his calculations. In
5 addition, he fails to incorporate a readily available, and widely followed, source of analysts'
6 growth rates. His multi-stage DCF analysis should be rejected because he mistakenly
7 assumes that investor growth expectations are capped by forecasts for growth in the U.S.
8 economy. His CAPM analysis is not credible because it is based almost exclusively on
9 historical data, it fails to correct for an observed bias in the CAPM result, and it ignores the
10 impact of company size on expected returns. Finally, Mr. Gorman's risk premium analysis is
11 flawed because he rejects the well-documented, inverse relationship between equity risk
12 premiums and interest rates levels. Equity risk premiums increase when interest rates are low
13 and decrease when interest rates are higher. When adjustments are made to correct these areas,
14 Mr. Gorman's results would support a much higher ROE.

15 **Q. Do you have further comments on Mr. Gorman's testimony?**

16 A. Yes, in addition to the areas mentioned above, I will also respond to Mr.
17 Gorman's criticisms of my Expected Earnings Approach and my Non-Utility DCF study. I
18 will also challenge his opposition to an adjustment for flotation costs, which Mr. Muldoon and
19 I recognize as legitimate and necessary.

20 **A. Discounted Cash Flow Model**

21 **Q. How did Mr. Gorman apply the constant growth DCF model?**

22 A. Mr. Gorman applied the constant growth DCF model using forward-looking
23 estimates of EPS growth based on consensus forecasts of securities analysts, as well as

1 considering a sustainable, “bxr” growth rate. This is comparable to the method discussed in
2 my testimony.

3 **Q. Is there an obvious flaw in Mr. Gorman’s constant growth DCF analysis?**

4 A. Yes, Mr. Gorman failed to remove outliers from his final constant growth DCF
5 results. As I discuss in my Direct Testimony, when applying quantitative methods to estimate
6 the cost of equity, it is essential that the resulting values pass fundamental tests of
7 reasonableness and economic logic. Accordingly, DCF estimates that are implausibly low or
8 high should be eliminated when evaluating the results of this method.¹¹⁴

9 **Q. Did Mr. Gorman recommend relying on analysts’ growth rates in
10 determining an ROE for Avista?**

11 A. Yes. Mr. Gorman correctly recognized that in order to correctly apply the DCF
12 model, “one must attempt to estimate investors’ consensus about what the dividend or
13 earnings growth rate will be” and concluded that “[a]s predictors of future returns, security
14 analysts’ growth estimates have been shown to be more accurate than growth rates derived
15 from historical data.”¹¹⁵ In contrast to Mr. Muldoon, Mr. Gorman and I agree that EPS
16 growth forecasts represent a superior guide to investors’ expectations.

17 **Q. Did Mr. Gorman leave out a readily available, widely respected source of
18 analysts’ growth rates?**

19 A. Yes, for no apparent reason, Mr. Gorman did not include EPS growth rate
20 estimates from Value Line in his analysis. He used Value Line as an underlying source for
21 many of his calculations, such as to compute the annualized dividend and sustainable growth

¹¹⁴ For example, removing a single low-end outlier of 6.67% for NiSource Inc. from the DCF results presented on page 1 of Exhibit NWIGU-CUB/106 increases the average by almost 30 basis points.

¹¹⁵ NWIGU-CUB/100, Gorman/21, lines 16-17.

1 terms for his DCF models and the average beta for his CAPM studies. Value Line is readily
2 available and is widely followed by investment professionals. It is a well-recognized source
3 of expected growth rates and Mr. Gorman's DCF analysis suffers because he did not consider
4 them.

5 **Q. How would Mr. Gorman's DCF analysis change if Value Line growth rates**
6 **are considered?**

7 A. In Exhibit Avista/1201, Schedule AMM-20, I show Value Line's projected
8 growth rates for the companies in Mr. Gorman's two proxy groups. For his gas group, the
9 average Value Line growth rate estimate is 6.4%. Adding this to his average dividend yield of
10 3.48% (Exhibit NWIGU-CUB/106) produces an implied cost of equity of 9.88%. For his
11 combination group, the average Value Line growth rate estimate is 6.1%. Adding this to his
12 combination group dividend yield of 4.11% (Exhibit NWIGU-CUB/106) produces a DCF
13 result of 10.21%. These results confirm the reasonableness of the 9.9% ROE requested by
14 Avista.

15 **Q. What is the problem with Mr. Gorman's multi-stage growth DCF**
16 **analysis?**

17 A. This analysis should be completely rejected. There is no merit to Mr.
18 Gorman's claim that each company's growth would converge to the maximum sustainable
19 growth rate for a utility company as proxied by consensus analyst's projected growth for the
20 U.S. GDP of 4.6%. He incorrectly claims that GDP growth sets a "maximum sustainable
21 long-term growth rate" for a utility.¹¹⁶ As discussed at length earlier in response to Mr.
22 Muldoon, there is no link between Mr. Gorman's GDP growth rate ceiling and the actual

¹¹⁶ NWIGU-CUB/100, Gorman/27, lines 20-21.

1 expectations of investors in the capital markets, which are the determining factor in any
2 analysis of a fair ROE.

3 Mr. Gorman presents no meaningful information to suggest that investors share his
4 view that growth in GDP must be considered “the highest sustainable long-term growth rate
5 of a utility.”¹¹⁷ The industry-wide historical comparisons of utility sales growth and GDP
6 cited by Mr. Gorman may be factually correct, but they do not address what Mr. Gorman
7 identified as the fundamental requirement in estimating growth – the future expectations of
8 investors. In fact, Mr. Gorman specifically noted the pitfalls associated with historical data in
9 assessing investors’ expectations of growth.

10 As discussed earlier in my response to Mr. Muldoon, actual historical growth rates for
11 utilities contradict the notion that long-term growth is constrained by GDP. For example,
12 Value Line reports that PG&E Corp. achieved earnings growth over the last 10 years of
13 14.5%, Southwest Gas had 10-year earnings growth of 8.5%, while Eversource Energy’s 10-
14 year earnings growth rate was 8.0%. These values for Mr. Gorman’s own proxy firms
15 indicate that utilities can and do achieve long-term growth that exceeds his sustainable growth
16 ceiling. Contrary to Mr. Gorman’s artificial constraint, it is entirely logical for investors to
17 recognize the potential for certain companies to grow faster than the overall economy.
18 Investors understand that, while some firms grow more slowly, others can and do experience
19 growth that exceeds the average for the economy.

¹¹⁷ *Ibid.*

1 **Q. Is Mr. Gorman’s view that individual company growth is capped by GDP**
2 **growth supported by expectations for the utility industry?**

3 A. No. As Mr. Gorman recognized, growth is in part created by “additional rate
4 base investment.”¹¹⁸ Investors recognize that utility industry has entered a long-term cycle of
5 significant capital spending on infrastructure, with Mr. Gorman’s own source noting that
6 “utility company capital spending will continue to grow.”¹¹⁹ This long-term cycle of capital
7 investment and its implications for investors’ growth expectations contradicts Mr. Gorman’s
8 suppositions regarding GDP growth and supports the reasonableness of the analysts’ growth
9 estimates referenced in my Direct Testimony.

10 **Q. Is there anything that insulates Mr. Gorman’s multi-stage application**
11 **from the difficulties you discussed earlier in your response to Mr. Muldoon?**

12 A. No. Mr. Gorman suggests that it would be illogical for investors to expect
13 long-term growth for a utility that exceeds the rate of growth of the economy.¹²⁰ Based on
14 this subjective assertion, he assumed that each company's growth rate would begin to
15 converge to that of the economy as a whole after 5 years, and then extended his analysis for
16 an additional 195 years. While few investors are likely to consider Mr. Gorman’s projected
17 cash flows in the year 2215 to be within their foreseeable horizon, as explained in detail in
18 response to Mr. Muldoon, it is entirely logical for investors to recognize the potential for
19 certain companies to grow faster than the overall economy.

¹¹⁸ NWIGU-CUB/100, Gorman/24, line 11.

¹¹⁹ NWIGU-CUB/100, Gorman/5, lines 13-14.

¹²⁰ NWIGU-CUB/100, Gorman/27, lines 7-14.

1 **Q. Are there computational errors that also bias Mr. Gorman’s multi-stage**
2 **DCF cost of equity estimates downward?**

3 A. Yes. As noted above, under his multi-stage DCF approach Mr. Gorman
4 predicted the cash flows that would accrue to investors over the next 200 years. To arrive at
5 his estimated cost of equity, Mr. Gorman used the internal rate of return (“IRR”) function
6 available in Microsoft’s Excel spreadsheet program to determine the discount rate (*i.e.*,
7 investors’ required rate of return) that would equate these cash flows with the current market
8 price of the stock.¹²¹ This IRR calculation, however, assumes that annual cash flows are
9 received at the end of each year, which is inconsistent with the periodic dividend payments
10 that investors receive over the course of the year and results in a downward bias in the implied
11 cost of equity.

12 **Q. What are your criticisms of Mr. Gorman’s sustainable growth DCF**
13 **analysis?**

14 A. I disagree with Mr. Gorman’s implication that analysts’ growth projections
15 should be tested against retention ratios or sustainable, $br+sv$ growth rates.¹²² Mr. Gorman
16 states that “a sustainable long-term retention ratio will help gauge whether analysts’ current
17 three- to five-year growth rate projections can be sustained.”¹²³ But there is no demonstrable
18 link between investors’ growth expectations and trends in retention ratios, and Mr. Gorman
19 has provided no explanation for what that link might be. I do agree that the sustainable
20 growth rates referenced by Mr. Gorman, and which depend on the retention ratio as one

¹²¹ Gorman workpaper NWIGU-CUB 104 through NWIGU-CUB 118.xlsx (tabs NWIGU CUB 111, p. 1 and NWIGU CUB 111, p. 2).

¹²² NWIGU-CUB/100, Gorman/24, lines 19-21.

¹²³ *Ibid.*

1 variable, provide one potential indicator to investors' expectations. Like Mr. Gorman, I
2 considered this growth measure in my application of the constant growth DCF model.

3 While this sustainable, $br+sv$ growth measure is one guide to investors' expectations
4 that is consistent with the theory underlying the DCF approach, there is no basis for Mr.
5 Gorman's claim that this alternative measure can be used to test the veracity of analysts'
6 estimates. Indeed, many of the individual $br+sv$ growth rates for the firms in his proxy groups
7 exceed analysts' estimates (*e.g.* Dominion Resources at 8.39% and Atmos Energy Corporation
8 at 8.02%),¹²⁴ while others are far too low to be credible. For example, Mr. Gorman reports a
9 sustainable, $br+sv$ growth rate of 2.28% for Duke Energy Corporation (Duke).¹²⁵ Combining
10 this growth rate with Mr. Gorman's 4.63% dividend yield for Duke¹²⁶ produces a cost of
11 equity estimate of 6.91%, which is far below his 9.35% recommendation. As indicated
12 earlier, Mr. Gorman correctly concluded that investors' expectations are the guide to the
13 growth rate required to apply the DCF model, and that analysts' projections provide the more
14 accurate estimate.

15 **B. Capital Asset Pricing Model**

16 **Q. What are the weaknesses in Mr. Gorman's CAPM studies?**

17 A. Mr. Gorman's CAPM analysis has several shortcomings. It is based almost
18 exclusively on historical data, even though the analysis should be forward-looking. He fails
19 to correct for an observed bias in the CAPM result. Finally, his analysis ignores the impact of
20 company size on expected returns.

¹²⁴ Exhibit NWIGU-CUB/108, Gorman/1 and 3.

¹²⁵ *Ibid.*

¹²⁶ Exhibit NWIGU-CUB/109, Gorman/2.

1 **Q. What is the primary difference between Mr. Gorman’s so-called**
2 **“forward-looking” CAPM analysis and the approach described in your Direct**
3 **Testimony?**

4 A. As Mr. Gorman observed, the appropriate “ R_m ” to use in applying the CAPM
5 is the “[e]xpected return for the market portfolio.”¹²⁷ The fundamental difference between my
6 approach and that of Mr. Gorman is that, while my analysis actually looked to the future
7 return expectations of investors in the capital markets, Mr. Gorman’s “forward-looking”
8 CAPM was actually based almost entirely on historical data. As Mr. Gorman explained:

9 I estimated the expected return on the S&P 500 by adding an expected
10 inflation rate to the long-term historical arithmetic average real return on the
11 market.¹²⁸

12 In other words, the relatively small portion of Mr. Gorman’s “forward-looking” market
13 return constituting inflation was based on projected data, but the actual return on the market
14 itself was completely backward looking. Thus, Mr. Gorman essentially presented two
15 variants of a CAPM using historical data. Neither one of these approaches is consistent with
16 the assumptions of the CAPM because as noted above, the CAPM seeks to determine the
17 expected return, and is predicated on the forward-looking expectations of investors. As
18 discussed earlier in response to Mr. Muldoon, Mr. Gorman’s use of historical returns in the
19 CAPM is inconsistent with the underlying presumptions of the model.

¹²⁷ NWIGU-CUB/100, Gorman/38, line 15.

¹²⁸ NWIGU-CUB/100, Gorman/40, lines 18-19 (emphasis added).

1 **Q. What about Mr. Gorman’s criticism (NWIGU-CUB/100, Gorman/52) that**
2 **your forward-looking estimate of the market rate of return is based on an “inflated”**
3 **DCF return on the market?**

4 A. As noted earlier, the use of forward-looking expectations in estimating the
5 market risk premium is well accepted in the financial literature and has been recognized by
6 other regulators. Mr. Gorman’s criticism of my forward-looking CAPM approach seems to
7 hinge on the fact that this method produces an equity risk premium for the S&P 500 that is
8 higher than the historical benchmarks he cites. But estimating investors’ required rate of
9 return by reference to current, forward-looking data, as I have done, is entirely consistent with
10 the theory underlying the CAPM methodology. As noted earlier, the CAPM is an *ex-ante*, or
11 forward-looking model based on expectations of the future. As a result, in order to produce a
12 meaningful estimate of required rates of return, the CAPM is best applied using data that
13 reflects the expectations of actual investors in the market. Rather than look backwards to a
14 risk premium based largely on historical data, as Mr. Gorman advocates, my analysis
15 appropriately focused on the expectations of actual investors in today’s capital markets.

16 All quantitative methods used to estimate the cost of equity have their own strengths
17 and weakness. Mr. Gorman does not suggest that the CAPM model is “wrong” to focus on
18 forward-looking projections instead of backward, historical results, nor does he claim that
19 looking to the future, as I have done, is a misapplication of the CAPM. Instead, Mr. Gorman
20 simply believes that the result of applying the CAPM in a manner that is consistent with the
21 underlying assumptions produces a result that he views as being too high.

1 **Q. Mr. Gorman rejects your use of the ECAPM because he says it is**
2 **“redundant” with the use of Value Line adjusted betas and, therefore, is unreasonable.¹²⁹**

3 **What is your response?**

4 A. As I stated in my Direct Testimony,¹³⁰ the ECAPM is simply a variant of the
5 traditional CAPM approach that is designed to correct for an observed bias in the CAPM
6 result. The modification reflected in the ECAPM is distinct from the Value Line adjustment
7 of estimated betas for the demonstrated tendency to regress toward the mean. As discussed
8 earlier, the Value Line adjustment is intended to make betas estimated based on historical
9 returns better estimates of forward-looking betas. In contrast, the ECAPM reflects a
10 refinement to adjust for a systematic tendency of low beta portfolios to over-earn and high
11 beta portfolios to under-earn relative to the predictions of the CAPM capital market line.
12 These are separate adjustments and each one is useful for improving the traditional CAPM
13 results.

14 **Q. Did Mr. Gorman fail to consider other important factors in applying the**
15 **CAPM?**

16 A. Yes. Like Mr. Muldoon, Mr. Gorman failed to reflect the size adjustment in his
17 CAPM application. According to the CAPM, the expected return on a security should consist
18 of the riskless rate, plus a premium to compensate for the systematic risk of the particular
19 security. The degree of systematic risk is represented by the beta coefficient. The need for
20 the size adjustment arises because differences in investors' required rates of return that are
21 related to firm size are not fully captured by beta. To account for this, *Morningstar* has

¹²⁹ NWIGU-CUB/100, Gorman/54 lines 13-14.

¹³⁰ Avista/300, McKenzie/41.

1 developed size premiums that need to be added to the theoretical CAPM cost of equity
2 estimates to account for the level of a firm's market capitalization in determining the CAPM
3 cost of equity. Accordingly, Mr. Gorman should have incorporated an adjustment to
4 recognize the impact of size distinctions between his proxy companies, as measured by the
5 average market capitalization.

6 **Q. Is there any merit to Mr. Gorman's contention (NWIGU-CUB/100,**
7 **Gorman/56) that a size adjustment should not be applied to utilities?**

8 A. No. First, Mr. Gorman implies that I am proposing to apply a general size risk
9 premium in arriving at a fair ROE for Avista; but this is not correct. Rather, this adjustment
10 merely corrects for an observed inability of the CAPM to fully reflect the impact of size
11 distinctions by market capitalization that the beta value does not otherwise capture, but which
12 is acknowledged by empirical research. My consideration of the impact of firm size does not
13 adjust for Avista's size relative to the proxy group; nor is it applied to the results of the DCF,
14 risk premium, or expected earnings approaches. Rather, it is specifically tied to the CAPM
15 because empirical research indicates that beta does not capture an increment of risk related to
16 firm size.

17 Mr. Gorman's observation that the "size adjustment recommended by Mr. McKenzie
18 reflects companies that have beta estimates in excess of 1.00" says nothing at all about the
19 relevance of a size adjustment.¹³¹ Of course, there are any number of specific factors that
20 distinguish a utility's risks from other firms in the non-regulated sector, just as there are
21 important distinctions between the circumstances faced by airlines and drug manufacturers.
22 But under the assumptions of modern capital market theory on which the CAPM rests, these

¹³¹ NWIGU-CUB/100, Gorman/56, lines 6-8.

1 considerations are reduced to a single risk measure – beta – which captures stock price
2 volatility relative to the market. Within the CAPM paradigm, the degree of regulation, the
3 nature of competition in the industry, the competence of management, and every other firm-
4 specific consideration is boiled down to a single question; namely, how much does the stock’s
5 price fluctuate in relation to the market as a whole? Beta is the measure of that variability,
6 and research demonstrates that beta does not fully account for the impact of firm size.

7 The fact that the size premiums reported by *Morningstar* were not estimated on an
8 industry-by-industry basis provides no basis to ignore this relationship in estimating the cost
9 of equity for utilities. Utilities are included in the companies used by *Morningstar* to quantify
10 the size premium, and firm size has important practical implications with respect to the risks
11 faced by investors in the utility industry. All else being equal, it is well accepted that smaller
12 firms are more risky than their larger counterparts, due in part to their smaller scale, relative
13 lack of diversification and lower financial resiliency. In the case of a smaller utility, its
14 earnings are principally dependent on the economic, social, regulatory, and other factors
15 affecting a more limited constituency. This can result in significant exposure, especially
16 where key employers or industries dominate the economy.

17 Larger utilities generally enjoy improved exposure to financial markets, which
18 enhances their ability to raise additional capital relative to smaller utilities. As a result, they
19 are better prepared to withstand adverse events and possess greater financial flexibility to
20 respond or adapt to changing market conditions. A study reported in *Public Utilities*
21 *Fortnightly* noted that the betas of small companies do not fully account for the higher
22 realized rates of return associated with small company stocks:

23 The smaller deciles show returns not fully explainable by the CAPM. The
24 difference in risk premium (realized versus CAPM) grows larger as one

1 moves from the largest companies in decile 1 to the smallest in decile 10.
2 The difference is especially pronounced for deciles 9 and 10, which contain
3 the smallest companies.¹³²

4 The study went on to conclude that a publicly traded utility with a market capitalization of
5 \$1.0 billion would require a small company premium of approximately 130 basis points above
6 the rate of return for larger firms.¹³³

7 **C. Utility Risk Premium**

8 **Q. Do the results of Mr. Gorman's risk premium approach based on**
9 **authorized returns provide a reliable guide to a fair ROE for Avista?**

10 A. No. Mr. Gorman subjectively chose to truncate the data available to apply his
11 risk premium approach by ignoring all observations prior to 1986. Mr. Gorman explained that
12 this period was selected "because public utility stocks consistently traded at a premium to
13 book value during that period,"¹³⁴ but such manipulation of this data runs counter to the
14 assumptions underlying the study of historical risk premiums. Ibbotson Associates noted the
15 pitfalls of such a subjective approach:

16 Some analysts estimate the expected risk premium using a shorter, more recent
17 time period on the basis that recent events are more likely to be repeated in the
18 near future ... This view is suspect ...¹³⁵

19 By choosing a truncated time period for his risk premium study, Mr. Gorman unnecessarily
20 introduces a subjective bias that taints his analysis and artificially lowers his results.

¹³²Annin, Michael, "Equity and the Small-Stock Effect", Public Utilities Fortnightly (Oct. 15, 1995) at 43.

¹³³This compares with the size adjustments incorporated in my application of the CAPM, which ranged from 177 basis points to -32 basis points. Avista/301, Schedules AMM-7 & AMM-8.

¹³⁴NWIGU-CUB/100, Gorman/33, lines 16-17.

¹³⁵Ibbotson Associates, *2005 Yearbook, Valuation Edition* at 80.

1 **Q. What other flaws are associated with Mr. Gorman’s risk premium**
2 **application?**

3 A. Mr. Gorman failed to incorporate the inverse relationship between interest rates
4 and equity risk premiums in his analysis of historical authorized rates of return. There is
5 considerable empirical evidence that when interest rates are relatively high, equity risk
6 premiums narrow, and when interest rates are relatively low, equity risk premiums are greater.
7 This inverse relationship between equity risk premiums and interest rates has been widely
8 reported in the financial literature. As summarized in *New Regulatory Finance*:

9 Published studies by Brigham, Shome, and Vinson (1985), Harris (1986),
10 Harris and Marston (1992, 1993), Carelton, Chambers, and Lakonishok (1983),
11 Morin (2005), and McShane (2005), and others demonstrate that, beginning in
12 1980, risk premiums varied inversely with the level of interest rates – rising
13 when rates fell and declining when rates rose.¹³⁶

14 *New Regulatory Finance* noted that, taken together, studies in the financial literature imply
15 that a 100 basis point change in bond yields would imply a 50 basis point increase in the
16 equity risk premium.¹³⁷

17 As shown on Mr. Gorman’s Exhibit NWIGU-CUB/113, current interest rates are
18 significantly less than those prevailing in the late 1980s and early 1990s. Given that interest
19 rates are currently lower than the average over his study period, current equity risk premiums
20 should be relatively higher, which Mr. Gorman’s analysis entirely ignores.

¹³⁶ Morin, Roger A., “New Regulatory Finance,” Public Utilities Reports, Inc. (2006) at 128.

¹³⁷ Morin, Roger A., “New Regulatory Finance,” Public Utilities Reports, Inc. (2006) at 129.

1 **Q. What cost of equity estimate is indicated if Mr. Gorman’s risk premium**
2 **approach is corrected to account for this factor?**

3 A. I began with the data from Mr. Gorman’s two risk premium Exhibits NWIGU-
4 CUB/113 and NWIGU-CUB/114. The only adjustment I made to this data was to account for
5 the inverse relationship between interest rates and risk premiums. Since rates are now
6 (historically) low, an upward adjustment to the base risk premium is critical. As shown on
7 page 1 of Avista/1201, Schedule AMM-21, adjusting Mr. Gorman’s risk premium analysis to
8 account for this inverse relationship results in a current cost of equity estimate for Avista of
9 10.00% using Treasury yields, or 10.05% based on public utility bond yields (Exhibit
10 Avista/1201, Schedule AMM-21, page 3).

11 **D. Expected Earnings Approach and Non-Utility DCF**

12 **Q. Mr. Gorman contends that the expected earnings analysis you used is not**
13 **a reasonable method for estimating a fair ROE for Avista.¹³⁸ Do you agree?**

14 A. No. I provided support for the expected earnings method in my earlier rebuttal
15 of Mr. Muldoon and in my Direct Testimony.

16 **Q. Do you agree with Mr. Gorman (NWIGU-CUB/100, Gorman/61) that a**
17 **methodology has to depend on market data to be useful in evaluating investors’ required**
18 **return?**

19 A. No. Mr. Gorman wrongly contends that because the expected earnings
20 approach is based on accounting data and not market data, it should be rejected. While I
21 agree that market-based models are certainly important tools in estimating investors’ required

¹³⁸ NWIGU-CUB/100, Gorman/62-63.

1 rate of return, in my opinion, this in no way invalidates the usefulness of the expected
2 earnings approach. In fact, this is one of its advantages.

3 A very simple, conceptual principle is that when evaluating two investments of
4 comparable risk, investors will choose the alternative with the higher expected return. If
5 Avista is only allowed the opportunity to earn a 9.35% return on the book value of its equity
6 investment, as recommended by Mr. Gorman, while other electric utilities are expected to
7 earn an average of 10.7%,¹³⁹ the implications are clear – Avista’s investors will be denied the
8 ability to earn a return commensurate with other opportunities of comparable risk.

9 Moreover, regulators do not set the returns that investors earn in the capital markets –
10 they can only establish the allowed return on the value of a utility’s investment, as reflected
11 on its accounting records. As a result, the expected earnings approach provides a direct guide
12 to ensure that the allowed ROE is similar to what other utilities of comparable risk will earn
13 on invested capital. This test of economic logic does not require theoretical models to
14 indirectly infer investors’ perceptions from stock prices or other market data. As long as the
15 proxy companies are similar in risk, their expected earned returns on invested capital provide
16 a direct benchmark for investors’ opportunity costs that is independent of fluctuating stock
17 prices, market-to-book ratios, debates over DCF growth rates, or the limitations inherent in
18 any theoretical model of investor behavior.

¹³⁹ The average expected return on book equity for 2018-20 calculated for Mr. Muldoon’s proxy group, as shown on Exhibit Avista/1201, Schedule AMM-16.

1 **Q. Mr. Gorman (NWIGU-CUB/100, Gorman/63) argues that your Non-**
2 **Utility DCF approach should not be given any weight because it includes companies that**
3 **are not comparable to petitioner. Do you agree?**

4 A. No. I addressed Mr. Gorman’s arguments earlier in my response to Mr.
5 Muldoon.

6 **E. Flotation Costs**

7 **Q. Is there any justification for ignoring flotation costs in the end result?**

8 A. No. Mr. Gorman rejects a flotation cost adjustment in this case because he
9 claims my adjustment “is not based on known and measurable Avista costs.”¹⁴⁰ Mr. Gorman
10 seems to agree that flotation costs can be included in the cost of equity analysis as a part of
11 the cost of raising capital, but he argues that such an adjustment should be rejected in this
12 case. Avista has been and will continue to invest significant amounts of equity capital to serve
13 the public. The equity capital necessary to support this investment is supplied by proceeds
14 from past stock issues and through retained earnings. The earnings base of this equity is
15 permanently reduced by the amount of past flotation costs. As Mr. Muldoon correctly
16 recognized, without a flotation adjustment, these legitimate costs of providing utility service
17 will be excluded for ratemaking purposes and will further undercut Avista’s ability to earn its
18 authorized ROE.

19 **Q. Does this conclude your Reply Testimony in this case?**

20 A. Yes, it does.

¹⁴⁰ NWIGU-CUB/100, Gorman/ 48, lines 22-23.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

ADRIEN M. MCKENZIE
Exhibit No. 1201

Return on Equity

MULDOON PROXY GROUP

<u>Company</u>	<u>Allowed ROE</u>
AGL Resources	10.41%
Atmos Energy Corp.	9.81%
Laclede Group	NA
New Jersey Resources	10.30%
NiSource, Inc.	10.61%
Northwest Natural Gas	9.80%
Piedmont Natural Gas	10.40%
South Jersey Industries	9.75%
Southwest Gas Corp.	9.98%
WGL Holdings, Inc.	9.58%
American Water Works	9.75%
California Water Service	9.43%
Middlesex Water Co.	9.75%
York Water Co.	NA
Average	9.96%

Source: *AUS Monthly Utility Reports* (October 2015).

MULDOON PROXY GROUP

	(a)	(b)	(c)
<u>Company</u>	<u>Expected Return on Common Equity</u>	<u>Adjustment Factor</u>	<u>Adjusted Return on Common Equity</u>
1 AGL Resources	12.5%	1.0193	12.7%
2 Atmos Energy Corp.	10.5%	1.0354	10.9%
3 Laclede Group	8.5%	1.0357	8.8%
4 New Jersey Resources	12.5%	1.0316	12.9%
5 NiSource, Inc.	5.5%	1.0293	5.7%
6 Northwest Natural Gas	10.0%	1.0208	10.2%
7 Piedmont Natural Gas	10.5%	1.0219	10.7%
8 South Jersey Industries	13.0%	1.0410	13.5%
9 Southwest Gas Corp.	11.5%	1.0320	11.9%
10 WGL Holdings, Inc.	12.0%	1.0160	12.2%
11 American Water Works	9.0%	1.0197	9.2%
12 California Water Service	9.5%	1.0246	9.7%
13 Middlesex Water Co.	9.5%	1.0207	9.7%
14 York Water Co.	12.0%	1.0090	12.1%
Average			10.7%

(a) The Value Line Investment Survey (Sep. 4 & Oct. 16, 2015).

(b) Computed using the formula $2 * (1+5\text{-Yr. Change in Equity}) / (2+5 \text{ Yr. Change in Equity})$.

(c) (a) x (b).

MULTI-STAGE DCF MODEL -- SUSTAINABLE GROWTH

Company	(a)	(b)	(c)	(c)	(d)	Annual Cash Flows					(e)	Implied Cost of Equity
	Recent Price	Est' Div Next 12 Mos.	2016 Div.	2019 Div.	Annual Change	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	End Yr 5	
1 AGL Resources	\$ (50.33)	\$2.04	\$2.10	\$2.40	4.6%	\$2.04	\$2.13	\$2.23	\$2.33	\$2.44	\$ 69.61	10.8%
2 Atmos Energy Corp.	\$ (54.04)	\$1.62	\$1.64	\$1.90	5.0%	\$1.62	\$1.70	\$1.79	\$1.88	\$1.97	\$ 71.66	10.9%
3 Laclede Group	\$ (53.09)	\$1.84	\$1.92	\$2.20	4.6%	\$1.84	\$1.93	\$2.01	\$2.11	\$2.21	\$ 61.86	8.3%
4 New Jersey Resources	\$ (30.18)	\$0.92	\$0.94	\$0.98	1.4%	\$0.92	\$0.93	\$0.95	\$0.96	\$0.97	\$ 36.87	8.7%
5 NiSource, Inc.	\$ (45.89)	\$1.04	\$0.66	\$1.20	22.1%	\$1.04	\$1.27	\$1.55	\$1.89	\$2.31	\$ 58.80	10.2%
6 Northwest Natural Gas	\$ (45.31)	\$1.86	\$1.91	\$2.10	3.2%	\$1.86	\$1.92	\$1.98	\$2.05	\$2.11	\$ 51.02	8.2%
7 Piedmont Natural Gas	\$ (31.89)	\$1.32	\$1.35	\$1.47	2.9%	\$1.32	\$1.36	\$1.40	\$1.44	\$1.48	\$ 35.42	7.9%
8 South Jersey Industries	\$ (27.66)	\$1.04	\$1.10	\$1.35	7.1%	\$1.04	\$1.11	\$1.19	\$1.28	\$1.37	\$ 37.15	12.4%
9 Southwest Gas Corp.	\$ (54.92)	\$1.64	\$1.74	\$2.10	6.5%	\$1.64	\$1.75	\$1.86	\$1.98	\$2.11	\$ 70.42	10.2%
10 WGL Holdings, Inc.	\$ (56.75)	\$1.85	\$1.87	\$1.99	2.1%	\$1.85	\$1.89	\$1.93	\$1.97	\$2.01	\$ 65.09	7.5%
11 American Water	\$ (53.41)	\$1.36	\$1.42	\$1.70	6.2%	\$1.36	\$1.44	\$1.53	\$1.63	\$1.73	\$ 64.21	7.9%
12 California Water	\$ (23.97)	\$0.67	\$0.69	\$0.97	12.0%	\$0.67	\$0.75	\$0.84	\$0.94	\$1.06	\$ 28.41	8.4%
13 Middlesex Water Co.	\$ (22.17)	\$0.78	\$0.78	\$0.85	2.9%	\$0.78	\$0.80	\$0.83	\$0.85	\$0.87	\$ 25.69	8.1%
14 York Water Co.	\$ (23.39)	\$0.61	\$0.63	\$0.79	7.8%	\$0.61	\$0.66	\$0.71	\$0.76	\$0.82	\$ 24.72	5.0%
Average - Muldoon Proxy Group (f)											9.2%	
Average - Gas Utilities											9.5%	
"Hamada Adjustment" (basis points) (g)											18.0	
Flotation Cost Adjustment (basis points) (h)											12.5	
Implied Cost of Equity - Gas Utilities											9.8%	

(a) Exhibit Staff/202 Muldoon/4. South Jersey Industries adjusted for 2/1 stock split.

(b) The Value Line Investment Survey, *Summary & Index* (June 5, 2015).

(c) The Value Line Investment Survey (June 5 & July 17, 2015).

(d) Compound annual rate of change from 2016 to 2019.

(e) Computed as 2019 Dividend $\times (1+g) / (k - g)$, where g equals br + sv sustainable growth rate from Avista/1201, Schedule AMM-18.

(f) Excludes highlighted values.

(g) Exhibit Staff/202 Muldoon/4.

(h) Muldoon Direct at 47.

SUSTAINABLE GROWTH RATE

	(a)	(a)	(a)			(b)	(c)		(d)	(e)		
	----- 2019 -----					Adjustment			----- "sv" Factor -----			
<u>Company</u>	<u>EPS</u>	<u>DPS</u>	<u>BVPS</u>	<u>b</u>	<u>r</u>	<u>Factor</u>	<u>Adjusted r</u>	<u>br</u>	<u>s</u>	<u>v</u>	<u>sv</u>	<u>br + sv</u>
1 AGL Resources	\$4.65	\$2.40	\$36.65	48.4%	12.7%	1.0193	12.9%	6.3%	0.0168	0.4764	0.80%	7.1%
2 Atmos Energy Corp.	\$3.80	\$1.90	\$36.65	50.0%	10.4%	1.0354	10.7%	5.4%	0.0620	0.4136	2.56%	7.9%
3 Laclede Group	\$4.20	\$2.20	\$48.10	47.6%	8.7%	1.0357	9.0%	4.3%	0.0112	0.2600	0.29%	4.6%
4 New Jersey Resources	\$1.85	\$0.98	\$15.65	47.0%	11.8%	1.0316	12.2%	5.7%	0.0033	0.4309	0.14%	5.9%
5 NiSource, Inc.	\$2.60	\$1.20	\$25.55	53.8%	10.2%	1.0293	10.5%	5.6%	0.0093	0.3988	0.37%	6.0%
6 Northwest Natural Gas	\$3.30	\$2.10	\$33.85	36.4%	9.7%	1.0208	10.0%	3.6%	0.0085	0.3845	0.33%	3.9%
7 Piedmont Natural Gas	\$2.10	\$1.47	\$20.40	30.0%	10.3%	1.0219	10.5%	3.2%	0.0099	0.4560	0.45%	3.6%
8 South Jersey Industries	\$2.50	\$1.35	\$18.40	46.0%	13.6%	1.0410	14.1%	6.5%	0.0409	0.4743	1.94%	8.4%
9 Southwest Gas Corp.	\$4.25	\$2.10	\$39.40	50.6%	10.8%	1.0320	11.1%	5.6%	0.0357	0.3696	1.32%	7.0%
10 WGL Holdings, Inc.	\$3.35	\$1.99	\$29.20	40.6%	11.5%	1.0160	11.7%	4.7%	(0.0118)	0.4160	-0.49%	4.2%
11 American Water	\$3.25	\$1.70	\$34.55	47.7%	9.4%	1.0197	9.6%	4.6%	0.0115	0.4685	0.54%	5.1%
12 California Water	\$1.55	\$0.97	\$16.00	37.4%	9.7%	1.0246	9.9%	3.7%	0.0169	0.4667	0.79%	4.5%
13 Middlesex Water Co.	\$1.35	\$0.85	\$14.30	37.0%	9.4%	1.0207	9.6%	3.6%	0.0206	0.4800	0.99%	4.6%
14 York Water Co.	\$1.15	\$0.79	\$9.60	31.3%	12.0%	1.0090	12.1%	3.8%	(0.0346)	0.6160	-2.13%	1.7%

SUSTAINABLE GROWTH RATE

	<u>Company</u>	(a)	(a)	(f)	(a)	(a)	(f)	(g)	(a)	(a)	(h)	(a)	(a)	(g)	
		----- 2014 -----	----- 2014 -----	----- 2014 -----	----- 2019 -----	----- 2019 -----	----- 2019 -----	Chg	----- 2019 Price -----	----- 2019 Price -----		----- Common Shares -----	----- Common Shares -----	----- Common Shares -----	
		<u>Eq Ratio</u>	<u>Tot Cap</u>	<u>Com Eq</u>	<u>Eq Ratio</u>	<u>Tot Cap</u>	<u>Com Eq</u>	<u>Equity</u>	<u>High</u>	<u>Low</u>	<u>Avg.</u>	<u>M/B</u>	<u>2014</u>	<u>2019</u>	<u>Growth</u>
1	AGL Resources	51.2%	\$7,386	\$3,782	50.0%	\$9,175	\$4,588	3.9%	\$75.00	\$65.00	\$70.00	1.910	119.65	125.00	0.88%
2	Atmos Energy Corp.	55.7%	\$5,542	\$3,087	55.0%	\$8,000	\$4,400	7.3%	\$70.00	\$55.00	\$62.50	1.705	100.39	120.00	3.63%
3	Laclede Group	44.9%	\$3,359	\$1,508	49.0%	\$4,400	\$2,156	7.4%	\$75.00	\$55.00	\$65.00	1.351	43.18	45.00	0.83%
4	New Jersey Resources	61.8%	\$1,564	\$967	72.5%	\$1,830	\$1,327	6.5%	\$30.00	\$25.00	\$27.50	1.757	84.20	85.00	0.19%
5	NiSource, Inc.	43.1%	\$14,331	\$6,177	44.0%	\$18,810	\$8,276	6.0%	\$50.00	\$35.00	\$42.50	1.663	316.04	325.00	0.56%
6	Northwest Natural Gas	55.2%	\$1,389	\$767	56.0%	\$1,685	\$944	4.2%	\$60.00	\$50.00	\$55.00	1.625	27.28	28.00	0.52%
7	Piedmont Natural Gas	47.9%	\$2,733	\$1,309	56.5%	\$2,885	\$1,630	4.5%	\$45.00	\$30.00	\$37.50	1.838	77.88	80.00	0.54%
8	South Jersey Industries	52.0%	\$1,792	\$932	53.0%	\$2,650	\$1,405	8.6%	\$40.00	\$30.00	\$35.00	1.902	68.33	76.00	2.15%
9	Southwest Gas Corp.	47.6%	\$3,124	\$1,487	52.5%	\$3,900	\$2,048	6.6%	\$75.00	\$50.00	\$62.50	1.586	46.52	52.00	2.25%
10	WGL Holdings, Inc.	63.8%	\$1,954	\$1,247	70.0%	\$2,090	\$1,463	3.3%	\$55.00	\$45.00	\$50.00	1.712	51.76	50.00	-0.69%
11	American Water	47.4%	\$10,364	\$4,913	45.0%	\$13,300	\$5,985	4.0%	\$80.00	\$50.00	\$65.00	1.881	179.46	185.00	0.61%
12	California Water	59.9%	\$1,046	\$626	58.5%	\$1,370	\$801	5.0%	\$35.00	\$25.00	\$30.00	1.875	47.81	50.00	0.90%
13	Middlesex Water Co.	58.8%	\$336	\$197	56.5%	\$430	\$243	4.2%	\$30.00	\$25.00	\$27.50	1.923	16.12	17.00	1.07%
14	York Water Co.	55.2%	\$189	\$105	52.0%	\$220	\$114	1.8%	\$30.00	\$20.00	\$25.00	2.604	12.83	12.00	-1.33%

(a) The Value Line Investment Survey (Jun. 5 & Jul. 17, 2015).

(b) Computed using the formula $2 \times (1 + 5\text{-Yr. Change in Equity}) / (2 + 5 \text{ Yr. Change in Equity})$.

(c) Product of average year-end "r" for 2019 and Adjustment Factor.

(d) Product of change in common shares outstanding and M/B Ratio.

(e) Computed as $1 - B/M$ Ratio.

(f) Product of total capital and equity ratio.

(g) Five-year rate of change.

(h) Average of High and Low expected market prices divided by 2019 BVPS.

COMPARISON TO AVISTA

		(a)	(b)	(c)		
		<u>Issuer Ratings</u>		<u>Value Line</u>		
		<u>S&P</u>	<u>Moody's</u>	<u>Safety Rank</u>	<u>Financial Strength</u>	<u>Beta</u>
	<u>Muldoon Proxy Group</u>					
1	AGL Resources	BBB+	NR	1	A	0.80
2	Atmos Energy Corp.	A-	A2	1	A	0.85
3	Laclede Group	A-	Baa2	2	B++	0.70
4	New Jersey Resources	A	Aa2	1	A+	0.85
5	NiSource, Inc.	BBB+	Baa1	3	B+	NA
6	Northwest Natural Gas	A+	A3	1	A	0.70
7	South Jersey Industries	BBB+	A2	2	A	0.85
8	Southwest Gas Corp.	BBB+	A3	3	B++	0.85
9	WGL Holdings, Inc.	A+	A3	1	A	0.80
10	WGL Holdings, Inc.	A+	A3	1	A	0.80
11	American Water	A	A3	3	B+	0.70
12	CA Water	A+	NR	3	B++	0.75
13	Middlesex Water	A	NR	2	B++	0.75
14	York Water	A-	NR	3	B+	0.75
	Average	A-	A3	2	B++	0.78
	<u>Oregon-Jurisdictional Utilities</u>					
	Northwest Natural Gas	A+	A3	1	A	0.70
	Pacificorp	A-	A3	NMF	NMF	NMF
	Portland General Electric	BBB	A3	2	B++	0.80
	Average	A-	A3	2	B++	0.75
	<u>Avista Corp.</u>	BBB	Baa1	3	A	0.80

NMF - No Meaningful Figure.

(a) www.standardandpoors.com (retrieved Oct. 14, 2015).

(b) www.moodys.com (retrieved Oct. 14, 2015).

(c) The Value Line Investment Survey (Sep. 4 & Oct. 16, 2015).

VALUE LINE EPS GROWTH

	<u>Company</u>	<u>Projected EPS Growth</u>
1	Atmos Energy Corp.	7.0%
2	Laclede Group	10.0%
3	New Jersey Resources	4.0%
4	NiSource, Inc.	NA
5	Northwest Natural Gas	7.0%
6	Piedmont Natural Gas	3.0%
7	South Jersey Industries	7.5%
8	Southwest Gas Corp.	7.0%
9	WGL Holdings, Inc.	<u>5.5%</u>
	Average	6.4%

Source: The Value Line Investment Survey (Sep. 4, 2015).

VALUE LINE EPS GROWTH

	<u>Company</u>	<u>Projected EPS Growth</u>
1	Alliant Energy	6.0%
2	Ameren Corp.	7.0%
3	Avista Corp.	5.0%
4	CenterPoint Energy	NA
5	CMS Energy Corp.	5.5%
6	Consolidated Edison	3.0%
7	Dominion Resources	8.0%
8	DTE Energy Co.	5.0%
9	Duke Energy Corp.	5.0%
10	Empire District Elec	3.0%
11	Entergy Corp.	NA
12	Eversource Energy	8.5%
13	MGE Energy	7.0%
14	NorthWestern Corp.	6.5%
15	PG&E Corp.	10.5%
16	Pub Sv Enterprise Grp	3.5%
17	SCANA Corp.	4.5%
18	Sempra Energy	8.5%
19	Vectren Corp.	9.5%
20	Xcel Energy Inc.	<u>4.5%</u>
	Average	6.1%

Source: The Value Line Investment Survey (Jul. 31, Aug. 21, & Sep. 18, 2015).

TREASURY BOND YIELD

	(a) Treasury Bond Yield	(a) Authorized Gas Returns	(a) Indicated Risk Premium
1986	7.80%	13.46%	5.66%
1987	8.58%	12.74%	4.16%
1988	8.96%	12.85%	3.89%
1989	8.45%	12.88%	4.43%
1990	8.61%	12.67%	4.06%
1991	8.14%	12.46%	4.32%
1992	7.67%	12.01%	4.34%
1993	6.60%	11.35%	4.75%
1994	7.37%	11.35%	3.98%
1995	6.88%	11.43%	4.55%
1996	6.70%	11.19%	4.49%
1997	6.61%	11.29%	4.68%
1998	5.58%	11.51%	5.93%
1999	5.87%	10.66%	4.79%
2000	5.94%	11.39%	5.45%
2001	5.49%	10.95%	5.46%
2002	5.43%	11.03%	5.60%
2003	4.96%	10.99%	6.03%
2004	5.05%	10.59%	5.54%
2005	4.65%	10.46%	5.81%
2006	4.99%	10.43%	5.44%
2007	4.83%	10.24%	5.41%
2008	4.28%	10.37%	6.09%
2009	4.07%	10.19%	6.12%
2010	4.25%	10.08%	5.83%
2011	3.91%	9.92%	6.01%
2012	2.92%	9.94%	7.02%
2013	3.45%	9.68%	6.23%
2014	3.34%	9.78%	6.44%
2015	2.55%	9.45%	6.90%
AVERAGE	5.80%	11.11%	5.31%

IMPLIED COST OF EQUITY

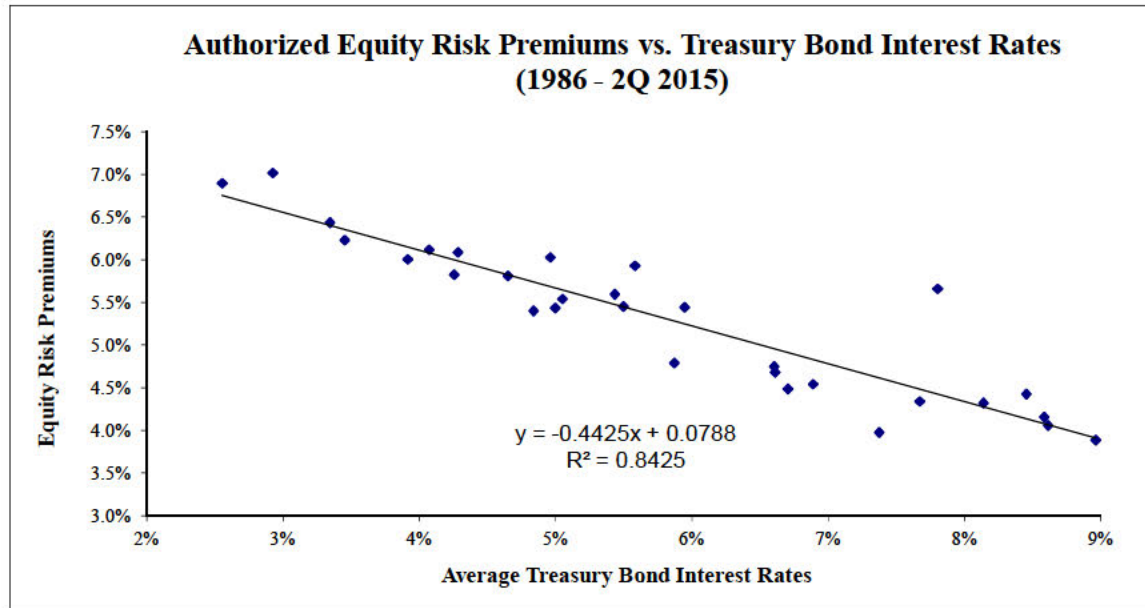
Projected Treasury Bond Yield (b)	3.80%
Average Treasury Bond Yield Over Study Period	5.80%
Change in Bond Yield	-2.00%
Risk Premium/Interest Rate Coefficient (c)	-44.25%
Adjustment to Study Period Risk Premium	0.88%
Average Risk Premium Over Study Period	5.31%
Interest Rate Adjustment	0.88%
Adjusted Equity Risk Premium	6.20%
Projected Treasury Bond Yield (b)	3.80%
Implied Cost of Equity	10.00%

(a) Exhibit NWIGU-CUB/113.

(b) See Gorman page 36, lines 16-19 for Projected Treasury Bond Yield .

(c) See regression data on page 2 of this Exhibit.

REGRESSION OUTPUT - TREASURY BOND YIELD



SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.917856417
R Square	0.842460403
Adjusted R Square	0.836833989
Standard Error	0.003570768
Observations	30

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.001909154	0.001909154	149.7330941	9.38635E-13
Residual	28	0.000357011	1.27504E-05		
Total	29	0.002266165			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.078795363	0.002195441	35.89044527	5.87349E-25	0.074298205	0.08329252	0.074298205	0.08329252
X Variable 1	-0.442513264	0.036163245	-12.23654748	9.38635E-13	-0.516590314	-0.36843621	-0.516590314	-0.368436215

REVISED GORMAN RISK PREMIUM

Avista/1201, Schedule AMM-21

Page 3 of 4

UTILITY BOND YIELD

	(a) Moody's "A" Rated Public Utility Bond Yield	(a) Authorized Gas Returns	(a) Indicated Risk Premium
1986	9.58%	13.46%	3.88%
1987	10.10%	12.74%	2.64%
1988	10.49%	12.85%	2.36%
1989	9.77%	12.88%	3.11%
1990	9.86%	12.67%	2.81%
1991	9.36%	12.46%	3.10%
1992	8.69%	12.01%	3.32%
1993	7.59%	11.35%	3.76%
1994	8.31%	11.35%	3.04%
1995	7.89%	11.43%	3.54%
1996	7.75%	11.19%	3.44%
1997	7.60%	11.29%	3.69%
1998	7.04%	11.51%	4.47%
1999	7.62%	10.66%	3.04%
2000	8.24%	11.39%	3.15%
2001	7.76%	10.95%	3.19%
2002	7.37%	11.03%	3.66%
2003	6.58%	10.99%	4.41%
2004	6.16%	10.59%	4.43%
2005	5.65%	10.46%	4.81%
2006	6.07%	10.43%	4.36%
2007	6.07%	10.24%	4.17%
2008	6.53%	10.37%	3.84%
2009	6.04%	10.19%	4.15%
2010	5.46%	10.08%	4.62%
2011	5.04%	9.92%	4.88%
2012	4.13%	9.94%	5.81%
2013	4.48%	9.68%	5.20%
2014	4.28%	9.78%	5.50%
2015	3.88%	9.45%	5.57%
AVERAGE	7.18%	11.11%	3.93%

INDICATED COST OF EQUITY

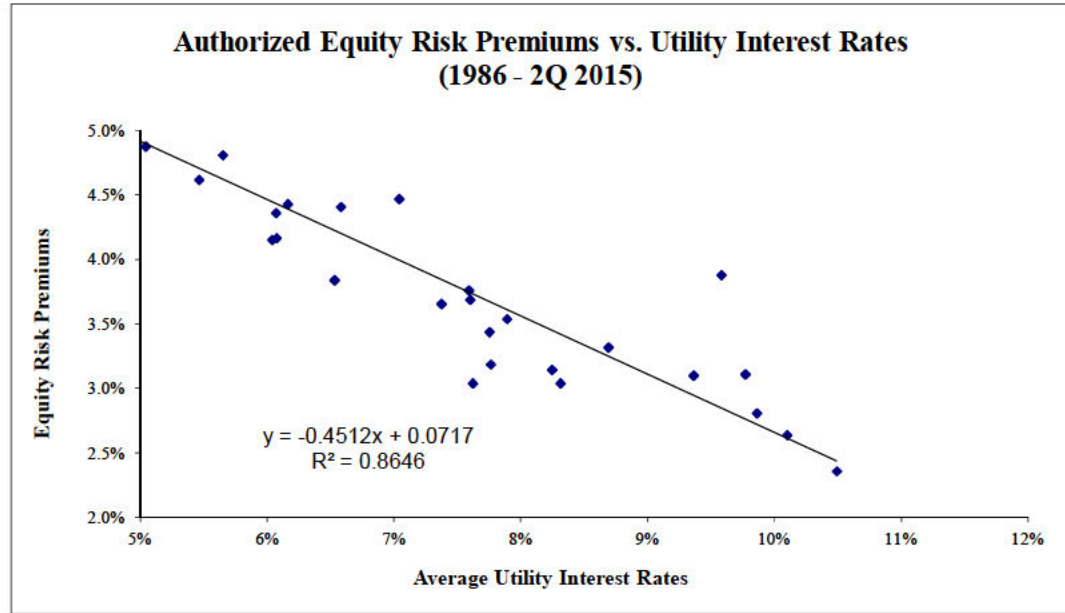
Current Baa Utility Bond Yield	5.24%
Average Treasury Bond Yield Over Study Period	7.18%
Change in Bond Yield	-1.94%
Risk Premium/Interest Rate Coefficient (c)	-45.12%
Adjustment to Study Period Risk Premium	0.88%
Average Risk Premium Over Study Period	3.93%
Interest Rate Adjustment	0.88%
Adjusted Equity Risk Premium	4.81%
Current Baa Utility Bond Yield	5.24%
Implied Cost of Equity	10.05%

(a) Exhibit NWIGU-CUB/114.

(b) NWIGU-CUB/100, Gorman/36, lines 21-23.

(c) See regression data on page 4 of this Exhibit.

REGRESSION OUTPUT - UTILITY BOND YIELD



SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.929850665
R Square	0.864622259
Adjusted R Square	0.85978734
Standard Error	0.003403106
Observations	30

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.002071038	0.002071038	178.8286845	1.11043E-13
Residual	28	0.000324272	1.15811E-05		
Total	29	0.002395309			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0717135	0.002501144	28.6722746	2.68474E-22	0.066590138	0.076836862	0.066590138	0.076836862
X Variable 1	-0.451243704	0.033743689	-13.37268427	1.11043E-13	-0.520364518	-0.38212289	-0.520364518	-0.38212289

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF SHELLY J. HEIER
REPRESENTING AVISTA CORPORATION

Return on Pension Assets

1 **I. INTRODUCTION**

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

3 A. My name is Shelly J. Heier. My business address is 999 Third Avenue, Suite
4 4200, Seattle, Washington 98104.

5 **Q. In what capacity are you employed?**

6 A. I am employed by Verus Advisory, Inc., as President, Chief Operating Officer,
7 and Senior Consultant. Verus provides investment-consulting services to institutional investors
8 including public and corporate defined benefit plans, endowments, foundations and health care
9 institutions. We advise on 130 clients with aggregate assets of \$118 billion. Verus was
10 previously known as Wurts & Associates, Inc., until April of 2015 when our firm was renamed.

11 **Q. Please describe your educational background and professional experience.**

12 A. I have been employed by Verus Advisory, Inc. (formerly known as Wurts &
13 Associates, Inc.) since 2000. In my 15 years at this firm, I have been involved in advice
14 rendered for corporate plan sponsors including investment manager research and selection, asset
15 allocation, liability driven investing, and performance evaluation. I have a bachelor's of arts in
16 finance from the University of Puget Sound and hold the Chartered Financial Analyst and
17 Chartered Alternative Investment Analyst designations.

18 **Q. What is the purpose of your testimony in this case?**

19 A. In response to the testimony of OPUC Staff witness Mr. Bahr, I will present my
20 independent evaluation of Avista's pension investment strategy, and specifically provide my
21 opinion and supporting information to demonstrate that Avista's pension investment strategy is
22 prudent and reasonable, and in the best interest of utility customers, including the 5.3% expected
23 return on assets (EROA) assumption for Avista's pension assets.

1 **Q. Please summarize the principal conclusions of your Reply Testimony.**

2 A. My Reply Testimony demonstrates that:

- 3 • Avista’s pension strategy is prudent and in the best interest of utility customers because it
4 aims to minimize the variability of net periodic pension expense by specifically limiting
5 the extreme variations in funded status caused by large movements in interest rates and
6 equity markets.
- 7 • Pension de-risking strategies, including liability-driven investing, (“LDI”), are common
8 and accepted practices among corporate plan sponsors and have been endorsed by the
9 Department of Labor and credit rating agencies.
- 10 • Changes in pension accounting standards and a national trend away from defined benefit
11 plans toward defined contribution plans have resulted in increased emphasis on pension
12 risk mitigation by corporate plan sponsors.
- 13 • Variability in funded status has a direct impact on variability in net periodic pension
14 expense and contributions. Pursuing liability driven investing helps to minimize interest
15 rate risk and equity risk, which are the two primary drivers of funded status volatility.
- 16 • While interest rate risk can be matched, the variability that equities introduce to funded
17 status cannot be mitigated. Significant equity market corrections have been the primary
18 driver of pension “crises” in the past. Reducing equity risk as a plan’s funded status
19 improves allows for less future funded status variability.
- 20 • Minimizing funded status volatility as a plan reaches a fully funded level will minimize
21 variability in net periodic pension expense and contributions, and provide more stable
22 and consistent pension expense in utility customer rates.

23 Accordingly, my Reply Testimony demonstrates that Mr. Bahr’s recommendation to
24 impute a higher EROA on Avista’s pension assets and lower annual pension costs should be
25 rejected.

26

1 **Q. How is your testimony organized?**

2 A. My testimony is organized as follows in the table of contents below:

<u>Description</u>	<u>Page</u>
I. INTRODUCTION	1
II. HISTORY OF AVISTA’S PENSION INVESTMENT STRATEGY	4
III. LIABILITY DRIVEN INVESTING IS A COMMON AND ACCEPTED PENSION MANAGEMENT PRACTICE	16
IV. CHANGES IN THE CORPORATE LANDSCAPE	20

10 **Q. Are you sponsoring any exhibits to be introduced in this proceeding?**

11 A. Yes. I am sponsoring the following Exhibits below:

<u>Exhibit No.</u>	<u>Exhibit Name</u>
AVISTA/1301	Avista Corporation, Exploration of Liability Driven Investing, July 1, 2010
AVISTA/1302	Pension Plan Asset Allocation & Liability Driven Investing, Avista Corporation, May 8, 2014
AVISTA/1303	Liability Driven Investing Phase Two, Avista Corporation Finance Committee, May 10, 2012
AVISTA/1304	SEI, 7 th Annual Global Liability Driven Investing (LDI) Poll
AVISTA/1305	Greenwich Associates Biennial Survey, U.S. Corporate Funds’ Risk Management Strategy, 2014
AVISTA/1306	Towers Watson 2014 Asset Allocations in <i>Fortune</i> 1000 Pension Plans, October 2015
AVISTA/1307	U.S. Department of Labor, Employee Benefits Security Administration, “JP Morgan Letter”, October 3, 2006
AVISTA/1308	Moody’s Analytical Approach to Defined Benefit Pension Plans, October 14, 2015
AVISTA/1309	NV Energy, Inc. Consolidated Financial Statements 2014 (excerpt)
AVISTA/1310	NorthWestern Energy 2014 Annual Report (excerpt)

1 **II. HISTORY OF AVISTA’S PENSION INVESTMENT STRATEGY**

2 **Q. Mr. Thies’ testimony indicates that you advised Avista’s Board of Directors**
3 **on shifting the asset allocation from 31% fixed income to 58% fixed income in May 2014.**
4 **Please provide the historical context and describe the analysis that led to this**
5 **recommendation.**

6 A. The decision to move to 58% fixed income in May 2014 was the result of a
7 longer-term strategy the Avista Board originally adopted in 2010 to reduce the risk the pension
8 plan creates for the company, its shareholders, its customers, and its employees. To put the May
9 2014 decision in context, it is best that I step back and provide the history of this risk-mitigation
10 strategy. In order to appropriately describe the strategy, I would like to first define some
11 terminology that the Board, Avista staff and my firm used throughout our discussions and
12 evaluations:

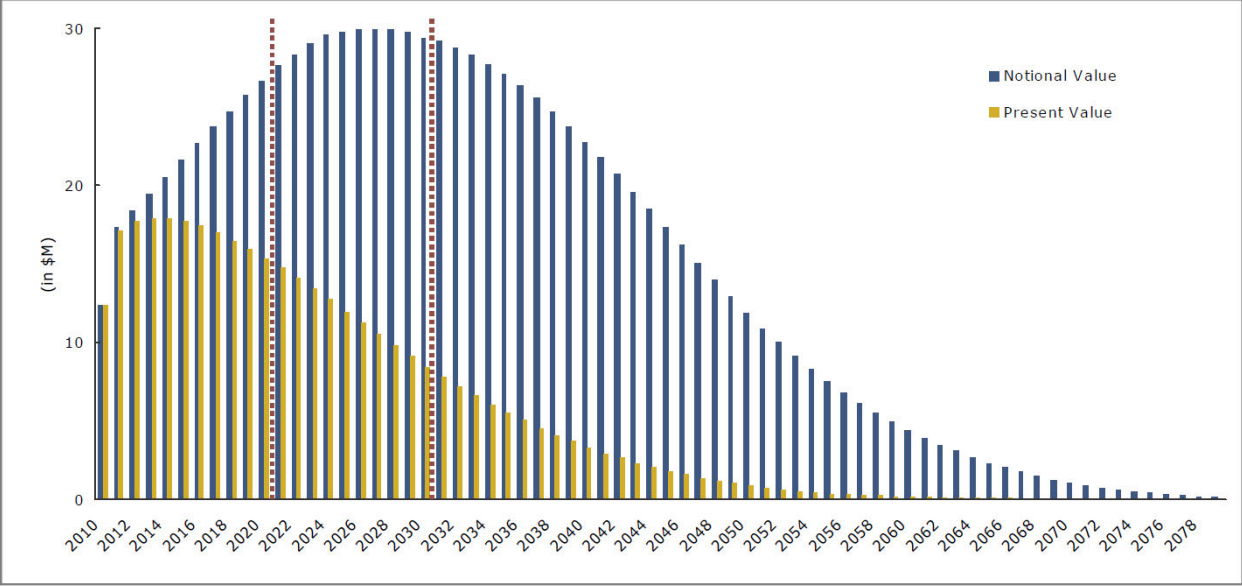
13 ***Funded status:*** A pension plan sponsor’s primary goal is to be able to meet all promises
14 made to pension beneficiaries. Those promises are a series of payments over the life of the
15 beneficiaries. Actuaries will use standard practices to forecast those future payments, and then
16 will calculate a present value of those future cash flows called a “projected benefit obligation” or
17 “PBO”. This PBO is the present value of the promised benefits, or liabilities, of the pension
18 plan.

19 The chart in Illustration No. 1, below, which is excerpted from a presentation made to the
20 Board in July of 2010¹, depicts Avista’s forecasted pension payments (in blue) as of March, 31,
21 2010. The present value (in yellow) translates the promised payments into today’s dollars using

¹ Avista/1301, Heier/9

1 a discount rate based on prevailing interest rates. The sum of these present value amounts is the
2 Projected Benefit Obligation (PBO).

3 **Illustration No. 1: Avista Pension Forecast Benefit Payments**



12 This liability measure (PBO) can then be compared to the market value of assets (MVA)
13 that are set aside to meet this obligation to determine how well positioned the plan is to meet
14 those liabilities. The ratio of MVA divided by PBO liabilities is commonly referred to as the
15 funded status. “Fully funded” would indicate a 100% funded ratio, where the MVA is equal to
16 the PBO. Because the discount rate utilized is tied to prevailing market interest rates, as market
17 interest rates change, so too will the PBO calculation. As described in the following section on
18 “duration”, as interest rates rise, PBO values will fall, and vice versa.

19 As I will demonstrate in this testimony, material changes in funded status will cause
20 pension expense to change. By stabilizing funded status as it nears 100% through liability driven
21 investing, future pension expense can be more stable and predictable, which is beneficial to
22 utility customers.

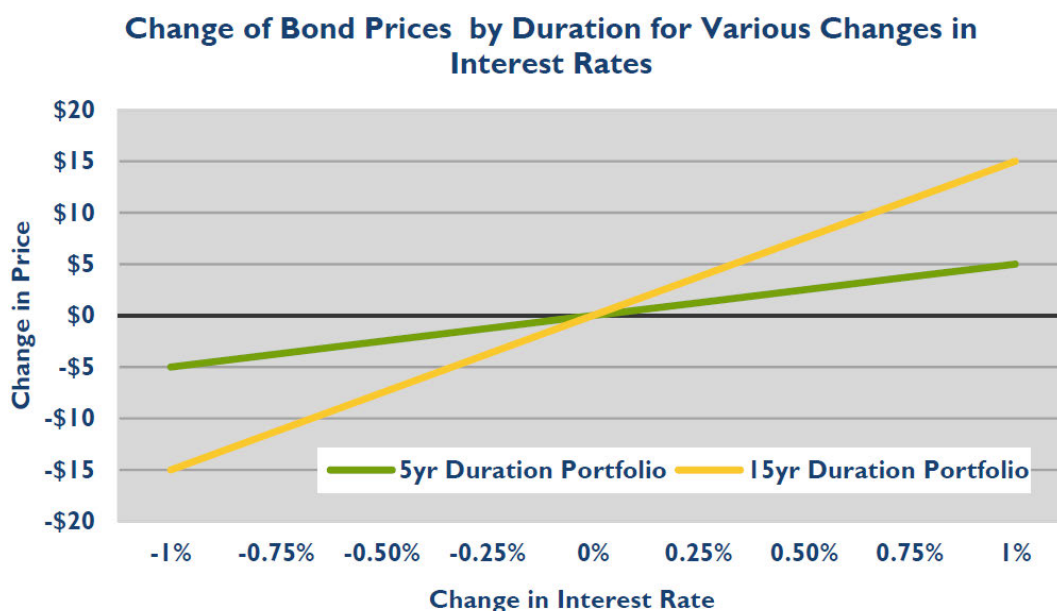
1 **Liability-driven investing:** Ultimately, a pension plan sponsor's goal is to invest pension
2 assets in order to fully pay its pension liabilities. Liability-driven investing, ("LDI"), is an asset
3 management approach in which the assets are invested in a manner such that the investment
4 return patterns – cash flow yield and/or capital gains – are similar to the patterns of the liabilities.
5 To the extent that these investment return and liability patterns are closely aligned, when external
6 events such as interest rate fluctuations or equity market swings occur, the assets and liabilities
7 would move in a similar direction and magnitude. For example, in Illustration No. 1 above, a
8 perfect LDI strategy would invest in a portfolio of securities that yielded cash flows that match
9 future years' pension payments (blue bars) over the 60+ year time frame. If interest rates move
10 up, the assets and liabilities would move down the same amount, and vice-versa. Plan sponsors
11 executing LDI strategies will utilize fixed income portfolios that have characteristics similar to
12 the projected benefit payments, such as the interest rate sensitivity (measured by duration) and
13 credit sensitivity (as in an S&P or Moodys rating, consistent with the rating of the plan sponsor).

14 As I will demonstrate further in my testimony, LDI provides a mechanism for plan
15 sponsors to more closely manage the variability of the funded status (i.e. assets divided by
16 liabilities) by better controlling how the assets move, thereby providing greater predictability in
17 pension contributions and expense.

18 **Duration:** Duration is a metric that is frequently used when discussing how sensitive the
19 pension obligations (liabilities) and assets are to interest rate movements. Duration is a cash-
20 flow weighted maturity of a stream of cash flows. It is a useful measure for estimating the
21 impact on the bond's price if interest rates change. A bond with a duration of 5 years will see a
22 loss of 5% for each 1% (one point) increase in interest rates. Duration can also be used to
23 measure or describe a corporate pension's liabilities, given the fact that the discount rate used to

1 calculate the present value of pension obligations is a market-based rate of interest. Mr. Thies'
 2 testimony provides further detail on the discount rate bond model approach. Illustration No. 2
 3 below, is a chart from a 2014 presentation to the Board,² which depicts how interest rate changes
 4 affect portfolios with differing durations. The portfolio with longer duration has far greater
 5 variation in price than a shorter duration portfolio with comparable interest rate movements.

6 **Illustration No. 2: Duration as a Measure of Bond Portfolio Sensitivity to Interest Rate**



16 When attempting to better align assets and liabilities, as described in the Liability Driven
 17 Investing description above, duration is the primary metric affecting the variability of liabilities.
 18 Avista's liabilities have a duration of roughly 15 years, therefore a one-point decrease in interest
 19 rates will result in the PBO increasing by roughly 15%. To help mitigate this interest rate
 20 sensitivity of the liabilities, an LDI strategy will attempt to introduce similar interest rate
 21 sensitivity in the assets. As I will demonstrate throughout this testimony, aligning the movement
 22 of assets and liabilities more closely will reduce the variability of the funded status. With less

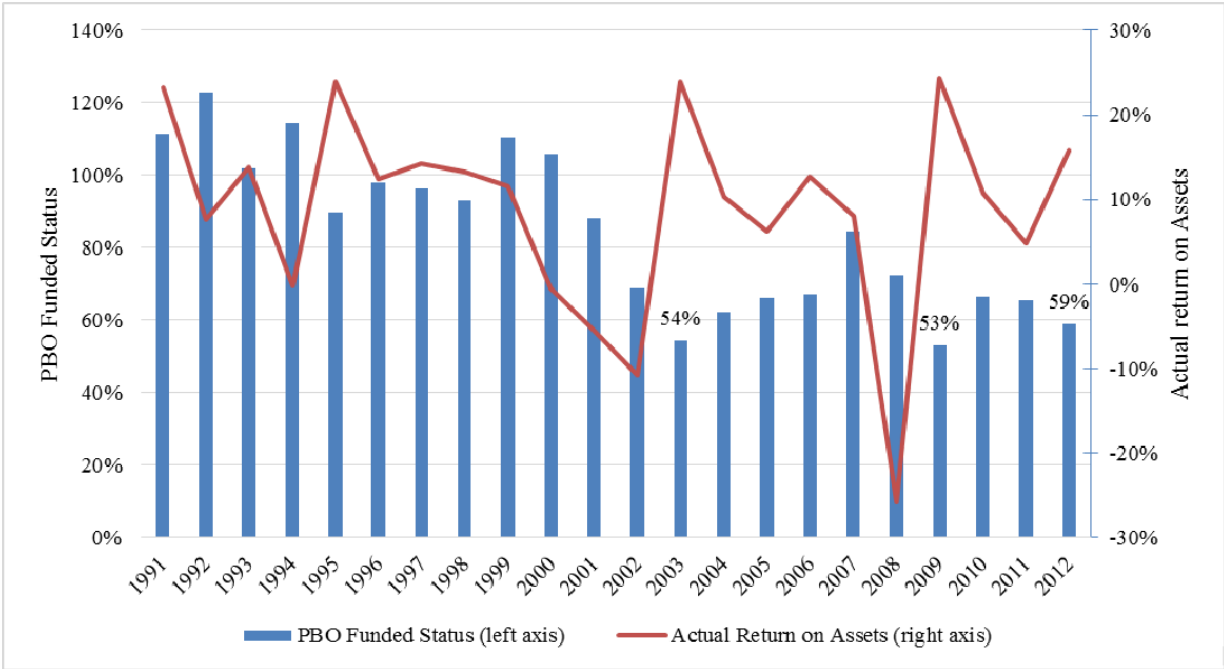
² Avista/1302, Heier/10

1 variability of funded status as the plan approaches 100% funded, the plan will have more
2 predictable and stable pension expense year-over-year.

3 **Q. What prompted Avista to consider Liability Driven Investing?**

4 A. Avista’s staff and Board began to evaluate LDI in early 2010 after the plan
5 experienced its second major drop in funded status in a decade. Illustration No. 3, below, based
6 on data provided by actuary Towers Watson in 2013, provides a multi-decade perspective on the
7 plan’s PBO funded level.

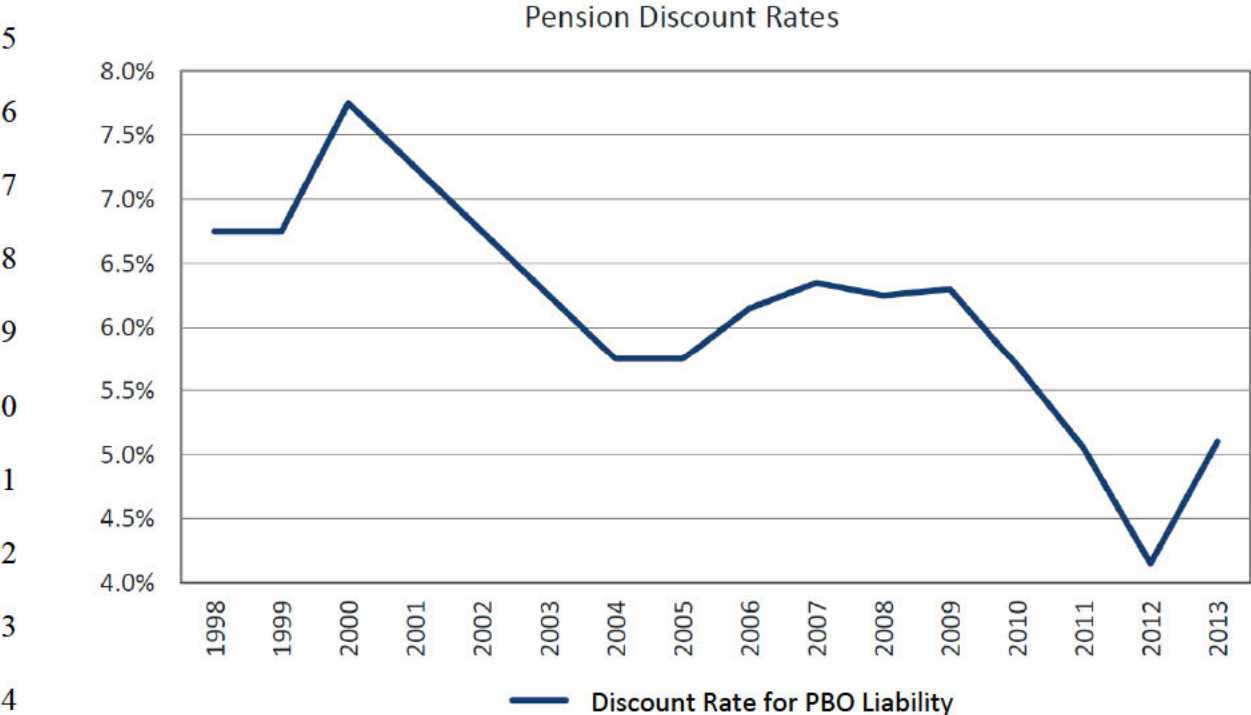
8 **Illustration No. 3: Avista PBO Funded Status and Returns 1991-2012**



18
19
20 The chart in Illustration No. 3 above, demonstrates that the plan’s funded status was more
21 consistently close to 100% during the decade of the 1990’s. However, the equity market losses
22 experienced in the 2000-2002 dot-com crash and the 2008 mortgage crisis, as well as continued

1 decline in discount rates, as depicted in Illustration No. 4³ below, caused the funded status to fall
2 below 60% twice. The funded status fell below 60% a third time due to the material decline in
3 discount rates in 2012, despite strong market returns.

4 **Illustration No. 4: Avista’s Pension Discount Rates 1998-2013**

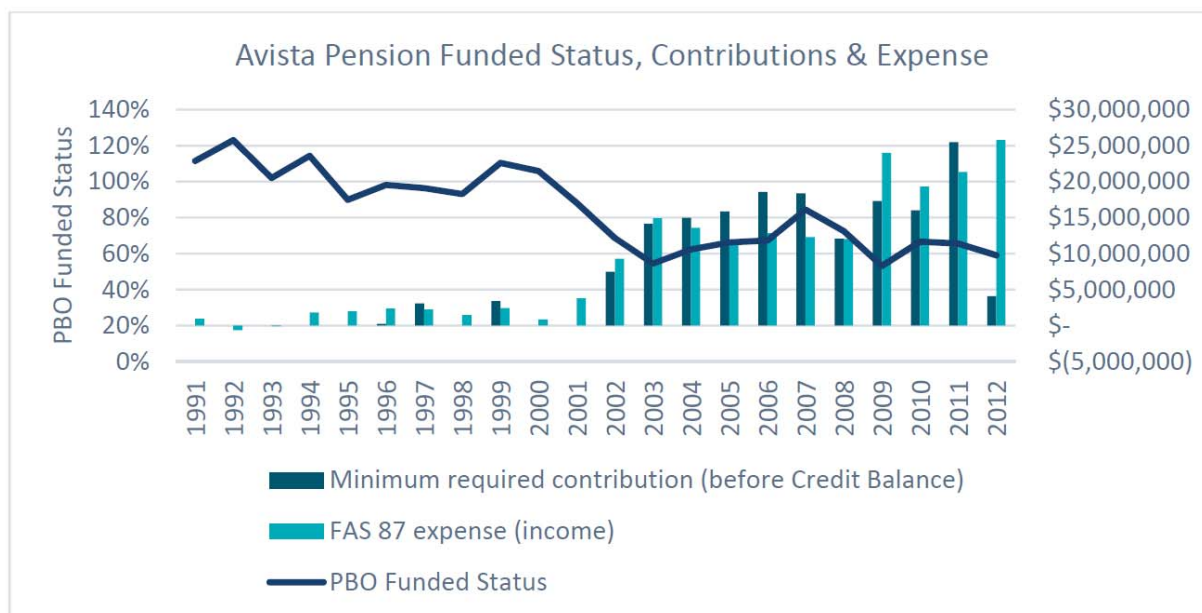


15
16 This low funded level required considerable increases in pension expense and contributions as
17 demonstrated below in Illustration No. 5.

18
19
20
21
22

³ Avista/1302, Heier/6

Illustration No. 5: Avista Pension Funded Status, Contributions & Expense



Avista’s pension expense tripled year-over-year in 2001 as a result of the equity market decline experienced in 2000. Pension expense was 17-times greater in 2003 compared to 2000 as a result of the 2000-2002 market experience. Additionally pension expense doubled year-over-year in 2009 as a result of the 2008 mortgage crisis. This impact on expense was a detriment to shareholders and customers of Avista, and such low funded levels increases risk to beneficiaries. Therefore, Avista’s Board and staff sought education on strategies to mitigate such wild swings in funded status and pension expense.

Q. Why was LDI determined to be an appropriate and prudent investment strategy for the pension fund in 2010?

A. The Board reviewed various pension risk management options, which ranged from varying levels of LDI, to third-party risk transfer and annuitization. The relative cost and increase in counterparty risk of the latter two options caused them to be eliminated for the time being. Detailed analysis conducted by Verus (then Wurts & Associates), actuary TowersWatson

1 and asset manager PIMCO, demonstrated the impact of alternative asset allocation policies on
2 funded status volatility, pension expense and contributions over time. These various asset
3 allocation policies included several LDI strategies. These LDI strategies included various
4 allocations to a bond portfolio designed to match the duration and credit sensitivity of Avista's
5 pension assets to the Avista pension liabilities. The Board evaluated the change in forecast
6 funded status variability across these alternative asset allocations, and found that adding LDI
7 would result in reduced funded status volatility driven by interest rate movements and equity
8 market fluctuations.

9 **Q. How was Avista's LDI strategy initially implemented?**

10 A. In 2010 the Board determined to implement LDI conservatively at first, given the
11 funded status was still at a relatively low level. As such, the plan's then-existing asset allocation
12 policy was maintained, but the duration of the fixed income asset portfolio was lengthened to
13 better match the duration of the liabilities. The fixed income asset portfolio was adjusted from a
14 Barclays Aggregate Bond index-based strategy to a custom benchmark that approximated the
15 duration and credit risk of the Avista liabilities. By increasing the duration of the assets, the
16 projected potential funded status volatility was reduced. Additionally, projected future pension
17 expense was lower.

18 **Q. What subsequent analysis and considerations were made by Avista?**

19 A. After implementing the LDI strategy in late 2010, we commenced monitoring and
20 evaluation of future steps. I provided education and updates on the strategy to the Board at least
21 annually, and to Avista staff regularly. In May 2012 we presented additional analysis to support

1 future steps to the Board.⁴ This included evaluation of increasing the allocation to LDI and
2 scenario analysis featuring different interest rate environments. The PBO funded status had
3 improved to 88% by this time. The Board determined to continue monitoring the funded status,
4 asset allocation, and interest rates. By December 2013, the PBO funded status had improved to
5 96% due to increased contributions, strong asset returns and an increase in interest rates.
6 Additionally, the Company was in the process of changing the structure of the retirement
7 benefits program, including shifting new employees to a defined contribution plan and away
8 from the defined benefit pension plan. Therefore, it became even more relevant to reduce the
9 variability in pension expense and the pension's funded status volatility.

10 **Q. What led to the decision to shift from 31% fixed income to 58% fixed income**
11 **in 2014?**

12 A. At the time of the decision (May 2014), the PBO funded status was estimated to
13 be 95%. In addition to carefully studying the industry acceptance and adoption rates of LDI, the
14 Board evaluated the sensitivity of the plan's funded status to both interest rate movements and
15 equity market volatility. The table in Illustration No. 6⁵ below, demonstrates the sensitivity of
16 the plan's funded status under differing equity market and interest rate scenarios. It is based on
17 the asset allocation at the time, which included a 31% allocation to LDI. It demonstrates what
18 the funded status would be after one year, including contributions and benefit payments, after the
19 varying scenarios are experienced. The scenarios included a change in interest rates from -1% to
20 +2%, plus a return on the 69% of the portfolio not invested in LDI) that ranged from +24% to -

⁴ Avista/1303

⁵ Avista/1302, Heier/11

1 24%. The component of the portfolio not invested in LDI was predominantly invested in equity
2 and equity-related investments.

3 **Illustration No. 6: 31% Allocation to LDI**

4 **1 Year Change in Interest Rates**

	PBO	-1%	0%	1%	2%
Non-LDI Assets					
1 Year Rate of Return					
	24%	95%	105%	118%	138%
	16%	90%	100%	113%	131%
	8%	86%	95%	107%	124%
	0%	82%	90%	101%	117%
	-8%	78%	85%	95%	110%
	-16%	73%	80%	90%	103%
	-24%	69%	75%	84%	96%

9

10 Illustration No. 6, demonstrates that if interest rates remain unchanged (the “0%”
11 column), and the non-LDI assets deliver an 8% return (the “8%” row) the funded status would
12 remain unchanged at 95%. However, as those scenarios deviate from that average expectation,
13 the funded status moves materially. The worst case scenario, in the darkest red, entails a decline
14 in interest rates (which increases liabilities) and a significant equity market decline (which
15 decreases assets). In this example, funded status was projected to fall to 69% if interest rates fall
16 1% and equity markets decline 24%. The best scenarios were those in which interest rates rise
17 (decreasing liabilities) and the equity markets experience double-digit returns.

18 This same analysis was evaluated for portfolios with increased LDI exposure, specifically
19 45%, 58% and 72% LDI. Illustration No. 7⁶ demonstrates the impact on funded status if the
20 portfolio is 58% LDI:

21
22

⁶ Exhibit No. Avista/1302, Heier/11

Illustration No. 7: 58% Allocation to LDI

		<u>1 Year Change in Interest Rates</u>				
		PBO	-1%	0%	1%	2%
<u>Non-LDI Assets</u>	<u>1 Year Rate of Return</u>	24%	94%	101%	109%	122%
	16%	92%	98%	106%	117%	
	8%	89%	95%	102%	113%	
	0%	86%	92%	99%	109%	
	-8%	84%	89%	95%	104%	
	-16%	81%	86%	92%	100%	
	-24%	79%	83%	88%	96%	

In comparison to the prior example with 31% LDI, Illustration No. 7 with 58% LDI shows the same potential ranges of sensitivity in interest rates and equity market movements, however, the result is that the plan's funded status change is more muted in magnitude. For example, the worst case scenario shows funded status falling to 79%, whereas the previous matrix (31% LDI) showed funded status falling to 69%. The best case scenarios still showed significant upside with the funded status exceeding 100% in many cases. Comparing these two matrices demonstrates the potential for decreased funded status variability, which was a primary objective of Avista. The range between the best and worst scenarios narrows considerably with increased LDI asset allocation. For the then-current portfolio (31% LDI), the range between the best and worst was 69 percentage points (138% minus 69%). For the 58% LDI portfolio, the range was 42 points (121% minus 79%). As discussed earlier, having less variability in the funded status year-to-year will result in the plan having less variability in pension expense on a year-to-year basis.

Q. The 2014 analysis showed you recommended a move to 45% LDI or 58% LDI. Why was the more conservative of the two selected?

1 A. As discussed above, reducing funded status volatility was the Board’s primary
 2 consideration, however, the Board also evaluated the near-term impact on contributions and
 3 pension expense. In evaluating the alternative LDI portfolios, the Board believed a 58% LDI
 4 portfolio was the most optimal portfolio, as it achieved the greatest minimization of funded
 5 status volatility and the resulting contributions and pension expense remained consistent with
 6 near-term expectations.

7 **Q. If reducing the variability in funded status is the objective, how would a full**
 8 **LDI implementation achieve that?**

9 A. Using the same analyses as presented immediately above, we can show how the
 10 funded status of a pension plan with 100% LDI would change across different interest rate and
 11 equity market scenarios. The analysis in Illustration No. 8 below is hypothetical, assuming a
 12 fully funded plan and ignoring contributions and benefit payments. While our model allows for
 13 some assumed imperfections in matching assets and obligations, one can visualize how the
 14 funded level changes minimally across the scenarios, in particular the extreme range of equity
 15 returns.

16 **Illustration No. 8: 100% Allocation to LDI for Hypothetical Fully Funded Plan**

17

		<u>1 Year Change in Interest Rates</u>				
		PBO	-1%	0%	1%	2%
<u>Non-LDI Assets</u> <u>1 Year Rate of Return</u>	24%	100%	100%	101%	102%	
	16%	100%	100%	101%	102%	
	8%	100%	100%	101%	102%	
	0%	100%	100%	101%	102%	
	-8%	100%	100%	101%	102%	
	-16%	100%	100%	101%	102%	
	-24%	100%	100%	101%	102%	

18

19

20

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22

1 By mitigating the range of potential funded status outcomes across all of these scenarios,
2 a plan sponsor can have greater predictability of pension expense and contributions. For
3 Avista's customers, this would reduce the likelihood of another market-driven "pension crisis"
4 similar to that experienced in 2000-2002 and 2008 causing increased utility rates driven by
5 increased pension expense.

6
7 **III. LIABILITY DRIVEN INVESTING IS A COMMON AND ACCEPTED PENSION**
8 **MANAGEMENT PRACTICE**

9 **Q. Is there precedent for such a de-risking strategy in corporate pension plans?**

10 A. Yes. It is commonly known that traditional defined benefit plans are diminishing
11 in utilization, and many corporations are freezing the plans in favor of offering defined
12 contribution plans; not only utility companies, but in other sectors of the economy. As a result,
13 many plan sponsors are choosing to change their risk management strategies related to their
14 defined benefit plans in order to achieve greater certainty of pension expense and contributions
15 in future years. It is estimated that liability-driven investing strategies and/or de-risking
16 strategies (which extend beyond LDI to include pension risk transfer) have been adopted by a
17 large portion of plan sponsors. In 2013 SEI Investments Management Corporation ("SEI")
18 surveyed 130 corporate plan sponsors in the US, Canada and UK (none were SEI clients), and
19 found 57% utilize an LDI strategy.⁷ In 2014 Chief Investment Officer magazine surveyed 124
20 plan sponsors and found 77% have implemented LDI.⁸ In 2013 Greenwich Associates surveyed
21 1277 institutional plan sponsors, of which 276 were corporate funds. As demonstrated in

⁷ Avista/1304, Heier/3

⁸ http://www.ai-cio.com/2014_Liability_Driven_Investing_Survey.aspx?page=2

1 Illustration No. 9 below, of these 276 corporate pension plan sponsors, 42% had established a
 2 dynamic de-risking strategy.⁹

3 **Illustration No. 9: Greenwch Survey**

4	Greenwch Associates: U.S. Corporate Funds' Risk Management Strategy (2013)			
5	Question: Have you established a dynamic de-risking strategy?			
6		# of Respondents	Yes	No
6	All Corporate Funds	276	42%	58%
7	Subsets:			
7	Over \$5 Billion	77	40%	60%
8	\$1 - \$5 Billion	124	43%	57%
8	\$501 million - \$1 Billion	52	42%	58%
9	\$500 million and under	23	43%	57%

10 Greenwch Associates did not ask this same question in their 2014 survey, however it is my
 11 belief that the adoption of de-risking strategies has continued to increase. As discussed later,
 12 numerous external factors are causing plan sponsors to minimize the variability of pension
 13 funded status, and the resulting variability in contributions and expense, in order to better
 14 manage their corporate financials and costs to customers, in addition to supporting better long-
 15 range financial planning and forecasts.

16 **Q. How have corporate plan sponsors implemented their LDI strategies?**

17 A. Each company will adopt a custom strategy that takes into consideration all
 18 facets of their enterprise, including funded status, credit rating, ability to contribute, and whether
 19 the pension is open, closed or frozen. In 2014 TowersWatson released a report on the pension
 20 plans of the Fortune 1000 companies.¹⁰ The study reviewed FASB pension disclosures of 533
 21 plan sponsors. Several elements of their study support the direction of Avista's strategy,

⁹ Avista/1305, Heier/
¹⁰ Avista/1306

1 particularly the higher allocation to fixed income. Specifically, they found that in aggregate,
2 plan “sponsors of frozen plans invested more than half their total assets in conservative, lower-
3 variance investment instruments, such as cash and debt, whereas sponsors of plans where some
4 or all workers continued to accrue benefits seemed inclined to take on riskier investments.” In
5 addition, they found a correlation between funded status and asset allocations. “Sponsors with
6 better-funded pensions held less in public equities and more in debt than their less well-funded
7 counterparts.”

8 **Q. How does this data compare to the utility industry?**

9 A. It is more difficult to obtain robust, statistically significant data on the utility
10 industry’s adoption of LDI or de-risking strategies. We believe the utility industry is faced with
11 the same demographic challenges, accounting rule changes, and pension actuarial standards as
12 the rest of corporate America, and therefore the same interest rate and equity risks. Several
13 companies have adopted EROAs similar to Avista’s, as a result of a de-risking approach. As
14 examples, NV Energy (Berkshire Hathaway Energy) reduced its EROA in 2014 to 5.3% (from
15 6.15% in 2013)¹¹. Additionally, Northwestern Energy reduced its EROA to 5.8% in 2014 (from
16 7.0% in 2013), and has a 55% target to long duration fixed income matched to their liabilities¹².

17 **Q. What other evidence can you provide that supports LDI as a common and**
18 **prudent investment practice for pension plans?**

19 A. There are two well-regarded entities that have endorsed such an approach. First,
20 the Department of Labor’s Employee Benefit Security Administration (DOL) acknowledged the

¹¹ Avista/1309

¹² Avista/1310

1 prudence of LDI strategies in an advisory opinion letter known as the “JPMorgan letter”¹³. In
2 this opinion, the DOL stated that they do not believe a fiduciary would violate “their duties under
3 sections 403 and 404 solely because the fiduciary implements an investment strategy for the plan
4 that takes into account the liability obligations of the plan and the risks associated with such
5 liabilities and results in reduced volatility in the plan’s funding requirements”. In other words,
6 the DOL ruled that utilizing LDI in order to minimize funded status variability, and thereby
7 stabilize pension contributions and expense, was a prudent and acceptable practice for corporate
8 pension plan management.

9 Second, Moody’s, one of the three most commonly used credit rating agencies, has also
10 stated that they look favorably on plans that have implemented LDI strategies.¹⁴ Their
11 accounting analysis also provides further support for the adoption of such strategies. In Moody’s
12 2015 discussion on their approach to incorporating pensions in their credit rating analysis, they
13 included a section entitled “Pension De-risking”. They note that they are “observing more
14 companies implementing de-risking strategies” and “expect to see more.” In discussing Liability
15 Driven Investing specifically, Moody’s states their view that such strategies are “generally
16 neutral for solidly positioned companies with well funded plans” and further state that such
17 strategies demonstrate “pro active approach to risk management.”

¹³ Avista/1307

¹⁴ Avista/1308, Heier/22

1 **IV. CHANGES IN THE CORPORATE LANDSCAPE**

2 **Q. Pension plans have been around for many decades, and common pension**
3 **management practices include heavier allocations to equities in order to achieve higher**
4 **rates of returns. Why is this new pension management practice of “LDI” necessary?**

5 A. Liability driven investing isn’t new. The matching of asset cash flows with
6 liability cash flows is a common practice in insurance strategies, and was very prominent in
7 pension plans in the late 1970s to early 1980s when interest rates were much higher. Common
8 practices shifted over the intervening years as we saw falling interest rates and a robust bull
9 market in equities. However, in the mid-2000’s accounting rules changed, requiring more mark-
10 to-market recognition of pension liabilities. The Pension Protection Act of 2006 also removed
11 some latitude on asset return smoothing, thereby making funded status more volatile on a shorter
12 term basis. Concurrently, we have continued to see a material increase in adoption of defined
13 contribution plans, and a shift away from defined benefit pension plans. By committing to a
14 specific up front contribution, and not a distant future benefit, companies are better able to
15 manage their financials on a current and forecast basis. As a result of these regime changes, plan
16 sponsors are motivated to alleviate the risk their defined benefit plans introduce to their
17 organizations, and their customers, by limiting the volatility they create. Therefore, LDI is more
18 relevant today than it was a decade or two ago.

19 **Q. Why is LDI a prudent approach in today’s environment of low interest rates,**
20 **particularly given the fact that if interest rates rise, long-duration bonds will lose value?**

21 A. If the pension plan assets and obligations are matched, and one is focused on what
22 happens to pension funded status, when interest rates rise the funded status will remain
23 unchanged. To the point made in response to the prior question, given the changes in accounting

1 standards as well as corporations' lower risk tolerance, ensuring less funded status volatility and
2 pension expense volatility is the primary objective, and LDI helps to achieve that.

3 There are two primary capital market factors that influence pension funded status:
4 equities and interest rates. Higher interest rates will reduce the pension obligation, and, to the
5 extent LDI is incorporated in the portfolio, interest rates will also reduce the value of the assets.
6 As interest rates move, the value of the assets and the level of the obligation move in tandem. In
7 contrast, higher equity returns will increase the assets, but have zero impact on the liabilities.
8 Herein lies the risk for plan sponsors: while interest rate risk can be matched, the variability that
9 equities introduce to funded status cannot be mitigated. As discussed next, significant equity
10 market corrections have been the primary driver of major pension funding crises in the past.
11 Reducing equity risk as a plan's funded status improves allows for less future funded status
12 variability. Minimizing funded status volatility will minimize variability in pension expense and
13 contributions, and provide more stable and consistent pension expense in utility customer rates.
14 Reduced and more stable pension expense can translate into reduced and more consistent
15 pension expense in utility customer rates.

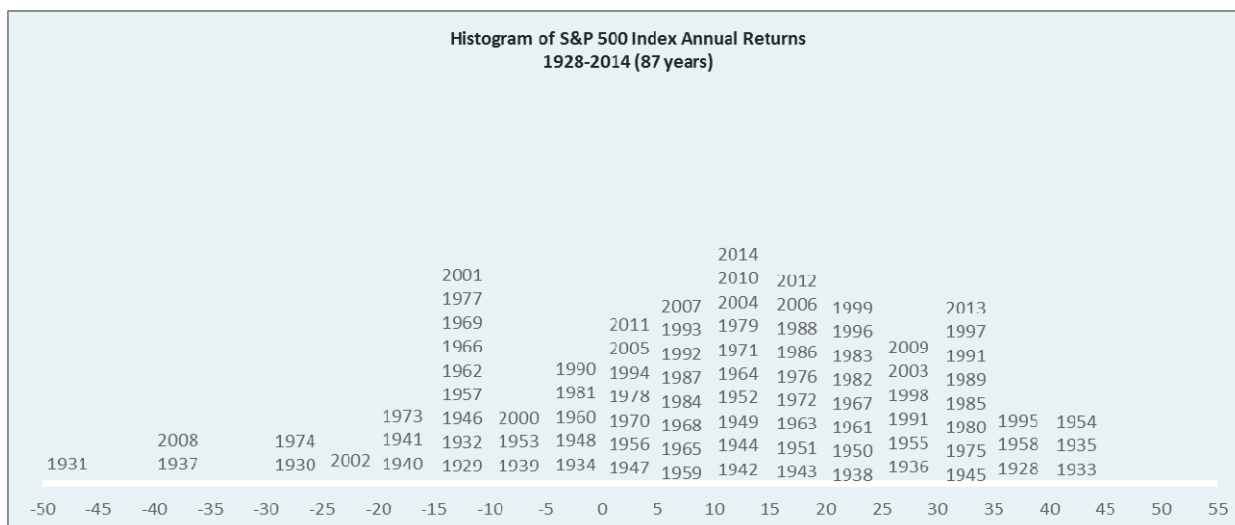
16 **Q. Why is equity risk important to manage?**

17 A. In a realm where reducing funded status variability is the primary objective, it is
18 important to understand that, while equity markets on average have delivered returns above
19 bonds, major equity market corrections or crashes have driven the majority of pension crises. As
20 Illustration No. 10 demonstrates, equity markets have provided a large variance of returns
21 throughout the years.

22

23

1 **Illustration No. 10: Historic Range of S&P 500 Index Returns by Calendar Year**



10 Illustration No. 10 demonstrates the range of returns realized by the S&P 500 Index each of

11 the past 87 calendar years. While many years experienced double-digit returns, it is critical to

12 note that 30% (26 years) fell below 0%, with 21% (18 years) seeing losses below -10%.

13 Experiences in 1973 (-17%), 1974 (-30%), 2002 (-22%) and 2008 (-37%) were detrimental to

14 pension plan assets. Liability Driven Investing is about matching the interest-rate sensitivity of

15 liabilities while at the same time mitigating the extreme draw-down risk of equities.

16 **Q. The market rebounds significantly after each of those draw-downs. Pension**

17 **investment portfolios are long-term in nature, therefore can't the plans withstand the**

18 **equity market volatility you describe above?**

19 A. Indeed, pensions are long-term in nature, particularly given how far into the future

20 the promised benefits will be paid. Additionally, common practices for developing return

21 expectations are based on long-term return forecasts, typical 10- or 20- year horizons. However,

22 with shorter asset-smoothing allowed in actuarial calculations for pension expense and

23 contributions, as well as mark-to-market accounting, these drawdowns can materially impact

1 funded status and thereby pension expense, before the assets have the ability to fully rebound in
2 the market recovery.

3 LDI allows a plan sponsor to have greater confidence in the funded level of the plan, and be
4 less susceptible to erratic markets. Further, it does not require the plan sponsor to try to
5 speculate on interest rates. Minimizing funded status volatility will minimize variability in
6 pension expense and contributions, and provide more stable and consistent pension expense in
7 utility customer rates.

8 **Q. Is the 5.3% EROA assumption utilized by Avista reasonable?**

9 A. Yes, the 5.3% return assumption is reasonable in my opinion. It has been
10 calculated in a manner consistent with Avista's long-term practice, which involves taking the
11 average of three independent sources. Verus' 10-year Capital Market Assumptions are one of
12 the three sources. Our calculation for the arithmetic average expected return was 5.2% to 5.4%,
13 with the difference between the two being attributed to net-of-fee excess returns from active
14 investment management strategies. The expected return provided by the two alternate sources
15 was 4.9% and 5.6%, representing a relatively close range of expectations. We have further
16 compared these assumptions against other reputable sources and believe the estimates to be very
17 consistent.

18 In our analysis, it was imperative that the return expectations for 2015 be reduced from
19 prior years, due to the methodology utilized in constructing long-term capital market
20 assumptions. For fixed income investments, the starting yield is a predominant input in future
21 expected returns, given the thesis that, absent defaults, a buy-and-hold fixed income strategy will
22 realize the starting yield-to-maturity. Yields were materially lower at the start of 2015 than in

1 years past. Furthermore, equity returns are dependent upon several market factors, including, but
2 not limited to, starting price-to-earnings (“P/E”) ratio, expected earnings, and inflation. These
3 data points are contrasted with a future ending P/E ratio, which is aligned with long-term
4 historical averages. At the start of 2015, given the strong equity market results in 2013 and
5 2014, the P/E ratio for equities was higher than in the prior several years. As a result, the
6 potential change in P/E ratio to the long-term historical average was smaller than in the past,
7 causing the equity expected return to decrease. In 2015, Verus reduced the expected (arithmetic)
8 return for US large cap equities to 6.7%, from 6.9% in 2014. Additionally, the long-duration
9 bond portfolio modeled for Avista was reduced to 4.2% from 5.1% in 2014. These adjustments,
10 combined with adjustments across all the asset classes, as well as the increased allocation to LDI,
11 resulted in the 5.3% return expectation for the plan.

12 **Q. Please summarize your Reply Testimony.**

13 A. Avista’s pension strategy is prudent and in the best interest of utility customers
14 because it aims to minimize the variability of pension expense by specifically limiting the
15 extreme variations in funded status caused by large movements in interest rates and equity
16 markets. When pension funded status changes materially from expectations, the subsequent
17 year’s pension expense and contributions will change materially, which can have immediate
18 impact on utility customers, as pension expense is included in rates. Avista experienced a 17-
19 fold increase in pension expense in 2003 relative to 2000 due to the dot-com crash, and a
20 doubling of pension expense in 2009 due to the 2008 market correction. Both of these events
21 had a material impact on Avista customers, and the Board wishes to avoid such extreme events
22 in the future. Therefore, a corporate strategy to minimize the variability of pension funded status

1 due to equity market and interest rate volatility is a benefit to customers. As summarized at the
2 outset, key points supporting the LDI strategy include:

- 3 • Pension de-risking strategies, including liability-driven investing, are common and
4 accepted practices among corporate plan sponsors and have been endorsed by the
5 Department of Labor and credit rating agencies.
- 6 • Changes in pension accounting standards and a national trend away from defined benefit
7 plans toward defined contribution plans have resulted in increased emphasis on pension
8 risk mitigation by corporate plan sponsors.
- 9 • Variability in funded status has a direct impact on variability in pension expense and
10 contributions. Pursuing liability driven investing helps to minimize interest rate risk and
11 equity risk, which are the two primary drivers of funded status volatility.
- 12 • While interest rate risk can be matched, the variability that equities introduce to funded
13 status cannot be mitigated. Significant equity market corrections have been the primary
14 driver of pension “crises” in the past. Reducing equity risk as a plan’s funded status
15 improves allows for less future funded status variability.

16 **Q. Does this conclude your Reply Testimony?**

17 A. Yes.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1301

Avista Corporation, Exploration of Liability Driven Investing, July 1, 2010

Avista Corporation
Exploration of Liability Driven Investing
July 1, 2010

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» Contents

- I. LDI Assessment Overview
- II. Analysis of Pension Liabilities
- III. LDI Scenario Analysis
- IV. Implementation Considerations
- V. Appendix



LDI Assessment Overview

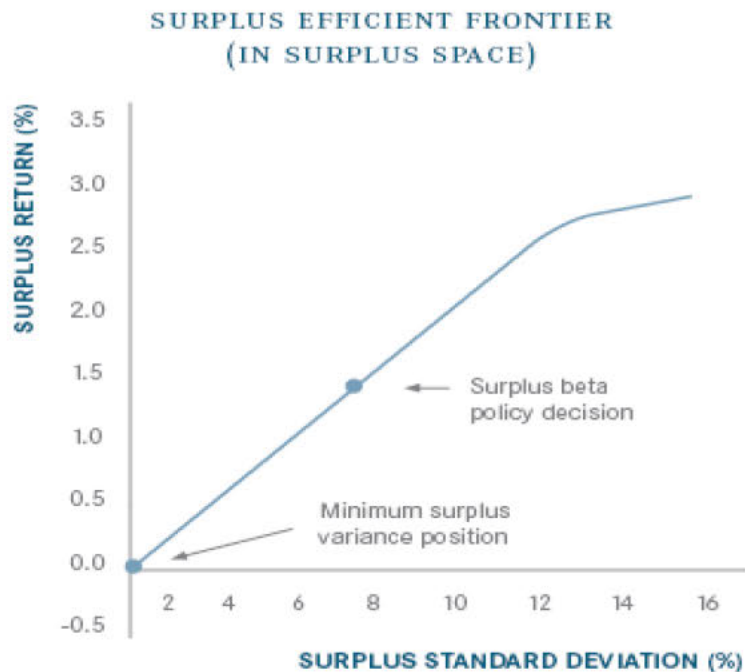
» LDI Overview

- Liability-driven investing (LDI) looks at the expected cash flows a plan will need to pay out into the future and constructs a portfolio to meet and/or potentially outperform them.
- LDI shifts the focus to the funding surplus (deficit) and maximizing the growth of the surplus (shrinking the deficit).
- The goal of LDI is to reduce or eliminate the interest rate risk embedded in the liabilities, an uncompensated risk in the portfolio.

The surplus (deficit if the value is negative) is the difference between the value of the assets and liabilities

$$\text{Surplus (Deficit)} = \text{Plan Assets} - \text{Plan Liabilities}$$

The surplus (deficit) can be determined by the current funded ratio.



- A framework that emphasizes the growth of the surplus (assets-liabilities) instead of the total return of the assets.
- Defines risk as the variability of the surplus instead of the volatility of the assets.
- The minimum surplus variance position would involve a 100% hedge of the liabilities by implementing long duration bonds.
- Higher expected returns typically involves assets (equities) that do not hedge the liabilities, creates surplus volatility.
- Efficient portfolios defined in an asset only framework are typically not optimal in an LDI framework.

» Project Overview

In order to study the feasibility of adopting a Liability Driven Investment strategy for the Avista Corporation Pension Plan, Wurts & Associates partnered with Avista's fixed income manager, Pacific Investment Management Co (PIMCO), and actuary, Towers Watson, to calculate the various metrics.

The project proceeded as follows:

1. Towers Watson provided the plan's PBO liability cash flows to PIMCO.
2. PIMCO analyzed the cash flows and developed a custom fixed income benchmark that best replicates the liabilities on a duration, credit spread duration, convexity, curve exposure and yield basis. This benchmark becomes the best means to hedge the pension liabilities.
3. Wurts & Associates created five asset mixes, in addition to the current portfolio structure, for PIMCO to analyze with the custom benchmark.
4. PIMCO analyzed the six portfolios relative to the liabilities and calculated numerous statistics with which to measure the effectiveness of the portfolios. Included was an expected return.
5. Wurts & Associates evaluated the outcomes, and after review and adjustments, delivered the expected return forecasts to Towers Watson for evaluation relative to FAS and PPA accounting standards.
6. Towers Watson calculated the impact of the revised return forecasts on various pension funding metrics (FAS and PPA) for 2011-2015 and delivered the data to Wurts & Associates for integration with the PIMCO analysis.
7. Wurts & Associates prepared this presentation utilizing data from both partners, paring information down to provide Avista pension fiduciaries a concise assessment of the analysis. The analysis from Towers Watson and PIMCO are available for review upon request.

Next Steps:

1. Review and discussion of this report
2. Interview with PIMCO on their approach to managing a portfolio to meet the custom liability benchmark
3. Presentation to and vetting by necessary Avista fiduciaries (BPAC, FC, etc).
4. Upon selection of an LDI strategy, communication with PIMCO on mandate guidelines; communication with Towers Watson on any needed changes to actuarial assumptions

Last Revised June 22, 2010

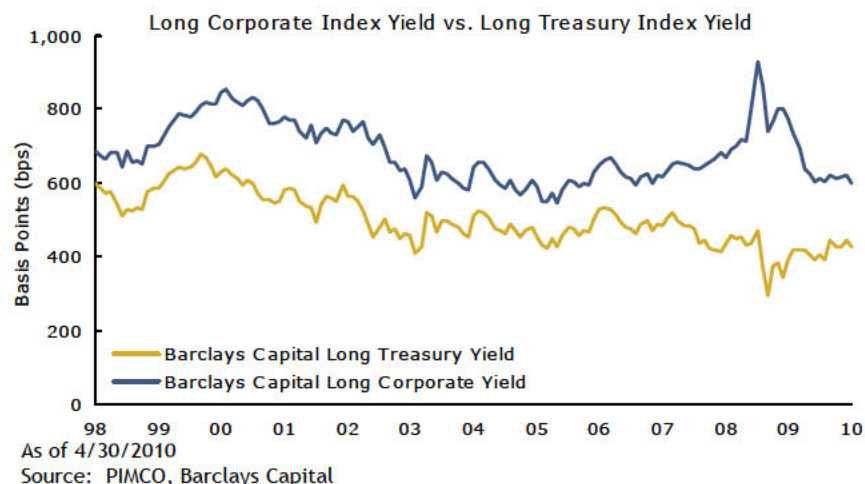
» Key Assumptions

- Plan Assets
 - As of January 1, 2010: \$272,852,000
 - As of March 31, 2010: \$285,754,000
- Pension Contributions
 - \$21,000,000 in 2010 through 2014 per the commitments made to shareholders. If any scenario resulted in minimum required contributions different from the \$21,000,000, the greater of the two figures was utilized.
- Discount Rates - Towers Watson analysis (same as used in 1/1/10 Pension Contribution and FAS Expense reports)
 - FAS 6.3%
 - PPA effective interest rate 6.59%
- Discount Rate for PBO liability cash flows - PIMCO
 - April 30, 2010 PPA Curve
- Asset Class Expectations
 - Equity and alternative assumptions based on Wurts' 2010 Capital Market Assumptions
 - Fixed income and levered equity (StocksPlus, etc) based on PIMCO's modeling
 - See Appendix for details

» LDI Environment / Possible Outcomes

Current Environment:

- Treasury yields are low on the short end, however the yield curve remains steep
- Corporate yield spreads have narrowed significantly since the crisis in 2008 but remain slightly above average
- European economic concerns in May resulted in a modest flight to quality (US Treasuries)



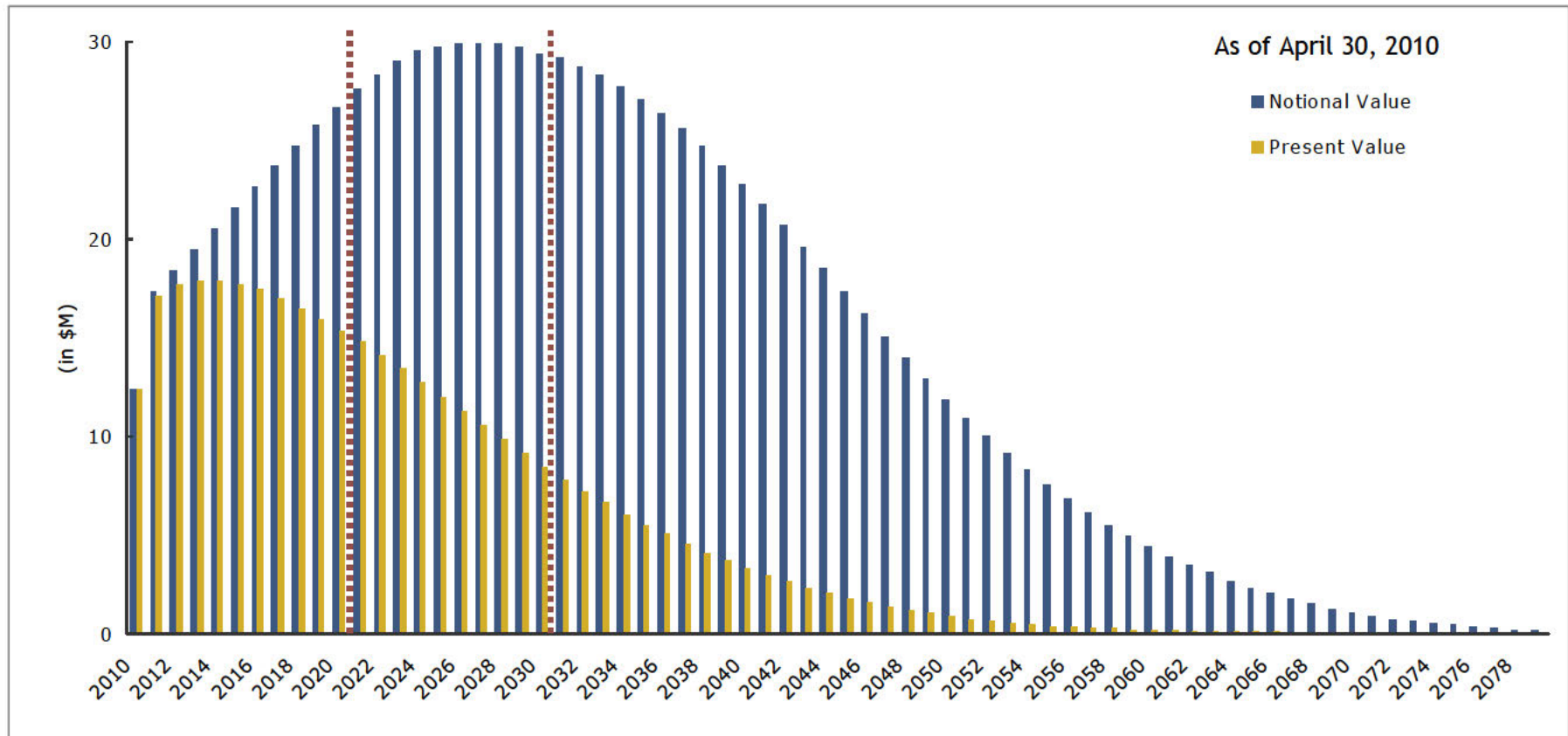
Liabilities	LDI Strategy	Scenario	Comments
↓	↓	Credit spreads remain constant, while Treasury yields rise across the yield curve due to concern over inflation and/or national debt. A longer duration fixed income portfolio will underperform an intermediate duration portfolio as rising yields cause prices to fall.	Most likely scenarios
↔	↑	Credit spreads remain constant, while Treasury yields rise at the low end but the yield curve flattens. A double-dip recession could cause the yield curve to invert. Rising rates affect intermediate bonds but minimal (or slight positive) effect on long duration.	
↓	↓	Credit spreads widen while Treasury yields rise, as investors demand better risk-adjusted returns in a period of increasing defaults and continued uncertainty regarding the US national debt.	Possible - examples in the 1980's
↑	↑	Treasury yields fall as world's economic system collapses and US Treasuries are recipient of a flight to quality. Credit spread movements would enhance/dampen effects but would likely be overwhelmed by overall interest rate movements.	Hope Not!



Analysis of Pension Liabilities

» Analysis of Pension Liabilities

- Towers Watson provided the Pension's PBO liability cash flows to PIMCO.
- PIMCO discounted the cash flows using the PPA Curve as of 03/31/2010



SOURCE: PIMCO Optimizer™, Avista, Towers Watson

NOTE: PIMCO assumed the following credit spread duration Beta adjustment factors: Corporate/Credit AAA=0.6, Corporate/Credit AA=0.7, Corporate/Credit A=1.0, Corporate/Credit BBB=1.5, PPA Liabilities (A-AAA) = 0.9, Treasuries = 0.0

» Analysis of Pension Liabilities

- PIMCO calculated bond statistics from the PBO cash flows, shown below.
- PIMCO then determined a custom fixed income benchmark that best matches these statistics.

As of April 30, 2010	Fixed Income Benchmark Indices					
	Avista Pension Liabilities	B.C. Aggregate Index	B.C. Long Govt/Cred Index	B.C. Long Credit Index	Citigroup 20+ Index	Custom 85% B.C. Long Credit / 15% Citi 20+ Index
Duration	14.2	4.4	12.4	12.1	26.6	14.2
Beta-Adjusted Credit Spread Duration	12.8	2.1	8	13.9	0	11.9
Convexity	3.1	-0.5	2.2	2.2	7	2.9
Curve Duration	-3.8	0.7	-2.5	-2.3	-10.2	-3.5
Yield	5.96%	3.35%	5.22%	5.93%	4.78%	5.76%

Helpful Definitions:

- B.C. - Barclays Capital, index provider (indices were formerly maintained by Lehman Brothers)
- Duration - a measure of the sensitivity of the price of a fixed income investment to a change in interest rates; expressed as a number of years.
- Beta-Adjusted Credit Spread Duration - A PIMCO metric that adjusts duration for the credit risk of an instrument; as higher quality instruments will be less volatile relative to interest rate movements.
- Convexity - a measure of the curvature in the relationship between bond prices and yields that demonstrates how the duration of a bond changes as the interest rate changes.

» Custom Benchmark Facts

PIMCO found that an index comprised of 85% Barclays Capital Long Credit Index and 15% Citigroup 20+ STRIPS Index best matches the Avista Pension Liabilities.

Barclays Capital Long Credit Index:

Barclays Capital U.S. Long Credit Index includes both corporate and non-corporate sectors with maturities equal to or greater than 10 years. The corporate sectors are Industrial, Utility, and Finance, which include both U.S. and non-U.S. corporations. The non-corporate sectors are Sovereign, Supranational, Foreign Agency, and Foreign Local Government. It is not possible to invest directly in an unmanaged index. Prior to November 1st, 2008, this index was published by Lehman Brothers.

Citigroup 20+ STRIPS Index:

Citigroup STRIPS Index, 20+ Year Sub-Index represents a composition of outstanding Treasury Bonds and Notes with a maturity of at least twenty years. The index is rebalanced each month in accordance with underlying Treasury figures and profiles provided as of the previous month-end. The included STRIPS are derived only from bonds in the Citigroup U.S. Treasury Bond Index, which include coupon strips with less than one year remaining to maturity. The index does not reflect deductions for fees, expenses or taxes.

Educational Note: Liabilities are sensitive to shifts in two key risk factors: Treasury rates (duration) and Corporate spread shifts (spread duration)

	B.C. Long Credit Index	Citigroup 20+ Index
Duration	12.23	26.6
Average Quality	A2/A3	AAA
Market Value (\$MM)	\$811,291	\$27,350
Number of Issues	1,120	n/a
Sector Allocation		
Corporate	82.0%	-
<i>financials</i>	17.8%	-
<i>utilities</i>	13.7%	-
<i>industrials</i>	50.4%	-
Sovereign/Supranational	7.1%	-
Local Authority/Agency	10.9%	-
Treasury	-	100%
Securitized	-	-
Total	100.0%	100.0%
Quality Breakdown		
AAA	2.0%	100.0%
AA	15.9%	-
A	40.3%	-
BBB	41.8%	-
Total	100.0%	100.0%
Top 5 Issuers		
US Treasury	-	100%
Brazil	3.11%	-
General Electric	2.49%	-
Citigroup	1.58%	-
Wal-Mart	1.46%	-
AT&T	1.40%	-
Total	10.04%	100.0%

» Observations on Liabilities

- A risk worth noting relates to the long tail of the Pension’s cash flows.
- On a notional basis, cash flows extend to 2089
- On a present value basis, cash flows extend to roughly 2067
- The *liquid* bond market thins significantly beyond 30 years (2040)
- Therefore, it is more difficult to defease the risk associated with the Pension’s longer term liabilities in the cash bond market. As such, synthetic strategies may be necessary

<u>Maturity Distribution of Pension Liabilities</u>				
	0-10 Years	10-20 Years	20-30 Years	+30 Years
Present Value (%)	49%	31%	14%	6%
Duration (%)	18%	36%	35%	11%
Duration (years)	2.5	5.1	5.0	1.6

Source: PIMCO



Limited liquid bonds in
this maturity/duration
range



Scenario Analysis

» Scenario Analysis

The scenario analysis was conducted in two separate studies, one by PIMCO, the other by Towers Watson, as each partner provides a different perspective on assets and liabilities.

Key Element of PIMCO's Analysis	Key Elements of Towers Watson's Analysis
<ul style="list-style-type: none"> • Duration matching • Credit spread & duration matching • Surplus volatility • Expected return on assets 	<ul style="list-style-type: none"> • FAS funded status (ABO) • FAS pension expense • PPA funded status • Minimum contributions

As a result of the separation of the study, there were modest differences in assumptions.

- PIMCO used 3/31/10 market values and, where possible, 4/30/10 fixed income benchmark statistics including yields.
- Wurts' Capital Market Assumptions are as of 1/1/10, therefore there was a mis-match between our estimate of Pension returns for the current allocation in January, and PIMCO's estimate as of 4/30/10, due to changes in interest rates.
- Towers Watson used market values and liabilities as of 1/1/10 based on 1/1/09 FAS and PPA reports.
- PIMCO used the 4/30/10 yield curve for the discount rate.
- Due to the closeness in return forecasts for a few scenarios, Towers Watson used just four of the five scenarios to minimize cost. Wurts has approximated the fifth scenario as the midpoint between two other scenarios and has footnoted this as "estimated" throughout.

This section will walk through the separate analyses briefly, then provide a combined perspective.

Helpful Definitions:

Surplus volatility is the standard deviation of surplus returns or the tracking error of assets vis-à-vis liabilities. The model estimates a distribution of surplus volatility using mean-variance optimization, with the liabilities included as a "negative asset". The number that results is a "one standard deviation move," which is the percentage change in funding (up or down) that contains 2/3 of the probability distribution. Another way of expressing the same idea is to say that one year out of six, the change in funding will be greater than the estimated volatility (on the upside) and one year out of six the change will be greater (on the downside). References to the "95th percentile" is the same calculation, but reflecting a two-standard deviation move, ie, a "1 year out of 20" change in funded status.

» PIMCO Analysis

- After constructing the liability hedging benchmark, PIMCO conducted scenario analysis utilizing that benchmark.
- Aside from the fixed income benchmark data, PIMCO used Wurts & Associate’s 2010 Capital Market Assumptions and recommended portfolio mixes. See appendix for assumptions.
- Portfolio mixes studied:

	Current Structure A	Extending Duration in Current Framework B	Increasing Fixed Allocation & Extending Duration			Incorporating Derivatives (Leverage) & Extending Duration F
	A	B	C	D	E	F
Asset Allocation						
US Large Cap	32%	32%	20%	18%		25%
US Small Cap	4%	4%	2%	0%		
Int'l Developed	12%	12%	12%	10%		
Emerging Markets	4%	4%	4%	2%		
Duration-Matched Bonds		31%	50%	70%	100%	100%
Core Fixed	21%					
High Yield	5%					
TIPS	5%					
Commodities	2%	2%	2%			
Real Estate	5%	5%	5%			
Absolute Return (HFOF)	10%	10%	5%			
	100%	100%	100%	100%	100%	125%

- As discussed previously, the A-F mixes demonstrate a progressive path for LDI integration

» PIMCO Analysis

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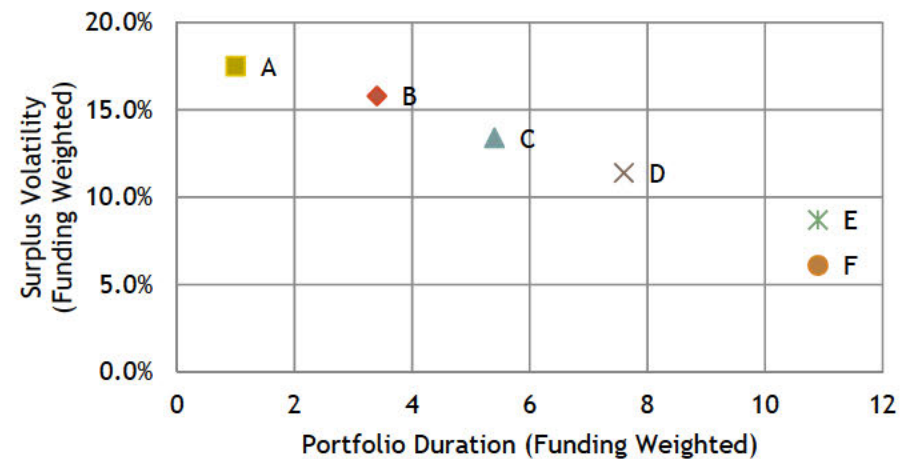
	A	B	C	D	E	F
Return Forecasts						
PIMCO's Estimated Returns	6.7	7.3	6.9	6.5	5.8	7.9
Impact of Changing the Fixed Income Benchmark						
Fixed Income Duration	4.4	14.2	14.2	14.2	14.2	14.2
Portfolio Duration (wtd by allocation)	1.4	4.4	7.1	10.0	14.2	14.2
Portfolio Duration (wtd by funded status)	1.0	3.4	5.4	7.6	10.9	10.9
Duration Coverage (Funding Weighted)	11%	24%	38%	53%	76%	93%
Surplus Volatility (Funding Weighted) - %	17.5%	15.8%	13.4%	11.4%	8.7%	6.1%
Surplus Volatility (Funding Weighted) - \$M	\$50	\$45	\$38	\$33	\$25	\$17
Est 95th %-tile Surplus VAR - %	30.2%	27.3%	23.2%	19.7%	15.1%	10.5%
Est 95th %-tile Surplus VAR - \$M	\$86	\$78	\$66	\$56	\$43	\$30
Est. Asset-Only Volatility - %	10.8%	11.7%	10.4%	10.3%	10.4%	13.8%
Est. Asset-Only Volatility - \$M	\$31	\$34	\$30	\$29	\$30	\$39
Excess Rtn over Liab. / Surplus Vol	0.04	0.08	0.07	0.05	-0.02	0.33

Comparative Analysis follows.

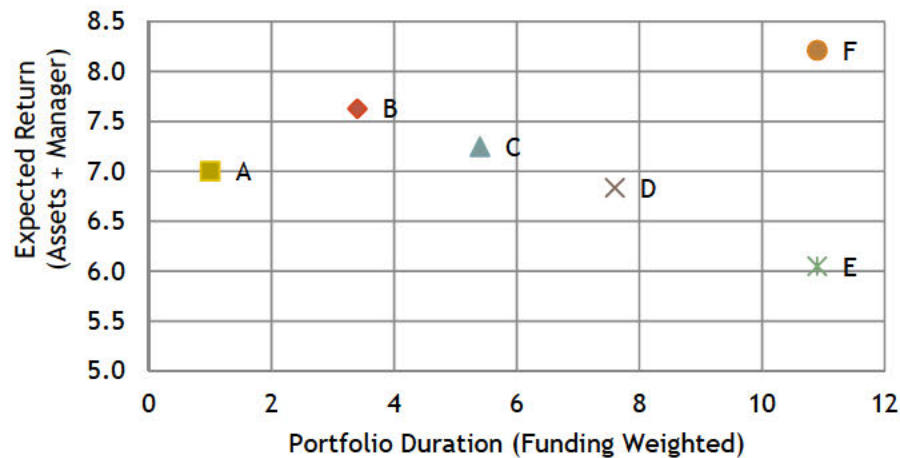
» PIMCO Analysis

- As expected, the analysis finds that as more LDI is incorporated (i.e. portfolio duration increases), the volatility of the pension surplus/(deficit) decreases.
- On an asset-only basis, portfolio volatility does not increase too significantly when incorporating LDI, up until the point leverage is introduced (mix F).
- Given the expected return differential between equities and fixed income, portfolio mixes that increase fixed income result in reduced expected ROAs. Mix B, which maintains the current allocation to fixed income but increases its duration, sees a slight uptick in expected returns due to the steep sloping yield curve.

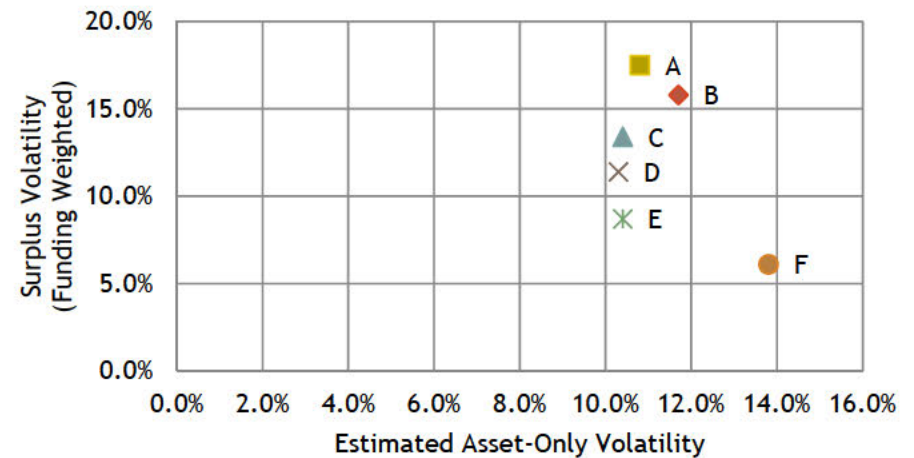
Portfolio Duration & Surplus Volatility



Portfolio Duration & Expected Return on Assets



Asset-Only Volatility & Surplus Volatility



» Towers Watson Analysis

- After PIMCO provided their analysis, the return forecast for the six portfolio mixes was provided to Towers Watson for their analysis.
- Before finalizing, Wurts provided an adjustment for returns from active management for consistency with past practices.
- Given the similarity between some of these return assumptions, Towers Watson ran just four scenarios with returns of 6.1% (E), 6.8% (D), 7.3% (C), 8.2% (F). They provided the current model with the 7.75% assumption (proxy for B). To estimate the figures for scenario A, Wurts calculated midpoints between (D) and (C). This is denoted throughout the presentation as “A (EST)”.

	Current Structure A	Extending Duration in Current Framework B	Increasing Fixed Allocation & Extending Duration C D E			Incorporating Derivatives (Leverage) & Extending Duration F
Return Forecasts						
PIMCO's Estimated Returns	6.70	7.30	6.90	6.50	5.80	7.90
Wurts' Est. For Active Mgmt	0.30	0.33	0.35	0.34	0.25	0.31
Total Estimated Return	7.00	7.63	7.25	6.84	6.05	8.21

Active Manager Contribution Assumptions					
Asset Class	Excess Return	Active Weight	Asset Class	Excess Return	Active Weight
Large Cap US Equity	0.50	50%	High Yield Fixed Income	0.00	0%
Small/Mid Cap US Equity	2.00	0%	TIPS	0.00	0%
International Large	1.25	60%	Commodities	0.00	0%
Emerging Markets	2.00	100%	Real Estate	0.00	0%
US Fixed Income	0.25	100%	Absolute Return (HFOF)	0.00	0%

» Towers Watson Analysis

(Select data)

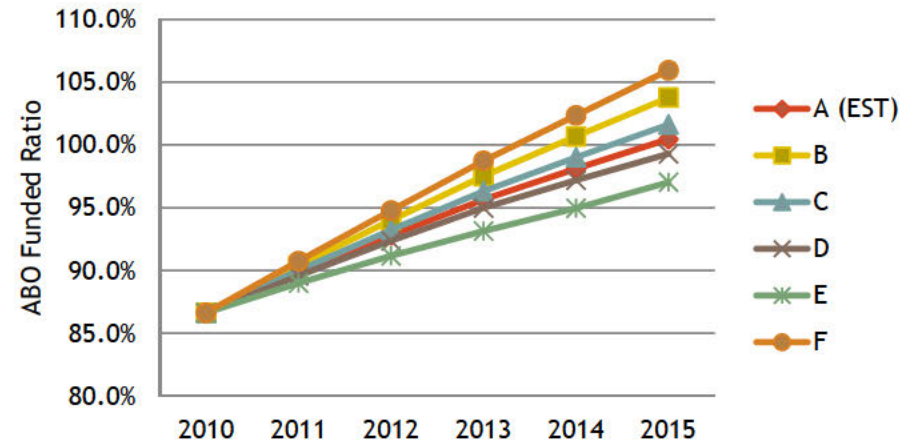
	A (EST)	B	C	D	E	F
Actuarial Impact - FAS (as of Jan 1)						
FAS Funded Status - 2013	-\$64,333,000	-\$57,597,000	-\$61,941,000	-\$66,725,000	-\$73,348,000	-\$53,216,000
FAS Funded Status - 2015	-\$48,511,000	-\$35,511,000	-\$43,921,000	-\$53,101,000	-\$61,991,000	-\$26,961,000
ABO Funded Ratio - 2013	95.6%	97.5%	96.3%	95.0%	93.1%	98.7%
ABO Funded Ratio - 2015	100.5%	103.8%	101.6%	99.3%	97.0%	105.9%
FAS Expense - 2013	\$18,298,000	\$15,236,000	\$17,220,000	\$19,376,000	\$22,277,000	\$13,209,000
FAS Expense - 2015	\$16,108,500	\$12,262,000	\$14,779,000	\$17,438,000	\$20,755,000	\$9,658,000
Actuarial Impact - PPA (as of Jan 1)						
PPA Funded Status - 2013	100.7%	101.9%	101.1%	100.2%	98.7%	102.7%
PPA Funded Status - 2015	104.0%	106.5%	104.9%	103.2%	101.5%	108.3%
Minimum Contribution* - 2013	\$20,796,000	\$20,129,000	\$20,558,000	\$21,034,000	\$22,044,000	\$19,697,000
Minimum Contribution* - 2015	\$21,142,000	\$14,277,000	\$20,616,000	\$21,668,000	\$23,462,000	\$9,637,000
<i>*before credit balance</i>						

Comparative Analysis follows.

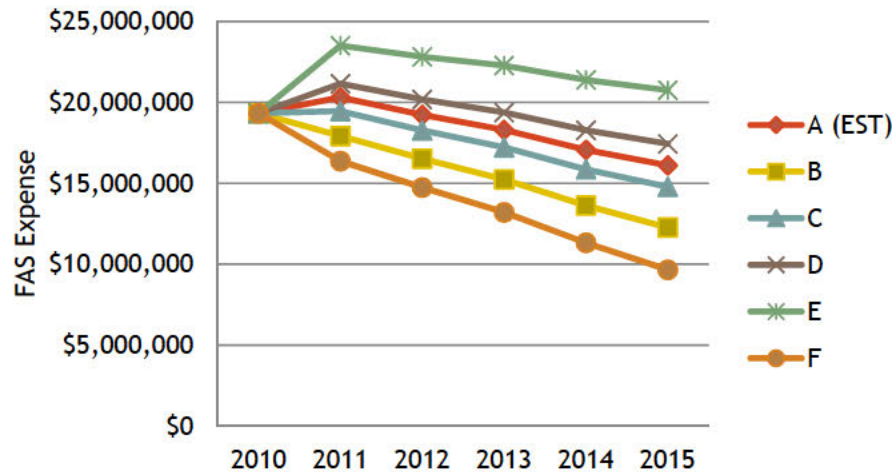
» Towers Watson Analysis - FAS

- Setting aside Scenario F for the moment, we see a trend develop in which Scenario B is superior on Funded Ratio statistics and FAS expense. This is because B has the second highest expected return in the analysis.
- Scenario E, which is 100% long bonds, does not meet the 100% funded target by 2014 or 2015 and carries the highest FAS Expense as well. This is of course due to the expected underperformance relative to liabilities for this portfolio.

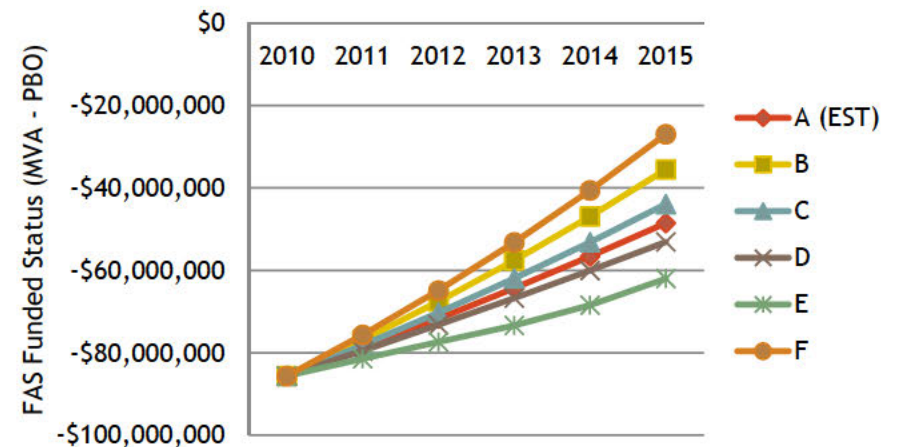
ABO Funded Ratio
as of January 1



FAS Expense



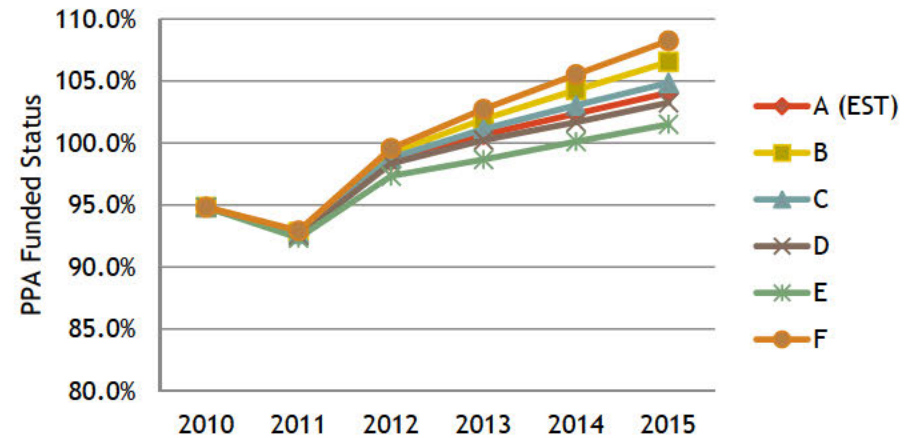
FAS Funded Status
as of January 1



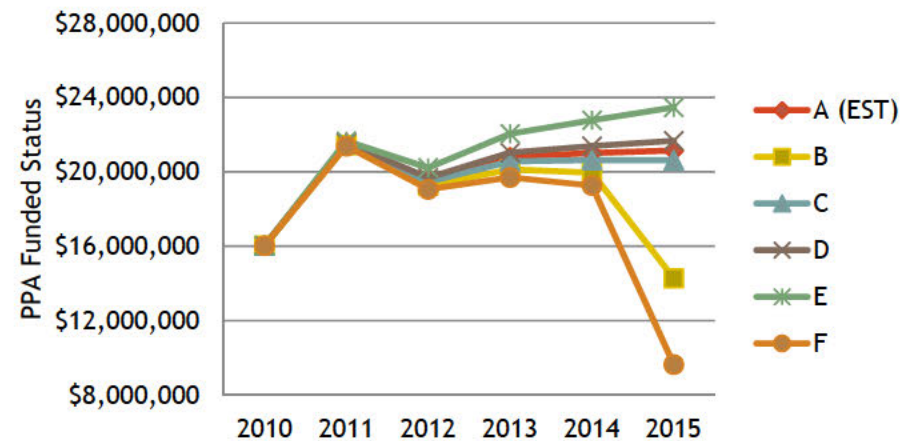
» Towers Watson Analysis - PPA

- PPA funded status trends are consistent with ABO funded status.
- 2008's investment losses are still affecting PPA funded status in 2010 and 2011, after which funded status begins to improve.
- Minimum contributions remain in the planned \$21 million range for most scenarios. As most scenarios pass 100% funded (PPA) in 2013 or 2014, minimum contributions stabilize (A,C,D) or fall (B,F)

PPA Funded Status
as of January 1

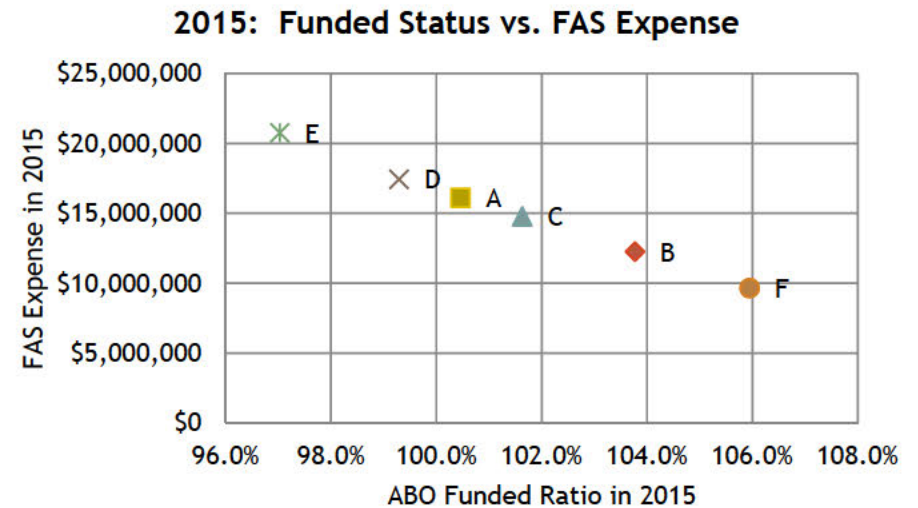
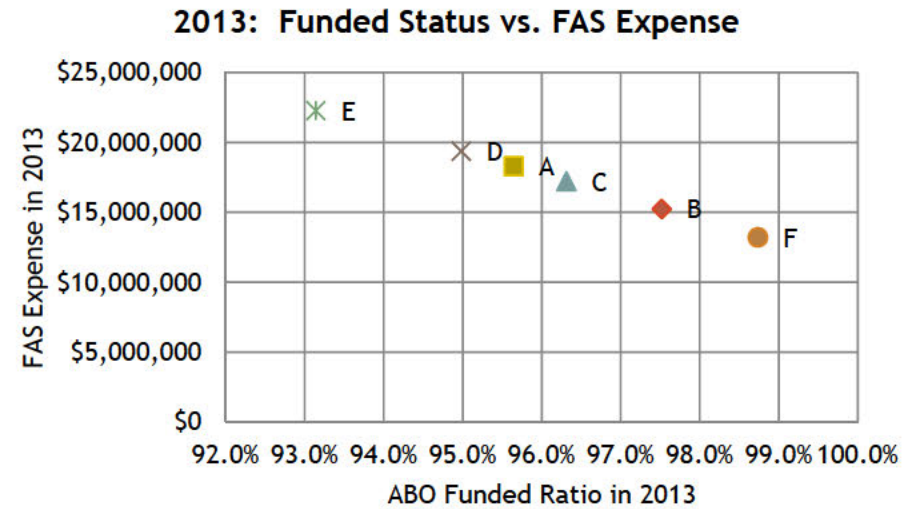


Minimum Contribution (before credit balance)
as of January 1



» Towers Watson Analysis - FAS

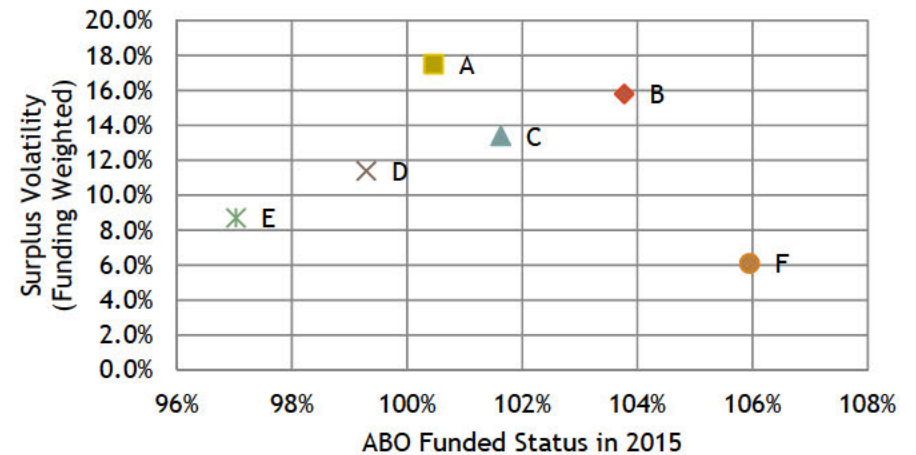
- These charts demonstrate the projected ABO funded status and FAS expense in 2013 and 2015. With a few years of achievement of the expected returns incorporated, the improved funded status with the higher returning scenarios (B,F) results in lower FAS expense amounts.



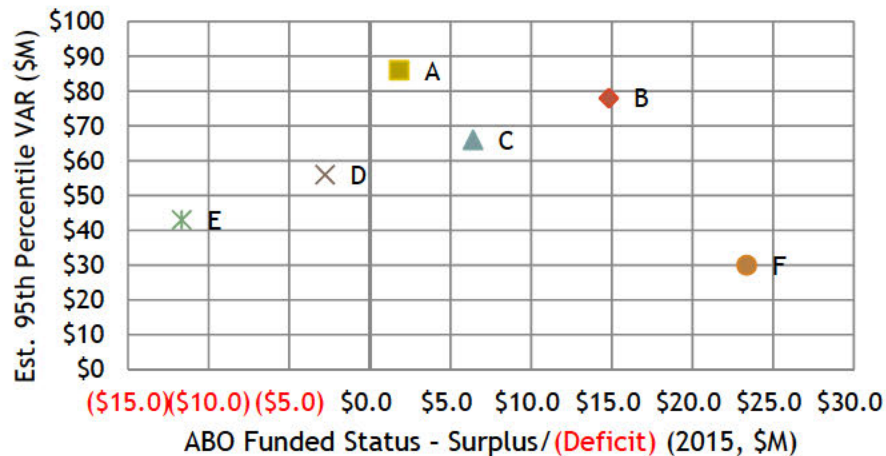
» Integrated Analysis

- Surplus volatility is the standard deviation of surplus returns, expressed as a percent of the assets. One standard deviation move in both directions (measured in % or \$) is the change in funding that contains 2/3 the probability distribution.
- For example, in the chart at right, F has a expected 106% funded status, with a surplus volatility of 6%, meaning the expected value has a 66% probability of being between 100% and 112%. Conversely, B's range is roughly 88% to 120%.
- At lower right, the surplus/(deficit) versus surplus volatility is shown in dollar terms. F's range is a surplus of \$6M to \$40M, while B's is from a deficit of \$30M to a surplus of \$60M.
- VAR represents the 95th percentile, or a 2-standard deviation event.

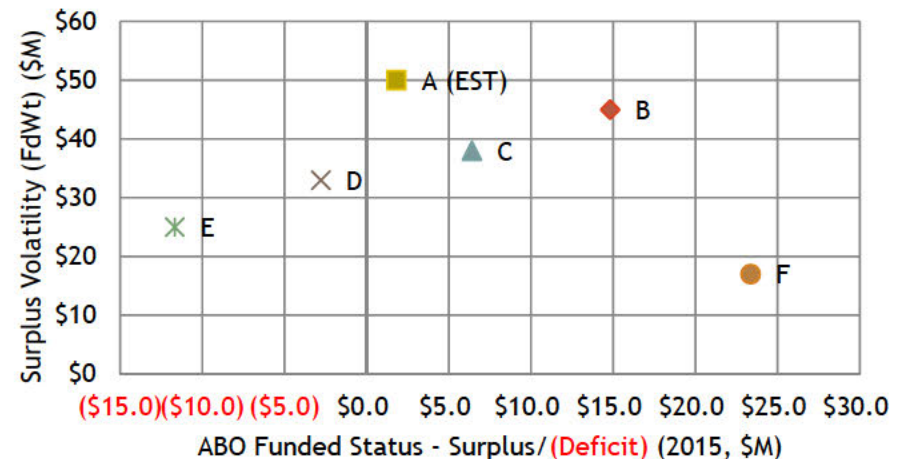
Funded Status (2015) & Surplus Volatility



ABO Surplus/ (Deficit) (2015) & VAR (\$M)



FAS ABO Surplus / (Deficit) (2015) & Surplus Volatility



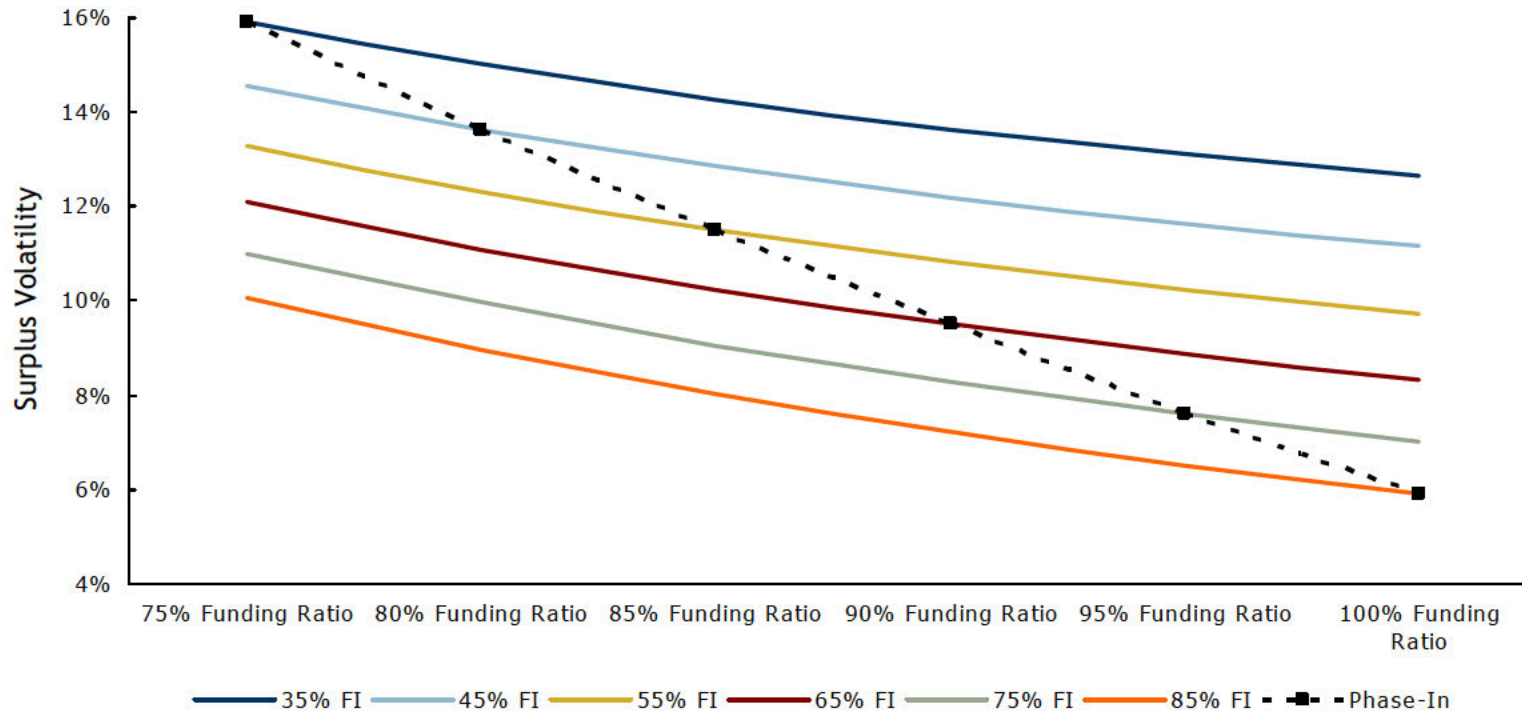


Implementation Considerations

» Implementation Considerations

- An attractive path for many corporate pension plan sponsors has been to increase the exposure to LDI strategies as funded status approaches 100% such that surplus volatility risks are reduced once the funding gap is narrowed.
- Given the uncertainty of market movements on a year-to-year basis, it seems prudent to shift as certain funding hurdles are achieved as opposed to a time-based transition strategy.

Hypothetical LDI Adoption Strategy



Source: PIMCO, based on hypothetical analysis

» Implementation Considerations

- Given the return assumptions in this analysis, which are predicated upon a steep yield curve and lingering positive credit spreads, a shift within the current framework from intermediate bonds to duration-matched bonds seems reasonable and prudent (from A to B).*
 - Benefits:
 - Modest increase in expected return
 - Modest decrease in surplus volatility
 - Improved projected funded ratios
 - Significantly lower expected min. contribution in 2015
 - Drawbacks/Risks:
 - Interest rate environment (long term rates rise)
 - Increase in asset-only volatility
 - Relatively large amount of surplus volatility remains
- Increasing to 50% duration-matched bonds (C) appears reasonable as well, although the expected return drops due to the trade off between equity returns and bond returns. Moving from A to C would result in a reduction in expected ROA to 7.25%.
 - Benefits:
 - Modest decrease in surplus volatility
 - Drawbacks/Risks:
 - Interest rate environment (long term rates rise)
 - Increase in asset-only volatility
 - Relatively large amount of surplus volatility remains
 - Expected min. contribution in 2015 not materially different from A

Scenario	Surplus Volatility	Return Above Liabilities*	"Sharpe" Ratio
A	17.5	0.8	0.05
B	15.8	1.3	0.08
C	13.4	0.9	0.07
D	11.4	0.5	0.04
E	8.7	-0.2	-0.02
F	6.1	2.0	0.33

Source: PIMCO

*Return above liabilities defined as return above the liability yield, which was 5.96%.

This simplistic calculation is essentially a risk-adjusted return. It shows an improvement in B and C due to decreased volatility. F shows the highest Sharpe because the volatility was reduced without sacrificing equity returns.

*Note: Recall that the return assumption for B is actually the current expected ROA, 7.75%. So, technically the change discussed here may not be realized in your actual financial statements. This is due to the decrease in expected return for Scenario A from our analysis in January 2010 and this analysis, resulting primarily from utilizing PIMCO's expected returns for bonds.

» Implementation Considerations

- The most effective of all scenarios is F, which moves to 100% duration matched bonds with 25% of the bonds overlaid with S&P 500 Index futures. This is implied economic leverage.***
 - Benefits:
 - Significant increase in expected return
 - Significant decrease in surplus volatility
 - Improved projected funded ratios
 - Significantly lower expected min. contribution in 2015
 - Drawbacks/Risks:
 - Interest rate environment (long term rates rise)
 - Some surplus volatility remains (can never be perfectly hedged)
 - Increase in asset-only volatility
 - Use of futures creates leverage; therefore return fluctuations will be magnified.
 - If Long Duration bonds underperform short-term Treasuries (the implied financing rate of the futures), the stock strategy will appear to underperform the equity index. In addition, margin calls may result, thereby eating further into gains.
 - However, from a surplus volatility standpoint, the relative performance of the Long Duration bonds to liabilities is the more relevant factor. This may be overwhelmed by equity returns in a period of high stock market volatility.
- In all scenarios incorporating duration-matched bonds, active management of the bonds could cause underperformance relative to goals. However, given the imperfection and lack of diversification of certain long-duration indices as well as the illiquidity in the 30+ year maturity arena, active management seems imperative.

***It is worthwhile noting that the approach PIMCO utilizes in the PIMCO Commodity Real Return Fund, an investment in the Pension, is comparable to their StocksPlus Long Duration. Instead of S&P 500 futures, the commodity fund utilizes commodity futures. In the Commodity fund, PIMCO attempts to add value by investing the collateral in TIPS instead of short term Treasuries which are again the implied financing rate of the futures contracts. In the StocksPlus Long Duration, PIMCO would deviate from short term Treasuries and use long duration bonds of all types.



Appendix

PIMCO's Capital Market Assumptions (based on Wurts')

As of March 31, 2010

	Volatility
FI - Barclays Capital Long Gov't / Credit	9.00%
FI - Barclays Capital Aggregate	6.00%
FI - Citigroup 20+ Year Strips	20.25%
FI - Barclays Capital Long Credit	9.50%
U.S. Equity - Small Cap	22.00%
U.S. Equity - Large Cap	19.00%
U.S. TIPS	8.00%
U.S. Equity - StocksPLUS Long Duration Model	19.00%
Real Estate	17.00%
Absolute Return - HFRI FoF Diversified Index	10.00%
Commodities	17.00%
Cash - 3-mth LIBOR	1.00%
Liabilities (14.2-yr duration)	14.00%

	Estimated Expected Return
FI - Barclays Capital Long Gov't / Credit	5.25%
FI - Barclays Capital Aggregate	3.70%
FI - Citigroup 20+ Year Strips	4.78%
FI - Barclays Capital Long Credit	5.93%
U.S. Equity - Small Cap	7.50%
U.S. Equity - Large Cap	8.00%
U.S. TIPS	4.65%
U.S. Equity - StocksPLUS Long Duration Model	9.75%
Emerging Markets Equity - MSCI EM	9.50%
International Equity - MSCI EAFE	8.25%
Real Estate	7.75%
Absolute Return - HFRI FoF Diversified Index	7.25%
Commodities	7.65%
Cash - 3-mth LIBOR	1.00%
Liabilities (14.2-yr duration)	5.96%

	FI - Barclays Capital Long Gov't / Credit	FI - Barclays Capital Aggregate	FI - Citigroup 20+ Year Strips	FI - Barclays Capital Long Credit	U.S. Equity - Small Cap	U.S. Equity - Large Cap	U.S. TIPS	U.S. Equity - StocksPLUS Total Return	U.S. Equity - StocksPLUS Long Duration Model	Emerging Markets Equity - MSCI EM	International Equity - MSCI EAFE	Real Estate	Absolute Return - HFRI FoF Diversified Index	Commodities	Cash - 3-mth LIBOR	Liabilities (14.2-yr duration)
FI - Barclays Capital Long Gov't / Credit	1.00	0.50	0.88	0.92	0.35	0.35	0.70	0.45	0.60	0.25	0.25	0.15	0.10	0.15	0.05	0.90
FI - Barclays Capital Aggregate	0.50	1.00	0.40	0.60	0.35	0.35	0.55	0.65	0.47	0.20	0.20	0.10	0.05	0.10	0.05	0.50
FI - Citigroup 20+ Year Strips	0.88	0.40	1.00	0.68	0.20	0.20	0.65	0.35	0.35	0.18	0.18	0.15	0.01	0.05	0.00	0.70
FI - Barclays Capital Long Credit	0.92	0.60	0.68	1.00	0.30	0.30	0.75	0.50	0.65	0.30	0.30	0.20	0.15	0.20	0.00	0.98
U.S. Equity - Small Cap	0.35	0.35	0.20	0.30	1.00	0.81	-0.12	0.80	0.30	0.68	0.68	-0.04	0.60	0.19	0.10	0.30
U.S. Equity - Large Cap	0.35	0.35	0.20	0.30	0.81	1.00	-0.13	0.80	0.35	0.68	0.70	0.09	0.60	0.10	0.05	0.30
U.S. TIPS	0.70	0.55	0.65	0.75	-0.12	-0.13	1.00	0.60	0.45	-0.09	-0.12	0.10	0.09	0.19	0.05	0.45
U.S. Equity - StocksPLUS Total Return	0.45	0.65	0.35	0.50	0.80	0.80	0.60	1.00	0.60	0.60	0.62	0.10	0.10	0.10	0.04	0.40
U.S. Equity - StocksPLUS Long Duration Model	0.60	0.47	0.35	0.65	0.30	0.35	0.45	0.60	1.00	0.63	0.65	0.15	0.10	0.10	0.10	0.70
Emerging Markets Equity - MSCI EM	0.25	0.20	0.18	0.30	0.68	0.68	-0.09	0.60	0.63	1.00	0.68	-0.10	0.72	0.35	-0.05	0.20
International Equity - MSCI EAFE	0.25	0.20	0.18	0.30	0.68	0.70	-0.12	0.62	0.65	0.68	1.00	0.00	0.65	0.19	0.00	0.20
Real Estate	0.15	0.10	0.15	0.20	-0.04	0.09	0.16	0.10	0.15	-0.10	0.00	1.00	-0.11	0.10	0.00	0.15
Absolute Return - HFRI FoF Diversified Index	0.10	0.05	0.01	0.15	0.60	0.60	0.09	0.10	0.10	0.72	0.65	-0.11	1.00	0.30	0.10	0.10
Commodities	0.15	0.10	0.05	0.20	0.19	0.10	0.19	0.10	0.10	0.35	0.19	0.10	0.30	1.00	0.05	0.10
Cash - 3-mth LIBOR	0.05	0.05	0.00	0.00	0.10	0.05	0.05	0.04	0.10	-0.05	0.00	0.00	0.10	0.05	1.00	0.05
Liabilities (14.2-yr duration)	0.90	0.50	0.70	0.98	0.30	0.30	0.45	0.40	0.70	0.20	0.20	0.15	0.10	0.10	0.05	1.00

SOURCE: PIMCO

Hypothetical example for illustrative purposes only.

Correlation time period is from 12/31/90 to 3/31/10.

U.S. Equity - Small Cap is represented by Russell 2000 Index; U.S. Equity - Large Cap is represented by S&P 500 Index; U.S. TIPS is represented by Barclays Capital U.S. TIPS Index; Real Estate is represented by Dow Jones U.S. Select REIT TR Index; Commodities is represented by Dow Jones UBS Commodity TR Index

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1302

**Pension Plan Asset Allocation & Liability Driven Investing, Avista Corporation,
May 8, 2014**

**PENSION PLAN ASSET ALLOCATION &
LIABILITY-DRIVEN INVESTING**

Avista Corporation

May 8, 2014

WURTS  ASSOCIATES

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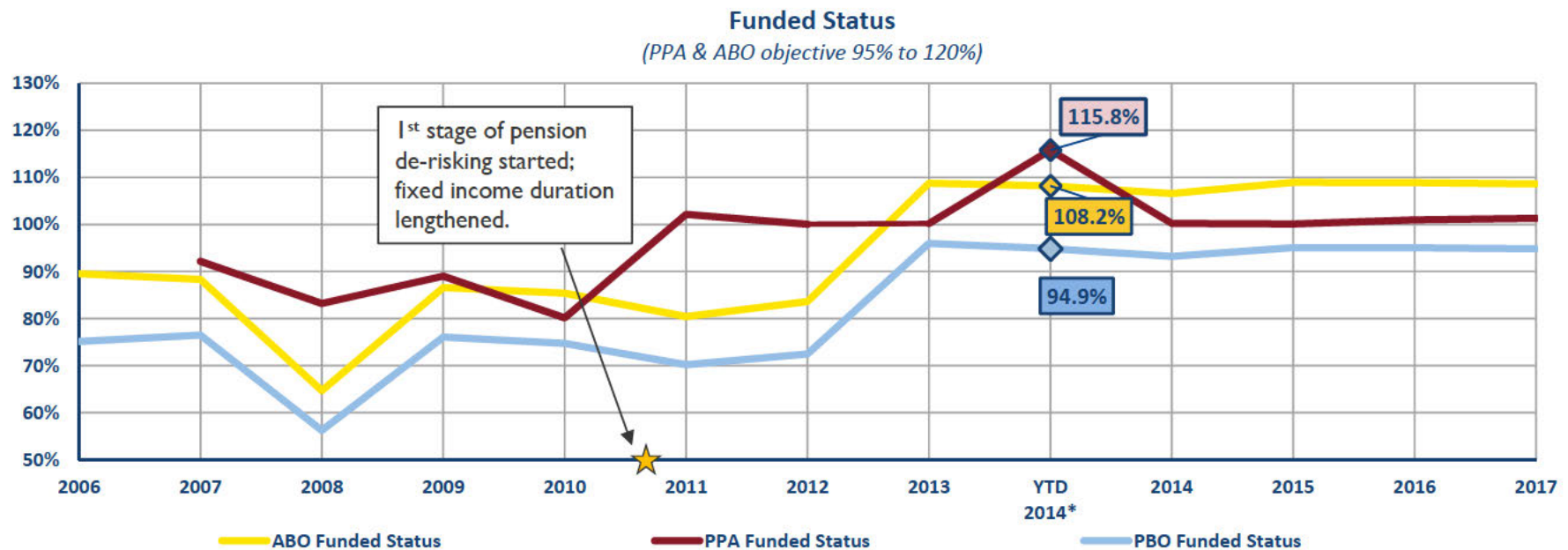
EXECUTIVE SUMMARY

- We recommend a material increase in the Pension's exposure to long-duration fixed income with the goal of reducing funded status volatility. The recommendation is to move from the current fixed income allocation of 31% to 45% or 58%.
- Implementation of the change will be through the existing investment managers, albeit their account structures will be modified in order to realize better fee economies and enhanced client service.
- To facilitate this discussion, we provide some historical perspective on the plan, projections on resulting contributions and pension expense, sensitivity analysis around rising rates and volatile equity markets, and our strategy to implement. This presentation also provides some further perspective on corporate pension plan trends and interest rate expectations.

HISTORICAL PERSPECTIVE

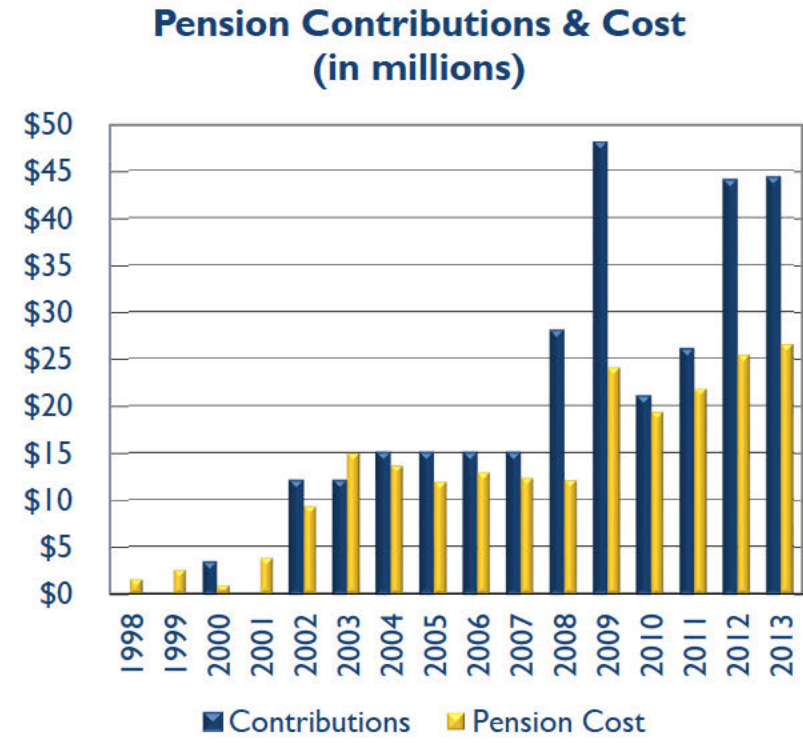
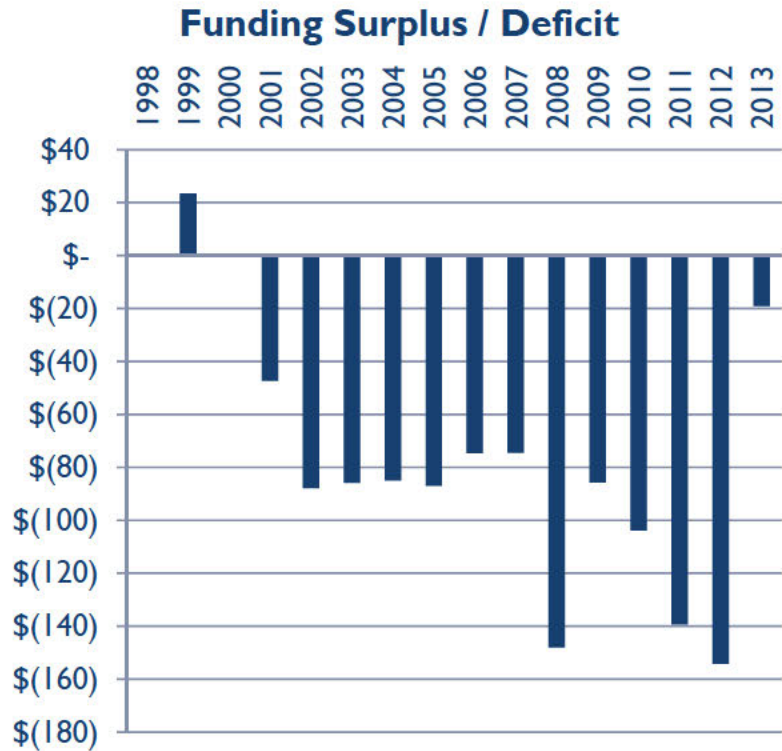
PENSION HISTORICAL PERSPECTIVE

- As of March 31, 2014, Avista's pension is 95% funded on a PBO basis and 108% on an ABO basis
 - PBO improved from 72.5% at 12/31/12
 - ABO improved from 83.6% at 12/31/12
- The dramatic improvement in funded status is the result of strong equity markets and the uptick in interest rates in 2013.



PENSION HISTORICAL PERSPECTIVE

- The pension’s historical funded status has seen deficits close to or in excess of \$140 million three times in the past 15 years
- The recent funding declines have resulted in contributions and cost above Avista’s historical experience.



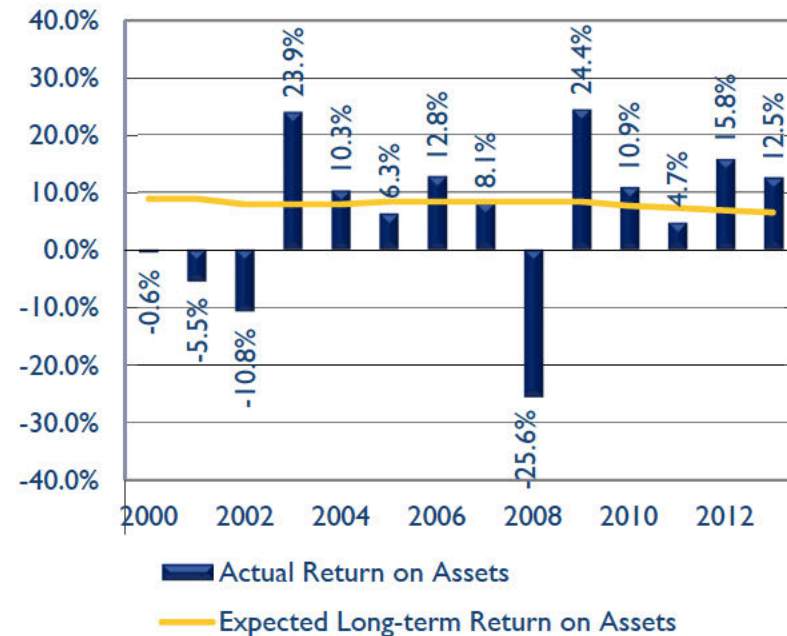
PENSION HISTORICAL PERSPECTIVE

- The key drivers of the Plan's deficit in 2008-2012 were falling discount rates and the high variation of returns relative to the expected return on assets, in particular the greater than 25% loss in 2008.

Pension Discount Rates



Pension Returns

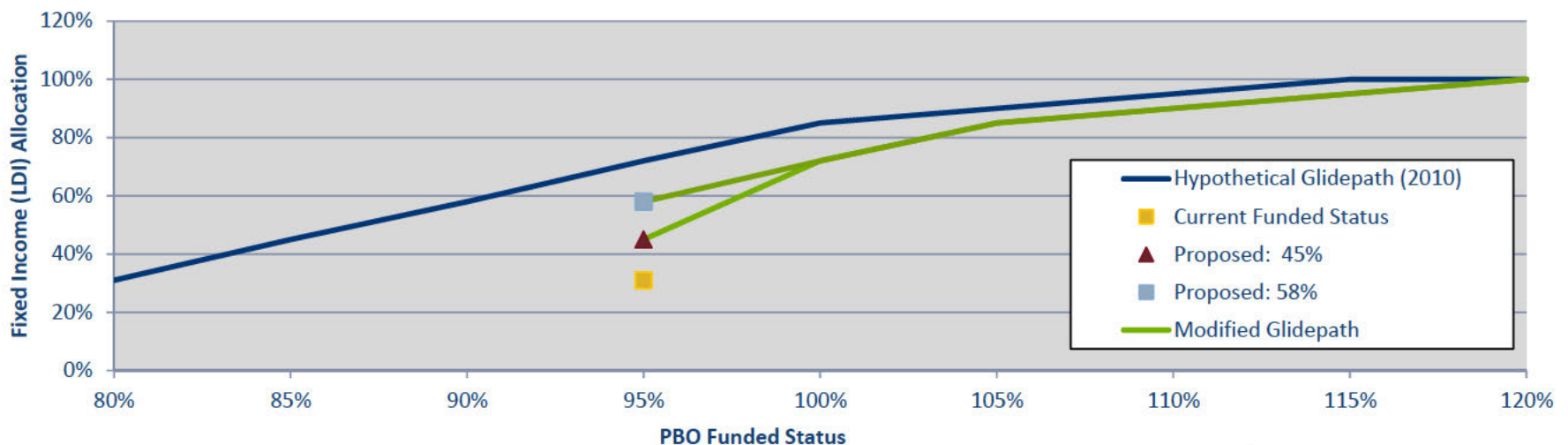


INVESTMENT STRATEGY RECOMMENDATIONS

INVESTMENT STRATEGY RECOMMENDATIONS

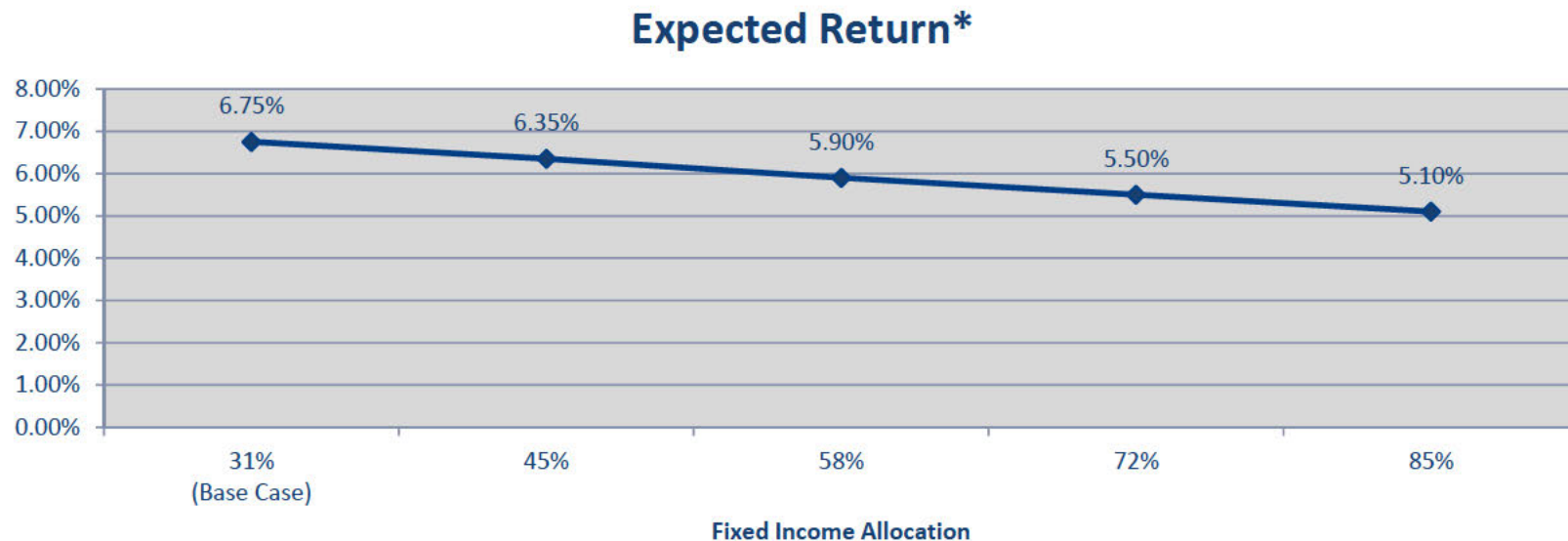
- In light of the dramatic improvement in funded status, further derisking should be considered. Wurts & Associates recommends that Avista materially increase the fixed income allocation to 45% or 58%, depending on the board's preference for the derisking pace. Our projected glide path assumes that the fixed income allocation would move to 72% at/near 100% funded.
- Although the funded status has improved dramatically, the recommendation is to not proceed to 100% fixed income (LDI) at 100% funded, but rather just 80-90%.
 - The plan needs additional incremental returns due to inability to perfectly match liability returns and "leakage" due to fees.
 - If annuitization is an optional future path, PBO should be targeted to 106% to 120%. Therefore additional growth assets are required to achieve this excess fundedness.

Asset Allocation Relative to PBO Funded Status



PENSION DERISKING STRATEGY

- It is no surprise that the expected return on assets diminishes as the fixed income allocation increases.
 - The chart below demonstrates the 10-year average expected returns* of the recommended asset allocation glidepath.
- The reduced return expectations will impact contributions and pension expense, which we detail on the following pages.

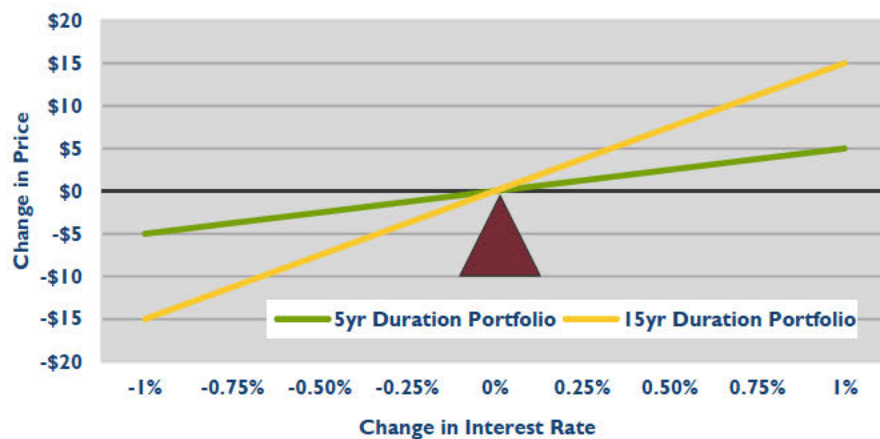


*Expected returns shown are based on the methodology Avista has followed, which incorporates Wurts & Associates' capital market assumptions as well as other advisors'; it also estimates marginal contribution from active manager excess returns.

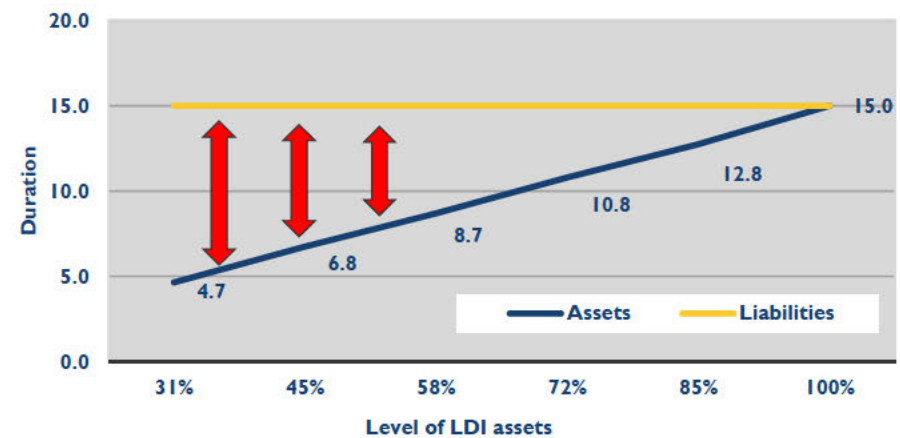
UNDERSTANDING DURATION

- In the subsequent pages we will demonstrate, using scenario analysis, how the plan's sensitivities to its two biggest risks, interest rate risk and equity risk, change with our asset allocation decisions. First, it may be beneficial to demonstrate how duration, a key measure of interest rate risk, plays a role:
 - Duration, measured in years, can be used to estimate gains or losses in assets or liabilities given a change in interest rates. Generally speaking, an asset or liability with a 10 year duration will see a principal loss of 10% for each 1 point increase in interest rates. A duration of 5 will see a loss of 5% for each 1 point increase in rates.
 - At present, the duration of Avista's pension liabilities is 15 and the weighted average duration of the plan's assets is 4.7.
 - If the asset allocation is changed to 45% fixed income or 58% fixed income, the duration of the plan's assets increases to 6.8 and 8.7, respectively.

Change of Bond Prices by Duration for Various Changes in Interest Rates



Duration Mismatch of Assets vs. Liabilities



The weighted average duration of the assets assumes 0 year and 15 years duration for equities and fixed income respectively. The duration of the liabilities remains constant at 15 years based on the most recent PIMCO analysis from 1/31/2013.

SCENARIO ANALYSIS: PBO IMPACT

1 Year Change in Interest Rates

		PBO	-1%	0%	1%	2%
Growth Engine 1 Year Rate of Return	24%	95%	105%	119%	138%	
	16%	91%	100%	113%	131%	
	8%	86%	95%	107%	124%	
	0%	82%	90%	101%	117%	
	-8%	78%	85%	96%	110%	
	-16%	74%	81%	90%	103%	
	-24%	69%	76%	84%	96%	

31% Long Bonds

1 Year Change in Interest Rates

		PBO	-1%	0%	1%	2%
Growth Engine 1 Year Rate of Return	24%	95%	103%	114%	130%	
	16%	91%	99%	109%	124%	
	8%	88%	95%	105%	118%	
	0%	84%	91%	100%	113%	
	-8%	81%	87%	95%	107%	
	-16%	77%	83%	91%	102%	
	-24%	74%	79%	86%	96%	

45% Long Bonds

1 Year Change in Interest Rates

		PBO	-1%	0%	1%	2%
Growth Engine 1 Year Rate of Return	24%	94%	100%	109%	121%	
	16%	92%	97%	106%	117%	
	8%	89%	95%	102%	113%	
	0%	86%	92%	99%	109%	
	-8%	84%	89%	95%	104%	
	-16%	81%	86%	92%	100%	
	-24%	79%	83%	88%	96%	

58% Long Bonds

1 Year Change in Interest Rates

		PBO	-1%	0%	1%	2%
Growth Engine 1 Year Rate of Return	24%	94%	98%	103%	111%	
	16%	92%	96%	101%	109%	
	8%	91%	94%	99%	106%	
	0%	89%	92%	97%	103%	
	-8%	88%	91%	95%	101%	
	-16%	86%	89%	93%	98%	
	-24%	84%	87%	91%	96%	

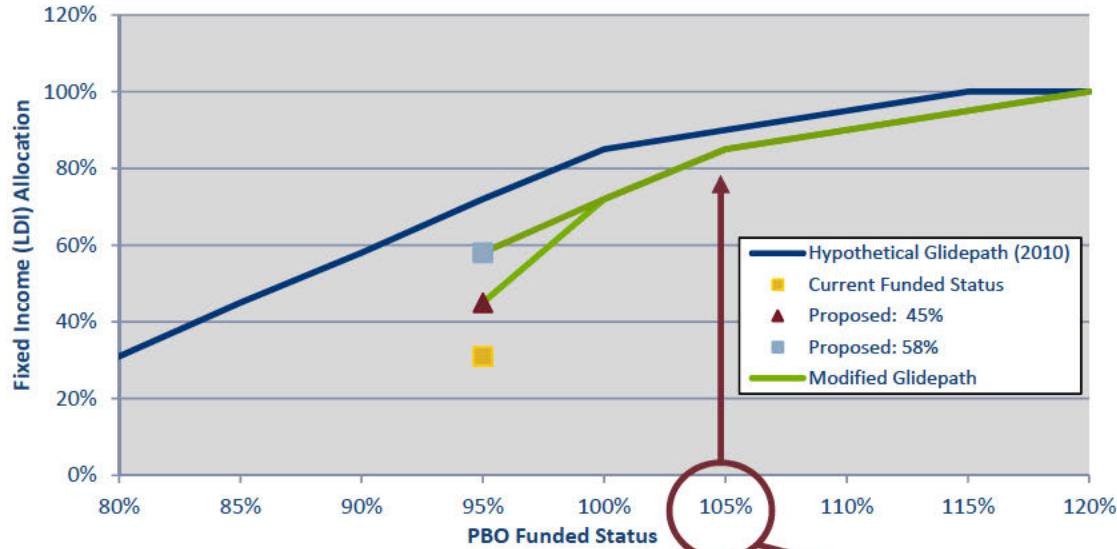
72% Long Bonds

- By increasing the exposure to long duration bonds, the plan is less sensitive to equity risk. However, the plan does not necessarily give up the opportunity to improve funded status even in rising interest rate environments.
- For example: If interest rates rise 2 percentage points over the course of one year, and equity markets are flat, the Plan's funded status would
 - With 45% long bonds, rise to 113%
 - With 58% long bonds, rise to 109%
 - With 72% long bonds, rise to 103%
- The improvement in funded status, while not as great as the improvement would have been with less bonds, is driven by the remaining mis-match in duration between assets and liabilities. More importantly, recognize that the equity downside risk is materially reduced. If rates remain flat and equity markets fall 16%, the Plan's funded status would
 - With our current allocation, fall to 81%
 - With 45% long bonds, fall to just 83%
 - With 58% long bonds, fall to just 86%
 - With 72% long bonds, fall to just 89%

The charts estimate, using non-actuarial calculations, the approximate impact of interest rate movements and changes in expected returns on the funded status of the plan. The starting PBO Funded status is assumed to be 96%. The analysis assumes a parallel shift of the yield curve. See appendix for more detailed assumptions.

SCENARIO ANALYSIS: PBO IMPACT DOWN THE ROAD

Asset Allocation Relative to PBO Funded Status



- For this analysis, we've assumed the starting PBO funded status is 105%. Our funded status sensitivity to interest rates and equities is very different at this higher funded level.
- Equity sensitivity becomes more prevalent at this funded level.
 - With 31% long bonds, if rates remain flat, underperforming equities will cause the funded level to fall into the 80%-range.
 - With 85% long bonds, the funded status remains close to 100% despite underperforming equities.

31% Long Bonds

		1 Year Change in Interest Rates				
		PBO	-1%	0%	1%	2%
Growth Engine 1 Year Rate of Return	24%	24%	104%	115%	130%	151%
	16%	16%	99%	110%	124%	144%
	8%	8%	95%	104%	117%	136%
	0%	0%	90%	99%	111%	128%
	-8%	-8%	85%	93%	105%	121%
	-16%	-16%	81%	88%	98%	113%
	-24%	-24%	76%	83%	92%	105%

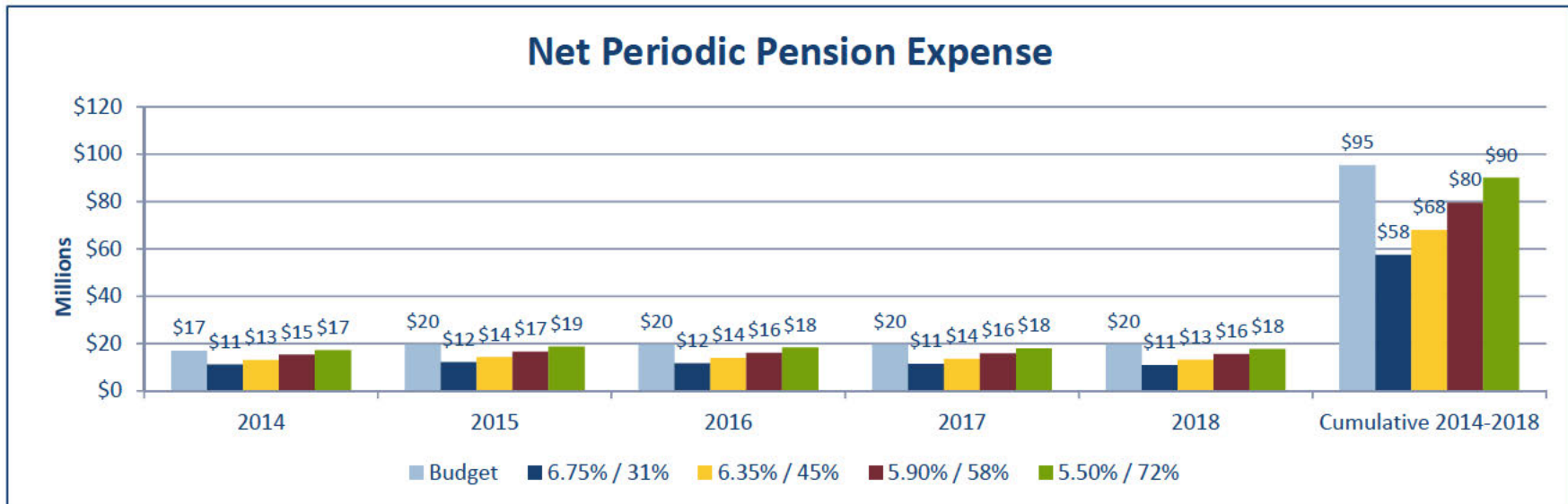
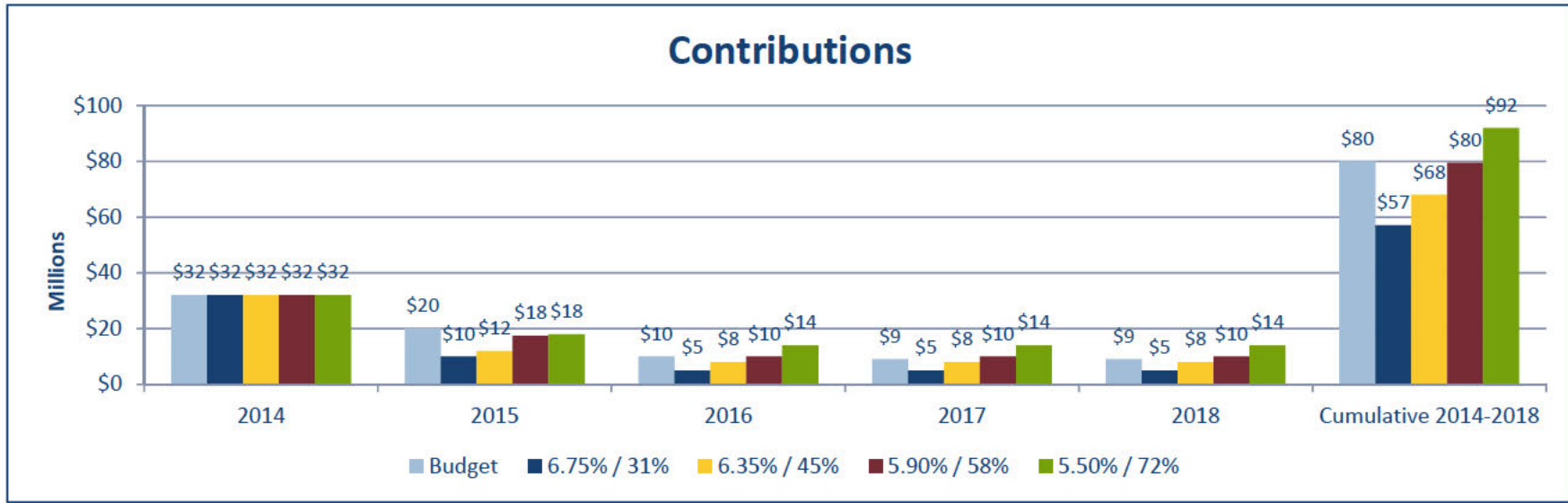
58% Long Bonds

		1 Year Change in Interest Rates				
		PBO	-1%	0%	1%	2%
Growth Engine 1 Year Rate of Return	24%	24%	103%	110%	119%	133%
	16%	16%	100%	107%	116%	128%
	8%	8%	97%	103%	112%	124%
	0%	0%	94%	100%	108%	119%
	-8%	-8%	92%	97%	104%	114%
	-16%	-16%	89%	94%	100%	109%
	-24%	-24%	86%	90%	96%	105%

85% Long Bonds

		1 Year Change in Interest Rates				
		PBO	-1%	0%	1%	2%
Growth Engine 1 Year Rate of Return	24%	24%	102%	105%	109%	115%
	16%	16%	101%	104%	108%	113%
	8%	8%	100%	103%	106%	111%
	0%	0%	99%	102%	105%	110%
	-8%	-8%	98%	100%	104%	108%
	-16%	-16%	97%	99%	102%	106%
	-24%	-24%	96%	98%	101%	105%

FINANCIAL IMPACT OF DERISKING STRATEGY



INVESTMENT IMPLEMENTATION RECOMMENDATIONS

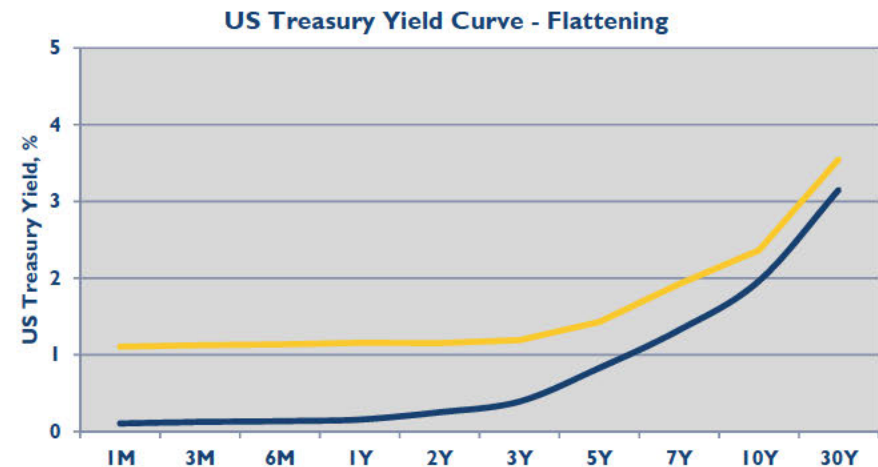
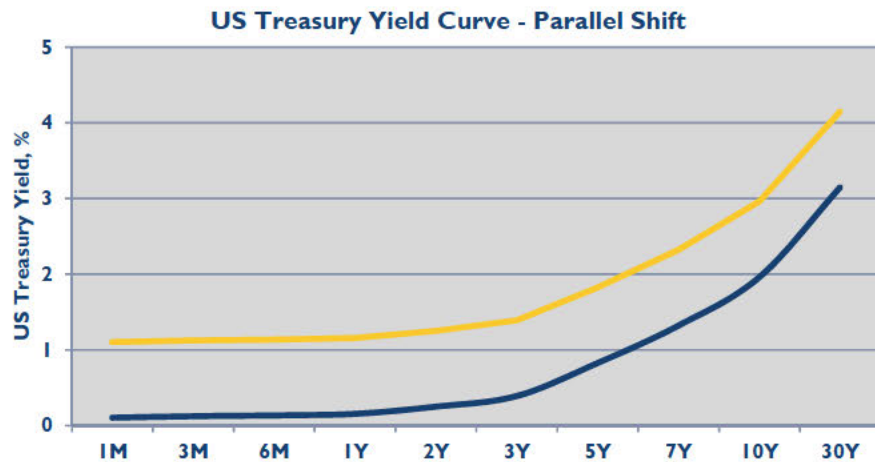
- Wurts & Associates recommends that Avista maintain a dual manager structure with incumbents PIMCO and Prudential to mitigate manager risk. The nature of the managers' mandates will be modified to allow more custom separate account arrangements in order to reduce investment management costs and improve tracking to plan liabilities.
- Implementation may appear complicated, given the amount of the dollars moving from equities to fixed income, and the mechanics of the shift from a fund structure to separate accounts. However, it is administratively reasonable given the high level of liquidity inherent in the plan's current portfolio structure.

Asset Class	Current Allocation 4/27/2014		Inflows/ Outflows to -->	45% LDI		45% LDI Targets	Inflows/ Outflows to -->	58% LDI		58% LDI Targets	Old Policy	
	\$	%		\$	%			\$	%		MAX	MIN
Large Cap	121,222,953	24.4%	(7,300,000)	113,922,953	22.5%	22.5%	(21,000,000)	92,922,953	18.0%	18.0%	30%	20%
Small Cap	26,359,659	5.3%	(13,700,000)	12,659,659	2.5%	2.5%	(7,500,000)	5,159,659	1.0%	1.0%	7%	2%
International	67,229,380	13.6%	(16,500,000)	50,729,380	10.0%	10.0%	(9,300,000)	41,429,380	8.0%	8.0%	15%	10%
Emerging Markets	21,300,063	4.3%	(11,100,000)	10,200,063	2.0%	2.0%	(10,200,063)		0.0%	0.0%	6%	2%
Fixed Income	155,713,859	31.4%	71,500,000	227,213,859	44.9%	45.0%	72,625,174	299,839,033	58.0%	58.0%	37%	26%
Absolute Return	59,659,985	12.0%	(9,000,000)	50,659,985	10.0%	10.0%	(4,000,000)	46,659,985	9.0%	9.0%	14%	8%
Real Estate	25,635,858	5.2%	4,600,000	30,235,858	6.0%	6.0%		30,235,858	5.8%	6.0%	8%	0%
Commodities	18,125,111	3.7%	(8,000,000)	10,125,111	2.0%	2.0%	(10,125,111)		0.0%	0.0%	6%	0%
Cash + Contribution	389,634	0.1%	10,500,000	389,634	0.1%	0.0%	10,500,000	389,634	0.1%	0.0%		
TOTAL	\$ 496,045,813	100.0%	\$ 10,500,000	\$ 506,545,813	100.0%	100.0%	\$ 10,500,000	\$ 517,045,813	100.0%	100.0%		

APPENDIX

SHAPE OF THE YIELD CURVE

- Throughout our scenario analysis, we've had to assume rising interest rates result in a parallel shift in the yield curve; meaning rates rise 1% at the short and long ends of the curve simultaneously.
- It is conceivable that rates could rise more in the short end than the long end – resulting in a flatter yield curve. The long end of the curve has traditionally been driven by inflation expectations, whereas the short end seems to be more affected by the Fed's policy.
- Furthermore, within the credit market, the supply/demand imbalance could play a more significant role in the shape of the curve. There has been very low issuance in the long-term corporate bond market, whereas there is increasing demand as more corporate pensions freeze and de-risk using LDI strategies. This may mitigate the impact of rising rates in the credit market.



- With a parallel shift in rates, shorter duration strategies will benefit a portfolio.

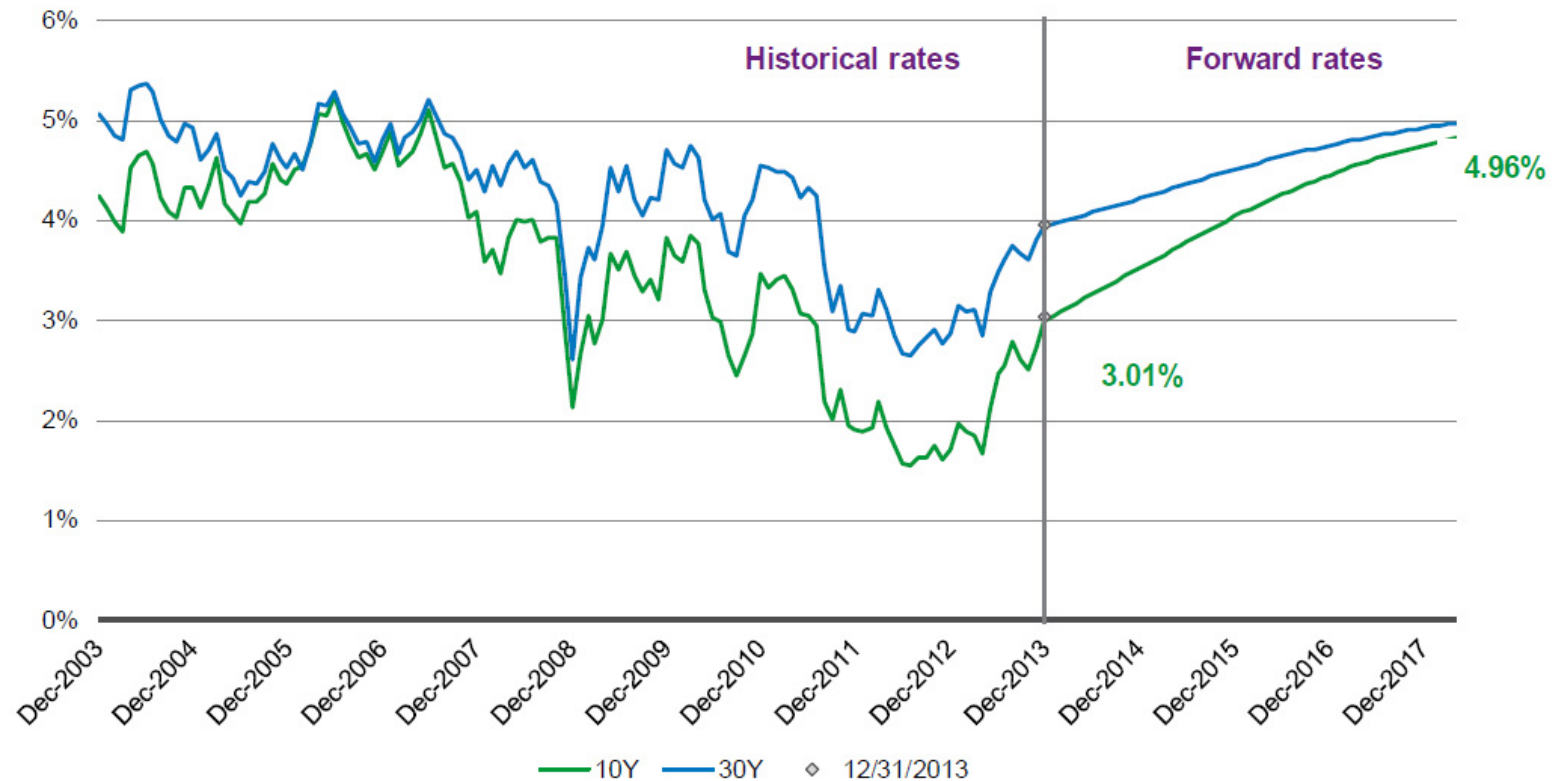
- With a flattening curve, a pure long bonds LDI allocation would be advantageous compared to the long + core bonds option.

PERSPECTIVE ON RISING RATES

Rising interest rates are already priced in to bond markets

Historical and forward 10 and 30 year US Treasury rates

For example, if the 10Y Treasury rate does not rise by more than 200 bps over the next five years, then the 10Y bond will have a positive return



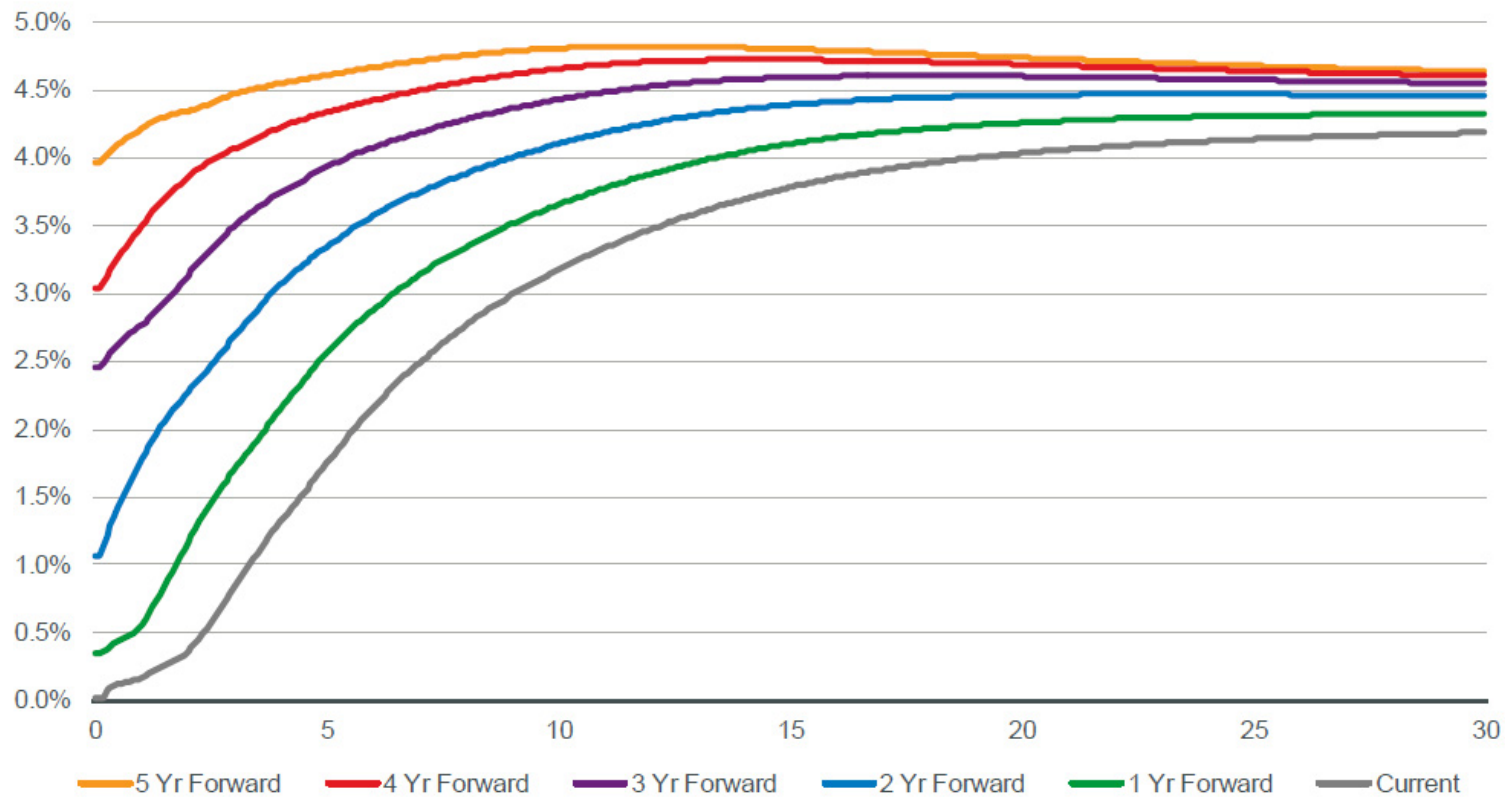
Source: BlackRock, par yields

PERSPECTIVE ON RISING RATES

Rising interest rates are forecasted most at the short end

Forward yield curves for next 5 years

Fed policies have affected the short end of the curve much more than the long end. Thus, short rates are those priced to rise.



Source: BlackRock, spot yields

CORPORATE PENSION PERSPECTIVES

PENSION PERSPECTIVES

- As plan sponsors evaluate pension plan derisking strategies, they commonly ask for perspective on their decision making relative to other corporate plan sponsors. Specifically, many ask:
 - What does the “typical” corporate pension plan’s asset allocation look like today?
 - How many are following a glide path and what does it look like?
- These questions are difficult to answer directly due to the lack of available clean and investment-strategy specific data.
 - **Milliman publishes an annual report reviewing the 100 largest pensions. The 2013 report found:**
 - While asset allocations changed minimally from 2011 to 2013, the average allocation to fixed income has risen to 40% from a low of 28% in 2005. The allocation to equities was 41%, down from a high of 61% at the end of 2005.
 - Milliman’s sources (SEC filings) did not provide further detail on the *duration* of the fixed income assets, which would be a critical detail for understanding the magnitude of derisking strategies.
 - **A recent study by Greenwich Associates, based on a survey* of 535 corporate plan sponsors found:**
 - Approximately 4 in 10 corporate plans have established a dynamic de-risking strategy (43% of plans between \$250m and \$500m and 42% of plans between \$501m and \$1B)
 - Over the last two years, *average* allocations to fixed income haven’t changed materially, although comparisons to the 2004-2007 survey data show fixed income allocations moving from the high 20’s to mid 30’s (28% in 2004 to 35% in 2013).
 - When compared to funded status, average fixed income allocations are materially greater with better funded plans than will less well funded plans.
 - A large number of corporate plan sponsor intend to materially increase their fixed income allocations, at the expense of equities, over the next three years

*In person interviews between July and October of 2013.

MILLIMAN 2013 REPORT

ASSET ALLOCATIONS

	2013	2012	2011	2010	2009	2008	2007	2006	2005
Equity Allocation	40.87%	39.45%	38.37%	44.60%	45.51%	43.79%	54.77%	60.43%	61.04%
Change From Prior Year	3.60%	2.82%	-13.99%	-2.00%	3.94%	-20.05%	-9.37%	-0.99%	n/a
Fixed Allocation	39.62%	40.41%	41.31%	35.88%	36.08%	41.56%	33.05%	29.20%	28.50%
Change From Prior Year	-1.94%	-2.18%	15.12%	-0.55%	-13.20%	25.76%	13.19%	2.47%	n/a
Other Allocation	19.51%	20.15%	20.33%	19.51%	18.41%	14.65%	12.18%	10.36%	9.63%
Change From Prior Year	-3.16%	-0.90%	4.18%	6.02%	25.67%	20.27%	17.49%	7.65%	n/a

- All dollar amounts in millions.

- Note: Numbers may not add up correctly due to rounding.

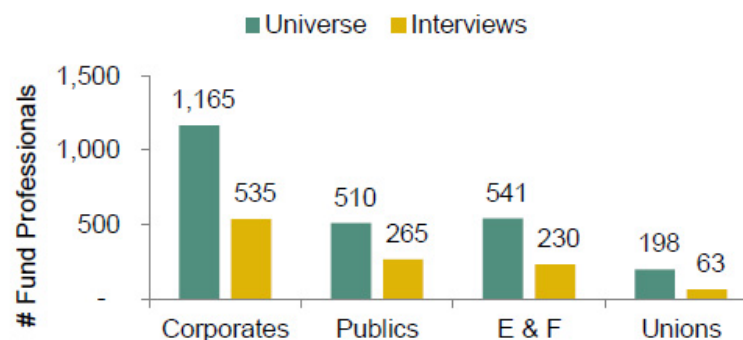
GREENWICH ASSOCIATES SURVEY

About the Research

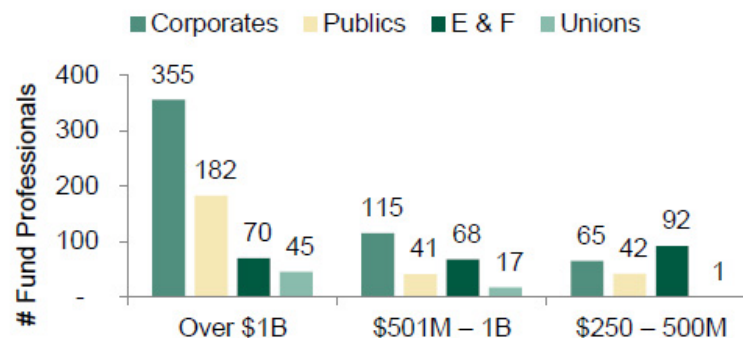
- Greenwich Associates' 42nd annual research with U.S. Institutional Investors is based on in-depth interviews conducted in-person between July and October of 2013.
- Respondents were 1,093 individuals from the largest tax-exempt funds in the United States out of a universe of over 2,500 corporate pension funds, public pensions funds, and endowments and foundations, each with assets greater than \$250 million. Individuals interviewed include:
 - 535 corporate fund respondents
 - 265 public fund respondents
 - 130 foundation respondents
 - 99 endowment respondents
 - 63 union respondents
- Senior fund professionals were asked to provide quantitative and qualitative evaluations of their investment managers' investment and servicing capabilities and also of the managers soliciting their business. Fund professionals were also asked detailed information on important market trends.

Source: Greenwich Associates 2013, USII-13.

Interviews Conducted with U.S. Fund Professionals 2013, by Institution Type



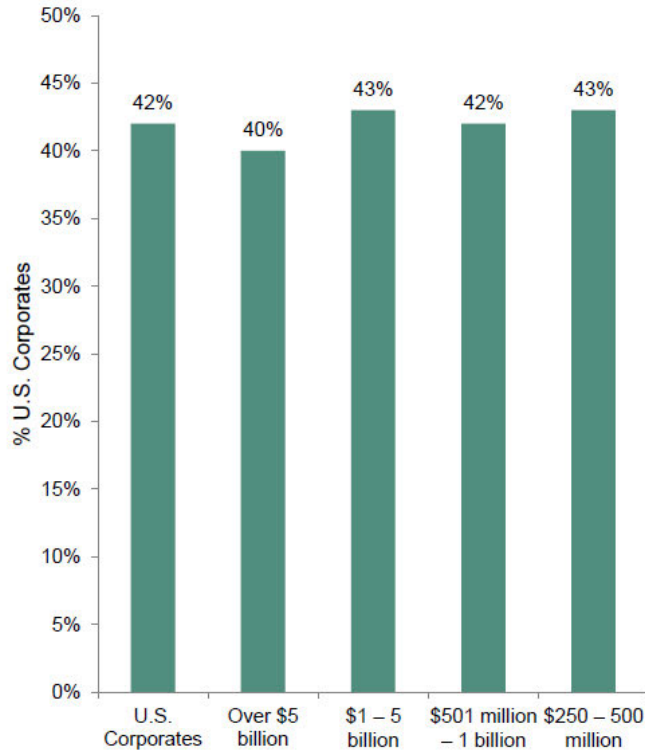
Interviews Conducted with U.S. Fund Professionals 2013, by Size



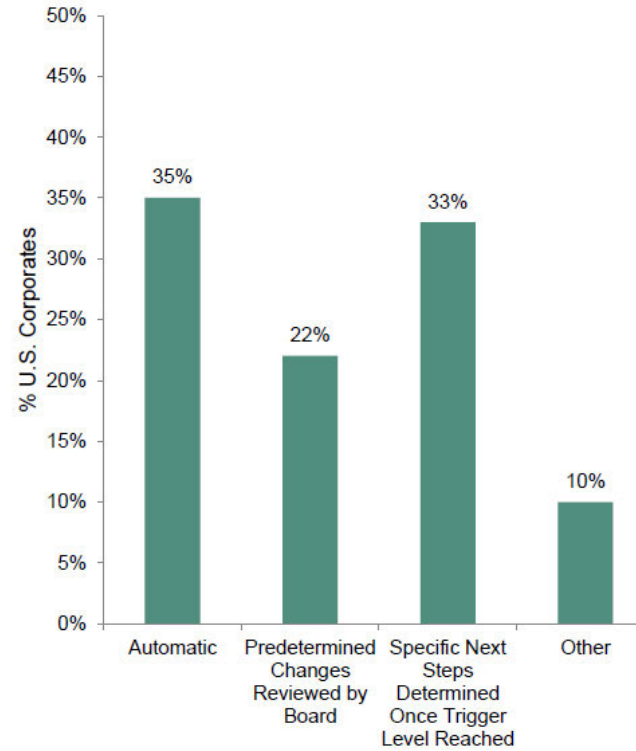
GREENWICH ASSOCIATES SURVEY

In response to recent market challenges, approximately 4 in 10 corporate funds have established a dynamic de-risking strategy.

U.S. Corporate Funds' Establishing a Dynamic De-Risking Strategy, by Size 2013



U.S. Corporate Funds' Decision Making Process for De-Risking Strategy 2013

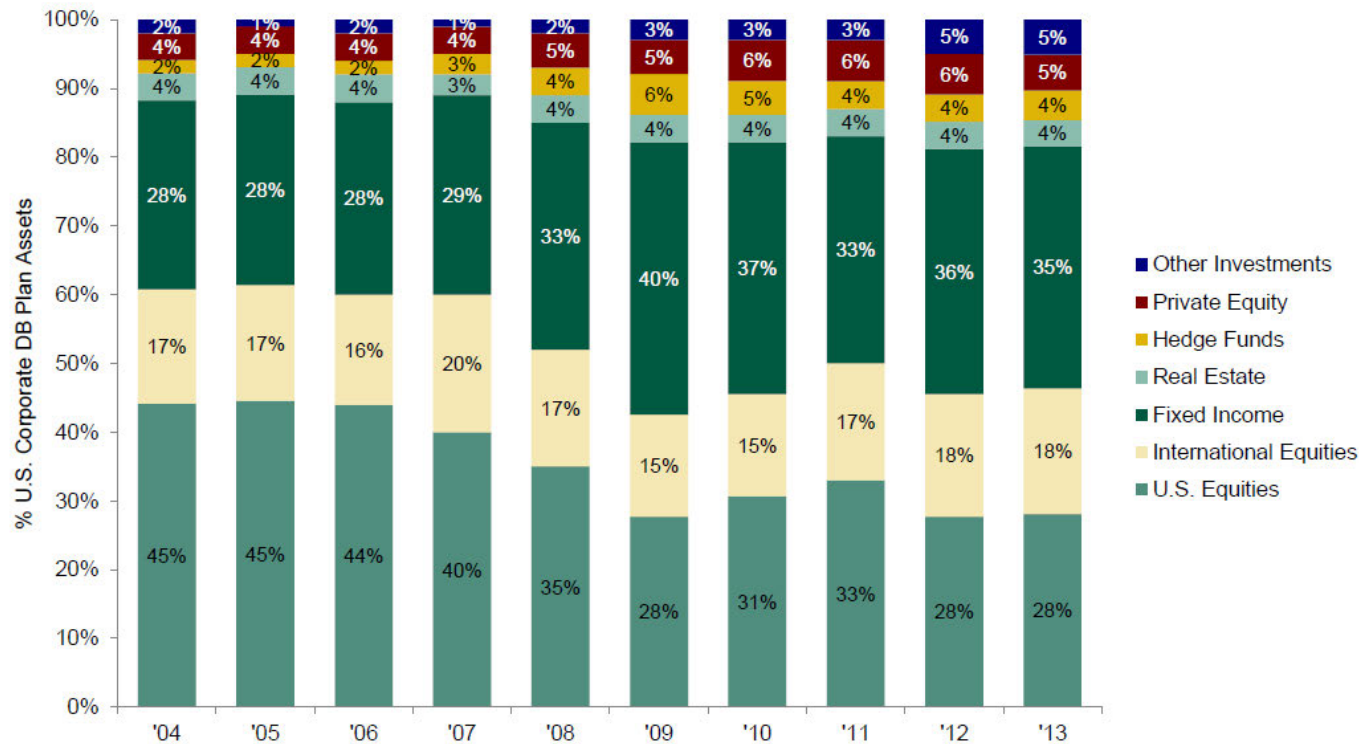


Source: Greenwich Associates 2013, USII-13.

GREENWICH ASSOCIATES SURVEY

Overall corporate fund allocations are remarkably similar to previous years, as fund executives assess uncertainties in market conditions.

U.S. Corporate Funds' Asset Mix of Defined Benefit Plan Assets

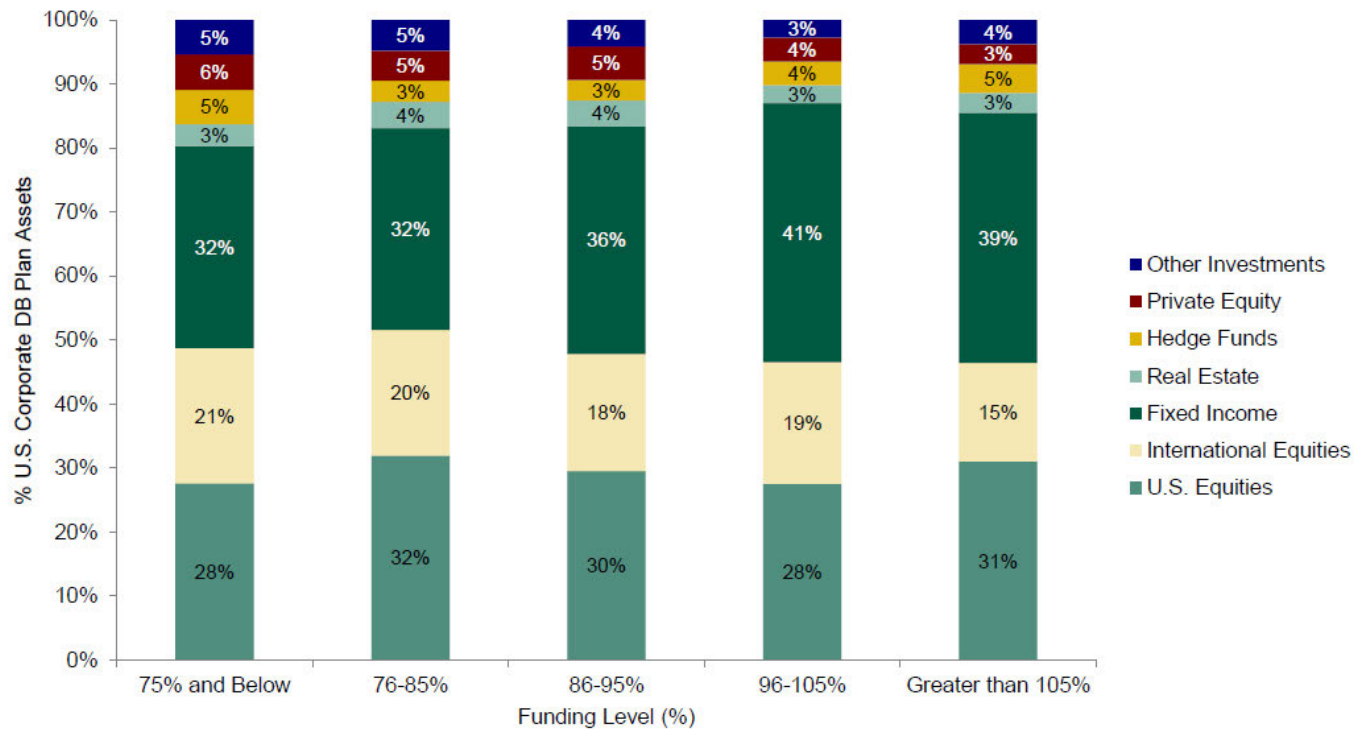


Source: Greenwich Associates 2013, USII-13.
Percentages are weighted in U.S. dollars and projected to the Greenwich Associates universe of U.S. institutional investors. Projections based only on the assets of institutions disclosing their specific asset allocation. Results are for corporate DB plans. Other investments include multi-asset, commodities, and money market.

GREENWICH ASSOCIATES SURVEY

Higher allocations to fixed income among more well-funded corporate plans are evidence of dynamic de-risking policies in place.

U.S. Corporate Funds' Asset Mix of Defined Benefit Plan Assets 2013, by Funding Level

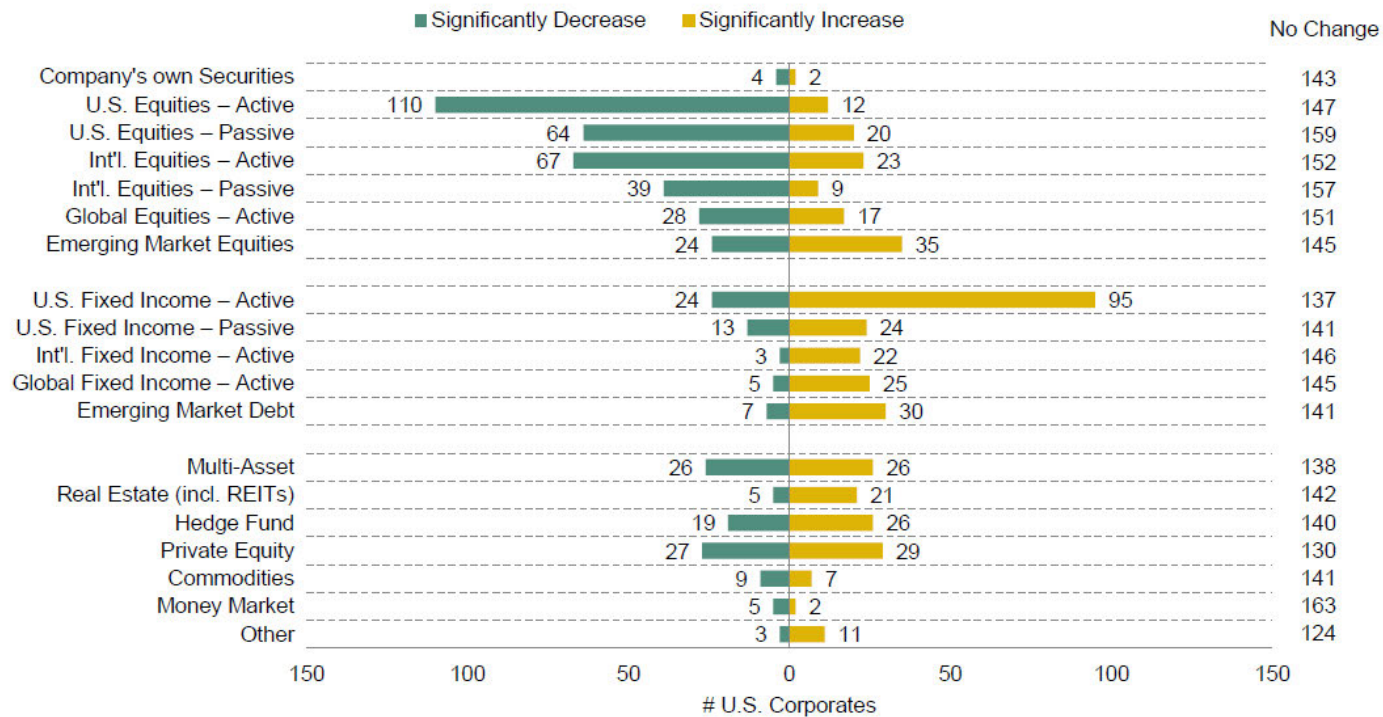


Source: Greenwich Associates 2013, USII-13.
Percentages are weighted in U.S. dollars and projected to the Greenwich Associates universe of U.S. institutional investors. Projections based only on the assets of institutions disclosing their specific asset allocation. Results are for corporate DB plans. Other investments include multi-asset, commodities, and money market.

GREENWICH ASSOCIATES SURVEY

Corporate funds clearly intend to further de-risk portfolios, predicting increases to fixed income and decreases to equities.

U.S. Corporate Funds' 3-Year Expected Asset Allocation Changes 2013



Source: Greenwich Associates 2013, USII-13.

Note: For each category, the balance of institutions not displayed here have indicated no change or no answer. Multi-Asset includes risk parity, asset allocation, GTAA, etc. Results are for corporate DB plans.

MANAGER IMPLEMENTATION

INVESTMENT MANAGER IMPLEMENTATION

- As we cross the \$200 million threshold for LDI assets in the plan, different manager structures and fee models become viable.
 - 31% LDI - \$150M (current allocation)
 - 45% LDI - \$215M
 - 58% LDI - \$278M
- Currently we are employing three mutual funds (PIMCO and Vanguard) and a commingled vehicle from Prudential. With over \$200M in the LDI sleeve, potential cost savings opportunities arise by utilizing much cheaper separate accounts and commingled funds. Further, the portfolio may be more effectively implemented by allowing the manager(s) control of the rebalancing activities to match liabilities.
- The dual manager structure in place today was designed to mitigate single manager risk. Although further cost savings are available by moving to a single manager structure, we recommend maintaining a dual manager structure.
 - This matter is further complicated by the fact that one of the incumbent managers, PIMCO, is on watch due to organizational concerns
- Given the size of assets, we are now able to take advantage of customized separate account solutions. Avista will benefit from better pricing, a incrementally better liability-matched portfolio, and a greater level of service from the managers' LDI service teams.
- Wurts & Associates recommends that the relationships with PIMCO and Prudential be maintained, and the nature of the relationships revised to allow the two managers to manage separate accounts. This will reduce the weighted average cost of the fixed income portfolio from 36bps to 30bps. In addition, it allows more efficient portfolio management and an easier future transition to a cash flow-matched portfolio structure.
 - In light of PIMCO's watch list status, after careful evaluation we determined it reasonable to proceed with the transition. However, BlackRock was evaluated as an alternate and if conditions deteriorate further at PIMCO we will be able to effectively recommend BlackRock as a replacement.

SERVICE LEVELS

	In all cases, all managers will run liability data to assist plan sponsors in assessing liabilities, and if needed, select a liability benchmark.	
	PIMCO	Prudential
Basic Fund Structure Plan Sponsor Driven	<ul style="list-style-type: none"> • Five mutual funds are available. • The plan sponsor is responsible for managing the exposure and rebalancing to the liability benchmark. The MFs can be used as stand alone allocations or can be combined in order to match liabilities and duration as closely as possible. • Minimum investment is \$1m for each mutual fund. 	<ul style="list-style-type: none"> • A full LDI solution is unavailable. • Two commingled funds benchmarked to the Barclays Long Gov/Credit Index and Barclays Long Corporate Index exist. • The plan sponsor is responsible for managing the exposure and rebalancing to liability benchmark. The two CFs can be used as stand alone allocations or can be combined in order to match liabilities and duration as closely as possible. • Minimum investment is \$5m.
Market Based Approach Manager Driven	<ul style="list-style-type: none"> • The team takes the client's unique liability cash flows and loads them into their proprietary software to "optimize" for factors like: duration, credit spread, yield, etc. From there, the software optimizes the portfolio allocation based on a number of publicly available FI benchmarks. • Additionally to individual bonds, PIMCO has the option to allocate to "sector funds" within the separate account. These sector funds are mutual fund vehicles not accessible to the public. The account may include interest rate swaps and treasury futures. • Minimum investment is \$75m. 	<ul style="list-style-type: none"> • A separate account using individual bonds will be managed to a market-based benchmark created by the Prudential analysis. The benchmark is based on sub-components of market indices weighted to reflect the liabilities and duration of the plan. This approach will match the actual liabilities closer and reduce interest rate risk significantly. • Minimum investment is \$100m.
Cash Flow Basis Manager Driven	<ul style="list-style-type: none"> • Further customization upon request 	<ul style="list-style-type: none"> • Prudential will conduct a LDI analysis and specify the best custom cash-flow based benchmark. The team takes the client's unique liability cash flows and the entire client portfolio into consideration. This approach significantly reduces interest rate risk and matches closest to the actual liabilities. • The separate account will invest in individual bonds and may invest in interest rate swaps and treasury futures. • Typically on a quarterly basis, Prudential will rebalance the strategy if necessary. • Minimum investment for each strategy is \$100m.

* The plan sponsor is responsible for providing the liability cash flows and advise the manager of any changes within the plan that may affect the liabilities. In a manager driven approach, the managers will act as co-fiduciaries and will take actuarial data directly and actively manage the LDI portfolio to meet liabilities.

FEE STRUCTURES

	PIMCO	Prudential
Basic Fund Structure Plan Sponsor Driven	<p>Five mutual funds are available at \$1m minimum investment.</p> <p>Extended Duration (PEDIX): 50 bps Long Bond - Full Authority (PLRIX): 50 bps</p> <p>Long Term Credit (PTCIX): 55 bps Long Duration Total Return (PLRIX): 50 bps Long Term Treasury (PGOVX): 48 bps</p>	<p>A full LDI solution is unavailable, but two commingled funds exist as component pieces with a minimum investment of \$5m.</p> <p>Long Corporate: First \$50m: 28 bps Next \$100m: 22 bps Next \$100m: 20 bps Balance: 15 bps</p> <p>Long Govt/Credit: First \$50m: 27 bps Next \$200m: 20 bps Balance: 15 bps</p>
Market Based Approach Manager Driven	<p>A separate account with a minimum investment of \$75M</p> <p>First \$100 m: 30 bps Next \$100 m: 27.5 bps Balance: 25 bps</p>	<p>A separate account with a minimum investment of \$100M</p> <p>First \$100 m: 30 bps Next \$100 m: 25 bps Next \$100 m: 22 bps Balance: 15 bps</p>
Cash Flow Basis Manager Driven	<p>Negotiable based on scope.</p>	<p>A separate account with a minimum investment of \$100M, \$200m + preferred</p> <p>First \$100 m: 30 bps Next \$100 m: 25 bps Next \$100 m: 22 bps Balance: 15 bps</p>

Strategies in bold are currently being used in the AVISTA LDI mandate.

FEE ANALYSIS – MULTI MANAGER STRUCTURE

Assuming each manager is awarded half of the
LDI mandate

	Status Quo	Market Based Approach		
	Current Line Up (all Assets)	PIMCO	Prudential	50% PIMCO / 50% Prudential
31% LDI \$75M Each Total Fees \$ Total Fees as % of Total LDI	\$542,157	\$222,987	NA	NA
	0.36%	0.30%	NA	NA
45% LDI \$108M Each Total Fees \$ Total Fees as % of Total LDI	\$787,002	\$321,717	\$319,743	\$641,460
	0.36%	0.30%	0.30%	0.30%
58% LDI \$139M Each Total Fees \$ Total Fees as % of Total LDI	\$1,014,358	\$407,436	\$397,669	\$805,104
	0.36%	0.293%	0.29%	0.29%

The current line up for a 31% LDI allocation consists of: 18.5% PIMCO Long Term Credit (PTCIX) 18.5% Prudential Long Duration 4.5% Vanguard Long Govt. Bond Index (VLGIX) 3.6% PIMCO Extended Duration (PEDIX)

SUPPLEMENTAL DETAILS

AVISTA ASSET ALLOCATION DETAIL

	Alternative Asset Allocations					CMA's (10 Yr)
	Current Policy	45% Fixed	58% Fixed	72% Fixed	85% Fixed	
Large Cap US Equity	25.0	22.5	18.0	13.0	7.0	6.9
Small/Mid Cap US Equity	5.0	2.5	1.0	0.0	0.0	6.9
Total Domestic Equities	30.0	25.0	19.0	13.0	7.0	
International Large	13.0	10.0	8.0	6.0	3.0	9.8
Emerging Markets	4.0	2.0	0.0	0.0	0.0	12.6
Total International Equities	17.0	12.0	8.0	6.0	3.0	
Total Global Equities	47.0	37.0	27.0	19.0	10.0	
Long Duration Bond [^]	31.0	45.0	58.0	72.0	85.0	5.1
Total Global Fixed Income	31.0	45.0	58.0	72.0	85.0	
Commodities	4.0	3.0	2.0	0.0	0.0	6.0
Real Estate	6.0	5.0	5.0	4.0	2.5	7.3
Total Real Assets	10.0	8.0	7.0	4.0	2.5	
Absolute Return	12.0	10.0	8.0	5.0	2.5	6.7
Total Non-Public Investments	12.0	10.0	8.0	5.0	2.5	
Total Allocation	100.0	100.0	100.0	100.0	100.0	

	Alternative Asset Allocations				
	Current Policy	45% Fixed	58% Fixed	72% Fixed	85% Fixed
Mean Variance Optimizer Analysis					
Forecast 10 Year Return	6.6	6.3	6.0	5.8	5.4
Standard Deviation	10.4	9.7	9.4	9.9	10.7
Return/Std. Deviation	0.6	0.7	0.6	0.6	0.5
1st percentile ret. 1 year	-14.8	-13.8	-13.6	-14.8	-16.6
Sharpe Ratio	0.44	0.44	0.42	0.38	0.32
Wurts Economic Scenario Analysis					
10 Year Return Forecast					
Stagflation	5.1	4.8	4.9	4.8	4.9
Weak Economy	4.5	4.4	4.6	4.8	4.9
Average Economy	5.8	5.1	4.7	4.4	4.1
Strong	7.7	6.3	5.6	4.9	4.2
Range of Scenario Forecast	3.3	1.9	1.0	0.4	0.8
Economic Shock (1 year)	-29.5	-20.4	-14.9	-9.8	-4.5
10 Year Real Return Forecast					
Stagflation	1.1	0.8	0.9	0.8	0.9
Weak Economy	2.5	2.4	2.6	2.8	2.9
Average Economy	2.6	1.8	1.5	1.2	0.9
Strong	4.0	2.5	1.8	1.1	0.4
Range of Scenario Forecast	2.9	1.7	1.7	1.9	2.5

[^] Long Duration Bond: Return assumption for 2014 Wurts CMA based on discount rate.

SCENARIO ANALYSIS – EXPLANATORY NOTES

- For this analysis we estimate the impact of changes in equity returns and interest rates on the plan's ABO & PBO funded status.
- We assume that the portfolio consists of two asset classes, equities and fixed income, at varying weights. For Example: the 31% LDI portfolio has a 69%/31% split of equities and long duration fixed income.
- To calculate the funded ratio we are using the plan's assets adjusted by contributions and benefits payments ("net assets"). The equity portion of the assets changes with the assumed equity returns in the blue left hand column. The fixed income portion of assets fluctuates based on interest rate expectations taking into account the weighted average duration of the fixed income assets and coupon payments. In the denominator, the liabilities plus service costs are adjusted by interest rate changes, the assumed duration and coupon payments.

$$\text{Funded Ratio} = \frac{[(\text{Net Assets} \times \text{Equity Weight} \times \text{Equity Return}) + (\text{Net Assets} \times \text{FI Weight} \times (\text{Interest Rate} \times (- \text{Weighted Average Duration}) + \text{Coupon Rate}))]}{[(\text{Interest Rate} \times (- \text{Duration})) \times \text{Liab} + \text{Coupon Rate}]}$$

- The plan's assets and liabilities were \$479.9 million as of 12/31/2013. Liabilities under PBO and ABO were \$500.6 million and \$441.7 million respectively.
- The estimated funded status as of 12/31/2013 was 96% PBO and 108% ABO.
- Service costs for the plan year are estimated at \$19.7 million.
- Estimated net contributions for the plan year are \$6M. (\$32.0 million contributions - \$26M benefits payments)
- We estimated a coupon rate of 5% for long duration fixed income and liabilities
- The duration for the liabilities and the LDI fixed income is estimated at 15 years.
- A change in interest rates is assumed to parallel shift the yield curve and affect short and long duration bonds equally.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1303

**Liability Driven Investing Phase Two, Avista Corporation Finance Committee,
May 10, 2012**

LIABILITY DRIVEN INVESTING PHASE TWO

Avista Corporation Finance Committee

May 10, 2012

WURTS  ASSOCIATES

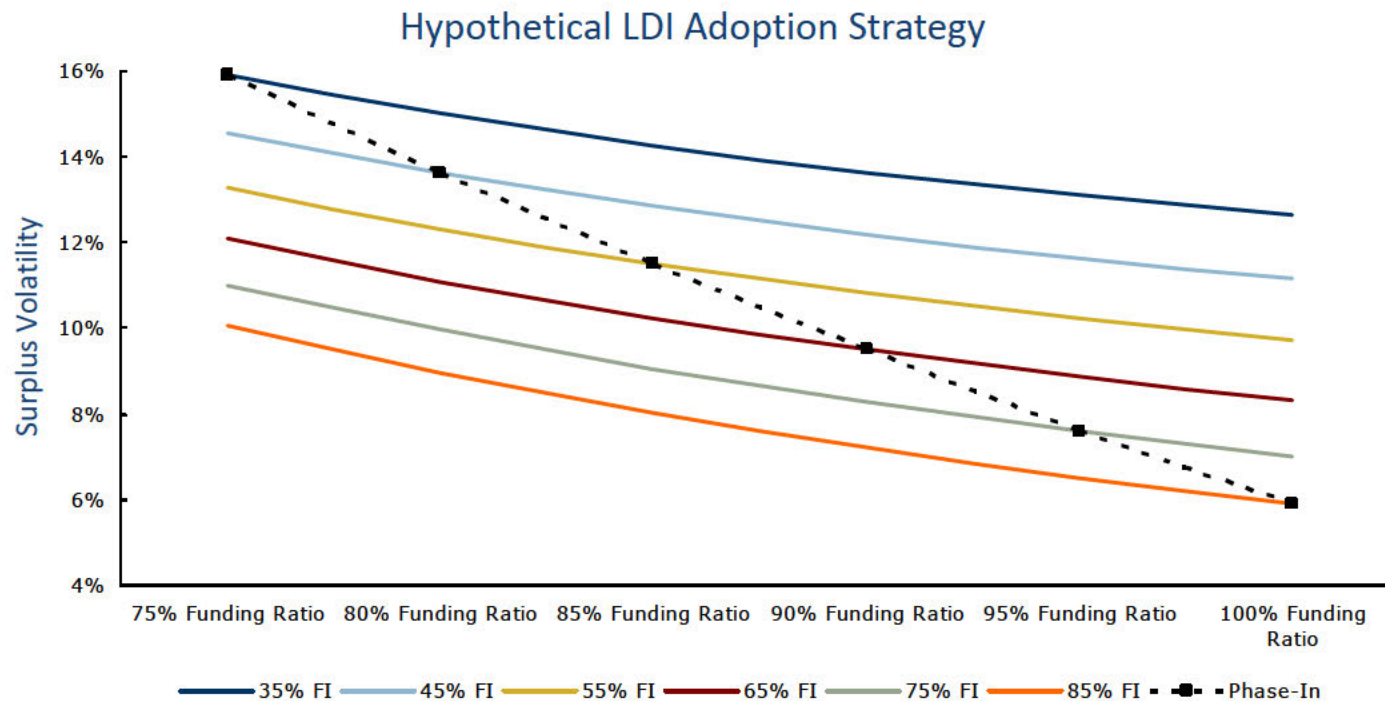
SEATTLE | 206.622.3700
LOS ANGELES | 310.297.1777
www.wurts.com

EXECUTIVE SUMMARY

- In 2010, Avista extended the duration of the investment portfolio in order to begin adopting a more liability-driven investing (LDI) approach.
- In 2011, Avista adopted a new pension planning strategy that specifically targets achieving fully funded status in 2015, as opposed to the prior tradition of a rolling five-year target.
- Given the variability of investment returns that can materialize in a short period of time, Avista's finance staff has commenced evaluation of a gradual increase in LDI exposure. This would entail equity risk being reduced as funded status moves toward 100%, thereby lessening the potential variability in the funded deficit.
 - Specific triggers for shifting asset allocation would be drivers of funded status improvements, including increases in applicable interest rates and/or above expectation investment returns.
 - Any changes to the role of the pension plan in Avista's future benefits would require revisiting the strategic analysis.
- The purpose of this presentation is to provide some historical perspective and demonstrate how this shift in asset allocation strategy might impact the plan and funding sources under varying scenarios.

LDI GLIDEPATH

- At its heart, Liability Driven Investing is about reducing funded status volatility for the plan sponsor.
- Phasing toward a full LDI approach is often preferred given the significant impact on contributions and expense faced when incorporating reduced return expectations for an under-funded plan. A strategy for such is often called a “glidepath.”



INDUSTRY PERSPECTIVE

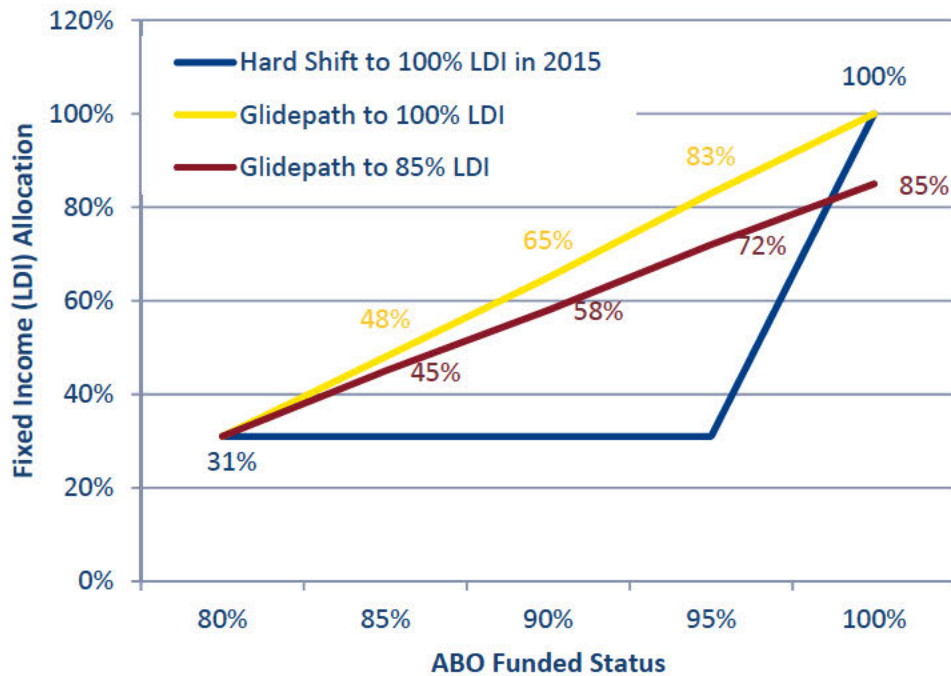
- Data on the adoption of LDI by corporate plan sponsors is somewhat anecdotal and provides little perspective on adoption rates of active plans versus frozen or terminated plans.
- The few recent surveys show continuing interest, adoption and material increases in allocations to fixed income despite the interest rate environment.
 - aiCIO Survey of Geography and Asset Allocation Series: LDI Edition (November 2011)*:
 - *67.5% of the 127 plans surveyed were open to new entrants / accruals*
 - *Of the corporate plans below \$5 billion, 80% have implemented LDI, with an average allocation of 51%.*
 - *Of corporate plans, those with funded status <80% have an average allocation of 36.4% to LDI; those with funded status >90% have an average 56.5% allocation to LDI.*
 - Milliman 2012 Pension Funding Study:
 - *Of the 100 companies surveyed, the average allocation to fixed income was 41% in 2011, up from 36% in 2010 and 33% in 2007. Equities dropped to 38% from 44% and 55% in 2010 and 2007 respectively.*
 - *Average return expectations dropped to 7.8% from 8.0% in 2010 and 8.2% in 2007.*
 - Aon Hewitt Global Pension Risk Survey 2011 – US Survey Findings:
 - *This survey, which covered 227 plans, highlights increased interest in adopting glidepaths.*
 - *Top reasons for glidepath strategy adoptions were: 1) “prudent to reduce risk as funded status improves;” 2) “takes emotion out of asset allocation change due to rules-based approach;” and 3) “minimizes long-term economic cost of plan.”*

*see pages 18-19 for excerpts from study.

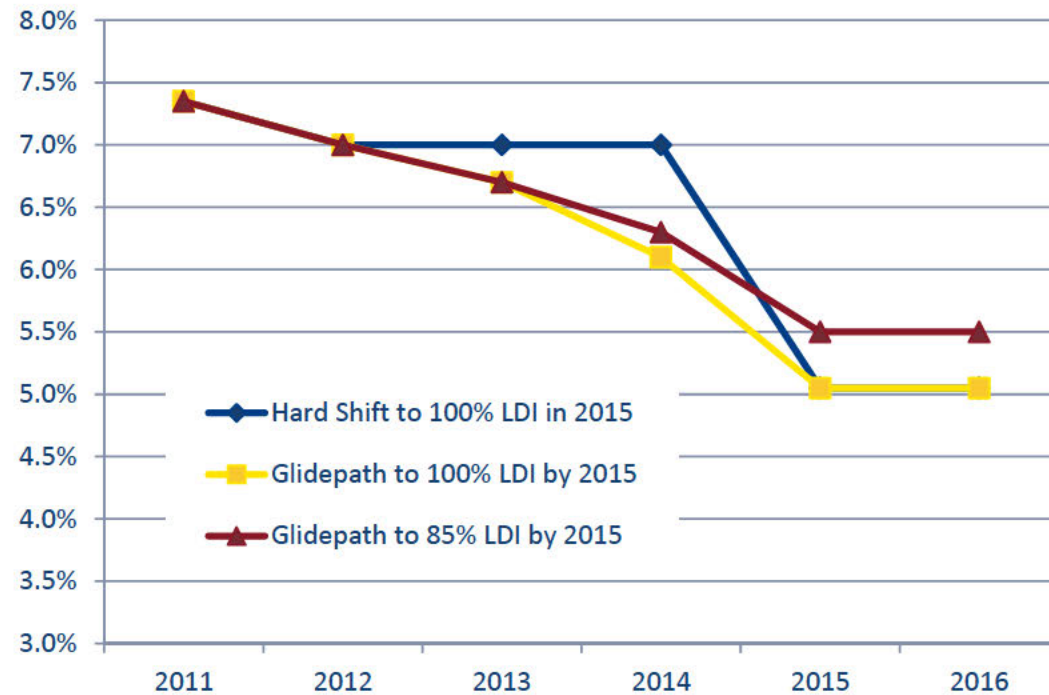
LDI GLIDEPATH – EXPECTED RETURNS

- We evaluated shifting the portfolio allocation to LDI by varying degrees as funded status improved in 5-percentage point increments, starting from the current level of approximately 80% and ending at 100% funded in 2015.
- The expected return from an LDI portfolio was set equal to the plan’s discount rate (currently 5.05%).

Asset Allocation Glidepath



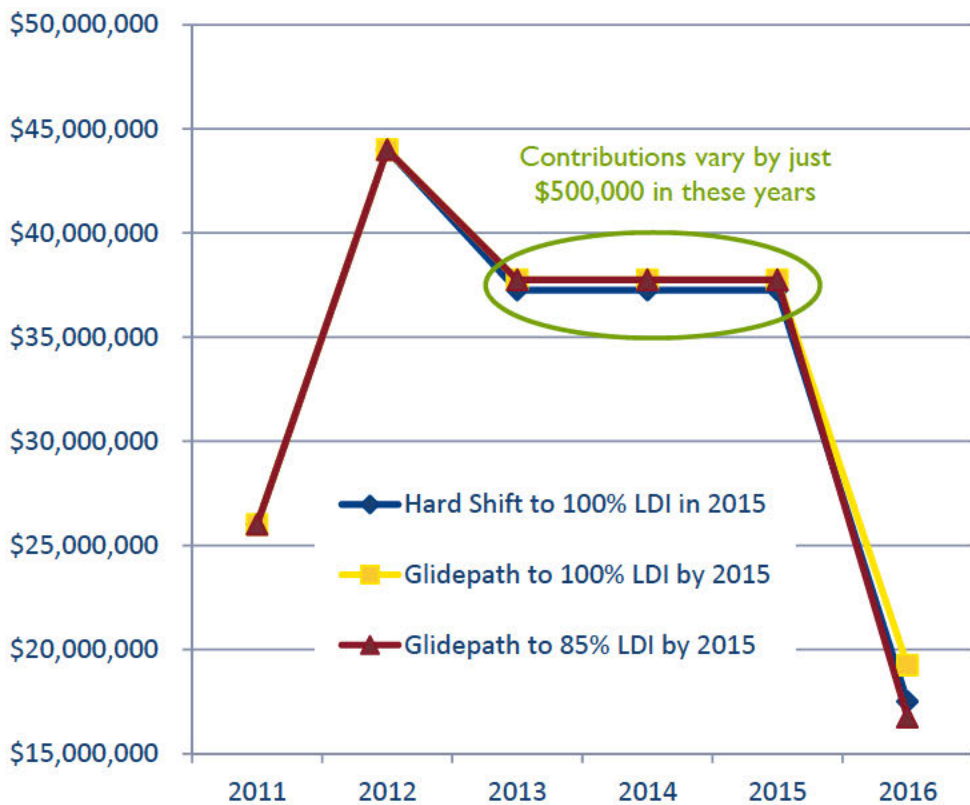
Expected Returns



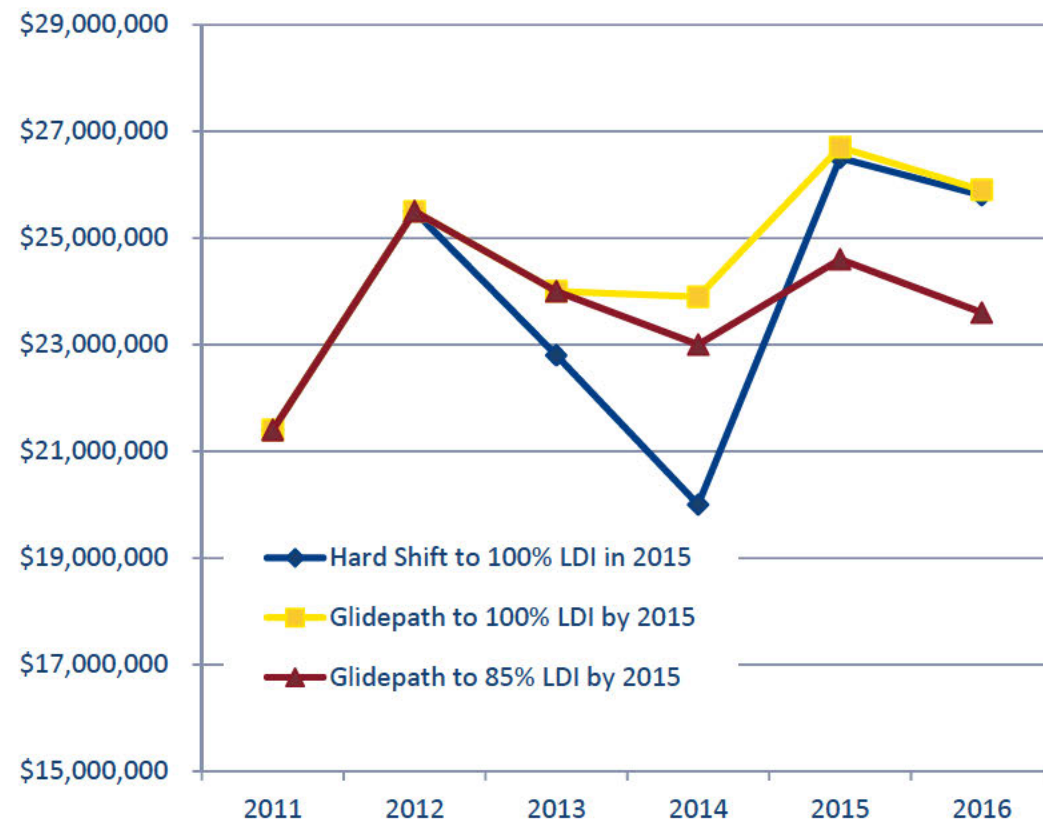
GLIDEPATH IMPACT

- Despite significantly different asset allocations in 2013-2015, contributions are not materially different.

Contributions



Pension Expense

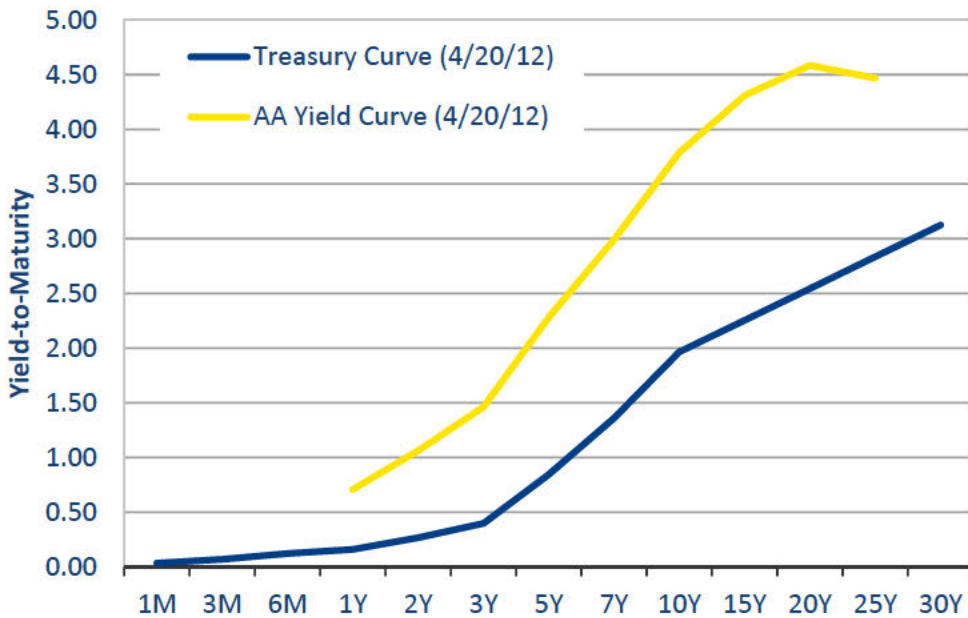


Contributions and expense are calculated under differing assumptions (PPA versus GAAP)

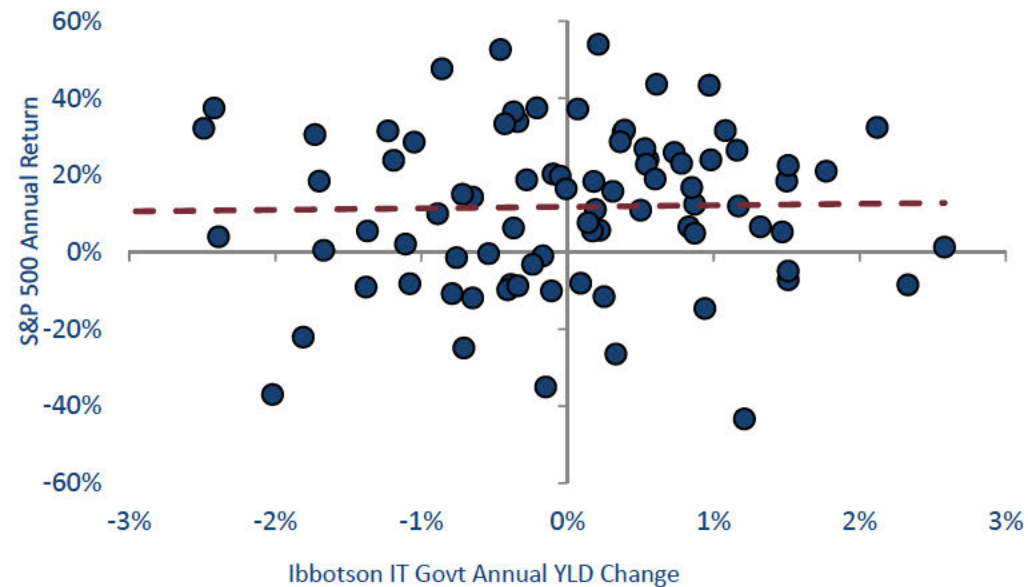
WHAT ABOUT THE LOW INTEREST RATE ENVIRONMENT?

- Without a doubt, interest rates are at/near historic lows.
- No one can predict when interest rates will rise and what will happen at the long end of the curve.
- More importantly, with ~70% in equity related assets, we certainly don't know what equities will do when rates rise.

US Treasury & AA Corporate Yield Curves



Relationship Between Equity Returns & Interest Rate Changes (1927-2011)



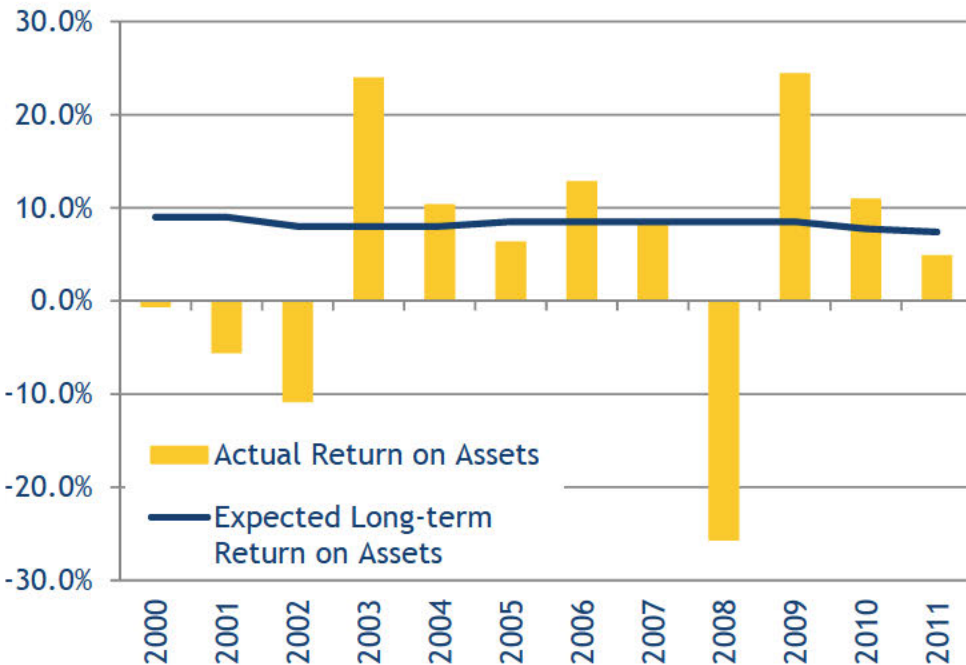
Source: Bloomberg as of 4/20/12. Note, Treasury yield curve between 10Y and 30Y issuances is extrapolated.

Source: Wurts & Associates, Ibbotson

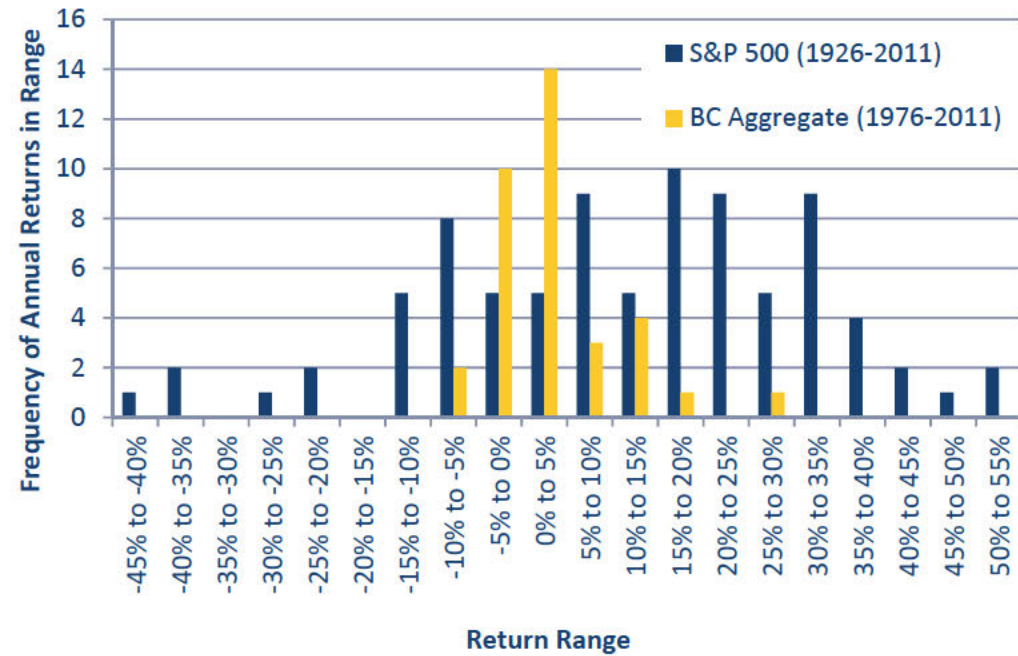
EROA (UN)RELIABILITY

- Variability in capital market returns, particularly equities, creates a high level of unreliability, and in some years, material negative impact on funded status.

Returns vs Expectations



Distribution of Annual Returns



Source: Avista Corp

Source: Wurts & Associates, Ibbotson

SETTING EXPECTATIONS FOR THE FUTURE

- In order to understand how the pension plan might react in different capital market environments, we evaluated a handful of scenarios. To neutralize some factors, we assume the pension is fully funded at the starting point of analysis, 12/31/14, and look at various interest rate and equity return scenarios in calendar year 2015. (See pages 13-15 for details on scenarios and output)

12/31/2015 ABO Funded Status Differential
Compared to Baseline for Each Portfolio



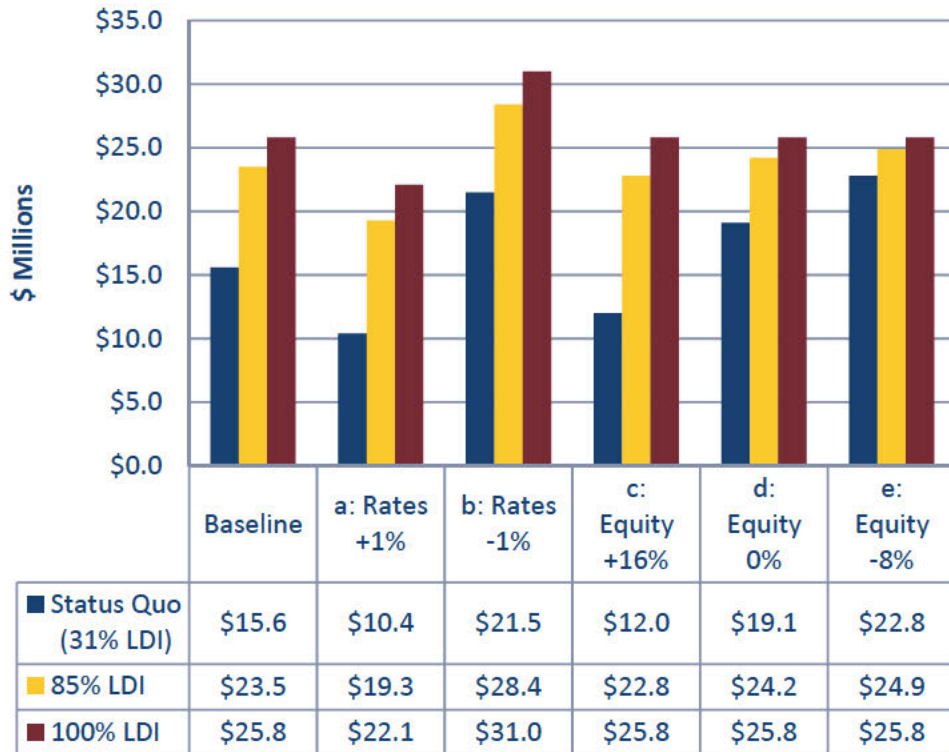
	a: Rates +1%	b: Rates -1%	c: Equity +16%	d: Equity 0%	e: Equity -8%
■ Status Quo (31% LDI)	9.3%	-9.1%	5.4%	-5.5%	-10.9%
■ 85% LDI	2.6%	-2.6%	1.1%	-1.2%	-2.4%
■ 100% LDI	0.8%	-0.7%	0.0%	0.0%	0.0%

- “Baseline” refers to a scenario in which everything goes as planned.*
- We then look at interest rates rising/falling or varying equity returns.*
- Variations in funded status are less dramatic with greater allocations to LDI.*

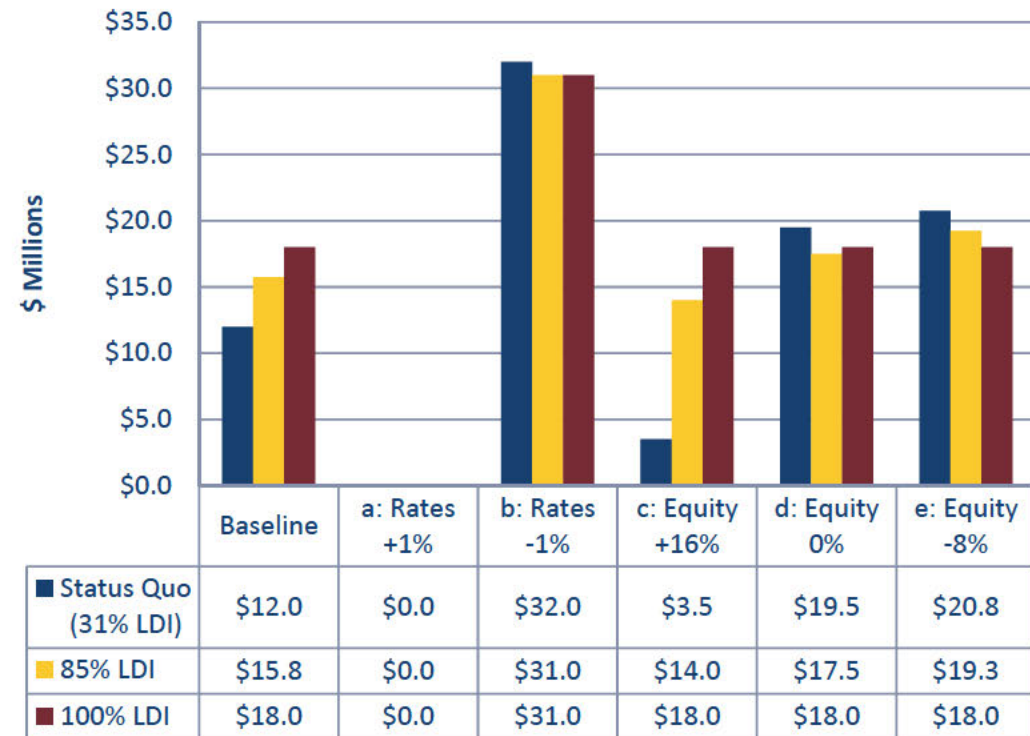
SETTING EXPECTATIONS FOR THE FUTURE, CONT.

- Greater expected returns cause pension expense to be consistently lower with the Status Quo portfolio, however the variability of expense across the five scenarios is more significant for Status Quo than the other portfolios (\$13 million range between high/low; versus \$8m or \$9m for the alternative portfolios).

2016 Pension Expense



2016 Contribution



IN CONCLUSION

- The Benefit Plans Administrative Committee (BPAC) will continue to:
 - Evaluate the asset allocation
 - Monitor interest rates
 - Review portfolio returns relative to expected returns
 - Monitor funded status

SUPPLEMENTAL MATERIALS

GLIDEPATH ANALYSIS

Assumptions

- Glidepath A: Maintain status quo portfolio (31% LDI) until 100% funded (2015); shift completely to 100% LDI portfolio at that juncture.

Hard Shift to 100% LDI in 2015					
	ABO Funded Status				
	80%	85%	90%	95%	100%
Allocation to LDI	31%	31%	31%	31%	100%
Modeled Expected Return	7.0%	7.0%	7.0%	7.0%	5.1%

- Glidepaths B & C: Pro-rata shifts in LDI exposure are triggered at 5% incremental changes in funded status up to target LDI allocation (85% or 100%) at 100% funded. LDI return assumptions were based on the discount rate of 5.05%; the remaining assets' return expectations were based on Wurts & Associates' 2012 Capital Market Assumptions.

Glide-Path to 100% LDI					
	ABO Funded Status				
	80%	85%	90%	95%	100%
Allocation to LDI	31%	48%	65%	83%	100%
Modeled Expected Return	7.0%	6.7%	6.1%	5.7%	5.1%

Glide-Path to 85% LDI					
	ABO Funded Status				
	80%	85%	90%	95%	100%
Allocation to LDI	31%	45%	58%	72%	85%
Modeled Expected Return	7.0%	6.7%	6.3%	6.0%	5.5%

SCENARIO ANALYSIS

Assumptions:

All Scenarios:

- Plan is fully funded in year 2015; analysis looks at subsequent plan characteristics in 2016
- Equity returns remain constant given lack of correlation with interest rate changes; interest rate changes affect fixed income assets only. This creates challenges in the interpretation of results

Baseline: No interest rate change, bond returns equal discount rate of 5.05%, non-bond component of portfolio achieves 7.9% return

- Status quo portfolio returns 7%
- 85% LDI portfolio returns 5.5%
- 100% LDI portfolio returns 5.1%

Scenario a: Interest rates rise 1% (parallel shift in yield curve)

- Discount rate rises to 6.05.
- Fixed income assets fall equal to liabilities, equity assets rise 7.9%

Scenario b: Interest rates fall 1% (parallel shift in yield curve)

- Discount rate falls to 4.05.
- Fixed income assets rise equal to liabilities, equity assets rise 7.9%

Scenario c: Interest rates constant; equities rise 8% above expectations

- Discount rate remain at 5.05%
- Fixed income assets match liabilities (+5.05%), equity assets rise 15.9%

Scenario d: Interest rates constant; equities fall 8% below expectations

- Discount rate remain at 5.05%
- Fixed income assets match liabilities (+5.05%), equity assets fall 0.1%

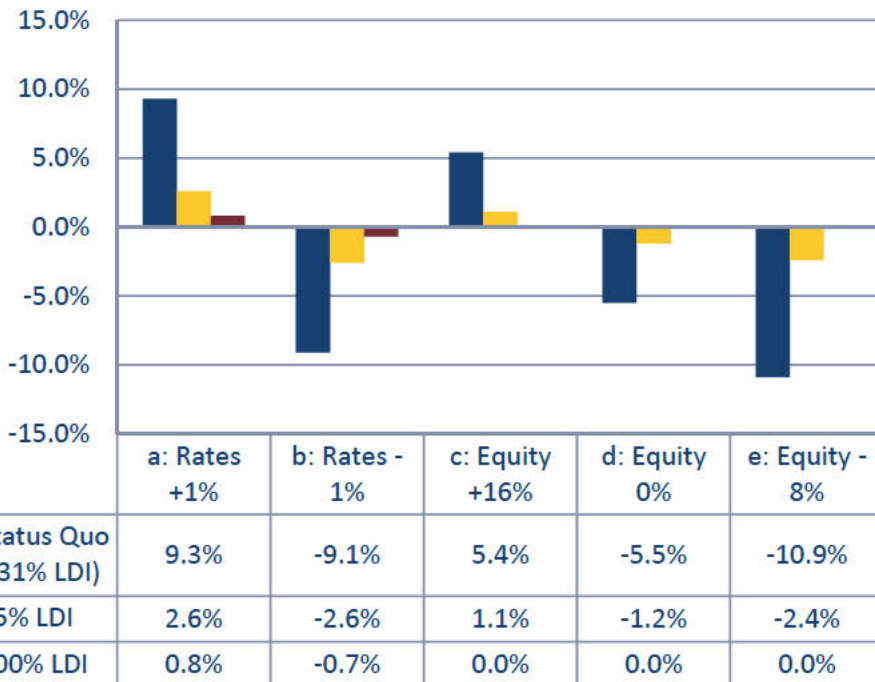
Scenario e: Interest rates constant; equities fall 16% below expectations

- Discount rate remain at 5.05%
- Fixed income assets match liabilities (+5.05%), equity assets fall 8.0%

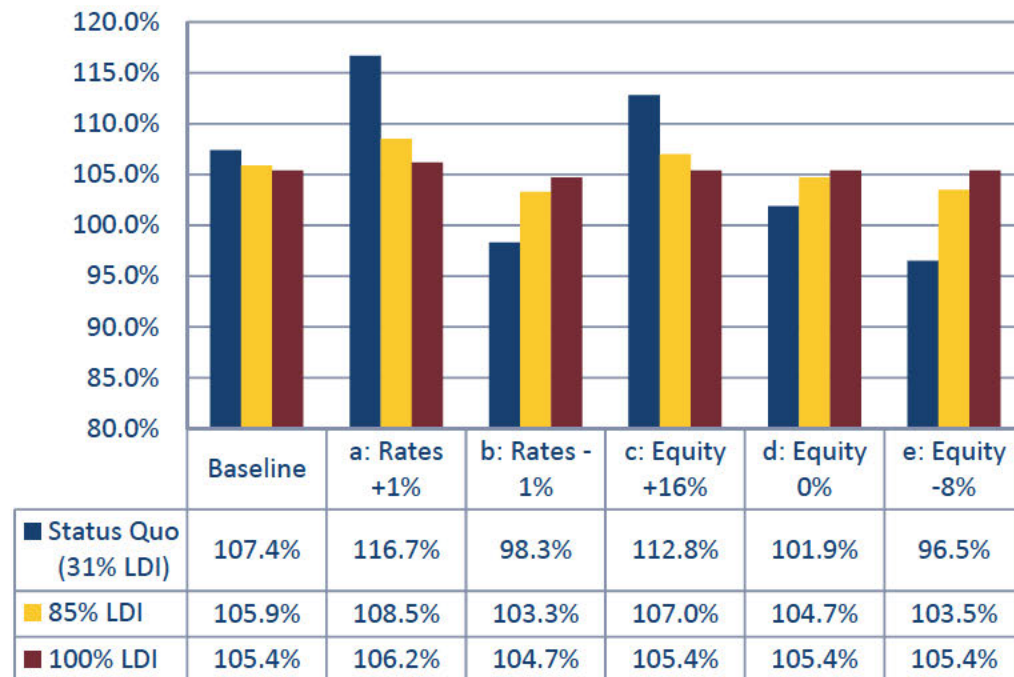
SCENARIO ANALYSIS: ABO FUNDED STATUS CHANGES

- The baseline scenario represents a “perfect” world; with today’s low interest rate environment and minimal movement in liabilities, the lesser exposure to LDI sees the greatest improvement in funded status.
- Scenarios a and c reflect the opposite of the “perfect storm;” interest rates or equities performance provide a tailwind for significant improvements in funded status.
- However, the interest rate shift scenarios (a & b) demonstrate the power of LDI. While a rise in interest rates results in asset losses, with LDI the funded status does not change materially.
- This power of LDI is further compounded when considering flat or declining equity markets; funded status is less materially impacted with greater LDI exposure.

12/31/2015 Funded Status Differential
Compared to Baseline for Each Portfolio



ABO Funded Status 12/31/15
(Assumes 101.4% Funded Status 12/31/14)

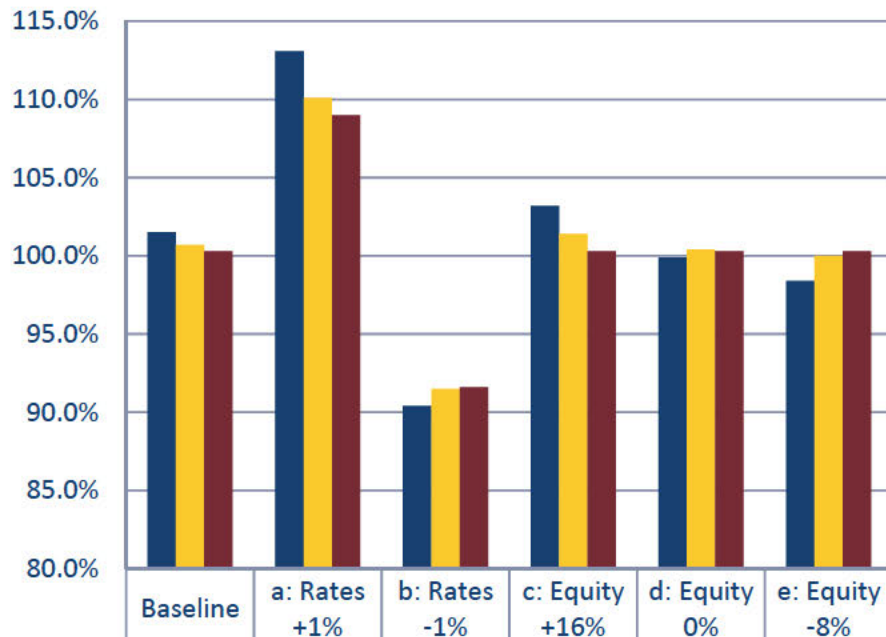


Note, funded status is also influenced by outside factors such as contributions, service cost and the impact of interest rate movements on projected benefits for active employees, which cannot be perfectly hedged given greater variability. These factors cause the baseline funded status to continue to improve from 2015-2016, and also the mild variability in scenarios a and b for the 100% LDI portfolio.

SCENARIO ANALYSIS : OTHER FUNDED STATUS MEASURES

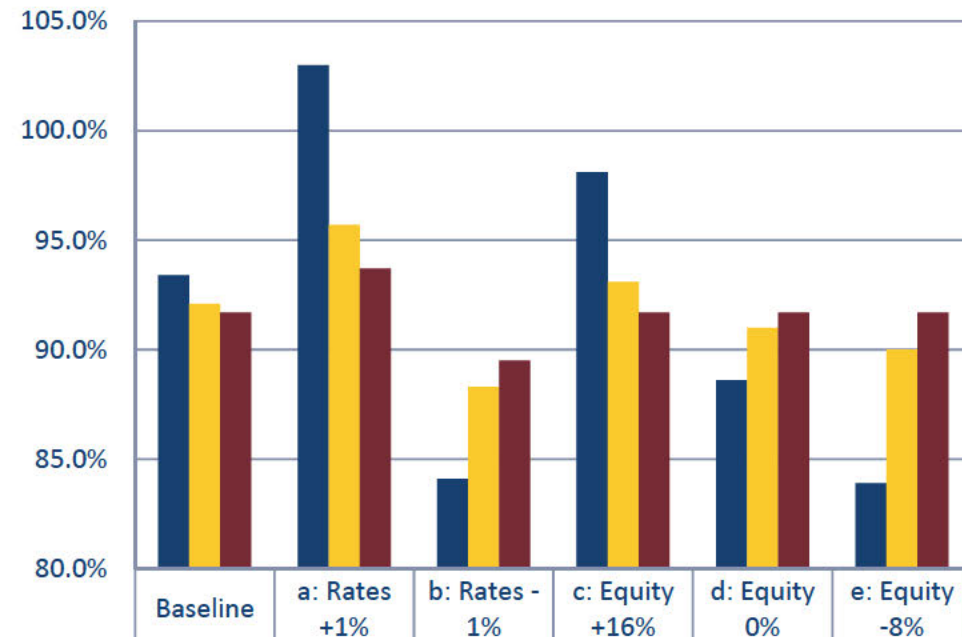
- PPA and PBO funded status changes are similar to ABO. Even in a rising interest rate market, all three portfolios see at least a modest improvement in funded status on these measures.
- PBO funded status typically has greater sensitivity than ABO funded status given the under-hedged position.

PPA Funded Status 12/31/2015
(Assumes 101.4% PPA % 12/31/2014)



	Baseline	a: Rates +1%	b: Rates -1%	c: Equity +16%	d: Equity 0%	e: Equity -8%
■ Status Quo (31% LDI)	101.5%	113.1%	90.4%	103.2%	99.9%	98.4%
■ 85% LDI	100.7%	110.1%	91.5%	101.4%	100.4%	100.0%
■ 100% LDI	100.3%	109.0%	91.6%	100.3%	100.3%	100.3%

PBO Funded Status 12/31/2015
(Assumes 88.0% PBO % 12/31/2014)

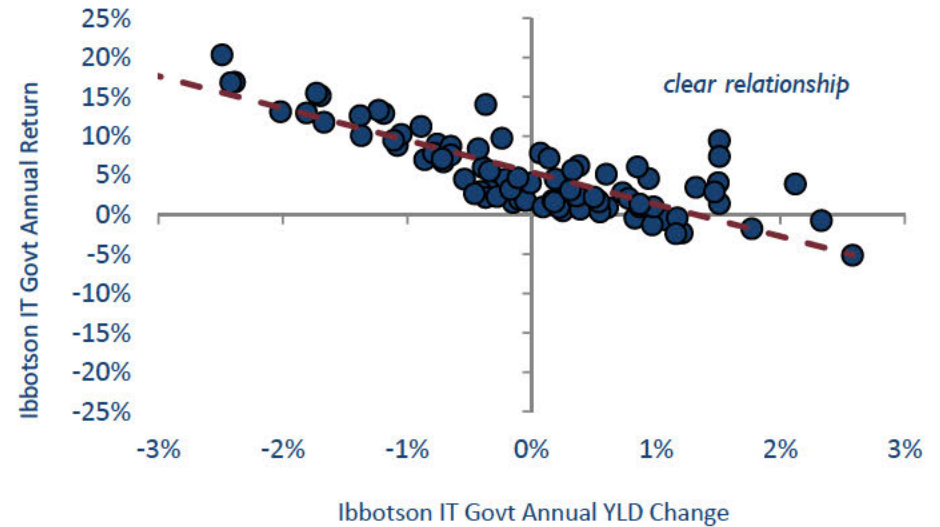


	Baseline	a: Rates +1%	b: Rates -1%	c: Equity +16%	d: Equity 0%	e: Equity -8%
■ Status Quo (31% LDI)	93.4%	103.0%	84.1%	98.1%	88.6%	83.9%
■ 85% LDI	92.1%	95.7%	88.3%	93.1%	91.0%	90.0%
■ 100% LDI	91.7%	93.7%	89.5%	91.7%	91.7%	91.7%

DEALING WITH BONDS TODAY

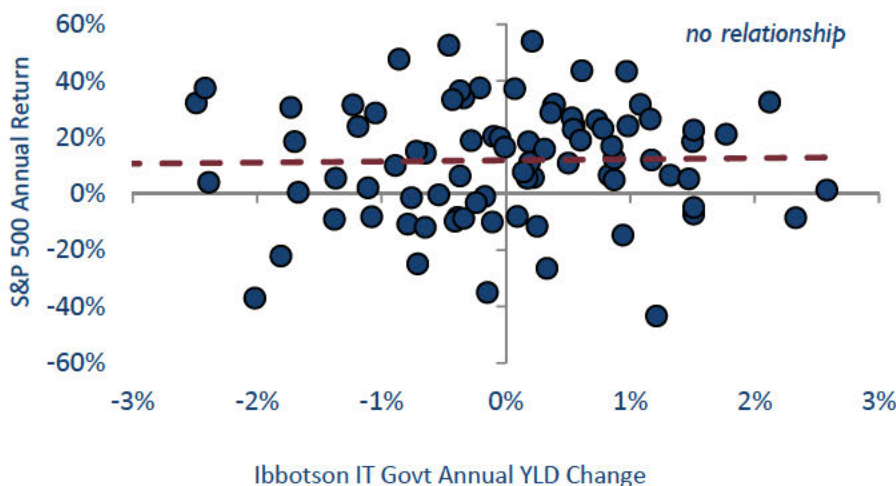
- We know that rising interest rates have negative implications for bond returns. And many agree that rates are at historic lows and are likely to go up from here (although most of us recognize that we don't know *when*).
- But, does the risk of rising rates mean investors should move out of bonds into equities? Does anyone know how equities will perform when rates rise? Rates could rise due to a variety of reasons, including inflation or economic growth, which affect equities uniquely. If rates rise 1% and investors lose 4% on their bond portfolio (4yr duration), wouldn't it be feasible for equities to lose 10%?
- We caution our clients from blindly moving out of high quality fixed income solely due to low yields and the risk of rising rates, as this materially increases the downside risk of portfolios and eliminates the "insurance" that bonds would provide in a flight to safety or a deflationary environment.

The Relationship Between a Change in Interest Rates and Treasury Bond Returns (1927 - 2011)



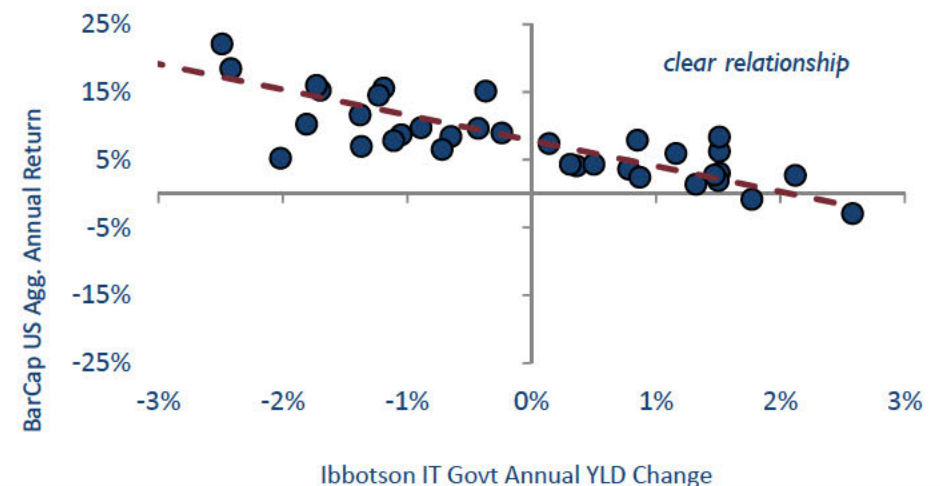
Source: Ibbotson

The Relationship Between a Change in Interest Rates and Equity Returns (1927 - 2011)



Source: Ibbotson

The Relationship Between a Change in Interest Rates and Aggregate Bond Returns (1976 - 2011)



Source: Ibbotson

PUT BONDS IN CONTEXT OF ECONOMIC SCENARIOS

- Portfolios should be constructed with an awareness of the possible economic outcomes.
- If one has certainty of one particular scenario, then a more focused and less diversified portfolio may be appropriate.
- However, most fiduciaries recognize they lack perfect predictive ability; therefore maintaining some exposure to assets that do well in less desirous economic scenarios may be most prudent.



AI-CIO SURVEY EXCERPTS

- aiCIO Magazine November 2011 LDI Survey (<http://www.ai-cio.com/datasurvey.aspx?id=3529&page=1>)
- The aiCIO Survey of Geography and Asset Allocation Series: LDI Edition was conducted in September of this year and asked respondents drawn from aiCIO's readership to respond to questions regarding their pension fund's status and future plans. 127 responded from across the globe; in this edition, we relied only on responses from the United States that qualified by meeting two criteria: they (a) were a senior investment official at (b) a corporate or public defined benefit pension plan.

PORTFOLIO

Total Asset Allocation

	TOTAL	PUBLIC	CORPORATE						
			>\$5B	<\$5B	<80% funded	80%-90% funded	>90% funded	Implemented LDI/plan to	No LDI plans
Domestic equity	31.6%	33.8%	30.7%	30.7%	30.7%	30.7%	30.7%	30.7%	34.4%
Intl equity	18.2%	19.6%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.8%
Alternatives	11.5%	17.2%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	8.2%
Fixed Income	37.5%	24.7%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%	33.6%
Other	4.7%	7.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%

Fixed Income Portfolio Composition

	TOTAL	PUBLIC	CORPORATE						
			>\$5B	<\$5B	<80% funded	80%-90% funded	>90% funded	Implemented LDI/plan to	No LDI plans
Short Duration	11.5%	16.7%	0.0%	13.0%	10.0%	5.5%	14.3%	8.3%	30.0%
Core	47.1%	73.7%	45.4%	25.4%	22.5%	22.5%	34.7%	25.4%	0.0%
Long duration	67.2%	10.0%	58.0%	58.0%	46.0%	76.8%	80.9%	72.1%	100.0%
Customized	27.5%	37.5%	50.0%	13.1%	27.5%	10.0%	23.8%	22.5%	0.0%
Other	8.2%	22.7%	4.5%	6.7%	7.5%	9.0%	6.0%	6.9%	0.0%

Average Fixed-Income/Liability Duration (in years)

	TOTAL	PUBLIC	CORPORATE						
			>\$5B	<\$5B	<80% funded	80%-90% funded	>90% funded	Implemented LDI/plan to	No LDI plans
Fixed-Income	9.7	5.4	11.0	11.7	12.2	12.9	10.9	11.8	9.5
Liability	12.5	13.9	11.1	12.1	9.5	13.4	11.8	11.9	8.5

AI-CIO SURVEY EXCERPTS

LDI Implementaion Status

	TOTAL	PUBLIC	CORPORATE >5B	CORPORATE <5B
Currently implement LDI	52.4%	0.0%	60.0%	80.0%
Have no plans to implement LDI	42.9%	100.0%	30.0%	15.0%
Plan to implement LDI	4.8%	0.0%	10.0%	5.0%

IMPLEMENTORS

LDI Implementation Timeline

	BEFORE 2006	2006	2007	2008	2009	2010	2011
Total	20.0%	10.0%	10.0%	20.0%	20.0%	10.0%	10.0%
CORPORATE							
>\$5B	50.0%	0.0%	0.0%	0.0%	25.0%	25.0%	0.0%
<\$5B	12.5%	12.5%	12.5%	25.0%	12.5%	12.5%	12.5%
<80% funded	40.0%	0.0%	0.0%	20.0%	20.0%	20.0%	0.0%
80%-90% funded	12.5%	12.5%	0.0%	37.5%	25.0%	12.5%	0.0%
>90% funded	25.0%	12.5%	12.5%	0.0%	12.5%	12.5%	25.0%

Average Percent of Portfolio in LDI

	TOTAL	CORPORATE				
		>\$5B	<\$5B	<80% funded	80%-90% funded	>90% funded
% in LDI	53.9%	56.3%	51.2%	36.4%	45.0%	56.5%

End Goal of the Plan (numerous answers allowed)

	TOTAL	PUBLIC	CORPORATE					Implemented LDI/plan to	No LDI plans
			>\$5B	<\$5B	<80% funded	80%-90% funded	>90% funded		
Keep open and maintain	64.9%	100.0%	71.4%	44.4%	75.0%	37.5%	40.0%	47.8%	66.7%
Close plan to new entrants	18.9%	0.0%	14.3%	27.8%	0.0%	37.5%	40.0%	26.1%	33.3%
Freeze plan	5.4%	0.0%	0.0%	5.6%	0.0%	12.5%	10.0%	8.7%	0.0%
LDI de-risking strategy	37.8%	0.0%	28.6%	61.1%	25.0%	87.5%	50.0%	60.9%	0.0%
Pension buyout/buy in	2.7%	0.0%	0.0%	5.6%	0.0%	12.5%	0.0%	4.3%	0.0%
Annuitize	2.7%	0.0%	0.0%	5.6%	0.0%	0.0%	10.0%	4.3%	0.0%

Glide Path in Place?

	TOTAL	CORPORATE				
		>\$5B	<\$5B	<80% funded	80%-90% funded	>90% funded
No	73.7%	33.3%	75.0%	40.0%	75.0%	100.0%
Yes, written into IPS as an 'intent'	10.5%	0.0%	12.5%	0.0%	12.5%	0.0%
Yes, but not written into IPS	15.8%	66.7%	12.5%	60.0%	12.5%	0.0%

Glide Path Triggers

TRIGGERS	TOTAL	CORPORATE				
		>\$5B	<\$5B	<80% funded	80%-90% funded	>90% funded
Automatic	9.1%	0.0%	20.0%	33.3%	0.0%	0.0%
Within a range	90.9%	100.0%	80.0%	66.7%	100.0%	100.0%
TRIGGERS BASED ON						
Funded status	70.0%	100.0%	66.7%	100.0%	100.0%	50.0%
Interest rates	20.0%	100.0%	0.0%	33.3%	33.3%	0.0%
Market outlook	20.0%	50.0%	11.1%	0.0%	33.3%	25.0%

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1304

SEI, 7th Annual Global Liability Driven Investing (LDI) Poll

SEI New ways.
New answers.®

Pension Management Research Panel

7th Annual

Global Liability Driven Investing (LDI) Poll



Over the past decade, pension investment management has undergone a sophisticated transformation, with increased focus on creating a holistic strategy that incorporates not just asset allocation, but also plan liabilities and goals, corporate finance, and enterprise risk. Many plan sponsors are looking to portfolio strategies that more closely match liabilities and protect plan funded status through difficult market environments.

The Pension Management Research Panel conducted its 7th annual global liability driven investing (LDI) poll to examine how strategies have evolved over the years through varying market environments, changing regulations, and new philosophies of pension investment management. The poll was completed by 130 corporate pension executives from the U.S., Canada and the U.K. None of the participating organizations are institutional clients of SEI. Please note that totals are rounded and may not always equal 100 percent.

FIGURE 1 PARTICIPANTS BY PENSION ASSET SIZE

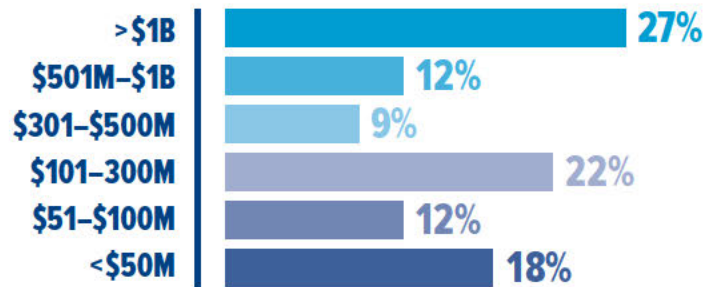
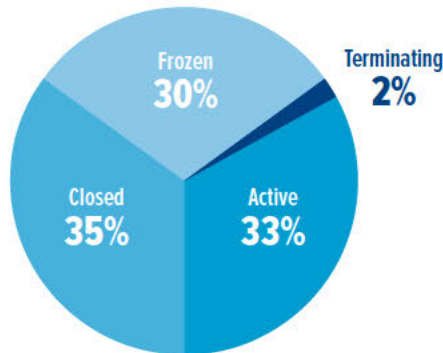


FIGURE 2 PLAN DESIGN STAGE IN 2013



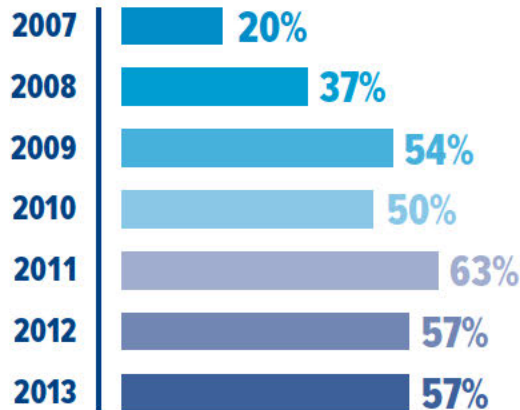
Finding 1—Use of Liability Driven Investing Remains Steady in 2013

Pension plan sponsors worldwide have faced an interesting investment environment year-to-date. Equity markets across the globe have continued to rally throughout 2013, with international equities returning 21 percent since January.¹ In the U.S., capital markets encountered increased uncertainty again as investors reacted to Washington policy confusion. Upon the U.S. Federal Reserve’s announcement regarding quantitative easing in May, bond yields rose and then leveled off in early October, remaining at relative low yields.

These factors could be impacting the overall stagnant move into LDI so far this year even in the face of improved funded status levels. While more than half (57 percent) of the poll participants said their organization currently uses an LDI strategy in the pension portfolio, this percentage is unchanged from last year’s poll. A significant portion of plans continue to use LDI; however, the overall percentage remains slightly below the highest level of 63 percent reported in 2011.

¹As of November 30, 2013; MSCI EAFE Index.

FIGURE 3 GLOBAL USE OF AN LDI STRATEGY



For the 43 percent of global plan sponsors not currently using LDI, reasons given were plan underfunding, the low interest rate environment, and, most commonly, hesitation to give up investment returns. One pension plan sponsor in the U.S. emphasized, “we are not willing to forego return and can accept the volatility.” Mirroring this sentiment, a pension Trustee in the U.K. said, “strong covenant means that we can carry more risk and obtain higher returns; thus, a greater investment in equities rather than bonds.”

Finding 2—Primary Goals for LDI Are Changing

While the primary goal of an LDI strategy—to control funded status volatility—has consistently ranked first since the poll’s inception, this year plan sponsors placed increased emphasis on improving funding levels and advancing the pension toward termination.

Last year, controlling contributions and pension expense ranked second in importance for measuring LDI success but has fallen to fourth this year. Likewise, minimizing plan impact on corporate

liquidity and cash fell from third to last place. These changes might be a result of plan sponsors increasingly pairing LDI with accelerated contribution strategies in order to more aggressively improve funding levels. As the global economy recovers, plan sponsors with available capital and balance sheet flexibility may now be able and willing to make accelerated payments as part of a de-risking strategy and, in turn, might be more accepting of the corresponding impact on overall corporate finance.

FIGURE 4 RANKING OF LDI GOALS 2013 VS. 2012

2013		2012
Control funded status volatility	1	Control funded status volatility
Improve funding levels	2	Control cash contributions/plan expense
Progress toward termination	3	Minimize plan impact on corporate liquidity/cash
Control cash contributions/plan expense	4	Improve funding levels
Provide predictability of annual costs	5	Progress toward termination
Minimize plan impact on corporate liquidity/cash	6	Provide predictability of annual costs

As you can see in Figure 5, the survey continued to ask participants to identify the primary benchmark for success of their overall pension investment strategy. In 2007 and 2008, the top two benchmarks—“absolute return of the portfolio” and “improved funded status”—were within five and two percentage points of each other, respectively. Over the past five

years, that gap has widened to favor the benchmark of “improved funded status,” which incorporates both assets and liabilities. This year, 51 percent of participants ranked this as the top benchmark for pension success, with “absolute return of the portfolio” falling to a historic low of nine percent.

FIGURE 5 TOP FIVE BENCHMARKS FOR PENSION STRATEGY SUCCESS

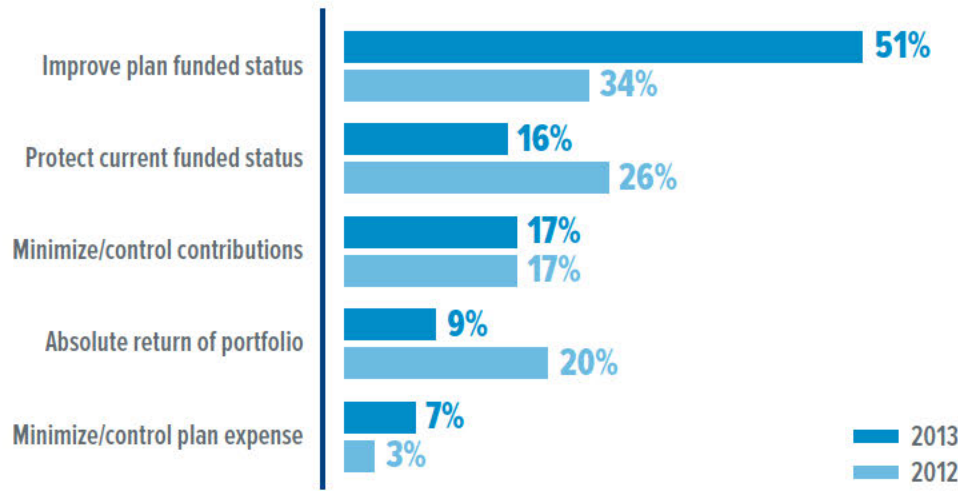
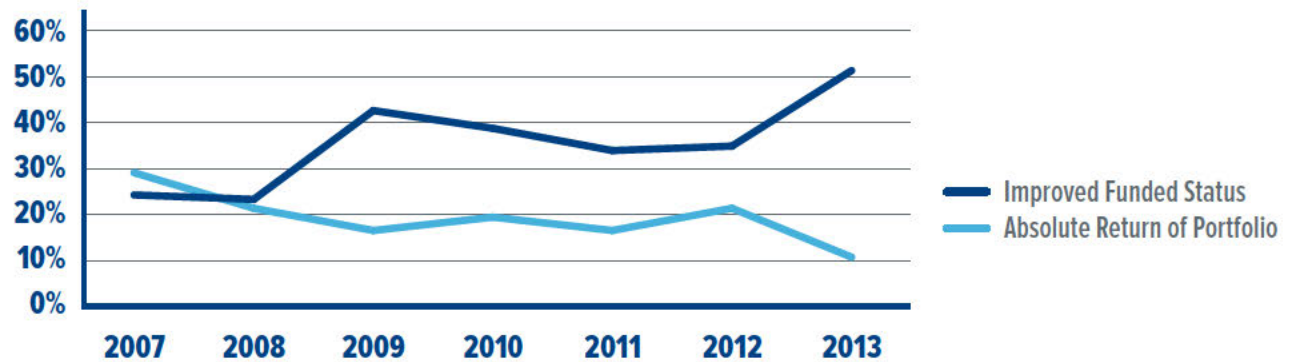


FIGURE 6 PRIMARY BENCHMARK FOR PENSION STRATEGY SUCCESS



This year, 51 percent of participants ranked “improved funded status” as the top benchmark for pension success, with “absolute return of the portfolio” falling to a historic low of nine percent.

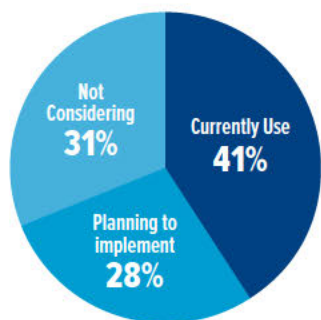
Finding 3—Many Plan Sponsors Are Pairing LDI with a Glidepath Strategy

On average, poll participants are allocating 49 percent of the portfolio to what they would define as “LDI strategies.” This includes use of a variety of fixed-income products, with the most popular being long-duration bonds in the U.S. and Canada (used by 72 percent) and gilts and index-linked gilts in the U.K. (89 percent).

The allocation to LDI will continue to evolve, as many pension plan sponsors have established or considered some form of glidepath strategy.

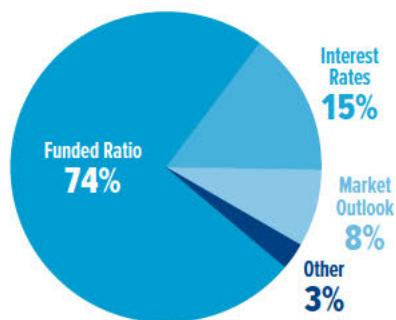
This type of strategy is called many things across the globe (journey planning, dynamic de-risking), but in its most basic form, it is an active approach to asset allocation. It involves setting acceptable levels of risk within portfolios and establishing key trigger points to shed risk, or de-risk, as the plan funded status improves. According to the survey, more than two-thirds (69 percent) of plan sponsors currently use or are planning to implement a glidepath strategy.

FIGURE 7 GLOBAL USE OF A GLIDEPATH



The majority (74 percent) of glidepath strategies rely on funded status as the key trigger for de-risking the portfolio; however, it’s critical that plan sponsors continue to assess current market conditions when considering asset allocation decisions. As markets move, the current glidepath or allocation strategy

FIGURE 8 COMMON GLIDEPATH TRIGGERS



may not meet the plan’s current hurdle rate, and require either additional contributions or longer periods of outperformance to catch up. Plan sponsors should consider not only de-risking, but also re-risking when appropriate, as part of an active glidepath strategy.

Finding 4—U.S. Poll Highlight: The LDI Portfolio Continues to Evolve

LDI continues to be most popular among U.S. pension plan sponsors, with 71 percent of U.S. survey participants currently implementing an LDI strategy. Below is a breakdown of average asset allocations within U.S. pension portfolios, with a heavy (44 percent) average allocation to fixed-income strategies.

As can be seen in Figure 10, 43 percent of the poll participants reduced their allocations

to U.S. equities in 2013, despite the strong equity performance throughout 2013. The assets being removed from equities appear to be transitioning into alternatives and fixed income. One-third (33 percent) of the participants said they increased their allocations to alternatives in 2013. Even with the discussion around tapering, 35 percent of poll participants still increased their fixed-income allocations.

FIGURE 9 AVERAGE PENSION PORTFOLIO ASSET ALLOCATIONS

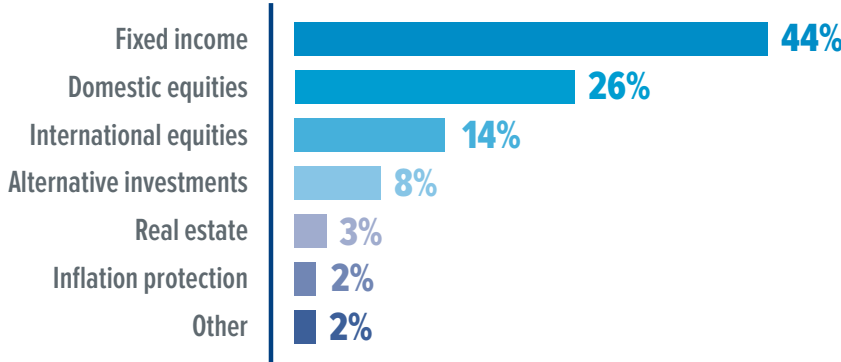
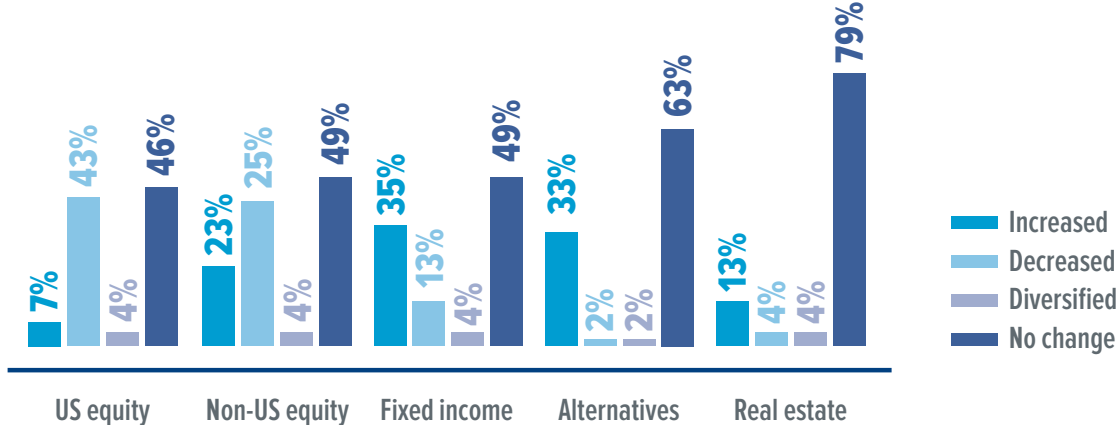


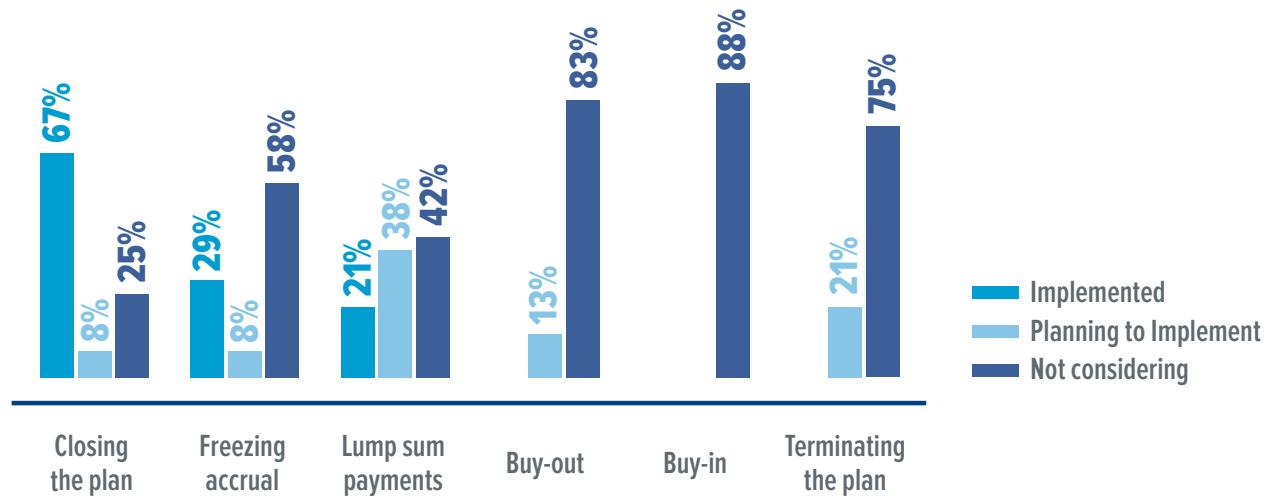
FIGURE 10 CHANGES MADE TO ASSET ALLOCATION IN 2013



In addition to LDI and glidepath strategies, plan sponsors are considering other options to decrease their liabilities and improve the funding health of their pension plans. More than two-thirds of U.S. plan sponsors (67 percent) have closed their plans, meaning that new employees will not have the option to participate. Offering lump-sum payments to term-vested employees is also another popular

risk-reduction strategy; 59 percent of poll participants have either implemented or are planning to implement lump-sum payments. Despite media emphasis in 2013, no plan sponsors reported purchasing or planning to purchase an annuity through an insurance buy-in or buy-out, which could be indicative of the high price tag accompanying such transactions.

FIGURE 11 ADDITIONAL RISK-REDUCTION STRATEGIES



While no plan sponsors are currently terminating their pension plans, 41 percent said that their organization has at least investigated the current cost for termination. Of those, one-third said the

total cost was more than they anticipated and 67 percent said the cost was about what they expected. No one responded that it was less.

Conclusion

Corporate pension plan sponsors across the globe continue to look for risk-management strategies that work to reduce volatility and improve pension funding status. LDI continues to be a popular strategy, with more than half (57 percent) of organizations currently using it within pension portfolios, though 2013 saw a stagnant growth rate, likely due in part to stronger equity performance and historically low interest rates.

More plan sponsors are pairing LDI with a glidepath strategy, with automatic triggers for improved active management and increased focus on improving funding status and progressing the plan toward termination. Survey participants indicated that their organizations are also increasingly turning to external partners to help implement these complex, custom LDI strategies. More than half (51 percent) said they currently use or would consider using a fiduciary manager or investment outsourcer for pension investment management.

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BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1305

**Greenwich Associates Biennial Survey,
U.S. Corporate Funds' Risk Management Strategy, 2014**

U.S. Corporate Funds' Risk Management Strategy

U.S. Institutional Investors – Total Interviews (1093) (1277)

	<u>Established Dynamic De-Risking Strategy</u>						<u>Decision Making Process for De-Risking Strategy</u>									
	Base		Yes		No		Base		Automatic		Predetermined Changes Reviewed by Board		Specific Next Steps Determined Once Trigger		Other	
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Corporate Funds																
Corporate Funds	276	*	42%	*	58%	*	117	*	35%	*	22%	*	33%	*	9%	*
Over \$5 billion	77	*	40%	*	60%	*	32	*	22%	*	31%	*	34%	*	13%	*
\$1 – 5 billion	124	*	43%	*	57%	*	55	*	45%	*	18%	*	27%	*	9%	*
\$501 million – 1 billion	52	*	42%	*	58%	*	20	*	40%	*	15%	*	35%	*	10%	*
\$500 million and under	23	*	43%	*	57%	*	10	*	10%	*	30%	*	60%	*	*	*
Public Funds																
Public Funds	142	*	6%	*	94%	*	5	*	20%	*	20%	*	40%	*	20%	*
– Federal	2	*	100%	*	*	*	*	*	*	*	*	*	*	*	*	*
– State	53	*	6%	*	94%	*	3	*	*	*	33%	*	33%	*	33%	*
– Municipal	87	*	3%	*	97%	*	2	*	50%	*	*	*	50%	*	*	*
Over \$5 billion	66	*	6%	*	94%	*	2	*	50%	*	*	*	50%	*	*	*
\$1 – 5 billion	37	*	11%	*	89%	*	3	*	*	*	33%	*	33%	*	33%	*
\$501 million – 1 billion	17	*	*	*	100%	*	*	*	*	*	*	*	*	*	*	*
\$500 million and under	22	*	*	*	100%	*	*	*	*	*	*	*	*	*	*	*
Endowments and Foundations																
Endowments & Foundations	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
– Endowments	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
– Foundations	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Over \$1 billion	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
\$501 million – 1 billion	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
\$500 million and under	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Unions																
Unions	33	*	24%	*	76%	*	6	*	17%	*	*	*	83%	*	*	*
Healthcare																
Healthcare Organizations	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total Institutions	451	*	29%	*	71%	*	128	*	34%	*	21%	*	36%	*	9%	*

Note: This question was "Rotated out" in 2014

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1306

Towers Watson 2014 Asset Allocations in *Fortune* 1000 Pension Plans, October 2015

2014 Asset Allocations in *Fortune* 1000 Pension Plans

By Mercedes Aguirre and Brendan McFarland

Asset allocations in defined benefit (DB) plans strongly affect overall investment returns, the plan's funded status and funding volatility, as well as the sponsor's cash cost and accounting expense over time. For participants, creditors, investors and regulators, asset allocations are central to a plan's risk exposure and long-term cost.

The Financial Accounting Standards Board began requiring more detailed disclosures in 2009, and Towers Watson has been analyzing asset allocations ever since.¹ These analyses track asset allocation patterns over time, and this sixth edition looks at fiscal year-end 2014 pension allocations by asset classes such as cash, equity, debt and alternatives, as well as by valuation level.

The analysis is performed on both an aggregate and average sponsor basis as well as by plan size, plan status (open, frozen or closed) and funded status. We compare asset holdings from 2009 through 2014 for a consistent sample of sponsors. Finally, we examine pension assets invested in company securities.

Analysis highlights

- On average, sponsors of frozen pension plans invested almost half their assets in conservative, lower-variance investments, such as cash and debt instruments, whereas sponsors of plans where some or all workers were still accruing benefits (open and closed plans) seemed more inclined to take on riskier investments.
- The overall funded status (on a plan sponsor financial accounting basis) of DB plans worsened over 2014, driven primarily by declining interest rates that pushed plan obligations higher. De-risking approaches, such as liability-driven investment (LDI) strategies that hedge against interest rate movements, played an important role in buffering funding declines. Plans with higher allocations to fixed-income assets had smaller funding losses or even modest gains versus plans with higher allocations to equity. On average, plans whose funded status improved invested more than 50% of their assets in debt.

- Looking at a consistent sample of sponsors, on average, the total held in public equity declined nearly 4 percentage points from 2013 to 2014. Over the same period, allocations to debt instruments increased at the same pace.
- In 2014, almost 10% of these DB plan sponsors held assets in the form of company securities, and the allocations averaged 4.6% of pension assets among those that did.

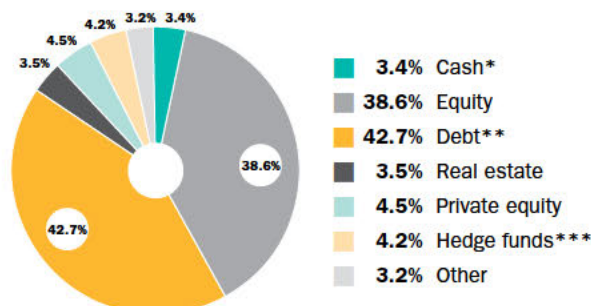
“Plans with higher allocations to fixed-income assets had smaller funding losses or even modest gains versus plans with higher allocations to equity.”

2014 pension asset allocations

Towers Watson's analysis of 2014 fiscal year-end asset allocations takes a detailed look at 533 *Fortune* 1000 U.S. plan sponsors' pension disclosures. *Figure 1* summarizes aggregate asset allocations weighted by plan size (as measured by the value of plan assets) for all *Fortune* 1000 pensions in the analysis. As of year-end 2014, these plan sponsors held almost \$1.9 trillion in pension assets, composed of cash, public equity, debt and alternative investments (real estate, private equity, hedge funds and other).

Figure 1. Aggregate asset distribution by class and level, 2014 (\$ millions)

Asset class	Level 1	Level 2	Level 3	Total
Cash*	1.7%	1.7%	0.1%†	3.4%
Equity	22.8%	15.4%	0.4%	38.6%
Debt**	4.5%	37.2%	1.0%	42.7%
Real estate	0.3%	0.3%	2.9%	3.5%
Private equity	0.1%†	0.2%	4.2%	4.5%
Hedge funds***	0.1%	1.4%	2.7%	4.2%
Other	0.3%	1.6%	1.3%	3.2%
Total	29.7%	57.8%	12.6%	100.0%
Total assets held (\$ millions)	\$564,388	\$1,096,767	\$238,337	\$1,899,492



*Cash includes cash equivalents and money market instruments.

**Debt includes insurance contracts.

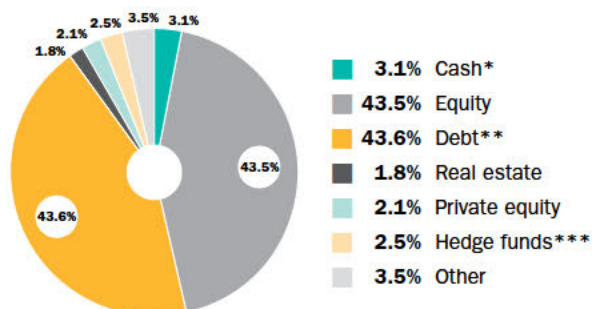
***Hedge fund assets include derivatives and interest rate swaps.

†Value is less than 0.1%.

Source: Towers Watson

Figure 2. Average asset distribution by class and level, 2014 (\$ millions)

Asset class	Level 1	Level 2	Level 3	Total
Cash*	1.9%	1.2%	0.1%†	3.1%
Equity	21.6%	21.3%	0.6%	43.5%
Debt**	8.5%	33.6%	1.5%	43.6%
Real estate	0.2%	0.5%	1.1%	1.8%
Private equity	0.1%†	0.3%	1.7%	2.1%
Hedge funds***	0.1%	0.8%	1.6%	2.5%
Other	0.7%	1.7%	1.1%	3.5%
Total	33.0%	59.4%	7.6%	100.0%
Total assets held (\$ millions)	\$1,059	\$2,058	\$447	\$3,564



Source: Towers Watson

Figure 3a. Aggregate allocations by plan sponsor's asset holdings, 2014

Asset class	Smallest plans (Less than \$527M)	Midsize plans (\$527M – \$1.99B)	Largest plans (\$1.99B – \$95.3B)
Cash*	2.4%	2.4%	3.5%
Equity	46.4%	42.5%	38.0%
Debt**	44.6%	46.3%	42.2%
Real estate	1.0%	1.6%	3.8%
Private equity	1.0%	1.6%	4.9%
Hedge funds***	1.3%	2.4%	4.4%
Other	3.3%	3.3%	3.2%
N	178	178	178
Total assets (\$ millions)	\$41,111	\$192,879	\$1,665,502

Figure 3b. Average allocations by plan sponsor's asset holdings, 2014

Asset class	Smallest plans (Less than \$527M)	Midsize plans (\$527M – \$1.99B)	Largest plans (\$1.99B – \$95.3B)
Cash*	3.4%	2.3%	3.6%
Equity	46.3%	43.0%	41.1%
Debt**	43.4%	46.0%	41.5%
Real estate	1.0%	1.5%	2.7%
Private equity	0.8%	1.6%	3.8%
Hedge funds***	1.2%	2.4%	3.8%
Other	3.9%	3.2%	3.4%
N	178	178	178
Total assets (\$ millions)	\$231	\$1,084	\$9,410

Source: Towers Watson

At year-end 2014, 38.6% of total pension assets were allocated to public equity, and 42.7% were allocated to debt, with the remaining investments spread among other asset holdings.

Plan sponsors must disclose a valuation level for each major asset category as described below:

- Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities (typical for Treasury securities and the common stock of large U.S. companies)
- Level 2: Unadjusted quoted prices for similar assets in active or inactive markets, or other observable inputs (common for corporate debt)
- Level 3: Unobservable inputs supported by little or no market activity, such as an expert appraisal of a real estate holding²

More than half of the asset valuations (57.8%) were classified as Level 2, and 29.7% as Level 1. Level 3 valuations (12.6%) are typically used for private equity, hedge funds and real estate.

Figure 2 depicts average asset allocations (weighted by the number of plan sponsors) for the same sponsors. The average *Fortune* 1000 pension plan in the analysis held roughly \$3.5 billion worth of assets at the end of 2014.

Among these plans, the average allocation to public equity was 43.5%, while the aggregate allocation was 38.6%. As for alternative assets — real estate, private equity, hedge funds and other investments — average allocations were 9.9%, while aggregate allocations were 15.4%. The difference between the aggregate and the average reflects differences in plan size — larger plans were more likely than smaller plans to invest in alternatives and less in public equity.

On average, more than half the asset valuations were classified as Level 2 (59.4%). Thirty-three percent were classified as Level 1 and only 7.6% as Level 3.

Asset allocations by plan sponsor's asset holdings

Aggregate and average asset allocations for small, medium and large DB plans are shown in Figures 3a and 3b. The analysis divides these into three groups of sponsors by total plan assets: Small plans held less than \$527 million, midsize plans held between \$527 million and \$1.99 billion, and large plans held more than \$1.99 billion. The largest plan held assets worth more than \$95 billion.

As asset amounts increased, public equity allocations declined, averaging 41% for the largest plans versus

²For Level 3 assets, a reconciliation of the beginning and ending balances is also required, reflecting the actual return on plan assets, purchases, sales and settlements.

46% for the smallest. This confirms the differences between the results shown in Figures 1 and 2, where public equity holdings were lower when assets were weighted by plan size. While larger plans allocated less to public equities, their allocations to other return-seeking investments — real estate, private equity and hedge funds — were more than double those of small plans.

Weighting small, medium and large plans by plan assets (Figure 3a) emphasizes the large share of pension assets held by very large plans,³ as well as the pronounced differences in investing behavior between small and very large plans.

Pension asset allocations by plan status

For this part of the analysis, we divided plan sponsors into three mutually exclusive categories: those whose primary pension plan was frozen, those whose primary pension plan was closed and those with open plans. Of the 533 plan sponsors in this study, 68% had a pension plan categorized as either frozen or closed, while 32% maintained open DB plans.

Figures 4a and 4b show asset allocations by plan status and demonstrate a relationship between plan status and investment risk, with the correlation strongest on an aggregate basis (Figure 4a). Sponsors of frozen plans invested more than half their total assets in conservative, lower-variance investment instruments, such as cash and debt, whereas sponsors of plans where some or all workers continued to accrue benefits (closed and open plans) seemed more inclined to take on riskier investments.

Pension asset allocations by funded status

In our 2009 through 2012 analyses of asset allocations, pension funding remained relatively stable, with average funded status typically ranging between 75% and 80%.⁴ In 2013, interest rates rose for the first time in years, pushing liability values down. Higher interest rates combined with very strong equity returns and substantial cash contributions boosted funding levels to an average 87% at year-end. Over 2014, the average funding level fell back to 79% and the number of fully funded pensions declined from 14% to 5.5%. The deterioration of funded status was primarily owing to the lower interest rates used to measure liabilities, which pushed them steeply higher. Moreover, many U.S. plan sponsors also adopted new mortality assumptions (motivated by a report issued by the

Figure 4a. Aggregate asset allocations by plan status, 2014

Asset class	Primary DB plan is frozen	Primary DB plan is closed	Open DB plans
Cash*	4.2%	3.6%	2.5%
Equity	33.3%	38.5%	43.3%
Debt**	47.5%	41.9%	39.0%
Real estate	3.0%	3.8%	3.7%
Private equity	4.3%	4.6%	4.6%
Hedge funds***	4.6%	4.2%	3.7%
Other	3.1%	3.4%	3.2%
N	250	114	169

Figure 4b. Average asset allocations by plan status, 2014

Asset class	Primary DB plan is frozen	Primary DB plan is closed	Open DB plans
Cash*	3.6%	2.9%	2.5%
Equity	40.9%	45.5%	45.9%
Debt**	46.1%	41.0%	41.7%
Real estate	1.5%	2.2%	1.9%
Private equity	1.6%	2.6%	2.3%
Hedge funds***	2.3%	2.8%	2.5%
Other	4.0%	3.0%	3.2%
N	250	114	169

Source: Towers Watson

Figure 5a. Average asset allocations by plan funded status, 2014

Asset class	2014 funded status				
	Below 70%	70% to 79%	80% to 89%	90% to 99%	100% or above
Cash*	4.6%	2.4%	2.3%	4.0%	4.9%
Equity	46.3%	43.3%	41.3%	41.7%	42.6%
Debt**	39.3%	42.9%	45.6%	48.2%	42.3%
Real estate	1.5%	2.2%	2.1%	1.4%	1.1%
Private equity	1.8%	2.5%	2.3%	1.6%	2.6%
Hedge funds***	2.6%	3.1%	3.6%	1.2%	0.9%
Other	4.0%	3.6%	2.8%	1.9%	5.5%
N	93	126	123	69	24

Society of Actuaries in 2014), which reflected longer life expectancies for workers, thereby increasing plan liabilities by an additional four percentage points overall. Liability increases overwhelmed even the most conservative investment strategies, but plan sponsors with greater concentrations in equity realized larger funding declines compared with those more heavily invested in bonds.

Our 2014 analysis shows a correlation between funded status and asset allocations (Figure 5a). Sponsors with better-funded pensions held less in public equities and more in debt than their less

³The 17 largest plans (or 10th decile) represent 37% of all plan assets in this study and 43% of assets among the largest group of DB plan sponsors.

⁴Funded status is defined as the ratio of the fair value of assets over projected benefit obligations (a financial accounting measure) at year-end.

Figure 5b. Average asset allocations by change in funded status, 2014

Asset class	2014 change in funding					
	More than -15%	-10% to -15%	-5% to -10%	-5% to 0%	0% to 5%	Greater than 5%
Cash*	3.1%	3.0%	3.4%	3.2%	2.9%	4.1%
Equity	57.8%	46.8%	45.1%	36.5%	34.3%	18.1%
Debt**	34.2%	38.2%	41.3%	50.7%	53.7%	69.7%
Real estate	0.6%	2.5%	2.0%	1.7%	0.5%	1.0%
Private equity	2.0%	2.5%	2.2%	2.1%	1.6%	0.6%
Hedge funds***	0.7%	4.0%	2.7%	2.3%	1.6%	4.3%
Other	1.6%	3.0%	3.3%	3.5%	5.5%	2.3%
Change in funding	-21.6%	-11.9%	-7.5%	-2.9%	1.3%	10.8%
N	30	95	167	107	29	7

Source: Towers Watson

Figure 6. Investment returns, 2009 – 2014

	Equity index returns			Bond index returns
	S&P 500 ⁵	Russell 2500 ⁶	MSCI EAFE ⁷	Citigroup Credit AAA/AA 10+Yr
2009	26.5%	34.4%	32.5%	2.1%
2010	15.1%	26.7%	8.2%	12.6%
2011	2.1%	-2.5%	-11.7%	18.1%
2012	16.0%	17.9%	17.9%	11.1%
2013	32.4%	36.8%	23.3%	-7.5%
2014	13.7%	7.1%	-4.5%	17.4%

Source: Bloomberg

well-funded counterparts. This resonates with the de-risking strategies, such as LDI, now in operation in many pension funds. The only exception to this result was among sponsors whose plans had funded ratios greater than 100%, which could be a lagging effect of the extraordinary equity boost in 2013.

Figure 5b depicts the relationship between a change in funded status and asset allocations during 2014. Sponsors whose plans realized funding gains in 2014 were more likely to have large holdings in debt, presumably in long bonds. On the other end of the spectrum, those with large funding declines were more likely to be heavily invested in public equity.

In 2014, robust returns on long bonds (as shown in Figure 6) coupled with plan contributions helped some sponsors mitigate the effects of interest rate declines on plan funding. Conversely, funding declined in plans with higher equity allocations as sponsors' cash contributions combined with moderate equity returns did not offset interest rate drops (although bonds would not have hedged improved mortality assumptions either). However, many of the same sponsors who realized significant losses in 2014

had enjoyed major gains in 2013 when stock returns were very strong.

The higher funded status many of these plans attained in 2013 could also have acted as a de-risking trigger, prompting some sponsors to try to lock in their funding gains. But now more than ever, an adverse macroeconomic environment and a greater appetite for reducing funding volatility should interest more sponsors (especially those with frozen plans) in a glide path type of strategy. In a glide path strategy, future target allocations are based on the plan's funded status, with the sponsor shifting assets from equities to debt as funding levels climb. This enables pension funds to reduce risk and safeguard gains (albeit reducing the opportunity for more-than-moderate future gains as well).

There is some evidence of de-risking in progress, as 16% of *Fortune* 1000 DB plan sponsors explicitly mentioned implementing LDI or long bond strategies. However, only 8% of 2014 *Fortune* 1000 DB plan sponsors explicitly linked their future target allocations with the plan's funded status in their annual pension disclosures, up slightly from 6% in 2013.

Pension assets held in company securities

Almost 10% of DB plan sponsors held assets in the form of company securities in 2014, declining slightly from 11% in 2013. These allocations averaged 4.6% of pension assets in 2014, dropping to 2.5% when weighted by end-of-year plan assets. The weighted average is lower than the simple average since larger plans allocated lower percentages to company securities than smaller plans.

In most of these plans (60%), employer securities made up less than 5% of total pension assets for 2014. Company securities were more than 10% of plan assets for only a handful of plan sponsors (Figure 7, next page), and those instances reflect higher past returns rather than allocations to employer securities of more than 10% when contributed.⁸

Six-year asset allocations

The 2009 to 2014 asset allocation studies are based on a consistent sample of 305 plan sponsors. Figures 8a and 8b (pages 5 and 6) show asset allocations for these sponsors on an aggregate and average basis over those six years.

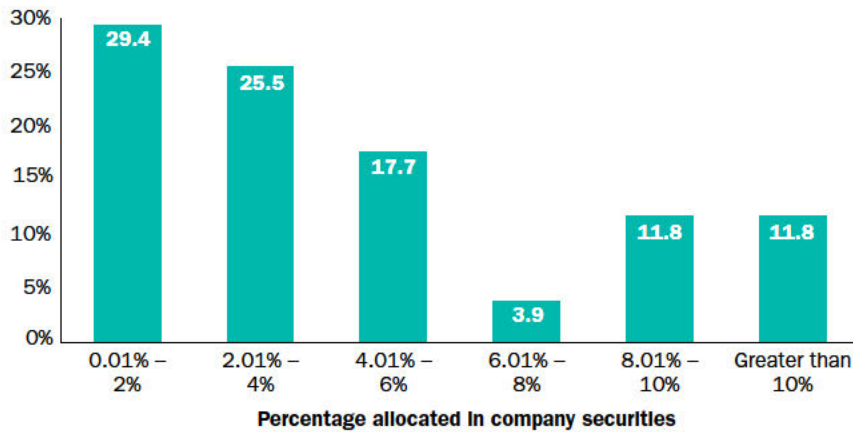
⁵The Standard & Poor's 500 Index is an American stock market index based on the market capitalizations of 500 large companies having common stock listed on the NYSE or NASDAQ.

⁶The Russell 2500 Index is a subset of the Russell 3000[®] Index. It includes approximately 2,500 of the smallest securities based on a combination of their market capitalization and current index membership.

⁷The MSCI EAFE Index is a stock market index that measures the equity market performance of developed markets outside of the U.S. and Canada.

⁸The Employee Retirement Income Security Act (ERISA) does not allow U.S. DB plans to invest more than 10% of assets in company securities.

Figure 7. Allocations of company stock holdings, 2014 (percentage of plan sponsors)



Source: Towers Watson

“In most of these plans, employer securities made up less than 5% of total pension assets for 2014.”

Figure 8a. Aggregate asset allocations by class and level for consistent sample of 305 pension funds, 2009 – 2014 (\$ millions)

Asset class	Level 1	Level 2	Level 3	Total
2009				
Cash*	2.2%	2.6%	0.1%†	4.8%
Equity	29.0%	15.3%	0.7%	45.1%
Debt**	4.2%	29.5%	2.2%	35.9%
Real estate	0.2%	0.4%	2.6%	3.1%
Private equity	0.1%†	0.1%†	4.8%	4.8%
Hedge funds***	0.1%†	0.3%	1.8%	2.1%
Other	0.3%	1.9%	1.9%	4.2%
Total %	36.0%	50.0%	14.0%	100.0%
Total assets	\$417,509	\$579,122	\$161,930	\$1,158,561
2010				
Cash*	1.7%	2.3%	0.1%†	4.0%
Equity	28.6%	15.4%	0.3%	44.3%
Debt**	4.1%	29.8%	1.4%	35.2%
Real estate	0.3%	0.2%	2.9%	3.4%
Private equity	0.1%†	0.2%	5.6%	5.8%
Hedge funds***	0.1%	1.4%	2.9%	4.3%
Other	0.4%	1.4%	1.2%	3.0%
Total %	35.2%	50.6%	14.2%	100.0%
Total assets	\$452,186	\$651,058	\$182,506	\$1,285,750
2011				
Cash*	1.8%	1.9%	0.1%†	3.7%
Equity	24.1%	13.7%	0.4%	38.2%
Debt**	4.7%	34.9%	1.2%	40.9%
Real estate	0.3%	0.2%	3.2%	3.7%
Private equity	0.1%†	0.1%†	5.7%	5.8%
Hedge funds***	0.1%	1.7%	3.1%	4.9%
Other	0.2%	1.4%	1.3%	3.0%
Total %	31.3%	53.9%	14.9%	100.0%
Total assets	\$413,799	\$712,758	\$196,673	\$1,323,230

Source: Towers Watson

Level 1	Level 2	Level 3	Total
2012			
1.8%	1.8%	0.1%†	3.6%
23.9%	15.2%	0.4%	39.5%
4.4%	35.2%	0.8%	40.4%
0.3%	0.3%	3.5%	4.0%
0.1%†	0.1%	5.3%	5.5%
0.1%	1.4%	2.7%	4.2%
0.3%	1.5%	1.1%	2.8%
30.8%	55.5%	13.7%	100.0%
\$434,392	\$782,319	\$193,305	\$1,410,016
2013			
1.6%	1.8%	0.1%†	3.4%
25.0%	15.8%	0.3%	41.1%
4.0%	34.7%	0.8%	39.4%
0.3%	0.3%	3.4%	4.0%
0.1%†	0.2%	5.1%	5.2%
0.1%	1.2%	2.7%	4.0%
0.3%	1.5%	1.1%	2.9%
31.2%	55.4%	13.4%	100.0%
\$462,306	\$822,185	\$198,472	\$1,482,962
2014			
1.7%	1.7%	0.1%†	3.4%
22.4%	14.5%	0.4%	37.2%
4.3%	37.9%	0.8%	43.1%
0.3%	0.3%	3.3%	3.8%
0.1%†	0.2%	4.6%	4.8%
0.1%	1.5%	2.9%	4.5%
0.34%	1.5%	1.4%	3.2%
29.2%	57.5%	13.3%	100.0%
\$446,302	\$879,906	\$203,935	\$1,530,144

Overall asset allocations were relatively stable in 2009 and 2010, but between 2010 and 2011 — a period of poor stock market performance — average allocations to equity dropped from 51.1% to 46.2%, while average allocations to debt rose from 36.3% to 38.9%.

There was little change in overall asset allocations between 2011 and 2012. Between 2012 and 2013, equity allocations rose and debt allocations declined, but both changes were relatively minor and might have resulted from strong equity performance in 2013. In 2014, there was a substantial shift away from equities into debt — it's possible that strong funding levels in 2013 motivated sponsors to shift to less risky investments to protect some of their gains. On average, equity holdings declined by 4.0 bps over 2014, while debt holdings increased by 4.0 bps.

Since 2009, average allocations to public equities declined by almost 10 bps.

Figure 9, next page, shows that in 2014, nearly half of pension sponsors reduced their equity allocations by between 0.1% and 4.9%. Of those that had larger reallocations — increases or decreases of more than 10% of equity holdings — almost 15% reduced their equity share by more than 10% (with an average decrease of 18.5%). On the other hand, only 1% of pensions increased their allocations to equities by more than 10% (with an average increase of 22.6%).

In line with our previous analysis, almost 76% of pension plans increased their allocations to debt securities. Forty-three percent of plans increased their allocation to fixed-income assets by .01% to 4.9%.

Figure 8b. Average asset allocation by class and level for consistent sample of 305 pension funds, 2009 – 2014 (\$ millions)

Asset class	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total	
2009					2012				
Cash*	2.7%	1.9%	0.1%†	4.6%	1.7%	1.1%	0.1%†	2.8%	
Equity	29.5%	20.9%	0.7%	51.2%	23.7%	22.4%	0.4%	46.5%	
Debt**	9.0%	24.5%	1.1%	34.6%	8.4%	30.7%	0.9%	40.0%	
Real estate	0.2%	0.4%	1.1%	1.7%	0.3%	0.5%	1.4%	2.1%	
Private equity	0.1%†	0.1%†	1.4%	1.4%	0.1%	0.2%	2.1%	2.3%	
Hedge funds***	0.1%†	0.2%	1.7%	2.8%	0.1%†	0.8%	2.1%	2.9%	
Other	0.8%	1.5%	1.5%	3.8%	0.7%	1.5%	1.1%	3.3%	
Total %	42.2%	49.4%	7.5%	100.0%	34.8%	57.1%	8.0%	100.0%	
Total assets	\$1,369	\$1,899	\$531	\$3,799	\$1,424	\$2,565	\$634	\$4,623	
2010					2013				
Cash*	2.0%	1.4%	0.1%	3.4%	1.7%	1.3%	0.1%†	3.1%	
Equity	28.2%	22.5%	0.4%	51.1%	23.2%	22.9%	0.4%	46.5%	
Debt**	8.5%	26.7%	1.1%	36.3%	7.5%	31.5%	1.0%	39.9%	
Real estate	0.3%	0.3%	1.1%	1.7%	0.3%	0.4%	1.4%	2.1%	
Private equity	0.1%†	0.2%	2.1%	2.4%	0.1%†	0.2%	2.2%	2.4%	
Hedge funds***	0.1%	0.4%	1.8%	2.3%	0.1%	0.8%	2.1%	3.0%	
Other	0.5%	1.5%	0.9%	2.3%	0.6%	1.4%	1.1%	3.0%	
Total %	39.5%	53.0%	7.5%	100.0%	33.3%	58.5%	8.1%	100.0%	
Total assets	\$1,483	\$2,135	\$598	\$4,216	\$1,516	\$2,696	\$651	\$4,862	
2011					2014				
Cash*	2.2%	1.2%	0.1%	3.5%	1.8%	1.3%	0.1%†	3.1%	
Equity	24.6%	21.2%	0.5%	46.2%	20.5%	20.9%	0.5%	41.9%	
Debt**	8.7%	29.7%	0.5%	38.9%	7.6%	35.3%	1.1%	43.9%	
Real estate	0.3%	0.4%	1.3%	2.0%	0.3%	0.5%	1.3%	2.1%	
Private equity	0.1%†	0.1%	2.4%	2.5%	0.1%†	0.3%	2.0%	2.3%	
Hedge funds***	0.1%	1.3%	2.5%	3.9%	0.1%	0.9%	2.0%	3.0%	
Other	0.5%	1.3%	1.2%	3.0%	0.6%	1.6%	1.3%	3.6%	
Total %	36.5%	55.2%	8.3%	100.0%	30.9%	60.8%	8.3%	100.0%	
Total assets	\$1,357	\$2,337	\$645	\$4,338	\$1,463	\$2,885	\$669	\$5,017	

Source: Towers Watson

Figure 9. Average allocation changes in equity and debt holdings over 2014

Magnitude of change	Equity allocations		Debt allocations	
	% of sponsors changing equity allocations	Average change	% of sponsors changing debt allocations	Average change
Increase of over 10%	1.0%	22.6%	14.8%	18.5%
5% – 9.9% increase	2.0%	7.0%	18.0%	6.9%
0.1% – 4.9% increase	14.8%	1.6%	43.0%	2.2%
No change	1.0%	0.0%	0.7%	0.0%
0.1% – 4.9% decrease	48.2%	-2.3%	18.0%	-2.3%
5% – 9.9% decrease	18.4%	-7.1%	3.6%	7.1%
Decrease of over 10%	14.8%	-18.4%	2.0%	-18.4%

Source: Towers Watson

Conclusion

Lower interest rates and moderate equity returns set funded status back in 2014, especially where plans were heavily invested in equities. More conservative plan sponsors were able to buffer such negative effects via higher allocations to debt.

The shift in equity allocations versus debt allocations was largely symmetrical, with 76% of plan sponsors allocating more to fixed-income assets and 81% allocating less to equities. The primary shift in 2014 was from public equities to debt rather than from public equities to other return-seeking assets, as was the case in earlier years.

Larger plan sponsors continued to hold less equity and more diversified allocations than smaller plans. Frozen plans held more fixed-income assets, on average, compared with closed or open plans.

Given volatile market conditions, adopting or maintaining an effective de-risking strategy could be more important than ever for pension plan funding.

For comments or questions, contact Mercedes Aguirre at + 598 2 6262510, mercedes.aguirre@towerswatson.com; or Brendan McFarland at +1 703 258 7560, brendan.mcfarland@towerswatson.com.

“The shift in equity allocations versus debt allocations was largely symmetrical, with 76% of plan sponsors allocating more to fixed-income assets and 81% allocating less to equities.”

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BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1307

**U.S. Department of Labor, Employee Benefits Security Administration,
“JP Morgan Letter”, October 3, 2006**



October 3, 2006

Donald J. Myers, Esq.
Reed Smith LLP
1301 K Street, N.W.
Suite 1100 - East Tower
Washington, D.C. 20005-3373

2006-08A
ERISA SEC
404(a)

Dear Mr. Myers:

This is in response to your request for an advisory opinion on behalf of JPMorgan Chase Bank, N.A. (JPMorgan) regarding the application of the fiduciary responsibility provisions of Title I of the Employee Retirement Income Security Act of 1974, as amended (ERISA). Specifically you have inquired whether a fiduciary of a defined benefit plan may, consistent with the requirements of section 404 of ERISA, consider the liability obligations of the plan and the risks associated with such liability obligations in determining a prudent investment strategy for the plan.

You represent that JPMorgan, as a plan fiduciary, proposes to "risk manage" the assets of defined benefit plans by better matching the risks of a plan's investment portfolio assets with the risks associated with its benefit liabilities, with a goal toward reducing the likelihood that liabilities will rise at a time when the assets decline. Defined benefit plan liabilities are determined by a number of factors, most significantly the demography of the participant population (participants' number of years of service and/or expected length of time for payment of retirement benefits) and the interest rates used to calculate the present value of the plan's obligations for funding and accounting purposes.

According to your letter, these liabilities most closely correlate with fixed-income assets, so that one approach for risk managing assets would be to invest directly in a portfolio of fixed-income securities with a duration of the plan's benefit obligations. However, you note that there may be aspects of a plan's obligations that correlate more closely with other types of investments, and it may not be possible to match liabilities precisely with fixed-income securities due to limitations in the fixed-income market. As a result, you indicate that a variety of approaches may be used in practice, depending on the facts and circumstances of the particular plan.

In developing an asset allocation that better matches the risk and duration characteristics of a plan's benefit liabilities, you explain that the focus of JPMorgan's services would be on reducing the risk of underfunding to the plan and its participants and beneficiaries by reducing volatility in funding levels. In this regard, you note that there may be incidental benefits to the plan sponsor from maintaining more consistent

funding levels, such as reduced volatility on the sponsor's financial statements and reduced minimum contribution obligations. However, you also note that the principal benefit of decreased volatility would be the reduced need for the plan to rely on the plan sponsor to meet its funding obligations, protecting the plan participants and beneficiaries in the event of the sponsor's insolvency.

Taking into account the foregoing, you have requested the views of the Department on whether a fiduciary of a defined benefit plan may, consistent with the requirements of section 404 of ERISA, consider the liability obligations of the plan and the risks associated with such liability obligations in determining a prudent investment strategy for the plan.

Sections 403(c) and 404(a)(1)(A) of ERISA require plan fiduciaries to discharge their duties with respect to a plan solely in the interest of plan participants and beneficiaries and for the exclusive purpose of providing benefits to participants and beneficiaries and defraying the reasonable expenses of administering the plan. Section 404(a)(1)(B) of ERISA requires plan fiduciaries to act with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character with like aims. These fiduciary standards apply to the selection and monitoring of plan investments, including plan investments made pursuant to a particular investment strategy. The frequency and degree of monitoring, will, of course, depend on the nature of such investments and their role in the plan's portfolio.

The general standards of fiduciary conduct contained in sections 404(a)(1) apply to any investment by a plan covered by Title I, including investments made pursuant to the described risk management investment strategy. Accordingly, fiduciaries of the plan must act prudently, solely in the interest of the plan's participants and beneficiaries, and for the exclusive purpose of providing benefits and defraying reasonable plan administrative costs when deciding whether to invest in a particular investment or use a particular investment strategy.

With regard to investing plan assets, the Department has issued a regulation, at 29 CFR 2550.404a-1, interpreting the prudence requirements of ERISA as they apply to the investment duties of fiduciaries of employee benefit plans. The regulation provides that the prudence requirements of section 404(a)(1)(B) are satisfied if (1) the fiduciary making an investment or engaging in an investment course of action has given appropriate consideration to those facts and circumstances that, given the scope of the fiduciary's investment duties, the fiduciary knows or should know are relevant, and (2) the fiduciary acts accordingly. This includes giving appropriate consideration to the role that the investment or investment course of action plays with respect to that portion of the plan's investment portfolio within the scope of the fiduciary's responsibility.

The regulation further specifies the facts and circumstances that must be given appropriate consideration to include, but not be limited to, (A) a determination by the fiduciary that the particular investment or investment course of action is reasonably designed, as part of the portfolio (or, where applicable, that portion of the plan portfolio with respect to which the fiduciary has investment duties) to further the purposes of the plan, taking into consideration the risk of loss and the opportunity for gain (or other return) associated with the investment or investment course of action and (B) consideration of the following factors as they relate to such portion of the portfolio: (i) the composition of the portfolio with regard to diversification; (ii) the liquidity and current return of the portfolio relative to the anticipated cash flow requirement of the plan; and (iii) the projected return of the portfolio relative to the funding objectives of the plan.

Within the framework of ERISA's prudence, exclusive purpose and diversification requirements, the Department believes that plan fiduciaries have broad discretion in defining investment strategies appropriate to their plans. In this regard, the Department does not believe that there is anything in the statute or the regulations that would limit a plan fiduciary's ability to take into account the risks associated with benefit liabilities or how those risks relate to the portfolio management in designing an investment strategy.

For these reasons, a fiduciary would not, in the view of the Department, violate their duties under sections 403 and 404 solely because the fiduciary implements an investment strategy for a plan that takes into account the liability obligations of the plan and the risks associated with such liabilities and results in reduced volatility in the plan's funding requirements. Whether any particular investment strategy is prudent with respect to a particular plan will depend on all the facts and circumstances involved.

This letter constitutes an advisory opinion under ERISA Procedure 76-1. Accordingly, it is issued subject to the provisions of that procedure, including section 10 thereof relating to the effect of advisory opinions.

Sincerely,

Louis J. Campagna
Chief, Division of Fiduciary Interpretations
Office of Regulations and Interpretations

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1308

**Moody's Analytical Approach to Defined Benefit Pension Plans,
October 14, 2015**



Moody's Analytical Approach to Defined Benefit Pension Plans

Agenda

AVISTA/1308
Heier/Page 2 of 33

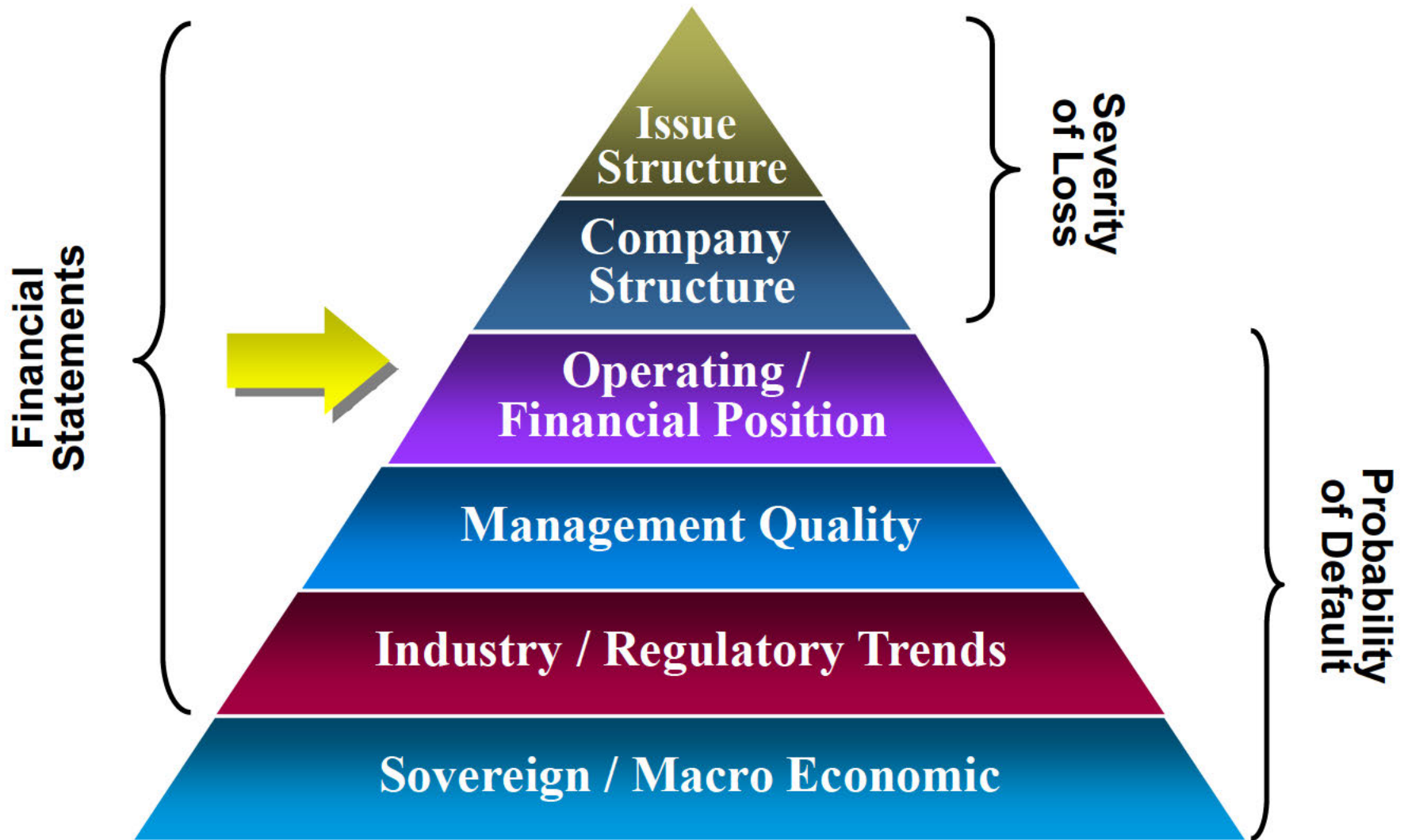
- » **Use of Financial Information in the Rating Process**
- » **Analytical Approach for Defined Benefit Pension Plans**
- » **Credit Impact of De-risking Strategies**

1

Use of Financial Information in the Rating Process

Moody's Fundamental Analysis of Credit

AVISTA/1308
Heier/Page 4 of 33



Moody's adjusts financial statements to better reflect the underlying economics of transactions and events and to improve the comparability of financial statements

Adjustment Objectives

- » Apply accounting principles that we believe more faithfully capture underlying economics
- » Identify and segregate effects of unusual or non-recurring items
- » Improve comparability by aligning accounting principles
- » Reflect estimate or assumptions that we believe are more prudent

Industry Methodologies

Appendix A: Global Business and Consumer Service Industry Methodology Factor Grid

Factor 1: Size and Profitability (30%)

Sub-Factor	Weight	Aaa 1	Aa 3	A 6	Baa 9	Ba 12	B 15	Caa 18	Ca 20
Pretax Income (USD Million)	15.0%	≥\$1,500	\$750 - \$1,500	\$500 - \$750	\$250 - \$500 OR dominant regional market share with a highly protected market position and ≥ \$75 to < \$250	\$75 - \$250 OR dominant regional market share with a highly protected market position and ≥ \$0 to < \$75	\$0 - \$75	(\$75) - \$0	<(\$75)
Revenue (USD Million)	15.0%	≥\$30,000	\$15,000- \$30,000	\$6,000-\$15,000	\$3,000 - \$6,000	\$1,500 - \$3,000	\$500 - \$1,500	\$200 - \$500	< \$200

Factor 2: Financial Strength (55%)

Sub-Factor	Weight	Aaa 1	Aa 3	A 6	Baa 9	Ba 12	B 15	Caa 18	Ca 20
RCF / Net Debt	12.5%	> 70% OR [$<0\%$ AND Net Debt < 0]	55%-70%	40%-55%	25%-40%	15%-25%	5%-15%	0%-5%	$<0\%$ OR [$>0\%$ AND Net Debt < 0]
FCF / Debt	12.5%	≥45%	32% - 45%	24% - 32%	16% - 24%	8% - 16%	0% - 8%	(5%) - 0%	<(5%)
(EBITDA-CapEx) / Interest Exp	12.5%	≥16.0x	9.0x - 16.0x	6.0x - 9.0x	4.0x - 6.0x	2.5x - 4.0x	1.0x - 2.5x	0.75x - 1.0x	<0.75x
Debt / EBITDA	17.5%	< 0.5x	0.5x - 1.0x	1.0x - 2.0x	2.0x - 3.0x	3.0x - 4.0x	4.0x - 6.0x	6.0x - 7.5x	≥ 7.5x OR [$< 0.0x$]

Factor 3: Financial Policy (15%)

Sub-Factor	Weight	Aaa 1	Aa 3	A 6	Baa 9	Ba 12	B 15	Caa 18	Ca 20
FINANCIAL POLICY	15.0%	Expected to have: extremely conservative financial policies; very stable metrics; public commitment to very strong credit profile	Expected to have: very stable and conservative financial policies; stable metrics; minimal event risk that would cause a large rating transition; public commitment to strong credit profile	Expected to have: predictable financial policies that preserve creditor interests. Although some event risk exists, no material long-term erosion in credit metrics is expected; strong commitment to a solid credit profile is expected	Expected to have: financial policies that balance the interest of creditors and shareholders; some risk that debt funded acquisitions or share repurchases could lead to ratings migration	Expected to have: financial policies that tend to favor shareholders over creditors; above average financial risk resulting from dividend payments, share repurchases, acquisitions or other significant capital structure changes	Expected to have: financial policies that favor shareholders over creditors; high financial risk resulting from dividend payments, share repurchases, acquisitions or other significant capital structure changes	Expected to have: financial policies that are highly unfavorable to creditors and that could meaningfully weaken the company's credit profile; debt-restructuring possible	Expected to have: financial policies that could contribute to a high likelihood of near term default

Adjusting Financial Data

AVISTA/1308
Heier/Page 7 of 33

Unisys Corporation

Final

Credit Opinion Ratios		12/31/12 (Annual) As Rep	Standard Adjustments								Non-Standard Adjustments	Total Adj.	12/31/12 (Annual) As Adj	
			Pensions	Op Leases	Cap. Int.	Stk. Comp	Hybrids	Securitization	LIFO	Unusual				
Pretax Income	Pretax Income =	254	-39.70	0.00	-5.30					20		-24.70	229 =	229
		254												229
Revenue	Revenue =	3,706											3,706 =	3,706
		3,706												3,706
RCF / Net Debt	Funds from Operations	414		56	-5.30							51	465	
	-Preferred Dividends	-16.20											-16.20	
	- Common Dividends	0.00											0.00	
	- Minority Dividends	-4.50											-4.50 =	444
	Short-term debt	0.00											0.00	2,387
	+ Long-term Debt - Gross	210	2,409	424								2,832	3,043	
	- Cash & Cash Equivalents	-655.60											-655.60	
		-88.2%												18.6%
FCF / Debt	Cash Flow From Operations	261	193	56	-5.30							244	505	
	- Capital Expenditures	-132.60		-56.47	5							-51.17	-183.77	
	- Preferred Dividends	-16.20											-16.20	
	- Common Dividends	0.00											0.00	
	- Minority Dividends	-4.50											-4.50 =	301
	Short-term debt	0.00											0.00	3,043
	+ Long-term Debt - Gross	210	2,409	424								2,832	3,043	
		51.4%												9.9%
(EBITDA - CAPEX) / Interest Expense	EBITDA	456	100	85						20		205	661	
	- Capital Expenditures	-132.60		-56.47	5							-51.17	-183.77 =	477
	Interest Expense	28	139	28	5							173	200	200
		11.8x												2.4x
Debt / EBITDA	Short-term debt	0.00											0.00	
	+ Long-term Debt - Gross	210	2,409	424								2,832	3,043 =	3,043
	Pretax Income	254	-39.70	0.00	-5.30					20		-24.70	229	661
	+ Interest Expense	28	139	28	5							173	200	
	+ Other Non-Recurring Expense	0.00											0.00	
	+ Depreciation	113		56								56	169	
	+ Amortization	62											62	
		0.5x												4.6x

Grid Implied Ratings

AVISTA/1308
Heier/Page 8 of 33

Company	Moody's Rating	Reporting Period	Outlook	Grid Implied Rating	FACTOR 1: SIZE & PROFITABILITY		FACTOR 2: FINANCIAL STRENGTH			FACTOR 3: FINANCIAL POLICY	
					Pre-Tax Income	Revenues	RCF/ Net Debt	FCF/ Debt	(EBITDA - Capex) Interest Expense	Debt / EBITDA	Financial Policy
Accenture plc	A1	11/30/2009	Stable	Aa2	Aaa	Aa	Aaa	Aaa	Aa	Aa	A
Cintas Corporation No. 2	A2	11/30/2009	Stable	A2	Baa	Baa	Aa	Aaa	Aa	A	A
Compass Group Plc	Baa1	9/30/2009	Stable	Baa1	Aa	Aa	Baa	Ba	Baa	Baa	Baa
Laboratory Corporation of America Holdings	Baa2	12/31/2009	Stable	A3	Aa	Baa	Baa	A	A	A	Baa
Adecco S.A.	Baa3	12/31/2009	Stable	Ba1	Baa	Aa	Ba	B	Ba	B	Baa
Manpower, Inc.	Baa3	12/31/2009	Stable	Ba2	B	Aa	Ba	Ba	B	B	Baa
Lender Processing Services, Inc.	Ba1	12/31/2009	Stable	Baa3	Baa	Ba	Baa	Baa	Baa	Baa	Ba
Weight Watchers International, Inc.	Ba1	1/2/2010	Stable	Ba2	Baa	B	B	Ba	Baa	Ba	Ba
Axiom Corporation	Ba2	12/31/2009	Stable	Ba1	B	B	A	Baa	Baa	Baa	Ba
Healthways, Inc.	Ba2	12/31/2009	Negative	Ba2	B	B	Baa	Baa	Ba	Baa	Ba
American Reprographics Company, L.L.C.	Ba3	12/31/2009	Negative	Ba3	B	B	Ba	Baa	Ba	Ba	Ba
Euronet Worldwide, Inc.	Ba3	12/31/2009	Stable	Ba2	B	B	A	Ba	Ba	Baa	Ba
On Assignment, Inc.	Ba3	12/31/2009	Stable	Ba2	B	Caa	Baa	A	Ba	Ba	Ba
Scientific Games Corporation	Ba3	12/31/2009	Stable	B1	B	B	Ba	B	B	B	Ba
Service Corporation International	Ba3	12/31/2009	Stable	Ba3	Ba	Ba	Ba	Ba	Ba	B	Ba
Alliance Healthcare Services, Inc.	B1	12/31/2009	Stable	B1	B	B	Ba	Ba	B	B	Ba
ARAMARK Corporation	B1	1/1/2010	Stable	B1	B	A	B	B	B	Caa	B
Iron Mountain Incorporated	B1	12/31/2009	Positive	Ba3	Baa	Baa	Ba	B	B	B	B
MoneyGram International	B1	12/31/2009	Stable	B2	B	B	B	Ba	B	B	B
Unisys Corporation	B1	12/31/2009	Stable	Ba3	B	Baa	Ba	Ba	B	B	B
Affinion Group Holdings, Inc.	B2	12/31/2009	Stable	B2	Caa	B	B	B	B	B	B
Carriage Services, Inc.	B2	12/31/2009	Stable	B3	B	Ca	B	B	B	B	B

2

Analytical Approach For Defined Benefit Pension Plans

Analytical Approach to Defined Benefit Pension Plans

AVISTA/1308
Heier Page 10 of 33

- » Because of the contractual nature of pension obligations, we view underfunded pension liabilities as “debt-like”
- » We adjust three primary financial statements to show pension underfunding as debt
- » Artificial smoothing distorts the measurement of pension expense
- » Adjust Income Statement to remove “Accounting Noise”
- » Pensions only one of many factors in rating process
 - Unlikely to drive a downgrade/upgrade in isolation
 - Can constrain a rating

Defined Benefit Pensions – Balance Sheet

AVISTA/1308
Heier/Page 11 of 33

- » Reclassify pension liability from long term liability to senior debt
- » Imputed debt equal to the gross underfunding of all trusts

	Pensions	
	2009	2008
Amounts recognized in balance sheet		
Noncurrent asset	\$ 94	\$ 1,106
Current liability	(76)	(38)
Noncurrent liability	(1,325)	(385)
Total	\$ (1,307)	\$ 683

The accumulated benefit obligations and fair value of plan assets for pension plans with accumulated benefit obligations in excess of plan assets were \$5,567 million and \$4,574 million, respectively, at October 31, 2009 and \$767 million and \$423 million, respectively, at October 31, 2008. The projected benefit obligations and fair value of plan assets for pension plans with projected benefit obligations in excess of plan assets were \$5,976 million and \$4,575 million, respectively, at October 31, 2009 and \$873 million and \$450 million, respectively, at October 31, 2008.

Defined Benefit Pensions – Income Statement



AVISTA/1308
Heier/Page 12 of 33

- » Service cost the operating cost to providing a pension
- » Remove “Accounting Noise”
- » Service cost is only cost reflected in adjusted Pretax Income
- » If plan is underfunded add implied interest
- » Interest is calculated as follows

Underfunded Pension Debt	XXXX
x Marginal Borrowing rate	<u> x%</u>
=Implied interest cost	XXXX

Defined Benefit Pensions – Cash Flow Statement

AVISTA/1308
Heier/Page 13 of 33

- » Any contributions in excess of service cost to be reclassified to financing activities
- » Service cost \$20
- » Cash contribution \$100
- » Cash From Operations  \$80
- » Cash from financing activities  \$80

Multi-employer Plans

- » Despite different funding mechanisms we believe Multi-employer pension plan underfundings are debt like obligations
- » Companies do not disclose their share of liability
- » We adjust using a multiple based approach
- » We gather information for top 124 plans to calculate a multiple
 - Plans are grouped into industry sectors
- » We calculate an industry multiple by dividing the total underfunding by total contributions to the plans
 - We use an adjusted RPA 94 liability to calculate the multiple
 - Liability is reduced by 10% to make comparable to single employer plan
- » We reduce this number by 50% - as unions will shoulder some of the underfunding
- » Multiple is applied to company's contribution to impute debt

Multi-employer Plans

- » Last update Summer 2015
- » 124 plans were dramatically underfunded
- » Total underfunding \$318 Billion using an unadjusted RPA 94 liability

Funded Status of Plans by Sector
\$'millions

	CAGR	Funded Status		Funded Status		Funded Status		Funded Status		Funded Status		Estimated Funded Status		Funded Status	
		2013		2012		2011		2010		2009		2008		2007	
Industry															
Construction	24%	143,614	46%	129,305	47%	123,741	46%	116,910	46%	88,409	56%	72,484	54%	39,156	75%
Entertainment/Printing	55%	16,659	46%	13,861	52%	11,165	57%	10,514	57%	6,340	65%	4,946	72%	1,213	93%
Food/Supermarket	25%	29,819	48%	26,573	50%	26,023	48%	25,915	48%	19,496	57%	15,358	57%	7,692	79%
Hotels/Casino	28%	2,984	59%	2,675	57%	2,761	53%	2,523	55%	2,289	55%	1,556	63%	690	83%
Transportation	18%	94,499	47%	85,819	48%	86,225	46%	81,134	48%	75,235	48%	58,071	52%	34,828	72%
Other	42%	30,842	53%	28,149	53%	26,775	52%	25,338	53%	19,116	61%	12,295	66%	3,771	91%
Total	24%	318,417	48%	286,382	48%	276,690	47%	262,334	48%	210,885	54%	164,710	56%	87,350	77%

Multi-employer Plans

» These underfundings have led to very large multiples

Average Under-Funding Multiple by Industry Group

	Updated Multiple	Previous Multiple
Construction	8.4	8.0
Entertainment/Printing	7.7	7.6
Food/Supermarket	15.6	13.0
Hotels/Casino	4.0	4.0
Transportation	10.1	9.3
Other	6.1	5.9

Public Sector Pension Analytical Approach

State methodology

- » State rating methodology updated in 2013
- » Pensions now account for 10% of a state's overall score in state scorecard
 - 3 Year Average Adjusted Net Pension Liability/ Total Governmental Fund Revenues
- » Flexible scoring can reflect qualitative considerations (such as funding history)
- » No ratings were directly impacted by new metrics
 - Focus on pension pressure already resulted in several rating downgrades

Local government GO methodology

- » Local government General Obligation Methodology updated 2014
- » Pension obligations included now account for 10% of scorecard
 - Moody's-adjusted Net Pension Liability (3-year average) to Full Value - 5%
 - Moody's-adjusted Net Pension Liability (3-year average) to Revenue 5%
 - Pension analysis also includes other qualitative factors
- » New approach led to a small number of local government ratings placed on review for possible downgrade
 - Affected credits were outliers in their ratings categories

Four principal adjustments to as-reported pension data

- » Allocate liabilities of cost-sharing plans to participating government employers based on their proportionate shares of total plan contributions
- » Discount accrued actuarial liabilities (AAL) using a high-grade (Aa and better) taxable bond index rate as of the date of valuation
- » Use fair or market value of assets (MVA) instead of smoothed asset value to calculate **Moody's adjusted net pension liability** (adjusted AAL minus MVA)
- » Calculate a standardized annual amortization metric related to the adjusted net pension liability, on a 20-year level dollar basis

Our goal is to improve comparability and adjust for the most influential and practical factors, but not to provide an alternative actuarial valuation for each plan

Adjusted pension liabilities for the 50 states and rated local governments

AT/ST/A/1308
Heier/Page 21 of 33

\$billions

	50 States	Rated Local Governments
Reported UAAL	513	182
Median discount rate	7.75%	7.65%
Moody's adjusted net pension liability	1,294	435
Median discount rate for Moody's adjustments	4.81%	4.13%

3

Pension De-Risking

Credit Impacts of Pension De-Risking

AVISTA/1308
Heier/Page 23 of 33

- » De-risking long term strategy
- » Observing more companies implementing de-risking strategies
- » Expect to see more
- » De-risking generally positive – however ultimately a cost benefit analysis
- » Pensions only one of many factors in rating process
 - Unlikely to drive a downgrade/upgrade in isolation
 - Can constrain a rating

Strategy	Summary	Credit Implication
Voluntary Contributions	Contributions in excess of required	Positive
Liability Driven Investing	Switching asset allocation to more effectively match durations	Neutral
Plan Freeze	Ceasing some or all benefit accruals going forward	Positive
Defeasence of Plan Obligation	Annuizations	Neutral
	Lump sum settlements	Positive

Pension De-Risking – Voluntary Contributions

AVISTA/1308
Heier/Page 24 of 33

- » Pension contributions in excess of required
- » Akin to pay down of debt
- » Credit impact dependent on source of cash
 - Debt – Neutral
 - Excess FCF – Positive
 - Own Stock – Positive
- » Tax deduction – If used to reduce leverage - positive

Pension De-Risking – HATF

AVISTA/1308
Heier/Page 25 of 33

- » HATF substantially reduced required contributions
- » We continue to use GAAP funded number for imputing debt
- » We are observing differing approaches to the relief offered
 - “We will put in the lowest required amount to the dollar”
 - “HATF will not impact how we fund our plan”
- » We view HATF to be credit positive from a liquidity perspective
- » Main benefit is for liquidity constrained companies
- » Is betting on interest rates and equity markets good risk management?
- » Underfundings will need to be addressed
- » Potential for HATF to turn credit negative if underfundings are higher than would otherwise have been when relief expires

Pension De-Risking – Liability Driven Investing

AVISTA/1308
Heier/Page 26 of 33

- » Offsetting interest rate and asset performance risk
- » Achieved through direct or synthetic means
- » Theoretical sacrifice of higher returns for lower volatility/risk
- » Generally neutral for solidly positioned companies with well funded plan
- » Demonstrates pro active approach to risk management
- » If helps improve metrics on a lagging basis then naturally positive

Pension De-Risking – Plan Freezes

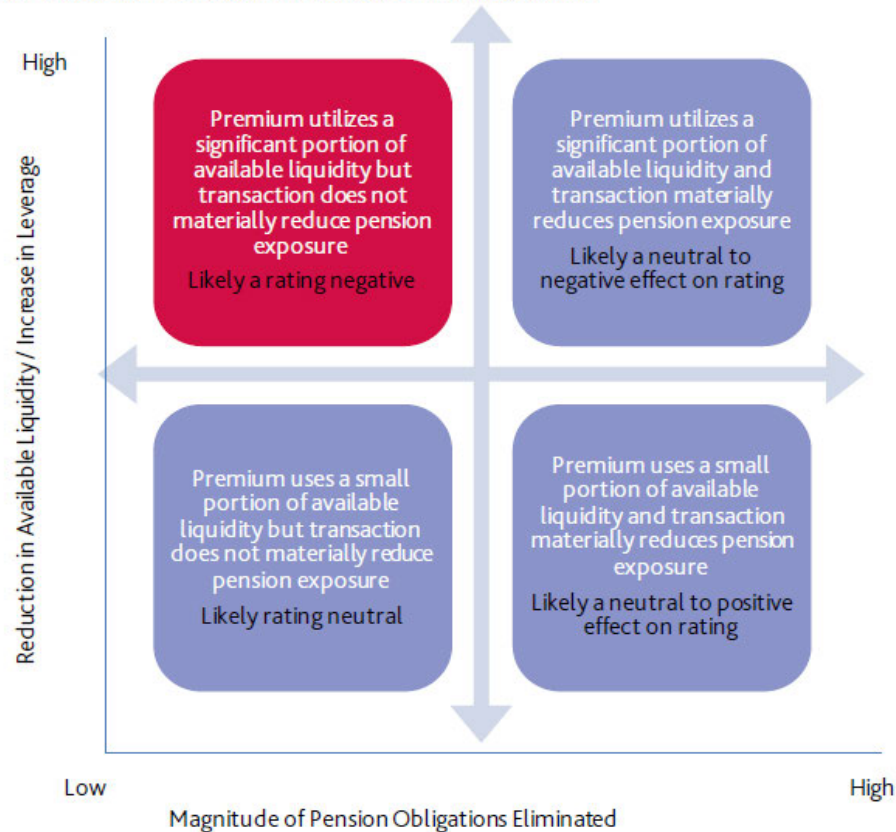
AVISTA/1308
Heier/Page 27 of 33

- » Reduce or eliminate service cost going forward
- » Generally positive
- » Asset and interest rate risk still retained for benefits earned to date
- » Any benefits earned going forward must still be funded
- » Levels of risk retained will determine how positive
- » Cost of providing alternative will also factor in equation

Pension Annuitizations

- » Credit impact generally neutral – Benefit of lower volatility versus sacrifice of liquidity

Credit Impact Matrix for Pension Termination Transactions



Lump Sum Settlements

AVISTA/1308
Heier/Page 29 of 33

- » Arbitrage in Interest/mortality rates allow lump sum settlement at less than GAAP liability
- » Akin to getting a discount on paying down debt
- » Source of cash to achieve funding level may offset any benefit
- » Potentially credit positive

Labor Relations

- » Any change in pension strategy will impact labor relations
- » Could be negative from a credit perspective

Mark to Market Accounting

- » Mark to Market accounting no impact on credit
- » Mark to Mark accounting precursor to LDI?

Multi-employer Plans De-Risking

- » Historically little or no de-risking in multi-employer plans
- » Contributions did not change as dynamically as single employer plans during downturn

Plan Sponsor Contribution Rates (\$ millions)

	2013	2012	2011	2010	2009	2008	2007
SEPP	50,394	69,537	65,482	64,397	55,225	32,126	31,596
MEPP	14,631	13,768	12,910	13,520	11,552	11,866	12,180

Source: Moody's

- » Many plans now seriously underfunded
- » Central States first plan to file for benefit reductions under the Multiemployer Pension Reform Act of 2014
- » Average benefit reduction expected to be 22.6%
- » Will be credit positive for plan sponsors, lower contingent calls on cash, however a lot of risk remains
- » We expect to see more plans file for benefit reductions in 2016

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BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1309

NV Energy, Inc. Consolidated Financial Statements 2014 (excerpt)

Plan Assumptions

Weighted-average assumptions used to determine benefit obligations and net periodic benefit costs were as follows:

	Benefit Obligations		Net Periodic Benefit Costs	
	2014	2013	2014	2013
Discount rate-pension	4.00%	4.88%	4.88%	4.01%
Discount rate-other benefits	4.00%	5.00%	5.00%	4.09%
Rate of compensation increase	2.75%	3.00%	3.00%	4.00%
Expected long-term return on plan assets-pension	N/A	N/A	5.30%	6.15%
Expected long-term return on plan assets-other benefits	N/A	N/A	5.30-6.85%	6.15-7.10%
Initial health care cost trend rate	8.00%	7.25%	7.25%	7.75%
Ultimate health care cost trend rate	5.00%	4.75%	4.75%	4.75%
Number of years to ultimate trend rate	10	15	15	6

In establishing its assumption as to the expected return on plan assets, the Company utilizes the expected asset allocation and return assumptions for each asset class based on historical performance and forward-looking views of the financial markets.

A one percentage-point change in assumed health care cost trend rates would have the following effect (in millions):

	One Percentage-Point	
	Increase	Decrease
Other postretirement benefit obligation as of December 31, 2014	\$ 2	\$ (2)
Total service and interest cost for the year ended December 31, 2014	\$ —	\$ —

Contributions and Benefit Payments

Employer contributions to the pension and other postretirement benefit plans are expected to be \$20 million and \$- million, respectively, during 2015. Funding to the established pension trusts is based upon the actuarially determined costs of the plans and the requirements of the Internal Revenue Code, the Employee Retirement Income Security Act of 1974 and the Pension Protection Act of 2006, as amended. The Company considers contributing additional amounts from time to time in order to achieve certain funding levels specified under the Pension Protection Act of 2006, as amended. The Company's funding policy for its other postretirement benefit plans is to generally contribute an amount equal to the net periodic benefit cost.

The expected benefit payments to participants in the Company's pension and other postretirement benefit plans for 2015 through 2019 and for the five years thereafter are summarized below (in millions):

	Pension	Other Post-retirement
2015	\$ 56	\$ 10
2016	56	10
2017	56	10
2018	59	10
2019	56	10
2020-2024	311	49

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

SHELLY J. HEIER
Exhibit No. 1310

NorthWestern Energy 2014 Annual Report (excerpt)

bond portfolio whose cash flow from coupons and maturities matches the year-by-year, projected benefit cash flow from our plans. The decrease in discount rate during 2014 increased our projected benefit obligation by approximately \$73.6 million.

In determining the expected long-term rate of return on plan assets, we review historical returns, the future expectations for returns for each asset class weighted by the target asset allocation of the pension and postretirement portfolios, and long-term inflation assumptions. Based on the target asset allocation for our pension assets and future expectations for asset returns, we are keeping our long term rate of return on assets assumption at 5.80% for 2015.

During 2014, we also updated our mortality assumptions to adopt the Society of Actuaries mortality table (RP-2014) and mortality projection scale (MP-2014) released in October 2014. This change in mortality assumption increased our projected benefit obligation by approximately \$33.8 million.

The weighted-average assumptions used in calculating the preceding information are as follows:

	Pension Benefits			Other Postretirement Benefits		
	December 31,			December 31,		
	2014	2013	2012	2014	2013	2012
Discount rate	3.75-3.90 %	4.55-4.75 %	3.55-3.80 %	3.20-3.40 %	3.75-4.20 %	2.25-3.20 %
Expected rate of return on assets	5.80	7.00	7.00	5.80	7.00	7.00
Long-term rate of increase in compensation levels (nonunion)	3.58	3.58	3.58	3.58	3.58	3.58
Long-term rate of increase in compensation levels (union)	3.50	3.50	3.50	3.50	3.50	3.50

The postretirement benefit obligation is calculated assuming that health care costs increased by 8.25% in 2014 and the rate of increase in the per capita cost of covered health care benefits thereafter was assumed to decrease gradually by 0.25% per year to an ultimate trend of 4.5% by the year 2029. The company contribution toward the premium cost is capped, therefore future health care cost trend rates are expected to have a minimal impact on company costs and the accumulated postretirement benefit obligation.

Investment Strategy

Our investment goals with respect to managing the pension and other postretirement assets are to meet current and future benefit payment needs while maximizing total investment returns (income and appreciation) after inflation within the constraints of diversification, prudent risk taking, and the Prudent Man Rule of the Employee Retirement Income Security Act of 1974. Each plan is diversified across asset classes to achieve optimal balance between risk and return and between income and growth through capital appreciation. Our investment philosophy is based on the following:

- Each plan should be substantially fully invested as long-term cash holdings reduce long-term rates of return;
- It is prudent to diversify each plan across the major asset classes;
- Equity investments provide greater long-term returns than fixed income investments, although with greater short-term volatility;
- Fixed income investments of the plans should strongly correlate with the interest rate sensitivity of the plan's aggregate liabilities in order to hedge the risk of change in interest rates negatively impacting the overall funded status;
- Allocation to foreign equities increases the portfolio diversification and thereby decreases portfolio risk while providing for the potential for enhanced long-term returns;
- Active management can reduce portfolio risk and potentially add value through security selection strategies;
- A portion of plan assets should be allocated to passive, indexed management funds to provide for greater diversification and lower cost; and
- It is appropriate to retain more than one investment manager, provided that such managers offer asset class or style diversification.

Investment risk is measured and monitored on an ongoing basis through quarterly investment portfolio reviews, annual liability measurements, and periodic asset/liability studies.

The most important component of an investment strategy is the portfolio asset mix, or the allocation between the various classes of securities available. The mix of assets is based on an optimization study that identifies asset allocation targets in

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF KAREN K. SCHUH
REPRESENTING AVISTA CORPORATION

Capital Investment

1 **I. INTRODUCTION**

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

3 A. My name is Karen K. Schuh. I am employed by Avista Corporation as a
4 Senior Regulatory Analyst in the State and Federal Regulation Department. My business
5 address is 1411 East Mission, Spokane, Washington.

6 **Q. Have you previously provided direct testimony in this case?**

7 A. Yes. My direct testimony (Avista/600) in this proceeding covered the
8 Company's capital investments in utility plant for the ratemaking purposes in this case.

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

10 A. In response to the testimony of Staff and other Parties¹, I will address the
11 Company's capital investments in utility plant, which have been incorporated into the 2016
12 test year adjustments included in Company witness Ms. Smith's direct testimony.
13 Additionally, my testimony will address proposals by Staff to arbitrarily reduce the level of
14 plant additions in this case, as well as respond to CUB/NWIGU's assertions regarding
15 capital spending.

16 **Q. Are you sponsoring any exhibits?**

17 A. Yes. I am sponsoring Avista/1401, which includes capital Business Cases for
18 all projects included in Avista's filing.

19
20

¹ I will refer to the parties in the case as follows: Staff (Public Utility Commission of Oregon Staff), NWIGU (Northwest Industrial Gas Users) and CUB (Citizens' Utility Board), and collectively as "the Parties".

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

2	<u>Description</u>	<u>Page</u>
3	I. Introduction	1
4	II. Parties' Positions	3
5	III. Supporting documentation for Capital Projects	16
6	IV. Conclusion	17

7

8 **Q. How were the capital additions proposed for the 2016 test year developed**
9 **in the Company's original case?**

10 A. As in prior rate cases, Avista started with rate base for the historical test year,
11 which, for this case, is the average of monthly averages ("AMA") for the twelve months
12 ended December 31, 2014. An adjustment was then made to restate plant-in-service at
13 December 31, 2014, to an end of period ("EOP") basis at December 31, 2014. My direct
14 filed testimony also included 2015 capital additions, together with the associated
15 accumulated depreciation ("A/D") and accumulated deferred federal income taxes
16 ("ADFIT") at a 2015 EOP basis. This included associated depreciation expense for the
17 capital additions. Next, the plant-in-service at December 31, 2014, was adjusted to a 2015
18 EOP basis. Finally, I included 2016 capital additions, only relating to new customer
19 hookups², together with the associated A/D and ADFIT on a 2016 AMA basis. This
20 included associated depreciation expense for the capital additions.

21 **Q. Has the Company updated its case relating to its proposed capital**
22 **investments since the original filing?**

23 A. No, it has not. The Company monitors capital additions on a regular basis and

² The 2016 level of capital relating to new customer hookups was included because the revenue associated with those hookups was also included in the Company's Test Year Revenue Load Adjustment, and are included with the agreed-upon level of customer load in the Partial Settlement Stipulation.

1 is on track to transfer the full amount of capital additions included in the original filing by
2 the end of 2015. Therefore, these plant balances are expected to reflect what the Company
3 will have in place serving customers by the end of 2015.

4 5 **II. PARTIES POSITIONS**

6 **Q. Please summarize your understanding of Staff's proposal relating to**
7 **natural gas capital additions.**

8 A. Staff recommended rejection of the Company's proposed Capital Additions.
9 Instead, Staff started with Avista's actual Commission Basis AMA results for 2014, and
10 then chose to arbitrarily restrict the increase in net plant at 7.75 percent for 2015, and
11 disregarded the 2016 growth capital. Staff contends that the Company has low growth in
12 customers, therefore, should not have such a high growth in net plant.

13 **Q. How did Staff arrive at using 7.75 percent to restrict capital additions in**
14 **2015?**

15 A. Staff looked at the historical net plant, before ADFIT, from 2002 to 2013 and
16 determined that the average net plant increase during that time period was 7.75 percent.
17 Staff then simply applied the 7.75 percent to the Company's 2014 AMA balance of \$210.76
18 million, and determined that a limit or cap of \$16.33 million should be placed on net plant
19 investment during 2015. As shown in Staff witness Mr. Moore's testimony³, this effectively
20 removed \$31.32 million of net plant for 2015, without any showing that it was imprudent, or
21 that it will not be in-service at the beginning of the 2016 rate year.

22 **Q. Do you agree with the restriction of a 7.75 percent increase to net plant**
23 **in 2015?**

³ Staff/600, Moore/ 15, line 12 table

1 A. No, there are several reasons why this percentage restriction on net plant
2 investment is not appropriate. First, this method effectively removed 55 percent
3 (approximately 27 projects) that are needed to run the day-to-day operations of the
4 Company. Projects, such as those to replace failed pipe, improve public safety, pipe that is
5 experiencing encroachment issues, and capital maintenance to the Jackson Prairie Storage
6 Facility⁴, to name just a few, were not even considered for recovery. Staff’s arbitrary method
7 does not even begin to consider the needs of the system relating to safety, reliability and an
8 aging infrastructure.

9 Second, all of the projects proposed by the Company for 2015 will be in service by
10 the time rates go into effect in early March 2016. As of September 30, 2015, the Company
11 has transferred approximately \$27.3 million of the proposed \$47 million, and the Company
12 is on track to transfer the remainder by the end of 2015. Looked at differently, even as of
13 September 30, 2015, the Company already has \$11 million more in capital investment
14 serving customers than the \$16.3 million that Staff is recommending for recovery.

15 Third, the growth rate derived by Staff is based on the 2002 to 2013 time-period.
16 This period, however, is not representative of the Company’s current capital investment
17 plans or needs. As discussed later in my testimony, the Company’s Oregon plant additions
18 are higher in 2015 than they have been in prior years.

19 Finally, the Rate Case and Audit Manual prepared by the NARUC Staff
20 Subcommittee on Accounting and Finance provides some guidance on this matter. In
21 particular, the Manual states that staff auditing capital expenditures “should be aware that
22 utility investment is often lumpy in nature, such that it may be cost ineffective to add small

⁴ Examples of projects Staff did not consider for recovery include: ER – 3000 Gas Reinforcement-minor, ER - 3005 Gas Distribution Non-Revenue Projects, ER 3006 Overbuilt Pipe Replacement, 3307-Bonanaza Gate Move, Jackson Prairie, and almost all proposed general plant projects with the exception of \$160,000.

1 increments of plant and equipment each year, rather than building to meet a longer growth
2 horizon⁵ (emphasis added). In 2015, where Avista has a larger number of transfers to plant,
3 it is not appropriate to simply use a historical average percentage to increase net plant.

4 **Q. What does Staff witness Mr. Moore present as a basis for determining an**
5 **appropriate level of capital investment by Avista?**

6 A. Mr. Moore states the following:⁶

7 Under normal operating conditions (e.g., absent a natural disaster or
8 other force majeure), growth in rate base should happen at a measured
9 pace so that rate-payers are not burdened with sharp rate increases that
10 far outpace the rate of inflation in order to reward its shareholders. It is
11 up to the Company to identify and prioritize appropriate rate base
12 additions to maintain a healthy plant in order to provide safe, reliable
13 service to its customers at just and reasonable rates. Stated differently, it
14 is the Company's prerogative as to how it chooses to manage its
15 investments to both control costs, [and] provide safe and adequate
16 service.... (emphasis added)

17
18 **Q. With regard to Mr. Moore's reference to rate increases for customers,**
19 **how have customer bills changed in recent years?**

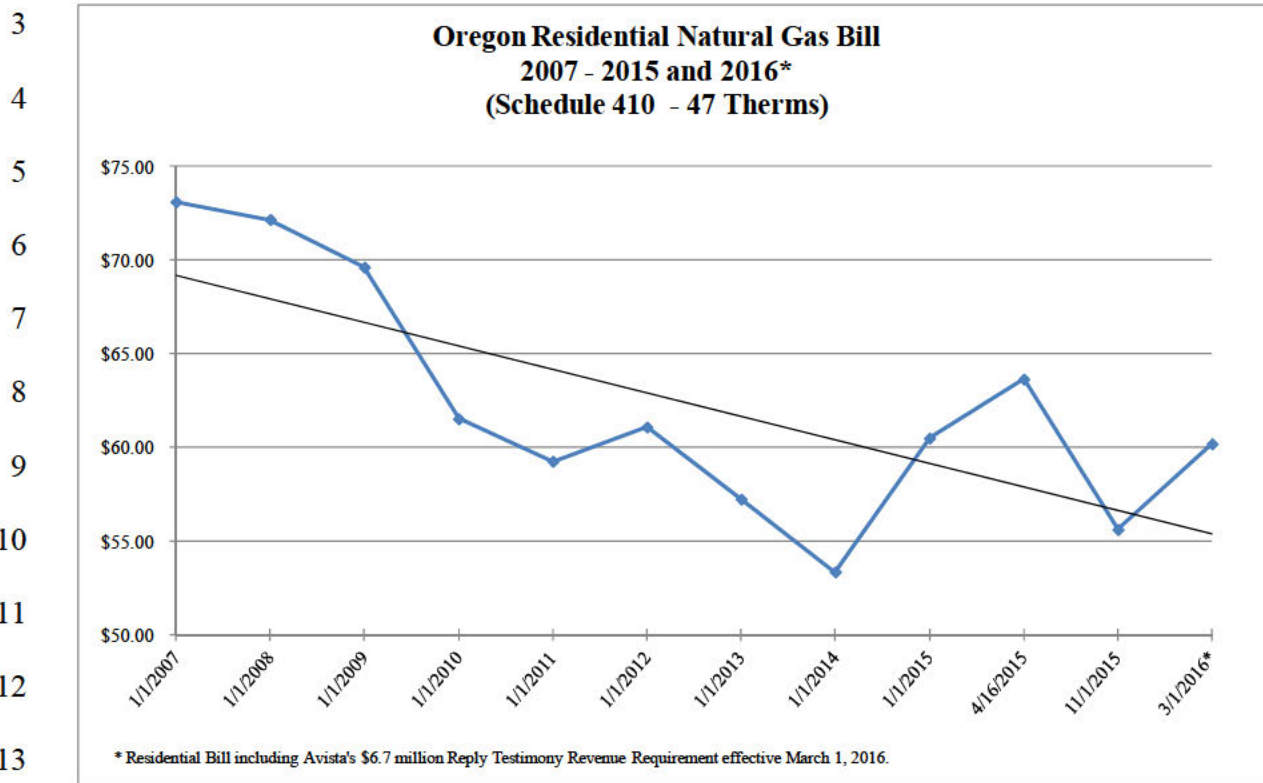
20 A. As Mr. Thies explained in his testimony, Illustration No. 1 below shows the
21 average monthly bill for an Avista residential customer served on Schedule 410 for the
22 period January 1, 2007 through March 1, 2016. For 2007 through 2015, the Illustration
23 provides the average monthly bill, using the rate effective January 1 for each year, for a
24 residential customer using an average of 47 therms per month. In addition, the Illustration
25 provides the average monthly bill using the following rate adjustments: the April 16, 2015
26 general rate increase (Avista's last general rate case Docket No. UG-284), and the
27 November 1, 2015 recently-approved Purchased Gas Cost Adjustment rate reduction.
28 Finally, the Illustration shows the average monthly bill effective March 1, 2016, with the

⁵ Rate Case and Audit Manual Prepared by NARUC Staff Subcommittee on Accounting and Finance (2003), page 16.

⁶ Exhibit STAFF/600, Moore/3, lines 9-17.

1 Company's Reply Testimony proposed revenue requirement of \$6.7 million.

2 **Illustration No. 1**



14 Illustration No. 1 above demonstrates that the Company's increased level of capital
15 expenditures in recent years, including 2015, has not led to a significant increase in
16 customers' bills. The effects of lower interest rates and natural gas commodity costs have
17 served to offset increases in capital expenditures, which are necessary to continue to provide
18 safe and reliable service to our customers.

19 **Q. In the excerpt of Mr. Moore's testimony above, he refers to the**
20 **management of "investments to both control costs and provide safe and adequate**
21 **service". What is Avista's response to this testimony?**

22 A. The Company balances both providing safe and reliable electric and natural
23 gas systems with the corresponding costs. As I show later in my testimony, and as Mr.
24 Thies discusses in his direct testimony, the Company, through its Capital Planning Group

1 (“CPG”), “has typically chosen not to fund all of the capital investment projects proposed by
2 the various departments’, driven primarily by the Company’s desire to mitigate the retail
3 rate impacts to customers.”⁷ That is to say, the CPG allocates the Company’s limited capital
4 budget, on an integrated basis, to address the highest priority projects.

5 **Q. Please describe what you mean by managing plant investment on an**
6 **“integrated basis?”**

7 A. The Company manages its plant investment as a system – all jurisdictions
8 and all services together. Managing our utility plant on a system basis allows for a complete
9 assessment of system risks and needs, and ensures that the capital dollars required to address
10 the highest priority investments are available, irrespective of the particular service or
11 jurisdiction. Avista’s annual capital budget and five-year capital plan is the result of
12 prioritization of projects within individual departments, followed by the CPG’s prioritization
13 of departmental projects on a total-utility basis. The development of system priorities helps
14 to ensure that the Company is addressing the highest-priority risks and needs across the
15 entire system in a timely manner, as compared to an approach that might allocate investment
16 based on the number of customers, rates of customer growth or energy use, percent of rate
17 base, rate impact, state jurisdiction, or on some other arbitrary basis.

18 **Q. Does the management of plant investment on an integrated basis also**
19 **serve to explain the level of capital investment currently undertaken by Avista?**

20 A. Yes. The management of plant investment on an integrated basis allows for
21 an evaluation of the need for specific projects, irrespective of their geography or type of
22 service. The capital budget is the result of a “bottoms-up” approach, whereby projects are
23 prioritized based on their need within the system (based upon reliability considerations, load

⁷ Exhibit AVISTA/200, Thies/9, lines 6-8.

1 growth, safety considerations, state and federal mandates, and other factors). Under this
2 method, the approved level of capital investment for a given year is based upon specific
3 consideration of projects and their overall need within the integrated system.

4 In contrast, “top-down” approaches (as may be implied from the suggestions of Mr.
5 Moore), do not involve specific consideration of projects, nor of their importance relative to
6 the entire system, which results in sub-optimal investment decisions across the entire
7 system. The combination of Avista’s bottom-up capital budgeting process and the
8 governance oversight provided by the CPG ensures that Avista’s investments are prudently
9 dedicated to where the need is greatest.

10 **Q. Did Staff take issue with any particular project?**

11 A. Other than Staff witness Ms. Johnson’s testimony related to Project Compass
12 (which is addressed by Company witness Mr. Kensok), and the timing of the East Medford
13 Reinforcement project (addressed by Mr. Webb), Staff did not take issue with any of the
14 Company’s capital projects.

15 **Q. What is Staff’s proposed addition to net plant, and how does that**
16 **compare with the plant-in-service during the rate year, proposed by the Company?**

17 A. Staff proposed a net plant increase, before ADFIT, from 2014 to 2016 of
18 \$16.33 million. The following illustration shows a comparison of the Company’s proposed
19 capital adjustment, and Staff’s capital adjustment to net plant before ADFIT:

20

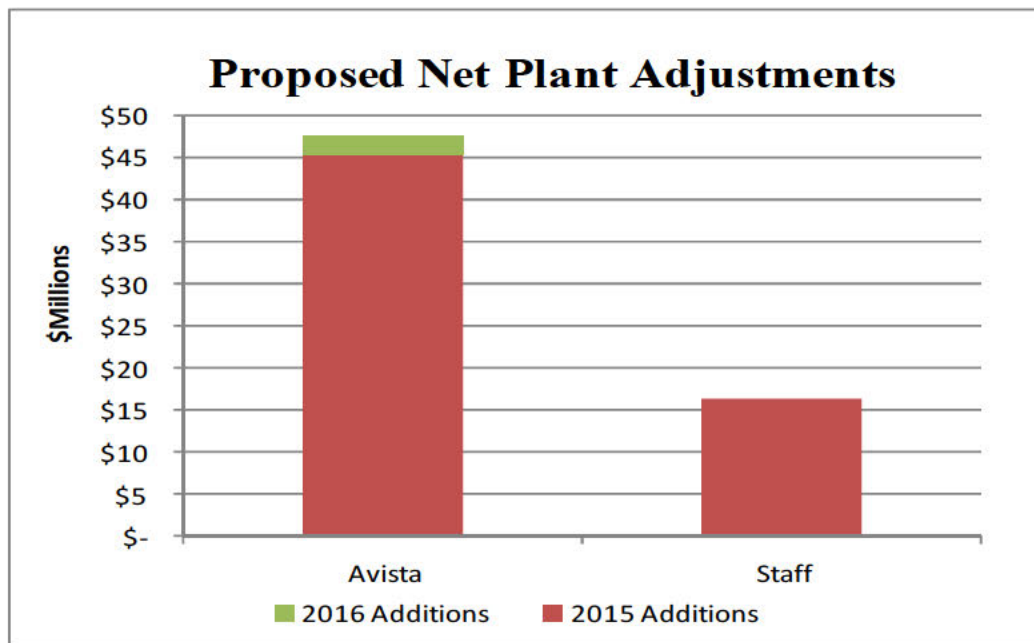
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23

24

1 **Illustration No. 2:**



11 As discussed earlier in my testimony, the Company's proposed net plant adjustments
12 for the 2016 test year, include a small amount for the Company's growth related projects
13 during 2016. The growth related capital was included for the 2016 test year in order to have
14 a matching of the revenues to the capital, because the Company also included forecasted
15 loads for 2016. The illustration above shows that Staff's net plant adjustment falls well
16 below the level of plant Avista will have in service at the beginning of the rate year. Clearly,
17 Staff's proposal will not reflect the level of rate base necessary to serve customers.

18 **Q. 2015 reflects higher capital additions than in previous years. What are**
19 **the main drivers for the increased capital additions in Oregon in 2015?**

20 A. The main projects that are driving the increase in capital additions are Project
21 Compass, the Aldyl-A pipe replacement project, the Ladd Canyon project, and the East
22 Medford Reinforcement project. Project Compass, which is the replacement of the
23 Company's customer information and work and asset management systems, went on line
24 and transferred to service in February of 2015 for a total of \$107.4 million (system), or

1 approximately \$8.3 million for Oregon operations.

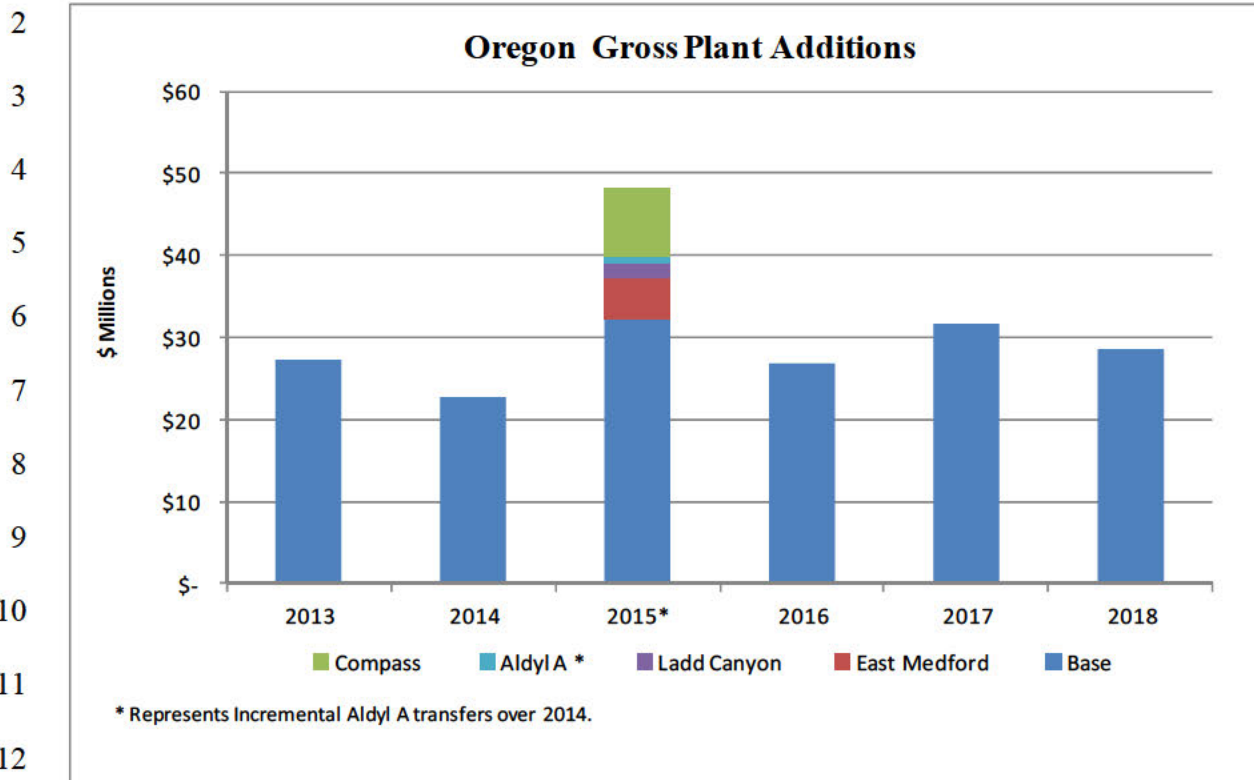
2 The Aldyl-A pipe replacement project is a 20-year program to systematically replace
3 select portions of the DuPont Aldyl A pipe found in the Company's natural gas distribution
4 system in Oregon, Idaho and Washington. The Company started this program in Oregon in
5 2012 and included Aldyl A capital additions starting in Docket No. UG-246, where on
6 November 1, 2014, approximately \$261,000 of revenue requirement was included in rates.
7 As described in that Docket, the Company is taking a systematic approach over time to
8 replace this natural gas pipe. In this current docket, the Company is proposing to recover
9 approximately \$6.3 million in plant additions related to Aldyl A in 2015. This project
10 transfers to plant on a monthly basis, and through September 30, 2015, approximately \$5.4
11 million of capital additions have transferred to service. Of the \$6.3 million transferring to
12 plant this year, approximately \$1.04 million is an increase over 2014 levels of Aldyl A. The
13 increased level of spending for 2015 is a part of the overall systematic program to address
14 risks.

15 The Ladd Canyon and East Medford projects are also projects that are necessary in
16 order to provide safe and reliable service to Oregon customers now and in the future. The
17 Ladd Canyon project is approximately \$1.65 million and will be in service in December of
18 2015. The East Medford Reinforcement project will cost approximately \$5 million, and will
19 also be in service by the end of 2015. Mr. Webb in his Reply testimony, discusses why these
20 projects are necessary at this time.

21 **Q. Apart from these four “lumpy” capital additions for 2015, how does the**
22 **level of capital investment for 2015 compare to other years?**

23 A. The illustration below shows the capital additions for Oregon operations in
24 2015, as compared to other years, after isolating these four “lumpy” projects.

1 **Illustration No. 3:**



13 As shown above, Oregon’s future gross capital additions (2016 – 2018) are expected
 14 to be between \$25 to \$32 million a year, reflecting a more normal level of capital spending.
 15 The addition of Project Compass, Ladd Canyon, East Medford Reinforcement, and the
 16 incremental increase in Aldyl A pipe over 2014, has resulted in a higher level of capital
 17 transferring to plant in 2015 than what has occurred in prior years. Apart from these four
 18 major projects, the capital investment for 2015 is more in line with both past and future
 19 periods.

20 **Q. Mr. Moore states, “Avista’s level of capital additions is not supported by**
 21 **the Company’s relatively flat growth in terms of numbers of customers, as well as an**
 22 **overall decline in gas sales.”⁸ Is the lack of growth in customers or load an appropriate**
 23 **metric to determine how much should be spent by the Company on capital projects?**

⁸ Staff/600, Moore/ 1, lines 11-13

1 A. No, it does not explain the need for the Company to invest in its
2 infrastructure. As Mr. Thies discusses in his direct testimony,

3 We are making significant capital investments in ... our natural gas
4 distribution system, and new technology to better serve the needs
5 of our customers. These investments target, among other things,
6 the preservation and enhancement of safety, service reliability and
7 the replacement of aging infrastructure.⁹

8
9 The Company should invest in capital that provides safe and reliable service to
10 customers, and the level of investment should not simply correspond to the amount of
11 customer growth the Company is experiencing.

12 **Q. Illustration No. 3 above indicates that the capital additions will continue**
13 **to range in the \$25 to \$32 million in Oregon in the next several years. What controls or**
14 **processes are in place to ensure that the Company is monitoring this level of capital**
15 **spend?**

16 A. In my direct testimony, I discussed the purpose of the Company's Business
17 Cases and the role of the CPG. The annual capital budgeting process starts within each
18 department in the Company, where they assess the projects that are necessary in the next
19 five years, and they develop a Business Case to present to the CPG. The CPG then goes
20 through the total budget and prioritizes projects based on a limited total Company budget.
21 The final listing of approved projects is presented to the Officer group for approval, and the
22 total is within the budget amount that approved by the Finance Committee of the Board of
23 Directors. In recent years, there have been several projects that have not been funded due to
24 limited capital budget dollars, demonstrating that the Company exercises discipline in its
25 budgeting process. Below is a table that shows the historical funded requests and unfunded
26 requests each year.

⁹ Avista/200, Thies/8, lines 12-16

Table No. 1 – Capital Investment and Capital Requests

Year	Total Requests	Funded Requests	Unfunded Requests
2011	\$291	\$230	\$61
2012	\$269	\$250	\$19
2013	\$320	\$266	\$54
2014	\$386	\$331	\$55

As a result of this constrained level of capital spending, capital projects must be prioritized so that the dollars flow where they are most needed. The CPG meets on a monthly basis and as unexpected, high-priority capital projects arise, the capital projects for the current year are reprioritized to limit the total spend to the amount established by the Company and approved by the Board of Directors. This can cause some projects to be delayed so that higher-priority projects can be completed.

In addition, some scheduled capital projects will encounter unexpected delays due to such things as permitting issues, delays in receipt of materials and equipment, etc. A delay in one project may allow another project to be accelerated in time as part of managing the availability of our workforce and to continue to make progress on projects next in the “queue” that need to be done. This reprioritization occurs within the CPG, which is charged with ensuring that the total capital spend for the year stays within the limit established by the Company’s Board of Directors.

Q. What evidence is there that the Company, in fact, manages the total capital spend for each year to the planned dollar limit?

A. The table below shows the planned capital spending for each year from 2006 to 2014 and shows that the Company’s average actual spend for this period was 101 percent of the planned spend.

Table No. 2 - Planned vs. Actual Expenditures

	Planned Expenditures (\$ millions)	Actual as a Percentage of Planned
2006	\$160.00	99%
2007	183.10	108%
2008	190.00	108%
2009	220.00	91%
2010	235.00	88%
2011	260.00	95%
2012	255.00	103%
2013	275.00	108%
2014	336.00	105%
Nine Year Average		101%

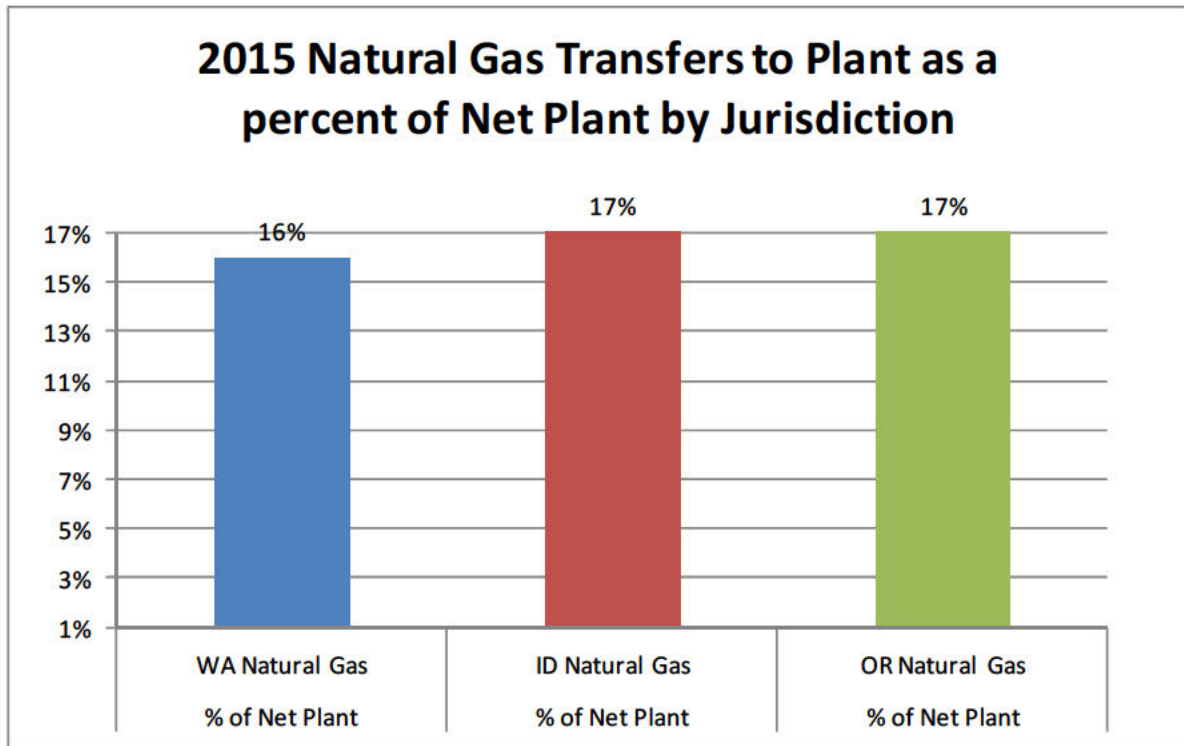
This demonstrates that, although individual project timing and dollar amounts will vary within a year, and will sometimes carry over from one year to the next, the Company manages its overall spending to be close to the overall planned amount.

Q. Mr. Moore states “it suggests that Oregon rate payers are being asked to shoulder an outsized share of the Company’s system-wide rate-base growth”¹⁰. Do you agree with this assessment?

A. No, as noted above, the departments assess the need for the capital projects based on system safety and reliability analyses. Mr. Webb discusses further in his testimony how the gas-engineering department assesses their needs. Further, large projects, such as Project Compass, are driving the larger transfers to plant balance in 2015. Illustration No. 4 below shows transfers to plant in all of the Company’s natural gas jurisdictions as a percentage of net plant:

¹⁰ Staff/604, Moore/ 8, lines 18-20

1 **Illustration No. 4:**



12

13 As shown in the illustration above, the Company’s transfers-to-plant are similar in

14 2015 across all jurisdictions — Oregon is not an “outlier” in that regard. Oregon’s

15 percentage is the same as Idaho’s, and is only slightly higher than Washington’s percentage

16 due at least in part, to a higher level of Oregon-directly assigned projects (i.e., the Ladd

17 Canyon project and the East Medford Reinforcement project). The Company is not asking

18 Oregon customers to shoulder a disproportionate share of plant additions in 2015 when

19 compared to other jurisdictions.

20 **Q. Did other Parties also review the Company’s capital projects?**

21 A. Yes. CUB provided testimony related to the Company’s Ladd Canyon Gate

22 Station upgrade¹¹. CUB removed approximately \$1.6 million of rate base associated with

23 this project, arguing that it was not needed at this time. Mr. Webb’s Reply testimony

¹¹ Exhibit CUB/100, McGovern-Jenks/9 -16

1 demonstrates why this upgrade is prudent and necessary at this time. CUB, however, did not
2 take issue with any other capital project.

3

4 **III. SUPPORTING DOCUMENTATION FOR CAPITAL PROJECTS**

5 **Q. Staff expressed concern of whether sufficient evidence was provided by**
6 **the Company with regard to its capital additions. Do you agree?**

7 A. No. Avista provided extensive evidence in this Docket supporting its current
8 and planned capital additions. The Company provided the original Business Cases in my
9 workpapers as a part of the originally filed case. For ease of reference, we have included
10 them again in my Exhibit Avista/1401. Avista also provided a significant amount of
11 supporting information in its pre-filed case, and provided even more detail in response to
12 many discovery requests by the Parties.

13 **Q. Staff witness Mr. Moore, on page 10, lines 14 through 16 discusses the**
14 **Business Case forms and argues that “The forms contain no calculations that would**
15 **demonstrate that the projects will result in concrete economic benefits to ratepayers.”¹²**
16 **Do you agree with this statement?**

17 A. No, the Business Cases included in my workpapers contain a Customer
18 Internal Rate of Return (“CIRR”) in the top right section. The CIRR represents a standard
19 internal rate of return calculation. While the actual calculation itself is not provided on this
20 sheet, the Company does a CIRR calculation or evaluation for each capital Business Case to
21 determine the benefits to customers. Some projects are mandated or required for compliance
22 purposes, and in these instances, there is no CIRR performed, as these projects need to be
23 completed regardless of the CIRR result.

¹² Staff/600, Moore/10, lines 14-16

1 Company are lumpy in 2015, as compared to other years. This is not unique to Oregon.
2 However, these capital projects are part of the Company's diligent effort to provide safe,
3 reliable service to customers and to replace aging infrastructure. If the Commission were to
4 accept Staff's and other Parties' proposed reductions to rate base, it would result in
5 insufficient revenues for Avista during the 2016 rate year to cover plant that is in service and
6 necessary to reliably serve customers.

7 **Q. Does this conclude your Reply testimony?**

8 A. Yes, it does.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

KAREN K. SCHUH
Exhibit No. 1401

Capital Business Cases

Table No. 1			
General Plant Capital Projects - 2015 Transfers to Plant			
Project	ER	2015	
		System	Oregon Allocated
		(000's)	(000's)
SCADA Upgrade	2277	\$ 1,020	\$ 89
Technology Refresh to Sustain Business Process	5005	21,379	1,860
Technology Expansion to Enable Business Process	5006	7,431	647
Enterprise Business Continuity	5010	649	56
Enterprise Security Systems	5014	5,400	470
Next Generation Radio System	5106	4,200	365
Microwave Replacement with Fiber	5121	2,755	240
Customer Information and Asset System Replacement	5138	95,386	8,300
AvistaUtilities.com Redevelopment	5143	7,038	612
Mobility in the Field	5144	420	37
Subtotal - Technology Projects		145,678	12,676
Transportation Equipment	7000	7,834	959
Structures and Improvements	7001	3,400	296
Office Furniture	7003	1,200	104
Stores Equipment	7005	648	56
Tools Lab & Shop Equipment	7006	1,719	167
Battery Storage Strategic Initiative ^[3]	7060	2,062	179
COF HVAC Improvement	7101	10,979	955
Long Term Campus Re-Structuring Plan	7126	5,000	435
Long Term Campus Re-Structuring Plan - Phase 2	7131	2,000	174
Apprentice Craft Training	7200	121	11
Subtotal - General Plant Projects		34,963	3,336
TOTAL		\$ 180,641	\$ 16,012

Business Case Ref.	ER	2015		Page #
		System	OR Share	
ET-1	2277	1,019,999	88,760	4
ET-2	5005	21,378,623	1,860,368	8
ET-3	5006	7,431,367	646,678	10
ET-4	5010	648,814	56,460	12
ET-5	5014	5,399,818	469,892	14
ET-6	5106	4,200,000	365,484	16
ET-7	5121	2,755,148	239,753	18
*	5138	95,385,719	8,300,465	
ET-8	5143	7,038,197	612,464	21
ET-9	5144	420,000	36,548	23
T-1	7000	7,834,114	959,402	25
G-1	7001	3,400,000	295,868	29
G-1	7003	1,200,000	104,424	29
G-2	7005	648,325	56,417	31
G-2	7006	1,719,060	166,994	31
**	7060	2,062,484	179,477	
G-3	7101	10,978,826	955,377	33
G-4	7126	5,000,000	435,100	35
G-5	7131	2,000,000	174,040	37
G-6	7200	121,407	10,565	39
		<u>180,641,901</u>	<u>16,014,537</u>	

* - ER 5138 - Customer Information and Asset System Replacement - was approved in Avista's previously filed general rate case, UG 284. For additional information about the project, please see testimony at Avista/500-Avista/502 therein.

** - Following the completion of Avista's revenue requirement for this case, it was identified that this project was inadvertently included within the revenue requirement and should have been excluded. We will correct this in our subsequent capital update for this case. Therefore, no business case has been included.

Table No. 2			
Oregon Gas Distribution Capital Projects - 2015 Transfers to Plant			
2015			
Project	ER	System	Oregon Allocated
		(000's)	(000's)
Gas Revenue Growth Projects	1001	\$ 13,545	\$ 3,846
Gas Meters Growth Projects	1050	1,880	658
Gas Regulators Growth Projects	1051	330	52
Gas ERT Growth Projects	1053	678	237
Gas Reinforce - Minor Blanket	3000	1,481	761
Replace Deteriorating Gas System	3001	1,000	1,000
Regulator Reliable - Blanket	3002	947	387
Gas Replace - Street & Highway	3003	4,827	3,477
Cathodic Protection - Minor Blanket	3004	950	50
Gas Distribution Non-Revenue Projects	3005	6,002	3,602
Overbuilt Pipe Replacement Projects	3006	900	828
Isolated Steel	3007	3,450	850
Aldyl-A Pipe Replacement	3008	18,317	6,298
Gas ERT Replacement Program	3054	402	402
Gas Meter Replacement	3055	1,030	296
Gas Telemetry	3117	400	120
East Medford Reinforcement	3203	5,000	5,000
Ladd Canyon Gate Station Upgrade	3303	1,650	1,650
Bonanza Gate Station Move	3307	600	600
Jackson Prairie Storage	7201	1,356	131
TOTAL		\$ 64,745	\$ 30,245

2015				
Business Case Ref.	ER	System	Oregon Allocated	Page #
NGD-1	1001	13,545,067	3,845,749	41
NGD-1	1050	1,880,298	658,104	41
NGD-1	1051	329,584	51,844	41
NGD-1	1053	678,333	237,417	41
NGD-2	3000	1,480,886	760,886	43
NGD-3	3001	1,000,000	1,000,000	45
NGD-4	3002	947,300	387,299	47
NGD-5	3003	4,827,444	3,477,444	49
NGD-6	3004	950,003	49,999	51
NGD-7	3005	6,001,954	3,601,954	53
NGD-8	3006	900,000	828,000	55
NGD-9	3007	3,450,000	850,011	57
NGD-10	3008	18,317,429	6,298,198	59
NGD-11	3054	401,891	401,891	62
NGD-12	3055	1,030,000	295,559	64
NGD-13	3117	400,000	120,000	66
NGD-14	3203	4,999,907	4,999,907	68
NGD-15	3303	1,650,000	1,650,000	70
NGD-16	3307	600,485	600,485	73
NGD-17	7201	1,356,300	130,883	75
		64,746,881	30,245,629	

Table No. 3		
Oregon Gas New Customer Hookups- 2016 AMA Transfers to Plant		
Project	ER	2016 Oregon (000's)
Gas Revenue Growth Projects	1001	\$ 1,720
Gas Meters Growth Projects	1050	154
Gas Regulators Growth Projects	1051	11
Gas ERT Growth Projects	1053	165
TOTAL		\$ 2,050

Business Case Ref.	ER	Oregon Allocated	Page #
NGD-1	1001	1,719,609	41
NGD-1	1050	153,771	41
NGD-1	1051	11,372	41
NGD-1	1053	164,672	41
		<u>2,049,424</u>	



Capital Program Business Case

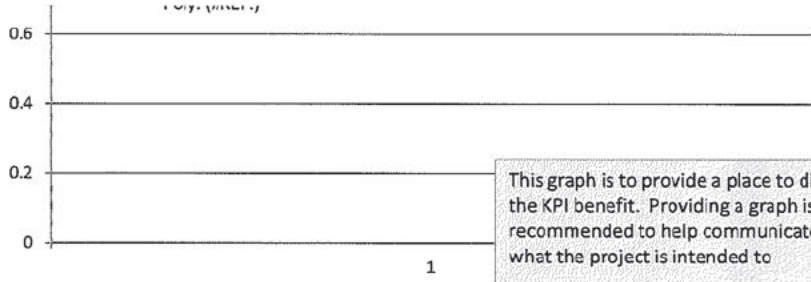
Investment Name:	SCADA - SOO and BUCC	Assessments:	
Requested Amount	Average capital amt 2013-18 is \$986,500	Financial:	7.00%
Duration/Timeframe	20 Year Program	Strategic:	Reliability & capacity
Dept., Area:	T&D - SCADA - System Operations	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Craig Figart/Brad Calbick/Heather Rosentrater	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Don Kopczynski	Assessment Score:	
Category:	Program		
Mandate/Reg. Reference:	WECC/NERC/FERC		

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This program replaces and/or upgrades existing electric and gas control center telecommunications and computing systems as they reach the end of their useful lives, require increased capacity, or cannot accommodate necessary equipment upgrades due to existing constraints. Included are hardware, software, and operating system upgrades, as well as deployment of capabilities to meet new operational standards and requirements. Some system upgrades may be initiated by other requirements, including NERC reliability standards, growth, and external projects (e.g. Smart Grid). Examples of upgrades to be completed under this program are Critical Infrastructure Protection version 5 (NERC requirement), Gas Control Room Management (PHMSA requirement), WECC RC Advanced Applications, and Technology Refresh (network and storage).	Improved performance, upgraded equipment, better status & control, new life cycle.	\$ 1,036,000	\$ 473,926	\$ -	2

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Non-compliant operational capabilities and practices would result in negative audit findings, financial penalties, and litigation expenses. Obsolete equipment would remain in service until failure. Additional capacity for growth may or may not be suitable for required expansions to meet other (e.g. Regulatory, SGIG) needs.	Severe negative system reliability and compliance impacts	\$ -	\$ 100,000	\$ 500,000	12
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	2
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,090,500	\$ -	\$ -	\$ 1,028,500
2015	\$ 1,020,000	\$ 473,926	\$ -	\$ 1,020,000
2016	\$ 1,002,000	\$ 487,158	\$ -	\$ 1,002,000

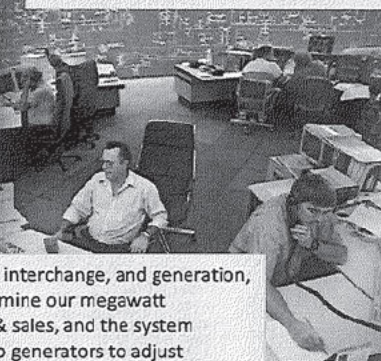
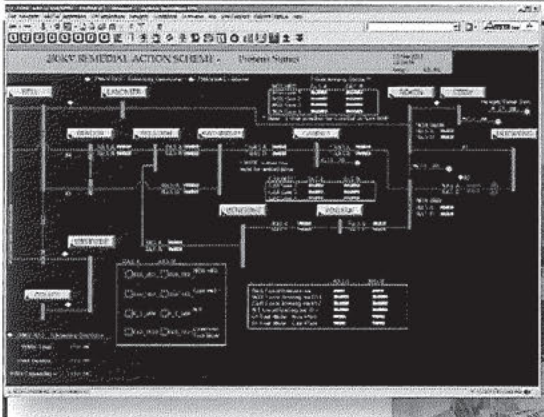
2277			



This graph is to provide a place to direct the KPI benefit. Providing a graph is recommended to help communicate what the project is intended to

Other Party Review signature *Margi Stevens*
(if necessary) Director/Manager

Transmission Operations – Certified System Operators monitor system conditions round-the-clock. They perform switching operations, maintain system voltage, and respond to abnormal conditions. Constant communication occurs with neighboring systems and regional authorities to assure system reliability. Operators are trained to respond to emergency situations such as black start restoration, load shedding, disturbance response, and activation of the Backup Control Center.



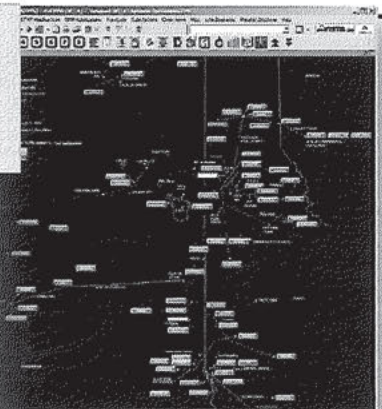
SCADA Variable Limits

Top 10 Lines

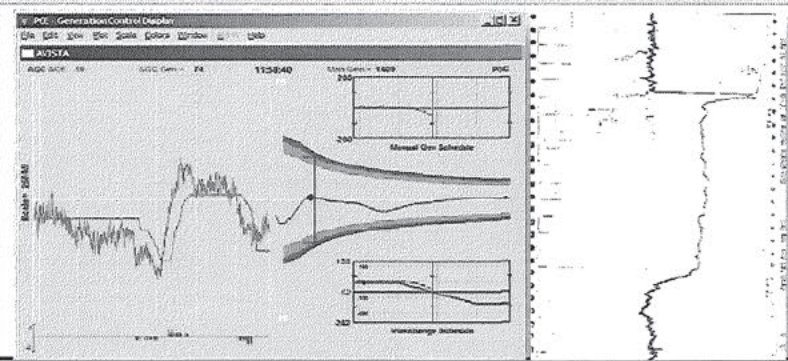
Line ID	Type	Code	Value	Unit	Min	Max
1	LINE	CB	227.9	kV	15.8	25.8
2	LINE	CB	193.0	kV	15.8	25.8
3	LINE	CB	224.9	kV	15.8	25.8
4	LINE	CB	227.9	kV	15.8	25.8
5	LINE	CB	227.9	kV	15.8	25.8
6	LINE	CB	227.9	kV	15.8	25.8
7	LINE	CB	227.9	kV	15.8	25.8
8	LINE	CB	227.9	kV	15.8	25.8
9	LINE	CB	227.9	kV	15.8	25.8
10	LINE	CB	227.9	kV	15.8	25.8

Top 10 (by MW Rating) Transformers

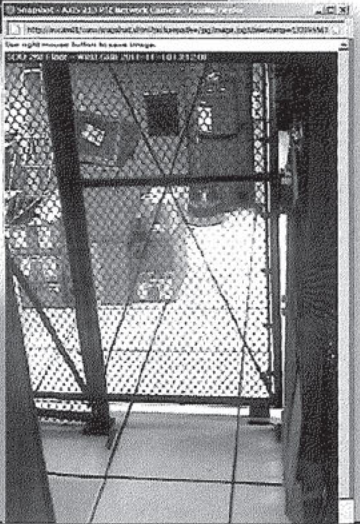
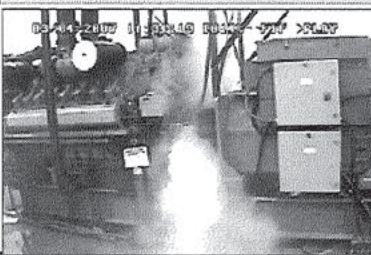
Transformer ID	Type	Code	Value	Unit	Min	Max
1	TRANS	CB	227.9	kV	15.8	25.8
2	TRANS	CB	227.9	kV	15.8	25.8
3	TRANS	CB	227.9	kV	15.8	25.8
4	TRANS	CB	227.9	kV	15.8	25.8
5	TRANS	CB	227.9	kV	15.8	25.8
6	TRANS	CB	227.9	kV	15.8	25.8
7	TRANS	CB	227.9	kV	15.8	25.8
8	TRANS	CB	227.9	kV	15.8	25.8
9	TRANS	CB	227.9	kV	15.8	25.8
10	TRANS	CB	227.9	kV	15.8	25.8



Balancing Authority – To maintain the balance between load, interchange, and generation, automated calculations occur every four seconds which determine our megawatt obligation based on our customer load, contracted purchase & sales, and the system frequency at that instant. Controls are automatically issued to generators to adjust generation to meet our obligation. Control algorithms are optimized to minimize



Critical Infrastructure Protection – Numerous protection measures are deployed to protect critical systems from unauthorized physical and electronic access. NERC standards have 43 requirements regarding protection of critical infrastructure. Onerous audits are performed every 3 years. Potentially significant financial penalties result from any instances of non-





Capital Program Business Case

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	Date	Template

Capital Program Business Case



Investment Name:	Technology Refresh to Sustain Business Proce		Assessments:		
Requested Amount	\$	15,362,243	Financial:	Medium - >= 5% & <9% CIRR	
Duration/Timeframe	10 Year Program		Strategic:	Life Cycle Programs	
Dept., Area:	IS/IT		Operational:	Operations require execution to perform at current levels	
Owner:	Jacob Reid/Jim Corder		Business Risk:	ERM Reduction >5 and <= 10	
Sponsor:	Jim Kensok		Program Risk:	High certainly around cost, schedule and resources	
Category:	Program		Assessment Score:	89	Annual Cost Summary - Increase/(Decrease)
Mandate/Reg. Reference:	n/a				

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This program is in place to provide for technology refresh in alignment with the roadmaps for application and technology lifecycles. The continuation of technology refresh programs provides benefit to Avista by providing a stable and reliable application and computing platform to allow for the safe and reliable operation of our electric and gas infrastructures.	This program provides for current technologies for the normal operation of the business	\$ 15,362,243		\$ -	15

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Not doing this program will result in four major impacts: 1) Reduction of 62 staff members with key institutional knowledge 2) Decrease in business process efficiency 3) increase in O&M labor to support the technology 4) increase technology outages impacting the operations of the business.	The performance of the computing technology at	\$ -		\$ 1,895,751	20
Technology Refresh Programs	This program is in place to provide for technology refresh in alignment with the roadmaps for application and technology lifecycles. The continuation of technology refresh programs provides benefit to Avista by providing a stable and reliable application and computing platform to allow for the safe and reliable operation of our electric and gas infrastructures.	This program provides for current technologies for the normal	\$ 15,362,243	\$ -	\$ -	15
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
5 years of costs					5005				
	Capital Cost	O&M Cost	Other Costs	Approved					
	\$ 9,973,758	\$ -	\$ -	\$ 9,973,758					
2013	\$ 10,019,774	\$ -	\$ -	\$ 11,110,491					
2014	\$ 12,129,043	\$ -	\$ -	\$ 15,362,243					
2015	\$ 13,949,536	\$ -	\$ -	\$ 16,094,833					
2016	\$ 17,183,753	\$ -	\$ -	\$ 16,094,833					
2017	\$ 19,031,035	\$ -	\$ -	\$ 16,094,833					
2018	\$ -	\$ -	\$ -	\$ 18,094,833					
2019	\$ -	\$ -	\$ -	\$ 20,094,833					
Total	\$ 72,313,141	\$ -	\$ -	\$ 102,825,824					

Mandate Excerpt (if applicable):
provide brief citation of the law or regulation and a reference number if possible

Additional Justifications:
Technology refresh program costs increase year over year to two main reasons. The first is because of the continuous technological evolution which causes obsolescence. Manufacturers continue to upgrade and improve their systems to provide improved performance and function. This in turn requires companies to replace system on a periodic basis to maintain reliability and functionality. The second main reason is due to the addition of new hardware and software to support new business requirements and growth. New equipment purchased under Technology Expansion Program will have to be refreshed in 3-5 years adding to the refresh budget. For example, infrastructure refresh costs the increase from year to year due to prior years spend in Technology Expansion, roughly \$800k in Distributed Systems and \$500k in Network Systems per year. Business Application Expansion is up between 2011 & 2012 because of the inclusion of some small to medium projects into the expansion program.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input checked="" type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required
Contract Labor:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input checked="" type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
				Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required

Check the appropriate box. The Internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Capital Program Business Case



Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	Fill in the name of the KPI here
	Fill in the name of the KPI here

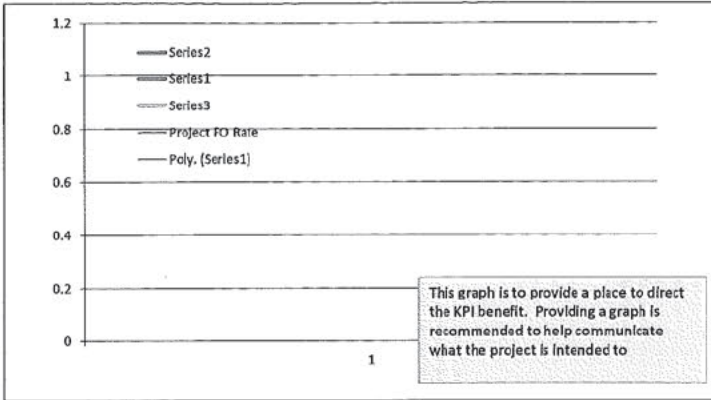
Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stenens* Director/Manager
(if necessary)

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

To be completed by Capital Planning Group	
Rationale for decision	Review Cycles 2012-2016
	Date
	Template



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Marcia Stevens*
(if necessary) Director/Manager

Please see attachment for descriptions of the work completed under this program.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

Investment Name:	Enterprise Business Continuity Plan		Assessments:			
Requested Amount	\$482,000		Financial:	High - Exceeds 12% CIRR		
Duration/Timeframe	5 Year Program		Strategic:	Other		
Dept., Area:	Enterprise Technology		Operational:	Operations improved beyond current levels		
Owner:	Clay Storey/Jim Corder		Business Risk:	ERM Reduction >10 and <= 15		
Sponsor:	Jim Kensok		Program Risk:	High certainly around cost, schedule and resources		
Category:	Program		Assessment Score:	106		
Mandate/Reg. Reference:	n/a		Annual Cost Summary - Increase/(Decrease)			

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Avista has developed an Enterprise Business Continuity Plan (EBCP) to facilitate emergency response and business continuity activities in fulfillment of our mission. The program supports the Enterprise Business Continuity objectives by providing an all-hazards framework for emergency response, technology recovery, alternate facilities and business continuity activities. The program provides communications, escalation and operational procedures necessary for efficient response to events. See "Additional Justifications:" for more information.	This is a risk mitigation program	\$ 482,000	\$ 498,755		4

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Without this program the company's ability to prepare for and respond to emergency event will be diminished. This will have the effect of creating longer delays in the restoration of business services for our customer and shareholders, potentially even action by the utility commission against Avista.	n/a	\$ -	\$ -	\$ -	25
Alternative 1: Brief name of alternative (if applicable)	Avista has developed an Enterprise Business Continuity Plan (EBCP) to facilitate emergency response and business continuity activities in fulfillment of our mission. The program supports the Enterprise Business Continuity objectives by	This is a risk mitigation program	\$ 482,000	\$ 498,755	\$ -	4
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
5 years of costs					5010				
	Capital Cost	O&M Cost	Other Costs	Approved					
	\$ 482,000			\$ 482,000					
2012	\$ 482,000	\$ 488,838	\$ -	\$ 482,000					
2013	\$ 600,000	\$ 549,558	\$ -	\$ 482,000					
2014	\$ 600,000	\$ 610,278	\$ -	\$ 482,000					
2015	\$ 450,000	\$ 655,818	\$ -	\$ 450,000					
2016	\$ 450,000	\$ 701,358	\$ -	\$ 450,000					
2017	\$ 450,000	\$ 746,898	\$ -	\$ 450,000					
2018	\$ 450,000	\$ 792,438	\$ -	\$ 450,000					
2019	\$ -	\$ -	\$ -	\$ 450,000					
Total	\$ 3,482,000	\$ 4,545,186	\$ -	\$ 3,696,000					

Mandate Excerpt (if applicable):
n/a

Additional Justifications:
Support of the Enterprise Business Continuity Plan mitigates risk and minimizes the impact on the shareholders, customers, employees, and the community during and following an incident requiring activation of the EBCP. Through the development and maintenance of standardized mission critical plans and comprehensive alternate facilities planning, exercises and testing, the response, recovery and restoration efforts are synchronized, which in turn, lowers the risk of direct, indirect, tangible or intangible losses. Through on-going development, maintenance, review, and testing of the critical alternate operating procedures in support of critical business processes, process and procedure gaps are identified. This process will ensure the readiness of systems, procedures, processes, and people during emergency operations and provide an environment of constant improvement.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input checked="" type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required
Contract Labor:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input checked="" type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
				Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).



Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	Fill in the name of the KPI here
	Fill in the name of the KPI here

Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Maurice Stevens* Director/Manager
(if necessary)

The Program is planned to include the following Projects in the next 5 years:

1. Enterprise Business Continuity management software
2. Alternate facilities infrastructure
3. Includes AFM/OMT in Disaster Recovery
4. Includes Mobile Dispatch in Disaster Recovery
5. Includes AMR systems(Fixed network, AutoSOI, MV90, others) in Disaster Recovery
6. Filesystem expansion in Disaster Recovery

To be completed by Capital Planning Group		
Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

Capital Program Business Case



ET-5

Investment Name:	Enterprise Security	Assessments:			
Requested Amount	\$1,836,932	Financial:	12%		
Duration/Timeframe	10 Year Program	Strategic:	Agile Technology Platforms		
Dept... Area:	Enterprise Technology	Business Risk:	Business Risk Reduction >5 and <= 10		
Owner:	Clay Storey/Jim Corder	Program Risk:	High certainty around cost, schedule and resources		
Sponsor:	Jim Kensok	Assessment Score:	#NAME?	Annual Cost Summary - Increase/(Decrease)	
Category:	Program		Performance	Capital Cost	O&M Cost
Mandate/Reg. Reference:	n/a				Other Costs
Recommend Program Description:	This program is to maintain and improve all security aspects to protect people, assets, information & operations through projects, activities and polices. It will also manage the number of security incidents at level that aligns with our corporate risk expectations. Additionally it will increase the culture of security through education and training.				Business Risk Score
				\$ 1,836,932	\$ -
					\$ -
					9

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Address issues related to violations of the security and compliance as they arise and pay fines as there are assessed.	The risk of security incidents increases		\$ -	\$ 5,000,000	15
Alternative 1: Brief name of alternative (if applicable)	This program is to maintain and improve all security aspects to protect people, assets, information & operations through projects, activities and polices. It will also manage the number of security incidents at level that aligns with our corporate risk expectations. Additionally it will increase the culture of security through education and training.	Decreases the likelihood or severity of security incidents	\$ 1,836,932	\$ -	\$ -	9
Alternative 2: Brief name of alternative (if applicable)			\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)			\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 1,885,000	\$ -	\$ -	\$ 1,885,000
2013	\$ 1,885,000	\$ -	\$ -	\$ 1,510,000
2014	\$ 1,885,000	\$ -	\$ -	\$ 1,935,000
2015	\$ 1,885,000	\$ -	\$ -	\$ 3,200,000
2016	\$ 1,885,000	\$ -	\$ -	\$ 3,200,000
2017	\$ 1,885,000	\$ -	\$ -	\$ 3,200,000
2018	\$ -	\$ -	\$ -	\$ 3,200,000
2019	\$ -	\$ -	\$ -	\$ 3,200,000
Total	\$ 9,425,000	\$ -	\$ -	\$ 19,445,000

From 5014			

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
						\$ -	The program is not mandatory however project under the scope of this business case may be mandatory base on their specific requirements.
						\$ -	
						\$ -	
5014	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 9,425,000	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: 2012 Budget Note: This program is being fund by a reduction in the Technology Refresh and Technology Expansion business cases, for \$565k and \$820k respectively. And \$500,000 from Security Initiative Business Case (ER5002).
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 9,425,000	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO
 Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

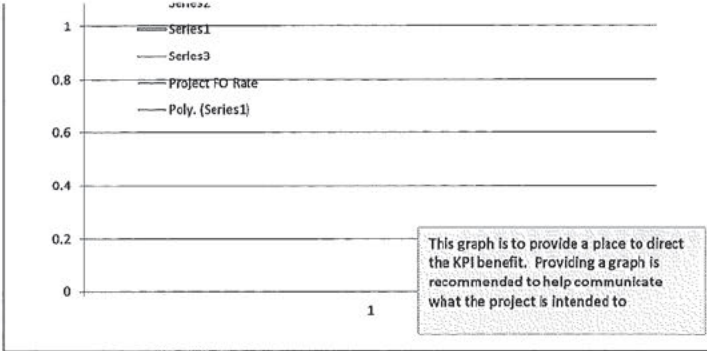
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure: Fill in the name of the KPI here
 Fill in the name of the KPI here

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Series2



Reviewed signature Director/Manager

Other Party Review signature Director/Manager
(if necessary) *Margie Stevens*

2013 Projects

- Certificate Management
- CVA expansion to SCADA and GCN
- Data loss prevention software and Data classification standards
- Email Encryption
- File Integrity Monitoring
- Network Access Control Phase 1
- Network Device Config Analysis Automation
- Network IPS Expansion
- Security monitoring expansion to GCC and SCADA (QRadar)
- Two factor authentication

2014 Projects

- SIEM & Qflow Refresh
- Controlled Access based on need to know
- SSPWR Internet Access
- Iron Security Appliances (SGDP) Refresh
- Asset management - Authorized & Unauthorized SW
- Identity Management Solution
- Controlled Use of Admin Privileges
- Password Vault

2015 Projects

- PKI Refresh
- CVA Hardware Refresh
- Web Services Security (C&M)
- Disk Encryption Refresh
- Network Device Config Analysis Refresh
- McAfee NSM & NIPS Refresh
- Malware Detection Appliance Refresh (FireEye)
- Limitation and Control of Network Ports, Protocols, and Services
- Configuration management tool
- Boundary Defense
- Application SW-Secure config
- Account Monitoring and Control
- HR Systems Integration w/Active Directory

2016 Projects

- Asset mgmt/Auth & Unauth Devices Refresh
- Password Vault Refresh
- Network Access Control Refresh
- Identity Management Refresh
- Enterprise Reduced Sign-On
- Controlled Access based on need to know-Refresh

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template



Investment Name:	Next Generation Radio Refresh	Assessments:	
Requested Amount	\$ 21,907,957	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	5 Year Project	Strategic:	Agile Technology Platforms
Dept... Area:	Enterprise Technology	Operational:	Operations require execution to perform at current levels
Owner:	Jacob Reid/Jim Corder	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Jim Kensok	Project/Program Risk:	High certainty around cost, schedule and resources
Category:	Mandatory	Assessment Score:	128
Mandate/Reg. Reference:	FCC Narrow Banding Mandate (See below)	Cost Summary - Increase/(Decrease)	

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
This project is refreshing Avista's 20 year old Land Mobile Radio (LMR) system that is used for critical crew communications during outage restoration and daily operations of maintaining the electric and gas distribution and transmission systems. Avista continues to maintain a private Land Mobile Radio system because the offerings available from public providers cannot provide communication throughout our rural service territory and as a portion of our nation's critical infrastructure it is imperative that Avista have a communication system that will operate in the event of a disaster to help safeguard the general public.	The current radio system will not meet the required mandate and due for refresh.	\$ -	\$ -	\$ -	0

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
<i>Status Quo:</i>	Describe the current condition of the asset(s) and problems that need to be corrected	n/a	\$ -	\$ -	\$ -	0
<i>Alternative 1: Brief name of alternative (if applicable)</i>	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
<i>Alternative 2: Brief name of alternative (if applicable)</i>	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
<i>Alternative 3 Name: Brief name of alternative (if applicable)</i>	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Timeline Construction Cash Flows (CWIP)

	Capital Cost	O&M Cost	Other Costs	Approved
Actual				
Forecast				
Previous	\$ 11,327,464	\$ -	\$ -	\$ 11,327,464
2012	\$ 8,003,573	\$ -	\$ -	\$ 4,262,000
2013	\$ 2,997,260	\$ -	\$ -	\$ 2,585,260
2014	\$ 3,946,378	\$ -	\$ -	\$ 3,275,207
2015	\$ 27,000	\$ -	\$ -	\$ 458,026
2016	\$ -	\$ -	\$ -	\$ -
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ -	\$ -	\$ -	\$ -
Future	\$ -	\$ -	\$ -	\$ -
Total	\$ 26,301,675	\$ -	\$ -	\$ 21,907,957

Rebaselined after completion of Design & Planning

Milestones (high level targets)	
February-08	Project Started
December-11	December-15 year end actual
December-12	year end actual
December-13	year end actual
December-14	year end actual

Associated Ers (list all applicable):	5106					
Mandate Excerpt (if applicable):	na					

Additional Justifications:	
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Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required
Contract Labor:	<input type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required
				Fleet:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required

Key Performance Indicator(s)
Expected Performance Improvements

KPI Measure: Fill in the name of the KPI here
Fill in the name of the KPI here

This graph is to provide a place to direct the KPI benefit. Providing a graph is recommended to help communicate what the project is intended to

Prepared signature _____

Reviewed signature _____
Director/Manager

Other Party Review signature *Margi Stevens* _____
(if necessary) Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the project

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Capital Project Business Case



Investment Name:	Microwave Refresh		
Requested Amount	\$	23,204,063	Assessments:
Duration/Timeframe	7 Year Project		Financial: 10.50%
Dept., Area:	Enterprise Technology		Strategic: Reliability & capacity
Owner:	Jacob Reidt/Jim Corder		Business Risk: Business Risk Reduction >5 and <= 10
Sponsor:	Jim Kensck		Project Risk: Moderate certainty around cost, schedule and resources
Category:	Project		
Mandate/Reg. Reference:	N/A		Assessment Score: 84
Recommend Project Description:	<p>The purpose of this project is to refresh the aging microwave technology with current technology to provide for the high speed data communications. These communication systems support relay and protection schemes of the electrical transmission system.</p>		
	Performance	Capital Cost	O&M Cost
	The current system are out of date and in need of replacement	\$ 8,400,000	\$ 840,000
			Other Costs
			\$ -
			Business Risk Score
			8

Annual Cost Summary - Increase/(Decrease)		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Alternatives:						
Unfunded Project:	Remaining at the status quo will increase Avista's risk of failure of these critical communication systems, which could have significant impact on Avista's transmission capacity and ability to serve our customers electrical needs.	n/a	\$ -	\$ -	\$ 1,000,000	15
Alternative 1: Brief name of alternative (if applicable)	The purpose of this project is to refresh the aging microwave technology with current technology to provide for the high speed data communications. These communication systems support relay and protection schemes of the electrical transmission system.	The current system are out of date and in need of	\$ 8,400,000	\$ 840,000	\$ -	8
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name : Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 2,910,116	\$ -	\$ -	\$ 2,910,116
2012	\$ 1,559,877	\$ -	\$ -	\$ 1,200,000
2013	\$ 1,500,000	\$ -	\$ -	\$ 1,500,000
2014	\$ 1,657,391	\$ -	\$ -	\$ 917,462
2015	\$ 2,276,679	\$ -	\$ -	\$ 2,276,679
2016	\$ 4,050,000	\$ -	\$ -	\$ 3,050,000
2017	\$ 4,100,000	\$ -	\$ -	\$ 3,050,000
2018	\$ 4,100,000	\$ -	\$ -	\$ 4,100,000
2019	\$ -	\$ -	\$ -	\$ 5,100,000
2020+	\$ 1,050,000	\$ -	\$ -	\$ -
Total	\$ 23,204,063	\$ -	\$ -	\$ 24,104,257

Associated Ers (list all applicable):

5119			

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
5119	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: Any supplementary information that may be useful in describing in more detail the nature of the Project, the urgency, etc.

Milestones (high level targets)

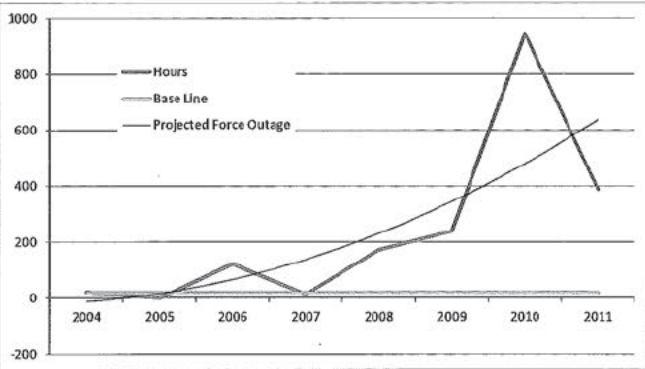
December-11	NLW-SHN Prior	December-12	M15-NLW 2012	December-15	MW to Fiber
December-12	NLW-SHN 2012	December-13	M15-NLW 2013	December-16	MW to Fiber
December-13	NLW-SHN 2013	December-12	Fiber to Low Off 2012	December-17	MW to Fiber
December-11	M23-SPU Prior	December-13	Fiber to Low Off 2013	December-18	MW to Fiber
December-12	M23-SPU 2012	December-14	Missing row in Actual Progress and	December-19	MW to Fiber
December-13	M23-SPU 2013	December-14	MW to Fiber	December-20	MW to Fiber



Resources Requirements: *(request forms and approvals attached)*

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required	Capital Tools:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required
Contract Labor:	<input type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required	Fleet:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required

Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	Fill in the name of the KPI here
	Fill in the name of the KPI here



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Director/Manager

Other Party Review signature
(if necessary) *Margie Stevens*
Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Project

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Capital Program Business Case



Investment Name:	AvistaUtilities.com Redesign	Assessments:	
Requested Amount	\$1,500,000	Financial:	7.00%
Duration/Timeframe	3 Year Project	Strategic:	Customer Experience
Dept., Area:	Customer Solutions	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Dana Anderson, Jim Corder	Project Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Dana Anderson, Jim Kensok		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	77

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
See Attached Project Charters.	Improved usability for customers and improved capability for information sharing and delivery to increase overall employee engagement	\$ 1,000,000	\$ 500,000	\$ -	0

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	Not consistent with industry and web best practices. 14% of customers are currently unable to complete transactions on the web and of those that can consistent feedback indicates that transactional tasks are time consuming and sometimes unusable.	n/a	\$ -	\$ -	\$ -	0
Alternative 1: Brief name of alternative (if applicable)	Redesign of AvistaUtilities.com	Improved usability, capability and new technology	\$ 1,000,000	\$ 500,000	\$ -	0
Alternative 2: Brief name of alternative (if applicable)			\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)			\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 10,452	\$ -	\$ -	\$ 10,452
2013	\$ 1,000,000	\$ 100,000	\$ (50,000)	\$ 419,000
2014	\$ 500,000	\$ 100,000	\$ (100,000)	\$ 1,037,000
2015	\$ -	\$ 100,000	\$ (100,000)	\$ 4,000,000
2016	\$ -	\$ 100,000	\$ (100,000)	\$ 2,000,000
2017	\$ -	\$ 100,000	\$ (100,000)	\$ -
Total	\$ 1,500,000	\$ 500,000	\$ (450,000)	\$ 7,466,452

Associated Ers (list all applicable):

ER	2013	2014	2015	2016	2017	Total
New						

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
New	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: 1. The benefits are defined in the attached charter. In general they relate to a redesigned site for improved usability for customers as well as improved tools for employee information. 2. This project supports the Customer Engagement strategy by improving the website to better serve customers. 3. This Project supports the Employee strategy by improving capability for delivering information to employees.

Milestones (high level targets)

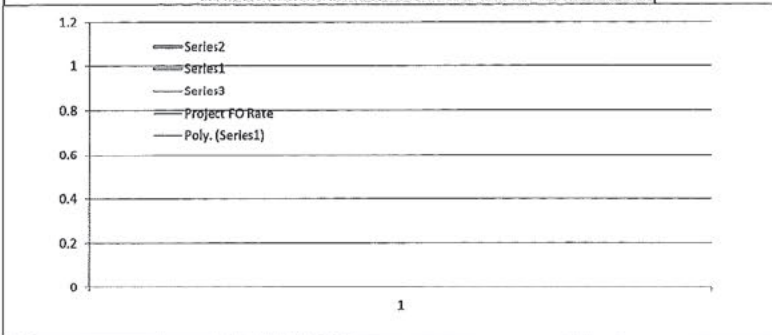
September-12	Project Start	January-00	open	January-00	open
January-13	Phase 0 Complete	January-00	open	January-00	open
April-13	Phase 1 Complete	January-00	open	January-00	open
August-13	Phase 2 Complete	January-00	open	January-00	open
February-14	Phase 3 Complete	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open

Milestones should be general. Use your judgement on project progress so that progress can

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO
 Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure: Fill in the name of the KPI here
Fill in the name of the KPI here



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 Director/Manager

Other Party Review signature *Maura Stevens*
 (if necessary) Director/Manager

Attachment 1: Project Charter
 Attachment 2: Charter Addendum for AU.com
 Attachment 2: Charter Addendum for AVAnet

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Investment Name:	Mobility in the Field	Assessments:	
Requested Amount	\$200,000	Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	5 Year Program	Strategic:	Agile Technology Platforms
Dept., Area:	Energy Delivery	Operational:	Operations improved beyond current levels
Owner:	Heather Rosentrater & Mike Broemeling	Business Risk:	ERM Reduction >0 and <= 5
Sponsor:	Don Kopczynski & Jim Kensok	Program Risk:	High certainty around cost, schedule and resources
Category:	Program	Assessment Score:	83
Mandate/reg. Reference:	n/a	Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			ERM Risk Score
		Capital Cost	O&M Cost	Other Costs	
This program is to increase our mobility in the field using mobile devices. A Mobile Road Map Team has documented 30 opportunities where mobile technology could be used in the field. The top opportunities, with the highest benefit and savings, are included over the five year program. Additional mobile opportunities will continue to emerge, therefore a Mobility Program is requested. The Customer IRR (CIRR) at 9% per Dave DeFelice. Opportunities will be done in phases over the 5 years. The first phase will be for the project called Visibility in the Field which enables the following: 1. Leak Survey 2. Gas Service Dispatch This would provide spatial maps in the field, using a mobile device resulting in efficiency gained for our field employees. Our customer will benefit with these new capabilities and efficiencies. The benefits would include operations improvements to reduce compliance risk, reduce duplicate effort, more timely entry of data along with improved tools and information in the field. The top opportunities are 1. View GIS Layers and Multiple Maps in the Field (In 2013) 2. Gas Exposed Pipe Report (In 2014) 3. Capture Facility Data (In 2015) 4. Provide Gas Blue Leak Survey Form (in 2013) 5. Damage Assessment (OMT) (in 2016).	ArcGIS Online will allow us to share information with web maps. This will increase collaboration with internal employees and external contractors and partners. This supports our strategic goals for agile technology.	\$ 200,000			2

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			ERM Risk Score
			Capital Cost	O&M Cost	Other Costs	
Unfunded Program:	Maps are printed and taken out to the field; Paper process to gather information in the field and then enter the data into electronic format once in the office; If a Serviceman does have a Go-Book then both the electronic entry is done along with the paper process as a backup; Information is relayed by	n/a	\$ -	\$ -	\$ -	3
Alternative 1: Add ArcGIS Server with tablet mobile devices	Either establish an ELA with Esri or purchasing licenses individually, installation of servers and ArcGIS Server application, establish governance, hire one FTE for AFM Team, deploy approximately 180 mobile devices, user testing, process changes and training. Mobile devices deployed would	\$2,000 per device estimate	\$ 150,000			2
Alternative 2: Add ArcGIS Server with Mesa devices	Mobile devices deployed as a Mesa.	\$4,000 per device estimate				0
Alternative 3 Name: Add ArcGIS Server with Go-Book devices	Mobile devices deployed as a Go-Book.	\$10,000 per device estimate				0

Program Cash Flows					Associated Ers (list all applicable):			
5 years of costs					Current ER			
	Capital Cost	O&M Cost	Other Costs	Approved				
2012				\$ -				
2013	\$ 200,000			\$ 160,000				
2014	\$ 320,000	\$ 126,000	\$ (200,000)	\$ 530,000				
2015	\$ 420,000	\$ 300,000	\$ (392,000)	\$ 420,000				
2016	\$ 320,000	\$ 350,000	\$ (425,000)	\$ 320,000				
2017	\$ 400,000	\$ 400,000	\$ (472,000)	\$ -				
2018	\$ -	\$ -	\$ -	\$ -				
Total	\$ 1,660,000	\$ 1,176,000	\$ (1,489,000)	\$ 1,430,000				

Mandate Excerpt (if applicable):
provide brief citation of the law or regulation and a reference number if possible

Additional Justifications:
The hardware and software technology is advancing in such a manner that it will now benefit our field personnel to have a Mobility in the Field Program. We now have less expensive mobile devices to deploy along with a disconnected application for our field workers to be able to work offline and synch information back and forth when connection is successful to wi-fi or cellular. Advances in technology are making mobile capabilities more of a standard in doing business. Our field workers need to have the tools that make them more efficient in their work processes, able to post data quickly and have more information to ultimately benefit our customers.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability Enterprise Tech: YES - attach form NO or Not Required

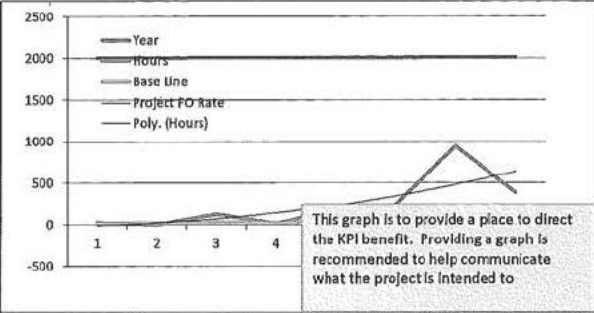
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the

Contract Labor: YES NO

Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Must ensure that all resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure: To be determined by each project
 Fill in the name of the KPI here



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Other Party Review signature Director/Manager
 (if necessary) *Margie Stevens*

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

To be completed by Capital Planning Group	
Rationale for decision	Review Cycles 2012-2016
	Date Template

Capital Program Business Case



Investment Name:	Fleet Budget	Assessments:	
Requested Amount	\$ 7,700,000	Financial:	7.00%
Duration/Timeframe	5 Year Program	Strategic:	Life-cycle asset management
Dept., Area:	Fleet Services	Business Risk:	Business Risk Reduction >0 and <= 5
Owner:	Chris Schlothauer	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Don Kopczynski		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Fleet utilizes a VRM (Vehicle Replacement Model) analysis program to determine which vehicles get replaced for the next budget cycle. This program utilizes our internal data regarding equipment utilization, repair costs, purchase costs, disposal costs, and business needs across all classes of equipment. This provides a consistent and level spend to cover all departments effectively. This contributes to the operational readiness for all departments and our company as a whole. The 5 year projection includes analysis of 19 classes in total and the replacement of over 600 assets.	describe any incremental changes that this Program would benefit present operations	\$ 7,700,000	\$ -	\$ -	4

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
			Capital Cost	O&M Cost	Other Costs	
Unfunded Program: Replace only on failure	Continue to maintain and repair equipment, but replace only when repairs are no longer an option. Minimal Capital expenditure with a maximum expenditure on O&M.	Unreliable equipment, failed commitments	\$ -	\$ 2,135,679	\$ -	9
Reduced Spend	Cut Spend by 50% to focus only on equipment that is at the end of it's life cycle, is at the upper end of repair costs, and is difficult to replace with a rental if equipment fails mid-year. This will create less spend on Capital, with an increase in O&M spend.	Less reliable equipment. Risk to operation's	\$ 3,850,000	\$ 1,914,099	\$ -	4
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name : Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2014	\$ 7,595,175	\$ -	\$ -	\$ 5,700,406
2015	\$ 7,700,000	\$ -	\$ -	\$ 7,700,000
2016	\$ 8,085,000	\$ -	\$ -	\$ 7,700,000
2017	\$ 8,489,250	\$ -	\$ -	\$ 7,700,000
2018	\$ 8,913,713	\$ -	\$ -	\$ 7,700,000
2019	\$ 9,359,398	\$ -	\$ -	\$ 7,700,000

7000			

Capital Program Business Case



2020+	\$ -	\$ -	\$ -	\$ -
Total	\$ 50,142,536	\$ -	\$ -	\$ 44,200,406

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
7000	\$ 7,700,000	\$ 8,085,000	\$ 8,489,250	\$ 8,913,713	\$ 9,359,398	\$ 42,547,361	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 7,700,000	\$ 8,085,000	\$ 8,489,250	\$ 8,913,713	\$ 9,359,398	\$ 42,547,361	Additional Justifications: Any supplementary information that may be useful in describing in more detail the nature of the Project, the urgency, etc.

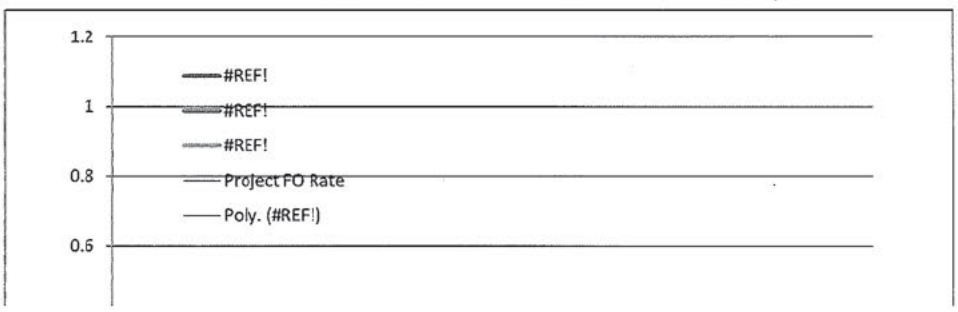
Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure: Fill in the name of the KPI here
 Fill in the name of the KPI here



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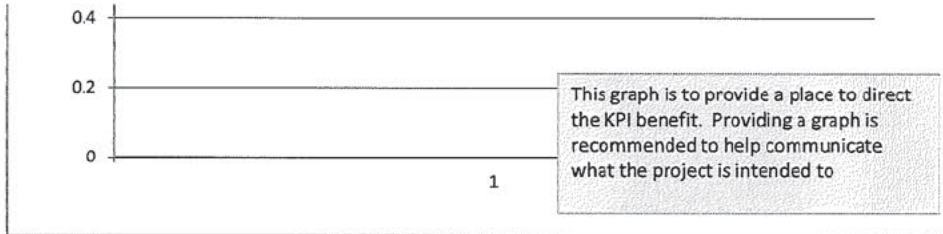
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Other Party Review signature Margie Stevens

T-1
 Avista/1401
 Schuh/Page 26



Capital Program Business Case



(if necessary)

Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

To be completed by Capital Planning Group

Rationale for decision

Review Cycles
2012-2016

T-1

Avista/1401
Schuh/Page 27



Capital Program Business Case

	Date	Template

Capital Program Business Case



Investment Name:	Structures and Improvements and Furniture	Assessments:	
Requested Amount	\$25,773,300	Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	7 Year Program	Strategic:	Life Cycle Programs
Dept., Area:	Facilities	Operational:	Operations require execution to perform at current levels
Owner:	Mike Brcemling & Eric Bowles	Business Risk:	ERM Reduction >0 and <= 5
Sponsor:	Don Kopczynski	Program Risk:	High certainly around cost, schedule and resources
Category:	Program	Assessment Score:	84
Mandate/Reg. Reference:	n/a	Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This program would be responsible for the Capital Maintenance, Improvements, and Furniture budgets at 50 plus Avista Offices and Service Centers (over 700,000 sf total). Many of the included Service Centers were built in the 50's and 60's and are starting to show signs of severe aging. The program would include Capital projects in all construction disciplines (Roofing, Asphalt, Electrical, Plumbing, HVAC, Energy efficiency projects etc.). This program would be driven mainly from the results of an objective building survey completed at each Service Center. The survey assigns a rating to each building category based on condition. This will help us create capital project lists for each Service Center and make decisions on continued maintenance vs future replacement.	improve operating functionality, increased safety, increased energy efficiency.	\$ 25,773,300		\$ -	0
Annual Cost Summary - Increase/(Decrease)					

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Status Quo :	We are experiencing severe issues with Asphalt Parking, Roof leaking, Energy loss due to inefficient HVAC systems, Low E glass, lack of building insulation, etc... Failure to maintain or replace these system can result in excessive Utility bills, increased damage to other adjacent systems, (example roof leak), as well as increased safety liability (sidewalk heaving and potholes) etc...	n/a	\$ -	\$ -	\$ -	0
Alternative 1: Brief name of alternative (if applicable)	Reducing Capital repair and replacements would drive up O & M costs respectively. This would also increase the risk for unplanned major failures which could also incur additional productivity costs for other departments affected (example major HVAC shutdown).	lower capital would drive up O&M and risk major failure	\$ -	\$ -	\$ -	0
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
5 years of costs					Current ER	7001	7003		
	Capital Cost	O&M Cost	Other Costs	Approved					
2012	\$ 4,820,000	\$ -	\$ -	\$ 4,420,000					
2013	\$ 4,000,000	\$ -	\$ -	\$ 3,600,000					
2014	\$ 4,000,000	\$ -	\$ -	\$ 3,433,300					
2015	\$ 4,000,000	\$ -	\$ -	\$ 4,600,000					
2016	\$ 4,000,000	\$ -	\$ -	\$ 3,600,000					
2017	\$ -	\$ -	\$ -	\$ 3,600,000					
2018	\$ -	\$ -	\$ -	\$ 3,600,000					
2019	\$ -	\$ -	\$ -	\$ 3,600,000					
Total	\$ 20,820,000	\$ -	\$ -	\$ 30,453,300					

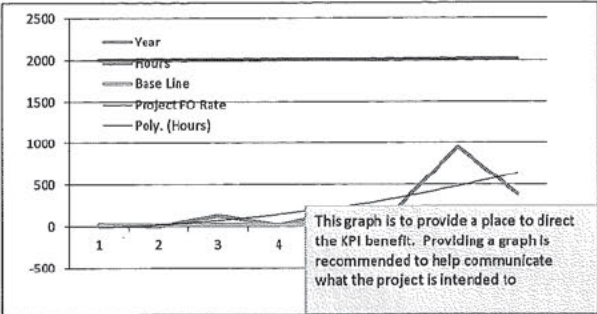
Mandate Excerpt (if applicable):
provide brief citation of the law or regulation and a reference number if possible

Additional Justifications:
With the completion of the Facilities Survey in May 2011, we now have the ability to rate the condition of each of our service centers which in turn helps us allocate money to where it is needed most. We are also working on creating a long range lifecycle plan to identify when continued maintenance is no longer prudent and replacement is a more cost effective solution. In addition, the office furniture budget is included in this program and can support various office remodels, chair and furniture replacements, furniture layout remodels, modular wall systems, and new furniture for misc. projects.

Resources Requirements: (request forms and approvals attached)

- | | | | | | | |
|-------------------------------------|--|--|---|-------------------------|---|--|
| Internal Labor Availability: | <input type="checkbox"/> Low Probability | <input checked="" type="checkbox"/> Medium Probability | <input type="checkbox"/> High Probability | Enterprise Tech: | <input checked="" type="checkbox"/> YES - attach form | <input checked="" type="checkbox"/> NO or Not Required |
| Contract Labor: | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | | Facilities: | <input checked="" type="checkbox"/> YES - attach form | <input type="checkbox"/> NO or Not Required |
| | | | | Capital Tools: | <input type="checkbox"/> YES - attach form | <input checked="" type="checkbox"/> NO or Not Required |
| | | | | Fleet: | <input type="checkbox"/> YES - attach form | <input checked="" type="checkbox"/> NO or Not Required |

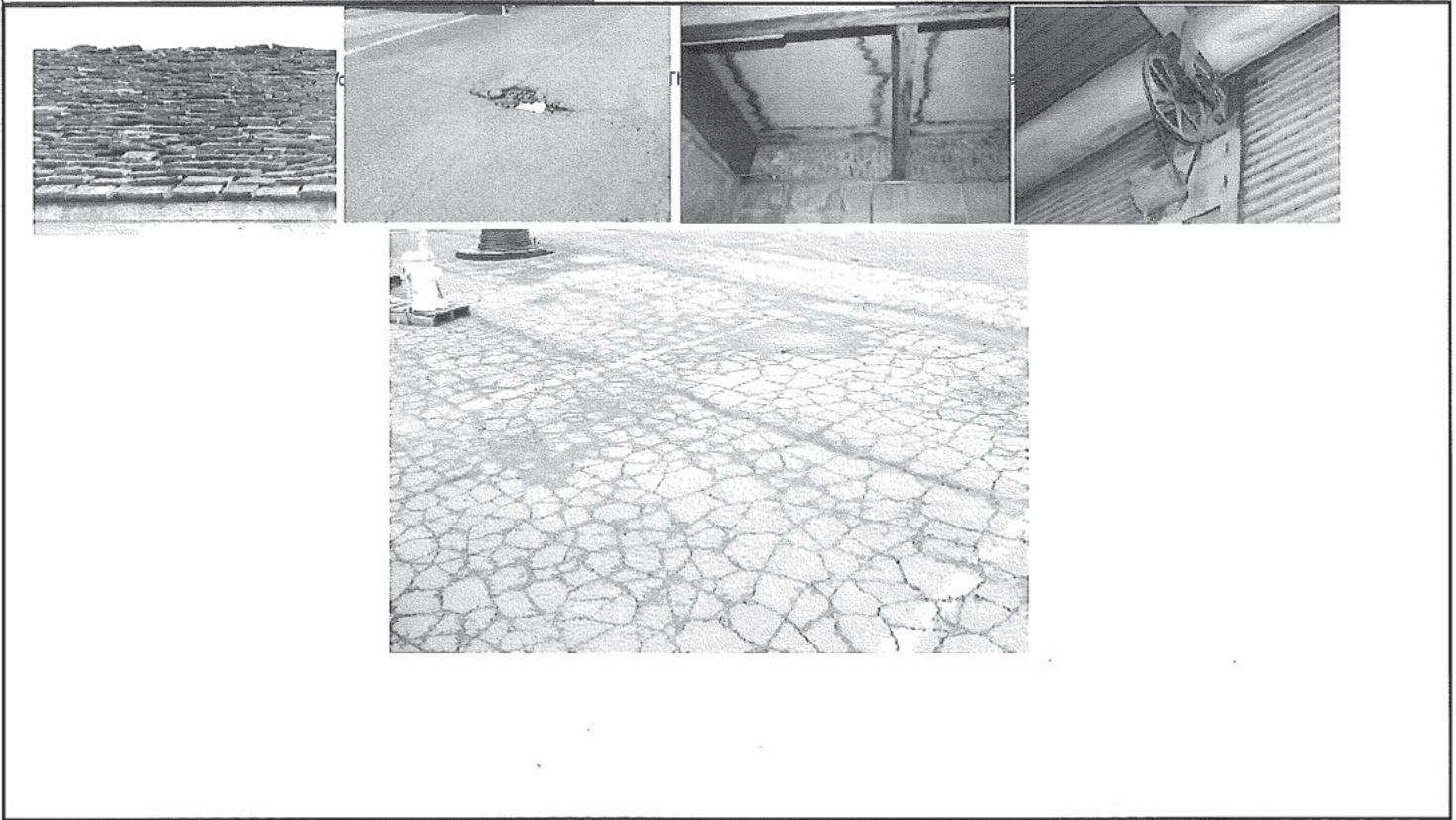
Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure: Fill in the name of the KPI here
Fill in the name of the KPI here



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Reviewed signature Director/Manager

Other Party Review signature Margie Stevens Director/Manager
 (if necessary)



To be completed by Capital Planning Group		Review Cycles		
Rationale for decision	2012-2016			
	Date	Template		

Capital Program Business Case



Investment Name: Capital Tools and Stores		Assessments:				
Requested Amount	\$ 1,821,500	Financial:	MH - >= 9% & <12% CIRR			
Duration/Timeframe	Ongoing Year Program	Strategic:	Life Cycle Programs			
Dept., Area:	Supply Chain	Operational:	Operations require execution to perform at current levels			
Owner:	Cody Krogh	Business Risk:	ERM Reduction >0 and <= 5			
Sponsor:	Don Kopczynski	Program Risk:	High certainly around cost, schedule and resources			
Category:	Program	Assessment Score:	84			
Mandate/Reg. Reference:	n/a	Annual Cost Summary - Increase/(Decrease)				
Recommend Program Description:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Purchase and repair of tool and facility material handling equipment		Enhances crew efficiency	\$ 1,500,000	\$ -	\$ -	0
		Annual Cost Summary - Increase/(Decrease)				
Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo :	Describe the current condition of the asset(s) and problems that need to be corrected	n/a	\$ -	\$ -	\$ -	0
Alternative 1: Repair all tools	Increased labor to repair failed tools, increased cost to have outside repairs performed (not all tools can be repaired), delayed response by crews, reduced crew efficiency, increased labor to find/rent tools and equipment, safety concerns for not having appropriate equipment to perform craft work (meter testing, metering equipment, specialized cable splicing, leak detection, utility locating equipment, reduction of safety related equipment, etc.)	n/a	\$ -	\$ 1,141,606	\$ -	0
Alternative 1: Rent Forklifts	Increased rental expense & labor to "Other" budget shifting 95% of costs to CAP loading, 5% to O&M		\$ 665,000	\$ 35,000	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):			
5 years of costs					2013	2014		
	Capital Cost	O&M Cost	Other Costs	Approved	7006	1500000	7005	1,307,007
2013	\$ 1,500,000	\$ -	\$ -	\$ 775,000			7005	514493
2014	\$ 1,575,000	\$ -	\$ -	\$ 1,821,500				
2015	\$ 1,653,750	\$ -	\$ -	\$ 2,348,325				
2016	\$ 1,736,438	\$ -	\$ -	\$ 2,400,000				
2017	\$ 1,823,259	\$ -	\$ -	\$ 2,400,000				
2018	\$ -	\$ -	\$ -	\$ 2,400,000				
2019	\$ -	\$ -	\$ -	\$ 2,400,000				
Total	\$ 8,288,447	\$ -	\$ -	\$ 14,544,825				

Mandate Excerpt (if applicable):
N/A

Additional Justifications:
Increased budget 2014-2017 amount by 5% to account for inflation

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: <input type="checkbox"/> Low Probability <input type="checkbox"/> Medium Probability <input checked="" type="checkbox"/> High Probability Contract Labor: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Enterprise Tech: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> NO or Not Required Facilities: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> NO or Not Required Capital Tools: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> NO or Not Required Fleet: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> NO or Not Required	<p>Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).</p>
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Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	Tool Repair as a percentage of tool purchases
	Fill in the name of the KPI here

Prepared signature _____

Reviewed signature _____
Director/Manager

Other Party Review signature Margie Stevens _____
(if necessary) Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

To be completed by Capital Planning Group	
Rationale for decision	Review Cycles 2012-2016
	Date
	Template

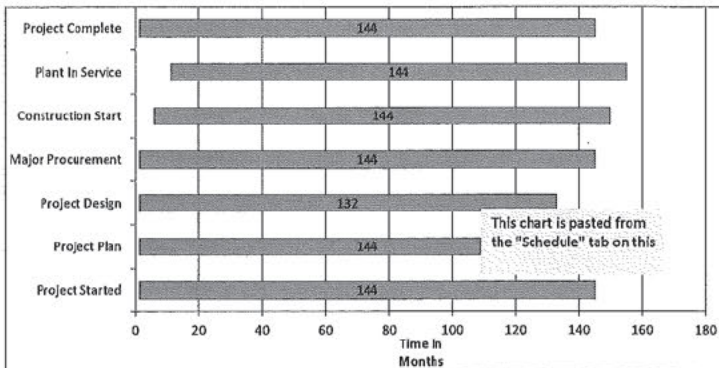


Investment Name:	HVAC Renovation Project	Assessments:	
Requested Amount	\$39,804,485	Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	8 Year Project	Strategic:	Life Cycle Programs
Dept., Area:	Facilities Management	Operational:	Operations improved beyond current levels
Owner:	Mike Broemling & Eric Bowles	Business Risk:	ERM Reduction >0 and <= 5
Sponsor:	Don Kopczynski	Project/Program Risk:	High certainty around cost, schedule and resources
Category:	Project	Assessment Score:	105
Mandate/Reg. Reference:	n/a	Cost Summary - Increase/(Decrease)	

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
The HVAC Renovation Project began in 2007 and 2008. The HVAC Project is a systematic replacement of the original 1956 Heating, Ventilation and Air Conditioning System for the Service Building, Cafeteria/Auditorium and General Office Building. The original HVAC equipment has been operating 24/7 since original construction in 1956. The Project entails a floor by floor evacuation and relocation of employees and a complete demolition of each floor; Including a massive Asbestos Abatement component, and removing the original fire proofing on the basic steel structure. The Project requires exhaustive demolition and reconstruction of each floor. Sustainable energy savings and conservation are built into the Project as we apply for LEED certification for each floor. The 5th, 4th, and 3rd floor has obtained LEED-CI Gold status recognizing all of the renewable strategies we employed during the design and construction phases. The goal of this project is to re-purpose and recycle the entire Facility for the next generation of Avista employees to use for 50 more years. Life cycle costs weighed heavily on our Construction Specifications and equipment choices during the design phase. The design team chose energy efficient equipment that was designed for 30 to 50 year life cycles.	This Project greatly improves air quality in the Facility and saves tremendous amounts of energy going forward.	\$ 39,804,485	\$ -	\$ -	0

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo:	The current condition of the HVAC system is very poor. It is 60 years old and our newest equipment was installed in the new addition of the General Office Building in 1978. 75% of our equipment was installed in 1956. Parts are no longer available for our equipment and replacement parts have to be manufactured.	n/a	Varies, but in the hundreds of thousands as equip. breaks down.	\$ 25,000	\$ -	0
Alternative 1: Brief name of alternative (if applicable)	During the Design Phase which occurred in 2008, several different types of HVAC delivery systems were compared and analyzed for distinct characteristics. Initial cost and life cycle cost were evaluated for the Project. By Value engineering our choices we were able to settle on our current system. Analysis is attached.	Updated municipal codes required us to increase air flow in the	\$ -	\$ -	\$ -	0
Alternative 2: Brief name of alternative (if applicable)	The only option that was discussed was to do "nothing", and maintain our 60 year old equipment. This scenario had been in place for the last 20 years, and time finally expired on the equipment. It is simply impractical to try to keep antiquated equipment up and running 24 hours a day when the replacement parts are no longer available.	describe any incremental changes in operations	Varies, but in the hundreds of thousands as equip. breaks down.	\$ 25,000	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in	\$ -	\$ -	\$ -	0

Timeline Construction Cash Flows (CWIP)



	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 18,121,485	\$ -	\$ -	\$ 18,121,485
2012	\$ 4,300,000	\$ -	\$ -	\$ 4,300,000
2013	\$ 6,500,000	\$ -	\$ -	\$ 8,053,000
2014	\$ 10,000,000	\$ -	\$ -	\$ 6,550,000
2015	\$ -	\$ -	\$ -	\$ 5,750,000
2016	\$ -	\$ -	\$ -	\$ -
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ -	\$ -	\$ -	\$ -
Future	\$ -	\$ -	\$ -	\$ -
Total	\$ 38,921,485	\$ -	\$ -	\$ 42,774,485

Milestones (high level targets)			
October-07	5th Flr Start Const.	Jun-11	2nd Flr Start Const.
December-08	5th Flr In Service	Oct-12	2nd Flr In Service
March-09	4th Flr Start Const.	Jan-13	1st Flr/Bsmt Start Const.
February-10	4th Flr In Service	Mar-14	1st Flr/Bsmt In Service
May-10	3rd Flr Start Const.	Apr-14	70's Addition Start Const.
Mar-11	3rd Flr In Service	Jun-15	70's Addition In Service

Associated Ers (list all applicable):	Current ER	7101	7001	7003	7050		
Mandate Excerpt (if applicable):	ASHRAE- When upgrading HVAC Systems, all design has to conform to ASHRAE standards, and air flows are regulated by the Washington Administrative code (WACS).						

Additional Justifications:



Capital Investment Business Case

Resources Requirements: (request forms and approvals attached)

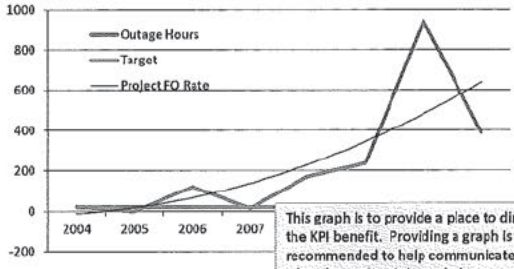
Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)

Expected Performance Improvements
 KPI Measure: Fill in the name of the KPI here
 Fill in the name of the KPI here



This graph is to provide a place to direct the KPI benefit. Providing a graph is recommended to help communicate what the project is intended to

Prepared signature _____
 Reviewed signature _____ Director/Manager
 Other Party Review signature _____ Director/Manager
 (if necessary)

AVISTA Corp.
 McKinstry
 15000 N. 10th St., Suite 1000
 Spokane, WA 99208

OVERVIEW

Avista Corp. needs to renovate the HVAC system that serves the five story general office building on their Spokane corporate campus. The need to renovate the system is due to the age of the current mechanical system which is approaching 50 years in the original portion of the office building and in excess of 20 years in the office building addition. While Avista has maintained the system exceptionally over the years, extending the expected life and performance, the current system is prone to failure, does not provide good flexibility, requires more energy than today's more efficient systems, and spare parts are difficult to locate.

As a result, Avista Corp. hired McKinstry to provide a design-build approach to the HVAC renovation. The final evaluation process selected determining the most appropriate HVAC system for the project. This was completed by generating various options for consideration, then developing information for each option that would allow McKinstry to recommend a solution to Avista, with Avista ultimately approving the recommended solution. In order to generate a list of potential HVAC system options, McKinstry completed on-site building reviews, met with facility personnel, and reviewed the building mechanical drawings. Based on these tasks, McKinstry developed the following options for review:

RENOVATION OPTIONS

- Existing System: The existing system utilizes a single unit zone air handling unit on each floor that serves a dual duct VAV system for the original office building portion. A unit zone air handling unit located in a roof app per se serves all five floors of the new addition. The new addition utilizes dual duct technology. Chilled water and heating water are provided to all air handling units via the central plant located in the Service Building. The dual distribution system throughout the building is a high velocity system, which creates noise issues and requires significant energy to distribute the air.
- Renovation Option #1: This option replaces the existing air handling equipment with similar equipment in both size and function. The replacement of the dual duct distribution system, VAV boxes, controls, and other miscellaneous work are provided under this option.
- Renovation Option #2: This option replaces the existing air handling equipment with a new heating and new cooling unit per floor (original building) and new heating and new cooling unit to serve the office addition. This option was developed as a way to increase energy performance over option #1. The replacement of the dual duct distribution system, VAV boxes, controls, and other miscellaneous work are provided under this option.
- Renovation Option #3: This option is the same as Option #2, however, it utilizes a lower discharge air temperature at the air handling units on each floor. By using a lower discharge air temperature, it is possible for the new air handling units on each floor to also serve the respective portion of the office addition for that floor. This eliminates the need for a perimeter mechanical system that serves the office addition. Heating is provided through hot water coils located at VAV boxes, controls, and other miscellaneous work are provided under this option.
- Renovation Option #4: This option provides all zone air handling units on each floor in the original office building and new air handling units in the perimeter that serves the office addition. The replacement of the dual duct distribution system, VAV boxes, controls, and other miscellaneous work are provided under this option.

Page 1 of 3

AVISTA Corp.
 McKinstry
 15000 N. 10th St., Suite 1000
 Spokane, WA 99208

- Renovation Option #4: This option provides new cooling-only air handling units on each floor of the office building and in the perimeter. Heating is provided through hot water coils located at VAV boxes. The replacement of the duct distribution system, VAV boxes, controls, and other miscellaneous work are provided under this option.
- Renovation Option #4c: This option is the same as Option #4, however, it utilizes a lower discharge air temperature at the air handling units on each floor. By using a lower discharge air temperature, it is possible for the new air handling units on each floor to also serve the respective portion of the office addition for that floor. This eliminates the need for a perimeter mechanical system that serves the office addition. Heating is provided through hot water coils located at VAV boxes. The replacement of the duct distribution system, VAV boxes, controls, and other miscellaneous work are provided under this option.
- Renovation Option #5: This option provides new roof mounted air handling units to serve all portions of the office space. New shafts provide conditioned air to the office space. The replacement of the dual duct distribution system, VAV boxes, controls, and other miscellaneous work are provided under this option.
- Renovation Option #6: This option provides new roof mounted cooling-only air handling units to serve all portions of the office space. New shafts provide conditioned air to the office space. Heating is provided through hot water coils located at VAV boxes. The replacement of the duct distribution system, VAV boxes, controls, and other miscellaneous work are provided under this option.
- Renovation Option #7: This option replaces the existing system with a new under-floor HVAC distribution system. This option includes new air handling units located on the floor, duct distribution, VAV boxes, controls, and the raised floor system itself, along with any of the other building upgrades needed to accommodate the raised floor system.
- Renovation Option #8: This option replaces the existing system with a ground source heat pump system throughout the building.

EVALUATION

In order to evaluate each option, McKinstry created a mechanical system selection matrix that included key information needed to select the proper system. This matrix is included as Attachment A - Mechanical System Option Evaluation. The primary factors that were evaluated on a qualitative basis included first cost and operational costs. Additional factors were also reviewed on qualitative basis.

In order to develop the final cost budget, McKinstry created preliminary mechanical schematics that provided equipment information and layout, as well as duct distribution on floors. McKinstry's estimating group then developed mechanical first costs based on the available information. Mechanical first costs make up the majority of the overall first cost, however, there were other miscellaneous costs to consider for each option including electrical work and other miscellaneous work. For these items, McKinstry relied on consultants and past experience to develop the budgets.

In order to develop operational costs, McKinstry developed an energy model for each system to predict energy use and cost. The energy model simulates the energy use of the HVAC system over the course of an entire year. It is a custom model built around the existing building conditions, the weather data specific to Spokane, and the type of HVAC system modeled. Also, McKinstry's service group evaluated the specifics of each option and provided annual service costs (preventive maintenance). Preventive maintenance costs were based on the probability equipment had generated for each option. Together, the energy costs and service costs were combined to reach the overall operational cost for each option.

Page 2 of 3

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	Date	Template
	2012-2016	

Capital Investment Business Case

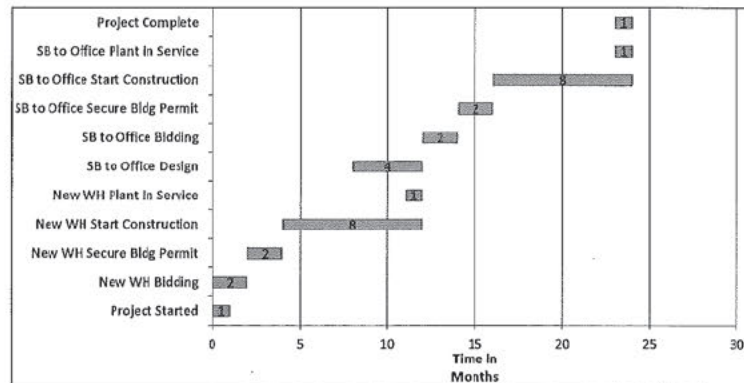


Investment Name:	COF Long-Term Restructuring Plan	
Requested Amount	\$23,450,000	
Duration/Timeframe	5 Year Project	
Dept., Area:	Facilities	
Owner:	Mike Broemling & Eric Bowles	
Sponsor:	Don Kopczynski	
Category:	Project	
Mandate/Reg. Reference:	n/a	
Assessments:	Financial: High - Exceeds 12% CIRR	
	Strategic: Other	
	Operational: Operations improved beyond current levels	
	Business Risk: ERM Reduction >0 and <= 5	
	Project/Program Risk: High certainly around cost, schedule and resources	
	Assessment Score: 100.5	Cost Summary - Increase/(Decrease)

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
Construct a new warehouse in 2012 and remodel the old warehouse in the Service Bldg to accommodate 110 work stations in 2013. Also add 125 parking spaces. New warehouse shall utilize current material handling technologies to increase employee efficiencies, and its height will allow for more material to be stored per SF, thus using our limited SF here at the COF more efficiently. Provide IS/IT infrastructure and networking in north half of the COF where it is currently non-existent, in anticipation of future projects. This project will also allow the HVAC renovation of the north building wing to be accomplished in one year rather than a staged process, which results in a one-time \$1.2M reduction in capital costs for that project. PLEASE SEE ADDITIONAL EFFICIENCIES UNDER "ADDITIONAL JUSTIFICATIONS" BELOW. The CIRR is 12.5%-16.0% excluding the HVAC savings and any other facility sales or cessation of rentals.	Alleviates current space issues by creating on-site office space and parking to house employees and contractors	\$ 23,450,000	\$ -	\$ (1,200,000)	3

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
Status Quo : COF will continue to not have enough office space and parking to accommodate demand. Continue to obtain more leases, buy buildings, or buy land and construct buildings to house our employees.	n/a	\$ -	\$ -	\$ -	5
Alternative 1: Construct a new warehouse (recommended option) See Project Description above.	Alleviates current space issues & new warehouse	\$ 9,500,000	\$ -	\$ (1,200,000)	3
Alternative 2: General Office Building "wing" addition and parking garage Construct a parking garage and an addition to the existing building on the west end (156 workstations and 120 parking spaces). No new warehouse bldg or warehouse efficiency gains.	Alleviates current space issues	\$ 30,000,000	\$ -	\$ -	3
Alternative 3 Name: Ross Court Office Building and Parking Lot Construct a new office building at the Ross Court location in addition to parking spaces (240 workstations and 151 parking spaces). No new warehouse bldg or warehouse efficiency gains.	Alleviates current space issues	\$ 15,000,000	\$ -	\$ -	3

Timeline Construction Cash Flows (CWIP)



	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2012	\$ 3,050,000	\$ -	\$ -	\$ 3,050,000
2013	\$ 7,900,000	\$ -	\$ -	\$ 7,900,000
2014	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000
2015	\$ 7,500,000	\$ -	\$ -	\$ 7,500,000
2016	\$ 4,000,000	\$ -	\$ -	\$ 4,000,000
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ -	\$ -	\$ -	\$ -
Future	\$ -	\$ -	\$ -	\$ -
Total	\$ 23,450,000	\$ -	\$ -	\$ 23,450,000

Milestones (high level targets)					
August-12	New WH Start Construction	February-15	Rotor Bldg and Inv Rec Start	February-16	WH Yard #2 & Wash Bay Start Const
April-13	New WH Plant In Service	June-15	Rotor Bldg In Service	October-16	WH Yard #2 & Wash Bay In Service
May-13	SB to Office Start Construction	June-15	WH Yard #1 Start Const		
October-13	SB to Office Plant in Service	August-15	WH Yard #1 and Inv Rec in service		
October-14	Waste & Asset Rec Bldg Start Con	July-15	GPSS & Spo Const. Remodel: Start Const		
May-15	Waste & Asset Rec Bldg In Service	March-16	GPSS & Spo Const. Remodel: In Service		

Associated Ers (list all applicable):	7126				
Mandate Excerpt (if applicable):	n/a				

Additional Justifications:
Sept 2013 changes: \$2.4 M for new IR / Haz. Mat area in 2014, \$1.5M for WH Yard and Wash Bay in 2015, \$1.5M in 2015 and \$2M in 2016 for G&P/Spo Construct Remodel. New IR and Hazmat Bldgs will result in time efficiencies for linemen trucks and drop off processes. Increasing the WH storage yard will also result in time efficiencies for WH personnel due to closer material, more level asphalted area (rather than gravel), and controlled (fenced) inventory and stocking. Wash bay will save time from washing vehicles off site and will prevent frequent freezing/breakdown of current wash bay. Office renovations of Spokane Construction and GPSS will replace a 30 year old HVAC system and increase number of cubicles on campus to accommodate for growth. JULY 2014 CHANGES: (2014 - \$1M) (2015 - \$7.5M) (2016 - \$4M). Hazmat Bldg cost more than expected, and a GPSS storage bldg must be replaced to do the WH storage yard increase.

Resources Requirements: (request forms and approvals attached)

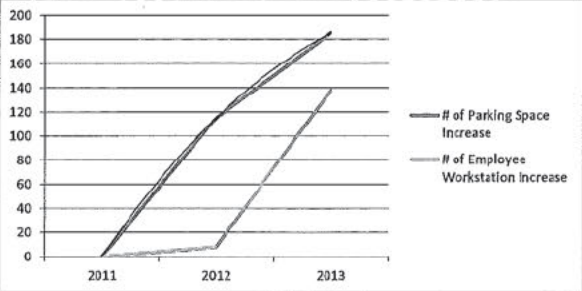
Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Key Performance Indicator(s)

Expected Performance Improvements

KPI Measure: Total Net Increase of Parking Spaces and Employee Workstations vs. 2011 total



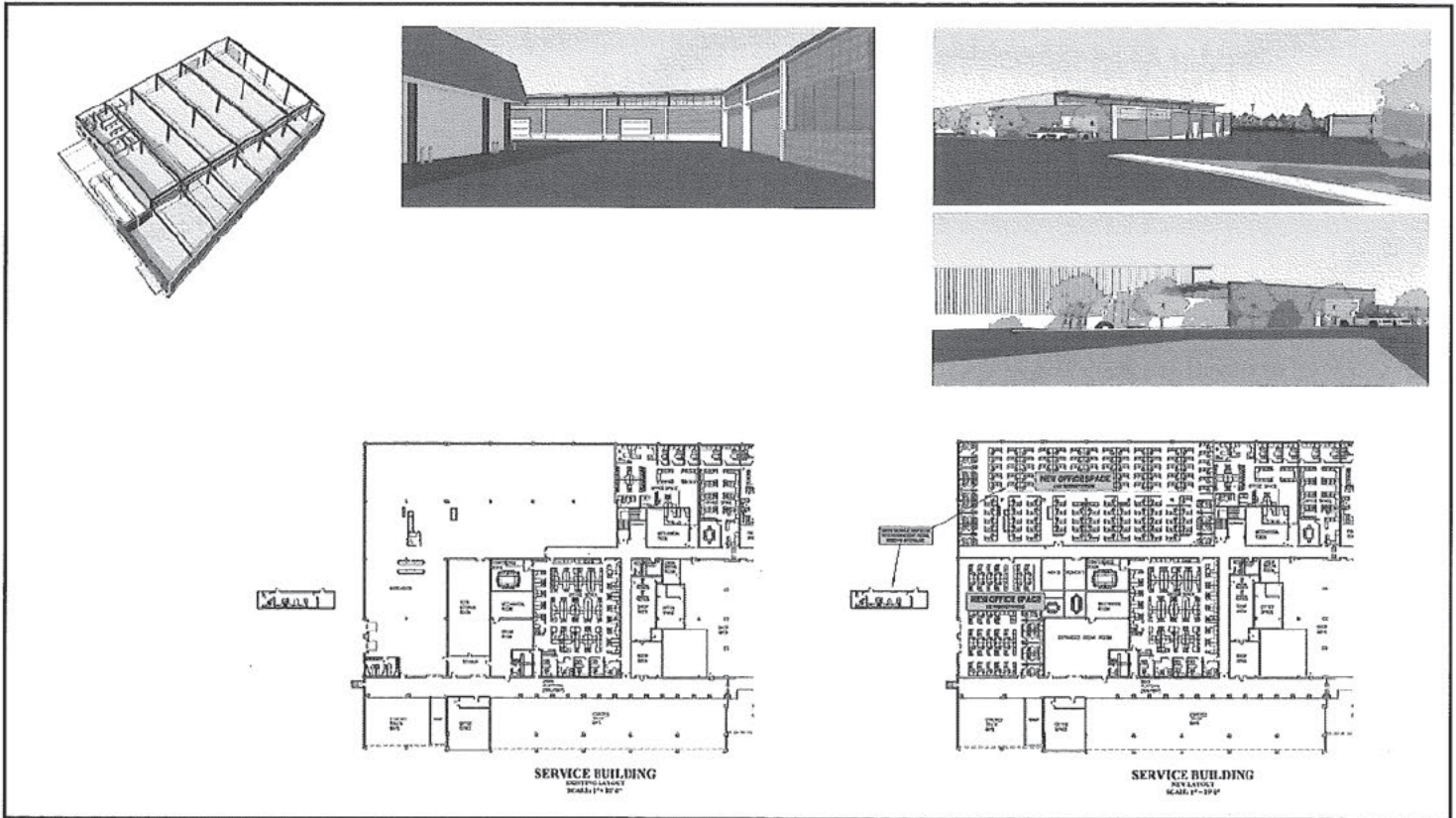
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Director/Manager

Other Party Review signature (if necessary) _____

Margie Stevens
Director/Manager



To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

Capital Project Business Case



Investment Name:	GOF Lng Trm Restruct Ph2	Assessments:	
Requested Amount	\$43,500,000	Financial:	7.00%
Duration/Timeframe	5 Year Project	Strategic:	Other
Dept... Area:	Facilities	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Mike Broemling and Eric Bowles	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Don Kopczynski	Assessment Score:	#NAME?
Category:	Project		
Mandate/Reg. Reference:	n/a		

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
COF Long Term Restructuring Plan, Phase 2. Increase Mission campus size by purchasing and developing adjacent lots, reroute Crescent Ave. to make one contiguous lot, construct new Fleet / Service Shops Building, convert all of 1950's Service Bldg to Office Space, and increase parking lot size and build 2-story parking structure. By end of 2015 Facilities projects will add approx. 183 new cubicles. Our parking lots will be beyond max capacity. The Fleet Garage is over 50 yrs old and is constrained by its dims from our ever enlarging vehicles and line trucks. New garage will allow for maintenance of CNG vehicles, current bldg does not allow this. Once Fleet is moved, a distinct separation b/n Operations / Service vehicles and Administrative Employees and vehicles. Separation will increase safety by eliminating intermingling of pedestrians in work areas. Office building & parking garage is projected to allow Call Center and any leased facilities to	State of the art fleet building. Service vehicles contained to north campus. Employee vehicles near main GOB.	\$ 47,500,000	\$ -	\$ -	2

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	Employee parking shall overflow into Logan neighborhood. City of Spokane will probably enforce parking regulations if this occurs. Added 5-to-10 minutes walk time from employee cars to desks. All CNG vehicles will have to be maintained at Dollar Road Fleet Bldg, with its extra 15 minute travel time. Continued rental or purchased facilities off site of COF for Avista departments (i.e. call center).	n/a	\$ -	\$ -	\$ -	15
Alternative 1: Brief name of alternative (if applicable)	Build extra parking lot on Ross Court ONLY. Approx. 220 add'l spaces req'd. to offset new employee load. Inconvenient and increased walk times for employees.	describe any incremental changes in operations	\$ 2,000,000	\$ 20,000	\$ -	2
Alternative 2: Brief name of alternative (if applicable)	Build new fleet building off-site. Purchase new lot for construction. Travel times and inefficiencies greatly increased.	describe any incremental changes in operations	\$ 7,000,000	\$ 20,000	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ 500,000	\$ -	\$ -	\$ 590,000
2015	\$ 2,000,000	\$ -	\$ -	\$ 1,410,000
2016	\$ 3,000,000	\$ -	\$ -	\$ 3,000,000
2017	\$ 9,000,000	\$ -	\$ -	\$ 9,000,000
2018	\$ 14,000,000	\$ -	\$ -	\$ 14,000,000
2019	\$ 15,000,000	\$ -	\$ -	\$ 15,000,000
Total	\$ 43,500,000	\$ -	\$ -	\$ 43,000,000

Associated Ers (list all applicable):

7126		

see note under add'l justification

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
7126	\$ -	\$ 500,000	\$ 2,000,000	\$ 3,000,000	\$ 38,000,000	\$ 43,500,000	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	SEE NOTE	\$ -	
0	\$ -	\$ -	\$ -	\$ -	UNDER ADD'L	\$ -	
0	\$ -	\$ -	\$ -	\$ -	JUSTIFICATION	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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Total	\$ -	\$ 500,000	\$ 2,000,000	\$ 3,000,000	\$ 38,000,000	\$ 43,500,000	

Additional Justifications:
PLEASE NOTE: Request \$500K In 2014 (start purchase adjacent lots), \$2M In 2015 (finish purchase adjacent lots), \$3M In 2016 (start N. Crescent Ave. reroute), \$9M In 2017 (finish N. Crescent reroute, start New Service Shops and Fleet Bldg), \$14M in 2018 (finish New Service Shops and Fleet Bldg), and \$15M in 2019 (Convert Old S. Bldg to Office and new parking garage/lot).

Milestones (high level targets)

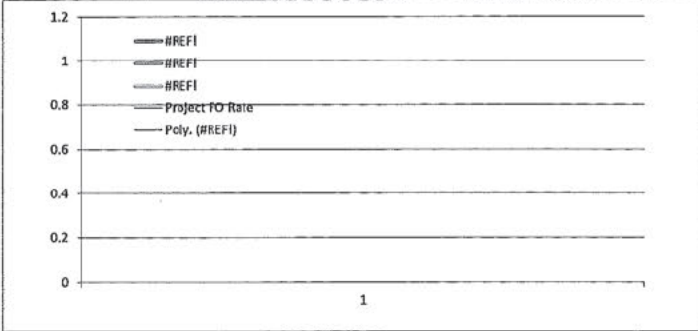
April-16	Ross Court parking start construction	Aug-18	Ross Park convert to office start construction
September-16	Ross Court parking in service	May-19	Ross Park convert to office in service
January-16	Fleet Bldg Start Construction		
December-16	fleet bldg in service		
April-17	Park garage & office start const.		
May-18	Park garage & office in service		

Milestones should be general. Use your judgement on project progress so that progress can

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input checked="" type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input type="checkbox"/> High Probability	Enterprise Tech:	<input checked="" type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required	Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
Contract Labor:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input checked="" type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required	Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required

Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure: Fill in the name of the KPI here
 Fill in the name of the KPI here



Prepared Vance Ruppert

Reviewed Eric Bowles
 Director/Manager

Other Party Review signature Margie Stevens
 (if necessary) Director/Manager

PLEASE SEE DRAWINGS ATTACHED TO SHAREPOINT SITE FOR MORE INFO

COF LngTrm Restruct Ph2 REV JULY-14.pdf

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Investment Name:	Apprentice/Craft Trng	Assessments:	
Requested Amount	\$60,000	Financial:	7.00%
Duration/Timeframe	10 Year Program	Strategic:	Performance Excellence
Dept., Area:	Apprentice/Craft Training	Business Risk:	Business Risk Reduction >0 and <= 5
Owner:	Linda Jones	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Karen Feltes	Assessment Score:	#NAME?
Category:	Mandatory		
Mandate/Reg. Reference:	296-05 WAC & Chpt 49 04 RCW		

Recommend Program Description: "This program is for on-going capital improvements to support the essential skills needed for Journey workers, apprentices and pre-apprentices now and for the future. It is important to provide the types of training scenarios that employees face in the field. The program is for capital infrastructure needed to create an effective set-up for training craft employees. Capital expenditures under this program could include items such as building new facilities or expanding existing facilities, purchase of equipment needed, or build out of realistic utility field infrastructure used to train employees. Examples include: new or expanded shops, truck canopy, classrooms, backhoes and other equipment, build out of "Safe City" - commercial and residential building replicas, and distribution, transmission, smart grid, metering, gas and substation infrastructure."	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
	describe any incremental changes that this Program would benefit present operations	\$ 60,000	\$ -	\$ -	2

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Without ability to train in-house, critical craft positions would be difficult to fill. Also, regulating bodies may de-certify our Apprentice program. Inability to train in-house may require extensive travel to fulfill our training obligations to maintain required skillsets.	n/a	\$ -	\$ 20,000	\$ -	6
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	2
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					
	Capital Cost	O&M Cost	Other Costs	Approved	
Previous	\$ -	\$ -	\$ -	\$ -	\$ -
2013	\$ 60,000	\$ -	\$ -	\$ -	\$ 60,000
2014	\$ 60,000	\$ -	\$ -	\$ -	\$ 60,000
2015	\$ 60,000	\$ -	\$ -	\$ -	\$ 60,000
2016	\$ 60,000	\$ -	\$ -	\$ -	\$ 60,000
2017	\$ 60,000	\$ -	\$ -	\$ -	\$ 60,000
2018	\$ -	\$ -	\$ -	\$ -	\$ 60,000
2019	\$ -	\$ -	\$ -	\$ -	\$ 60,000
Total	\$ 300,000	\$ -	\$ -	\$ -	\$ 420,000

Associated Ers (list all applicable):			

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
7200	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 300,000	See Below
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 300,000	

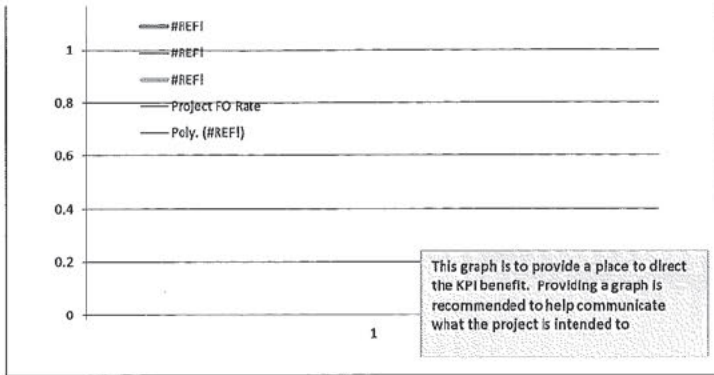
Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
Contract Labor:	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO		Facilities:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
				Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	Fill in the name of the KPI here
	Fill in the name of the KPI here

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Reviewed signature _____
Director/Manager

Other Party Review signature *Maurie Stevens*
(if necessary) Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template



Investment Name:	New Revenue - Growth			Assessments:				
Requested Amount	\$	33,170,486		Financial:	8.40%			
Duration/Timeframe	On Going	Year Program		Strategic:	Other			
Dept., Area:	Energy Delivery			Business Risk:	Business Risk Reduction >0 and <= 5			
Owner:	Al Fisher			Program Risk:	Moderate certainty around cost, schedule and resources			
Sponsor:	Don Kopczynski							
Category:	Mandatory							
Mandate/Reg. Reference:	Growth			Assessment Score:	97			
Recommend Program Description:				Annual Cost Summary - Increase/(Decrease)				
This program is for costs to serve new loads for gas and electric. This includes the cost to construct new overhead and underground lines, gas piping, street and area lights. Devices such as transformers, meters, regulators, ERTs, and network transformers and protectors are also included in this business case. 2014 Budget: 23% increase (from 2013's original plan) in hookups is projected.				Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
				describe any incremental changes that this Program would benefit present operations	\$ 33,170,486	\$ -	\$ -	4

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	We have an obligation to serve. Additionally if not funded, there would be minimal customer load growth	n/a	\$ -	\$ -	\$ -	12
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	4
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2014	\$ 33,170,486	\$ -	\$ -	\$ 33,170,486
2015	\$ 38,465,049	\$ -	\$ -	\$ 38,512,116
2016	\$ 40,785,194	\$ -	\$ -	\$ 41,434,864
2017	\$ 41,389,769	\$ -	\$ -	\$ 40,763,946
2018	\$ 42,027,959	\$ -	\$ -	\$ 40,657,672
2019	\$ 42,027,959	\$ -	\$ -	\$ 42,027,959
Total	\$ 237,866,416	\$ -	\$ -	\$ 236,567,043

1000	1001	1002	1003
1004	1005	1009	1050
1051	1053		

ER	2014	2015	2016	2017	2018	Total	Mandate Excerpt (if applicable):
1000	\$ 11,620,718	\$ 13,606,838	\$ 14,471,120	\$ 15,578,871	\$ 16,125,357	\$ 71,402,904	provide brief citation of the law or regulation and a reference number if possible
1001	\$ 10,601,275	\$ 12,062,433	\$ 12,913,301	\$ 14,015,398	\$ 14,502,519	\$ 64,094,926	
1002	\$ 340,410	\$ 340,410	\$ 340,410	\$ 340,410	\$ 340,410	\$ 1,702,050	
1003	\$ 5,766,400	\$ 5,874,400	\$ 6,150,400	\$ 4,179,562	\$ 4,179,562	\$ 26,150,324	
1004	\$ 650,000	\$ 650,000	\$ 650,000	\$ 650,000	\$ 650,000	\$ 3,250,000	
1005	\$ 600,000	\$ 625,000	\$ 650,000	\$ 675,000	\$ 700,000	\$ 3,250,000	
1009	\$ 890,000	\$ 920,000	\$ 950,000	\$ 980,000	\$ 980,000	\$ 4,720,000	
1050	\$ 1,768,580	\$ 1,875,666	\$ 1,994,413	\$ 2,126,567	\$ 1,894,939	\$ 9,660,165	
1051	\$ 305,825	\$ 324,552	\$ 345,474	\$ 368,929	\$ 328,220	\$ 1,673,000	
1053	\$ 627,279	\$ 2,185,750	\$ 2,320,075	\$ 2,475,031	\$ 2,326,952	\$ 9,935,087	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: Any supplementary information that may be useful in describing in more detail the nature of the Project, the urgency, etc.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 33,170,486	\$ 38,465,049	\$ 40,785,194	\$ 41,389,769	\$ 42,027,959	\$ 195,838,457	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

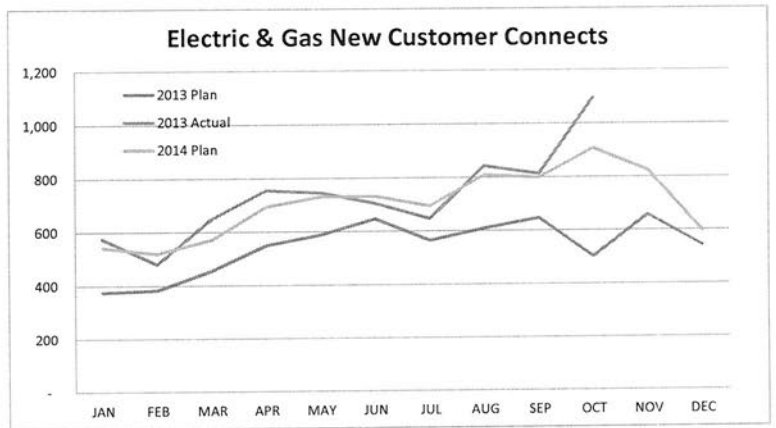
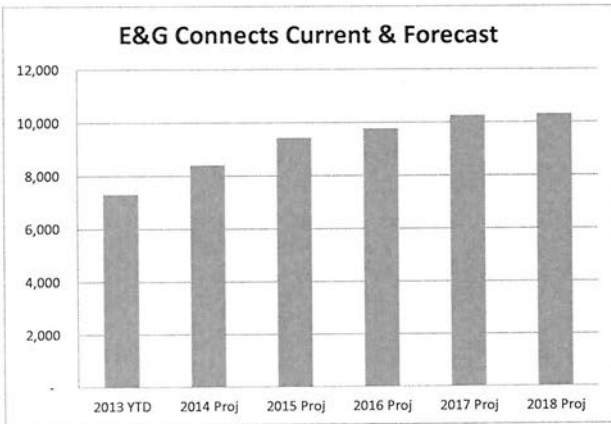
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

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Director/Manager

Other Party Review signature *Manni Stevens*
(if necessary) Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program



To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

Investment Name:	Gas Reinforcement	Assessments:			
Requested Amount	\$1,000,000	Financial:	MH - >= 9% & <12% CIRR		
Duration/Timeframe	On-Going 2012+	Strategic:	Reliability & Capacity		
Dept., Area:	Gas Operations	Operational:	Operations not impacted by execution		
Owner:	Mike Faulkenberry	Business Risk:	ERM Reduction >10 and <= 15		
Sponsor:	Don Kopczynski	Program Risk:	Moderate certainty around cost, schedule and resources		
Category:	Mandatory	Assessment Score:	143	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	WAC 480-90-148(2)(d), IDAPA 31.31.01.151, OR				
Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This annual program will provide for necessary reinforcements and reliability looping of the existing gas distribution system in WA, ID, and OR. Avista has an obligation to provide reliable service that is of adequate pressure and capacity. Periodic reinforcement of the system is required to reliably serve due to increased demand at existing service locations and new customers. Execution of this program on an annual basis will ensure the continuation of reliable gas service that is of adequate pressure and capacity. The 2013 budget was cut and needs to be increased for 2014+ (to \$1,000,000) to ensure adequate capacity that will meet a design day load. Specific ER's may be added to this Business Case as they are defined as Reinforcement Projects.	describe any incremental changes that this Program would benefit present operations	\$ 1,050,000	\$ -	\$ -	4

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo :	Gas distribution reinforcements are identified on an on-going basis and need to be completed when identified to ensure continuation of reliable service.	n/a		\$ -	\$ -	16
Alternative 1: Pipe Installation	Capital Pipe Installations - Install additional pipe to reinforce and loop existing gas distribution system to increase system reliability.	Reduced system monitoring during cold	\$ 1,000,000		\$ -	4
Alternative 2: Uprate Alternative	Distribution System Uprates - Increase the operating pressure of existing gas distribution system to a 60 PSIG MAOP. Uprating gas distribution system will increase the delivery capacity in addition to increases operating efficiency by tying existing distribution system together with similar operating pressures.	Reduction in regulator station maintenance.	\$ 50,000	\$ 100,000	\$ -	4
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
2012-2016					Current ER				
	Capital Cost	O&M Cost	Other Costs	Approved Capital	3000				
2012	\$ 1,050,000	\$ -	\$ -	\$ 800,000					
2013	\$ 1,050,000	\$ -	\$ -	\$ 1,120,000					
2014	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000					
2015	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000					
2016	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000					
2017	\$ 800,000	\$ -	\$ -	\$ 800,000					
2018	\$ 600,000	\$ -	\$ -	\$ 600,000					
2019	\$ -	\$ -	\$ -	\$ 600,000					
Total	\$ 6,500,000	\$ -	\$ -	\$ 6,920,000					

Mandate Excerpt (if applicable):
WAC 480-90-148(2)(d), "Each gas utility must maintain its gas system in a condition that enables it to furnish safe, adequate, and efficient service." IDAPA 31.31.01.151, "Service to the customer shall assure the customer of adequate pressure, a definite heat content, and the accurate measurement of gas." OR Tariff - Rule 14(A)(2), "The Company will exercise reasonable diligence and care to furnish and deliver a continuous and sufficient quantity of gas to its customers but does not guarantee continuity or sufficiency of quantity."

Additional Justifications:
Program required to reliably serve customers

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

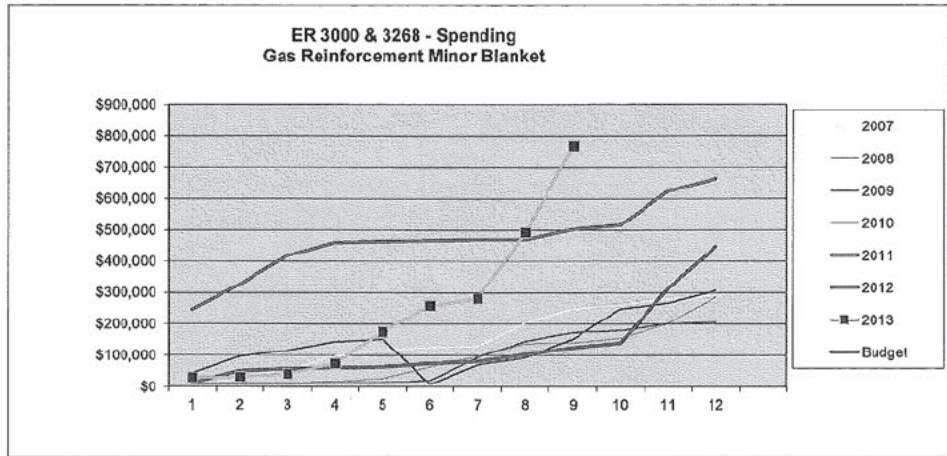
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	Cold Weather Related Outages
Fill in the name of the KPI here	

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Reviewed signature _____
Director/Manager

Other Party Review signature *Margie Stevens* _____
(if necessary) Director/Manager



Business Case	ERM Risk Reduction	Status Quo Raw Score	Risk on Completion Raw Score	Status Quo Risk					
				Financial Impact (Consequential Costs/Revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
Gas Reinforcement	12	16	4	2 - \$200K - \$2MM	< Once / year	4 - Potential for regulators to impose onerous restrictions or board or management to make leadership change	< Once / year	5 - > 120,000 Customer-hours	< Once / 5 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
						1 - Potential for Injury Public health infrastructure impact up to 8 hours	< Once / 10 years	1 - Potential for Injury	< Once / 50 years
				Risk upon Completion					
				Financial Impact (Consequential Costs/Revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
				1 - < \$200K	< Once / 10 years	2 - Could result in a moderate negative impact to local, online, or industrial relationships and for regional media coverage	< Once / 10 years	1 - < 1,500 Customer-hours	< Once / 10 years
Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood				
		1 - Potential for Injury Public health infrastructure impact up to 8 hours	< Once / 50 years	1 - Potential for Injury	< Once / 50 years				

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Capital Investment Business Case



Investment Name:	Repl. Deteriorating Steel Gas Systems	Assessments:	
Requested Amount	\$800,000	Financial:	<= 0% CIRR
Duration/Timeframe	On-Going	Strategic:	Life Cycle Programs
Dept., Area:	Gas Operations	Operational:	Operations improved beyond current levels
Owner:	Mike Faukenberry	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Don Kopczynski	Program Risk:	Moderate certainly around cost, schedule and resources
Category:	Program	Assessment Score:	79
Mandate/Reg. Reference:		Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This annual program will replace sections of existing steel gas piping that are suspect for failure or are showing signs of deterioration within the gas system. This program will address the replacement of sections of gas main with corrosion related issues that no longer operate reliably and/or safely. Sections of the gas system require replacement due to many factors including material failures, environmental impact, increased leak frequency, or coating problems. This program will identify and replace sections of steel pipe to improve public safety and system reliability; it's primary focus is to address corrosion related pipe issues.	describe any incremental changes that this Program would benefit present operations	\$ 800,000	\$ -	\$ -	1

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo: A number of locations have been identified in Medford, Klamath Falls, Roseburg, and La Grande OR that have older main at a higher operating risk related to leaks.	n/a	\$ -	\$ -	\$ -	6
Alternative 1: Pipe Installation Strategically replace sections of at-risk steel piping.	Reduced risk of system leaks	\$ 800,000	\$ -	\$ -	1
Alternative 2:	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated ERs (list all applicable):				
2012-2016					Current ER				
	Capital Cost	O&M Cost	Other Costs	Approved	3001				
2012	\$ 800,000	\$ -	\$ -	\$ 800,000					
2013	\$ 600,000	\$ -	\$ -	\$ 665,000					
2014	\$ 800,000	\$ -	\$ -	\$ 1,280,000					
2015	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000					
2016	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000					
2017	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000					
2018	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000					
2019	\$ -	\$ -	\$ -	\$ 1,000,000					
Total	\$ 6,200,000	\$ -	\$ -	\$ 7,745,000					

Mandate Excerpt (if applicable):
N/A

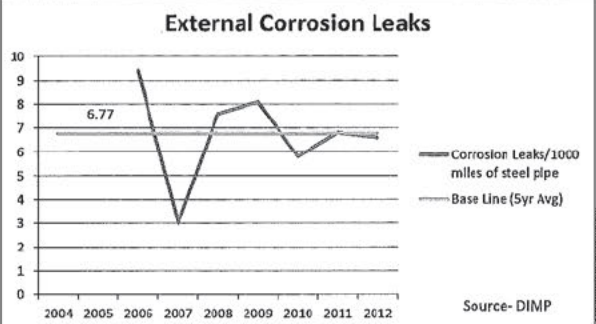
Additional Justifications:
This program has been executed historically using a qualitative assessment method at the district level.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO
 Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

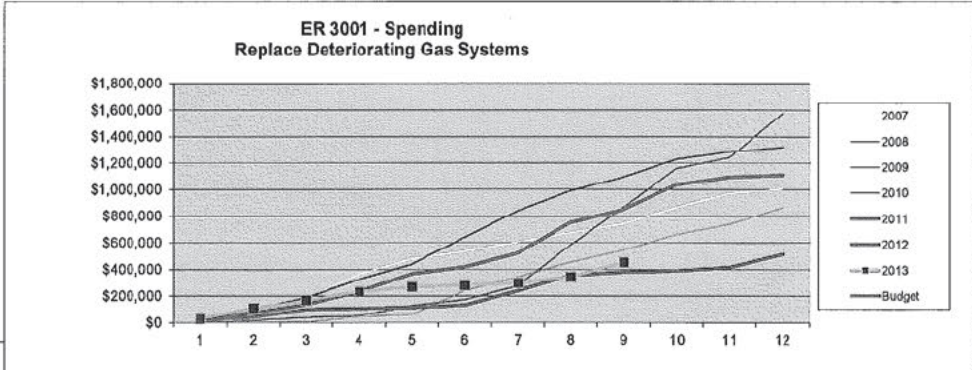
Check the appropriate box. The Internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure: Leak Rate/ 1000 miles of steel pipe



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 Reviewed signature _____ Director/Manager
 Other Party Review signature _____ Director/Manager
 (if necessary) *Margie Stevens*

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program



Business Case	Reduction	Cost/Year Score	Completion Raw Score	Financial Impact (Consequential Costs/Revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
Repl. Deteriorating Steel Gas Systems	7	8	1	3- \$6MM - \$4MM	< Once / 10 years	4- Potential for regulators to impose onerous restrictions or Board or management to make leadership change	< Once / 10 years	1- < 1,500 Customer-hours	< Once / 10 years
				Environmental	Likelihood	Safety and Health Public	Likelihood	Safety and Health Employee	Likelihood
				1- Isolated spill with 0 to low level PCBs, no migration, air emission minor exceedance, standard clean-up	< Once / year	3- Potential for serious injury Significant damage to equipment, property or business Public health Infrastructure impact up to 48 hours	< Once / 10 years	1- Potential for injury	< Once / 10 years
				Risk upon Completion					
Repl. Deteriorating Steel Gas Systems	7	8	1	1- < \$20K	< Once / 50 years	1- No likely impact media or regulatory relationship	< Once / 50 years	1- < 1,500 Customer-hours	< Once / 50 years
				Environmental	Likelihood	Safety and Health Public	Likelihood	Safety and Health Employee	Likelihood
				1- Isolated spill with 0 to low level PCBs, no migration, air emission minor exceedance, standard clean-up	< Once / 50 years	1- Potential for injury Public health Infrastructure impact up to 8 hours	< Once / 50 years	1- Potential for injury	< Once / 50 years
				Risk upon Completion					

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	Date	Template

Investment Name:	Regulator Station Reliability Replacement		Assessments:				
Requested Amount	\$800,000		Financial:	7.00%			
Duration/Timeframe	On-Going Year Program		Strategic:	Life-cycle asset management			
Dept., Area:	Gas Operations		Business Risk:	Business Risk Reduction >0 and <= 5			
Owner:	Typically Director		Program Risk:	High certainty around cost, schedule and resources			
Sponsor:	Typically Executive Officer		Assessment Score:	75			
Category:	Program		Annual Cost Summary - Increase/(Decrease)				
Mandate/Reg. Reference:	PHMSA CFR 192.739		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Recommend Program Description:			describe any incremental changes that this Program would benefit present operations	\$ 600,000	\$ -	\$ -	1
This annual program will replace or upgrade existing regulator stations and meter stations to current Avista standards. This program will address enhancements that will improve system operating performance, safety, replacement of inadequate or antiquated equipment that is no longer supported, and ensure the reliable operation of metering and regulating equipment.							

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Maintenance may not be able to be completed properly due to antiquated equipment. This could result in fines from PUC, leaks on stations, and higher rates of equipment failure.	n/a	\$ -	\$ -	\$ -	4
Alternative 1: Complete as described above.	Stations that require upgrade or replacement are identified on an on-going basis to ensure continued reliable operations. Stations that are not upgraded may pose a greater risk to leaks or affect system reliability.	Reduction in Reg Stn maintenance.	\$ 600,000	\$ -	\$ -	1
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2014	\$ 600,000	\$ -	\$ -	\$ 725,000
2015	\$ 800,000	\$ -	\$ -	\$ 800,000
2016	\$ 800,000	\$ -	\$ -	\$ 800,000
2017	\$ 800,000	\$ -	\$ -	\$ 800,000
2018	\$ 800,000	\$ -	\$ -	\$ 800,000
2019	\$ 800,000	\$ -	\$ -	\$ 800,000
2020+	\$ 800,000	\$ -	\$ -	\$ -
Total	\$ 5,400,000	\$ -	\$ -	\$ 4,725,000

3002		

ER	2014	2015	2016	2017	2019	Total	Mandate Excerpt (if applicable):
3002	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 4,000,000	CFR § 192.739 - Pressure limiting and regulating stations: Inspection and testing. Mandates that Regulating Stations must be inspected annually. If older components are not repairable, then maintenance might not be completed appropriately.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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Total	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 4,000,000	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure:

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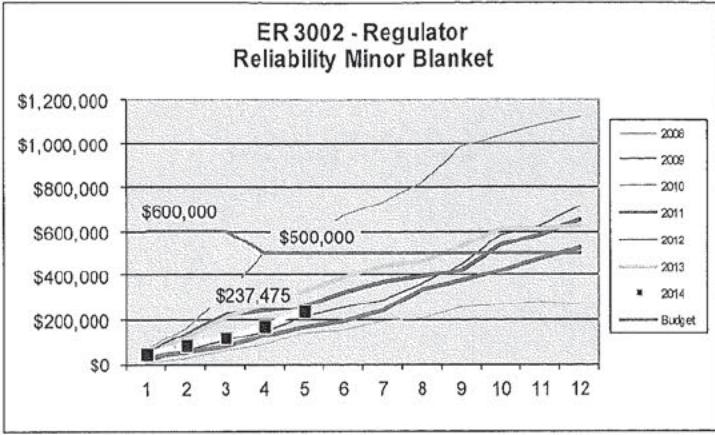
ER 3002 - Regulator Reliability Minor Blanket

\$1,200,000

Page 1 of 2

\$1,000,000

2008
2009



Reviewed signature Director/Manager

Other Party Review signature Mariani Skewes Director/Manager
(if necessary)

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

Business Case	ERM Risk Reduction	Status Quo Raw Score	Risk on Completion Raw Score	Status Quo Risk					
				Financial Impact (Consequential costs/revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
Regulator Station Reliability Replacement	2	4	2	1 - < \$200k	< Once / 10 years	2 - Could result in a moderate negative impact to local, online, or industrial relationships and/or regional media coverage	< Once / 10 years	3 - < 1,500 Customer-hours	< Once / 10 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
				1 - Isolated spill with 0 to low level PCBs, no migration, air emission minor exceedance, standard clean-up	< Once / 10 years	1 - Potential for injury Public health infrastructure impact up to 8 hours	< Once / 10 years	1 - Potential for injury	< Once / 10 years
				Risk upon Completion					
				Financial Impact (Consequential costs/revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
				1 - < \$200k	< Once / 10 years	1 - No likely impact on media or regulatory relationship	< Once / 50 years	1 - < 1,500 Customer-hours	< Once / 50 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
				1 - Isolated spill with 0 to low level PCBs, no migration, air emission minor exceedance, standard clean-up	< Once / 50 years	1 - Potential for injury Public health infrastructure impact up to 8 hours	< Once / 50 years	1 - Potential for injury	< Once / 50 years

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Capital Investment Business Case



Investment Name:	Gas Replacement Street and Highway	Assessments:	
Requested Amount	\$4,500,000	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	On-Going	Strategic:	Other
Dept., Area:	Gas Operations	Operational:	Operations require execution to perform at current levels
Owner:	Mike Faulkenberry	Business Risk:	ERM Reduction >10 and <= 15
Sponsor:	Don Kopczynski	Program Risk:	Moderate certainty around cost, schedule and resources
Category:	Mandatory	Assessment Score:	140
Mandate/Reg. Reference:	Franchise Agreements and Permits	Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This annual program will replace sections of existing gas piping that require replacement due to relocation or improvement of streets or highways in areas where gas piping is installed. Avista installs many of its facilities in public right-of-way under established franchise agreements. Avista is required under the franchise agreements, in most cases, to relocate its facilities when they are in conflict with road or highway improvements.	describe any incremental changes that this Program would benefit present operations	\$ 4,500,000	\$ -	\$ -	2

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
			Capital Cost	O&M Cost	Other Costs	
<i>Status Quo:</i>	Avista would be out of compliance with established franchise agreements and/or permits if work is not completed.	n/a	\$ -	\$ -	\$ -	16
<i>Alternative 1:</i>	Relocate facilities in conflict with street and highway projects where established franchise agreements and/or permits exist.	n/a	\$ 4,500,000	\$ -	\$ -	2
<i>Alternative 2:</i>		n/a	\$ -	\$ -	\$ -	0
<i>Alternative 3 Name: Brief name of alternative (if applicable)</i>		describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
2012-2016					Current ER				
	Capital Cost	O&M Cost	Other Costs	Approved					
2012	\$ 2,200,000	\$ -	\$ -	\$ 2,200,000	3003				
2013	\$ 4,500,000	\$ -	\$ -	\$ 4,550,000	3302				
2014	\$ 4,500,000	\$ -	\$ -	\$ 4,300,000	3297				
2015	\$ 4,500,000	\$ -	\$ -	\$ 4,500,000					
2016	\$ 4,500,000	\$ -	\$ -	\$ 4,500,000					
2017	\$ 4,500,000	\$ -	\$ -	\$ 4,500,000					
2018	\$ 4,500,000	\$ -	\$ -	\$ 4,500,000					
2019	\$ -	\$ -	\$ -	\$ 4,500,000					
Total	\$ 29,200,000	\$ -	\$ -	\$ 33,550,000					

Mandate Excerpt (if applicable):
Franchise agreements and typical state highway and R/R permits prescribe that the utility will relocate at their expense when in conflict with entity activities.

Additional Justifications:
Mandatory work to maintain compliance with existing franchise and operating permits with state highway districts and rail roads.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

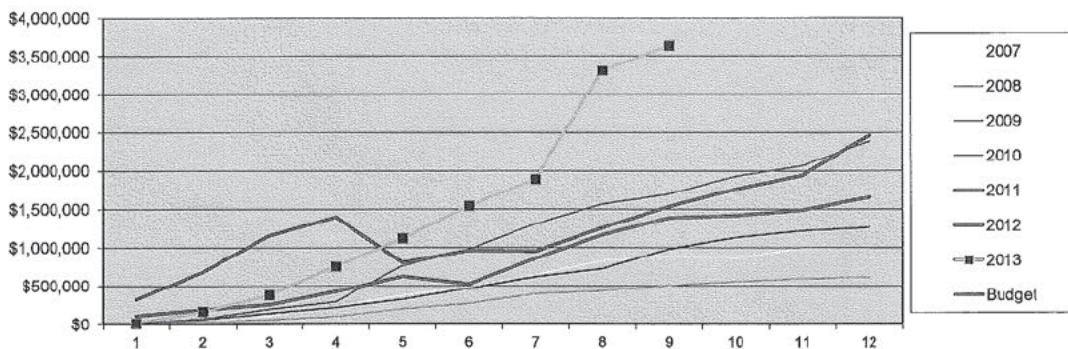
Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure:

Prepared signature _____

Reviewed signature _____
 Director/Manager

Other Party Review signature *Margie Stevens* _____
 (if necessary) Director/Manager

ER 3003 & 3302 - Spending
 Gas Replc. - Street & Hwy



				Reliability of an outage	Likelihood				
Gas Replacement Street and Highway	14	16	2	2 - \$200k - \$2MM	< Once / year	4 - Potential for regulators to impose onerous restrictions or Board or management to make leadership change	< Once / year	1 - < 1,500 Customer-hours	< Once / 10 years
				Environmental	Ukelihood	Safety and Health: Public	Ukelihood	Safety and Health: Employee	Ukelihood
				Risk upon Completion					
				Financial Impact (Consequential Costs/Revenues)	Ukelihood	Legal, Regulatory, External Business Affairs	Ukelihood	Customer Service and Reliability (# customers * duration of an outage)	Ukelihood
				1 - < \$200k	< Once / 10 years	1 - No likely impact on media or regulatory relationship.	< Once / 10 years	1 - < 1,500 Customer-hours	< Once / 50 years
				Environmental	Ukelihood	Safety and Health: Public	Ukelihood	Safety and Health: Employee	Ukelihood

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	Date	Template

Capital Program Business Case



Investment Name:	Gas Non-Revenue Program	Assessments:	
Requested Amount	\$5,600,000	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	On-Going Year Program	Strategic:	Reliability & Capacity
Dept., Area:	Gas Operations	Operational:	Operations require execution to perform at current levels
Owner:	Mike Faulkenberry	Business Risk:	ERM Reduction >10 and <= 15
Sponsor:	Don Kopczynski	Program Risk:	Moderate certainty around cost, schedule and resources
Category:	Program	Assessment Score:	89
Mandate/Reg. Reference:		Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This annual program will replace sections of existing gas piping that require replacement to improve the operation of the gas system but are not directly linked to new revenue. The program includes replacement of pipe and facilities that are at the end of their useful life or have failed. It includes improvements in equipment and/or technology to enhance system operation and/or maintenance, replacement of obsolete facilities, replacement of main to improve cathodic performance, and projects to improve public safety and/or improve system reliability. Starting in 2014, costs associated with the labor and minor materials to complete the PMC program will no longer be captured in this Business Case, they will be on the "Gas PMC Program". This results in a \$1M reduction in the 2014 budget request; however the historical spend has been high in this category, so the resultant 2014 request is \$6,00,000 (total).	describe any incremental changes that this Program would benefit present operations	\$ 5,600,000	\$ -	\$ -	8
Annual Cost Summary - Increase/(Decrease)					

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program: Avista will be unable to complete capital non-revenue system enhancements	n/a	\$ -	\$ -	\$ -	8
Alternative 1: Brief name of alternative (if applicable) Complete installation and/or upgrade of non-revenue assets.	n/a	\$ 5,600,000	\$ -	\$ -	2
Alternative 2: Brief name of alternative (if applicable)	n/a	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
5 years of costs					Current ER				
	Capital Cost	O&M Cost	Other Costs	Approved	3005				
Previous	\$ -	\$ -	\$ -	\$ -					
2012	\$ 4,223,000	\$ -	\$ -	\$ 3,823,000					
2013	\$ 4,349,690	\$ -	\$ -	\$ 7,949,690					
2014	\$ 5,600,000	\$ -	\$ -	\$ 6,500,000					
2015	\$ 6,000,000	\$ -	\$ -	\$ 6,000,000					
2016	\$ 6,000,000	\$ -	\$ -	\$ 6,000,000					
2017	\$ -	\$ -	\$ -	\$ 6,000,000					
2018	\$ -	\$ -	\$ -	\$ 6,000,000					
2019	\$ -	\$ -	\$ -	\$ 6,000,000					
Total	\$ 26,172,690	\$ -	\$ -	\$ 48,372,690					

Mandate Excerpt (if applicable):

Additional Justifications:
The program addresses a number of mandatory projects, at the direction of the commission and/or projects that enhance public safety and system reliability. (Example: Incremental pipe enhancements, replacement of odorization equipment, installation of steel pipe to enhance system cathodic protection, etc.)

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
Contract Labor:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
				Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required

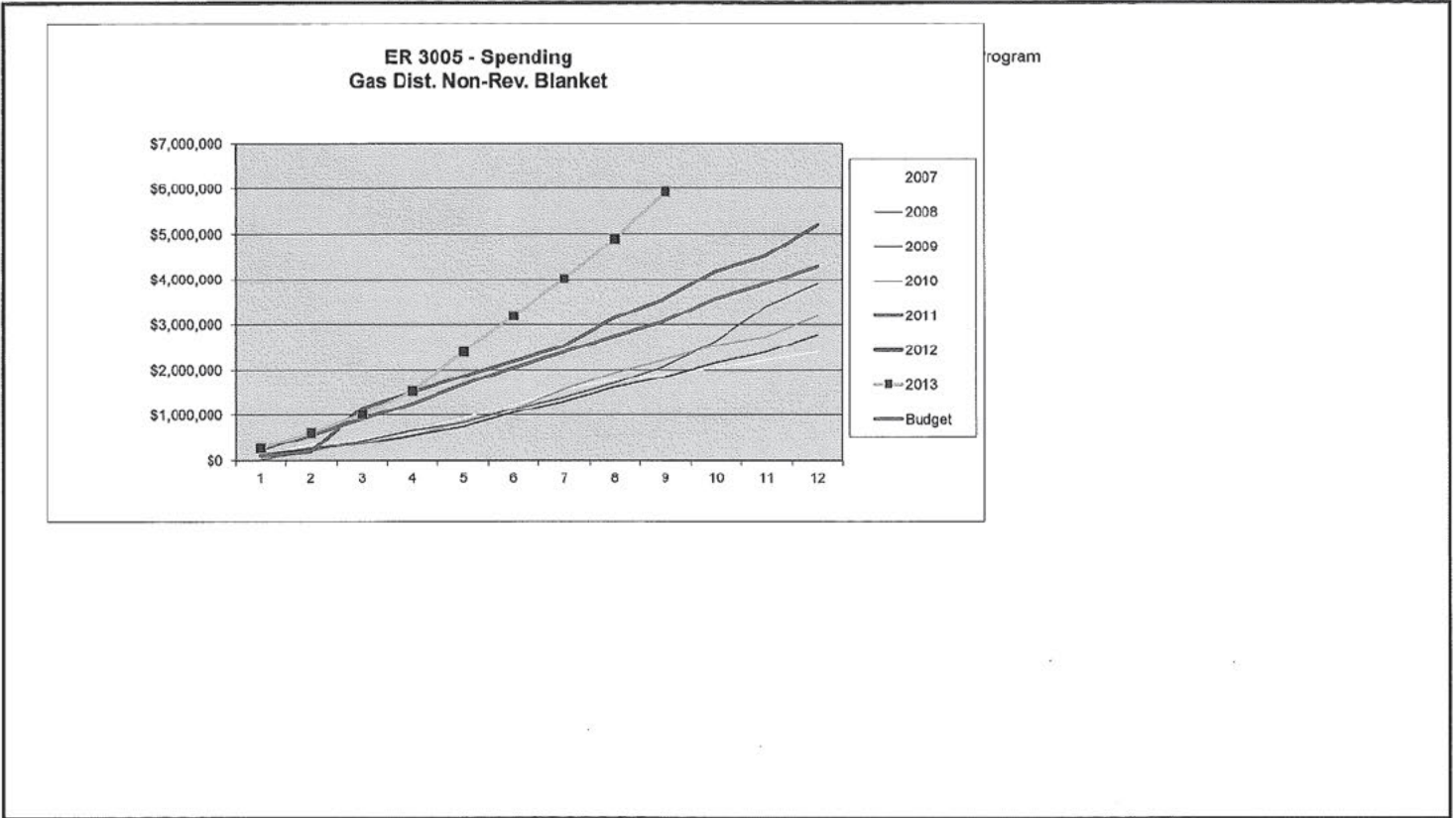
Check the appropriate box. The Internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
Expected Performance Improvements
KPI Measure:

Prepared signature _____

Reviewed signature _____
Director/Manager

Other Party Review signature *Margie Stevens* _____
(if necessary) Director/Manager



To be completed by Capital Planning Group	
Rationale for decision	Review Cycles 2012-2016
	Date
	Template

Capital Program Business Case



Investment Name:	Overbuilt Pipe Replacement	Assessments:	
Requested Amount	\$900,000	Financial:	7.00%
Duration/Timeframe	On Going Year Program	Strategic:	Reliability & Capacity
Dept., Area:	Gas Operations	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Mike Faulkenberry	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Don Kopczynski	Assessment Score:	#NAME?
Category:	Mandatory		
Mandate/Reg. Reference:	49 CFR 192.361(f)		

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
This program will replace sections of existing gas piping that have experienced encroachment or have been overbuilt by customer constructed improvements (i.e. decks, driveways, etc.) that restricts the Company's access to pipe. It will address the replacement of sections of gas main and services that no longer can be operated safely. The replacements will be completed to enhance public safety. All types of overbuilds will be addressed with the primary focus of the project being overbuilds in manufactured/mobile home developments.	describe any incremental changes that this Program would benefit present operations	\$ 900,000	\$ -	\$ -	4

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Unfunded Program: Avista will continue operating with increased risk due to overbuilds	n/a	\$ -	\$ -	\$ -	12
Alternative 1: Brief name of alternative (if applicable) Complete programmatic replacement of overbuilt pipe.	describe any incremental changes in operations	\$ 900,000	\$ -	\$ -	4
Alternative 2: Brief name of alternative (if applicable) Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable) Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 500,000	\$ -	\$ -	\$ 500,000
2013	\$ 900,000	\$ -	\$ -	\$ 470,000
2014	\$ 900,000	\$ -	\$ -	\$ 700,000
2015	\$ 900,000	\$ -	\$ -	\$ 900,000
2016	\$ 900,000	\$ -	\$ -	\$ 900,000
2017	\$ 900,000	\$ -	\$ -	\$ 900,000
2018	\$ 900,000	\$ -	\$ -	\$ 900,000
2019	\$ -	\$ -	\$ -	\$ 900,000
Total	\$ 5,400,000	\$ -	\$ -	\$ 5,670,000

Associated Ers (list all applicable):
3006

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
3006	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 4,500,000	49 CFR 192.361(f) "Installation of service lines under buildings. Where an underground service line is installed under a building." (Not allowed w/o conduit)
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: Avista operates with an increase risk to its customers and the general public when operating pipeline facilities that exist under structures.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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Total	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 4,500,000	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
Contract Labor:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
				Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

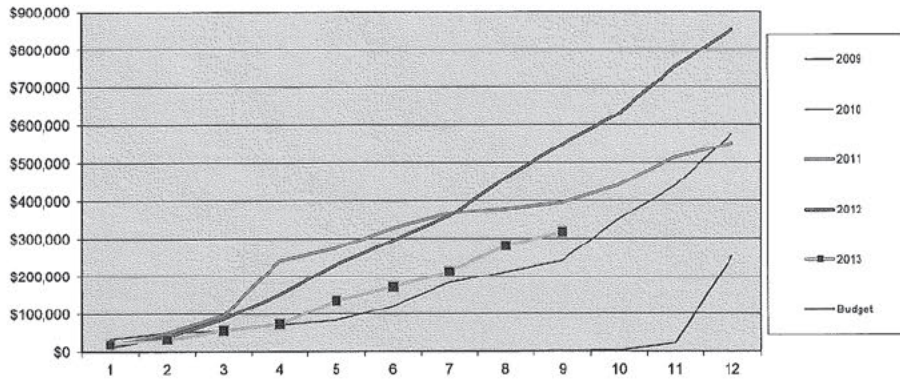
Key Performance Indicator(s)
Expected Performance Improvements
KPI Measure:

Prepared signature

Reviewed signature Director/Manager

Other Party Review signature Margie Stuenkel
(if necessary) Director/Manager

ER 3006 - Spending
Overbuilt Pipe Replacement Minor Blanket



To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Capital Investment Business Case

NGD-9



Investment Name:	Isolated Steel Replacement	Assessments:	
Requested Amount	\$2,598,333	Financial:	High - Exceeds 12% CIRR
Duration/Timeframe	On-Going	Strategic:	Reliability & Capacity
Dept., Area:	Gas Operations	Operational:	Operations somewhat impacted by execution
Owner:	Mike Faulkenberry	Business Risk:	ERM Reduction >0 and <= 5
Sponsor:	Don Kopczynski	Program Risk:	Moderate certainly around cost, schedule and resources
Category:	Mandatory	Assessment Score:	117
Mandate/Reg. Reference:	WAC Docket PG-100049, 49CFR192.455&157	Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This annual program will replace sections of cathodically isolated steel pipe. Isolated portions of pipe including risers, service pipe and main will be replaced as required to meet the requirements of 49 CFR 192.455 & 157 and in accordance with WAC Docket PG-100049. This program will be conducted in ID and OR also to assure cathodically isolated steel is identified and replaced as needed.	describe any incremental changes that this Program would benefit present operations	\$ 2,598,333	\$ -	\$ -	12

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
			Capital Cost	O&M Cost	Other Costs	
Status Quo:	Avista would be out of compliance with Docket PG-100049 and 49 CFR 192.455 & 457.	n/a	\$ -	\$ -	\$ -	12
Alternative 1:	Complete programmatic replacement of isolated steel pipe	n/a	\$ 2,598,333	\$ -	\$ -	9
Alternative 2:		n/a	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)		describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
2012-2016					Current ER				
	Capital Cost	O&M Cost	Other Costs	Approved Capital	3007				
2012	\$ 2,321,433	\$ -	\$ -	\$ 1,095,000					
2013	\$ 2,348,337	\$ -	\$ -	\$ 2,248,333					
2014	\$ 2,598,333	\$ -	\$ -	\$ 1,758,333					
2015	\$ 3,450,000	\$ -	\$ -	\$ 3,450,000					
2016	\$ 3,550,000	\$ -	\$ -	\$ 3,550,000					
2017	\$ 3,320,000	\$ -	\$ -	\$ 3,320,000					
2018	\$ 2,750,000	\$ -	\$ -	\$ 2,750,000					
2019	\$ 2,750,000	\$ -	\$ -	\$ 2,750,000					
Total	\$ 23,088,103	\$ -	\$ -	\$ 20,921,666					

Mandate Excerpt (if applicable):
Docket PG-100049 (III) - "Agreement"(2) - Avista agrees to survey its entire Washington State pipeline system to find isolated steel and complete all remedial action set forth in this Agreement within five years of the effective date of this Agreement.

Additional Justifications:



Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)

Expected Performance Improvements

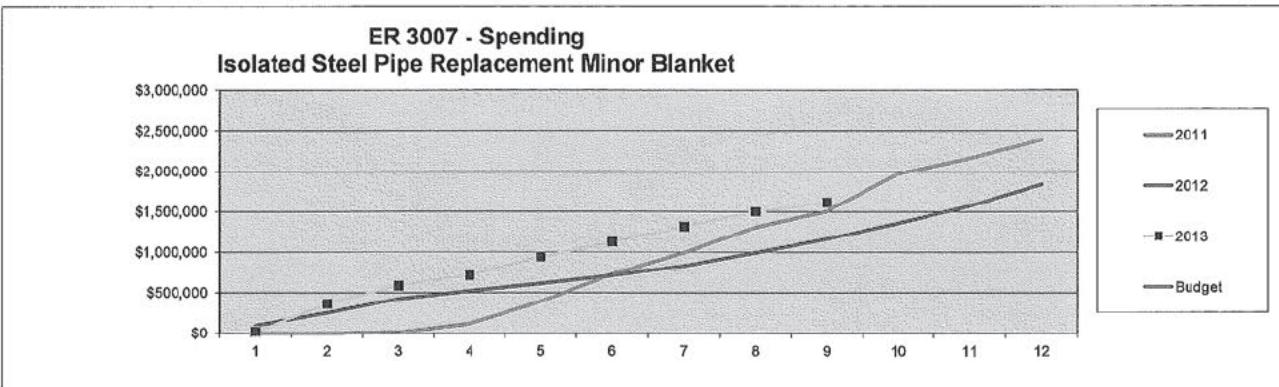
KPI Measure:

	B	U	Z	AA
	Department	YTD October 2013	Minimum to Complete 2013	Percent Complete
1				
2	Spokane Gas Construction	586	630	90%
3	Roseburg	113	107	106%
4	Madford Construction	5	222	2%
6	Clarkston Electric & Gas	6	34	18%
7	La Grande	25	28	89%
8	Sandpoint / Bonners Ferry	4	7	57%
9	CDA Gas	38	31	123%
10	Klamath Falls	24	43	56%
11	Pullman Electric & Gas	14	98	14%
12	Total YTD 2013	815	1220	67%

Prepared signature _____

Reviewed signature _____ Director/Manager

Other Party Review signature *Margie Stevens* Director/Manager
 (if necessary)



Business Case	ERM Risk Reduction	Status Quo Raw Score	Risk on Completion Raw Score	Status Quo Risk					
				Financial Impact (Consequential Costs/Revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
Isolated Steel Replacement	3	12	9	3 - \$2MM - \$4MM	< Once / 5 years	4 - Potential for regulators to impose onerous restrictions or Board or management to make leadership change	< Once / 5 years	1 - < 1,500 Customer-hours	< Once / 10 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
				Risk upon Completion					
				3 - \$2MM - \$4MM	< Once / 5 years	2 - Could result in a moderate negative impact to local, online, or industrial relationships and / or regional media coverage	< Once / 10 years	1 - < 1,500 Customer-hours	< Once / 50 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	Date	Template

Capital Program Business Case



Investment Name:	Aldyl A Replacement mains and bending stress	Assessments:	
Requested Amount	\$16.5MM	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	20 Year Program	Strategic:	Life Cycle Programs
Dept... Area:	Gas Delivery	Operational:	Operations require execution to perform at current levels
Owner:	Mike Faulkenberry	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Don Kopczynski	Program Risk:	High certainty around cost, schedule and resources
Category:	Program	Assessment Score:	89
Mandate/Reg. Reference:	n/a	Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This program covers the replacement of 730 miles of pre-1987 Aldyl A mains and the remediation of 16,000 bending stress sites on services tapped from steel main. Due to the tendency for this material to suffer brittle-like cracking leak failures, Aldyl A will eventually reach a level of unreliability that is not acceptable. There is a potential harm to the public through damage to life and property and there is a high likelihood of increasing regulatory scrutiny from increasing failures.	As Aldyl A is removed, O&M expense associated with repairing the increasing leaks will be eliminated in proportion	\$ 10,250,000	\$ -	\$ -	5
Annual Cost Summary - Increase/(Decrease)					

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Unfunded Program:	If unfunded, the increasing failures of mains and services is modeled to result in more than 13 catastrophic events in Washington alone. Extended to Idaho and Oregon, the cost of the effects (at a 10% escalation) and increasing expenses for O&M leak repair could total more than \$60MM over a 20 year period, an average of \$3MM annually.	n/a		\$ 3,000,000	15	
Alternative 1: Brief name of alternative (if applicable)	20 year replacement program: Replace 37 miles of main and remediate 800 service taps each year, prioritized by DIMP risk modeling. Modeling suggests that if pipe is removed on a first in-first out basis up to 3 catastrophic events could occur over 20 years, however, using a DIMP based approach to remove highest risk facilities first without regard to age only it may be possible to avoid any incidents.	As Aldyl A is removed, O&M expense associated with repairing the increasing leaks will be eliminated in proportion	\$ 17,552,196	\$ (60,000)	\$ -	5
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
5 years of costs					Current ER				
	Capital Cost	O&M Cost	Other Costs	Approved					
2012	\$ 5,000,000	\$ -	\$ -	\$ 5,000,000					
2013	\$ 10,250,000	\$ -	\$ -	\$ 12,710,904					
2014	\$ 17,552,196	\$ -	\$ -	\$ 16,702,196					
2015	\$ 17,817,429	\$ -	\$ -	\$ 16,817,429					
2016	\$ 18,885,272	\$ -	\$ -	\$ 17,385,272					
2017	\$ -	\$ -	\$ -	\$ 18,262,977					
2018	\$ -	\$ -	\$ -	\$ 18,648,237					
2019	\$ -	\$ -	\$ -	\$ 19,062,221					
Total	\$ 69,504,897	\$ -	\$ -	\$ 124,589,236					

2% Inflation included in above numbers

Mandate Excerpt (if applicable):
provide brief citation of the law or regulation and a reference number if possible

Additional Justifications:
Avista has experienced 2 Injury and property damage events due to failing Aldyl A since 2005 and is currently bound by a settlement agreement with the Washing Utility and Transportation Commission. Further events of this nature will most likely result in some sort of mandatory pipe replacement program with a timeline we cannot control. Taking a proactive and priority-justified approach is critical at this time to protect life and property for the public as well as reduce Avista's exposure to the risks of liability and regulatory scrutiny.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: <input checked="" type="checkbox"/> Low Probability <input type="checkbox"/> Medium Probability <input type="checkbox"/> High Probability	Enterprise Tech: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> NO or Not Required
Contract Labor: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Facilities: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> NO or Not Required
	Capital Tools: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> NO or Not Required

Check the appropriate box. The Internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided



Capital Program Business Case

Avista/1401
Schuh/Page 60

NGD-10

Fleet:

- YES - attach form
- YES - attach form

NO or Not Required

(this does not require a firm commitment).

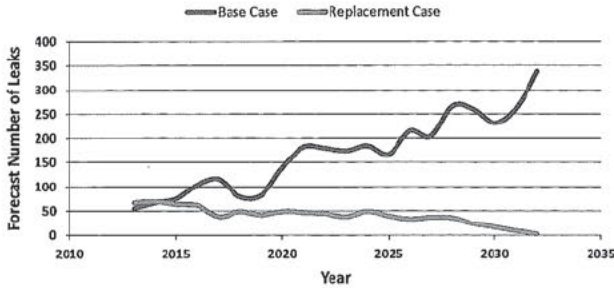


Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	Prevention of leaks and their consequences
Fill in the name of the KPI here	

Prepared signature

Reviewed signature Director/Manager

Third Party Review signature (if necessary) *Margi Stevens* Director/Manager



Business Case	ERM Risk Reduction	Unfunded Raw Score	Revised Risk Raw Score	Unfunded Project/Program Risk (no funding if a project, cease funding if an existing program)					
				Financial Impact (Consequential Costs/Revenue)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (if customers * duration of an outage)	Likelihood
Aldyl A Replacement (main & bending stress tees)	15	20	5	3 - \$2MM - \$4MM	< Once / year	4 - Potential for regulator to impose onerous restrictions or Board or management to make leadership change	< Once / year		
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
						5 - Potential for multiple loss of lives Wide spread damage on property or business Public health infrastructure impact up to 72 hours	< Once / year	2 - Potential for minimal or minor injury Lost Time Incident and Severity Rate increases year over year	< Once / 5 years
				Revised Risk if funded/completed					
				3 - \$2MM - \$4MM	< Once / 50 years	3 - Could result in a sustained negative impact to local, online, or industrial relationships and / or national / global media coverage	< Once / 50 years		
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
		5 - Potential for multiple loss of lives Wide spread damage on property or business Public health infrastructure impact up to 72 hours	< Once / 50 years	2 - Potential for minimal or minor injury Lost Time Incident and Severity Rate increases year over year	< Once / 50 years				

Budget request for 2014, 2015, and 2016 were revised with updated budget projections based on new models and information.

WA UTC Docket UG-120715 Commission Policy on Accelerated Replacement of Pipeline with Elevated Risk was issued on December 31, 2012. The new policy will include a Cost Recovery Mechanism (CRM) based generally on the mechanism used in Oregon with NWNG.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Capital Program Business Case



Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	# of ERTs replaced vs. planned

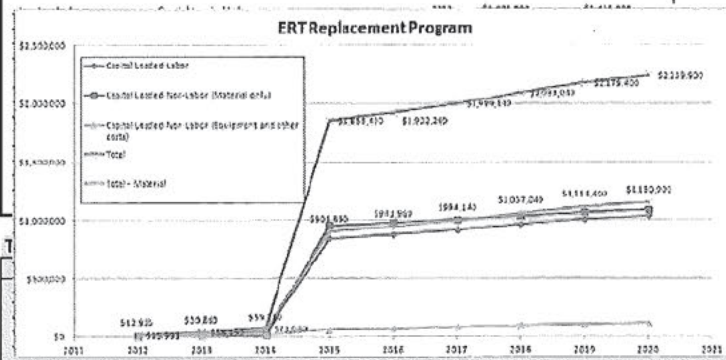
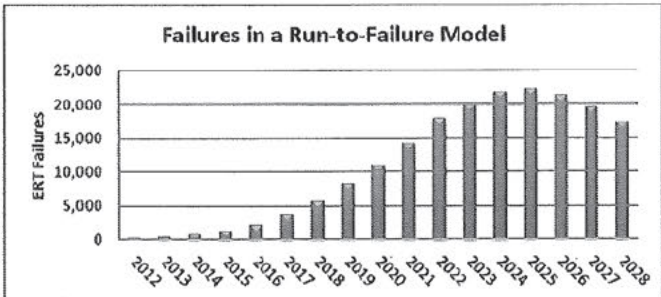
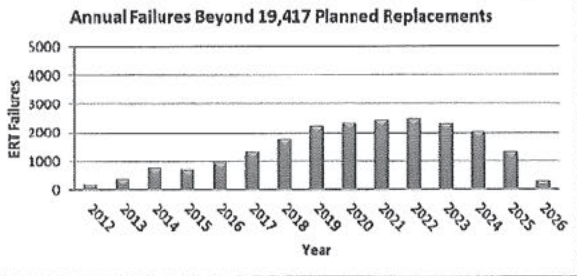
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Director/Manager

Other Party Review signature
(if necessary) *Margie Skewens*
Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

Avista has over 230,000 gas ERTs in service since the year 2000. There have been large population years, such as 2004 and 2005, which represent over 100,000 units alone. These ERTs run on batteries that will eventually discharge and need replacement, and are predicted to happen in large quantities over short periods of time, peaking at over 20,000 field failures a year unless organized replacements begin. A levelized replacement rate of approximately 19,500 units annually, starting in 2015, balances the maximum life of the battery while reducing the effects of field failures to a manageable level. The levelized replacement process also introduces smaller populations of ERTs back into the system so the next time batteries need replacing there will only be about 19,500 unit families in place for any given future year. (Refer to Asset Management Report Titled "ERT Replacement Strategy Development, 6/14/12)



Review Cycles 2012-2016	
Date	Template

Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	# of meter changed out vs. # required (this changes annually)

Prepared signature _____

Reviewed signature _____
Director/Manager

Other Party Review signature *Margie Stevens* _____
(if necessary) Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

MANDATE EXCERPT: OAR 860-023-0015(3) - "Each energy utility shall adopt schedules for periodic tests and repairs of meters. The length of time meters shall be allowed to remain in service before receiving periodic tests and repairs is to be determined from periodic analysis of the accuracy of meters tested. The schedules adopted shall be subject to the Commission's approval."

ADDITIONAL COMMENTS: Program required to reliably serve customers, ensure accurate measurement, and properly bill gas revenue. These charges had historically gone into ER3005, the Business Case for ER3005 will be adjusted to show the change starting in 2014. Historically ER3117 had been combined with this program, as of 1-1-14, it will be on its own Business Case.

Previous Scoring:

Business Case	Business Risk Reduction	Unfunded Raw Score	Revised Risk Raw Score	Unfunded Project/Program Risk (no funding if a project, cease funding if an existing program)					
				Financial Impact (Consequential Costs/Revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
Gas PMC Program, Capital Replacements	12	16	4	2- \$20k - \$2MM	< Once / year	4- Potential for regulators to impose onerous restrictions or Board or management to make leadership change	< Once / year	1- < 1500 Customer-hours	< Once / 10 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
						1- Potential for injury Public health infrastructure impact up to 8 hours	< Once / 10 years	1- Potential for injury	< Once / 50 years
				Revised Risk if funded/completed					
				1- < \$200k	< Once / year	1- No likely impact on media or regulatory relationship	< Once / 50 years	1- < 1500 Customer-hours	< Once / 50 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
		1- Potential for injury Public health infrastructure impact up to 8 hours	< Once / 50 years	1- Potential for injury	< Once / 50 years				

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

Capital Program Business Case



Investment Name:	Gas Telemetry	Assessments:	
Requested Amount	\$400,000	Financial:	7.00%
Duration/Timeframe	Year Program	Strategic:	Reliability & Capacity
Dept., Area:	Gas Engineering	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Mike Faulkenberry	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Don Kopczynski	Assessment Score:	
Category:	Program		
Mandate/Reg. Reference:	CFR 192.741 192.631		

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
This program will continue the installations of gas telemetry throughout Avista's gas service territory. Further enhancing the telemetry sites will increase the visibility of the gas system to help analyze operational concerns and cold weather performance. This program will also replace the current mechanical pressure recording charts with electronic pressure recording devices. These types of projects also enhance our Disaster Recovery efforts by updating existing telemetry and adding new sites. Gas Scheduling benefits from this data also by having independent measurement points to check the pipelines values and to receive more timely information from the field.	describe any incremental changes that this Program would benefit present operations	\$ 400,000	\$ -	\$ -	1

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Unfunded Program: No further enhancements or maintenance of the existing telemetry system. Existing mechanical pressure recorders are expensive to fix and replace.	n/a	\$ -	\$ 50,000	\$ -	8
Alternative 1: Brief name of alternative (if applicable) Increase the number of gas telemetry sites and maintain or upgrade existing facilities. This funding level was previously approved as part of the Gas PMC Business Case. We are now requesting to separate it out as it does not align well with the PMC program.	describe any incremental changes in operations	\$ 400,000	\$ -	\$ -	1
Alternative 2: Brief name of alternative (if applicable) Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable) Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2014	\$ 370,000	\$ -	\$ -	\$ 315,000
2015	\$ 370,000	\$ -	\$ -	\$ 400,000
2016	\$ 370,000	\$ -	\$ -	\$ 400,000
2017	\$ 370,000	\$ -	\$ -	\$ 400,000
2018	\$ 370,000	\$ -	\$ -	\$ 400,000
2019	\$ -	\$ -	\$ -	\$ 400,000
Total	\$ 1,850,000	\$ -	\$ -	\$ 2,315,000

3117		

ER	2014	2015	2016	2017	2018	Total	Mandate Excerpt (if applicable):
3117	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 2,000,000	CFR 192.741 - Each distribution system supplied by more than one source must be equipped with
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	telemetering or recording pressure gauges to indicate the gas pressure in the district.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	CFR 192.631 - Control Room Mgmt
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications:
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Increased gas telemetry sites will also aide in the installation and monitoring of Automatic Shut Off or Remote Control Valves (ASO/RCV).
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Disaster Recovery - new telemetry sites are IP addressable to help in the event the primary dispatch center (Mission) is not available.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 2,000,000	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required	Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).
Contract Labor:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required	
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required	
				Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required	

Key Performance Indicator(s)
Expected Performance Improvements
KPI Measure:

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Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens*
(if necessary) Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

To be completed by Capital Planning Group	
Rationale for decision	Review Cycles 2012-2016
	Date
	Template

Investment Name:	East Medford Reinforcement	Assessments:	
Requested Amount		Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	1 2015	Strategic:	Reliability & Capacity
Dept., Area:	Gas Engineering	Operational:	Operations improved beyond current levels
Owner:	Mike Faulkenberry	Business Risk:	ERM Reduction >10 and <= 15
Sponsor:	Don Kopczynski	Project/Program Risk:	Moderate certainty around cost, schedule and resources
Category:	Project	Assessment Score:	97
Mandate/Reg. Reference:	OR Tariff - Rule 14(A)(2)	Cost Summary - Increase/(Decrease)	

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This project will complete the 12" high-pressure steel pipeline loop across the east side of Medford, OR. The length of the remaining segment will be about 3.2 miles. Avista's Gas Integrated Resource Plan requires increased gas deliveries from the TransCanada Pipeline source at Phoenix Road Gate Station in SE Medford. Existing distribution piping exiting the station will be unable to receive the increased gas volumes. A new high-pressure gas line encircling Medford to the east and tying into an existing high pressure line in White City will improve delivery capacity and provide a much needed reinforcement in the East Medford area which is forecasting higher growth.	describe any incremental changes that this project would benefit present operations	\$ 18,650,000	\$ -	\$ -	2

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo :	Inability to received gas supply quantities into the greater Medford system as detailed within the Integrated Resource Plan (IRP).	n/a	\$ -	\$ -	\$ -	16
Alternative 1: Brief name of alternative (if applicable)	Capital Pipe Installations (3.2 Miles) - Install additional pipe to reinforce and loop existing gas distribution system to increase system capacity and reliability. This will be the last Phase, scheduled for 2018.	describe any incremental changes in operations	\$ 5,000,000	\$ -	\$ -	2
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name : Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Construction Cash Flows (CWIP)

Timeline

	Capital Cost	O&M Cost	Other Costs	Approved Capital
Previous	\$ 14,000,000	\$ -	\$ -	\$ 14,000,000
2012	\$ 550,000	\$ -	\$ -	\$ 550,000
2013	\$ 340,000	\$ -	\$ -	\$ 400,000
2014	\$ -	\$ -	\$ -	\$ 615,000
2015	\$ 5,000,000	\$ -	\$ -	\$ 4,385,000
2016	\$ -	\$ -	\$ -	\$ -
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ -	\$ -	\$ -	\$ 5,000,000
Future	\$ -	\$ -	\$ -	\$ -
Total	\$ 19,890,000	\$ -	\$ -	\$ 24,950,000

Milestones should be general. In some cases it may be as simple as project start, project complete. Use your judgement on project progress so that progress can be measured.

Milestones (high level targets)

July-12	Previous 9.1 miles complete
November-12	Design pipe installation for 2012
July-18	Install pipe, 2012
November-18	Design pipe installation for 2018
	Install pipe, 2018

Associated Ers (list all applicable):	Current ER	3203					
Mandate Excerpt (if applicable):	OR Tariff - Rule 14(A)(2), "The Company will exercise reasonable diligence and care to furnish and deliver a continuous and sufficient quantity of gas to its customers but does not guarantee continuity or sufficiency of quantity."						

Additional Justifications:
The first phase was completed in 2008 and installed 26,500'. Approximately 21,400' was installed in 2009 and 2000' in 2013. The remainder to be installed in 2018.

Resources Requirements: *(request forms and approvals attached)*

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure:

Prepared signature _____

Reviewed signature _____
 Director/Manager

Other Party Review signature *Margie Stevens* _____
 (if necessary) Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the project

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

Investment Name:	Ladd Canyon Stn Upgrd	Assessments:	
Requested Amount	\$ 1,453,000	Financial:	7.00%
Duration/Timeframe	1 Year Project	Strategic:	Reliability & Capacity
Dept., Area:	NGAS	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Mike Faulkenberry	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Don Kopczynski		
Category:	Mandatory		
Mandate/Reg. Reference:	Service Agreement With Williams Pipeline	Assessment Score:	131

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
It is proposed to upgrade the existing Ladd Canyon/Union Gate Stn #0817 (not #817) near LaGrande, OR. The existing gate station has reached it's physical capacity due to the growth in the area and needs to be upgraded to support the gas load increases. The new Gate Station #7080 will include separate regulation facilities to modify the existing system and maintain a 150 PSIG MAOP (STA #7081) for the Union supply main and a 400 PSIG MAOP (STA #7082) for the Airport main extension along Pierce Rd. The new facility will require heater, odorizer, regulation and relief facilities for the Avista site. New telemetry facilities will be installed at this location as well. This project will accomodate the long term benefit of adding capacity to the Elgin area once the 3 miles of HP is extended from Union to the Elgin HP line out of La Grande. This CPR has been updated to reflect complete construction cost estimates and includes fees required for the Williams Northwest Pipe portion of the facility that Avista will be required to reimburse.	Completion of this project eliminate the short term temporary facilities at this site.	Capital Cost	O&M Cost	Other Costs	1
The Facilities Agreement with Williams states that an agreement to complete the permanent upgrades needs to be in place within 90 days. 90 days was up on Nov. 9th, 2013. Williams graciously extended the timeline to allow Avista to conduct a thorough system analysis to ensure the metering and regulating facilities will be sized appropriately.		\$ 1,453,000	\$ -	\$ -	

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score	
Unfunded Project:	Short Term Temporary facilities would remain in service. This would be a violation of our agreement with Williams Pipeline NW. This would degrade a positive working relationship Avista currently has with Williams.	n/a	Capital Cost	O&M Cost	Other Costs	8
<i>Alternative 1: Rebuild Gate Stn</i>	As described above	describe any incremental changes in operations	\$ 1,453,000	\$ -	\$ -	1
<i>Alternative 2: Brief name of alternative (if applicable)</i>	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
<i>Alternative 3 Name: Brief name of alternative (if applicable)</i>	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,453,000	\$ -	\$ -	\$ 838,000
2015	\$ -	\$ -	\$ -	\$ 615,000
2016	\$ -	\$ -	\$ -	\$ -
2017+	\$ -	\$ -	\$ -	\$ -
Total	\$ 1,453,000	\$ -	\$ -	\$ 1,453,000

Associated Ers (list all applicable):

3303			

ER	2013	2014	2015	2016	2017+	Total	Mandate Excerpt (if applicable):
3303	\$ -	\$ 1,453,000	\$ -	\$ -	\$ -	\$ 1,453,000	Obligation to serve and the existing Facilities Agreement with Williams Pipeline states a permanent fix needs be
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 1,453,000	\$ -	\$ -	\$ -	\$ 1,453,000	Additional Justifications: Avista has known of this project since the Fall of 2013. Capital funds have not been officially requested because the cost of the project was unknown until just recently. Williams Pipeline has only recently provided Avista with a construction estimate.

Milestones (high level targets)

June-14	Start Construction	January-00	open	January-00	open
December-14	In Service	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open

Milestones should be general. Use your judgement on project progress so that progress can

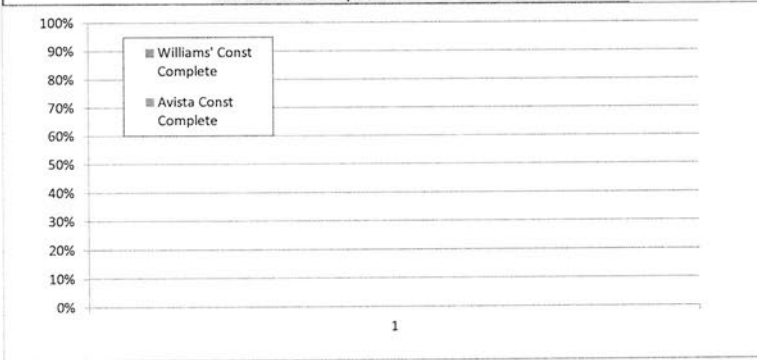
Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Enterprise Tech: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Contract Labor: YES NO
 Facilities: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Key Performance Indicator(s)

Expected Performance Improvements

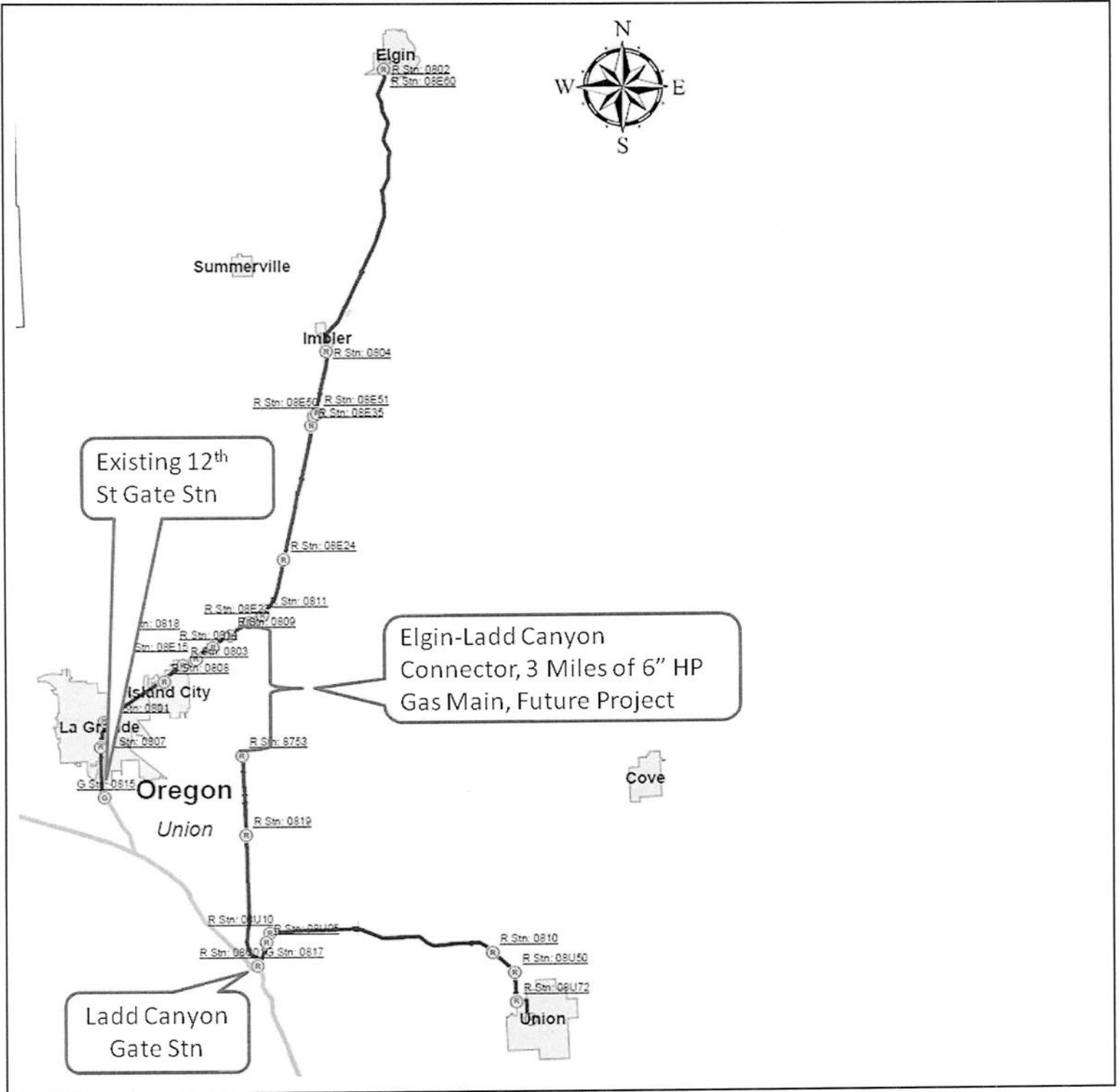
KPI Measure:	Williams' Const Complete	0%
	Avista Const Complete	0%



Prepared _____

Reviewed Margie Stevens
Director/Manager

Other Party Review (if necessary) _____
Director/Manager



To be completed by Capital Planning Group

Rationale for decision

Review Cycles	
2012-2016	
Date	Template

Capital Project Business Case



Investment Name:	Bonanza Meter Stn Move	Assessments:	
Requested Amount	\$600,000	Financial:	7.00%
Duration/Timeframe	1 Year Project	Strategic:	Reliability & Capacity
Dept., Area:	Gas Engineering	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Mike Faulkenberry	Project Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Don Kopczynski	Assessment Score:	70
Category:	Project	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
It is proposed to work with GTN to relocate the metering and odorizing equipment at the Bonanza Meter Stn. This project provides Avista the flexibility to lower the operating pressure of the Klamath Falls Lateral to lower than 20% if it were deemed advantageous. This pressure reduction would transition this line out of Transmission. It will cost Avista capacity on the lateral to do so, but that benefit may be offset if forced to do extraneous inspections due to Transimssion Integrity Management Plan (TIMP).	Adds service to AVA's system; eliminates reliability issues; adds operational flexibility	\$ 600,000	\$ -	\$ -	1

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	By doing nothing, Avista and GTN have high visibilty and exposure due to an odorizer that Avista owns and GTN operates.	\$ -	\$ 50,000	\$ -	8
Relocate Meter Stn	Relocate odorizer and meter as described above.	\$ 600,000	\$ -	\$ -	1
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ -	\$ -	\$ -	\$ -
2015	\$ 600,000	\$ -	\$ -	\$ 600,000
2016	\$ -	\$ -	\$ -	\$ -
2017+	\$ -	\$ -	\$ -	\$ -
Total	\$ 600,000	\$ -	\$ -	\$ 600,000

Associated Ers (list all applicable):	3307
---------------------------------------	------

ER	2013	2014	2015	2016	2017+	Total	Mandate Excerpt (if applicable):
3307	\$ -	\$ -	\$ 600,000	\$ -	\$ -	\$ 600,000	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: Any supplementary information that may be useful in describing in more detail the nature of the Project, the urgency, etc.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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Total	\$ -	\$ -	\$ 600,000	\$ -	\$ -	\$ 600,000	

Milestones (high level targets)

January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open

Milestones should be general. Use your judgement on project progress so that progress can

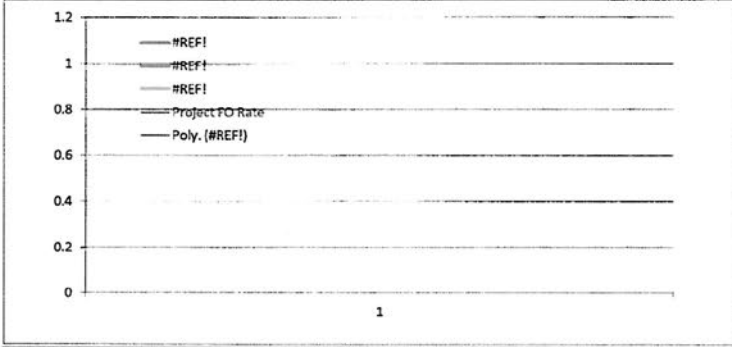
Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability Enterprise Tech: YES - attach form NO or Not Required
 Contract Labor: YES NO Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Capital Project Business Case

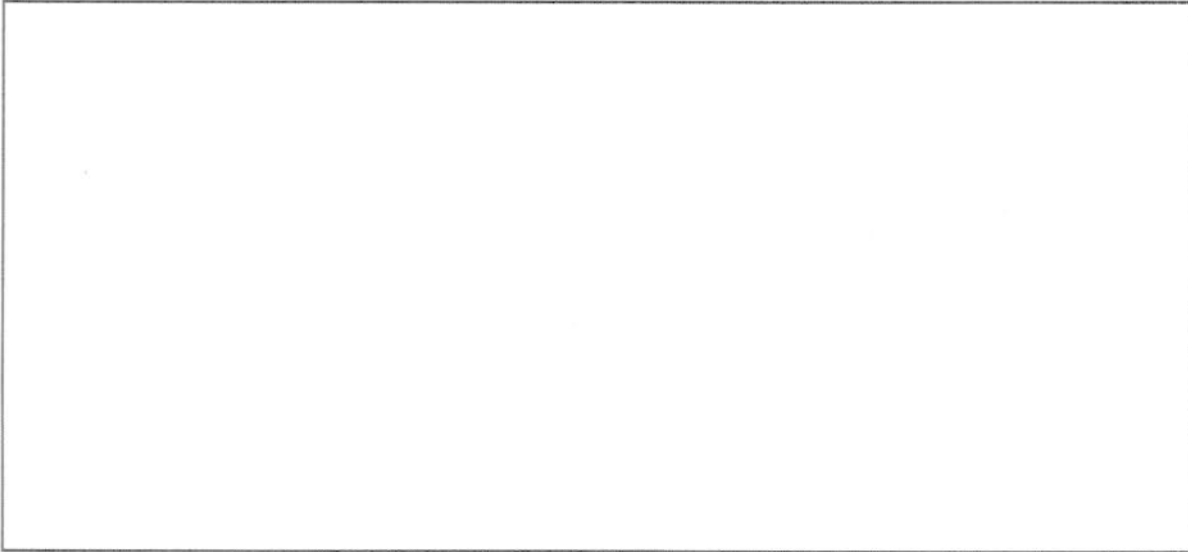


Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure: Fill in the name of the KPI here
 Fill in the name of the KPI here



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 Reviewed signature [Signature] Director/Manager
 Other Party Review signature (if necessary) _____ Director/Manager

name here



To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

Capital Investment Business Case



Investment Name:	Jackson Prairie Storage	Assessments:	
Requested Amount	\$1,000,000	Financial:	High - Exceeds 12% CIRR
Duration/Timeframe	20+ Year Program	Strategic:	Reliability & Capacity
Dept., Area:	Natural Gas Resources	Operational:	Operations require execution to perform at current levels
Owner:	Steve Harper	Business Risk:	ERM Reduction >15
Sponsor:	Jason Thackston	Program Risk:	High certainly around cost, schedule and resources
Category:	Program	Assessment Score:	116
Mandate/Reg. Reference:	n/a	Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Jackson Prairie (JP) Underground Storage Facility stores natural gas. Avista owns this facility as a 1/3 partner with Puget Sound Energy and Williams' Northwest Pipeline. Puget Sound Energy is the managing partner for the facility which is located in Chehalis, WA. The requested capital represents Avista's 1/3 share of the capital needed to maintain the existing facility and maintain equal ownership status. The purpose of the facility is to allow Avista to serve customers on a peak day, and to purchase natural gas at potentially lower costs during off-peak periods and store that gas for use during high cost periods.	describe any incremental changes that this Program would benefit present operations	\$ 1,000,000	\$ -	\$ -	2

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo:	n/a		\$ -	\$ -	20
Alternative 1: Brief name of alternative (if applicable)	Recommended -- Support Avista's 1/3 capital obligation. Estimated to be approximately \$1,000,000 per year looking forward. Cost is estimated to be \$539,000 in 2014. Capital needs vary year-to-year, but relate to well, compression, pipe, separator/dehydration, metering and control facilities.	\$ 1,000,000	\$ -	\$ -	2
Alternative 2: Brief name of alternative (if applicable)	Not recommended-- Fund a lesser amount than Avista's 1/3 capital obligation. Voting rights would be diminished and therefore decisions made by other partners would not be in the best interest of Avista or its customers.	\$ -	\$ -	\$ -	2
Alternative 3 Name: Brief name of alternative (if applicable)	Describe other options that were considered	\$ -	\$ -	\$ -	0

Program Cash Flows	Associated Ers (list all applicable):				
2012-2016	ER 7201				
	Capital Cost	O&M Cost	Other Costs	Approved	
Previous		\$ -	\$ -	\$ -	
2012	\$ 630,000	\$ -	\$ -	\$ 630,000	
2013	\$ 550,000	\$ -	\$ -	\$ 550,000	
2014	\$ 539,000	\$ -	\$ -	\$ 539,000	
2015	\$ 1,000,000	\$ -	\$ -	\$ 1,356,300	
2016	\$ 1,000,000	\$ -	\$ -	\$ 1,175,000	
2017	\$ 1,000,000	\$ -	\$ -	\$ 1,117,000	
2018	\$ 1,000,000	\$ -	\$ -	\$ 1,210,000	
2019	\$ -	\$ -	\$ -	\$ 1,085,000	
Future	\$1,000,000/year	\$ -	\$ -	\$ -	
Total	\$ 5,719,000	\$ -	\$ -	\$ 7,662,300	

Mandate Excerpt (if applicable):
provide brief citation of the law or regulation and a reference number if possible

Additional Justifications:
While not a mandated project by definition, this Program is not one that can easily be terminated. The use of JP is documented and acknowledged as part of Avista's Integrated Resource Plan.

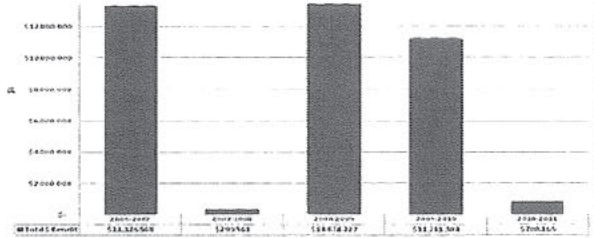
Resources Requirements: (request forms and approvals attached)

- Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO
 Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
Expected Performance Improvements
KPI Measure: Avoided gas costs through use of JP storage
Fill in the name of the KPI here
JP WA/ID Avoided Winter Cost
2/28/2016
2/28/2016

Prepared signature



Reviewed signature Director/Manager

Other Party Review signature Margie Stevens Director/Manager
(if necessary)

Business Case	ERM Risk Reduction	Status Quo Raw Score	Risk on Completion Raw Score	Status Quo Risk					
				Financial Impact (Consequential Costs/Revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
Jackson Prairie Storage	18	20	2	5 - > \$10MM	< Once / year	3 - Could result in a sustained negative impact to local, online, or industrial relationships and / or national / global media coverage	< Once / year		
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
						1 - Potential for injury Public health infrastructure impact up to 8 hours	< Once / year		
				Risk upon Completion					
				Financial Impact (Consequential Costs/Revenues)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
				1 - < \$200k	< Once / 10 years	1 - No likely impact on media or regulatory relationship	< Once / 50 years		
Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood				
		1 - Potential for injury Public health infrastructure impact up to 8 hours	< Once / 50 years	1 - Potential for injury	< Once / 50 years				

To be completed by Capital Planning Group		Review Cycles	
Rationale for decision	2012-2016		
	Date	Template	

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF JEFFREY A. WEBB
REPRESENTING AVISTA CORPORATION

East Medford and Ladd Canyon Capital Investment

1 **I. INTRODUCTION**

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

3 A. My name is Jeffrey A. Webb. I am employed by Avista Corporation as the
4 Manager of Gas Engineering & Measurement. My business address is 1411 East Mission
5 Avenue, Spokane, Washington.

6 **Q. Please briefly describe your educational background and professional**
7 **experience.**

8 A. I am a 2000 graduate of the University of Washington with a Bachelor of
9 Science degree in Mechanical Engineering. Prior to attending the University of
10 Washington, I spent six years in the United States Army as a helicopter co-pilot, achieving
11 the rank of Sergeant. After graduating from the University of Washington, I worked at
12 Puget Sound Energy as a natural gas engineer for seven years. In 2007, I joined Avista as a
13 gas design engineer. In 2013, I was promoted to my current role as Manager of Gas
14 Engineering & Measurement, where I manage the Gas Engineering Department. In this
15 role, I am responsible for, among other things, managing the design and system engineering
16 of Avista's natural gas distribution system in Oregon, Washington, and Idaho. I am a
17 registered Professional Engineer in the states of Oregon and Washington.

18 **Q. What is the scope of your testimony in this proceeding?**

19 A. In reply to the testimony of Commission Staff witness Mr. Moore, and CUB
20 witness Mr. Jenks, I will address the methods used by Avista to prioritize natural gas
21 distribution capital investments, and I will specifically discuss the Company's East Medford
22 Reinforcement and Ladd Canyon Gate Station Upgrade projects, which will improve system
23 capacity and reliability.

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

2	<u>Description</u>	<u>Page</u>
3	I. Introduction	1
4	II. Gas Distribution Capital Investment Prioritization	3
5	III. East Medford High Pressure Pipeline Reinforcement	7
6	IV. Ladd Canyon Gate Station Upgrade	18
7	V. Conclusion	26

8

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

10 A. Yes. I am sponsoring Exhibit Nos. 1501, 1502, 1503, 1504, and 1505, which
11 were prepared by me or under my direction.

12 **Q. Would you please explain what is contained in each of these exhibits?**

13 A. Yes. Exhibit No. 1501 illustrates the phases in which the East Medford
14 Reinforcement project has been, and is expected to be, completed.

15 Exhibit No. 1502 includes an email documenting the updated priority of the East
16 Medford High Pressure Reinforcement project for completion in 2015. This exhibit is
17 excerpted from Avista's response to CUB_DR_041.

18 Exhibit No. 1503 illustrates the Medford distribution system pressures on a design
19 heating degree day both before and after the completion of the East Medford Reinforcement
20 project, demonstrating the current need for the completion of this project. The illustrations
21 in this exhibit are excerpted from Avista's response to CUB_DR_041.

22 Exhibit No. 1504 illustrates the system pressures in the La Grande / Union
23 distribution area on a design heating degree day, both before and after the completion of the
24 Ladd Canyon Gate Station rebuild, and the Pierce Road High Pressure Reinforcement
25 projects.

1 Exhibit No. 1505 is Avista's response to CUB_DR_026, which addressed the
2 increased budget associated with the Ladd Canyon Gate Station upgrade.

3

4 **II. GAS DISTRIBUTION CAPITAL INVESTMENT PRIORITIZATION**

5 **Q. Staff and CUB express concerns regarding the changes in timing of**
6 **certain investments.¹ Would you please explain the variables that go into determining**
7 **when a project should be completed?**

8 A. Yes. The determination of when a capital investment should be completed is
9 a function of a number of considerations, including, but not limited to, capacity limitations
10 on the natural gas system, system reliability, regulatory compliance, public safety and
11 health, employee safety and health, environmental impacts, availability of financing and cost
12 to finance, availability of labor and materials, priority versus other needs in the system, and
13 impacts on retail prices to customers.

14 **Q. Given the variables involved, and Avista's multiple service territories,**
15 **how do you prioritize the completion of Avista's natural gas distribution projects?**

16 A. In regards to assessing system capacity, Avista's primary analysis tool is the
17 SynerGEE[®] computer-based modeling tool for natural gas distribution systems. This tool
18 uses actual data taken from monthly natural gas meter reads over a multi-year period to
19 determine system dynamics, including system pressure under various circumstances.
20 Because maintaining a safe and reliable natural gas distribution system is Avista's primary
21 focus, SynerGEE[®] modeling provides the basis for analysis of all capacity projects. The
22 SynerGEE[®] modeling tool is the same tool used to support the distribution system planning
23 analysis provided in Avista's 2014 Natural Gas Integrated Resource Plan (IRP). In addition,

¹ Exhibit STAFF/600, Moore/14, lines 1-14, and Exhibit CUB/100, McGovern-Jenks/10, lines 3-5.

1 the presence of any other variables, such as State and Federal mandates, integrity
2 assessments, and long-term growth plans are also factors considered in the justification of a
3 project.

4 Once the analysis of the factors influencing each individual project is complete, the
5 projects are ranked accordingly in terms of priority. Projects, such as East Medford and
6 Ladd Canyon, are prioritized against the entirety of other projects in Avista's natural gas
7 service territory, without regard to geographical location. That is to say, Avista considers
8 the entire natural gas system to ensure the most important projects are completed first. As a
9 result, over any given period, there may be some "lumpiness" in the annual capital
10 investment when one year is compared to another.

11 **Q. Is it possible that these variables might change over time?**

12 A. Absolutely. System capacity (i.e., the ability to serve customers reliably) can
13 be reduced by new load growth (either incremental use or incremental customers) or
14 improved as a result of pipeline enhancements (which may occur on a smaller scale, as a
15 result of road improvements or other minor pipe replacement programs, or on a larger scale,
16 due to high pressure pipeline reinforcements). Additionally, updates to safety-related
17 regulations or other mandates may result in increased importance being placed on certain
18 projects, which could result in changes in prioritization of projects. As project prioritization
19 changes, updated requests are submitted to the Capital Planning Group (CPG), as discussed
20 further by Company witness Ms. Schuh. Those updated requests may seek earlier funding
21 for projects whose updated priority has increased, and/or seek to defer funding for projects
22 whose updated priority has decreased. These requests are then evaluated against projects
23 submitted from other functional areas by the CPG, in order to prioritize projects over all of
24 Avista's functional areas and in all of Avista's jurisdictions.

1 **Q. Is it reasonable to expect that areas of risk in the system will be**
2 **proportional throughout each of Avista’s service jurisdictions each and every year?**

3 A. No. Risk within Avista’s natural gas distribution system is a function of a
4 number of factors, including age of pipe, historical construction methods, pipe materials,
5 and operating conditions for any given area of the distribution system. Additionally,
6 population and changes in population over time can impact the evaluation of risk (e.g., an
7 area in which more customers would lose service due to capacity constraints on a design day
8 would be considered higher risk). Given the characteristics of Avista’s system, where
9 service is provided to areas which have been served by natural gas for different periods of
10 time (i.e., different ages of pipe), which have varying population densities, and where
11 projects are regularly completed to address areas of risk, it is only natural that the identified
12 areas of risk will not necessarily be evenly distributed across Avista’s service jurisdictions.
13 For example, to date the areas identified by the Aldyl-A asset management program as
14 requiring the most immediate attention have been more heavily weighted to Washington and
15 Oregon than to Idaho. This is a function of a robust evaluation of the most effective (from
16 both a safety and a cost efficiency perspective) plan to address Aldyl-A pipe in Avista’s
17 distribution system.

18 Not only will risk areas not necessarily be evenly distributed across Avista’s service
19 jurisdictions, but, in fact, the Gas Distribution Integrity Management Program (DIMP)
20 administered by the U.S. Department of Transportation Pipeline and Hazardous Materials

1 Safety Administration (PHMSA) requires that the DIMP risk prioritization occur
2 irrespective of State boundaries.²

3 **Q. How do you monitor these variables over time to ensure your**
4 **prioritization reflects changing circumstances?**

5 A. My direct reports refresh the SynerGEE[®] load studies for Avista's various
6 service areas every 1-2 years. Additionally, if factors arise that indicate an update to the
7 SynerGEE[®] model may be necessary prior to the next scheduled refresh, an earlier update
8 could occur. Each SynerGEE[®] refresh includes benchmarking the computer model to actual
9 system conditions experienced in the preceding winter and updating the actual gas usage per
10 customer from the customer information system. As previously mentioned, if these
11 refreshed SynerGEE[®] studies indicate a reprioritization of certain projects, a request is
12 submitted to the CPG to allow it to allocate limited capital investment dollars to maximize
13 each dollar's impact on Avista's ability to provide service (both natural gas and electric) to
14 our customers.

15 **Q. Were the East Medford Reinforcement and Ladd Canyon Gate Station**
16 **Upgrade projects submitted to the CPG?**

17 A. Yes, both the East Medford Reinforcement and Ladd Canyon Gate Station
18 Upgrade projects were submitted to the CPG, in accordance with the evaluative process I
19 described above and the Company's overall capital investment evaluation, as further
20 discussed by Ms. Schuh. The CPG agreed that these investments were a priority for our
21 natural gas distribution system for the year 2015.

² DIMP FAQ C.4.c.7 (<https://primis.phmsa.dot.gov/dimp/faqs.htm#c4>, accessed November 10, 2015) states:
The operator sets the risk threshold, and determines where measures designed to reduce the risks of failure of its gas distribution pipeline are needed. The criteria should be the same for the entire system regardless of the state. Actions should be commensurate with risk. If the risk is viable, the operator must take some action to reduce it.

1 **III. EAST MEDFORD HIGH PRESSURE PIPELINE REINFORCEMENT**

2 **Q. What is Staff’s concern regarding inclusion of the East Medford**
3 **Reinforcement project in Avista’s revenue requirement?**

4 A. Mr. Moore’s objection to the inclusion of the East Medford Reinforcement
5 project in the Company’s revenue requirement centers around Avista’s 2014 Natural Gas
6 Integrated Resource Plan (IRP), where the Company indicated that the East Medford
7 Reinforcement project was slated for completion in 2018.

8 Regarding the East Medford Reinforcement project, Mr. Moore’s opening testimony
9 states:³

10 The Company’s 2014 Integrated Resource Plan (IRP) identifies the East Medford
11 reinforcement as one of its upcoming distribution projects scheduled for 2018. The
12 IRP states: “Previous IRP and distribution planning analysis identified a near-term
13 resource deficiency driven by forecasted local growth. Increased natural gas
14 deliveries from the TransCanada Pipeline...will remedy this deficiency.... This has
15 been a multi-phase project spanning several years. As forecasted, needs have
16 changed over time, and with no immediate resource need, completing the final phase
17 of the project has been delayed.”⁴

18 **Q. Has Mr. Moore objected to the prudence of this investment?**

19 A. No, Mr. Moore has not objected to the prudence of this investment. In fact,
20 Mr. Moore states, “Staff supports the completion of this project.”⁵ Mr. Moore’s concern
21 regarding this project is the timing of the completion of the reinforcement.

22 **Q. Did Mr. Moore’s excerpt from the IRP exclude certain language that**
23 **would provide further context?**

24 A. Yes. Mr. Moore’s excerpt from the IRP (included above) excludes the final
25 two sentences of the East Medford Reinforcement section of the IRP, which are contextually

³ Exhibit STAFF/600, Moore/14

⁴ Exhibit STAFF/600, Moore/14, lines 4-12.

⁵ Exhibit STAFF/600, Moore/14, line 13.

1 important. The following excerpt from the IRP is the final paragraph of the East Medford
2 Reinforcement section (emphasis added to highlight the omitted sentences):⁶

3 This has been a multi-phase project spanning several years. As forecasted, needs
4 have changed over time, and with no immediate resource need, completing the final
5 phase of the project has been delayed. Other factors may drive completion of the
6 project including reliability needs, flexibility of natural gas supply management and
7 optimizing synergies of other construction projects to reduce project cost. Avista will
8 continue to evaluate forecasts and assess the most appropriate timing for completion
9 of this project.

10 Additionally, just prior to the specific discussion of the East Medford reinforcement
11 project, the IRP includes the following important information, which highlights that all
12 distribution projects included in the IRP are preliminary estimates, subject to change
13 (emphasis added):

14 Table 7.1 summarizes the cost of major distribution system enhancements addressing
15 growth-related system constraints, system integrity issues and the timing of these
16 expenditures. These projects are preliminary estimates of timing and costs of major
17 reinforcement solutions. The scope and needs of these projects generally evolves
18 with new information requiring ongoing reassessment. Actual solutions may differ
19 due to differences in actual growth patterns and/or construction conditions from the
20 initial assessment.⁷

21 Just because a certain project has a timeframe listed in a document, such as the IRP, does not
22 mean that the project is going to occur exactly in that timeframe. That is one of the main
23 reasons why the Commission requires a new IRP to be filed every two years – the
24 Commission recognizes that conditions change, which may lead to an earlier acquisition of
25 new interstate pipeline resources than contemplated in the prior IRP, or the acceleration, or
26 delay, of key distribution projects.

27

⁶ Exhibit AVISTA/401: “Avista Utilities 2014 Natural Gas IRP” p. 129-130.

⁷ Exhibit AVISTA/401: “Avista Utilities 2014 Natural Gas IRP” p. 129.

1 **Q. Would you please provide an overview of the East Medford**
2 **Reinforcement project?**

3 A. Yes. The East Medford High Pressure Reinforcement project has been a
4 multi-year project to install a 12” steel gas main in order to complete a supply main loop
5 around the city of Medford. Completion of this loop will improve both capacity and
6 reliability to the customers of the Medford area and will help meet current capacity demands
7 as well as support future residential, commercial, and industrial load growth. The
8 Commission may be familiar with this project, as the majority of the project (approximately
9 \$15 million of the expected total of approximately \$20 million) has already been approved
10 by the Commission for inclusion in rates. This project was first included in Avista’s 2007
11 general rate case (Docket No. UG-181). In Docket No. UG-181, Avista’s initial project plan
12 was to complete this reinforcement as a three-phase project, with the first phase to be
13 completed in July 2008, the second phase in October 2008, and the third phase in October
14 2009. Subsequent to Docket No. UG-181, the project plan was updated, consistent with the
15 regular evaluation of project prioritization that was discussed earlier in my testimony. As a
16 result, the project timeline (including the feet of pipe completed in each phase) is currently
17 as follows (see Exhibit No. 1501 for a map showing the various phases):

18 **Table No. 1: East Medford Reinforcement Project Phases**

<u>Phase</u>	<u>Year</u>	<u>Feet of Pipe</u>
Phase 1a	2008	7,500'
Phase 2	2008	18,500'
Phase 1b	2009	7,300'
Phase 3	2009	12,800'
Phase 4	2013	1,000'
Phase 5	2015	16,400'

19
20
21
22
23
24

1 Phase 5 represents the portion of the East Medford reinforcement that is currently
2 under construction, and which is contested by Mr. Moore. This phase is expected to be
3 completed and in service by the end of 2015.

4 The following Table No. 2 illustrates the East Medford Reinforcement project gross
5 rate base additions approved for inclusion in revenue requirements in Avista’s general rate
6 case filings, since the beginning of the project.

7 **Table No. 2: East Medford Reinforcement Project in Regulatory Proceedings**

Year	Case	Gross Rate Base Addition	Order #	Excerpt from Order
2007	UG-181	Pro forma investment: \$5.0 million	08-185	<i>In the second stage, effective on or after November 1, 2008, Avista may increase its revenue requirement to include the capital costs of the East Medford Reinforcement Project. (at p. 3)</i>
2009	UG-186	2008 investment (in base year): \$4.7 million Pro forma investment: \$4.5 million	09-422	<i>Avista itemizes its forecasted system-wide general plant improvements and its Oregon gas distribution expenditures for 2009 and 2010. The Company states that it is adding significant new distribution facilities in Oregon, due to customer growth, reliability requirements, and capacity upgrades. Other issues driving the need for capital investment include an aging infrastructure, physical degradation, and municipal compliance issues. Avista also reports sharply higher costs for much of its materials. (at p. 4)</i>
2013	UG-246	\$0.7 million	14-015	
	Total	\$14.9 million		

17

18 **Q. Why was the final phase delayed from 2009, as originally presented to**
19 **the Commission in Docket No. UG-181?**

20 A. As I have previously mentioned, with the limited availability of capital
21 investment dollars, natural gas distribution projects must be prioritized in order to ensure
22 that necessary system investments are completed to maintain and improve system reliability.
23 Subsequent to Docket No. UG-181, the natural gas distribution project prioritization process
24 identified other capacity projects that rose to even higher priority levels than the completion

1 of the East Medford project. These other capacity projects included the Roseburg (Oregon)
2 reinforcement, Sutherlin (Oregon) reinforcement, Chase Rd (Post Falls, ID) reinforcement,
3 Clarkston (Idaho) reinforcement, and the Grants Pass (Oregon) reinforcement. The primary
4 factor that resulted in the prioritization of these projects ahead of the completion of the final
5 phase of the East Medford project was that the areas in which these projects occurred had a
6 higher risk of customer outages on peak days. Additionally, growth projections for the East
7 Medford area were updated (which demonstrated slower customer and load growth than
8 contemplated when the project was originally evaluated), which allowed this project to be
9 delayed until 2018 from a supply capacity perspective.

10 **Q. Why, then, was the project completion later accelerated from 2018 to**
11 **2015?**

12 A. As has been a theme of my testimony thus far, ensuring the safe and reliable
13 operation of Avista's natural gas distribution system requires a regular re-evaluation of
14 system risks and corresponding updates of project prioritization. In the case of the East
15 Medford reinforcement project, in late July of 2014, Avista's Gas Engineering department
16 identified that our SynerGEE[®] load study for the Medford distribution system had
17 incorrectly modeled the delivery of natural gas from the Williams Northwest Pipeline
18 (Williams NWP) transmission pipeline at Avista's Jones Creek gate station. The Jones
19 Creek gate station is near Grants Pass and serves as the second feed into the Medford high
20 pressure system. The SynerGEE[®] load study included delivery at 400 psig (pounds per
21 square inch gauge).

22 This pressure (400 psig) is the normal gate station operation on a best efforts basis
23 from Williams NWP; however, under our contract with Williams NWP, Williams NWP
24 only guarantees delivery at 300 psig. Because design heating degree day modeling

1 considers only firm supply and firm demand, the SynerGEE® model had to be updated to
2 reflect the contractually guaranteed supply pressure. This update resulted in the
3 identification that the last phase of the East Medford reinforcement was now priority #1 for
4 completion, due to the substantial difference in modeling conditions, which revealed many
5 more customers to be at risk of loss of service on a design heating degree day.

6 Exhibit No. 1502 includes an email, dated August 1, 2014, from the engineer in my
7 department who performs the SynerGEE® modeling, and which highlights the need for the
8 accelerated completion of the last phase of the East Medford reinforcement.

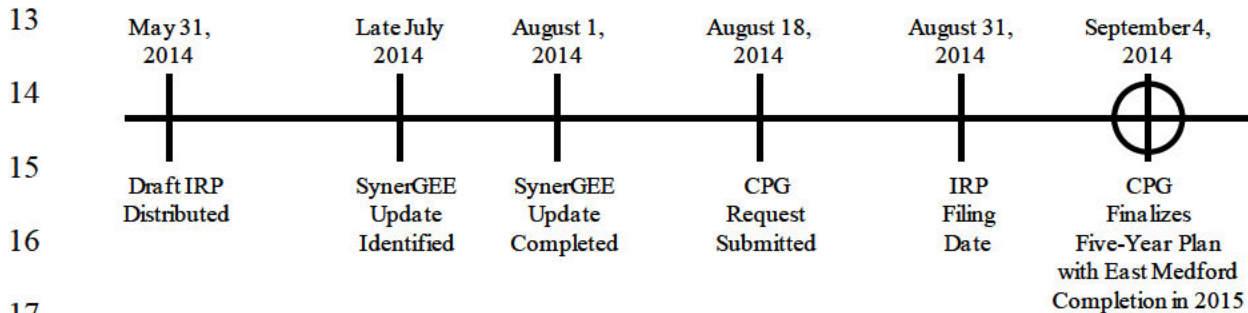
9 Additionally, design heating degree days are not hypothetical considerations. The
10 most recent design heating degree day in our Oregon service territory occurred on
11 December 8, 2013 in Klamath Falls, Oregon.

12 **Q. Would you please explain the timeline surrounding the change in**
13 **planned completion of the East Medford reinforcement, relative to the completion of**
14 **the IRP?**

15 A. Yes. It is important to recognize that the IRP represents facts and project
16 completion estimates at a given point in time, and those facts and circumstances can, and
17 likely will, change after that point. The following timeline demonstrates why the IRP did
18 not reflect the updated project timing associated with the East Medford reinforcement
19 project:

20

1	May 30, 2014	Final draft of IRP is provided to Technical Advisory
2		Committee for comment (this is effectively the cut-off date for
3		finalization of the IRP).
4	July 2014:	Avista's Gas Engineering department recognizes the need to
5		update the SynerGEE load study modeling parameters.
6	August 1, 2014	The results of the SynerGEE load study update are completed.
7	August 18, 2014	A request is made to the Capital Planning Group to complete
8		the East Medford reinforcement in 2015.
9	August 31, 2014	Filing date of the IRP.
10	September 4, 2014	Capital Planning Group finalizes its five-year capital plan,
11		including approval of the completion of the East Medford
12		reinforcement in 2015.



18 As this timeline demonstrates, all of the additional information that led to a re-
19 evaluation of the priority of the East Medford reinforcement as the highest priority
20 reinforcement, occurred subsequent to the completion and distribution of the final draft of
21 the IRP. Additionally, the approval of the updated timing of the East Medford
22 reinforcement did not occur until after the filing date of the IRP. Furthermore, the IRP
23 recognizes that facts can, and likely will change following the completion of the IRP.

24 **Q. What does Exhibit No. 1502 show in relation to the East Medford**
25 **project?**

26 A. Exhibit No. 1502 is the aforementioned email from Terrence Browne, a
27 senior gas planning engineer, to me, which communicates the results of the SynerGEE®

1 load study at the contractually-agreed pressure and the increase in the priority of the East
2 Medford Reinforcement project to priority number one for gas distribution. The subject line
3 is titled “HP priorities, E Medford H.P. reinforcement is priority one,” and the message was
4 sent with High Importance. These factors underscore the need for the prompt completion of
5 the East Medford reinforcement project.

6 **Q. What does Exhibit No. 1503 show in relation to the East Medford**
7 **project?**

8 A. Exhibit No. 1503 includes the results of the SynerGEE® load studies
9 illustrating the Medford, Ashland, and Grants Pass distribution area. On pages one and two,
10 respectively, these two images represent the “before” and “after” conditions of the
11 distribution system in the Medford, Ashland, Grants Pass area. These images demonstrate
12 the present need for the completion of this project and the substantial reduction in the
13 number of customers at risk of loss of service on a design heating degree day that will be
14 accomplished by the completion of this project.

15 The first image (page 1), titled “Medford, Ashland, Grants Pass 61 HDD,” illustrates
16 the distribution system dynamics on a design heating degree day, with delivery at 300 psig
17 at the Jones Creek gate station (this illustration represents the system without the completion
18 of the East Medford Reinforcement).

19 The second image (page 2), titled “Medford, Ashland, Grants Pass 61 HDD After
20 12” Reinforcement,” illustrates the same natural gas distribution system on a design heating
21 degree day with delivery at 300 psig at the Jones Creek gate station after the completion of
22 the East Medford High Pressure Reinforcement project.

23 Each of these SynerGEE® models includes color coded distribution pipeline, where
24 the color coding is indicative of the pressure in the pipe under design heating degree day

1 conditions. As shown in the legend included in each model, white colored pipelines indicate
2 pipeline pressures of 0 psig (in other words, pipelines without pressure, which are, therefore,
3 unable to serve load). Customers served by these pipelines are at risk of loss of pressure
4 under design heating degree day conditions.

5 The first image, showing the “before” scenario, illustrates that approximately 9,500
6 customers are included in areas at risk of an outage on a design heating degree day, without
7 the completion of the East Medford Reinforcement. Customers within the light-blue
8 outlines are at risk of loss of service.

9 The second image, showing the “after” scenario, illustrates that, with the completion
10 of the East Medford reinforcement, the number of customers at risk of an outage on a design
11 heating degree day falls to approximately 4,200 customers.

12 This represents a reduction in customers at risk of approximately 56 percent for the
13 Medford, Ashland, and Grants Pass distribution area. The remaining at risk customers will
14 be addressed with smaller scale capacity improvements to the intermediate pressure
15 distribution system over the next several years.⁸

16 **Q. Mr. Moore’s testimony at Exhibit STAFF/600, Moore/13⁹ suggests that**
17 **“Cold Weather Action Plans” are sufficient to address the risk associated with design**
18 **day capacity deficiencies. What is your response to this testimony?**

19 A. A Cold Weather Action Plan includes a decision tree intended to initiate
20 high-level manual intervention activities in particular areas at a pre-defined temperature.

⁸ The remediation plans for these remaining at risk customers involve smaller scale projects that reinforce the capacity of areas of intermediate pressure main pipe (as opposed to major pipeline reinforcements such as East Medford). These minor reinforcement projects fall in their own budget category and are prioritized against other projects across jurisdictions in the same manner as I have previously discussed.

⁹ Exhibit STAFF/600, Moore/13, lines 8-12: “Certain areas of the system have capacity deficiencies to meet demand at design day temperatures. East Medford is one of these areas. However, the presentation also discusses how the Company has historically addressed the deficiencies by producing a ‘Cold Weather Action Plan’.”

1 The plan is what I would call a back-up plan. The Company's priority, however, is to be
2 able to serve customers through its distribution system on peak days automatically (e.g.,
3 without the need for manual intervention or customer-use modifications). The Cold
4 Weather Action Plan is used in certain areas where reinforcement projects or system
5 upgrades have not yet been completed or are in progress. In order to continue to be able to
6 serve customers on peak days in these areas, the Company has developed certain activities
7 that it may undertake, as necessary. These particular activities include: (1) a review of low-
8 pressure areas to ensure identification of areas of concern; (2) identification of customers to
9 notify (either a request to shed load or a notification of possible curtailment of service); and
10 (3) assignment of field personnel to monitor pressures at gas meter sets and regulator
11 stations. The Cold Weather Action Plan specifies a particular temperature at which local
12 Operations Managers need to assess the general health of the gas system by completing
13 these three actions. After initiating the Cold Weather Action Plan and assessing the three
14 activities mentioned above, Operations Management has the responsibility to take further
15 actions to support the system as necessary. Depending on the assessment, these actions
16 could include the continuation of monitoring, requesting a media blast to request a
17 temporary thermostat turndown, taking extraordinary measures to manually improve the
18 capacity of the system by bypassing regulator stations or manually shedding load, and/or
19 preparing relight lists (to restore service to customers who lost gas service).

20 **Q. You refer to the bypassing of regulator stations or the manual shedding**
21 **of load as extraordinary measures. Why are these measures considered out of the**
22 **ordinary?**

23 A. A natural gas distribution system should be designed to deliver natural gas to
24 customers without the need for manual intervention. Said differently, reliable service is at

1 risk when manual intervention is required to support the delivery of gas within a distribution
2 pipeline system. Manual intervention requires Avista employees to work outdoors in
3 extremely cold situations, which results in increased operations and maintenance expense
4 (O&M expense) due to overtime, increased safety risks to our employees performing the
5 manual intervention (i.e., working outdoors in cold, snowy, and icy conditions). These
6 activities are “last-ditch” efforts to maintain service, but even these steps do not represent a
7 guarantee that service will be maintained.

8 **Q. In your opinion, as a Professional Engineer, is it appropriate to rely on**
9 **Cold Weather Action Plans for the reliable operation of a natural gas utility?**

10 A. No, I believe it is not appropriate to rely upon a Cold Weather Action Plan for
11 the safe and reliable operation of Avista’s natural gas distribution system. It is far better to
12 design a system that can be relied upon to serve customers without manual intervention. In
13 fact, I am not aware of any of Avista’s peer companies that would consider manual
14 intervention on the natural gas distribution system to be a normal and acceptable ongoing
15 operating activity.

16 **Q. Would you please summarize your reply to Staff’s comments regarding**
17 **the completion of the East Medford High Pressure Reinforcement project?**

18 A. Yes. As I have detailed in my testimony, the completion of this project in
19 2015 was necessary, based upon the updated SynerGEE® analysis, to address a current
20 distribution system design heating degree day deficiency in the Medford service area, which
21 put approximately 9,500 customers at risk of losing service. Further, the acceleration of this
22 project from 2018 to 2015 occurred within the governance framework of the CPG.

23 Avista believes that the decision to complete the East Medford Reinforcement in
24 2015 was prudently made in light of the new information, and the re-evaluation which came

1 about after the completion of the IRP. Avista's decision to complete the project in 2015, as
2 opposed to 2018, is consistent with the IRP when considered in the full context of the
3 distribution planning section of the IRP, and the changes in facts and circumstances that
4 occurred in the second half of 2014 surrounding the East Medford project.

5

6

IV. LADD CANYON GATE STATION UPGRADE

7

**Q. Please summarize your understanding of CUB's concerns related to the
8 Ladd Canyon project.**

9

A. In Exhibit CUB/100, McGovern-Jenks/16, lines 7-11, CUB states:

10

While this project might be needed in [the] future, the Company has failed to
11 demonstrate that the cost and timing of the project was prudently incurred to serve
12 core customers. The Company has failed to identify why the capacity of an
13 interruptible customer drove the timing of the investment. This entire project should
14 be removed from rate base.

14

15

**Q. Would you please provide a summary of what the Ladd Canyon Gate
16 Station upgrade entails?**

17

A. Yes. The Ladd Canyon Gate Station (previously known as the Union Gate
18 Station) project is a rebuild of the existing gate station #0817 (an interconnection between
19 Avista and Williams NW Pipeline). The rebuild of the gate station will increase the capacity
20 of the station and upgrade outdated facilities and equipment. The additional capacity is
21 needed to serve an existing capacity deficit at this site. Additionally, this project will allow
22 us to reinforce additional loads in the area when the last phase of the Pierce Road La Grande
23 HP Reinforcement is completed in 2017.

23

1 **Q. What benefits will the upgraded gate station provide to the customers served by**
2 **this gate station?**

3 A. As was the case in East Medford, the current capacity of this gate station is a
4 limiting factor on Avista's ability to serve customers reliably today in the Ladd
5 Canyon/Union area on a design heating degree day. As previously discussed, the most
6 recent heating degree design day occurred in our Oregon service territories as recently as
7 2013 in Klamath Falls. The ability to serve customers reliably on a design heating degree
8 day is a real concern, as the inability to provide service on a design heating degree day could
9 result in substantial hardship to customers.

10 **Q. What are the peak load requirements on this gate station?**

11 A. The peak load requirements on a design heating degree day are 40.9 mcfh
12 (thousand cubic feet per hour). However, the capacity of the Ladd Canyon gate station is
13 37.2 mcfh. Given these two factors, there is a clear capacity deficit, as the peak load
14 requirement on a design heating degree day exceeds the capacity of the legacy station.

15 Exhibit No. 1504 illustrates system pressures in the La Grande area on a design day.
16 There is a shortcoming in our SynerGEE® modeling that does not allow a limitation of
17 capacity at a gate station to be included in the analysis.¹⁰ Even though the yellow colors in
18 this exhibit indicate a pressure of 30 psig in the distribution system, effectively the majority
19 of the 750 customers in the town of Union are at risk of loss of service in the event of an
20 extended cold period approaching a design heating degree day, because of the physical
21 capacity shortfall of the old gate station.

¹⁰ This limitation is due to the fact that the SynerGEE® program models the distribution system downstream of the gate station. That is, the model assesses distribution pipeline capacity and assumes that the supply required to meet customer demand included in the model is available. Upon completion of a SynerGEE® model run, the Gas Engineering Department then compares the required supply to the capacity available through the respective city gate stations to determine whether a capacity constraint exists at the gate station(s).

1 **Q. CUB contends that curtailing interruptible customers is an alternative to**
2 **address capacity constraints at the Ladd Canyon Gate Station.¹¹ Is this correct?**

3 A. No, it is not correct to assume that interrupting customers would alleviate the
4 design day deficiencies. While it is true that loads can be interrupted or curtailed in the
5 event of supply or capacity shortfalls, the load studies performed to model the Company's
6 gas distribution system on design days consider only firm load. That is to say, Avista's
7 design heating degree day models presume that all interruptible customers have already been
8 interrupted, and only firm loads are being served. Therefore, the capacity deficits shown in
9 the previously discussed load studies could not be alleviated through interruption.

10 **Q. Will this gate station upgrade address other capacity and reliability**
11 **issues?**

12 A. Yes. Exhibit No. 1504 illustrates the capacity need in the Elgin area.
13 Currently, the Elgin area is served solely by the existing La Grande distribution network,
14 which only has one gate station. Under current design, at design day temperatures, by the
15 time the natural gas in the high pressure pipeline reaches Elgin, the pipeline pressure has
16 fallen from 240 psig at origination to less than 35 psig. However, the design criteria for the
17 distribution system in Elgin dictate that pipeline pressure should not drop below 100 psig
18 upon reaching Elgin.

19 **Q. Is completion of the Ladd Canyon project a “building block” that must**
20 **be completed prior to other necessary upgrades?**

21 A. Yes. The CPG has authorized work on the Pierce Road reinforcement to
22 begin in 2016 and to be completed in 2017. The Ladd Canyon Gate Station upgrade needs
23 to be completed by, or before, the planned completion of the Pierce Road reinforcement.

¹¹ CUB/100, McGovern-Jenks/13, lines 13-14.

1 However, given that there is an existing capacity deficit in service to Avista’s customers in
2 the Ladd Canyon/Union area, this project not only enables additional future benefits, but
3 also provides current tangible benefits in increased system capacity today to enable reliable
4 service during design heating degree day temperatures.

5 Page 2 of Exhibit No. 1504 illustrates the improvements to Avista’s system with the
6 completion of the Ladd Canyon Gate Station, and the Pierce Road reinforcement.

7 **Q. CUB asserts that a paving customer drove the urgent need for the station**
8 **upgrade.¹² What is Avista’s response to CUB’s concerns?**

9 A. Avista acknowledges that the paving customer’s demand resulted in the
10 temporary lease of a skid mounted gate station (from Williams NWP) that offered increased
11 capacity to serve the load associated with the paving customer, as well as all other customers
12 served by the legacy gate station. However, a condition of the agreement with Williams
13 NWP was that the use of this temporary gate station facility would be just that—temporary.
14 The initial stipulation was that we would determine a plan for a permanent solution within
15 90 days of the initial use of the temporary gate station. Given this agreement, we evaluated
16 the natural gas distribution system in the area, which included consideration of the existing
17 gate station capacity deficit, as well as the planned completion of the Pierce Road La Grande
18 H.P. Reinforcement. The conclusion was that the upgrade of the gate station was an
19 appropriate decision to improve the reliability of our service to our customers. The assertion
20 that the upgrade was solely for the benefit of the Paving Customer is simply not correct.

21
22

¹² Exhibit CUB/100, McGovern-Jenks/9, lines 20-21: “It is clear from the Company’s response to Staff data requests that the...(Paving Customer) is driving the urgent need for the station upgrade.”

1 **Q. Hypothetically, if the Paving Customer had never requested natural gas service**
2 **from Avista, when would this gate station upgrade have been completed?**

3 A. As previously discussed, this project would have needed to be completed
4 prior to the completion of the Pierce Road high pressure reinforcement project in 2017.
5 However, there was an existing need already and, therefore, this project needed to be
6 completed ahead of the Pierce Road project, in order to alleviate the existing gate station
7 capacity deficiency. Irrespective of the Paving Customer, there was a need for the
8 completion of this project, and the acceleration of the project by less than a year is not at all
9 unreasonable.

10 **Q. In addition to its concerns regarding the need for the project, does CUB**
11 **also express concern regarding the recovery of the investment in the Ladd Canyon gate**
12 **station?**

13 A. Yes. In its opening testimony, CUB states, “CUB did not feel, while the
14 Paving Customer was a customer, that the upgrades scheduled clearly for the benefit of the
15 Paving Customer should be funded by other customers.”¹³ As the Company understands
16 this statement, CUB seems to suggest that the Paving Customer should have borne the costs
17 of the gate station upgrade.

18 **Q. By way of further context, would you please discuss how the various**
19 **components of the natural gas distribution system are meant to serve load?**

20 A. A typical natural gas distribution system starts with a gate station. A gate
21 station is a connection point with an interstate gas transportation company and serves as a
22 receipt point for Avista to bring gas into the system for service to all customers. In other
23 words, the gate station is a system resource, as it enables all other system activities. It

¹³ Exhibit CUB/100, McGovern-Jenks/11, lines 12-14.

1 usually contains facilities to filter, meter, odorize, heat, reduce pressure, and remotely
2 monitor the gas entering Avista's distribution system. At Ladd Canyon (as with the majority
3 of gate stations) natural gas then flows through steel high pressure supply mains that
4 transport the gas from the gate station to the load centers. Supply mains vary in diameter
5 from 2" to 24", operate from 150 psig to 500 psig, and contain valves and other
6 appurtenances to control the flow of gas safely. At the load centers, district regulator
7 stations are installed to lower the operating pressure of the gas further to no greater than 60
8 psig. The gas is then distributed through a network of plastic intermediate pressure mains
9 and valves installed in the streets. New plastic gas mains are usually 2" - 6" in diameter.
10 Services are installed to transport the gas from the intermediate pressure mains to the meter
11 set at each individual home or business. The meter sets further reduce the pressure to the
12 appropriate level for service to the customer and measure the gas for billing purposes.

13 **Q. Are customers individually held responsible for payment for system**
14 **resources?**

15 A. No. Because gate stations serve as the connection point between the
16 interstate transmission pipelines and the greater distribution network, gate stations are
17 considered a "system resource" and are analogous to distribution substations in an electric
18 utility. Just as the incremental customer whose load causes the distribution load to grow
19 beyond the capacity of the substation is not charged for the cost of upgrading the substation
20 (given that the incremental substation capacity enables all customers served from the
21 substation to receive more reliable service), the incremental customer whose load causes the
22 distribution load to grow beyond the capacity of the gate station is also not charged the cost
23 of upgrading the gate station.

1 Furthermore, given that there was an existing design heating degree day deficiency
2 exclusive of consideration of the Paving Customer, the contention that this gate station
3 upgrade is being completed for the sole benefit of the Paving Customer is incorrect.

4 **Q. CUB raises concern about the prudence of the cost associated with the**
5 **Ladd Canyon Gate Station upgrade. Would you please explain your understanding of**
6 **CUB’s concern?**

7 A. CUB questions the prudence of the costs associated with the Ladd Canyon
8 Gate, stating, “In addition to the assignment of cost of the Ladd Canyon project, CUB takes
9 issue with the prudence of the proposed project at the current cost.”¹⁴

10 **Q. Does CUB correctly represent the cost estimate for the Ladd Canyon**
11 **Gate Station Upgrade project?**

12 A. No. CUB contends that the contingency line item within the project cost
13 estimate is distinct from the initial project cost estimate.¹⁵ In fact, the contingency line item
14 was included in the original cost determination for the project, which was submitted to and
15 approved by the CPG. The original project cost was determined to be approximately \$1.45
16 million.

17 **Q. In your opinion, as a Professional Engineer, is the inclusion of a**
18 **contingency amount common and customary in project cost estimation?**

19 A. Yes, the inclusion of a contingency amount is standard industry practice and
20 is included to recognize that there are likely to be additional costs, but which are not
21 specifically assignable to a line item at the outset of the project.

¹⁴ Exhibit CUB/100, McGovern-Jenks/15, lines 9-10.

¹⁵ Exhibit CUB/100, McGovern-Jenks/15, lines 11-13.

1 **Q. In Exhibit CUB/100, CUB contends that the subsequent increase in cost**
2 **was not explained.¹⁶ Do you agree?**

3 A. No. As provided directly to CUB in Attachment D to Avista’s response to
4 CUB data request #026, and included herein as Avista/Exhibit 1505, the Company provided
5 notes from the CPG’s August 2015 meeting, during which the group approved the
6 incremental addition of \$185,000 to the project’s budget, because of permitting issues.

7 **Q. Would you please elaborate on these permitting issues?**

8 A. Yes. Avista’s original project estimate of \$1.45 million was based upon
9 project quotes from Williams NWP. The funding request was submitted to the CPG in May
10 2014. In August of 2014, Avista and Williams NWP learned that both parties would be
11 required to pursue additional permitting from the Oregon State Historic Preservation Office
12 (SHPO) because the properties on which this gate station is located are within an area of
13 cultural sensitivity. These SHPO permits resulted in additional expenses of approximately
14 \$170,000 related to the third party consultants and filing fees needed to complete them.

15 Additionally, in February 2015, the SHPO permitting process was completed and
16 Williams NWP learned that it was required by FERC to obtain a FERC 7C permit. The
17 additional cost to Avista associated with acquiring this permit was approximately \$180,000.

18 Beyond these permitting issues, increased costs of approximately \$40,000 were the
19 result of additional engineering time and resources required related to the permitting
20 discussed earlier. The previously discussed contingency was able to absorb a portion of this

¹⁶ Exhibit CUB/100, McGovern-Jenks/15, line 17 through McGovern-Jenks/16, line 2: “Additionally, the Company states, without further documentation, that ‘subsequent to the initial estimate, the project manager requested, and received, approximately \$200,000 more from the Capital Planning Group’, raising the cost to \$1.65 million. There is no explanation why the original 25% contingency could not absorb this higher cost. If in fact, the project is deemed prudent at \$1.4 million, the project is not automatically prudent at a higher cost.”

1 additional expense, and the expected cost to complete this project remains at \$1.65 million,
2 and this project will be completed and in service before the end of 2015.

3 **Q. Do you believe that the completion of the Ladd Canyon Gate Station**
4 **upgrade in 2015 represents a prudent investment by the Company?**

5 A. Yes. Given the factors discussed above, the current upgrade of the gate
6 station is a prudent investment, as it addresses both a current deficiency and is a building
7 block for a later project that will be completed within approximately 24 months.
8 Additionally, the costs were prudently incurred, and the increase in project costs was
9 primarily related to permitting issues beyond the control of Avista.

10

11

V. CONCLUSION

12

Q. Please provide a summary of your Reply testimony.

13

A. Avista's natural gas operations are subject to dynamic and ever-changing
14 environments. In recognition of this, Avista regularly re-evaluates its capital investment
15 priorities to ensure capital investments are occurring to address shifting priorities. The
16 decision to complete both the East Medford and Ladd Canyon projects in 2015 was based
17 upon this regular re-evaluation and the existence of a need for investment to address
18 deficient system capacity. The completion of these two projects is appropriate and prudent,
19 based upon the evidence I have detailed herein.

20

Q. Does this conclude your Reply testimony?

21

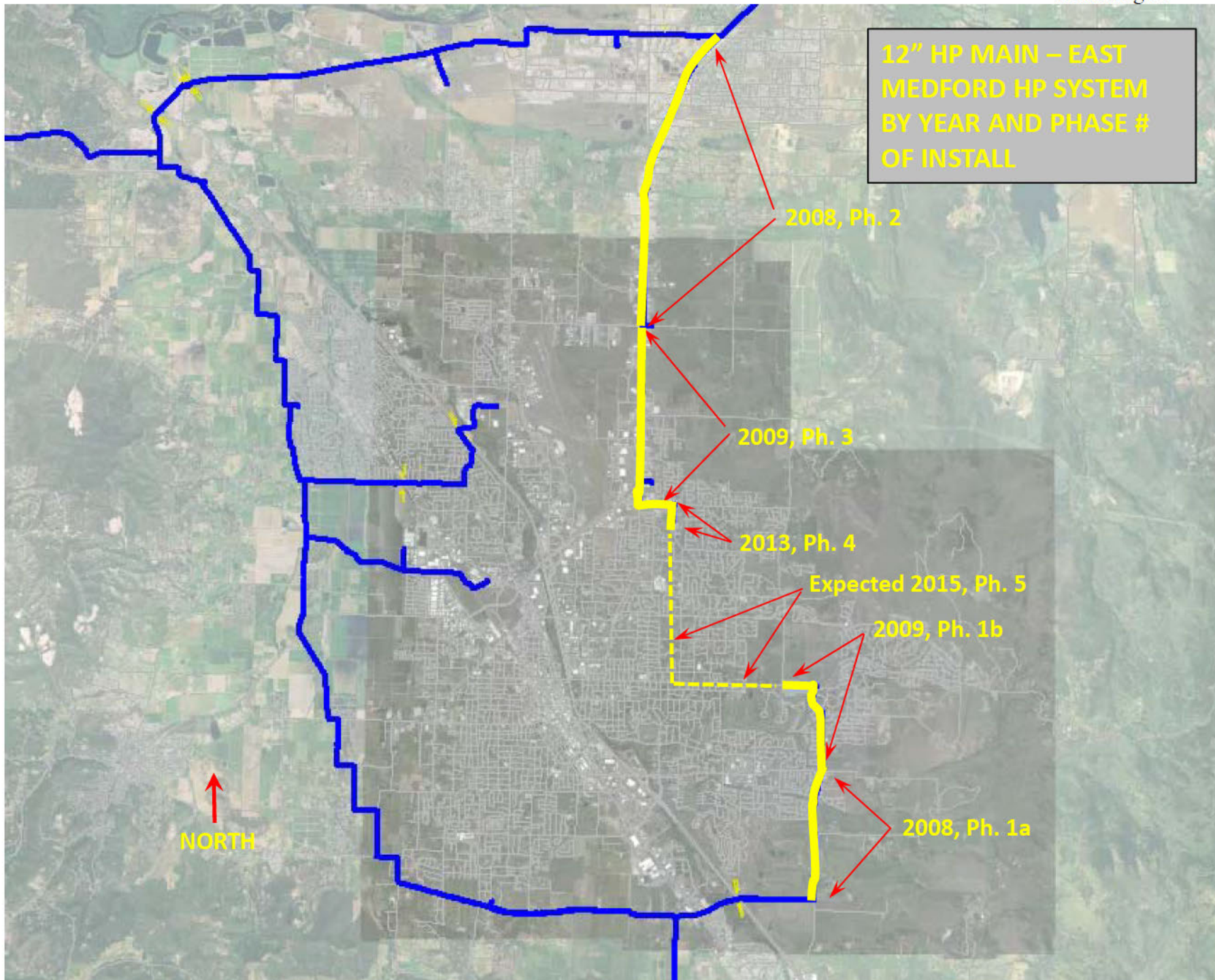
A. Yes it does.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

JEFFREY A. WEBB
Exhibit No. 1501

East Medford Reinforcement Project Phases



BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

JEFFREY A. WEBB
Exhibit No. 1502

East Medford Reinforcement Priority Upgrade

CONFIDENTIAL

East Medford Reinforcement Priority Upgrade

Pages 1 through 3

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

JEFFREY A. WEBB
Exhibit No. 1503

Medford Area SynerGEE® Studies

CONFIDENTIAL

Medford Area SynerGEE® Studies

Pages 1 through 2

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

JEFFREY A. WEBB
Exhibit No. 1504

La Grande Area SynerGEE® Studies

CONFIDENTIAL

La Grande Area SynerGEE® Studies

Pages 1 through 2

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

JEFFREY A. WEBB
Exhibit No. 1505

CUB DR 026

**AVISTA CORP.
RESPONSE TO REQUEST FOR INFORMATION**

JURISDICTION: Oregon
CASE NO.: UG 288
REQUESTER: CUB - McGovern
TYPE: Data Request
REQUEST NO.: CUB - 026
DATE PREPARED: 10/07/2015
WITNESS: Karen Schuh
RESPONDER: Karen Schuh
DEPT: State & Federal Regulation
TELEPHONE: (509) 495-2293
EMAIL: karen.schuh@avistacorp.com

REQUEST:

The following questions refer to the Company's response to CUB DR 3:

- a) Please provide copies of all materials that were reviewed by the Capital Planning Group related to Ladd Canyon.
- b) Please provide copies with signatures showing who approved of the project, of the original approval of the Ladd Canyon upgrade and the supplemental approval of the project.

RESPONSE:

- a. Please see the table below describing the sequence of events in the Ladd Canyon Business Case:

Description	Date	Amount	CPG Documentation
Original Business Case	Jun-14	1,453,000	CUB_DR_026 Attachment A
Release of Funds	Dec-14	(615,000)	CUB_DR_026 Attachment B
Addition of Funds	Jan-15	615,000	CUB_DR_026 Attachment C
Addition of Funds (permitting)	Aug-15	185,000	CUB_DR_026 Attachment D & E
Total Project Cost		1,638,000	

The Ladd Canyon business case was developed in June 2014 and was originally budgeted to be completed in 2014 with a total spend of \$1,453,000. Please see this original business case approved by the Capital Planning Group (CPG) in CUB_DR_026 Attachment A.

In December of 2014 there was a release of funds through the CPG for pipe that was purchased through another business case, this is shown in CUB_DR_026 Attachment B, an excerpt from the 2014 CPG recap.

In January 2015, there was an addition of funds to transfer this pipe back to this project of \$615,000. In August 2015, it was determined that, primarily due to permitting, additional

funds would be needed. The review sheet requesting these additional funds, which was submitted to and approved by the CPG is included in CUB_DR_026 Attachment C. CUB_DR_026 Attachment D is an excerpt from the CPG's August minutes, which reflects the approval of the August funding request and reflects the previous approval of the January funding increase.

- b. Please see CUB_DR_026 Attachment A for the original approval of the project in 2014. For any additional funds approved or released, the CPG approves these amounts during the CPG meetings and do not require any additional signatures or adjustments to the original business case.

Investment Name:	Ladd Canyon Stn Upgrd	Assessments:		
Requested Amount	\$ 1,453,000	Financial:	7.00%	
Duration/Timeframe	1 Year Project	Strategic:	Reliability & Capacity	
Dept., Area:	NGAS	Business Risk:	Business Risk Reduction >5 and <= 10	
Owner:	Mike Faulkenberry	Project Risk:	High certainty around cost, schedule and resources	
Sponsor:	Don Kopczynski	Assessment Score:	131	
Category:	Mandatory	Annual Cost Summary - Increase/(Decrease)		
Mandate/Reg. Reference:	Service Agreement With Williams Pipeline	Performance	Capital Cost	
Recommend Project Description:		O&M Cost	Other Costs	
It is proposed to upgrade the existing Ladd Canyon/Union Gate Stn #0817 (not #817) near LaGrande, OR. The existing gate station has reached it's physical capacity due to the growth in the area and needs to be upgraded to support the gas load increases. The new Gate Station #7080 will include separate regulation facilities to modify the existing system and maintain a 150 PSIG MAOP (STA #7081) for the Union supply main and a 400 PSIG MAOP (STA #7082) for the Airport main extension along Pierce Rd. The new facility will require heater, odorizer, regulation and relief facilities for the Avista site. New telemetry facilities will be installed at this location as well. This project will accommodate the long term benefit of adding capacity to the Elgin area once the 3 miles of HP is extended from Union to the Elgin HP line out of La Grande. This CPR has been updated to reflect complete construction cost estimates and includes fees required for the Williams Northwest Pipe portion of the facility that Avista will be required to reimburse.		Business Risk Score		
The Facilities Agreement with Williams states that an agreement to complete the permanent upgrades needs to be in place within 90 days. 90 days was up on Nov. 9th, 2013. Williams graciously extended the timeline to allow Avista to conduct a thorough system analysis to ensure the metering and regulating facilities will be sized appropriately.		Completion of this project eliminate the short term temporary facilities at this site.	\$ 1,453,000	\$ -

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	Short Term Temporary facilities would remain in service. This would be a violation of our agreement with Williams Pipeline NW. This would degrade a positive working relationship Avista currently has with Williams.	n/a	\$ -	\$ -	\$ -	8
Alternative 1: Rebuild Gate Stn	As described above	describe any incremental changes in operations	\$ 1,453,000	\$ -	\$ -	1
Alternative 2: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name : Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,453,000	\$ -	\$ -	\$ -
2015	\$ -	\$ -	\$ -	\$ -
2016	\$ -	\$ -	\$ -	\$ -
2017+	\$ -	\$ -	\$ -	\$ -
Total	\$ 1,453,000	\$ -	\$ -	\$ -

Associated Ers (list all applicable):			
3303			

ER	2013	2014	2015	2016	2017+	Total	Mandate Excerpt (if applicable):
3303	\$ -	\$ 1,453,000	\$ -	\$ -	\$ -	\$ 1,453,000	Obligation to serve and the existing Facilities Agreement with Williams Pipeline states a permanent fix needs be
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 1,453,000	\$ -	\$ -	\$ -	\$ 1,453,000	Additional Justifications: Avista has known of this project since the Fall of 2013. Capital funds have not been officially requested because the cost of the project was unknown until just recently. Williams Pipeline has only recently provided Avista with a construction estimate.



To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

Capital Planning Group
Actual results as of December 31, 2014

December Release of funds

jww0439:

- * 0.278MM Clark Fork
- * 0.1MM Gas Cathodic Protection
- * 0.18MM Gas Chase Rd
- * 0.24MM Gas Isolated Steel
- * **0.6MM Gas Ladd Canyon**
- * 0.01MM Gas Oakland Bridge
- * 0.025MM Gas Reg Station
- * 0.67MM Cabinet Unit 1
- * 1MM Little Falls
- * 1.3MM Nine Mile
- * 1MM Post Falls S Channel
- * 0.4MM TCOP
- * 0.04MM Elec Road Moves
- * 0.15MM Meter Minor Blanket
- * 0.07MM Primary URD
- * 0.25MM Segment Reconductor
- * 0.12MM Tx Asset Mgmt
- * 0.3MM Tx NERC High Priority
- * 0.77MM Tx Reconductor/Rebuild

Investment Name:	Ladd Canyon Stn Upgrd		Original Assessments:				
Requested Amount	\$1,453,000		Financial:	7.00%			
Duration/Timeframe	1 Year Project		Strategic:	Reliability & Capacity			
Dept., Area:	NGAS		Business Risk:	Business Risk Reduction >5 and <= 10			
Owner:	Mike Faulkenberry		Project/Project Risk:	High certainty around cost, schedule and resources			
Sponsor:	Don Kopczynski		Assessment Score: 131				
Category:	Mandatory		Project status				
Mandate/Reg. Reference	Service Agreement With Williams Pipeline		Overall	Scope	Expected Spend at Year's End	Labor Resource Shortfall	Schedule (+ ahead/- behind)
Project Update Description:			On Track	Change - No Impact	\$615,000	Change - No Impact	-1.00%
<p>It is proposed to upgrade the existing Ladd Canyon/Union Gate Stn #0817 (not #817) near LaGrande, OR. The existing gate station has reached it's physical capacity due to the growth in the area and needs to be upgraded to support the gas load increases. The new Gate Station #7080 will include separate regulation facilities to modify the existing system and maintain a 150 PSIG MAOP (STA #7081) for the Union supply main and a 400 PSIG MAOP (STA #7082) for the Airport main extension along Pierce Rd. The new facility will require heater, odorizer, regulation and relief facilities for the Avista site. New telemetry facilities will be installed at this location as well. This project will accomodate the long term benefit of adding capacity to the Elgin area once the 3 miles of HP is extended from Union to the Elgin HP line out of La Grande. This CPR has been updated to reflect complete construction cost estimates and includes fees required for the Williams Northwest Pipe portion of the facility that Avista will be required to reimburse.</p> <p>The Facilities Agreement with Williams states that an agreement to complete the permanent upgrades needs to be in place within 90 days. 90 days was up on Nov. 9th, 2013. Williams graciously extended the timeline to allow Avista to conduct a thorough system analysis to ensure the metering and regulating facilities will be sized appropriately.</p>							
			CPI =		1.51	SPI = 0.99	

Requested Action:	Additional Funds Requested	Amount (\$):	\$185,000
Year of Change		Date Required	
Consequence:	Additional costs due primarily to permitting.	Offset:	Heavy spend expected in Q3 & Q4.

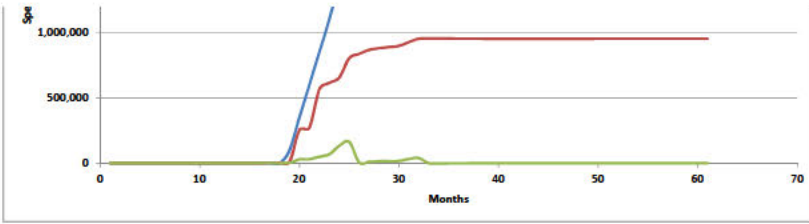
Status:	Description - Describe any status in Yellow or Red above and Mitigation Plans to address		
Overall	Since Ladd Canyon (ER 3303) got delayed into 2015, I bought pipe (\$615k) for E Mfr 12" HP Loop (ER 3203) in 2014. The intent will be to push that \$615k from E Mfr to Ladd Canyon in 2015. Both Business Cases reflect this.		
Scope			
Expected Spend at Year's End			
Labor Resource Shortfall			
Schedule			

Revised Schedule:



Construction Cash Flows (CWIP)

	Approved	Update Revised by Year	Variance
2013	\$ -		\$ -
2014	\$ 838,000		\$ 838,000
2015	\$ 615,000		\$ 615,000
2016	\$ -		\$ -
2017+	\$ -		\$ -
Total	\$ 1,453,000	\$ -	\$ 1,453,000



Prepared signature _____

Reviewed signature _____
(if necessary) Director/Manager

Other Party Review signature _____
(if necessary) Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the project

To be completed by Capital Planning Group		Approvals	
Rationale for decision		Date	Approval Amount (\$) (+ amount for added budget/- amount for reduced budget)

Capital Planning Group
 Actual results as of July 31, 2015

Status	Area	Business Case/Project	Amount	Requester	Other Information	Score	Appr Y/N	Date	Offset Amount	Offsetting Business Case	Req'd Date
		Gas Ladd Canyon Gate								Gas East Medford HP	
Revised	Gas	Station	615,000	Jeff Webb	Timing swap with E Medford, net \$0.	131	Y	1/21/2015	(615,000)	Main Reinforcement Project	
Revised	Gas	Gas Ladd Canyon Gate	185,000	Jeff Webb	Additional costs due to permitting	131	Y	8/19/2015			

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF DON M. FALKNER
REPRESENTING AVISTA CORPORATION

Accumulated Deferred Federal Income Taxes

I. INTRODUCTION

1
2 **Q. Please state your name, business address and present position with Avista**
3 **Corporation?**

4 A. My name is Don M. Falkner. I am employed by Avista Corp., doing business
5 as Avista Utilities (“Avista” or “Company”), and my current position is Assistant Treasurer
6 and Tax Director. My business address is 1411 East Mission Avenue, Spokane, Washington.

7 **Q. Please briefly describe your educational background and professional**
8 **experience.**

9 A. I am a 1981 graduate of Washington State University with a Bachelor of Arts
10 Degree in Business Administration, majoring in Accounting. That same year, I sat for and
11 passed the Certified Public Accountant exam. I joined the Company in June of 1981. I have
12 served in various positions within the sections of the Finance Department, including Power
13 Supply Accounting, Subsidiary Accounting, Budget and Forecasting, Plant Accounting,
14 Corporate Accounting, and the State and Federal Regulation Department. For the past eight
15 years, I have served as the Assistant Treasurer and Tax Director for the Company.

16 **Q. What is the scope of your reply testimony in this proceeding?**

17 A. My reply testimony responds to the Northwest Industrial Gas Users and the
18 Citizens’ Utility Board (“NWIGU-CUB”) witness Michael P. Gorman on the proposed
19 adjustment to accumulated deferred federal income tax (ADFIT).

20 **Q. What is NWIGU-CUB witness Mr. Gorman proposing in his testimony**
21 **regarding ADFIT?**

22 A. Beginning at Page 66, line 17 of Mr. Gorman’s testimony (NWIGU-
23 CUB/100), Mr. Gorman proposes a \$7.5 million reduction to rate base for additional ADFIT,
24 which reduces the revenue requirement by \$0.8 million. The additional ADFIT being

1 proposed is for the recognition of bonus depreciation¹ that may be available to Avista for
2 2015 and 2016² plant additions. This additional tax deduction was computed using 50%
3 bonus depreciation on the 2015 and 2016 plant additions proposed by Avista.

4 **Q. In the Company's originally-filed case, was bonus depreciation included**
5 **for 2015 capital additions?**

6 A. No. Bonus depreciation was not included for 2015 capital additions. Bonus
7 depreciation had previously been enacted as a temporary measure to help stimulate the U.S.
8 economy. It was originally scheduled to expire on December 31, 2008. However, due
9 primarily to concerns about the economy, bonus depreciation in one form or another has been
10 extended by Congress, by enacting annual "tax extender" bills to continue it and certain other
11 popular tax breaks each year. Congress failed to pass a tax extender bill in 2013 and 50%
12 bonus depreciation expired at the end of 2013. After that, Congress passed a tax extender
13 package on December 16, 2014 which included a retroactive extension of 50% bonus
14 depreciation through only the end of 2014. With the credit expired again, the Company has
15 not incorporated any bonus depreciation for the 2015 capital additions in this case, or for the
16 2015 calendar year quarterly estimated tax payments to the IRS.

17 **Q. Please explain the tax payments to the IRS in 2015 as they relate to the**
18 **2015 bonus depreciation issue.**

¹ Bonus depreciation is a tax deduction a company is allowed to take on its federal tax return for capital investment the company made which reduces taxable income and therefore, reduces the amount of taxes a company pays to the IRS. Bonus depreciation acts similar to accelerated tax depreciation. Accelerated depreciation means that a company will record more depreciation in the early years of an asset's life and less depreciation in the later years, relative to book or regulatory depreciation. While this approach results in a timing difference, cumulative tax and book depreciation generally are equal over the course of an asset's life. A deferred tax liability or Accumulated Deferred Federal Income Tax ("ADFIT") is the amount of taxes currently saved by a company that will be repaid in the future due to a temporary timing difference between the "book" treatment of an asset on a company's financial records and the tax treatment based on Internal Revenue Code rules. ADFIT is a benefit that is passed back to customers by lowering rate base.

² The Company included approximately \$2 million of capital investment for new customer hookups in calendar year 2016 on an AMA basis. These 2016 additions were included because the additional revenue associated with these new customers in 2016 is also reflected in the proposed revenue requirement.

1 A. Avista is required to estimate its 2015 Federal tax expense and make quarterly
2 deposits of the estimated amount of tax expense so that by December 15, 2015, the entire
3 2015 estimated tax liability has been paid to the IRS. Avista estimates the amount of the tax
4 liability using forecasted taxable income for the year. Taxable income is forecasted by using
5 only known, approved tax deductions. Therefore, Avista's 2015 estimated tax payments that
6 have been paid to the IRS in 2015 do not include a bonus depreciation deduction for 2015.

7 **Q. Since the credit has expired and is no longer available for the Company to**
8 **use in 2015, what basis does Mr. Gorman use to include it?**

9 A. On July 21, 2015 the Senate Finance Committee voted to extend more than 50
10 expired tax provisions, including the 50% bonus depreciation. While Congress and the
11 President have until December 31, 2015 to approve, Mr. Gorman is speculating that the bonus
12 depreciation tax provision will be approved and available for Avista to use on 2015 capital
13 additions.

14 **Q. If we were to accept the assumption that bonus depreciation will be**
15 **approved for 2015³, should Avista accept Mr. Gorman's adjustment to ADFIT?**

16 A. No. It is not appropriate to reduce rate base because Avista has not had the
17 benefit of lower tax payments to the IRS during 2015. As explained earlier, Avista is required
18 to estimate its 2015 Federal tax expense and make quarterly deposits to the IRS during 2015.
19 Avista has already made three of its four tax deposits. The final quarterly deposit will be
20 made by December 15, 2015. If Congress and the President approve the bonus depreciation
21 deduction in late December 2015, Avista will have made all of its estimated tax payments

³ Bonus depreciation is also a deduction from taxable income on the Oregon state income tax (SIT) return. The Company agreed, for settlement purposes, to remove the state income taxes it had pro formed in this case. While the Company has agreed to factor in bonus depreciation for 2015 (even though Congress has not approved it) for the SIT calculation, other factors were also considered, like the amount of tax credits that will be available to offset SIT expense in the rate year.

1 without including the bonus depreciation. Because Avista has already made these payments,
2 it is already incurring a carrying cost on these payments.

3 Going forward, if bonus depreciation is ultimately approved for 2015, the Company
4 can make a refund request from the IRS in 2016, but the Company would not receive any
5 refund until mid-March 2016, at the earliest. The Company has not had the benefit of lower
6 tax payments to the IRS during 2015 nor will it before rates are in effect in this case. The
7 Company did not pro form 2016 capital additions (except the capital to hookup new
8 customers) in this case because they would not be in service before rates are in effect. And
9 Commission Staff and other parties have opposed rate base additions after the date new retail
10 rates go into effect. Therefore, it would be inconsistent and not appropriate to reduce rate
11 base for 2015 bonus depreciation, because the benefit would be received, if it is received at
12 all, after rates are in effect from this case.

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

14 A. Yes it does.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF JAMES M. KENSOK
REPRESENTING AVISTA CORPORATION

Project Compass

1 **I. INTRODUCTION**

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

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

6 **Q. Please provide information pertaining to your educational
7 background and professional experience?**

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

22 **Q. Please summarize your testimony?**

1 A. My testimony will demonstrate that, contrary to the claims of Staff witness
2 Ms. Johnson, the overall timeline and costs required to complete Project Compass were
3 reasonable, and the Company made prudent decisions in managing the Project, including
4 the performance of its many contractors. In the end, the Company successfully and cost-
5 effectively delivered these new systems to our customers, and should receive full recovery
6 of the costs associated with the Project.

7 **Q. Would you please briefly summarize your role, responsibilities, and**
8 **qualifications, as they relate to the development and implementation of Project**
9 **Compass?**

10 A. Yes. As described in my qualifications, for over 32 years I have worked
11 in many capacities in the field of information technology, and have led complex projects
12 and organizations in both utility and non-utility enterprises. For Project Compass, I served
13 as a member of the Executive Steering Committee for the Project, which was established
14 to ensure appropriate executive oversight and direct communications between the Project
15 co-sponsors and Avista's senior leadership. As a Committee, we were regularly updated
16 by the Compass leadership team, during which time we delved into areas of identified
17 Project risk, asked questions, at times made special assignments for report back, made
18 executive-level decisions as appropriate, and took additional actions such as traveling to
19 the overseas operations of our contract companies for onsite evaluations, and face-to-face
20 problem solving, and issue resolution. Overall, we ensured there was direct accountability
21 for performance of the Project, ensuring we had the information and understanding
22 required to make effective and timely decisions. I also represented the Executive Steering

1 Committee in presentations and discussions with the Company's Board of Directors,
2 related to Project Compass.

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

4 A. Yes. I am sponsoring Exhibit Nos. 1701 - 1703. Exhibit No. 1701 is
5 rebuttal testimony filed by Avista in response to testimony filed by David Gomez, a
6 member of the Staff of the Washington Utilities and Transportation Commission
7 (WUTC), in Avista's pending electric and natural gas rate case in Washington. Ms.
8 Johnson has introduced Mr. Gomez's testimony in this Docket as an exhibit to her
9 testimony. Exhibit No. 1702 is a report titled "Overview of Avista's Project Compass,"
10 dated August 2013¹. An additional report titled "Revised Timeline and Budget Forecast –
11 Avista's Project Compass," dated June 2014, is provided as Exhibit No. 1703.

12 **Q. What is Staff witness Ms. Johnson proposing in her testimony**
13 **regarding Avista's requested recovery of costs associated with the recent**
14 **implementation of its customer information and work and asset management**
15 **systems (Project Compass)?**

16 A. Ms. Johnson alleges that \$27 million (system) of the cost required to
17 successfully implement Project Compass was excessive², and the Company should not be
18 allowed to recover half that amount (\$13.5 million) from its customers (Oregon allocated
19 share \$1.175 million).

20 **Q. What evidence does witness Ms. Johnson provide to support this**
21 **recommendation?**

¹ Due to their voluminous nature, the attachments to this report have not been included in this exhibit.

² Staff/300, Johnson/ 3, lines 15-17.

1 A. Ms. Johnson introduces the testimony of WUTC Staff member David
2 Gomez, filed in connection with Avista’s pending electric and natural gas rate case in
3 Washington (Docket Nos. UE-150204 and UG-150205).

4 **Q. What did the WUTC Staff argue in its testimony?**

5 A. Ms. Johnson summarizes Mr. Gomez’ testimony as follows:

6 “The testimony of WUTC witness Gomez sets forth extensive discussion
7 regarding one of the contractor’s, EP2M/Five Point/Ernst & Young, performance
8 of its obligations under the contract (See Staff/304, pages 52 and 53 showing
9 Docket UE-150204/UG-150205, Testimony of David C. Gomez, pages 52-53).
10 Staff examined Mr. Gomez’s concerns that Avista failed “to recognize, evaluate,
11 identify, document and mitigate the possible risks to Project Compass resulting
12 from the apparent conflict of interest arising from Five Point’s acquisition of
13 EP2M less than six months after award of a contract” and “the Company’s lack of
14 documentation of the prudence of its decision, above alternatives, to enter into an
15 Extension Agreement with Ernst & Young for the added resources needed to
16 complete Project Compass.” After evaluating and considering the WUTC
17 witness’s testimony, Staff concluded that Avista had contributed to the cost
18 overruns of Project Compass and should be held partially responsible. (emphasis
19 added) (Johnson Exhibit 300, 3:20-4:10)
20

21 WUTC Staff witness Mr. Gomez argued that \$17.9 million (system) of the Project
22 Compass implementation costs were not prudently incurred, primarily due to an apparent
23 conflict of interest, and the performance of one of the 34 contract companies who
24 supported the Project.

25 **Q. In the quote of Ms. Johnson’s testimony above, you underscored the**
26 **words “extensive discussion.” Did Ms. Johnson identify any evidence presented by**
27 **Mr. Gomez to support his allegations related to a conflict of interest?**

28 A. No. In fact, the Dockets in Avista’s pending case in Washington are now
29 closed, and Mr. Gomez was unable to produce a single piece of evidence to support his
30 allegations related to a conflict of interest. His “extensive discussion” was reduced to

1 nothing more than speculation. And the fact that Ms. Johnson herself has not identified
2 any such evidence, renders her testimony as nothing more than “hearsay.”

3 **Q. Did Staff witness Ms. Johnson include any of the exhibits attached to**
4 **the testimony of Mr. Gomez in this Docket?**

5 A. No, she did not. And this is not surprising, in that none of the exhibits
6 presented by Mr. Gomez in the Washington dockets included any evidence to support his
7 alleged conflict of interest.

8 **Q. Did Ms. Johnson provide any other information or independent**
9 **analysis, other than an excerpt of the testimony of WUTC Staff witness Mr. Gomez,**
10 **as the basis for her proposed disallowance?**

11 A. No, she did not.

12 **Q. In the Washington dockets, did any other party recommend a**
13 **disallowance related to Project Compass?**

14 A. No. No other party recommended a disallowance.

15 **Q. Has Project Compass been reviewed in the State of Idaho, and if so**
16 **what was the outcome?**

17 A. On October 16, 2015 Avista filed a settlement agreement with the Idaho
18 Public Utilities Commission (IPUC), supported by all parties, that if approved by the
19 IPUC would resolve all issues in the case. The settlement agreement reflects full recovery
20 of Avista’s investment in Project Compass, including the bonuses paid to employees
21 related to the successful completion of the Project.

1 **Q. With regard to the increased costs to complete Project Compass, did**
2 **Avista provide, in the Washington dockets, an explanation of the reasons for the**
3 **increased costs, and was this information also provided to Ms. Johnson?**

4 A. Yes. Avista provided a thorough explanation of the increased costs related
5 to Project Compass, in both its direct pre-filed testimony in the Washington dockets, as
6 well as in rebuttal testimony in response to the testimony of Mr. Gomez. Avista's rebuttal
7 testimony was provided to Ms. Johnson on September 8, 2015, and a report summarizing
8 the increased costs of the Project and the delay in the "Go Live" date of the Project,
9 submitted in Avista's prefiled testimony in Washington, was provided to OPUC Staff in
10 September of 2014.

11 **Q. Has the OPUC Staff, including Ms. Johnson, previously represented**
12 **that they have reviewed the increased costs associated with Project Compass, as well**
13 **as the later "Go Live" date of February 2015, and found that the Project was**
14 **prudent and should be recovered in retail rates?**

15 A. Yes. Avista provided extensive explanation and documentation of Project
16 Compass in its last two general rate cases: Docket Nos. UG-246 and UG-284. In Avista's
17 rate case filing on August 15, 2013, in Docket No. UG-246, Avista witness Mr. Larry La
18 Bolle sponsored testimony and exhibits explaining and supporting Project Compass.

19 In Docket No. UG-284, filed on September 2, 2014, Avista witness Mr. Jim
20 Kensok sponsored testimony and exhibits with updated information on the Project,
21 including an increase in the expected cost, and a delay in the Go-Live date of the Project
22 to the first quarter of 2015. An excerpt of that testimony is as follows:³

³ Docket No. UG-284, Avista/500, Kensok/7, line 23 through Kensok/9, line 2.

1 **Q. Under Avista’s initial Project Plan, completed in 2012, when did it expect to place**
2 **these new Systems into service?**

3
4 A. The process of placing new Systems into service is known as the “Go-Live.” A portion
5 of the Maximo asset management application was placed into service in the fall of 2013, and
6 Avista was initially targeting the third quarter of 2014 for the Go Live of the remainder of the
7 Maximo application and the Customer Care & Billing System.

8 **Q. Has Avista revised the Go Live to a later effective time frame?**

9
10 A. Yes, it has. The Company is now planning for a Go Live of the new System in the first
11 quarter of 2015.

12 **Q. Has the Company also revised the Project budget in conjunction with the re-**
13 **forecasted timeline?**

14
15 A. Yes it has. At this point, the Company is expecting the Project capital costs to equal
16 approximately \$100 million.

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

19
20 A. Yes. The discussion is contained in a report attached to this testimony as Exhibit No.
21 502. As explained in the report, the process of coding extensions for the applications was more
22 complex than initially expected. In addition, the ongoing process to remediate defects in the
23 code is taking more time than was allotted in the initial Project plan.

24 **Q. Is it possible that Avista could further revise the Go Live date?**

25
26 A. Yes. The Go Live target date is an important project planning and management tool that
27 represents a point in time in which every major project activity reaches a critical and timely
28 state of completion. As described in Exhibit No. 502, the currently-ongoing process of code
29 defect management is associated with inherent uncertainty, and until the point that the number
30 of defects declines in a measured and predictable way, it’s difficult to estimate the amount of
31 effort (and cost) remaining in the project. In establishing a revised Go Live timeframe of early
32 2015, Avista is cognizant that as it makes more progress in code defect management it may
33 need to once again revise the expected Go Live date and project budget in order to ensure a
34 successful launch of the new System.

1 This testimony in Avista’s prior rate case (Docket No. UG-284) clearly explains
2 that Project Compass required more time and dollars than originally estimated to
3 successfully complete the Project.

4 The settlement agreement, supported by all parties, in Docket No. UG-284, and the
5 OPUC Staff testimony supporting the settlement agreement, supported full recovery of the
6 costs associated with Project Compass, including the increased costs associated with the
7 delay in the Go Live date.⁴

8 **Q. What was the testimony of OPUC Staff in Docket No. UG-284**
9 **regarding Project Compass?**

10 A. In Docket No. UG-284 OPUC Staff presented joint testimony, filed by Ms.
11 Gardner and Mr. Muldoon supporting the all-party settlement agreement. That testimony,
12 on pages 23 and 24, identifies Ms. Johnson and Mr. Ordonez as the “Assigned Staff” for
13 “Capital Additions to Rate Base,” including Project Compass. An excerpt of OPUC
14 Staff’s testimony related to Project Compass is as follows:

15 In particular, Staff reviewed the prudence of major investments including the
16 Customer Information System (CIS) project (Expenditure Requisition (ER) 5138).
17 Staff reviewed the CIS project during 2014. The Company states that the in-
18 service date for the CIS is early February 2015. Avista will provide an attestation
19 from an officer of the Company when the CIS is completed and functioning. From
20 Staff’s perspective, the Company’s decision to pursue this project was prudent and
21 should be allowed into rate base per the Stipulation terms. (emphasis added)
22 (Exhibit No. Staff/102, Gardner / page 24, lines 1-8)
23

24 The Settlement Stipulation in that Docket No. UG-284 reflected full recovery of
25 the costs associated with Project Compass, and OPUC Staff’s testimony immediately

⁴ In November 2014 the estimate to complete Project Compass was increased to approximately \$107 million, and the final actual cost to complete the Project was approximately \$107 million. This updated information, including support for the change, was provided by the Company in its original filing in this Docket.

1 above supported full recovery, with the knowledge that the costs were higher than
2 originally estimated, and the Go Live date was “early February 2015.”

3 Ms. Johnson’s recommended disallowance of a portion of the costs of Project
4 Compass in this Docket, based on the unsubstantiated testimony of a witness in another
5 state, should be rejected.

6 **Q. On page 5, beginning on line 3, of her testimony, Ms. Johnson provides**
7 **the following question and answer:**

8 *Q. Did you make a similar adjustment in prior cases?*

9 *A. No. Staff only learned of the cost overruns in this case and has proposed*
10 *an adjustment to hold the Company partially responsible.*

11

12 **Is Ms. Johnson’s testimony in this Docket consistent with OPUC Staff’s testimony in**
13 **the prior case?**

14 A. No. As explained immediately above, OPUC Staff supported full recovery
15 of Project Compass costs in the prior Docket No. UG-284, with the knowledge that the
16 costs to complete were higher than the original estimate, and Staff’s testimony, quoted
17 above from that prior case, recognized that “the in-service date for the CIS is early
18 February 2015.”

19 **Q. The evidence presented by Ms. Johnson in this Docket related to**
20 **Project Compass consists of 4 pages of testimony, and three exhibits consisting of a**
21 **total of 15 pages. Would you please summarize Avista’s response, through your**
22 **Reply testimony and exhibits?**

23 A. Yes. Ms. Johnson’s testimony specifically makes reference to the alleged
24 conflict of interest, Avista’s management of one contractor in particular, and Avista’s

1 overall management of the costs of the Project. In the Reply testimony to follow, I will
2 respond to each of these issues.

3 There are three exhibits attached to my testimony. Exhibit No. 1701 includes a
4 copy of rebuttal testimony I sponsored before the WUTC in response to the testimony of
5 Mr. Gomez related to Project Compass. In that testimony I thoroughly address each of the
6 issues, identified above, raised by Ms. Johnson (which came out of Mr. Gomez's
7 testimony).

8 Exhibit No. 1702 is a summary report of Avista's Project Compass, dated August
9 2013, entitled "Overview of Avista's Project Compass." This report explains why it was
10 necessary to replace our prior system, which was originally installed in 1994; the process
11 we went through to develop and implement the new systems; and the preliminary estimate
12 of costs. This report clearly explains that in the early stages of a project with the scope
13 and magnitude of Project Compass, there is significant uncertainty regarding the amount
14 of time and cost that will be necessary to complete the project. As a project of this nature
15 progresses over time, the specific requirements become more clear, and the time and cost
16 to complete become more precise. This report was first provided to OPUC Staff in
17 August 2013.

18 Exhibit No. 1703 includes a report, dated June 2014, titled "Revised Timeline and
19 Budget Forecast – Avista's Project Compass." This report explains that the progress over
20 time on Project Compass revealed increased complexity and the requirement for more
21 time and dollars for the successful completion of the Project. The report provides specific
22 examples of the increased complexity, and also explains that the additional work
23 necessary to complete the Project involved Avista employees, as well as many of the

Project Compass

1 contractors working on the Project. The report is clear that the additional time and dollars
2 necessary to complete the Project were not caused by, or related to, a single contractor,
3 but required more time and dollars for many of the contractors, i.e., the fact that a single
4 contractor did not complete its deliverables on the schedule originally established for the
5 Project, did not delay the Project. The additional complexity and additional work caused
6 Avista and many of its contractors to require more time and dollars to successfully
7 complete the Project.

8 This report explaining the need for additional time and dollars to complete Project
9 Compass was part of the materials filed by Avista in its last general rate case in Docket
10 No. UG-284 (Jim Kensok Exhibit No. 502), and was available to OPUC Staff as it
11 developed its recommendation for full recovery of the costs associated with Project
12 Compass in that Docket. The original Project Compass report dated August 2013
13 (attached here as Exhibit No. 1702) was also provided again in that Docket (Jim Kensok
14 Exhibit No. 501).

15 **Q. What is Avista's response to Ms. Johnson's testimony related to an**
16 **alleged conflict of interest between the contractors EP2M and Five Point?**

17 A. In response to the speculation of Mr. Gomez regarding a potential conflict
18 of interest between the firms EP2M and Five Point, my rebuttal testimony in the
19 Washington rate case (Exhibit No. 1701, pages 14-18) demonstrated that during the time
20 between when Avista received its bid from EP2M in October 2011, and when the
21 purchase of EP2M by Five Point was announced in January of 2013, there was no
22 evidence of any relationship between EP2M and Five Point. Further, the Company
23 documented that its selection of EP2M was the result of a review and scoring process that

1 was robust, comprehensive, and objective, a fact that Mr. Gomez did not challenge. In
2 the end, Mr. Gomez could provide no evidence of any such conflict of interest and his
3 assertion was reduced to sheer speculation.

4 **Q. Please describe the initial role of Five Point in supporting Project**
5 **Compass?**

6 A. Five Point was hired by the Company in June 2011, to provide project
7 support in the areas of documenting Avista's system requirements used in the Request for
8 Proposals process for selecting the new computer applications and key installation
9 vendors, and assisting in the review of proposals.

10 **Q. When did Avista receive proposals from EP2M and other qualifying**
11 **vendors to provide application systems and installation services?**

12 A. Vendor proposals were received by Avista in October 2011. EP2M was
13 selected in March 2012, and its contract was negotiated and signed in July 2012.

14 **Q. Did Avista's contract with Five Point include an implementation role?**

15 A. No. As distinct from implementation, the role of Five Point was to support
16 Avista's procurement process. In January 2013, Avista was notified of the purchase of
17 EP2M by Five Point. Prior to this time, Avista had no knowledge of any relationship
18 between Five Point and EP2M, or at what point in time those discussions may have
19 commenced.

20 **Q. What concern did Mr. Gomez express regarding this transaction?**

21 A. He asserted that a conflict of interest arose when Five Point acquired
22 EP2M, and that the Company's vendor selection and contracting processes may have been

1 negatively impacted as a result.⁵ Through discovery, Mr. Gomez asked Avista to explain
2 any conflict of interest in its procurement process, to explain whether it was appropriate
3 that Five Point personnel were involved in contract negotiations with EP2M, and to
4 explain how Avista addressed these conflicts of interest.

5 **Q. What was the Company's response to this request?**

6 A. In its response, Avista corrected Mr. Gomez's erroneous assumption that
7 Five Point was in the contract negotiations between Avista and EP2M, noting that
8 Avista's employee team was in these negotiations -- not Five Point.⁶

9 The Company also explained⁷ that it learned of the acquisition many months
10 following its decision to select EP2M as a contractor. The Company explained that its
11 customers were protected from any potential conflict of interest by the rigorous and
12 objective processes established for developing vendor proposals, evaluating and scoring
13 proposals, making final vendor selections, and in negotiating the final contracts, purchase
14 agreements, and purchase prices. Avista supported this position by referring Mr. Gomez
15 to the comprehensive documentation of these processes as provided in the report
16 Overview of Avista's Project Compass, dated August 2013, and referring to 81 pages of
17 process documentation, including information such as rating criteria, weightings, scores,
18 and Avista's team selections.⁸

19 **Q. Did Mr. Gomez challenge or otherwise question the vendor selection**
20 **processes used and documented by Avista, or assert that the Company's processes**
21 **were less than comprehensive and objective?**

⁵ Avista/1701, Kensok/ 15, lines 11-17.

⁶ Avista/1701, Kensok/ 15, lines 19-22.

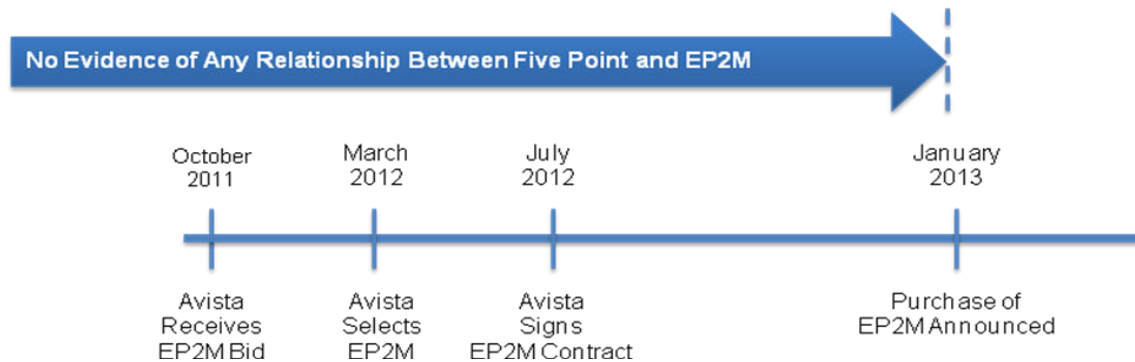
⁷ Avista/1701, Kensok/ 16, lines 1-11.

⁸ Avista/1702, Kensok/ 29-36.

1 A. No, he did not.

2 **Q. What facts are relevant in evaluating the prudence of the Company's**
3 **contracting with EP2M?**

4 A. At the time EP2M submitted its bid in October 2011, there was no
5 evidence of any relationship between EP2M and Five Point. The acquisition of EP2M by
6 Five Point was announced in January 2013. Only Company employees scored the
7 proposals of the vendors, based on results of a comprehensive and objective review and
8 scoring process, which is well-documented, and has not been challenged by Mr. Gomez,
9 or Ms. Johnson in this Docket. At the time EP2M was selected by Avista in March 2012,
10 there was no evidence of any relationship between Five Point and EP2M. As described
11 above, and as depicted in the illustration below, there was no evidence of any relationship
12 between Five Point and EP2M until January 2013.



13
14
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16
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18
19 **Q. Based on the foregoing facts, what did Avista conclude about Mr.**
20 **Gomez' allegation that Avista failed "...to recognize, evaluate, identify, document**
21 **and mitigate the possible risks..." associated with Five Point's acquisition of EP2M?**

22 A. Avista selected qualified vendors following a robust RFP process. At the
23 time EP2M was selected as a vendor, there was no evidence of any relationship between

1 Five Point and EP2M. In supporting the basis of its decision to select EP2M, Avista also
2 cited the prudence criteria of the WUTC: “...what would a reasonable board of directors
3 and company management have decided given what they knew or reasonably should have
4 known to be true at the time they made the decision.” (emphasis added) (Eleventh
5 Supplemental Order, Docket No. UE-920433, September 21, 1993)

6 Mr. Gomez’s speculation about any potential conflict of interest is just that -
7 speculation. The ultimate evaluation and selection of EP2M was made by Avista, on the
8 merits, without any undue influence of a third party.

9 **Q. What is Avista’s response to Ms. Johnson’s concerns about the**
10 **Company’s overall management of the costs of Project Compass?**

11 A. It is the nature of predicting the cost of large, enterprise-wide computer
12 applications, that the accuracy of the prediction is highly-dependent on the
13 implementation stage of the project. Avista described this phenomenon in relation to the
14 Project Compass budget and timeline in Exhibit No. 1702 (provided to OPUC Staff as
15 Exhibit No. 502 in Docket No. UG-246 (2013) and Exhibit No. 501 in Docket No. UG-
16 284 (2014)). A relevant excerpt from page 37 of that report is provided, below.

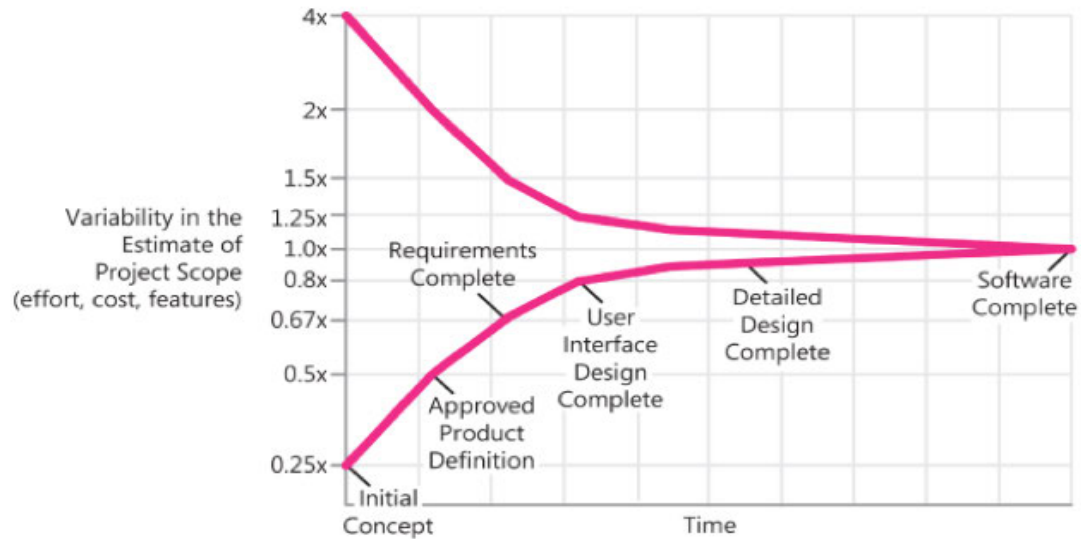
17 “Early in the scoping of a software project, particular details of the application
18 being designed/installed, a detailed knowledge of the Company’s specific business
19 requirements, details of the solution sets, the management plan, identified staffing
20 needs, and many other variables are simply unclear. Accordingly, estimates of the
21 potential cost of the project are highly variable. As these sources of variability
22 continue to be investigated and reduced, the project uncertainty decreases;
23 likewise, so does the variability in estimates of the project cost. This phenomenon,
24 widely discussed in the literature, and often associated with author Steve
25 McConnell⁹, is known as the “Cone of Uncertainty,” presented in Illustration No.
26 1¹⁰, below.” (emphasis added)
27

⁹ Software Estimation: Demystifying the Black Art. Steve McConnell, Microsoft Press, 2006

¹⁰ id. Illustration No. 1.2.

Illustration No. 1:

The ‘Cone of Uncertainty’ describing the relationship between the variability in the estimates of a software projects’ costs and the stage of the project at which the estimates are developed.



As illustrated in this “Cone of Uncertainty,” there is significant uncertainty in the early stages of developing accurate estimates of the cost and time necessary to complete a project of the size and scope of Project Compass.

Q. At approximately what point of development on this chart was Project Compass when the initial budget of \$78.9 million was estimated?

A. The Project was generally at the point of the “Approved Product Definition.” At this point, Avista had surveyed its business requirements in support of evaluating the capabilities of the candidate vendor applications.

Q. According to this chart, what degree of variability could one assign to Avista’s initial budget, with respect to the ultimate project cost?

A. It could be expected to potentially range as high as two-times the budget that was estimated at that point, or a total of \$157.8 million.

Project Compass

1 **Q. Generally, at what point on the above chart was the Company's**
2 **Project Compass at the time the budget was revised up to \$98.6 million?**

3 A. The revision occurred after the Detailed Designs were finally completed.

4 **Q. What degree of variability could one assign to the predicted final cost**
5 **at that point?**

6 A. Generally, about ten percent, or a total of \$108.5 million.

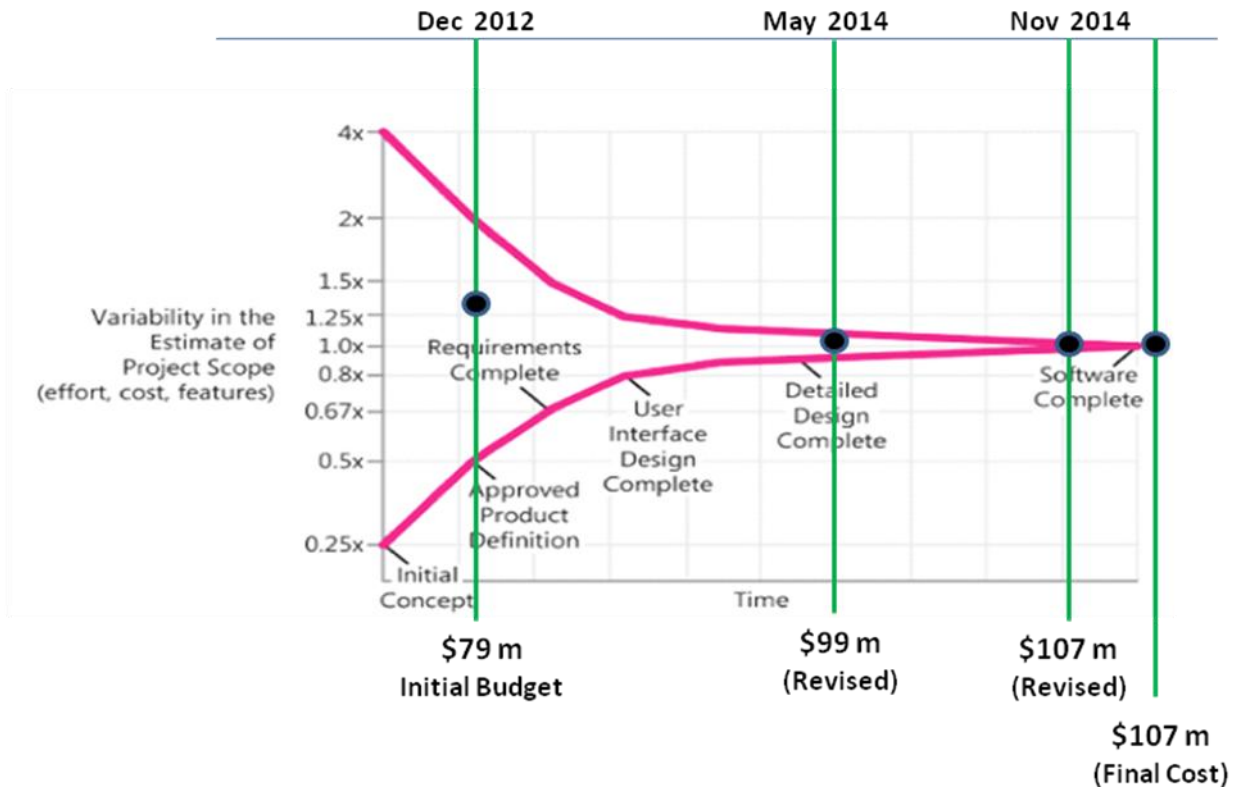
7 **Q. What was the final capital cost of the implementation of Project**
8 **Compass?**

9 A. Approximately \$107 million.

10 **Q. Can you duplicate the McConnell chart with an overlay showing the**
11 **points at which the Project Compass budget was revised, as discussed above?**

12 A. Yes. Illustration No. 2 below shows the initial Project budget and
13 revisions, including the calendar dates. The black dots represent where the final cost fell
14 within the range of the Cone of Uncertainty, for each of the respective dates.

Illustration No. 2:



Q. Did the Company provide an explanation of the activities responsible for the additional time and cost required to successfully implement the Project?

A. Yes. As noted above in June 2014, Avista prepared a report titled “Revised Timeline and Budget Forecast – Avista’s Project Compass.” (Exhibit No. 1703), provided to OPUC Staff in September 2014. The report explained that the complexity of the Project was greater than initially estimated in 2012, which resulted in a greater workload than was initially budgeted. The additional effort impacted the progress made by Avista and its many contractors, leaving too little time in the initial schedule for completing and adequately testing the new systems. The report described some of the factors influencing the complexity of the Project, as noted in the excerpt below:

Project Compass

1 “While it’s common for a business to install one major
2 system at a time, such as a customer service, financial
3 management, supply chain or asset management system, the
4 Company is installing two major systems simultaneously
5 (CC&B and Maximo Asset Management). Avista is required to
6 implement both new applications because our legacy System
7 contains a customer service module and work and asset
8 management module that are highly integrated, mainframe
9 based, and both in need of replacement. As described above, this
10 effort requires not only that these two systems be custom
11 integrated, but that together, they be integrated with the
12 approximately 100 other applications and systems required to
13 perform the Company’s integrated business operations.

14 In addition to the number of other applications and
15 systems, Avista has several complex applications that many
16 utilities do not possess. Some of these include our Avista
17 Facilities Mapping system (“AFM”), which geographically
18 displays every element of our electric and natural gas facilities in
19 a Geographic Information System (GIS) map format; our Outage
20 Management System, which integrates outage management
21 computer logic with the AFM system to provide accurate outage
22 information for customers and diagnostic tools that reduce
23 outage restoration time and costs; and our Central Dispatch
24 System, which integrates AFM, the Outage Management
25 System, and our Mobile Workforce Management application, to
26 optimize the dispatch and management of restoration crews in
27 real time across our entire electric and natural gas system.

28 The degree of complexity of the new System is also
29 impacted by the diversity of service provided by the utility.
30 Because Avista provides both natural gas and electric service,
31 the complexity is substantially greater than that of a utility
32 providing either one or the other. Further, the Company provides
33 service in three regulated jurisdictions, each of which has
34 separate and unique operating tariffs and rules that must be
35 coded into the new applications. For portions of our new System,
36 Avista’s application configuration and specialized coding will be
37 roughly five times greater than that of a single-fuel utility
38 operating in one state.” ((Exhibit No. 1703), at pages 7,8))
39

1 As discussed above in relation to the “Cone of Uncertainty,” as Avista and its
2 many contractors progressed in the implementation phase, it became clear that the time
3 and costs involved in completing these very complex systems would be greater than
4 initially estimated.

5 **Q. Did the Company provide additional information in response to the**
6 **allegations of Mr. Gomez, which further documented the activities requiring**
7 **additional time and budget to complete?**

8 A. Yes. Avista provided contracts for each of the 34 companies that
9 supported the successful completion of Project Compass, including every amendment,
10 addendum, and extension made to each of the contracts.¹¹ The Company created a table
11 showing all of the contract companies, including their statements of work and contract
12 deliverables for each company for each year of the Project, including the annual and total
13 amounts paid to each contractor.¹² Avista also provided a summary of the “Project
14 Change Request” documents approved over the course of the Project. These change
15 requests described the need for each change, including the added cost to the Project, and
16 identified, as applicable, the contract company or Avista staff associated with the project
17 change. This information provided a chronological sequence of the activities related to
18 Project changes, as associated with each company, including the incremental cost of each
19 change, as well as the total incremental cost associated with each vendor over the life of
20 the Project.¹³

21 **Q. Did the Company’s June 2014 report, (Exhibit No. 1703), describe**
22 **actions taken by the Company to remain on the initial time and budget?**

¹¹ Avista/1701, Kensok/ 12-13.

¹² Avista/1701, Kensok/ 12, lines 11-16.

¹³ Avista/1701, Kensok/ 18-24; 13, lines 1-7.

1 A. Yes. The report described the efforts of the Project Compass team to
2 assess the relationship between the complexity of Avista’s code requirements, the project
3 schedule, and the level of staffing applied to the work. The end result was that Avista’s
4 integration contractor retained additional resources to bolster its overseas code-
5 development team. Progress on the other activities that were taking additional time
6 (application configuration, data conversion, integration code, and writing the test cases)
7 was managed to help ensure that applicable portions were ready for System Testing once
8 the new code was available.

9 In addition to these steps, the report described how the Project Compass team
10 revised the standard testing protocol to partially overlap the phases of testing to be
11 conducted. In this approach, completed “portions” of an application were subjected to
12 limited testing with similarly-completed portions of other applications, including the
13 required integrations. The objective of this testing protocol was to reduce the overall
14 calendar time required for testing.

15 **Q. Regarding the concern raised by witness Ms. Johnson related to the**
16 **overall cost to complete Project Compass, has the Company demonstrated that these**
17 **costs were in fact reasonable?**

18 A. Yes, it has. The ultimate complexity of the Project, and the resulting effort
19 required, were greater than could be initially estimated. As we have discussed, above, this
20 greater required effort is not unexpected given the point in the “Cone of Uncertainty”
21 when Avista’s initial plan and budget were developed. The Company has explained the
22 reasons for the additional time and cost, and has provided detailed supporting
23 documentation. Avista also documented its extensive efforts and adjustments made

1 during implementation to minimize the added time and costs associated with the
2 successful launch of the new systems.

3 **Q. What is Avista’s response to the allegation of Mr. Gomez that the**
4 **additional time and cost required to successfully complete the Project was primarily**
5 **due to the performance of Five Point?**

6 A. As described above, the greater complexity of the Project, and the
7 associated increased effort, required more time for Avista’s employee teams and its many
8 Project vendors to complete their work – not just Five Point.¹⁴ The Company
9 demonstrated that the progress of Five Point was interdependent with the progress being
10 made by Avista employee teams and other project vendors.¹⁵ In other words, the progress
11 of Five Point in meeting its assigned deliverables could not be isolated from the progress
12 being made by others who had responsibility for completing interdependent activities that
13 were required for Five Point to complete its deliverables.¹⁶ Furthermore, the Company
14 provided several examples of major activities whose progress was completely independent
15 of Five Point, and which required the full implementation timeline (February 2015) for
16 completion.¹⁷ Assuming for the sake of argument, that Five Point had been able to timely
17 complete all its deliverables (which would have also have required all of the interrelated
18 parties to do likewise), the Project would still have required the full implementation
19 timeline (February 2015) because other major parts of the Project (not dependent on the
20 performance of Five Point) would not have been ready in time for an earlier
21 implementation. Avista clearly demonstrated that the additional time and cost required to

¹⁴ Avista/1701, Kensok / 10-14.

¹⁵ Avista/1701, Kensok / 18-19.

¹⁶ Avista/1701, Kensok / 19, lines 30-31.

¹⁷ Avista/1701, Kensok / 20, lines 15-26.

1 complete the Project were reasonable, and that Mr. Gomez's assertion was not supported
2 by the evidence.¹⁸

3 **Q. What additional issue did Mr. Gomez assert with respect to Avista's**
4 **management of its contract and relationship with Five Point?**

5 A. Essentially, he claimed that when Avista first noted that Five Point was not
6 completing its deliverables according to the required schedule, the Company should have
7 immediately ceased payments to them, according to the provisions of its contract.
8 Because the Company did not exercise this provision, witness Gomez asserted that it
9 failed to act prudently.

10 **Q. Did Mr. Gomez suggest what result would have been achieved by**
11 **Avista ceasing payments to that contractor?**

12 A. Yes. He claimed this action would have forced Five Point to meet its
13 deliverables schedule, thus likely avoiding the need to extend the timeline and budget for
14 the entire Project.

15 **Q. How did Avista respond to his assertion?**

16 A. First, as noted above, the Company had already demonstrated that the
17 progress being made by Five Point was not the primary reason for the need to extend the
18 Project timeline and budget. Second, the fact that it was taking longer for Five Point to
19 complete its deliverables was not a surprise given the increased workload attributed to the
20 ultimate size and complexity of the Project.¹⁹ Moreover, the need for additional time to
21 complete assigned activities was not unique to Five Point. It was the case for Avista
22 employee teams, as well as the majority of the other contractors supporting the Project.

¹⁸ Avista/1701, Kensok / 21, lines 1-9.

¹⁹ Avista/1701, Kensok / 22, lines 12-20.

1 **Q. Mr. Gomez singled out the case of Five Point, where Avista recognized**
2 **the additional time and budget required to complete its deliverables. Did the**
3 **Company recognize a similar need for its own employee teams and its other**
4 **contractors?**

5 A. Yes. Due to the ultimate effort required to successfully complete the
6 Project, Avista revised the schedules and compensation for 24 other contract companies,
7 in addition to Five Point.²⁰

8 **Q. Did Avista provide an assessment of the likely consequences to the**
9 **Project if it had, in fact, taken the actions alleged by Mr. Gomez as prudent?**

10 A. Yes. In each instance, as noted above, where it was taking additional time
11 for contractors to complete their work, the Company assessed the performance of the
12 contractor and evaluated whether the progress being made was reasonable in light of the
13 increased effort required to complete the Project. In addition to this consideration, the
14 Company also weighed its contract options in the event it should determine that replacing
15 a contractor was in the best interest of the Project. In the case of Five Point, as singled out
16 by Mr. Gomez, Avista evaluated such options²¹ and concluded, beyond the fact that there
17 was no need to replace this contractor,²² that it would likely have resulted in immediate
18 litigation.²³ This is because Five Point would have been able to identify the performance
19 of other contractors and Avista teams as having influenced its overall progress in meeting
20 deliverables. This outcome would have jeopardized the success of the entire Project.

²⁰ Avista/1701, Kensok / 26-27.

²¹ Avista/1701, Kensok / 23, lines 14-25; 24-25.

²² Avista/1701, Kensok / 22, lines 1-5.

²³ Avista/1701, Kensok / 25, lines 8-18.

1 **Q. Please summarize the Company’s response to the allegation of Mr.**
2 **Gomez that it should have taken enforcement action against Five Point?**

3 A. The overarching consideration for Avista, in determining its course of
4 action with each contractor, was how a particular decision would impact the Project
5 timeline and, most importantly, the overall cost to our customers for installing these new
6 systems. The evidence in that case supported the Company’s decisions with this
7 particular contractor, and all of its other contractors, as being reasonable and prudent, in
8 delivering a very successful outcome, and at a lesser cost compared with an alternative
9 decision. There is no evidence that indicated that a different decision by the Company
10 would have delivered Project Compass more quickly, more successfully, or at a lesser
11 cost.²⁴

12 **Q. Staff witness Ms. Johnson proposed that the bonus amounts paid to**
13 **Avista employees should not be recovered by the Company. What is Avista’s**
14 **response?**

15 A. The bonus plan recognized the significant challenge and the effort involved
16 to complete Project Compass, and that employees would have to make a substantial and
17 sustained contribution over a period of approximately two years (much longer for some
18 employees). When the timeline was extended, it required our employees to maintain a
19 high level of intensity through the February 2015 Go Live date. The continuity that comes
20 with retaining the same employees over a multi-year period, on an effort as complex as
21 Project Compass, warrants a bonus plan to help encourage employees to stay with the
22 Project to the end.

²⁴ Avista/1701, Kensok / 26, lines 5-10.

1 **Q. How was the bonus plan developed and approved?**

2 A. The plan was developed by Avista’s Executive Steering Committee and the
3 Project Compass leadership team. It specified that only Company employees were
4 eligible, and that the amount received was based on the person’s contribution to the
5 Project. Amounts received by employees were based on objective and measurable
6 benchmarks established at the beginning of the Project. The plan was audited by our
7 internal audit group, and approved by the Company’ senior executives and the Board of
8 Directors. The Executive Steering Committee authorized bonuses being paid based on the
9 achievement of project benchmarks as required in the plan.

10 The amounts paid to employees in recognition of their effort and success were
11 reasonable. The Project was ultimately very successful, and employees dedicated a very
12 difficult two-plus years of their working life to seeing it through to completion, and the
13 bonuses were reasonable and appropriate.

14 **Q. Please summarize Avista’s response to the proposal by Staff witness**
15 **Ms. Johnson that the Company should not be allowed to recover all of its**
16 **implementation costs associated with Project Compass?**

17 A. First, Ms. Johnson has not provided any evidence or explanation why \$27
18 million of the Project cost, approximately \$20 million of which was previously
19 determined by Staff in 2014 to have been prudently incurred, should now be treated as
20 “excessive” and be subject to a 50% penalty. There is no evidence in either Avista’s 2014
21 rate case, or in its current case, suggesting that the costs of Project Compass have been
22 other than prudently incurred. Regarding witness Ms. Johnson’s reliance on the testimony
23 of WUTC Staff witness Mr. Gomez as the sole basis for her proposed writeoff, the

1 Company has demonstrated that the evidence in that case does not support his allegations.
2 To the contrary, the evidence filed in the Company's Washington rate case, and in this
3 case, demonstrates that Project Compass was carefully designed, effectively managed, and
4 very successfully implemented, and that the costs of implementation were reasonable and
5 prudently incurred. Accordingly, the Company should receive full recovery of its project
6 costs.

7 **Q. Does this conclude your Reply testimony?**

8 A. Yes.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

JIM M. KENSOK
Exhibit No. 1701

**Kensok Rebuttal Testimony from
Washington General Rate Case**

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-150204

DOCKET NO. UG-150205

REBUTTAL TESTIMONY OF

JAMES M. KENSOK

REPRESENTING AVISTA CORPORATION

REDACTED

1 **I. INTRODUCTION**

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

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

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

8 A. I am a graduate of Eastern Washington University with a Bachelor of Arts
9 Degree in Business Administration, majoring in Management Information Systems, and a
10 graduate of Washington State University with an Executive MBA. I have experience
11 through direct application and management of Information Services over the course of my
12 32-year information technology career. I joined the Company in June of 1996. Over the
13 past 18 plus years, I have spent approximately one year in Avista's Internal Audit
14 Department as an Information Systems Auditor with involvement in performing internal
15 information systems compliance and technology audits. I have been in the Information
16 Services Department for approximately 17 years in a variety of management roles
17 directing and leading information technology and systems, planning, operations, system
18 analysis, complex communication networks, cyber security, applications development,
19 outsourcing agreements, contract negotiations, technical support, cost management, data
20 management and strategic development. I was appointed Vice-President and CIO in
21 January of 2007 and Chief Security Officer in January of 2013.

22

1 **Q. Please summarize your testimony?**

2 A. My testimony will demonstrate that, contrary to the claims of Staff witness
3 Mr. Gomez, the overall timeline and costs to complete Project Compass were reasonable,
4 and the Company made prudent decisions in managing the challenges it faced, including
5 the performance of its many contractors. In the end, the Company successfully and cost-
6 effectively delivered these new systems to our customers.

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

8	<u>Description</u>	<u>Page</u>
9	I. Introduction	1
10		
11	II. The Project Timeline and Costs were Reasonable and Prudent	6
12		
13	III. Avista made Prudent Decisions Managing its Relations with	14
14	Five Point	
15		
16	IV. The Revised Project Cost Was Not Caused Primarily by	18
17	Five Point	
18		
19	V. The Company Was Prudent in Retaining Five Point and Ernst	21
20	& Young to Complete the Project	
21		
22	VI. Company Employees Earned Bonuses Based on a Very	28
23	Successful Effort in Implementing Project Compass	
24		

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

26 A. Yes. I am sponsoring Exhibit Nos. ___(JMK-7) - ___(JMK-12C). Exhibit
27 No. ___(JMK-7) is an overview report of Avista's Project Compass. A summary table of
28 contract and spending information for the contract companies who supported Project
29 Compass is provided as Exhibit No. ___(JMK-8C). The Company's response to
30 Staff_DR_141C Supplemental is provided as Exhibit No. ___(JMK-9C). An excerpt of the
31 Company's response to Staff_DR_140C is attached as Exhibit No. ___(JMK-10C). The

1 Company's response to Staff_DR_152C is attached as Exhibit No. ____ (JMK-11C), and the
2 Project Compass employee bonus plan is provided as Exhibit No. ____ (JMK-12C).

3 **Q. Would you please briefly summarize the role, responsibilities, and**
4 **qualifications for both yourself, and the Project program manager responsible for**
5 **Project Compass, as they relate to the development and implementation of the**
6 **Project?**

7 A. Yes. As described in my qualifications, for over 32 years I have worked
8 in many capacities in the field of information technology, and have led complex projects
9 and organizations in both utility and non-utility enterprises. For Project Compass, I served
10 as a member of the Executive Steering Committee for the Project, which was established
11 to ensure appropriate executive oversight and direct communications between the Project
12 co-sponsors and Avista's executive leadership. As a Committee, we were regularly
13 updated by the Compass leadership team, during which time we delved into areas of
14 identified Project risk, asked questions, at times made special assignments for report back,
15 made executive-level decisions as appropriate, and took additional actions such as
16 traveling to the overseas operations of our contract companies for onsite evaluations, and
17 face-to-face problem solving, and issue resolution. Overall, we ensured there was direct
18 accountability for performance of the Project, ensuring we had the information and
19 understanding required to make effective and timely decisions. I also represented the
20 Executive Steering Committee in presentations and discussions with the Company's
21 Board of Directors, related to Project Compass.

22 Dr. Greg Jones was the project program manager responsible for Project Compass.
23 He is employed by Black & Veatch (B&V) which is a leading global engineering and

1 consulting company serving the energy industry. He possesses extensive knowledge and
2 expertise in the use of project management methodologies and tools. He has 32 years of
3 IT experience, 25 of that in the utility industry. He has led the successful implementation
4 of five Customer Information System/Asset Management Systems for utilities, and has
5 successfully completed two other implementations for non-utility clients. He serves on
6 the Board of Directors of the Oracle Utility Users Group (four years as chair) and has 18
7 years experience leading large, complex multi-country utility projects.

8 Dr. Jones' responsibilities for Project Compass included managing multiple
9 project managers (of which several are Project Management Institute [PMI] certified) and
10 project support staff. He tracked project milestones making adjustments as required,
11 communicated regularly with the Executive Steering Committee, business leadership, and
12 consultants on project status, project scope, timing, and budgets.

13 **Q. What is Staff witness Mr. Gomez proposing in his testimony regarding**
14 **Avista's requested recovery of costs associated with the recent implementation of its**
15 **customer information and work and asset management systems (Project Compass)?**

16 A. Staff witness Mr. Gomez alleges that the actual time and cost required to
17 successfully implement these new systems was excessive, due primarily to the
18 performance of one contractor that he believes the Company failed to properly manage.¹
19 As a result, Mr. Gomez argues that a portion of the implementation costs were not
20 prudently incurred,² and should not be recovered by the Company.

¹ Staff witness Mr. Gomez Exhibit No. __CT (DCG-1TC) 52:17; 53:1,2.

² Exhibit No. __CT (DCG-1TC) 49:8-12.

1 **Q. What was the basis of Mr. Gomez’ proposal?**

2 A. Mr. Gomez alleges that Five Point Partners (“Five Point”),³ which was one
3 of the 34 contract companies hired by Avista to support the Project, was not properly
4 managed by the Company.

5 Specifically, Mr. Gomez asserts that:

- 6 • A conflict of interest⁴ arose with Five Point, suggesting it may have
7 engaged with another company (EP2M) to influence Avista’s vendor
8 selection process;⁵
- 9 • The Company failed to manage the risks of this potential conflict of
10 interest;⁶
- 11 • Five Point failed to perform under the terms of its contract, and that was
12 the primary reason for increased costs and an extension of time to
13 complete;⁷
- 14 • Avista did not properly respond to the performance of Five Point⁸ and did
15 not demonstrate prudence in its decision to retain Five Point and extend
16 their contract with the successor company Ernst and Young;⁹ and
- 17 • Based on his assertion that the Project was late and over budget, Avista
18 should not be entitled to recover the bonuses paid to employees for
19 successfully implementing the Project.¹⁰

20
21 **Q. Does Mr. Gomez otherwise argue that Project Compass was not**
22 **successfully implemented?**

23 A. No, he does not. The Project was successfully launched on February 2,
24 2015, and has performed very well since that time. This is a tribute to the hard work and
25 dedication of our employees and many contractors. The Company took the time and made

³ Five Point Partners was hired by Avista in June of 2011 to help the Company develop its system requirements for the RFPs that would be sent to potential application and system integration vendors. The firm, EP2M, was hired by Avista in July 2012 as its system integrator for the Oracle Customer Care & Billing application. The purchase of EP2M by Five Point was announced in January 2013, and Five Point was subsequently purchased by the firm Ernst and Young, which was announced in June 2014.

⁴ Exhibit No. ___CT (DCG-1TC) 53:15,16.

⁵ Exhibit No. ___CT (DCG-1TC) 55:2-13.

⁶ Exhibit No. ___CT (DCG-1TC) 52:12-17.

⁷ Exhibit No. ___CT (DCG-1TC) 52:8-11.

⁸ Exhibit No. ___CT (DCG-1TC) 57:1-4.

⁹ Exhibit No. ___CT (DCG-1TC) 57:9-12.

¹⁰ Exhibit No. ___CT (DCG-1TC) 60:5-11.

1 the investments required to assure success in the implementation of the system, which is
2 noteworthy when compared with similar efforts across the utility industry.

3 **Q. What is Avista’s response to the assertions and conclusions of Staff?**

4 A. In this testimony I will demonstrate that Project Compass was capably and
5 successfully managed and implemented, and that the time required and the costs incurred
6 were reasonable, and prudent. Specifically, this testimony will show that:

- 7 • The Project timeline and costs were reasonable and prudent;
- 8 • Avista made prudent decisions in relation to all agreements involving Five
9 Point;
- 10 • The increased Project cost was not primarily caused by Five Point;
- 11 • The Company made prudent decisions managing Five Point and its
12 successor, Ernst & Young; and
- 13 • The employee bonuses were directly related the successful completion of
14 the Project, and should be recovered by Avista.

15
16

17 **II. THE PROJECT TIMELINE AND COSTS WERE REASONABLE**
18 **AND PRUDENT**

19
20

Q. Please provide an overview of the Project Compass timeline?

21 A. The Company’s legacy customer service and work management system
22 was placed into service in 1994, and through prudent investments to refresh and expand its
23 capabilities, it remained in service for 20 years. In 2010, Avista began the effort to replace
24 its legacy system, and in 2012, after selecting primary vendors, the Company prepared an
25 implementation plan and initial capital budget. Avista chose Oracle’s “Customer Care &
26 Billing” system (“CC&B”), and the “Maximo” work and asset management application
27 (“MAXIMO”) sold by IBM. The firm EP2M was selected as the primary installation
28 contractor for CC&B, and IBM was hired to install its Maximo system. In June of 2014,
29 the Company extended its in-service date (the “Go-Live”) from July 2014 to early 2015

1 and, correspondingly, increased the amount of the initial budget estimate. The final
2 addition to the budget estimate was made in November 2014, and the Go-Live took place
3 on February 2, 2015.

4 **Q. Why does Avista believe these revisions to the timeline and budget**
5 **were reasonable?**

6 A. It is the nature of predicting the cost of large, enterprise-wide computer
7 applications, that the accuracy is highly-dependent on the implementation stage of the
8 project. Avista described this phenomenon in relation to the Project Compass budget and
9 timeline, in a report prepared by the Company in 2013, titled, “An Overview of Avista’s
10 Project Compass,” which is attached to this testimony as Exhibit No.__(JMK-7).¹¹ This
11 report was also previously provided to all parties in Avista’s prior general rate case as
12 Exhibit No.__(JMK-2) in Dockets UE-140188 and UG-140189. A relevant excerpt from
13 page 37 of that report is provided, below.

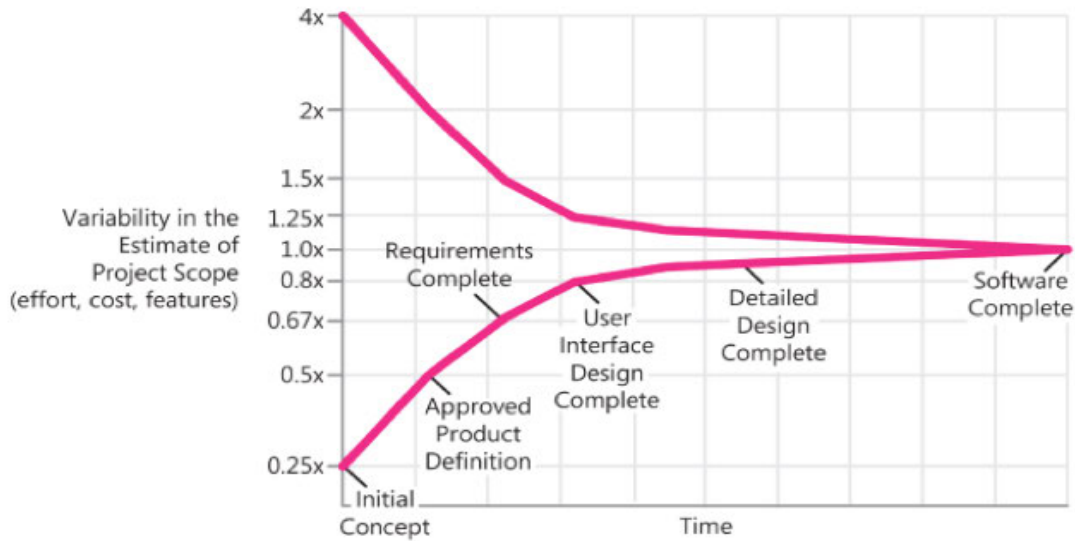
14 “Early in the scoping of a software project, particular details of the application
15 being designed/installed, a detailed knowledge of the Company’s specific business
16 requirements, details of the solution sets, the management plan, identified staffing
17 needs, and many other variables are simply unclear. Accordingly, estimates of the
18 potential cost of the project are highly variable. As these sources of variability
19 continue to be investigated and reduced, the project uncertainty decreases;
20 likewise, so does the variability in estimates of the project cost. This phenomenon,
21 widely discussed in the literature, and often associated with author Steve
22 McConnell¹², is known as the “Cone of Uncertainty,” presented in Figure 4¹³,
23 below.” (emphasis added)

¹¹ Due to the voluminous nature of the Attachments to this report, they are being provided in electronic format only.

¹² Software Estimation: Demystifying the Black Art. Steve McConnell, Microsoft Press, 2006

¹³ id. Figure 4.2, 96.1/751.

1 **Figure 4.** The ‘Cone of Uncertainty’ describing the relationship between the
2 variability in the estimates of a software projects’ costs and the stage of the project
3 at which the estimates are developed.



4

5

6 As illustrated in this “Cone of Uncertainty,” there is significant uncertainty in the early
7 stages of developing accurate estimates of the cost and time necessary to complete a
8 project of the size and scope of Project Compass.

9 **Q. At approximately what point of development on this chart was Project**
10 **Compass when the initial budget of \$78.9 million was estimated?**

11 A. The Project was generally at the point of the “Approved Product
12 Definition.” At this point, Avista had surveyed its business requirements in support of
13 evaluating the capabilities of the candidate vendor applications.

14 **Q. According to this chart, what degree of variability could one assign to**
15 **Avista’s initial budget, with respect to the ultimate project cost?**

16 A. It could be expected to potentially range as high as two-times the budget
17 that was estimated at that point, or a total of \$157.8 million.

1 **Q. Generally, at what point on the above chart was the Company's**
2 **Project Compass at the time the budget was revised up to \$98.6 million?**

3 A. The revision occurred after the Detailed Designs were finally completed.

4 **Q. What degree of variability could one assign to the predicted final cost**
5 **at that point?**

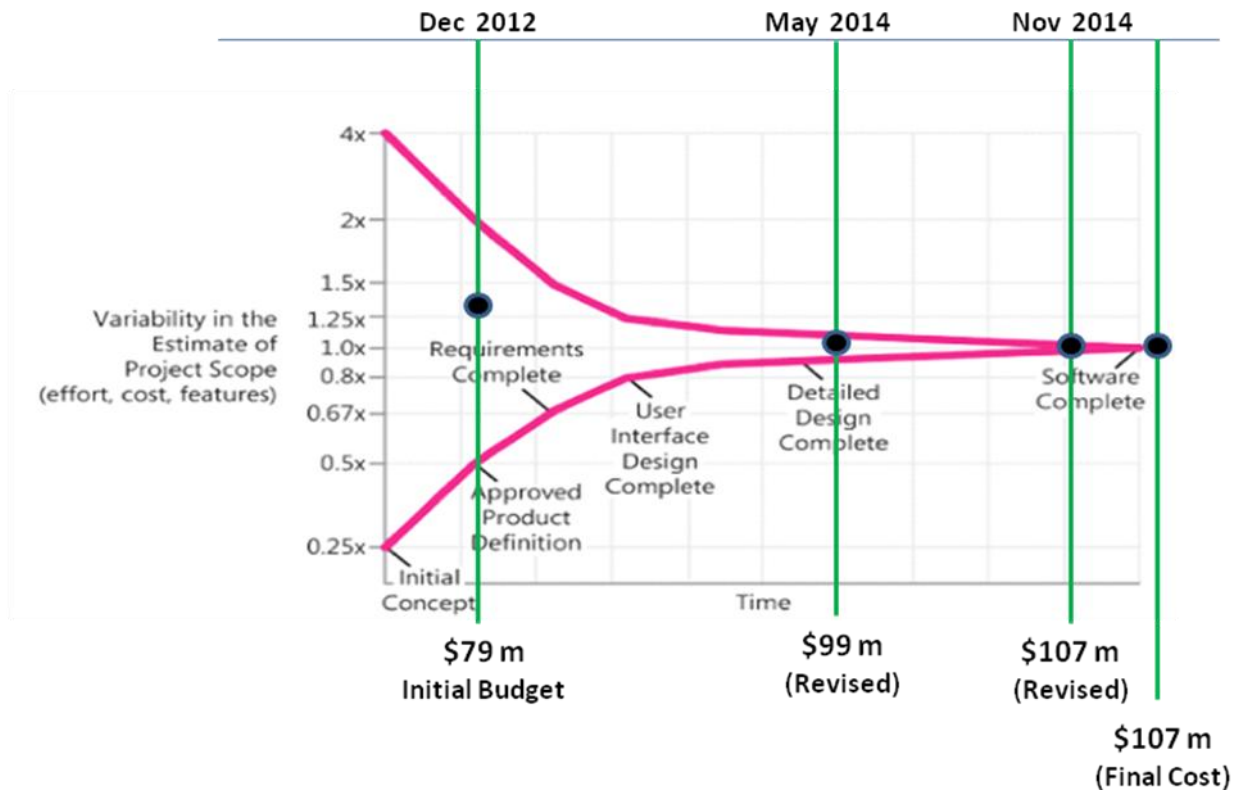
6 A. Generally, about ten percent, or a total of \$108.5 million.

7 **Q. What was the final capital cost of the implementation of Project**
8 **Compass?**

9 A. Approximately \$107 million.

10 **Q. Can you duplicate the McConnell chart with an overlay showing the**
11 **points at which the Project Compass budget was revised, as discussed above?**

12 A. Yes. The chart below shows the initial Project budget and revisions,
13 including the calendar dates. The black dots represent where the final cost fell within the
14 range of the Cone of Uncertainty, for each of the respective dates.



13 **Q. Did the Company provide an explanation of the activities responsible**
14 **for the additional time and cost required to successfully implement the Project?**

15 A. Yes. In June 2014, Avista prepared a report titled “Revised Timeline and
16 Budget Forecast – Avista’s Project Compass.” This report was filed during the course of
17 the Company’s last general rate case in Washington in 2014, as PC_DR_181
18 Supplemental Attachment A, in Dockets UE-140188 and UG-140189, and was also
19 included in this case as Exhibit No.__(JMK-2).

20 The report explains that the complexity of the Project was greater than initially
21 estimated in 2012, which resulted in a greater workload than was initially budgeted. The
22 additional effort impacted the progress made by Avista and its many contractors, leaving
23 too little time in the initial schedule for completing and adequately testing the new

1 systems. The report described some of the factors influencing the complexity of the
2 Project, as noted in the excerpt below:

3 “While it’s common for a business to install one major
4 system at a time, such as a customer service, financial
5 management, supply chain or asset management system, the
6 Company is installing two major systems simultaneously
7 (CC&B and Maximo Asset Management). Avista is required to
8 implement both new applications because our legacy System
9 contains a customer service module and work and asset
10 management module that are highly integrated, mainframe
11 based, and both in need of replacement. As described above, this
12 effort requires not only that these two systems be custom
13 integrated, but that together, they be integrated with the
14 approximately 100 other applications and systems required to
15 perform the Company’s integrated business operations.

16 In addition to the number of other applications and
17 systems, Avista has several complex applications that many
18 utilities do not possess. Some of these include our Avista
19 Facilities Mapping system (“AFM”), which geographically
20 displays every element of our electric and natural gas facilities in
21 a Geographic Information System (GIS) map format; our Outage
22 Management System, which integrates outage management
23 computer logic with the AFM system to provide accurate outage
24 information for customers and diagnostic tools that reduce
25 outage restoration time and costs; and our Central Dispatch
26 System, which integrates AFM, the Outage Management
27 System, and our Mobile Workforce Management application, to
28 optimize the dispatch and management of restoration crews in
29 real time across our entire electric and natural gas system.

30 The degree of complexity of the new System is also
31 impacted by the diversity of service provided by the utility.
32 Because Avista provides both natural gas and electric service,
33 the complexity is substantially greater than that of a utility
34 providing either one or the other. Further, the Company provides
35 service in three regulated jurisdictions, each of which has
36 separate and unique operating tariffs and rules that must be
37 coded into the new applications. For portions of our new System,
38 Avista’s application configuration and specialized coding will be

1 roughly five times greater than that of a single-fuel utility
2 operating in one state.” (Exhibit No.__(JMK-2), at pages 7,8))
3

4 As discussed above in relation to the “Cone of Uncertainty,” as Avista and its
5 many contractors progressed in the implementation phase, it became clear that the time
6 and costs involved in completing these very-complex systems would be greater than
7 initially estimated.

8 **Q. Has the Company provided additional information in this case that**
9 **documents the activities requiring additional time and budget to complete?**

10 A. Yes. In response to a Staff data request,¹⁴ Avista provided contracts for
11 each of the 34 companies that supported the successful completion of Project Compass,
12 including every amendment, addendum, and extension made to each of the contracts. In
13 another response, to Staff_DR_141C (Confidential Attachment A), the Company created a
14 table that includes all of the contract companies, including the statements of work and the
15 contract deliverables for each company for each year of the Project, including the annual
16 and total amounts paid to each contractor. I have attached that table (Confidential
17 Attachment A), as an excerpt from Staff_DR_141C, to my testimony as Exhibit
18 No.__(JMK-8C). Avista also provided a table in response to Staff_DR_141C
19 Supplemental (Confidential Attachment B) that includes a summary of the “Project
20 Change Request” documents approved over the course of the Project. These change
21 requests describe the need for each change, including the added cost to the Project, and
22 identify, as applicable, the contract company or Avista staff associated with the project
23 change. The table is organized by contract company and provides a chronological
24 sequence of the activities related to Project changes, as associated with that company,

¹⁴ Staff_DR_141C Confidential Attachment B.

1 including the incremental cost of each change, as well as the total incremental cost
2 associated with that vendor over the life of the Project. I have attached Staff_DR_141C
3 Supplemental to my testimony as Exhibit No.__(JMK-9C). All of the Project Change
4 Request documents were also provided (Confidential Attachment A) in response to
5 Staff_DR_141C, Exhibit No.__(JMK-9C).¹⁵ I have included one of the Change Request
6 Documents, as an example, excerpted from Confidential Attachment C, in Exhibit
7 No.__(JMK-9C).

8 In summary, the ultimate complexity of the Project, and the resulting effort
9 required, were greater than initially estimated. Two examples of the added complexity and
10 effort, include the need to upgrade the version of the Company's ARC GIS (computer
11 mapping) application to provide Maximo data compatibility, and the added coding for
12 substantial extensions required to support the Company's comfort-level-billing and credit
13 and collections activities. As we have discussed, this greater required effort is not
14 unexpected given the point in the "Cone of Uncertainty" when Avista's initial plan and
15 budget were developed. The Company made extensive efforts and adjustments during
16 implementation to minimize the time and costs associated with the successful launch of
17 the new systems.

18 **Q. Did the June 2014 report, Exhibit No.__(JMK-2), describe actions**
19 **taken by the Company to remain on the initial time and budget?**

20 A. Yes. The report describes the efforts of the Project Compass team to assess
21 the relationship between the complexity of Avista's code requirements, the project
22 schedule, and the level of staffing applied to the work. The end result was that Avista's

¹⁵ Due to the voluminous nature of these documents, they are being provided in electronic format only.

1 CC&B integration contractor retained additional resources to bolster its overseas code-
2 development team. Progress on the other activities that were taking additional time
3 (application configuration, data conversion, integration code, and writing the test cases)
4 was managed to help ensure that applicable portions were ready for System Testing once
5 the CC&B Extension code was available. Through this analysis and the actions taken, the
6 Company believed it could better manage the overall time required for coding extensions.

7 In addition to these steps, the report describes how the Project Compass team
8 revised the standard testing protocol, to partially overlap the phases of testing to be
9 conducted. In this approach, completed “portions” of an application were subjected to
10 limited testing with similarly-completed portions of the other application, including the
11 required integrations. The objective of this testing protocol was to reduce the overall
12 calendar time required for testing.

13

14

III. AVISTA MADE PRUDENT DECISIONS
MANAGING ITS RELATIONSHIP WITH FIVE POINT

15

16

17

18

**Q. Please describe the initial role of Five Point in supporting Project
Compass?**

19

20

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22

A. Five Point was hired by the Company in June 2011, to provide Project
support in the areas of documenting Avista’s system requirements used in the Request for
Proposals process for selecting the new computer applications and key installation
vendors, and assisting in the review of proposals.

23

24

**Q. When did Avista receive proposals from qualifying vendors for
application systems and installation services?**

1 A. Vendor proposals were received by Avista in October 2011. Winning
2 vendors were selected in March 2012, and contracts were negotiated and signed in July
3 2012. This concluded the “procurement phase” of the Project, which was immediately
4 followed by “project implementation.”

5 **Q. Did Avista’s contract with Five Point include an implementation role?**

6 A. No. As distinct from implementation, the role of Five Point was to support
7 Avista’s procurement process. In January 2013, Avista was notified by EP2M that it had
8 been purchased by Five Point. Prior to this time, Avista had no knowledge of any
9 relationship between Five Point and EP2M, or at what point in time those discussions may
10 have commenced.

11 **Q. What concern did Mr. Gomez express regarding this transaction?**

12 A. He asserts that a conflict of interest arose when Five Point acquired EP2M,
13 and that the Company’s vendor selection and contracting processes may have been
14 negatively impacted as a result. Through discovery,¹⁶ Mr. Gomez asked Avista to explain
15 any conflict of interest in its procurement process, to explain whether it was appropriate
16 that Five Point personnel were involved in contract negotiations with EP2M, and to
17 explain how Avista addressed these conflicts of interest.

18 **Q. What was the Company’s response to this request?**

19 A. In its response to Staff_DR_140C, Avista corrected Mr. Gomez’ erroneous
20 assumption that Five Point was in the contract negotiations between Avista and EP2M,
21 noting that Avista’s employee team was in these negotiations -- not Five Point. An excerpt
22 of Staff_DR_140C is attached to my testimony as Exhibit No.__(JMK-10C).

¹⁶ An excerpt of Staff_DR_140C is attached as Exhibit No.__(JMK-10C).

1 The Company also explained that it learned of the acquisition many months
2 following its decision to select EP2M as a contractor. The Company explained that its
3 customers were protected from any potential conflict of interest by the rigorous and
4 objective processes established for developing vendor proposals, evaluating and scoring
5 proposals, making final vendor selections, and in negotiating the final contracts, purchase
6 agreements, and purchase prices. Avista supported this position by referring Staff to the
7 comprehensive documentation of these processes, provided on pages 29 – 36 of the
8 Company’s 2013 report “An Overview of Avista’s Project Compass,” (Exhibit
9 No.__(JMK-7). Relevant attachments to the report include 81 pages of process
10 documentation, including information such as rating criteria, weightings, scores, and
11 Avista’s team selections.

12 **Q. Did Mr. Gomez challenge or otherwise question the vendor selection**
13 **processes used and documented by Avista, or assert that the Company’s processes**
14 **were less than comprehensive and objective?**

15 A. No, he does not.

16 **Q. What facts are relevant in evaluating the prudence of the Company’s**
17 **contracting with EP2M?**

18 A. At the time EP2M submitted its bid in October 2011, there was no
19 evidence of any relationship between EP2M and Five Point. The acquisition of EP2M by
20 Five Point was announced in January 2013. Only Company employees scored the
21 proposals of the vendors, based on results of a comprehensive and objective review and
22 scoring process, which is well-documented, and has not been challenged by Staff. At the
23 time EP2M was selected by Avista in March 2012, there was no evidence of any

1 relationship between Five Point and EP2M. As described above, and as depicted in the
2 illustration below, there is no evidence of any relationship between Five Point and EP2M
3 until January 2013.



10 **Q. Based on the foregoing facts, what would you conclude about Mr.**
11 **Gomez’ allegation that Avista failed “...to recognize, evaluate, identify, document**
12 **and mitigate the possible risks...” associated with Five Point’s acquisition of**
13 **EP2M.¹⁷**

14 A. Avista selected qualified vendors following a robust RFP process. At the
15 time EP2M was selected as a vendor, there was no evidence of any relationship between
16 Five Point and EP2M. Among the prudence criteria of this Commission is “...what would
17 a reasonable board of directors and company management have decided given what they
18 knew or reasonably should have known to be true at the time they made the decision.”
19 (emphasis added) (Eleventh Supplemental Order, Docket No. UE-920433, September 21,
20 1993)

¹⁷ Exhibit No. __CT (DCG-1TC) 52:13-17.

1 Mr. Gomez' speculation about any potential conflict of interest is just that -
2 speculation. The ultimate evaluation and selection of EP2M was made by Avista, on the
3 merits, without any undue influence of a third party.

4 **IV. THE REVISED PROJECT COST**
5 **WAS NOT PRIMARILY CAUSED BY FIVE POINT**
6

7 **Q. How do you respond to the assertion of Mr. Gomez that the additional**
8 **time and cost required to successfully complete the Project was primarily due to the**
9 **performance of Five Point?**¹⁸

10 A. As described earlier, the greater complexity of the Project, and the
11 associated increased effort, required more time for many Avista employee teams and
12 Project vendors, not just Five Point, to complete their work.

13 **Q. Has the Company demonstrated that this greater workload impacted**
14 **the progress of others, in addition to Five Point?**

15 A. Yes. In the Company's response to Staff_DR_140C (Exhibit No.__(JMK-
16 10C)), Avista provided weekly and monthly Project status reports (Confidential
17 Attachments B) that clearly document the progress on many parts of the Project, and
18 showing the Project taking longer than was initially planned. The reports list key activities
19 or issues, including, as applicable, the original due date, the revised due date, the impact
20 or consequence of an activity taking longer to complete than planned, actions developed
21 to resolve the issue, the overall risk status (green, yellow, or red), and the expected trend
22 for that issue.

¹⁸ Exhibit No. __CT (DCG-1TC) 52:8-11.

1 The Project status report for the week of April 7, 2014, as an example, highlights
2 progress on several key activities that were taking more time to complete than planned,
3 and as a result, were coded as moderate risk (yellow) or high risk (red). This report, which
4 encompasses pages 503-541 of Confidential Attachment B, is excerpted and attached to
5 this testimony in Exhibit No.__(JMK-10C). These moderate and high-risk, key activities,
6 along with the organizations who shared in their completion, included the following:

- 7 • Defect Resolution Process for Integration Code supporting Customer Care
8 and Billing (CC&B). **Avista, Five Point, Intellitect**
- 9 • Testing Cycles for the Credit and Collections System Test and System
10 Integration Testing. **Avista, Five Point, Intellitect**
- 11 • Data Conversion for the Maximo Work and Asset Management System
12 (“Maximo”). **IBM, HP**
- 13 • Maximo System Integration Testing Data. **IBM, Avista, Intellitect**
- 14 • ARC GIS 10.2 Upgrade. **ESRI, Avista**
- 15 • Data Extraction and Conversion of Validated Data. **Avista, IBM**
- 16 • Blocking Code Defects pace will not allow Exit from System Integration
17 Testing (“SIT”). **Avista, Five Point, Intellitect**
- 18 • System Integration Testing is not currently on pace. **Avista, Five Point,**
19 **Intellitect**
- 20 • Development of Bill. **Transcentra, Avista**
- 21 • CC&B impact on Training Materials Development. **Avista, Five Point,**
22 **Intellitect, Mosaic**
- 23 • Data Conversion impact on Training Materials Development. **IBM, Avista,**
24 **Mosaic**
- 25 • Late Code impact on Training Materials Development. **Avista, Five Point,**
26 **Intellitect, Mosaic**
- 27 • Number of Testing Environments is creating difficulties with technical
28 teams. **Avista**
- 29

30 As is evident from the listing above, most portions of the Project required the shared
31 contribution of more than one organization.

32 **Q. Were there multiple major activities that had not reached a sufficient**
33 **stage of development required to successfully execute the Go Live, as initially**
34 **scheduled for July 2014?**

1 A. Yes. These include the following:

- 2 • CC&B Integrations
- 3 • CC&B and Maximo System Integration Testing
- 4 • Field Activities
- 5 • Credit & Collections
- 6 • Meter Data Synchronization
- 7 • Development of Test Cases
- 8 • Maximo Data Conversion
- 9 • ARC GIS 10.2 Upgrade

10

11 **Q. Would it have been possible to successfully implement the new systems**
12 **with any of these activities not complete?**

13 A. No. The new systems could not have functioned properly without each of
14 these, and with every other key activity timely and sufficiently completed.

15 **Q. Please describe the role of Five Point in accomplishing the major**
16 **activities listed above?**

17 A. Five Point shared the responsibility with others for completing CC&B
18 Integrations, CC&B and Maximo System Integration Testing, Credit & Collections, and
19 Development of Test Cases. As such, Five Point was not, by itself, responsible for any of
20 these four activities. The remaining four activities, Field Activities, Meter Data
21 Synchronization, Maximo Data Conversion, and ARC GIS 10.2 Upgrade, did not require
22 the participation of Five Point in any way. The progress made on these activities was not
23 impacted by, or dependent on the performance of Five Point. And, in addition, these four
24 activities, which did not involve Five Point, required more time and budget to complete
25 than the original estimate, and were not ready for implementation on the original Go Live
26 date in July 2014.

1 **Q. What does the evidence in this case demonstrate with regard to the**
2 **assertion of Mr. Gomez that the additional time and cost required to complete the**
3 **Project was primarily caused by the performance of Five Point?**

4 A. That assertion is not supported by the evidence in this case. The evidence
5 provided to all parties, and included in the record in this case clearly shows that the
6 additional time and costs required to complete the Project were not primarily due to the
7 performance of Five Point, alone. Furthermore, the record shows that the extended
8 timeline and implementation costs were reasonable and prudent in order to achieve the
9 successful completion of the Project.

10
11 **V. THE COMPANY WAS PRUDENT IN RETAINING FIVE POINT AND**
12 **ERNST & YOUNG TO COMPLETE THE PROJECT**
13

14 **Q. What does Mr. Gomez assert with respect to Avista's management of**
15 **its contract and relationship with Five Point?**

16 A. Essentially, Mr. Gomez claims that when Avista first noted that Five Point
17 was not completing its deliverables according to the required schedule, that the Company
18 should have immediately ceased payments to Five Point, according to the provisions of its
19 contract.¹⁹ Because the Company did not exercise this provision, Mr. Gomez asserts that
20 it failed to act prudently.

21 Upon acquiring EP2M, in January 2013, Five Point assumed the lead role in
22 implementing the CC&B application. The performance issues raised by Mr. Gomez
23 pertain to this implementation role of Five Point. In June 2014, Avista learned that Five

¹⁹ Exhibit No. __CT (DCG-1TC) 57:1-4.

1 Point had been acquired by the firm Ernst & Young, with whom Avista contracted to
2 complete the closing months of the Project.

3 **Q. Did Mr. Gomez suggest what result would be achieved by Avista**
4 **ceasing payments to Five Point?**

5 A. Yes. Mr. Gomez claims this action would have forced Five Point to meet
6 its deliverables schedule, thus likely avoiding the need to extend the timeline and
7 budget.²⁰

8 **Q. What is your response to this assertion?**

9 A. Mr. Gomez' proposed actions on the part of Avista, and his speculation
10 about the likely response of Five Point and the success of the Project, does not square with
11 the realities faced by the Company or the ultimate prudence of its decisions.

12 **Q. Please explain?**

13 A. As described earlier in this testimony, neither the Company, nor EP2M or
14 Avista's other contractors could have known the ultimate complexity of the Project at the
15 time the initial workplan was developed, and the contracts were negotiated and signed. As
16 more information was developed during the Detailed Design phase, Avista and its
17 contractors were able to more-accurately estimate the required workload. The increased
18 workload was attributed to the size and complexity of the Project, and its many
19 interdependencies, as the Company has explained in detail through information provided
20 for the record in this case.

21 **Q. What actions did Avista and Five Point, in particular, take in an**
22 **attempt to help deliver the Project on its original timeline?**

²⁰ Exhibit No. __CT (DCG-1TC) 57:2,3..

1 A. As described in Avista’s 2014 report “Revised Timeline and Budget –
2 Avista’s Project Compass” (Exhibit No.__(JMK-2), Five Point added staff to its
3 complement of code developers, and Avista and Five Point worked together to improve
4 the processing time being required to complete activities, particularly in the area of defect
5 remediation. At the Company’s request, Five Point replaced its project manager, and also
6 moved its key developer to Spokane to work directly with Avista employees in reducing
7 the turnaround time for resolving defects. Avista also restructured the testing phases of the
8 Project, in an attempt to reduce the overall calendar time required for these activities.

9 **Q. What was Avista’s overall assessment of the impact of the effort that**
10 **was being required to complete the deliverables?**

11 A. The Company recognized that, despite the progress being made by Avista,
12 Five Point, and the Company’s many other contractors, successful completion of the
13 Project would require additional time and budget.

14 **Q. Did Avista consider the option of exercising its contract provisions in**
15 **an attempt to force Five Point to perform according to its initial contract schedule?**

16 A. Yes. In Avista’s response to Staff Data Request 152C (Exhibit
17 No.__(JMK-11C), the Company listed a range of factors considered in evaluating what
18 steps might be taken regarding the performance of Five Point. Avista took these factors
19 into consideration in its decision to continue to use Five Point to complete Project
20 Compass. These factors included:

- 21 • Ability of Avista to work successfully with Five Point in completing the
- 22 Project.
- 23 • Consequences if Avista were to terminate payments to Five Point.
- 24 • Potential outcome of litigation with Five Point.
- 25 • Finding a suitable replacement contractor who was also available.

- 1 • Significant delay and increased costs caused by changing contractors.
2 • Cost of a replacement contractor.
3

4 **Q. Were there any other considerations?**

5 A. Yes. Many of the Five Point staff were among the original authors of the
6 CC&B application when it was developed at the firm Cordaptix, which was acquired by
7 the firm SPL, and then subsequently acquired by Oracle. These staff were part of the
8 Oracle CC&B “systems implementation team,” before joining EP2M, and were now
9 supporting Project Compass as part of Five Point. Therefore, when considering
10 alternatives to Five Point, we had to weigh the risks of finding a replacement team that
11 had sufficient knowledge, experience, skills, and familiarity with the application, which
12 was an important element of our successful implementation.

13 **Q. What was the context for consideration of these issues?**

14 A. The overarching consideration for Avista, in determining its course of
15 action with Five Point, was how a particular decision would impact the Project timeline
16 and, most importantly, the overall cost to our customers for installing these new systems.
17 Members of the Company’s Executive Steering Committee, composed of the President of
18 Avista Utilities, myself, the VP of Energy Delivery, the VP and Treasurer, and the VP of
19 Energy Resources, discussed the likely consequence of each of these factors with the
20 Project Compass leadership team, and concluded that the clear choice was to complete the
21 Project with Five Point.

22 **Q. Were you an active participant in this process?**

23 A. Yes, I was. As a member of Executive Steering Committee, I participated
24 in the meetings that occurred where these issues were discussed.

1 **Q. Why did the Executive Steering Committee reach this conclusion?**

2 A. Importantly, Five Point, together with our other contractors, had the
3 capability and availability needed to complete the Project, and Avista was able to work
4 successfully with them in continually adjusting work processes to optimize the completion
5 of tasks. Evaluation of the other factors considered by the Executive Steering Committee
6 was described in the Company’s response to Staff_DR_152C (Exhibit No. __ (JMK-11C)),
7 an excerpt of which is provided below.

8 “Avista also concluded that even if another suitable contractor was
9 immediately available to step in, that the effective transition would, in the
10 very best case, add several months to the Project timeline (i.e. several
11 months beyond the actual February 2, 2015 Go Live). Avista also
12 concluded that it was inevitable that if the Company rejected the
13 deliverables of Five Point, ceased paying them, and retained their
14 holdback payments, it would in all probability result in immediate
15 litigation. Finally, Avista concluded that litigation between the parties
16 would seriously impede the effective transfer of information from Five
17 Point to the new contractor, which would further lengthen the transition
18 time and add costs.”

19
20 An additional significant factor was that Five Point, in any litigation, could
21 reasonably point to the performance of Avista and other contractors as contributing to
22 their need for additional time to meet contract deliverables.

23 As we have explained in detail above, along with significant documentation, there
24 were multiple components of the Project that were behind schedule, for which Five Point
25 had no direct involvement. Compared with the decision to continue the Project with Five
26 Point, the Committee concluded that any alternative action would have seriously delayed
27 the Project and added significantly to the final cost. It was estimated that any delay
28 beyond February 2, 2015, could cost upwards of \$3.6 million per month, as noted in
29 Exhibit No. __ (JMK-11C).

1 Finally, and very importantly, since the Committee understood that the Project
2 timeline and budget would have to be extended anyway, to complete other work not
3 involving Five Point, it made no sense to take actions that would jeopardize the success of
4 the entire Project.

5 The evidence supports Avista's decision to retain Five Point as prudent, and it
6 produced a very successful outcome, and at a lesser cost compared with an alternative
7 decision that would have required the Company to start all over again with a new
8 contractor, if and when such a contractor became available. There is no evidence in this
9 record that indicates that a different decision by the Company would have delivered
10 Project Compass more quickly, more successfully, or at a lesser cost.

11 Recognizing the greater workload, across the board, that was required to
12 successfully complete the Project, the Company extended the contracts and compensation
13 of many of its other vendors, including Five Point and Avista's other primary installation
14 contractor, IBM. These additions were accomplished through the "Project Change
15 Request" process.

16 As described earlier in my testimony, in the Company's supplemental response to
17 Staff_DR_141C (Exhibit No.__(JMK-9C), Avista provided a table that includes a
18 summary of the "Project Change Request" documents approved over the course of the
19 Project. These change requests describe the need for each change, including the cost
20 added to the Project, and identify, as applicable, the contract company or Avista staff
21 associated with the project change. The table is organized by contract company, and
22 provides a chronological sequence of the activities related to Project changes, as
23 associated with that company, including the incremental cost of each change, as well as

1 the total incremental cost associated with that vendor over the life of the Project. In total,
 2 the change requests show increased costs for 25 of the contract companies who supported
 3 Project Compass. The table, below, is a summary derived from Confidential Attachment B
 4 showing the total incremental cost associated with the Project Change Requests for each
 5 of the Project Compass contractors. The table lists the 16 contractors whose incremental
 6 cost was greater than \$100,000. The individual incremental cost for nine contractors, not
 7 shown, was below \$100,000.

Contractor	Number of Change Requests ²¹	Incremental Cost
IBM	█	██████████
Five Point ²²	█	██████████
Intellitect	█	██████████
Other Software/Tech. Vendors	█	██████████
Hewlett Packard (HP)	█	██████████
Black & Veatch (B&V)	█	██████████
Utility Solutions Partners	█	██████████
Dinero / Emtec	█	██████████
Intervoice (Convergys)	█	██████████
Oxford	█	██████████
TransCentra	█	██████████
Senturus	█	██████████
Gartner QA	█	██████████
Benchforce IT Consultants	█	██████████
Volt	█	██████████
Fujitsu America	█	██████████
Mosaic	█	██████████

8

²¹ Includes only those change requests associated with changes in Project cost.

²² Based on the initial contract with EP2M and the contract extension with Five Point / Ernst and Young.

1 The Company's contract with Five Point was nearing its conclusion at the time it
2 was acquired by Ernst & Young. In agreeing to extend its contract with Ernst & Young,
3 the Company was able to retain the Five Point team for the balance of the Project, as well
4 as to add additional expertise and support from the staff of Ernst & Young. The contract
5 extension was based on the hourly rates of named personnel and an estimate of the hours
6 to be spent on the Project for each person, based on the estimated time needed to complete
7 the Project. The Company chose a time-and-materials-based contract, because it provided
8 greater transparency and more control over the ultimate amount Avista would spend in
9 successfully completing the Project. The contract extension allowed the Company to
10 continue the implementation, without interruption or delay, and to very successfully
11 complete, launch, and support the new systems.

12

13 **VI. COMPANY EMPLOYEES EARNED BONUSES BASED ON A VERY**
14 **SUCCESSFUL EFFORT IMPLEMENTING PROJECT COMPASS**

15

16 **Q. Mr. Gomez recommends that the bonus amounts paid to Avista**
17 **employees should not be recovered by the Company. What is Avista's response?**

18

19 A. The bonus plan, which I have attached as Exhibit No.__(JMK-12C),
20 recognized the significant challenge and the effort involved to complete Project Compass,
21 and that employees would have to make a substantial and sustained contribution over a
22 period of approximately two years (much longer for some employees). When the timeline
23 was extended, it required our employees to maintain a high level of intensity through the
24 February 2015 Go Live date. The continuity that comes with retaining the same
25 employees over a multi-year period, on an effort as complex as Project Compass, warrants
a bonus plan to help encourage employees to stay with the Project to the end.

1 **Q. How was the bonus plan developed and approved?**

2 A. The plan was developed by Avista's Executive Steering Committee and the
3 Project Compass leadership team. It specified that only Company employees were
4 eligible, and that the amount received was based on the person's contribution to the
5 Project. Amounts received by employees were based on objective and measurable
6 benchmarks established at the beginning of the Project. The plan was audited by our
7 internal audit group, and approved by the Company' senior executives and the Board of
8 Directors. The Executive Steering Committee authorized bonuses being paid based on the
9 achievement of project benchmarks as required in the plan.

10 The amounts paid to employees in recognition of their effort and success were
11 reasonable. The Project was ultimately very successful, and employees dedicated a very
12 difficult two-plus years of their working life to seeing it through to completion, and the
13 bonuses were reasonable and appropriate.

14 **Q. Does this conclude your rebuttal testimony?**

15 A. Yes.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

JIM M. KENSOK
Exhibit No. 1702

**Overview of Avista's
Project Compass**

Overview of Avista's Project Compass

Avista Utilities



August 2013

Table of Contents

I. Summary.....	5
II. Avista’s Legacy Customer Information System.....	6
Architecture of the System.....	6
Keeping Pace with Change.....	8
Additional Benefit of Extending the Life of the System.....	11
III. Drivers of the Need for Replacement.....	12
The Role of Technology Evolution.....	12
A Familiar Example.....	13
Avista’s Chain of Legacy Technologies.....	13
Hardware.....	13
Applications and Computer Languages.....	14
People.....	16
Other Legacy Considerations.....	16
Cost of Modifications.....	16
Ultimate Cost of Replacement.....	17
Platform for the Future.....	17
Summary of the Limitations of Avista’s System.....	18
Options to Extend the Service Life of the System.....	18
Timing of the Replacement.....	20
IV. Planning for Replacement of the Legacy System.....	20
Replacements of Customer Information Systems are Common.....	20
These Projects also Present a Significant Challenge.....	21
Identifying Common Challenges.....	22
Designing the Project Around Best Practices.....	24
The Initial Project Plan.....	26
V. Evaluation of Replacement Options.....	27
Assessing and Selecting the Replacement Applications.....	27
Establishing Review Criteria.....	29

Supporting the Application Scoping, Review and Selection Process.....	29
Application Proposals Received from Vendors.....	30
Evaluating the Proposals.....	31
Functionality.....	31
Technology.....	32
Implementation Partner.....	32
Cost.....	32
Avista’s Final Selection of Applications and Service Vendors.....	35
Oracle’s Customer Care & Billing.....	35
IBM’s Maximo Enterprise Asset Management.....	35
EP2M.....	36

VI. Implementation of the Replacement Systems..... 36

Project Compass Capital Budget.....	37
Timing of the Final Project Budget.....	37
The Role of Cost Information Early in the Project.....	38
The Project Budget as a Management Tool.....	39
Project Budget Allocation.....	40
Application Costs as a Portion of the Budget.....	40
Board of Directors’ Updates.....	41
Principal Implementation Activities of Phase 2.....	41
Key Activities in Phase 3.....	44

VI. List of Attachments

- Attachment 1 Depiction of major systems interconnected with Avista’s legacy Customer Information System.
- Attachment 2 Request for Information for potential reinvestment in Avista’s legacy Customer Information System.
- Attachment 3 Project charter document for initial work to evaluate options for replacing Avista’s legacy Customer Information System.
- Attachment 4 Project update presented to Avista’s executive steering Committee.
- Attachment 5 Request for Information for services in support of the evaluation of options for replacing Avista’s legacy Customer Information System.

- Attachment 6 List of vendors who received the Request for Information document for supporting System evaluation options.
- Attachment 7 CONFIDENTIAL – Scoring results from assessment of vendor proposals, per Attachment 5 & 6.
- Attachment 8 Overview document of Avista’s Request for Proposals for vendor application solutions and services.
- Attachment 9 List of vendors who received Avista Request for Proposals, per Attachment 8.
- Attachment 10 Avista Project Compass Guidebook.
- Attachment 11 CONFIDENTIAL – Scoring results of the assessments of vendor’s solution and services proposals, per Attachment 8.
- Attachment 12 CONFIDENTIAL – Final solution evaluation workbook, per Attachment 8.
- Attachment 13 CONFIDENTIAL – Voting tallies for final vendor Selections.
- Attachment 14 CONFIDENTIAL – Price comparison of final solutions packages.
- Attachment 15 CONFIDENTIAL – Final capital budget approved for Project Compass.
- Attachment 16 CONFIDENTIAL – Project update for Avista’s Board of Directors, February 2012.
- Attachment 17 CONFIDENTIAL – Project update for Avista’s Board of Directors, September 2012.
- Attachment 18 CONFIDENTIAL – Project update for Avista’s Board of Directors, February 2013.

I. Summary

Avista Utilities (Avista or Company) is engaged in a multi-year effort to replace its legacy Customer Information System (or System). Research and planning for this effort began in 2010, and the actual work of replacement, which was named Project Compass (or Compass) was begun in May of 2012. The Company's Customer Information System has been in service since 1994, and has been fortified over time by linking it with nearly 100 other software applications and systems to keep pace with evolving information technologies and expanding customer preferences. While this strategy has provided our customers value, the Company has also been mindful that its ability to continue supporting this aging technology is finite. Between 2003 and 2010, Avista and its technology support partner Hewlett-Packard, assessed options for modernizing the legacy system in order to reduce business risks and operating costs while delaying its ultimate replacement. The Company decided in 2010 to commence with the research and planning needed to support the current replacement initiative. During 2011, Avista selected a technology partner to assist in documenting technology needs, and in assessing commercial business applications from leading vendors. Project Compass was formally launched in 2012, and proceeded with Avista's purchase of Oracle's Customer Care & Billing application, IBM's Maximo asset management application, and implementation support from EP2M. A final capital budget was approved for the Project in 2012. The Company and its support contractors are currently engaged in the implementation of these new systems, which involves the complex process of enabling them to support over 3,500 business requirements associated with 200 business processes, and to connect seamlessly with 100 other software systems and applications. In addition, the training programs needed to support these new systems and work processes, are also being developed and tested. Portions of the Maximo application will be enabled in the fall of 2013, and all other asset management and Customer Care & Billing systems will enter service in July of 2014. A final Phase of Project Compass will span a period of 6 to 12 months after the systems are fully in service, to ensure that all technical, training, and process issues that arise are identified, assessed and timely solved.

II. Avista's Legacy Customer Information System

A utility's Customer Information System is one of the most essential business systems enabling the organization's daily operations. For Avista, it supports functions that range from customer calls, to automated service on the phone system or web, access to electric and gas meter information, customer billing, outage management, customer work scheduling and status reporting, ordering construction materials, and managing customer account information. Each of these activities, and many more, is supported by our highly-integrated Customer Information System. Developed in the early 1990's, it's considered a "legacy" System because it relies on key technologies that are no longer manufactured, commercially available, or supported. Like the systems implemented by many utilities of that era, our software applications were designed and developed by Avista staff, and are often referred to as "homegrown." The decisions of companies to 'self build' resulted in part from the then-high cost of commercially available software products, and the desire to tailor systems to their own unique business processes. In 1992, Avista contracted with Electronic Data Services (EDS) to provide enterprise-wide information technology support, including the ongoing development of the Customer Information System, which was placed in service in August 1994.

Architecture of the System

Avista's legacy System is composed of three highly-integrated applications, also known as the Avista "Workplace." As a unified platform, these applications draw information from a common set of master data tables, and form the technology foundation for a network of complex business processes and transactions. A brief description of the applications is provided below.

1. Customer Service – application supports the traditional utility business functions of meter reading, customer billing, payment processing, credit, collections, field requests and customer service orders. In addition, it hosts the single source of customer-related data that is used widely throughout Avista for various other business processes.
2. Work Management – this application supports gas 'trouble' reporting and the electric Outage Management System, and is used to create orders for location services, permitting, and construction jobs, including those requested by our customers and those arising

through the normal course of construction scheduling and operations. In addition, the Work Management system is linked with the Company's Enterprise Procurement System, part of Avista's Oracle e-Business Suite, for the automated ordering and proper accounting of construction materials.

3. Electric and Gas Meter Application – module used to inventory and manage the Company's fleet of in-service electric and gas meters. In addition to hosting the meter data associated with each customer and premise, the system is also used to track each meter and manage the periodic requirements for meter maintenance and testing.

Avista's Customer Information System was developed around then state-of-the-art concepts including 'single source data,' 'subject area databases,' and 'relational databases.' These innovative and powerful tools, based on the 'relational model', organized very large sets of data into a series of normalized tables (or *relations*). Each table represented a certain type of data, such as the street addresses where the Company provided service. Data in these tables could be freely inserted, deleted and edited, and stored much more efficiently than 'linked' databases. In this model, each individual record in every data table was associated with a unique identifier or 'key'. This unique key might represent a single service address contained in the table of address data. But the unique key for this address was also shared by all of the data related to that address that was contained in all of the other data tables. In this way, a service address was linked with all other related data for that address, including such information as the date of meter installation, the meter manufacturer, meter serial number and usage data for that meter, etc.

The System also employed the now ubiquitous 'client-server' architecture. But when implemented in 1994, it was the first utility system in North America to deploy this design. Databases were built and managed for the mainframe platform using IBM's DB2 product, and the application program code was written in the then-mainstream programming language COBOL v2. The COBOL application routines or programs were developed using the CASE tool "ADW", created by Sterling, performed on desktop computers running the IBM OS/2 operating system. The application was designed for the mainframe operating system known as CICS. Another language, Smalltalk, was used to create visual interface for computer screens, and employed the innovative object-oriented programming methodology. Queries of the data tables were enabled by routines

written in the language known as SQL. This advanced System allowed the Company's customer service representatives to efficiently access the mainframe applications, and to query, display, edit and manage data in object form on their desktop computer screens.

Keeping Pace with Change

The Customer Service and Electric & Gas Meter Applications were enabled in 1994, and development of the Work Management System application quickly followed. Avista's Workplace was initially integrated with three other business systems, as depicted below in Figure 1.

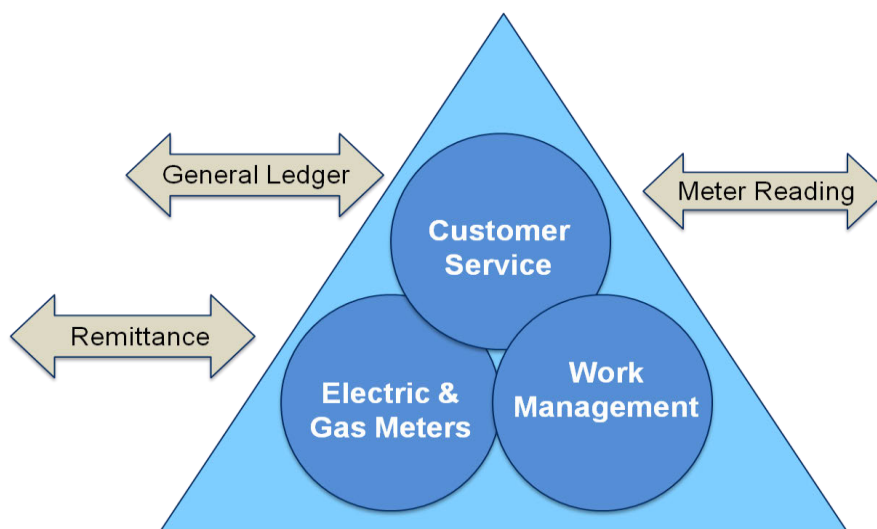


Figure 1. A simplified graphic representing the initial configuration of Avista's legacy Customer Information System, showing the three primary applications and integrated systems.

Change to the System came quickly, however, as wave after wave of new information technologies (such as automated phone systems, powerful mid-range computing platforms, and customer web portals) enabled an evolving stream of new customer service functionalities, embedded as standard features in each new generation of applications developed by leading global vendors. As consumers grew accustomed to these service options in their interaction with a wide range of other companies, they began to expect these types of services from their utilities. Avista worked to accommodate these developments, and in addition, added many features to its System to reduce internal costs by automating paper functions, redesigning work-processes, and providing self-service options for customers. This expanded functionality (such as payment by phone) was

accomplished by ‘integrating’ the legacy System with the emerging applications and systems that enabled these new capabilities.

An ‘integration’ refers to the sharing of data between computer applications when more than one is required to complete a process. In early integrations, data from one application was sent directly to another application in a direct link known as a ‘point to point’ integration. The integration relied on a custom computer program to translate the data format and computer language of one application into a form that could be input into the other application for processing, and vice versa. This function allowed the two applications to communicate and work in concert to perform a joint function. Many businesses shared this need to extend the capabilities of the limited architecture of their information systems, and this demand gave rise to an entirely new software product family known as “Middleware.” These applications provide communication and management of data for distributed software applications beyond those available from the computer operating system itself. Using a Middleware product known as ‘Biz Talk’, the Company was able to cost-effectively expand the efficiency, capability and functionality of its legacy System, by integrating new commercial off-the-shelf software, internally developed custom applications, and the application systems of third-party service providers. For both customers and employees, this approach seamlessly integrated technologies far beyond the boundaries of the System’s original design limitations. When the System architecture was designed, home computers were uncommon, the internet was in its infancy, there were no e-mail services, no automated phone system, few cell phones, no text or SMS messaging, and no mobile computing, as supported by today’s smart phones and tablets. Some of the major applications and systems now integrated with Avista’s Workplace include the following:

- Enterprise Voice Portal – this automated telephone system supports a range of self service options for customers, as well as voicemail and other functions used by those contacting the Company and for internal Company operations.
- Mobile Dispatch System – this application supports the call out and scheduling of Avista’s gas and electric servicemen, and other field staff required to support Company operations.

- Avista Facilities Management – this application houses the Company’s Geographic Information System. In addition to map data, it includes all the Company’s electric and gas facility maps and other geographic data.
- Automatic Meter Reading – this system gathers meter-reading data from the Company’s fleet of AMR-equipped meters in Avista’s service territories in Oregon, Idaho and portions of Washington.
- Construction Design Tool – this application supports the Company’s computer-based design tool for gas and electric construction projects, the automated input of component assemblies, materials ordering, and cost accounting.
- Outage Management Tool – this application uses Avista’s electric Facility Management and mapping data, in conjunction with electric system device and circuit intelligence, to determine the likely source of a reported outage, to display the likely size of the outage, and to automatically dial affected customers as well as automatically posting outage information on our customer web portal.
- Mobile Web Application – this application hosts our customer’s access of Avista’s web portal using smart phones and tablets.
- Electronic Check Payment – this family of applications belongs to banks and third-party service vendors used by the Company to support payment options for customers.
- Contract Billing – this family of applications supports services such as customer account management, bill printing, mailing and remittance processing.
- Customer e-mail Support – applications that host e-mail services for our customers, and provide support applications and services.
- Meter Data Management – this recently integrated system provides the data-storage and management capability to enable ‘smart metering’ capabilities such as customers’ real-time use of energy.
- Smart Grid Pilot – this portal provides access for Avista customers participating in the Company’s Smart Grid Demonstration Project.
- Avista Web Applications – this system of applications supports the Company’s internet website, Avistautilities.com, and enables customers to access and manage their account information held in the Customer Information System.

- Avista’s Oracle Financial and Enterprise Procurement Systems – these enterprise applications support the breadth of the Company’s financial and reporting systems, as well as a host of enterprise supply-chain functions.

Prudent investments in our legacy system over the past 20 years have allowed us to deliver consistently-high levels of customer service across an expanding range of service channels and self-service options. In place of its initial three modules and three system integrations, the current System supports nearly 200 business processes, and includes approximately 100 integrations with other specific applications and systems, as depicted in simplified form in Figure 2, below. A more complete depiction of the interconnection of major systems is provided as Attachment 1.



Figure 2. A simplified graphic representing the integration of Avista’s legacy Customer Information System with other major applications and systems.

Additional Benefit of Extending the Life of the Legacy System

Avista has invested in its Customer Information System, principally because we could add functionality and value to better serve customers for relatively small incremental investments. But,

importantly, this approach also allowed the Company to ‘skip over’ successive generations of technology platforms, many of which are being replaced by our peer utilities today as they install new contemporary systems. In addition, the Company was able to evaluate the experiences of other utilities engaged in replacing their systems, as one way to support the design of a best practices project. Extending the life of its legacy System has allowed the Company to avoid the significant investment of replacement, and to acquire replacement systems later in the evolutionary trajectory of the technology, giving it broader and more standardized capabilities, and a likely longer future service life.

III. Drivers of the Need for Replacement

As described above, our legacy System meets the basic needs of our stakeholders today because we’ve made managed investments to extend its value, cost effectiveness and service life. But while there has been incremental and long-term benefits associated with this strategy, there have also been less-obvious but important costs and business risks accumulating with time as the technology platform ages. These latter costs and risks can compete with the benefits of extending the service life, and the Company has remained aware of the inevitability that our core legacy System and the very-complex “patchwork” of integration programs supporting other applications, would have to be replaced.

The Role of Technology Evolution

Over the past twenty years, the rapid evolution of information science technologies has impacted the life-cycle availability of aging software and hardware products and services, and it has enabled significant improvements in consumer service capabilities in each new generation of commercial applications. This rapid cycling of product and service innovation has eroded the foundational integrity of Avista’s legacy technology. And at the same time, it has pressured us to continue adding on functionality well beyond the design capabilities of our legacy System.

A Familiar Example

As a way to illustrate the impact of these technology forces, consider a parallel evolution in personal music players. In 1980, Sony introduced the revolutionary and highly-successful Walkman cassette player. Cassette tapes were then dominant, but by the mid-1980s, the Walkman was redesigned for the new format of compact discs (CD). By 1990, cassette players began to disappear from store shelves as personal CD players were continually improved. But, like the cassette tape before, the CD personal music player was doomed when Apple introduced the iPod in 2001. And for some time now, the supremacy of the iPod has been undermined by the iPhone and other smart devices that can store and play music files, but in addition, can access music via web streaming or files stored in the computing cloud.

Today, a person might still use a Walkman to listen to music on existing cassette tapes. But to maintain and expand a cassette music library, requires several electronic components forming a ‘chain of technology’ that’s no longer mainstream. Though cumbersome (by today’s standards), it’s still possible to perform the steps required to record a new tape, so long as each piece of equipment in the technology chain is working. And the incremental cost is small, compared with the alternative of replacing the tape library with digital files purchased from iTunes. At some point, however, the old equipment will fail. And, because it’s no longer mainstream, it will be progressively more difficult and expensive to repair. Even the most ardent cassette person will probably reach the point, where the cost, complexity and limitations are enough to overcome the inertia of reinvesting in a new music platform.

Avista’s Chain of Legacy Technologies

The complexity of the technology chain supporting the Company’s legacy System is similar in many ways. The key areas of vulnerability and challenge have to do with older computer hardware and operating systems, computer applications and programming languages, and the availability of qualified technical and development support, as briefly described below:

Hardware – As mentioned, our System is based on a mainframe computing platform. This is because when the system was designed and launched, only mainframe machines had the

computing horsepower required for its operation. Even though smaller computers have the necessary capabilities today, the legacy System databases and program applications are entirely mainframe dependent. In addition, the development application used for making programming changes to the Company's System, runs on IBM's OS/2 operating system that has not been sold or supported for many years. And the computers that were matched to the OS/2 operating system haven't been manufactured for a similar time. For several years after the hardware and operating system were discontinued, Avista bought used computer components (some from e-Bay auctions) that were matched with OS/2. More recently, however, the Company uses specialized software that runs on contemporary desktop computers to "emulate" the OS/2 operating system. This workaround allows the Company to execute its OS/2-dependent software applications in a "virtual" OS/2 environment.

Applications and Computer Languages – The legacy software application is the 'computer program' that runs and maintains our legacy system databases, and enables all the features required to support our business processes. These applications are written in the computer language, COBOL v2, which for many years has not been sold, supported, or used in programming applications. This version of COBOL, which we refer to as 'native' COBOL, is also no longer compatible with contemporary mainframe operating systems. To work around this, the Company has for many years used another specialized application, Micro Focus COBOL, to compile the native COBOL language into machine language that is a virtual replication of a more contemporary version of COBOL, which is then able to run on the mainframe operating system. While the virtual COBOL replication has a very high degree of fidelity with the native COBOL, it relies on a visual replication that sometimes results in transcription errors. While the error rate is low, there are millions of lines of computer code that are re-created during the compiling process. The system must be tested to detect these errors, which then requires additional programming time to locate and repair them. More recently, there is a concern that the machine language created by Micro Focus COBOL may not be able to run on newer mainframe operating systems, which now run COBOL v390.

Avista's legacy software applications are almost constantly being repaired, modified (to comply with new requirements), or upgraded with new functionality or capabilities. To accomplish these

operations requires use of a CASE tool application known as Application Development Workbench, or ADW. CASE tool applications, whose use peaked in the early 1990s, are tightly coupled with mainframe programming languages; they enable and help-automate the process of generating (writing) code in the native COBOL language. The company that produced ADW is no longer in business, and Avista's application is neither produced nor supported. In addition, ADW can only run on the desktop machines using the emulation software to create a compatible OS/2 operating system. Once the coding changes are made in native COBOL using ADW, they are then compiled using the Micro Focus COBOL application.

Another computer language that's key to sustaining Avista's legacy system is known as Smalltalk. The language is used to create routines or programs that enable many key functionalities of Avista's system, including 'rendering' the display screens customer service representatives use to view and manage customer and system data. Rendering is the conversion of lines of computer code into a visual screen display, which not only allows the user to see account information, for example, but to also make changes to the data or information contained on the rendered screen. This functionality is utterly everywhere today, such as the displays on your smart phone, but it was a very innovative application when designed into Avista's system the early 1990s. And, Smalltalk was the leading programming language of its type in that day. Although this language is a very flexible and powerful tool, it is no longer mainstream, and is no longer sold or supported. Many versions of Smalltalk are still in use among small communities of users in the computer industry, but the language is no longer taught in computer curricula and there is no formal training for new programmers.

Finally, the Company's customer service and system data residing on the mainframe platform must be updated every night in what is known as a 'batch' program. The batch updates the data tables to reflect changes in account status made during the day, and to perform other functions using the data, such as producing customer bills. Like the COBOL routines that enable the interactive use of the Customer Service application (described above), separate COBOL routines are required to perform these batch functions. There are approximately 3,000 individual COBOL programs and millions of individual lines of code in the legacy System. The management, repair

and modification of these native COBOL programs can only be performed using the ADW and Micro Focus COBOL applications to both modify and compile them.

People – Maintaining our legacy System requires us to train and maintain technical staff competent in these older programming languages and computer operating systems. This is becoming more difficult as the availability of business analysts and application developers who are familiar with these languages and technology becomes more limited each year. This attrition of skilled developers makes it very difficult to replace members of Avista’s support team, many of whom grew up with this technology when it was new, and who either have retired, or are anticipated to do so in the next few years. Since there is no longer technical training or schooling available for these old languages and systems, the Company must train developers in house, which requires a considerable investment to achieve proficiency. It’s also difficult to channel younger employees into career tracks that have very-limited and diminishing future application. As a consequence, the need to find, train, and maintain capable technical staff adds another layer of complexity, cost and risk to the maintenance of these legacy Systems.

Other Legacy Considerations

Each of the elements above focuses on an aspect of the Company’s System that poses a level of risk greater than that associated with contemporary hardware, operating systems, technical support, and business applications. Avista’s situation is not unique, however, and illustrates the general technology principle shared by many legacy systems: that even though they may require complex workarounds to perform their intended functions, which many can do adequately, they are subject to elevated levels of risk that only compound with time. In addition to increasing business and customer service risk, there are other considerations associated with the maintenance of legacy systems like Avista’s.

Cost of Modifications – In addition to the risks associated with outdated technology, the System is difficult to modify to add new functionality. This arises because the linkages connecting the applications of Avista’s Workplace, along with the Middleware that connects Workplace with the other applications and systems, are ‘hardwired’ together. Unlike contemporary enterprise applications, when a programming change is made to one of Avista’s applications it requires

complimentary programming changes to both the connecting Middleware and the other applications themselves. Because the system has been stretched over time so far beyond its original design considerations, these layers of changes have geometrically increased the complexity of the entire system. Each new modification must be adapted to this complexity, and at the same time, it adds to the complexity. Additionally, because the legacy System is used only by Avista, the ongoing application development costs must be borne entirely by our customers.

Ultimate Cost of Replacement – As Avista added new capability to its legacy System, as described above, this required ‘programming’ to modify the software applications to enable the business processes supporting this new capability. When the legacy System is replaced, the new applications must be ‘programmed’ to support the same integrated systems and business processes. Generally, then, as the number of integrations in the legacy System increases, so does the cost, complexity and the degree of sophistication required to install the replacement system.

Platform for the Future – In addition to the costs and risks of extending the service life of Avista’s legacy system, and the complexity and cost of adding functionality, its ultimate capability has been largely exhausted. The System was designed as a meter-based billing system that provided the Company an efficient and cost-effective platform for managing a customer’s basic transactions. In this respect, the system is more ‘business centric’ because it was designed around the transactional needs of the business. This is not surprising, though, since at the time the System was developed, the transactional convention consisted of customers receiving a paper bill, which they paid with a personal check sent by mail, or in person at one of Avista’s offices. Utility customers, generally, had no expectation of being involved in energy choices or service options, which likewise, were rare. Today’s information technologies and the market demands for service differentiation have swept aside the business-centric service model and placed the ‘customer centric’ model front and center. Consumers today have an ever-increasing expectation of being able to conduct business with all manner of companies in ways they, the customer, prefer (e-mail, text, chat, phone), at the time they determine to be convenient (24 x 7 x 365), and to have one point of contact to seamlessly, quickly and efficiently meet all their needs. As capably as Avista’s System has performed in the past, it simply does not have the fundamental capabilities required to provide customers the service options they have come to expect in the customer-centric marketplace. In

addition, the legacy system cannot support the newer utility product offerings becoming more familiar to customers, such as real-time information management, pre-pay options and time-of-use metering and billing. Some enhancements viewed by customers today as “basic service” (e.g. text messaging or selecting their preferred mode of contact – phone, text, SMS or e-mail), simply cannot be accommodated.

Summary of the Limitations of Avista’s Legacy System

The Company’s legacy System is dependent on expensive mainframe computing platforms, even though today’s mid-range computers have the capability needed to support the applications. It also depends on many obsolete technologies that require complex workarounds to function properly. And the workarounds themselves depend on obsolete systems and applications working properly in concert to enable them. As a consequence, maintaining the system involves risk that grows as the technology ages, and requires expert staff and trained contractors who remain competent in these archaic technologies. Making changes to the System is complex, burdensome, and expensive. But unlike the inconvenience of having to repair a broken cassette player, Avista’s system is the hub of business operations for over 600,000 customers, and it must operate flawlessly on a continuous basis. Finally, though the System still operates adequately, there are finite and insurmountable limits to its ultimate ability to provide the technology platform that’s needed to serve our customers today and into the future.

Options to Extend the Service Life of the System

Periodically, Avista and its support partner, EDS/Hewlett-Packard, have evaluated the System’s capabilities as well as options for its possible modernization. The potential scalability of the Customer Information System was assessed in 1999 to determine the feasibility of expanding the number of customers that could be served with then-current applications, processes and technical infrastructure. The results of this work titled “Avista Workplace Application Scalability Assessment,” indicated that with certain investments, the system would be able to support up to 1.5 million customers. As the number of customers served by Avista continued to grow at generally-historic rates, the system investments needed to support greater scalability were neither needed nor made. In 2002, as some of the technologies supporting Avista’s System, such as ADW, were becoming unsupported, an assessment was made, titled “Avista Application Migration

Review”, of the feasibility of moving the Company’s system from the mainframe platform to a contemporary mid-range platform and operating system. The benefits of such a process, commonly known as ‘replatforming’, were forecast over time and were compared with the estimated costs for completing the work. Results of this work indicated that replatforming the System at that time was not cost effective, and as a result, this work did not proceed. The next assessment was made in 2003 and focused on ways to reduce the risk associated with the ADW application then running on aging desktop computers using the IBM OS/2 operating system. The project report, titled “ADW Conversion”, recommended Avista purchase the specialized software to emulate the OS/2 system on contemporary computers and operating systems. This recommendation was implemented. The legacy System was reviewed again in 2006 as part of a larger information technology review conducted for the entire Company. The report, titled “Preliminary Applications Rationalization Assessment”, addressed the overall rationalization potential across the Company, and identified any ‘modernization’ opportunities for specific applications. The term “rationalization” refers to an information technology discipline that’s aimed at reducing the ongoing costs of maintaining overlapping or redundant software systems across the whole of the business. The report noted the Company’s Customer Information System as a ‘high risk’ application that was a candidate for either replacement or “refactoring.” The latter refers to a process of changing the internal structure of the existing application code to reduce its complexity and improve its readability. While this process helps reduce the risk associated with legacy software, it does not fundamentally change its basic properties or architecture. Refactoring the Customer Service System was assessed as not having sufficient benefit, and the Company was not ready to replace the System. Most recently, in 2010, the Company again reconsidered reinvesting in its legacy System as means to delay its ultimate replacement. As a prelude to requesting vendor proposals to support such an effort, the Company sent a Request for Information to several major information technology vendors to describe the legacy System, and to gauge their interest in participating in possible next steps. A copy of the document, titled: “Request for Information for Avista Workplace Revitalization Project” is attached to this report as Attachment 2. As Avista continued to weigh the possible feasibility of this approach, it ultimately determined that commencing with the research and planning for the current replacement project was the prudent course of action.

Timing of the Replacement

Avista's decision to replace its legacy System involved a number of considerations, many of which have been described above. Considered in concert, these helped shape the decision to commence with the research and planning necessary to support this effort:

- Confidence that Avista could operate the legacy system without fail through at least 2014, without any significant upgrades to older technology. This timeframe would accommodate the period of research, planning, design and implementation of a replacement project;
- Avista expected to have a limited window of availability for the employee and contract technical resources necessary ensure the proper functioning, maintenance, repair, and upgrades of the legacy system expected through 2014;
- The pending need to determine whether or not to renew the long-term (ten years) services contract with Hewlett – Packard for the ongoing mainframe capability, and the maintenance and operations support for the legacy system. The end of the then-current contract presented a window of opportunity for replacing the legacy system;
- The experience that the Company had practically tapped the capabilities of its legacy system, whether or not it was operating on contemporary computer hardware and software;
- The concern that business and service risks associated with the legacy system were continuing to accumulate with time;
- The continuing assessment that as new functionality was added to the legacy system, it was driving geometrically-increasing complexity, and likely greater ultimate replacement costs, and
- The knowledge that the legacy system would not have the capability to deliver some of the service and billing options our customers desired, or service and work-process options.

IV. Planning for Replacement of the Legacy System

Replacements of Customer Information Systems are Common

Nationwide, many utilities have undertaken the same journey in replacing their own legacy

Customer Information Systems, and many are replacing systems installed around the year 2000, a ‘generation’ newer than Avista’s System. Several utilities in the Northwest are among those engaged in some phase of a major replacement project. Avista’s understanding of the status of these efforts is summarized below:

Company	State(s)	Status
Cascade Natural Gas & Intermountain Gas	OR/WA/ID	Currently using Oracle’s Customer Care & Billing application in Oregon and Washington, which replaced their prior system installed in 1999. Planning to install this system in their Idaho service area in late 2014-2015.
Northwest Natural Gas	OR/WA	Currently using commercial system installed around year 2000. Now in the process of evaluating potential for upgrades and/or system replacement in near future.
Puget Sound Energy	WA	Recently placed in service new SAP and Outage Management applications in April 2013. Now engaged in system stabilization.
Portland General Electric	OR	Beginning evaluation phase for the replacement of their customer information and meter data management applications, expected to be completed in next 5 years.
Idaho Power	ID	Planning to place in service a new SAP customer information system in September 2013.
PacifiCorp	ID/OR/WA	Currently evaluating systems for possible installation over the coming five years.
Seattle City Light	WA	Engaged in the early installation work of their recently selected Oracle Customer Care & Billing system.

These Projects also Present a Significant Challenge

Replacing a customer information system is a major undertaking for any corporation. And, it’s particularly complex for an integrated business, such as a utility, that manufactures its own products, constructs and maintains its own distribution and delivery infrastructure, and that often sells more than one energy product in the highly regulated markets of sometimes multiple state jurisdictions. The degree of interconnectedness of the customer information system with the many other business systems and applications supporting the enterprise, is a key driver of the challenge. In addition to the complexity of these systems, there’s significant workload associated with the steps of planning, evaluating, selecting, implementing and testing the new systems, as well as training employees and informing customers in time for a smooth transition. In addition, successful projects have a high degree of executive engagement and commitment, superb information technology competence, a deep knowledge of the company’s work processes – both

current and potential future states, and proven experience with the implementation of enterprise information technology projects. The confirmation of these challenges lies in the failure rates reported for these projects, in the range of 40% to 60% over the past five years. In these cases, “failure” was judged as a project that was either abandoned, or that failed to substantially meet its project goals – in terms of cost, solution expectations, implementation timeline or operational readiness.

Identifying Common Challenges

As part of its initial project research, Avista contacted several utility peers who were in various stages of the process of implementing new customer information systems. In an effort to evaluate their preparation, approaches and performances, Avista conducted in-depth interviews to gather lessons learned from these utilities, which included El Paso Electric, San Jose Water, Green Mountain Power and Los Angeles Department of Water and Power.

In addition, the Company took advantage of shared industry knowledge related to the changing demands being placed on utility customer information systems, the maturation of technology solutions, and project audits¹ that assessed root causes of the failure to successfully implement new systems. What emerged from that collective work was a pattern of challenges that had caused many projects to be less than successful. Taking advantage of the opportunity to learn from the experience of others helped Avista prepare, with eyes wide open, for the challenges of replacing its Customer Information System. Some of the central issues the Company and others identified as problematic are included in the list below.

1. Executive involvement that was either distant or faded over the term of the project.
2. Sponsorship of the project that was weak or diffused because there were necessarily so many departments involved in the project.

¹ Focused Management and Operations Audit of Kentucky Utilities Company and Louisville Gas and Electric Company. Final Report presented to The Kentucky Public Service Commission. Liberty Consulting Group, September 12, 2011.

Performance Audit of the Customer Care and Billing System: Testing Prior to Go-Live. Office of the Auditor, Austin, Texas. September 21, 2011.

3. Project management that lacked the applicable experience and strong skills needed to establish a realistic, comprehensive and sustainable plan for the administration of such a large and complex information technology project.
4. Expectations established too early in the project for the ultimate project cost, scope and timeframe, which rendered them unachievable.
5. In spite of the involvement of many departments, project leadership that was often ‘tilted’ toward either the information technology aspect or the business processes.
6. Research to identify best practices and peer-lessons learned that was either inadequate or ineffectively built into the project.
7. Inventory of business requirements that was not complete or that lacked sufficient detail.
8. Business requirements that were not effectively translated into a complete understanding of the application capabilities required to support them.
9. The expertise and effort needed to perform comprehensive evaluations of vendors and their proposals, related to due diligence, project scope and confirmation, was insufficient.
10. Selected vendor solutions often were not complete without additional customized development, which drove added complexity and costs.
11. Implementation support from third-party contractors that had little familiarity with the systems being purchased from the software vendors.
12. Inadequate code testing by the vendor prior to installation in the utility environment.
13. Test environments that did not fully replicate production.
14. The tendency to customize the product solution to better match the existing business processes of the organization, rather than working to implement the solution as designed.
15. An organizations’ resistance to re-design work processes to comport with the architecture of the new solution.
16. Inadequate test team involvement.
17. Inadequate training, education and organizational change management programs to help employees accept and perform competently in new work processes and systems.
18. Going Live with the new systems before the business was fully prepared and production ready.

Designing the Project Around Best Practices

While alarming in some respects, the challenge experienced by many utilities is also not entirely surprising. The process of selecting and implementing a new customer information solution is complex enough by itself, but it is also commonly joined, like Avista's, with the implementation of new asset management or other software systems, and many other work processes. It's also outside a utility's core competency, and it can occur only once in a generation. The degree of challenge and failure has, not surprisingly, given rise to a range of business services whose purpose is to reinforce the capabilities of companies like Avista in the technical and project management skills identified as areas of potential weakness. Avista selected several of these specialized vendors as part of its application selection and implementation processes. Some of the key project-design decisions made by the Company are listed below.

- Established a steering committee of senior executives, meeting monthly with the project directors, to provide executive oversight on all aspects of the design and implementation of the replacement project.
- Made the executive decision to implement what is referred to as “off the shelf” vendor applications, with a commitment to minimize the number of Avista-specific customizations. This approach, while it demands that significant changes be made to the Company's existing business processes during the replacement, helps ensure our customers benefit from the periodic application updates to be provided by the vendor without bearing the cost of the additional software programming that would otherwise be required to accommodate the volume of customized computer code. This approach, which is more mainstream today, is diametric to the approach common when the Company's legacy System was designed and built in house and was carefully tailored over the years to match our existing business practices.
- Created an Avista project leadership structure with two co-directors serving as executive leaders of the effort: the director of customer service, representing the Company's business processes, and the director of application systems programming, responsible for the information technology aspects. The intent of this structure, although potentially ungainly, was to overcome a common failing of projects to ‘overweight’ one aspect of the project to

the detriment of the other. In addition, both project managers are dedicated full time to Project Compass.

- Hired an outside expert in change management as a Company employee to work full time developing and implementing a communications and change management plan for the project. Avista learned this function was critical to successful companies' efforts to substantially change work processes that accompanied the adoption of off the shelf applications.
- Hired an outside firm to assist the Company in developing a solutions Request for Proposals, in soliciting, comparing, and evaluating proposals from an array of options and potential vendors, and in selecting and purchasing the vendor applications. In Avista's research, this was an area of key challenge for utilities because even the process of understanding the totality of its 'business requirements' was a barrier, let alone the challenge of assessing whether a vendor's application had the full capability to support these requirements.
- Ensuring the vendor selected for supporting the implementation of the customer service and asset management applications, and in seamlessly linking them together, had direct experience and extensive familiarity with the applications selected.
- Retaining an outside project manager with significant expertise and experience implementing enterprise-wide utility software applications – being assigned the broad responsibility for the overall implementation process, including the coordination of project leaders representing the vendor applications selected and those who would be selected for quality assurance monitoring and system testing.
- Identifying and securing the full-time participation of key employees who would be needed full time for the project.
- Securing dedicated office space located away from the distractions of Avista's day-to-day operations, and having ample office and meeting space for all project leaders, employees and contractors associated with the project.
- Retaining the services of an outside firm specialized in creating training programs for new systems, development of the curricula, training the trainers, and evaluating the effectiveness of the training effort.

- Planning for an employee communication program that would be part of the foundation of the Company’s change management effort for Project Compass.
- Anticipating the service changes that would arise for customers associated with the new System, and planning for the communications effort that would accompany the Go-Live.
- Waited to establish a final project budget until the planning, preparation and scope had been well enough defined to successfully manage the project.

The Initial Project Plan

The Project was envisioned to be completed over a four-year time horizon, with a substantial effort dedicated to pre-project research and planning. Figure 3, below, depicts the high-level activity phases of this initial plan.



Figure 3. Depiction of the high-level phases of activity envisioned for the Project to replace Avista’s legacy Customer Information System.

The first Phase of the Project, known as “Selection/Procurement,” encompassed the activities of mapping Avista’s business process needs and developing the detailed business requirements for requesting and evaluating alternative sets of software and system solutions that would best meet those needs. This Phase would conclude with the Company selecting the optimized solution set, negotiating final pricing, and signing the purchase agreements with vendors.

Known broadly as “Implementation,” Phase 2 encompasses the complex activities of installing and configuring the new vendor software, testing the new systems, and developing and delivering the specialized training modules for the new Systems. ‘Configuring’ a software application involves the programming required to code its generic capabilities to execute the steps needed to

match each of the Company's work processes. In addition, there are many Avista process steps that cannot be executed within the generic capability of the new applications, without customization. This involves the addition of customized programming that is outside the bounds of the 'off the shelf' capability of the application. Significant customization renders the process of installing the periodic vendor updates of the applications, both complex and expensive. Avista is committed to capturing the value delivered by 'off the shelf' implementation, and accordingly, our goal is to minimize the need for customization. What this requires, however, is that Avista organize employee teams to accomplish the significant tasks of developing new internal business processes that can be supported by new application. There is also a significant volume of work required to perform the 'programming' to integrate the new vendor applications with the approximately 100 other applications and systems required to support the Company's customer service and allied business operations. This Phase of the Project also encompasses the development of employee training programs and systems for the new applications, and the extensive testing of the system needed to confirm the technical performance of the new applications as configured to Avista's design. Finally, this Phase concludes with the step of placing the new Systems into service, the "Go-Live."

The third Phase, known as "Post Go-Live Support," encompasses the activities associated with supporting the in-service deployment of the new systems. Key activities include development of contingency plans to respond to issues that may arise during the Go-Live, and providing technical support for the new systems in the period referred to as "system stabilization."

V. Evaluation of Replacement Options

Assessing and Selecting the Replacement Applications

An early step in the work of Selection/Procurement was development of a project charter, which is included as Attachment 3, and outlines the high-level work objectives, some of the key deliverables, and authorizes an expense budget to support these activities. A presentation made to the executive steering committee in April 2011, includes a partial listing of the Project drivers, highlights of Avista's Project research, some key elements of the Project design, planned next

steps, and some very-preliminary Project capital costs. This presentation is included as Attachment 4. Later in 2011, the Company named this effort, “Project Compass.”

The next key step focused on selecting and retaining a firm to support Avista in developing the following work products:

- 1) Complete inventory of Avista’s technical business process requirements;
- 2) Inventory of the types of business process decisions to be made;
- 3) Gap analysis;
- 4) Request for Proposals document for technology solution providers;
- 5) Normalized evaluation and vetting of vendor proposals;
- 6) Selected preferred solution set, including due diligence and scoping;
- 7) Formal purchase offer for acquisition of vendor services, and
- 8) Negotiated final purchase price for applications and integration services.

Avista developed a Request for Information to document the services of interest and to gauge the interest of candidate firms, which is included with this report as Attachment 5. The list of firms is provided in Attachment 6. The Company solicited, reviewed and scored proposals from the participating firms, and a summary of the scores used in making the selection is included as Confidential Attachment 7.

Avista selected Five Point Partners (Five Point) to support its Selection/Procurement activities. Among other criteria, the Company placed emphasis on their proprietary ‘STAR’ methodology for identifying every type of major business process requirement that Avista would need from solution and application vendors to support its future business operations. This ‘requirements’ definition allowed the Company to develop a detailed and specific Request for Proposals from candidate solution providers. Understanding the detailed requirements translated to a more complete understanding of the complexity and cost of the solution sets, as well as understanding up front the activities and applications that would be required for successful implementation, including their costs, and foreknowledge of what parties would be responsible for the associated workload and costs.

Establishing Review Criteria

Global criteria were developed and vetted for use in evaluating vendor proposals. These criteria included: 1) Functionality; 2) Technology; 3) Implementation Partner, and 4) Cost. With the help of Five Point, Avista used the inventories of its business process and decision types to create the Request for Proposals from candidate solution vendors. The solicitation packet was reviewed and refined in several rounds and sent to vendors on September 28, 2011. An overview document of the Company's Request for Proposals for CIS (customer service) and EAM (asset management) solutions, is provided as Attachment 8. A list of vendors who received the Company's solicitation is included as Attachment 9. An initial step in the vendor's process of evaluating and responding to Avista's proposal solicitation was a conference call opportunity to ask Company representatives detailed questions about its current and anticipated business practices, processes and systems.

Supporting the Application Scoping, Review and Selection Process

During the process of developing its Request for Proposals, Avista launched a parallel effort, known as 'current state mapping', needed to support the design of the Project. This is a comprehensive inventory and evaluation of each of Avista's existing customer information system work processes and system requirements. The purpose of this work was to clearly understand, from a global perspective, every single work process in the business and the applications and systems involved in supporting those activities. In Avista's view, the current state represented a picture of how custom-designed and integrated information technology solutions had been introduced over time to support the Company's legacy service paradigm and work processes. The current-state map included over 200 work processes and over 3,500 individual process steps or system requirements. These process steps represented the necessary technology functions required to support the existing business processes. While these 3,500 requirements were much too detailed to be included in the Request for Proposals, the Five Point STAR process did identify the solution capabilities the vendors would have to meet in order to support Avista's future requirements and business operations. A summary document prepared by Avista, titled "Project Compass Guidebook", is included with this report as Attachment 10, and provides a detailed overview of the complex activities required to support both the procurement of application and service vendors, as well as the detailed process organized to support and execute the current state mapping.

Application Proposals Received from Vendors

Avista received responses from vendors on October 28, 2011, and with the help of Five Point, immediately began the review and evaluation process. The table below lists the vendors who responded and the solutions and roles they proposed for delivering a solution set to Avista.

Vendor	Product or Service Offering	Customer Information System Application	Enterprise Asset Management Application	Mobile Work Management Application	Other Vendors
IBM	Systems Integration	SAP Customer Relationship & Billing (CR&B)	SAP Enterprise Asset Management (EAM)	ClickSoft Mobile Work Management (MWM)	---
IBM	Systems Integration & Software Applications	SAP CR&B	IBM Maximo Asset Management	---	---
EP2M	Systems Integration	Oracle Customer Care & Billing (CC&B)	Oracle Asset Management	Oracle MWM	---
Wipro	Systems Integration	Oracle CC&B	IBM Maximo	Ventyx Service Suite	---
HCL AXON	Systems Integration	SAP CR&B	SAP EAM	ClickSoft MWM	Technology Associates
HCL AXON	Systems Integration	SAP CR&B	Meridium Asset Management	ClickSoft MWM	Technology Associates
HCL AXON	Systems Integration	SAP CR&B	IBM Maximo	ClickSoft MWM	Technology Associates
Sparta	Integration Services	SAP CR&B	SAP EAM	Ventyx Service Suite	Vesta Partners
Logica	Software Application	---	Logica Asset Management	---	---
Meridium	Software Application	---	Meridium Asset Management	---	Partners with Wipro
HPES	Systems Integration	---	---	---	General Services Only

Most of the responding vendors proposed a complete solution, which included three applications: customer service; asset management; and mobile work management. These vendors, including IBM, EP2M, Wipro, HCL AXON and Sparta, proposed to deliver the complete solution through the primary service known as Systems Integration. This involves the installation of system software applications that are developed and sold by leading global software companies such as SAP, Oracle and IBM, and the integration of these software applications with the other

information and process systems of the Company. One vendor, IBM, proposed options where it either provided systems integration services for the software applications of others, including SAP and ClickSoft, or a package that included its own software application (Maximo). HCL AXON proposed to deliver a complete solution set from three options that included various combinations of software application systems. Two vendors, Logica and Meridium, proposed to deliver and install only their own software applications, and one vendor proposed only installation and integration services (no solution applications).

Evaluating the Proposals

In its initial review, Avista's Project Compass team and Five Point evaluated and scored each proposal according to more-detailed criteria, grouped under the four global Project criteria, as represented below:

1. Functionality

- a. Minimum Requirements – Degree the solution vendor met the minimum functional capabilities established by Avista. A scoring sheet for this portion of the evaluations is attached to this report as Confidential Attachment 11, pages 1 - 3.
- b. Project Drivers – Degree to which the proposed solution met the system requirements identified in Avista's STAR analysis. Scoring sheets for this portion of the evaluations are attached to this report as Confidential Attachment 11, pages 4 - 21.
- c. Customer Service Fit – Measure of the functionality of the Customer Care, relationship, and billing systems with respect to Avista's needs. Scoring sheets for this portion of the evaluations are attached to this report as Confidential Attachment 11, pages 22 - 28.
- d. Enterprise Asset Management Fit - Measure of the functionality of the asset management systems with respect to Avista's needs. Scoring sheets for this portion of the evaluations are attached to this report as Confidential Attachment 11, pages 29 - 32.

- e. Mobile Work Management Fit - Measure of the functionality of the mobile work management systems with respect to Avista's needs. Scoring sheets for this portion of the evaluations are attached to this report as Confidential Attachment 11, pages 33 - 38.

2. Technology

- a. Technical Fit – Evaluation of the technical hardware and software needs and costs, and technology implications of the proposals, with respect to Avista's core information technology strategies, in the short and long-term. Scoring sheets for this portion of the evaluations are attached to this report as Confidential Attachment 11, pages 39 - 50.

3. Implementation Partner

- a. System Integrator Capabilities – Assessment of the vendor's implementation strategy, installation approach, capabilities, timeliness, staffing, and compatibilities with Avista's project plans. The scoring template and assessment notes for this portion of the evaluations are attached to this report as Confidential Attachment 11, pages 51 - 59.

4. Cost

While a vendor's proposed cost was an important element of the initial screening, Avista understood the limitations on the usefulness of these initial costs. Not only were these costs very preliminary, but they did not necessarily represent the package of solutions the Company would select, did not represent the results of final price negotiation, and did not reflect with any degree of accuracy the final cost estimates that would be developed later in the process. The initial costs for each proposal are included in Confidential Attachment 11, pages 60 - 61. Avista's very preliminary estimate of its costs to implement each proposal are included on page 60 of Confidential Attachment 11. The budget line just under the heading titled "Implementation Costs" was the initial very-preliminary estimate of the collective costs to implement each package.

Based on the initial review and scoring of the proposals by the Avista Project Team, the Company withdrew consideration of the proposals made by Wipro, Sparta, Logica, Meridium and HPES.

Avista then conducted day-long interviews in early December 2011 with the final vendors who fully-met the RFP requirements. A Summary Score sheet for the application solution sets from each vendor is attached to this report as Confidential Attachment 11, page 62, The summary scores do not include the evaluations of the capabilities of the System Integration vendors themselves. The remaining vendors, HCL AXON, EP2M/Oracle and IBM, were invited to make Product Demonstrations for the Avista Compass team at Avista's offices, conducted over a period of three weeks in January of 2012.

During and after the product demonstrations, Avista and Five Point conducted further evaluations of the vendor proposals rated against a more-detailed list of the Project Compass Drivers, provided below. As Avista's evaluation proceeded, a ranking of the elements of the proposals was created from the aggregation of selections of individual Compass team members. Results were rolled into a Final Solution Workbook where scores for the proposed software applications (customer service, asset management, and mobile), the technology assessments, and the evaluations of system integration vendors were summarized on the basis of meeting the Project Drivers.

Project Compass Drivers

- Technology
 - Agile – ability to respond quickly to the ever-changing needs of the business
 - Reduce technology complexity
 - Strong technology roadmap
 - Minimizes customizations
- Customer
 - Communication preferences
 - Choices – service options
 - Improve customer touch points
 - Develop new ways to deliver more value to the customer
 - Improved information (business analytics) access and availability
- Future
 - Smart Grid
 - Energy Efficiency Programs

- Real time billing
- On-bill financing
- Strong product roadmap
- Customer experience
- Employee
 - Employee impact – positive benefits
 - Minimize adverse impact to employees
- Business
 - Business process efficiency and effectiveness
 - Trusted System Integration relationship
 - Strong System Integration implementation approach, methodology and experience
 - Preserves data integrity
 - Meets project budget, scope and timeline
 - Eliminate silos of information
 - Improved information (business analytics) access and availability
 - Satisfies current regulatory and business requirements

The Final Solution Workbook is included in this report as Confidential Attachment 12, and records the numeric scores derived from the initial evaluation of the vendor proposals.

- Results reflect a slightly higher ranking of SAPs Customer Relationship & Billing solution compared with Oracle’s Customer Care & Billing solution, as shown in Confidential Attachment 12, pages 3 - 4.
- IBM’s Maximo Enterprise Asset solution was ranked as having a slightly better match for Avista than either the SAP or Oracle Asset solutions, as shown in Confidential Attachment 12, pages 5 - 7.
- Among the Mobile applications, the Ventyx solution was rated higher than the Oracle and ClickSoft solutions, as shown in Confidential Attachment 12, pages 8 - 9.
- With respect to the vendor’s overall Technology scores, as determined by Avista’s Technology Project Driver, SAP was rated substantially above both Oracle and IBM, as shown in Confidential Attachment 12, pages 10 - 13.

- In rating the capabilities of the Systems Integrator vendors, from Avista's perspective, HCL AXON was rated above EP2M and IBM, as reflected in Confidential Attachment 12, pages 14 - 15.

Avista's Final Selection of Applications and Services Vendors

In Avista's final analysis, it determined that the best overall combination of solutions for serving its customers would be a hybrid of the solution sets proposed, including the Oracle Customer Care & Billing solution, installed and integrated by EP2M, and the IBM Maximo Asset Management solution installed and integrated by IBM, in partnership with EP2M. In addition, Avista determined it was in the interest of its customers to delay the selection and implementation of the Mobile application at that time, since a new version of the top-scoring Ventyx Service Suite will be available for review in 2014. Final voting scores for the candidate customer and asset solutions, the lead solution integrators, and the combined projects, are included in this report as Confidential Attachment 13

Oracle's Customer Care & Billing application was ultimately selected over SAPs customer application because it met all the solution requirements needed to serve our customer and business needs, is more tailored to utility industry applications, was much more intuitive for customers and our employees to navigate and use. It is also compatible with Avista's existing Oracle financial and procurement systems. Because SAPs Customer application could not be integrated with Avista's Oracle financial system, selecting SAP would have required Avista to abandon its Oracle ERP system and to transition to SAPs system over a period of approximately five years.

IBMs Maximo Enterprise Asset Management solution was selected over the applications of SAP and Oracle because it was judged to have the strongest overall capability for Avista, is an industry leader, integrates well with Avista's geospatial facilities technology, provides for the incorporation of fleet, facilities and enterprise technology assets, and provided the opportunity for early installation of Avista's electric generation assets. In addition, IBM was willing to partner with EP2M in the installation and integration of its Maximo product.

EP2M was selected as the System Installation/Integration vendor because it has a great depth of familiarity and experience with the Oracle Customer application, has an excellent track record of successful project completion, received excellent customer reviews, has very low employee turnover and has excellent utility experience.

This combination of vendors and solutions, together, was judged to provide Avista and its customers with the optimized products and services that would deliver excellent service and value, in both the short and long term, and at the lowest overall price. During the final selection process, Avista prepared a comparison of the very preliminary pricing, as derived through the course of the evaluation process, for Avista's selected solution, as well as the second choice solution set (HCL AXON and SAP). These prices were very preliminary because the final pricing for the selected solutions had not yet been negotiated. In addition, because these costs did not reflect all of the activities involved in replacing the legacy System, they were not intended to represent a budget estimate for completing the Project. The costs used to compare the final solution sets are included as Confidential Attachment 14.

VI. Implementation of the Replacement Systems

Avista's initial project research and its planning work with Five Point Partners, to assess its business process requirements and to evaluate a range of proposals, provided the base of knowledge and certainty needed by the Company to proceed with the replacement of its legacy System. Avista entered final negotiations with the selected vendors, described above, and executed purchase agreements in May 2011. The single largest contract was awarded to the firm EP2M for implementing the Oracle Customer Care & Billing application, and integration with the IBM Maximo application and the host of other applications and systems required to support Avista's customer service and operations business. A copy of Avista's Master Services Agreement and Statement of Work for its contract with EP2M, is provided in the confidential work papers accompanying this filing. Avista's second-largest contract was signed with IBM for its Maximo software and the services of installing and integrating the application. Avista's Master Services Agreement and Statement of Work for IBM is also provided as confidential work papers.

Project Compass Capital Budget

A final project budget was developed over the course of 2011 and 2012, for the implementation of the Company's customer service and asset management applications. This budget was approved by the Company's executive steering committee on December 6, 2012, and is included as Confidential Attachment 15.

Timing of the Final Project Budget

Although Avista discussed potential costs of the project early in its inception, and approved preliminary budgets through the course of Project development, it did not establish a final capital budget until the Project was well-enough defined to do so with confidence. Avista has learned from its own experience, through its peer utility interviews, and from the support and advice of outside experts, that organizations commonly undermine the success of their software projects by making cost commitments too early in the development stages. This mistake undermines predictability, increases risk and project inefficiencies, and generally impairs the ability to manage a project to a successful conclusion. Early in the scoping of a software project, particular details of the application being designed/installed, a detailed knowledge of the Company's specific business requirements, details of the solution sets, the management plan, identified staffing needs, and many other variables are simply unclear. Accordingly, estimates of the potential cost of the project are highly variable. As these sources of variability continue to be investigated and reduced, the project uncertainty decreases; likewise, so does the variability in estimates of the project cost. This phenomenon, widely discussed in the literature, and often associated with author Steve McConnell², is known as the "Cone of Uncertainty," presented in Figure 4³, below.

² Software Estimation: Demystifying the Black Art. Steve McConnell, Microsoft Press, 2006

³ id. Figure 4.2, 96.1/751.

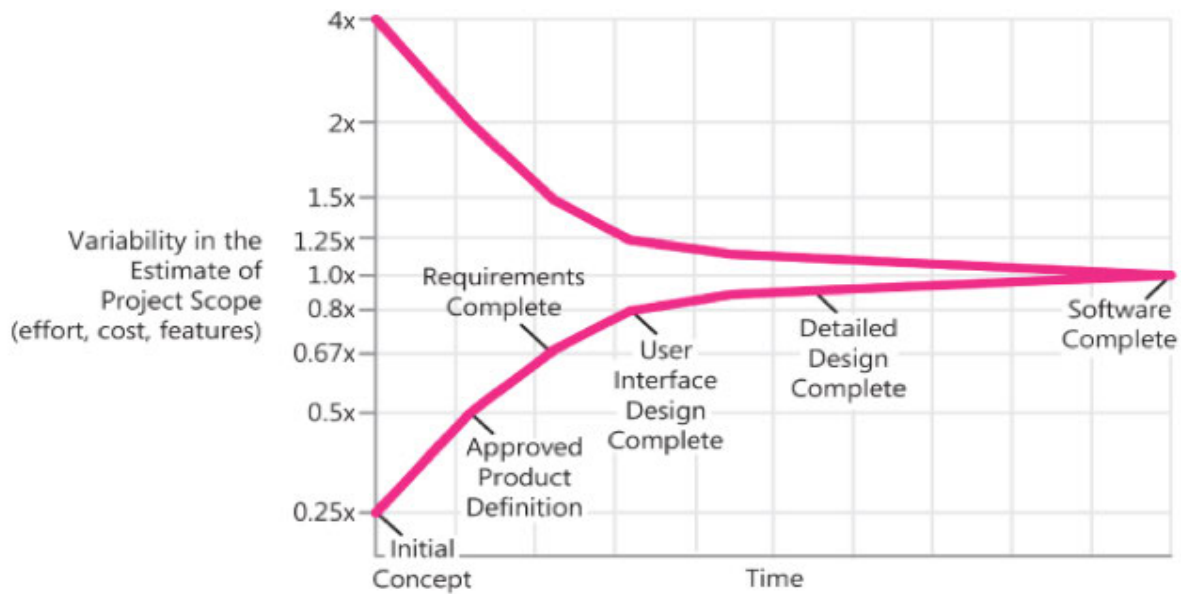


Figure 4. The ‘Cone of Uncertainty’ describing the relationship between the variability in the estimates of a software projects’ cost and the stage of the project at which the estimates are developed.

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

The Role of Cost Information Early in the Project

The decision point for the Company in 2010, was whether to significantly reinvest in its legacy technology, as the means to defer its ultimate replacement, or instead, to invest in the planning and exploration of options needed to support its current replacement. In moving toward the latter, the Company’s focus was to assess its needs, evaluate options, and select a set of solutions that would meet the long-term needs of the Company and its customers at the lowest possible cost. At that point, the Company engaged in the progressive stages of project design needed to prudently define

its likely scope and potential cost. Through this work, uncertainty around the project was narrowed and potential costs were further refined, to the point that Avista was confident purchasing the selected applications and proceeding with the work of implementation. Even though this was several months before the final budget was approved, Avista had by this time built the foundation needed to initiate a successful project: the ability to deliver a solution that would meet its long-term customer service and business requirements in an optimized approach, and in a manner that would achieve the least cost for its customers.

The Project Budget as a Management Tool

While Avista believes its estimates of scope, timeline and budget for the project are reasonable, and it is committed to control the Project to best meet each of these estimates, it is also cognizant that its success will not be defined by whether or not each estimate, including the budget, is precisely met. In contrast with a ‘not-to-exceed’ metric, the software budget is a management tool that allows senior leaders to make informed enterprise-level decisions, and that provides an effective tool for the project manager to control project activities in an effort to meet the estimates of each deliverable (timeline, scope, functionality and cost). In describing the relationship between software project estimates and final results, McConnell states:

“The primary purpose of software estimation is not to predict a project’s outcome; it is to determine whether a project’s targets are realistic enough to allow the project to be controlled to meet them.”⁴ “Typical project control activities include removing noncritical requirements, redefining requirements, replacing less-experienced staff with more-experienced staff, and so on.”⁵ “In practice, if we deliver a project with about the level of functionality intended, using about the level of resources planned, in about the time frame targeted, then we typically say that the project “met its estimates,” despite all the analytical impurities implicit in that statement. Thus, the criteria for a “good” estimate cannot be based on its predictive capability, which is impossible to assess, but on the estimate’s ability to support project success...”⁶

Avista believes it has designed and developed such an implementation plan and budget for Project Compass. By this, we mean that the overall Project record will demonstrate its proper research and design, robust planning and estimating, effective management and controls, and that its delivered scope, timeline and cost, are reasonable, cost effective and prudent.

⁴ id. At 42/751.

⁵ id. At 39/751.

⁶ id. At 41/751.

Project Budget Allocation

The overall allocation of the final capital budget for the Project is shown in Confidential Attachment 15. The budget amounts represent key purchases and contract and employee labor required to support the activities of installation. In addition, these costs are also separated for each major application system: Customer Care & Billing; Maximo for Generation Resources, and Maximo for Gas and Electric Transmission and Distribution assets.

Application Costs as a Portion of the Overall Project Budget

Today, the cost to purchase the rights to enterprise commercial applications is a relatively small proportion of the overall replacement project budget. This is because the vendor's cost of developing and updating these huge applications can be spread across a broad global client base. Accordingly, the incremental cost to each company is relatively small. To achieve this broad applicability, the software applications are designed with a standard off-the-shelf range of functionalities, which allows them to be adopted by the widest possible client base. But, since every company still has unique business processes within these broad templates of standard functionality, the applications are designed with significant additional flexibility that is not configured when the application is purchased. This configuration must be performed by each company after the application is purchased and installed, in the ways that best meet their individual business requirements. For Avista, as described above, tailoring the applications to meet our 3,500 individual business requirements involves a significant labor cost. In addition, the customer service and asset management applications must be integrated to perform seamlessly with each other, and with every other business software application (over 100 for Avista) that's required to support the operations of the Company. Finally, for each existing Avista work processes that cannot be accommodated by the standard functionality of the new applications, this work process must be re-designed so that it can. This process re-design is also labor intensive because it's performed by work teams staffed with employees representing every segment of the business that's impacted by the change. Overall, these costs of installation, configuration, integration and work process re-design represent the lion's share of the project budget.

In addition to the activities above, there is a broad range of other support required to make the Project successful. These include development of training materials for employees on the new systems and the re-designed work processes, the process of training, project change management, employee and customer communications, project quality assurance, computer hosting and computer hardware for the applications, and providing technical support for the new systems at their launch and during the period of stabilization.

Board of Directors Updates on Project Compass

The Finance Committee of the Board of Directors was provided an overview and update on the progress of the Project by Mr. James Kensok, in February 2012. A copy of that presentation is included as Confidential Attachment 16. Mr. Kensok provided another update to the Board Finance Committee in September 2012, and that presentation is provided as Confidential Attachment 17. The Board Finance Committee received an updated progress report on Project Compass, made by Mr. Kensok, in February 2013. A copy of that presentation is included as Confidential Attachment 18.

Principal Implementation Activities of Phase 2

As briefly described above, the major activities of the Implementation Phase include installing the software solutions and configuring them with Avista's System, testing all of the System components prior to deploying the solution, developing and implementing employee training and customer and employee communications. And, finally, the Go-Live placement of the new System into service. Some of the key activities include:

- Tailor / Configure the software solutions to match the design of Avista's business requirements.
- Develop Technical Specifications – These ensure the software configurations can be documented for future development and upgrades.
- Develop / Configure Work Processes – documents how the Company has determined that the flow of work processes will be accomplished using the new software.
- Develop Integrations – to connect with Avista's other business systems and applications.

- Develop Data Migration Plans – to move Avista’s customer and other data to the new platforms.
- Security Setup – Establishes the security plan for protecting the Company’s customer and other data.
- Test Scenarios – developing test scenarios from an inventory of the processes to be tested, using the step-by-step procedures for each particular transaction or business process that will be used to integrate and test new systems.
- Conduct Unit Testing – unit testing ensures that underlying customized portions of the software systems are functioning as designed.
- Migrate Data Tables and Files – to ensure there is order and accuracy when information is moved from the programming stage into the testing stage and, finally into live application.
- Evaluate System Test Application – the performance testing of the system created for testing the actual applications and their integrations.
- Conduct Systems Integration Testing – focuses on the testing processes between the software solutions implemented, and the Company’s other systems, including third party systems.
- Conduct User Acceptance Testing – provides those who will actually be using the systems to evaluate all application functions related to their business processes. Acceptance testing confirms the system meets business requirements, and also, verifies the business processes for the software solution are complete, well understood, and well documented.
- Defect Management – During each test cycle, actual test results are compared with expected results. If issues are identified and logged, functional and/or technical updates will be made as required to resolve a particular issue. As issues are resolved, additional testing is completed to validate that the issue is fixed properly. The majority of this testing falls within the test cycles outlined above, but additional testing is completed as required by the project team until all business requirements, system functionality, integrations and business processes are fully tested.
- Training Materials are created for employees and others who will be using the system.
- Train the Trainer courses are conducted for employees who will be key trainers for others.

- Deliver Training – Training is one of the final opportunities to prepare employees to operate the system with the new business processes. The timing of the training is critical so that the users are trained in time for the transition, but will still retain knowledge of the new system.
- The project team develops the detailed “cutover plan”, to ensure a comprehensive list of supporting requirements is timely developed. ‘Cutover’ refers to the process of moving Avista’s service from the legacy operating systems to the new applications and systems.
- Ensuring that the technical operating environment for the new is in place and stable prior to the Go-Live.
- An assessment of organizational readiness is conducted to ensure the Company is equipped for a successful Go-Live.
- In conjunction with preparing for the Go-Live, a contingency plan will be developed and in place to respond to issues that may arise during the process.

In addition to the major activities listed above, the work in this Phase is also organized and managed in several project ‘workflows’ that provide a unified objective and continuity across this Phase. These six workflows include:

- Overall project milestone plan – this body of work supports the management of the overall project.
- Enterprise Asset Management / First Wave – this effort is focused on the application of the new asset management software to Avista’s electric generation and substation equipment.
- Enterprise Asset Management / Second Wave – this portion of the project encompasses the activities required to apply the new asset management software to the Company’s electric transmission and distribution, and its natural gas infrastructure. This work process replaces the functionality currently provided by Avista’s legacy work management and electric and gas meter application systems.
- Customer Service Application – This portion of the program, which represents the lion’s share of project Compass, is focused on replacing the functionality of Avista’s legacy customer service system.

- Testing – This workflow is focused on the technical testing of the new applications, as integrated into the Company’s business environment. Activities include the technical testing of the software and hardware systems, and what is known as user-acceptance testing. The latter involves Company employees testing the new systems by simulating all possible combinations of their business application.
- Enterprise Technology – Ensuring the new applications mesh technically and strategically with the Company’s enterprise services model for information technologies.
- Organizational Change Management and Communication – This work involves the preparation of employees for their successful participation in work process redesign efforts, and for the systemic changes they will experience when the new systems are implemented. In addition, there is an important element of this work that is focused on the customer: preparing them in advance for the minor service changes that will accompany the launch of the new systems.

Key Activity in Phase 3

After the Go-Live, there is a transition when supporting consultants remain on site to help resolve technical issues that arise, in the Phase known as Post Go-Live Support. The duration of this transition period, which is expected to last between 6 and 12 months, will be defined by Avista’s internal support personnel as they become comfortable supporting the new system.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

JIM M. KENSOK
Exhibit No. 1703

**Avista's Project Compass:
Revised Timeline and Budget Forecast**

Revised Timeline and Budget Forecast

Avista's Project Compass

Avista Utilities



June 2014

Avista's Project Compass

Revised Project Timeline and Budget Forecast

Q. Why is the Company revising its initial project plan?

A. Avista is in the latter stages of implementing its new Customer Service and Work and Asset Management software systems, named "Project Compass" (or "Project" or "System"). The Company is installing Oracle's Customer Care & Billing system (or "CC&B"), and IBM's Maximo Work and Asset Management system (or "Maximo"). The initial Project plan was completed in 2012 and envisioned a launch of the new System, known as the "Go Live," in Q3 2014. Through the course of implementation, the Project team has developed much-more complete information about the full detail of the System work requirements and its ultimate cost. This information, which is described below in this report, provides the basis for the current revision of the initial plan. The overarching consideration for revising the schedule is ensuring the new computer applications undergo thorough testing to validate they will perform at a level, when launched, to execute critical business functions properly and minimize the potential for disruptions to our customers and the Company. The Compass management team determined a Q3 Go Live would not provide sufficient time for the robust testing needed to ensure the readiness of the new applications. Accordingly, the Company's officers recently agreed to extend the Go Live time frame to include Q1 2015.

Q. Did the Company's plan and schedule, as initially developed, provide adequate time for testing the System?

A. Yes. The initial work plan generally provided ample time for comprehensive application testing. But, because there were longer than estimated delivery times required by several implementation activities, the new System was not ready to commence testing on the schedule originally envisioned.

Q. Specifically, what work processes took longer to complete?

A. The key activities that required additional time were the development of code for “Extensions” to the CC&B application, and the currently-ongoing process of “Defect Management” associated with application testing. Secondary activities that required additional time, included “System Configuration,” writing “Test Cases” to support the testing protocol, the processes of “Data Conversion” for both CC&B and Maximo, and the development of “Integration Code” for the new replacement System and interconnected applications and systems.

Q. Please briefly describe each of the work processes mentioned above?

A. System Configuration – “Configuring” an application is the process of setting parameters in a vendor’s computer software that enables its built-in logic to perform the functions required by the Company’s various work processes. The process involves selecting among options, embedding algorithms, entering data, and creating specialized instructions. Configuration is performed through a series of input tables that organize the process of setting parameters. Each input table, which could represent one particular type of customer service agreement, for example, may have up to 100 individual, flexible, and configurable fields. Configuring each field requires entering from one to several individual values, instructions, or algorithms to establish the new base System. Each field in each table is often cross-linked with content in dependent fields in complementary tables, creating a complex of dependencies between many multiples of tables and fields. This initial work requires the person entering the configuration settings on a particular table to work iteratively and sequentially in configuring the dependent fields in the other tables as one integrated work flow. As one example of the work involved, it required one technician working full time over six months to configure Avista’s existing rate tariffs into CC&B (142 different service agreements across our three jurisdictions). Considering that CC&B has 1,686

configuration tables, containing 12,158 configurable fields, the magnitude and complexity of this task is quickly evident.

Extension Code – There is considerable flexibility to accommodate a range of business processes within the application’s off-the-shelf Configuration settings. But, many business steps are complex enough that they require programming of specialized software code that is outside the application itself. The capability enabled by this specialized code is referred to as an application “Extension.” The process of developing this code, which is complex and labor intensive, begins with a description of the work process steps that a particular extension will perform (its technical requirements). Each set of requirements is then translated into a technical specification that guides development of the actual programming code. Once the technical staff has written the code, it is subjected to several iterations of “Unit Testing.” Unit Testing validates that the unit of code, in isolation from the System, properly performs the steps identified in the technical specification.

Integration Code – “Integrations” refer to the connections between separate computer applications that allow them to work in concert to perform allied functions. An integration may involve exchanges of data, transmission of instructions or changes in state, performance of computations and other algorithms, and myriad other shared functions. Like Extensions, Integrations require the development of specialized programming code that connects the CC&B application with the Maximo application, and that connects them both with the approximately 100 other applications and systems required to support the Company’s customer service and business operations. Some of these systems include the Avista customer website, the Company’s various internal systems (such as financial applications, varied databases, supply chain, crew dispatch, outage management reporting), systems of outside financial institutions used by the Company and our customers, and the many vendors who support our delivery of natural gas and electric service, such as bill printing and presentment. In

addition to Integration connections between applications, this work also encompasses the development of Avista's "enterprise service bus." The latter is essentially an Integration network that is shared by the integrated applications. The process of developing and Unit Testing the Integration code mirrors that of the code for Extensions, described above.

Code Defect Management – The work of Configuration and coding Extensions and Integrations is very complex and highly interrelated. As a consequence, it is inherent that each unit of the completed work will require several iterations of testing and modification before it will properly execute its part of a business process. Portions of the configuration settings and the specialized code, which initially do not perform properly, are known in the industry as "Defects." Defects are identified during testing when the configured application and specialized code are run through a simulated business process referred to as a "Test Case." During the test, the program simulation runs to the point where a Defect is encountered and the simulation is halted. In the work process known as "Defect Management," that Defect is located and analyzed, and is returned to the Configuration or coding team for correction. The revised code is then run through the very same test-case simulation until the next-limiting defect is encountered. This process is iteratively repeated until all of the defects in that unit of code or Configuration, for that one unique Test Case, have been located and repaired. Then, the testing process is repeated for the next individual Test Case. Over a cycle of testing, it is typical for the rate of defects to be relatively low, initially, and then to increase to a peak before tapering back down to a low and predictable rate. This pattern is important because during the initial testing it is impossible to predict the ultimate number or complexity of Defects in a unit of code. Only at the point where the number of Defects peaks and begins to decline in a predictable way can the remaining Defect-Management effort be reliably forecast.

Application Testing – Three major areas of testing play a critical role in the successful implementation of the new applications. Each type of testing is

associated with its own unique process of code Defect Management. “**System Testing**” commences when the work of Configuration and the coding of Extensions is complete. Its purpose is to ensure the new applications perform properly as they have been Configured and coded to support Avista’s business processes. “**Systems Integration Testing**” occurs next in the sequence and focuses on testing the specialized Integration code to ensure the new applications perform properly with all of the other integrated applications and systems. This is followed by “**User Acceptance Testing,**” which is performed by Avista employees who will be using the new System to serve our customers. It has the twin objectives of scrubbing the System to further identify and repair any critical Configuration, Extension or Integration Defects, and to identify and implement changes to the System that will make it more user friendly and function more smoothly and efficiently for customers and employees.

Simulation Test Cases – Test-Case scenarios are written to evaluate virtually every step of every business process that is enabled by the new System. Each Test Case is unique from all other Test Cases and is written to evaluate a very specific portion of the configured application or specialized code. The complexity of the applications requires a significant number of unique Test Cases to fully validate the integrity of the new System. The number of Test Cases written for each phase of testing of the Company’s new applications, is presented below.

<u>Application Testing</u>	<u>Number of Test Cases</u>
Avista Utilities’ Customer Web Portal	1,283
CC&B Credit and Collections System	667
CC&B Credit and Collections System Integration	407
CC&B System Test	1,472
CC&B System Integration Test	2,471
Maximo System Test	210
Maximo System Integration Test	454
Interactive Telephone System Test	351

Total **7,315**

Data Conversion – All of the Company’s existing data, whether customer account information, energy-use history, electric and natural gas facilities data of all types, mapping system information, and regulatory and compliance information, etc., must be transferred from existing computer hardware and data bases, such as the Company’s current mainframe platform, to new data formats, databases, and computer platforms connected to the new applications. To accomplish the conversion, data in the existing databases is mapped according to where it will eventually reside in the new databases. The data are then extracted from the old databases, are transformed as necessary, and are loaded into the new databases. The integrity of the loaded data is then validated for accuracy. Defects in data conversion are identified in the process, Defects are repaired, and the data load/validation exercise is repeated.

Q. Why are these work processes taking longer to complete than was initially planned?”

A. The longer implementation times are primarily the result of the high degree of complexity of the integrated systems being installed by the Company.

Q. What do you mean by “complexity of the integrated systems?”

A. While it’s common for a business to install one major system at a time, such as a customer service, financial management, supply chain or asset management system, the Company is installing two major systems simultaneously (CC&B and Maximo Asset Management). Avista is required to implement both new applications because our legacy System contains a customer service module and work and asset management module that are highly integrated, mainframe based, and both in need of replacement. As described above, this effort requires not only that these two systems be custom integrated, but that

together, they be integrated with the approximately 100 other applications and systems required to perform the Company's integrated business operations.

In addition to the number of other applications and systems, Avista has several complex applications that many utilities do not possess. Some of these include our Avista Facilities Mapping system ("AFM"), which geographically displays every element of our electric and natural gas facilities in a Geographic Information System (GIS) map format; our Outage Management System, which integrates outage management computer logic with the AFM system to provide accurate outage information for customers and diagnostic tools that reduce outage restoration time and costs; and our Central Dispatch System, which integrates AFM, the Outage Management System, and our Mobile Workforce Management application, to optimize the dispatch and management of restoration crews in real time across our entire electric and natural gas system.

The degree of complexity of the new System is also impacted by the diversity of service provided by the utility. Because Avista provides both natural gas and electric service, the complexity is substantially greater than that of a utility providing either one or the other. Further, the Company provides service in three regulated jurisdictions, each of which has separate and unique operating tariffs and rules that must be coded into the new applications. For portions of our new System, Avista's application configuration and specialized coding will be roughly five times greater than that of a single-fuel utility operating in one state.

Q. Did Avista take steps to understand the source of and to mitigate the impact caused by the longer code development?

A. Yes it did. In December 2013, the Project Compass team assessed the relationship between the complexity of Avista's code requirements, the project schedule, and the level of staffing applied to the work. The end result was that Avista's integration contractor retained additional resources to bolster its overseas code-development team. Progress on the other activities that were taking additional time (application configuration, data

conversion, integration code, and writing the test cases) was managed to ensure that applicable portions were ready for System Testing once the CC&B Extension code was available. Through this analysis and actions taken, the Company believed it could better manage the overall time required for coding extensions.

Q. Why didn't the Company change its forecast of the Go Live date earlier in 2014?

A. The Project Compass team concluded that even with an expected addition of time for code completion, that it might be able to make up the time and maintain a Q3 Go Live. The team specifically investigated the structure and schedule allotted for testing the new System, as the primary tool for managing the overall Go Live schedule. The Company wanted to test these ideas before making any formal decision to revise the schedule.

Q. How did the team propose to change its testing protocol in an effort to maintain its initial Go Live schedule?

A. As described above, the System Testing, System Integration Testing, and the User Acceptance Testing, are typically performed in sequence. Each phase of testing, including the process of Defect Management, is relatively complete before the next phase is initiated. The Project Compass team revised this testing protocol to partially overlap the phases of testing to be conducted. In this approach, completed "portions" of an application are subjected to limited System Testing and then to limited System Integration Testing with similarly-completed portions of the other application, including the required Integrations. The net effect of this testing protocol, if successful, would be a reduction in the overall calendar time allotted to application testing.

Q. What did the Project Compass Team learn from the overlapping testing approach?

A. The Company implemented and evaluated this approach for System Testing and concluded that it did reduce the time required for this test phase. But, because of the emerging complexity and additional time required for code Defect Management, the overlapping testing was not able to sufficiently reduce the time required for a successful Go Live. Because overlapping testing adds complexity, and because code Defect Management was becoming the more critical scheduling constraint, the team has made limited use of the overlapping testing protocol for the System Integration and User Acceptance Testing.

Q. What impact is Defect Management having on the overall Project schedule?

A. Avista has experienced greater complexity with the Project Compass Defects than had been anticipated. The result is that even though some time was saved by overlapping portions of the System Test, it has been offset by additional time being spent on Defect Management. The result is the present revision of the overall Project timeline to include Q1 2015.

Q. What steps has Avista taken to reduce the time being spent on code Defect Management?

A. Avista has implemented actions in the areas of process cycle time and testing protocol to improve the rate, or velocity, of Defect repair.

Process Cycle time – Avista worked with its system-integration contractors to reduce the time required for defects in the code to be repaired by the development team and returned to Avista for the next round of testing. Actions have included changing communication protocols, assigning key development staff of the contractors to work from Avista’s offices, and modifying schedules of the overseas development teams.

Testing Protocol – In a conventional testing protocol, as described above, the Test Case scenario will be run until a limiting Defect is encountered. The testing is then stopped,

the Defect is located and analyzed, and it's returned to the development team for repair. The Company is piloting a revised protocol where an identified Defect is patched with a temporary workaround, and the Test Case is continued until the next-limiting Defect is encountered. When possible, the second Defect is likewise patched, and testing is continued until the point where a limiting Defect blocks any workaround and further testing. Then, these accumulated Defects are analyzed and sent to the development team for repair. The intent is that by aggregating several Defects at a time it will improve the overall velocity of code Defect Management.

Q. What additional steps has the Company taken to help control the overall Go Live schedule?

A. The company has implemented changes to the Data Conversion process for CC&B and Maximo. These have helped accelerate Data Conversion and have improved the efficiency of the data validation process. Additional project resources have been added to various workstreams such as the Customer Web Integration effort. System-integration contractors have arranged for their lead staff to spend additional direct time with Avista's team in Spokane, and Avista employs a fifty-hour work week, as needed, to meet peak Project demands. The Project team has also increased the capability of the computer systems supporting the application testing processes. This allows the iterative Test Cases to be run more quickly, further accelerating the Defect Management process. In addition, the Test Cases are being re-prioritized to help ensure the most important business processes are tested and repaired first. The team has also launched the first wave of training for its customer service employees who will be using the new CC&B application. Finally, the Project managing directors are working to ensure morale of employees and contractors remains at a high level for the intensive duration of the Project.

Q. Has the revised implementation plan impacted the Project budget?

A. Yes. The longer time frame required to complete the work processes described above are in large part responsible for the addition of approximately \$18 million to the estimated Project budget. This additional capital budget amount, forecast by cost category, is presented in the table below.

Compass Major Costs	\$(1000's)
System Integrators	\$3,163
Avista Labor / Loadings	\$4,661
Technology Contractors	\$3,201
AFUDC	\$3,609
Software Licenses	\$480
Common (PMO)	\$654
Hardware/Hosting	\$10
Oracle DB License	-
Contingency	\$2,150
Total	\$17,927

The revised capital budget authorization for Project Compass is \$100 million, which was approved by the Company's officers and Board of Directors on May 8, 2014.

Q. When you say “in part” do you mean there are other factors driving an increase in the project budget beyond a later implementation?

A. Yes. There have been a number of additions to the Project that have contributed to its overall cost, and that were not known at the time the Project plan and budget were assembled in 2012. These changes to the implementation of the applications have been tracked through a formalized process known as a “Project Change Request.” The sum of these changes represents a total cost addition of \$9.128 million.

Q. Can you provide some examples of the activities and costs that comprise these Project Change Requests?

A. Yes. One of the larger cost items (approximately \$1.8 million) is associated with the Company's AFM system. During implementation, the Compass team learned that a GIS software update would provide for a more efficient transfer of data between the AFM system and the new Maximo and CC&B applications. Another addition to the Project was the development of a more-comprehensive customer communication plan (approximately \$1 million) to precede the Go Live of the new System. The plan includes ad placement and a direct mailing that identifies subtle changes and improvements in service, as well as the potentially-longer service times (such as call hold time and average time per call) that are expected to temporarily coincide with the Go Live of the new System. Another substantial addition to the capital cost of Project Compass was the inclusion of software maintenance fees to cover the second year of implementation (approximately \$998,000). Most of the Project Change Requests have addressed the need for additional technical resources to accomplish specific tasks during implementation of the new systems. For a brief description of each of these Project Change Requests please see Attachment A to this report.

Q. Didn't the Company have a "contingency" in its initial budget to accommodate such changes?

A. Yes. The \$80 million initial capital authorization included a contingency amount of \$7.176 million. This contingency has offset the majority of the costs added through Project Change Requests.

Q. Has the Company established a definitive date for the Go Live?

A. Not at this point. While the Project Compass team believes that a Go Live window that includes Q1 2015 will provide sufficient time for an effective implementation of the Project, it must complete the bulk of the testing and Defect Management processes before it has confidence in setting a definitive date. When the Go Live date has been selected it will be shared with customers through the communication plan.

Q. Does the Company believe the Project Compass Costs, including the budget additions, are reasonable and prudent?

A. Yes. The original timeline and budget were important project management tools that, while much more refined than the earliest estimates, were still associated with some degree of uncertainty. As described above, when the initial estimates of time and resources required for coding the extensions were developed, the team had no way of knowing the precise degrees of complexity of the coding, the resources required to meet a specified timeline, or the degree of complexity of the defect management process. If the Project team had that precise foreknowledge, it may have added resources and budget to the Project to achieve the initial Go Live date, or it may have added budget to the initially-planned resources to achieve a later date. Because the Project is costing more to implement than was initially estimated, doesn't mean it is no longer the least-cost solution for our customers. Avista believes its revised implementation plan and budget simply reflects a more accurate assessment of the true cost of implementing the Project.

Q. How does the Company believe the implementation of large IT projects should be evaluated?

A. First, Avista is not aware of any large enterprise application system that has been installed by a peer utility that explicitly achieved its initial estimates of timeline and budget. That said, there are distinguishing factors in every project that are useful in helping to assess the reasonableness of its costs. In extreme cases, some companies have abandoned the applications during the course of implementation; the new systems are never placed in service. These failures are often followed by an entirely new selection and implementation effort. In less dire cases, the company may learn during the course of implementation that it selected a less than optimum solution set, which requires a significant and expensive workaround to successfully install. In some cases, the scope of functionality has been set either too broad or too restrictive. In either case, the costs and the time delay associated with mitigating those initial choices can be very substantial. In

other cases, companies have made implementation errors such as overlooking basic required functionality, resulting in additional time and budget to include while the majority of the project is awaiting the Go Live. In the best cases, companies have simply underestimated, to varying degrees, the true cost of implementing the selected applications. In other words, these companies have completed a comprehensive needs assessment, prepared a balanced project scope, conducted a robust selection process, selected the proper solutions, hired capable implementation contractors, adequately prepared their organizations for the many changes associated with implementing the new systems, including timely and effective training, prepared their customers for any changes associated with the new systems, and achieved a reasonable balance in the timing of completion of implementation activities. Although these companies took longer to Go Live and spent more money than initially planned, they successfully avoided the major pitfalls that have rendered so many of these projects less than fully successful. Avista counts its Project Compass in this latter class of successful projects, and is confident in the successful completion of the Project.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF JOSEPH D. MILLER
REPRESENTING AVISTA CORPORATION

Long-Run Incremental Cost of Service Study

1 **I. INTRODUCTION**

2 **Q. Would you please state your name, business address and present position**
3 **with Avista Corporation?**

4 A. My name is Joseph D. Miller. My business address is 1411 East Mission
5 Avenue, Spokane, Washington. I am employed as a Senior Regulatory Analyst in the State
6 and Federal Regulation Department.

7 **Q. Have you filed direct testimony in this proceeding?**

8 A. Yes. I have filed direct testimony in this case presenting the natural gas long-
9 run incremental cost of service (“LRIC”) study.

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

11 A. My testimony will provide the Company’s response to the long-run
12 incremental cost of service studies prepared by both Commission Staff (“Staff”) and the
13 Northwest Industrial Gas Users (“NWIGU”). In addition, my testimony will address the
14 Citizens’ Utility Board (“CUB”) assertion that the Company’s LRIC Study is flawed.

15 **Q. Please summarize the conclusions of your Reply testimony?**

16 A. The results of the three independent long-run incremental cost studies
17 performed by the Company, Staff and NWIGU provide consistent and compelling results
18 which demonstrate that at current rates, on a relative margin-to-cost basis, both residential
19 customers (Schedule 410) and small commercial customers (Schedule 420) are paying less
20 than their relative cost of service. Conversely, large general (Schedule 424), interruptible
21 (Schedule 440), seasonal (Schedule 444), and transportation (Schedule 456) customer groups
22 exceed their relative cost of service, to varying degrees. Arguments provided by CUB, with
23 reference to the LRIC Study performed by the Company, are fundamentally unsound, and are

1 not backed by empirical evidence, nor does CUB present its own LRIC Study.

2 **Q. How does a long-run incremental cost of service study assist in**
3 **determining the appropriate rate spread?**

4 A. A long-run incremental cost of service study is an engineering-economic study
5 which estimates the incremental annual cost of providing natural gas service to customers
6 segregated into groups by rate schedule. When applied to current results of operations, the
7 study indicates the adequacy of current rates compared to costs. The study results provide a
8 guideline to inform the appropriate rate spread among rate schedules.

9 **Q. Do any of the natural gas utilities in Oregon use a similar LRIC**
10 **methodology to that of the Company?**

11 A. Yes. All natural gas utilities in Oregon use some form of an LRIC Study as
12 the basis for their rate spread proposals. It is my understanding that Cascade Natural Gas
13 Corporation has proposed a similar LRIC methodology in its current general rate case filing
14 (Docket No. UG-287).

15 **Q. Has the Company's LRIC Study evolved over the past several years with**
16 **the input of all parties?**

17 A. Yes. I agree with Staff witness Dr. Compton's characterization of the
18 evolution of the Company's study when he stated that, "Over the years Avista Utilities'
19 practices relating to my areas of responsibility have evolved in a mutually acceptable manner-
20 being influenced by various parties, including Staff".¹

21 **Q. Have refinements been agreed to by the parties in recent cases?**

22 A. Yes.

¹ Staff/1300, Compton/2, lines 7 - 9.

1 **Q. Was CUB a party to recent settlements, which detailed specific LRIC**
2 **Study changes that would be incorporated into future studies?**

3 A. Yes.

4 **Q. Please provide a brief summary of the LRIC changes that have been**
5 **agreed to by all parties in the past two all-party settlement stipulations?**

6 A. The Company agreed to make two changes to the LRIC Study per the 2013
7 Settlement Agreement in Docket No. UG-246.² The agreed-upon changes per the Settlement
8 Agreement, which are incorporated into this LRIC Study, are as follows:

- 9 - Gas Scheduling will be allocated on a volumetric basis rather than on a customer-
10 count basis.
- 11 - For “Special Contracts” Schedule 447, Avista will use an engineering estimate/cost-
12 study, as is used for the other customer rate schedules, for purposes of estimating main
13 extension costs for Schedule 447, rather than using an amount based upon an
14 estimated bypass cost.

15 Subsequently, in 2014 the Company agreed to make three changes to the LRIC Study
16 per the Settlement Agreement approved by the Commission in Docket No. UG-284.³ The
17 agreed-upon changes per the Settlement Agreement, which are reflected in the Company’s
18 study in this Docket, are as follows:

- 19 - Gas Planning will be allocated on a volumetric basis rather than on a customer-count
20 basis.
- 21 - Core main costs, estimated on a LRIC/as-new basis, will be defined as total main costs

² UG-246 Stipulation at p. 12, lines 21-22 - p. 13, lines 1-6.

³ UG-284 Amended Stipulation at p. 8, lines 19-23 - p. 9, lines 1-4.

1 minus main extension costs.

- 2 - Storage investment will be allocated on the basis of January sales rather than annual
- 3 sales.

4 **Q. Have you prepared an illustration summarizing the margin-to-cost ratios**
 5 **at present rates from the LRIC Studies prepared for the Company’s last three general**
 6 **rate cases?**

7 A. Yes. Illustration No. 1 below shows the margin-to-cost ratios at present rates
 8 from the Company’s LRIC studies presented in its last three general rate cases (Docket Nos.
 9 UG-246, UG-284 and UG-288):

10 **Illustration No. 1: Margin-to-Cost Ratios from Avista’s Last Three General Rate Cases**

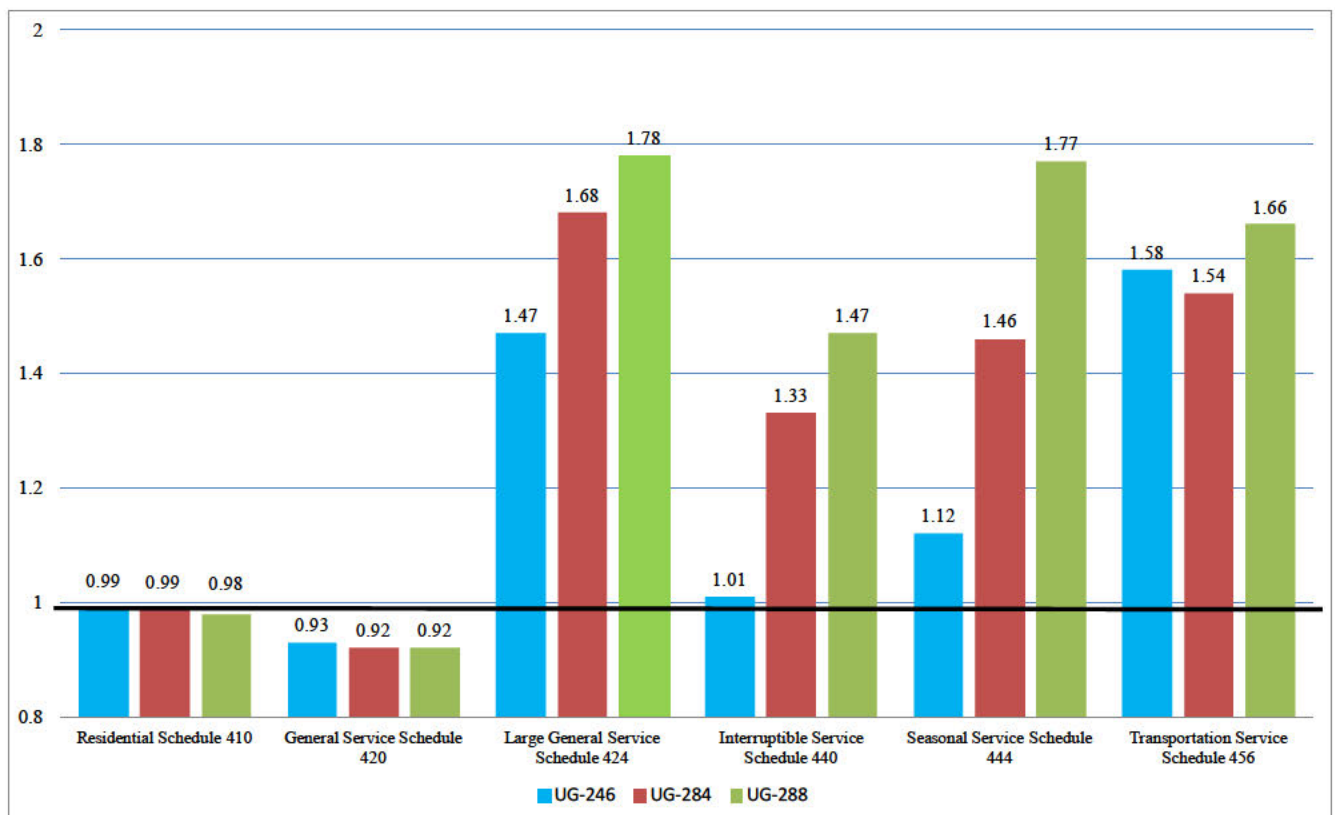


Table No. 1: Long Run Incremental Cost Study Results of the Parties

<u>Customer Class</u>	<u>Rate Schedule</u>	<u>Avista</u>	<u>Staff</u>	<u>NWIGU</u>	<u>Staff/NWIGU</u>
Residential	410	0.98	0.98	0.98	0.97
General Service	420	0.92	0.96	0.91	0.95
Large General Service	424	1.78	1.56	2.04	1.79
Interruptible Service	440	1.47	1.31	1.68	1.51
Seasonal Service	444	1.77	1.68	2.32	2.31
Special Contract	447	0.91	0.77	1.64	1.42
Transportation	456	<u>1.66</u>	<u>1.41</u>	<u>1.87</u>	<u>1.59</u>
Total		1.00	1.00	1.00	1.00

The results of the four LRIC Studies provide consistent results which demonstrate that both residential customers and small commercial customers are paying less than their relative cost of service. Conversely, interruptible, large general, seasonal, and transportation customer groups exceed their relative cost of service to varying degrees.

Table No. 2 below shows the LRIC Target Increase by Schedule, which represents the distribution margin revenue from each schedule that would be required to align the originally filed revenue requirement with the cost study to achieve 100% unity amongst all schedules.

Table No. 2: Long Run Incremental Cost Target Increase by Schedule

<u>Customer Class</u>	<u>Rate Schedule</u>	<u>Avista</u>	<u>Staff</u>	<u>NWIGU</u>	<u>Staff/NWIGU</u>
Residential	410	\$6,241	\$ 6,360	\$ 6,625	\$ 6,819
General Service	420	\$3,601	\$ 2,906	\$ 3,718	\$ 3,047
Large General Service	424	\$ (240)	\$ (174)	\$ (296)	\$ (241)
Interruptible Service	440	\$ (97)	\$ (51)	\$ (142)	\$ (106)
Seasonal Service	444	\$ (15)	\$ (14)	\$ (22)	\$ (22)
Special Contract	447	\$ 64	\$ 116	\$ (68)	\$ (42)
Transportation	456	<u>\$ (997)</u>	<u>\$ (586)</u>	<u>\$ (1,258)</u>	<u>\$ (898)</u>
Total		\$8,557	\$ 8,557	\$ 8,557	\$ 8,557

The results from all four studies support rate increases for schedules 410 and 420, and rate reductions for schedules 424, 444 and 456 as proposed by the Company, Staff and

1 NWIGU. While the overall increase or decrease required to move the schedules to unity
2 based on the Company's originally filed revenue requirement varies, all four studies clearly
3 demonstrate that certain schedules should receive increases, and others decreases.

4 **Q. Do you have any general comments on the LRIC Studies prepared by both**
5 **Staff and NWIGU?**

6 A. Yes, while the Company does not endorse all of the specific attributes of the
7 methodologies employed by Staff or NWIGU, the Company recognizes that their respective
8 results are similar to the Company's own independent study prepared for this proceeding.
9 The fact that all three independent studies show similar results provides a solid basis to inform
10 rate spread.

11 **Q. Would you briefly describe the differences between the LRIC studies of**
12 **the Company and those of Staff and NWIGU?**

13 A. Yes. Staff generally accepted the costs by the Company, but took exception to
14 the line extension footage averages utilized for some rate schedules. More specifically,
15 Staff's preference was to use longer historical averages, adjusted for abnormalities, for
16 purposes of determining an average main extension on an individual customer basis.⁵ In
17 general terms, however, Staff's LRIC results were not materially different than the results of
18 the Company's own study as shown in Table No. 1 above.

19 NWIGU took issue with the Company's usage of a peak and average ratio when
20 allocating the capacity and commodity components of system main investment.⁶ NWIGU
21 prefers the usage of design day demand as the basis for allocating system main costs.

⁵ Staff/1300, Compton/8, line 7 – Compton/15, line 6.

⁶ NWIGU/100, Collins/2, line 19 – Collins/3, line 23.

1 NWIGU contends that their LRIC Study indicates that the same classes that are above unity,
2 as shown in Table No. 1 above, are even further away from cost of service than the
3 Company's LRIC Study results.

4 **Q. What conclusions can be drawn from the three LRIC Studies in this**
5 **proceeding?**

6 A. The results of the three independent long-run incremental cost studies
7 performed by the Company, Staff and NWIGU provide consistent and compelling results
8 which demonstrate that at current rates, on a relative margin-to-cost basis, both residential
9 customers and small commercial customers are paying less than their relative cost of service.
10 Conversely, interruptible, large general, seasonal, and transportation customer groups exceed
11 their relative cost of service to varying degrees, and in certain cases, substantially so.

12 **CUB**

13 **Q. Did CUB conduct an independent LRIC Study for this proceeding?**

14 A. No, it did not.

15 **Q. Did CUB provide any quantitative analysis to support any of its testimony**
16 **related to the LRIC Study?**

17 A. No, it did not.

18 **Q. Please summarize your understanding of CUB's testimony related to the**
19 **LRIC Study prepared by the Company?**

20 A. CUB made three general arguments in support of its assertion that the LRIC
21 Study performed by the Company is flawed.⁷

22 Issue 1: Residential customers are not driving system upgrades and increases

⁷ CUB/100, McGovern-Jenks/16, line 12 – McGovern/Jenks/25, line 9.

1 Issue 2: The useful life of investments are exaggerated for industrial customers

2 Issue 3: Avista's Distribution system is not accurately sized on a LRIC basis

3 **Issue 1: CUB's assertion that residential customers are not driving system upgrades**
4 **and increases**

5 **Q. Please describe CUB's argument that residential customers are not**
6 **driving system upgrades and increases?**

7 A. CUB attempts to tie the increase in large customer load growth (Schedules
8 424, 440, 444, 447 & 456) to the increase in Avista's capital spending. CUB describes the
9 increase in capital spending as being largely tied to new infrastructure and growth to serve
10 these large loads, and that residential customers are not driving system upgrades.⁸

11 **Q. Do you agree that new infrastructure related to growth is driving system**
12 **upgrades and increases?**

13 A. No, as shown in Table No. 3 below, only 14% of rate base growth is due to gas
14 distribution growth plant. Approximately 86% of new capital investment, as described in
15 detail by Company witness Ms. Schuh and Mr. Webb, is related to reinforcements, safety,
16 pipe replacement, mandated work, storage, general plant and Project Compass.

17 **Table No. 3: Summary of Capital Transfers to Plant Included in this Docket:**

<u>Plant Category</u>	<u>Investment</u> <u>('000's)</u>	<u>Percent</u> <u>of Total</u>
Distribution Growth Plant	\$ 6,843	14%
Distribution Plant *	25,452	53%
General Plant/IT	7,712	16%
<u>Compass</u>	<u>8,300</u>	<u>17%</u>
Total	48,307	100%

21 * Distribution Plant includes reinforcements, safety, pipe
22 replacement, mandated work and storage

⁸ CUB/100, McGovern-Jenks/17, line 1 – McGovern-Jenks/19, line 12.

1 **Q. Is the distribution growth plant caused by large commercial and**
2 **industrial customers?**

3 A. No, actually quite the opposite is true. Table No. 4 below demonstrates that
4 the drivers of customer growth from 2014 to 2016 are new residential (Schedule 410) and
5 small commercial (Schedule 420) customer hookups.

6 **Table No. 4: Forecasted Customer Growth Summary (2014 – 2016)**⁹

<u>Customer Class</u>	<u>Rate Schedule</u>	<u>Customer Growth</u>	<u>Percent of Total</u>
Residential	410	1488	93.4%
General Service	420	102	6.4%
Large General Service	424	3	0.2%
Interruptible Service	440	0	0.0%
Seasonal Service	444	0	0.0%
Special Contract	447	0	0.0%
Transportation	456	<u>0</u>	<u>0.0%</u>
Total		1593	100.0%

13 **Q. What is driving the other non-growth capital?**

14 A. The majority of the other non-growth capital is related to reinforcements,
15 safety, pipe replacement, mandated work (road moves, cathodic protection), storage, Project
16 Compass and general plant (common assets).

17 **Q. Is this other non-growth capital being driven by large commercial and**
18 **industrial load?**

19 A. No, the majority of these projects are required to be done irrespective of any
20 increase in load. As discussed by Mr. Webb, the Company undergoes a rigorous capital
21 investment prioritization process. The determination of when a capital investment should be
22 completed is a function of a number of considerations, including capacity limitations on the

⁹ The new customer growth from 2014 -2016 is derived from the load forecast agreed to in the Partial Stipulation.

1 natural gas system, system reliability, public safety and health, employee safety and health,
2 environmental impacts, and regulatory impacts. Generally speaking, these considerations are
3 not impacted by increases in large load as asserted by CUB.

4 **Q. Is the non-growth capital, which is being installed to ensure there is**
5 **enough capacity on a design day, otherwise attributable to all rate schedules?**

6 A. No. As detailed in the Company's 2014 IRP, and discussed in detail by Mr.
7 Webb, the design day criteria used to support new plant investment assumes that interruptible
8 Schedule's 440 & 456 would be interrupted on a design day, and therefore those customers
9 usage is not being served on a design day. In addition, Seasonal Service Schedule 444 is
10 contractually obligated to only take service from March 1 through November 30 of each year.
11 Because these customers are not taking service during the winter, when a design day event is
12 likely to occur, they are also excluded from the design day planning criteria.

13 **Q. CUB uses the Ladd Canyon Station Upgrade as an example of how larger**
14 **customers and their growth are driving increases in system costs.¹⁰ Is this correct?**

15 A. No. As is shown in the testimony of Mr. Webb, the Ladd Canyon Station had
16 already reached an existing capacity deficit on a heating degree design day and needed to be
17 upgraded, irrespective of the incremental load of the Paving Customer.

18 **Issue 2: CUB's assertion that the useful life of investments are overstated for industrial**
19 **customers**

20 **Q. Please summarize CUB's argument that the useful lives of investments are**
21 **exaggerated for industrial customers.**

22 A. CUB argues that, unlike residential customers, "if an industrial customer

¹⁰ CUB/100, McGovern-Jenks/18, line 8 – McGovern/Jenks/19, line 12.

1 closes up shop for economic reasons or otherwise, it is not a foregone conclusion that another
2 natural gas customer will be able to utilize the facilities that Avista put in place to serve the
3 prior customer at all”.¹¹ CUB asserts that “if a new customer does arrive, it is quite likely that
4 alterations will be required” leaving the initial investment obsolete and therefore not serving
5 customers.¹² Because the Company’s LRIC assigns the same useful lives, regardless of rate
6 schedule, CUB believes that the remaining useful life of plant for industrial customers is
7 overstated.

8 **Q. Do you agree that the useful lives of investments are exaggerated for**
9 **industrial customers?**

10 A. No. While there may be circumstances where an industrial customer has
11 either closed entirely and no other customer has yet to take service at the same location, or
12 where an industrial customer has closed and a new customer with vastly different facilities
13 requirements has taken service, both of these scenarios are extremely rare, as explained
14 below.

15 **Q. Did CUB provide any analysis to substantiate its claim that in many cases,**
16 **investments by the Company become obsolete?**

17 A. No. CUB’s sole reasoning is based on one isolated circumstance where a
18 recent seasonal asphalt paving customer went out of business. In this instance, the customer,
19 through a Natural Gas Line Extension Agreement entered into a “take or pay” arrangement.
20 Under that arrangement, the customer obligated itself to use a certain level of natural gas by
21 the end of 2015. In order to justify the Company’s investment of approximately \$45,000, the

¹¹ CUB/100, McGovern-Jenks/19, lines 18 - 21.

¹² CUB/100, McGovern-Jenks/19, lines 21 - 22.

1 customer was required to use 305,000 therms in that time period. If the customer did not meet
2 their usage requirements, they would be required to pay a deficiency, as shown in the
3 Agreement. When the customer closed its account in August 2015, it had actually used
4 approximately 476,000 therms, meeting its contractual obligations and, therefore, the
5 customer did not need to otherwise make a contribution towards the cost of providing service.

6 **Q. Is there any evidence that there has been a material number of closures**
7 **related to industrial customers in the last five years?**

8 A. No, actually quite the opposite is true. In the last five calendar years (2010-
9 2014), the Company has only experienced three situations where an industrial customer has
10 completely closed service and no new customer has yet to take service at the same location.

11 **Q. What percentage of industrial load did these three customers represent?**

12 A. The three industrial customers represented 0.04% of industrial load.¹³

13 **Q. Is the Company forecasting a material number of industrial customer**
14 **closures in the next five years?**

15 A. No. There is no information available today that would suggest or support a
16 material number of closures into the future, which would provide a basis for altering the
17 useful lives of assets in the LRIC Study. To the contrary, the Company expects relatively
18 stable customer levels over the next five years for rate schedules 424, 440, 444 and 456 as
19 shown in the Company's load forecast prepared by Dr. Forsyth.¹⁴ Dr. Forsyth, by way of the
20 Company's business managers and account executives, is in regular communication with the
21 Company's large commercial and industrial customers to determine the likelihood of material

¹³ The calculation was derived from the last known annual load of the three industrial customers divided by the forecasted 2016 load for rate schedules 440, 444 & 456, as agreed to in the Partial Stipulation.

¹⁴ Avista/700, Forsyth.

1 changes related to customer usage, addition of new customers and/or existing customers who
2 will be terminating service. All known material changes are incorporated into the forecasts
3 prepared by Dr. Forsyth.

4 **Q. Based on the limited number of times industrial customers have actually**
5 **left the system, do you find any evidence or support to alter the useful lives of**
6 **investments for industrial customers?**

7 A. No, while there may be rare circumstances where industrial customers leave
8 the system, there has not been a consistent trend of customer closings which would provide a
9 basis for making such an adjustment. Not surprisingly, our experience has been when a
10 customer leaves the system, at some point, another customer has, and or will take service.

11 **Q. Did CUB provide its own analysis of what the useful lives of investments**
12 **should be for industrial customers?**

13 A. No, it did not. CUB simply states that the useful lives of assets for industrial
14 customers are overstated based on one isolated example.¹⁵

15 **Q. Even if the Company were to arbitrarily reduce the useful life of its assets**
16 **by as much as 50% for the Company's large rate schedules, what would be the effect on**
17 **the Company's LRIC Study results?**

18 A. Table No. 5 below shows the before and after results of making an arbitrary
19 50% reduction to the useful lives of Services (48 years to 24 years) and Mains (58 years to 29
20 years) for rate schedules 424, 440, 444 and 456.

21

¹⁵ CUB/100, McGovern-Jenks/19, line 14 – McGovern-Jenks/20, line 15.

Table No. 5: LRIC Margin to Cost Ratios

(50% Reduction to the Useful Life of Assets)

<u>Customer Class</u>	<u>Rate Schedule</u>	<u>Actual Useful Lives</u>	<u>50% Adjusted Useful Lives</u>
Residential	410	0.98	0.99
General Service	420	0.92	0.92
Large General Service	424	1.78	1.63
Interruptible Service	440	1.47	1.34
Seasonal Service	444	1.77	1.59
Special Contract	447	0.91	0.92
Transportation	456	<u>1.66</u>	<u>1.49</u>
Total		1.00	1.00

Although no reliable evidence exists to make any adjustment to the useful lives of these assets, the results in Table No. 5 show that, even reducing the lives of these assets by as much as 50% still supports the Company's rate spread proposal as detailed by Mr. Ehrbar.

Issue 3: CUB's assertions that Avista's distribution system is not accurately sized on a LRIC basis

Q. Please summarize CUB's assertion that the LRIC Study does not reflect an accurately sized system on an LRIC basis.

A. CUB asserts that Avista's distribution system is not properly sized because the usage characteristics of customers today are different than the usage characteristics of customers when the system was built. As a result, CUB asserts that an appropriate cost study should be based on the hypothetical cost of a brand new natural gas distribution system, sized to meet current customers' natural gas requirements.¹⁶ This is in contrast to the Company's LRIC study, which calculates the theoretical cost of replacing Avista's present natural gas

¹⁶ CUB/100, McGovern-Jenks/21, line 18 – McGovern-Jenks/25, line 9.

1 distribution system.

2 **Q. Does CUBs view that the LRIC Study does not reflect an accurately sized**
3 **system on an LRIC basis have merit?**

4 A. No it does not. The LRIC Study should be based on the replacement cost of
5 the actual facilities that will be in the Company's future revenue requirement. The LRIC
6 Study is a forecast of the marginal replacement costs that the Company expects to incur in the
7 future. CUB's view of an accurately sized system is based on a hypothetical replacement of
8 the entire system that could not and will not happen. The Company acknowledges that if it
9 could rebuild its entire distribution from scratch in an instant, it would look different from
10 what's in place today. But we know that of course cannot happen. Therefore, the Company's
11 approach which reflects a realistic expectation of what will actually be installed over time is
12 the most appropriate measure for calculating the long-run marginal cost.

13 **Q. Does CUB itself place doubt on its own theory that the LRIC Study should**
14 **look at the forward cost of a new system?**

15 A. Yes. CUB acknowledges this when it states, "This line of inquiry may be
16 dismissed as irrelevant because the Company cannot feasibly scratch the entire system and
17 start anew." (emphasis added)¹⁷

18 **Q. Did CUB provide any analysis or calculations supporting its "hypothetical**
19 **system"?**

20 A. No, CUB did not. CUB relies on limited theoretical concepts and data in an
21 attempt to draw doubts as to the usefulness of the LRIC Study as a whole. CUB provided no
22 analysis, nor did it explain in any way how its conceptual theories could be applied on an

¹⁷ CUB/100, McGovern-Jenks/23, lines 3 - 4.

1 actual basis for purposes of conducting an LRIC Study. As such it should be rejected.

2 **Q. Given the testimony sponsored by CUB related to the LRIC Study in this**
3 **proceeding, is there any practical way to incorporate their LRIC theories into an actual**
4 **LRIC Study with corresponding results?**

5 A. No. CUB provided no quantitative or qualitative theory or analysis that would
6 inform the Commission of how to incorporate any of its theories on a prospective basis into
7 an actual LRIC Study.

8 **Q. Does this conclude your Reply testimony?**

9 A. Yes, it does.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-288

REPLY TESTIMONY OF PATRICK D. EHRBAR
REPRESENTING AVISTA CORPORATION

Rate Spread

1 **I. INTRODUCTION**

2 **Q. Please state your name, business address and present position with Avista**
3 **Corporation?**

4 A. My name is Patrick D. Ehrbar and my business address is 1411 East Mission
5 Avenue, Spokane, Washington. My present position is Manager of Rates and Tariffs.

6 **Q. Have you filed direct testimony in this proceeding?**

7 A. Yes. I have filed direct testimony in this case addressing rate spread, rate
8 design, and natural gas decoupling, among other things.

9 **Q. What is the scope of your Reply testimony in this proceeding?**

10 A. My testimony will respond to the rate spread proposals put forth by
11 Commission Staff (“Staff”), Citizens’ Utility Board (“CUB”), and the Northwest Industrial
12 Gas Users (“NWIGU”). My testimony will also cover the proposed rate spread of Avista’s
13 revised revenue requirement in its Reply testimony.

14 **Q. Are you sponsoring any exhibits that accompany your testimony?**

15 A. Yes. I am sponsoring Exhibit No. 1901 which is related to the spread of the
16 revised revenue requirement provided by Company witness Ms. Smith, and which reflects the
17 agreed-upon rate design components from the Partial Settlement Stipulation in this case. This
18 exhibit was prepared under my supervision.

19
20 **II. RATE SPREAD**

21 **Q. By way of background, would you please summarize the Company’s**
22 **originally-filed rate spread proposal?**

23 A. Yes. The Company utilized the results of the Long Run Incremental Cost
24 (“LRIC”) study sponsored by Company witness Mr. Miller as a guide to spread the proposed

1 margin/revenue increase by service schedule. The Company spread the proposed increase for
 2 all schedules in a manner that results in the margin-to-cost ratios for the various service
 3 schedules moving approximately 50% closer to 1.00 (unity). The resulting rate spread
 4 resulted in Schedules 410 and 420 receiving rate increases, no rate change for Schedule 440,
 5 and 7.0% margin reductions for Schedules 424, 444 and 456. Table No. 1 below summarizes
 6 the proposed rate spread on a margin, and total revenue¹, basis using Avista's original
 7 proposed revenue requirement of \$8,557,000:

8 **Table No. 1:**

9

<u>Proposed % Natural Gas Increase by Schedule</u>		
Rate Schedule	Increase in Margin Revenue	Increase in Total Revenue
11 Residential Schedule 410	17.0%	8.9%
12 General Service Schedule 420	21.4%	9.5%
Large General Service Schedule 424	-7.0%	-1.3%
13 Interruptible Service Schedule 440	0.0%	0.0%
Seasonal Service Schedule 444	-7.0%	-1.5%
14 Transportation Service Schedule 456	-7.0%	-6.9%
Overall	16.1%	8.0%

15

16 Table No. 2 below shows the effect on the margin-to-cost ratios from the proposed
 17 rate spread:

¹ In order to provide an “apples-to-apples” comparison for the effect of the Company’s originally-filed rate spread, and rebuttal rate spread, the effects of the recent November 1 rate changes (Purchased Gas Cost Adjustment, etc.) have not been included in the total revenue figures.

Rate Spread

1 **Table No. 2:**

2

Present and Proposed Margin-to-Cost

3

Margin-to-Cost at
Present Rates

Margin-to-Cost at
Proposed Rates

4

Residential Schedule 410

0.98

0.99

5

General Service Schedule 420

0.92

0.96

Large General Service Schedule 424

1.78

1.43

6

Interruptible Service Schedule 440

1.47

1.26

Seasonal Service Schedule 444

1.77

1.41

7

Transportation Service Schedule 456

1.66

1.33

8

Overall

1.00

1.00

9

Q. Why did the Company propose that some rate schedules receive revenue

10

increases, while other rate schedules receive either no revenue change or revenue

11

decreases?

12

A. The Company's proposed rate design would help to address the misalignment

13

of rates among the service schedules. The margin-to-cost ratios at present rates have

14

continued to move away from unity over time. Illustration No. 1 and Table No. 3 below show

15

the margin to cost ratios at present rates from the Company's LRIC studies presented in its

16

last three general rate cases (Docket Nos. UG-246, UG-284 and UG-288):

Illustration No. 1: Margin-to-Cost Ratios from Avista’s Last Three General Rate Cases

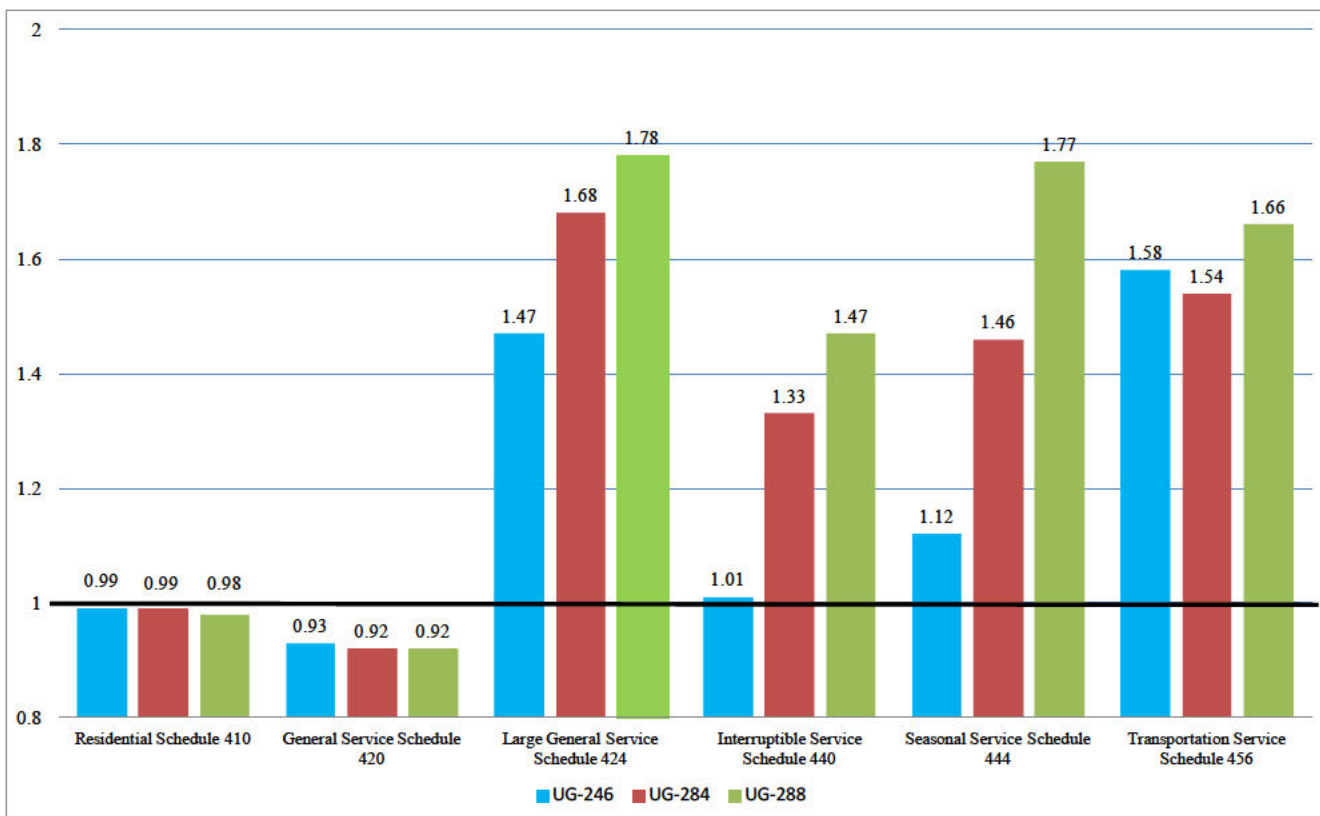


Table No. 3: Margin-to-Cost Ratios from Avista’s Last Three General Rate Cases

Rate Schedule	UG-246 Margin-to-Cost	UG-284 Margin-to-Cost	UG-288 Margin-to-Cost
Residential Schedule 410	0.99	0.99	0.98
General Service Schedule 420	0.93	0.92	0.92
Large General Service Schedule 424	1.47	1.68	1.78
Interruptible Service Schedule 440	1.01	1.33	1.47
Seasonal Service Schedule 444	1.12	1.46	1.77
Transportation Service Schedule 456	1.58	1.54	1.66

As can be seen in Illustration No. 1 and Table No. 3, the margin-to-cost ratios for all of the service schedules have continued moving further away from unity. Given that the margin-to-cost ratios calculated in this case, along with the results of prior LRIC studies, continue to demonstrate a substantial misalignment of rates, the Company continues to

1 believe that a 50% movement towards unity is reasonable at this time and will help to more
2 closely align rates with costs.

3 **Q. Staff witness Dr. Compton references the Commission’s Order No. 15-109**
4 **in Docket No. UG-284 whereby the Commission rejected the originally filed settlement**
5 **stipulation (Staff Exhibit No. 1300, p. 19). What is your understanding of why the**
6 **Commission rejected the proposed rate spread in that case?**

7 A. As referenced by Dr. Compton, in Order No. 15-109, the Commission rejected
8 the originally-filed settlement rate spread, where certain schedules would receive rate
9 increases and others rate decreases. In particular, at page 5 of Order No. 15-109, the
10 Commission stated:

11 We appreciate that rates may be misaligned relative to cost-of-service and that rate
12 cases provide opportunities to make adjustments that more closely align rates with
13 costs. Absent compelling evidence that warrants more immediate action, however, we
14 are not inclined to raise some rates while reducing others. In this case [UG-284] there
15 is no evidence that suggests that Avista's rates for its larger customers are so high and
16 need to be reduced at this time. (emphasis added)
17

18 **Q. Does the Company believe that “compelling evidence” exists in this case**
19 **(UG-288) that supports the Company’s proposed rate spread?**

20 A. Yes, the Company believes compelling evidence does exist in this case that
21 warrants rate reductions for certain schedules. First, as demonstrated in Table No. 3 above,
22 the Company’s LRIC studies over the past three general rate cases have shown that the
23 margin-to-cost ratios are continuing to move away from unity. Absent Commission support
24 of rate reductions for certain schedules in this case, the rates charged to those service
25 schedules will continue to be misaligned from the three LRIC studies filed in this case.

26 Second, the Commission has the benefit of three LRIC studies filed in this case. In
27 addition to Avista’s LRIC study, Staff and NWIGU also filed LRIC studies as discussed by

1 Company witness Mr. Miller. (CUB did not file an LRIC study.) All three studies showed
2 similar margin-to-cost ratios, and ultimately those parties proposed rate spreads that were
3 either the same as, or are not materially different from, what the Company had proposed. As
4 a result, the Company believes that there is substantial and compelling evidence provided in
5 this Docket that supports rate reductions for some customers, even in light of increasing rates
6 for other service schedules.

7 **Q. Has the Commission approved rate reductions for certain rate schedules,**
8 **while increasing rates for other schedules, in prior Avista general rate cases?**

9 A. Yes, in Docket Nos. UG-181 (Avista's 2007 general rate case) and UG-246
10 (Avista's 2013 general rate case), the Commission approved settlement stipulations whereby
11 certain rate schedules received rate increases, while others received rate decreases.

12 **Q. Has the Commission approved rate reductions for certain rate schedules,**
13 **while increasing rates for other schedules, for other Oregon jurisdictional utilities as**
14 **well?**

15 A. Yes. In Northwest Natural's 2012 general rate case, Docket No. UG-221, the
16 parties in that case settled (Second Partial Stipulation) upon a rate spread that increased base
17 rates for residential and small commercial customers, while providing five percent base rate
18 decreases for larger firm and interruptible sales and transportation customers. The
19 Commission stated at p. 9 of Order No. 12-408 that "the parties agree that any rate schedule
20 receiving a zero percent base margin increase under NW Natural's proposed rate spread will
21 instead receive a five percent base margin decrease." CUB was a party to that settlement, and
22 the Commission approved it on October 26, 2012.

23 In addition, in Docket No. UE-246, Pacific Power's 2012 general rate case, the
24 Commission approved a settlement, where CUB was again a signatory, whereby residential

1 customers received a 3.1% rate increase while pumping, small general service, and lighting
2 customers received rate decreases between 4.9% and 7.0%.²

3 **Q. In the Avista dockets where the Commission approved rate decreases, did**
4 **any other parties file LRIC studies?**

5 A. No, in both Docket Nos. UG-181 and UG-246, the parties to those general rate
6 cases reached settlements prior to the time Staff and intervenor testimony was filed. As such,
7 the only LRIC study filed in those dockets was Avista's filed study. In this case the
8 Commission has before it not one, but three filed LRIC studies.

9 **Q. Did CUB file a LRIC in this case?**

10 A. No, they did not.

11 **Q. Does NWIGU's rate spread proposal differ from the Company's?**

12 A. No, it does not. NWIGU witness Mr. Collins states that "NWIGU supports the
13 Company's proposed margin revenue allocation since it makes a gradual movement to cost
14 based rates and doesn't subject any class to rate shock."³

15 **Q. Is Staff's proposed rate spread similar to that of the Company?**

16 A. Yes, Staff's rate spread proposal is very similar to the Company's rate spread.
17 First, Staff accepted the proposed revenue decreases for Schedules 424, 444 and 456 (and no
18 revenue change for Schedule 440).⁴ Second, Staff proposes that the overall billed revenue
19 increase for Schedules 410 and 420 be the same.⁵ The effect of this revenue-based spread for
20 Schedules 410 and 420 is that, on a margin basis⁶, the percentage increase for Schedule 410 is
21 slightly lower than the margin increase for Schedule 420. The effect of this is not materially

² UE-246, Order No. 12-493, Appendix A p. 25 of 36

³ NWIGU/100, Collins/5, lines 9-11.

⁴ Staff /1303, Compton/ 4, line 33.

⁵ Id. at line 38.

⁶ Id. at line 33.

1 different from the Company's rate spread proposal, where Schedule 410 receives less as
2 compared to Schedule 420 on a margin basis.

3 **Q. Staff proposed that if the overall increase is 4% or less, then it would be**
4 **supportive of rate reductions for certain schedules, but if the increase is greater than**
5 **4%, then certain schedules should "be held to a zero percent increase". (Staff Exhibit**
6 **No. 1300, p. 17). Do you agree with Staff's proposal?**

7 A. No I do not. The Company believes that the evidence in this case warrants rate
8 reductions for certain schedules.

9 **Q. CUB asserts that "customers under Schedule 410 pay for 98 percent of**
10 **their own cost of service. This is pretty close to paying exactly the amount that the study**
11 **says customers should pay".⁷ (emphasis added) Is this a fair characterization?**

12 A. No, the characterization is too simplistic. Closer evaluation reveals that
13 Schedule 410 provides 65.8% (\$34.9 million) of Avista's total margin revenue, and Schedule
14 420 provides 25.7% (\$13.6 million).⁸ Combined, these two schedules make up 91.5% of total
15 margin revenue (\$48.5 million), and based on the three LRIC studies, both schedules are
16 paying less than their relative cost of service. If one were to arbitrarily re-spread even 1% of
17 those schedules' margin revenue to all of the other rate schedules, a total of \$485,000 would
18 be reassigned. This would increase the rates for Schedules 424, 440, 444, and 456 by 10.7%.⁹

19 The point of this analysis is that, for Avista's natural gas operations in Oregon,
20 because the majority of margin revenue comes from just two schedules, any subsidization of
21 Schedules 410 and 420 puts a heavy burden on all other rate schedules. Inversely, given the

⁷ CUB/100, Mc-Govern-Jenks/26, lines 9-11.

⁸ Avista/903, Ehrbar/2, line 1.

⁹ The total margin revenue for Schedules 424, 440, 444 and 456 is approximately \$4.5 million, as shown on p. 2 of Exhibit No. 903.

1 small amount of margin revenue provided by the non-Schedule 410 and 420 customers, the
2 reassignment of revenue away from those schedules puts very little burden on Schedules 410
3 and 420, as demonstrated by Dr. Compton.¹⁰

4 **Q. Please provide the Company's response to CUB's assertion that Schedule**
5 **456 Transportation Customers are overpaying by only 3%.¹¹**

6 A. CUB provides an analysis on Pages 27-31 of their Exhibit 100 that attempts to
7 demonstrate that Schedule 456 customers are not significantly overpaying on a cost of service
8 basis. This analysis is flawed in many ways, and should be rejected. First, to make its point,
9 CUB adds to Schedule 456's margin revenue (which is presently \$3.3 million) an estimated
10 cost of wholesale natural gas and interstate pipeline transportation (which they estimate to be
11 \$25.4 million). CUB then compares the grossed-up Schedule 456 revenue (\$28.7 million) to
12 the margin revenue provided by the other rate schedules, which, unlike Schedule 456, do not
13 include the cost of wholesale natural gas or interstate pipeline transportation. Clearly such a
14 comparison is not on an "apples-to-apples" basis. Comparing an estimated total revenue for
15 one schedule to the margin revenue of the other schedules, and using that comparison for
16 purposes of determining whether or not Schedule 456 is paying their cost of service is
17 completely inappropriate.

18 Second, this analysis is flawed because the rates being set in this general rate case are
19 only related to distribution service. Whether customers procure their own gas, or have it
20 provided to them by Avista, is completely irrelevant in determining how the Company's
21 distribution system related costs are presently, and proposed to be, recovered from customers.

¹⁰ Staff /1303, Compton/20, lines 5-7.

¹¹ CUB/100, Mc-Govern-Jenks/31, line 3.

1 The results of the three LRIC studies all show that Schedule 456 is paying more than its
2 relative cost of service, and therefore is deserving of a rate reduction.

3 **Q. What is your understanding of how CUB came to their “recommended**
4 **rate spread”?**¹²

5 A. Beyond the two theories CUB proffered related to Schedule 410 being “pretty
6 close” to unity¹³, and total revenue methodology analysis for Schedule 456, CUB stated that
7 at “a quick glance”¹⁴ capacity release revenue is not being properly allocated. CUB states
8 that “the fact that capacity release revenue is not being properly allocated to residential
9 customers informs CUB’s recommended rate spread.”¹⁵

10 **Q. Is the allocation of capacity release revenue a general rate case issue?**

11 A. No, the allocation of pipeline capacity release revenue is a Purchased Gas Cost
12 Adjustment (“PGA”) issue.

13 **Q. Is the use of interstate pipeline costs which are addressed in PGA filings**
14 **appropriate for purposes of informing the spreading of costs associated with Avista’s**
15 **natural gas distribution system?**

16 A. No, the costs related to the distribution system, as calculated in a LRIC, is
17 appropriate for informing rate spread.

18 **Q. Before describing CUB’s issue related to pipeline capacity release revenue,**
19 **did CUB raise this issue in Avista’s recently-concluded PGA (Docket No. UG-289)?**

20 A. No, it did not.

21 **Q. Briefly, what is CUB’s concern with pipeline capacity release revenue?**

¹² Id. at p. 32, line 18.

¹³ Id. at p. 26, line 10.

¹⁴ Id. at p. 32, line 7.

¹⁵ Id. at p. 32, ll. 16-18.

1 A. CUB asserts on pages 31-32 of its Exhibit No. 100 that Avista is not properly
2 allocating capacity release revenue to its service schedules. However, CUB seems to be
3 confused between the costs and revenues associated with interstate pipeline capacity (i.e.,
4 capacity Avista contracts for on Williams Northwest Pipeline and TransCanada-Gas
5 Transmission Northwest to deliver natural gas from market hubs to the Company’s city gates)
6 and distribution system capacity. CUB asserts that the Company sizes the local distribution
7 system based on the Company’s design day. That is correct. However, CUB then states that
8 during off-peak times the Company markets this capacity to others. The Company does not
9 release to other parties capacity on its distribution system. In fact, there are no parties who
10 could even make use of the Company’s local natural gas distribution system.

11 What Avista does release, in off-peak times, is its contracted capacity on interstate
12 pipelines, for the benefit of all customers. And the costs and revenues related to interstate
13 pipelines are applied equally, on a per-therm basis, to the Company’s service schedules. The
14 costs associated with interstate pipeline capacity are allocated to customers on a per-therm
15 basis in the PGA. Likewise, the capacity release revenue is allocated to customers on a per-
16 therm basis in the PGA. This is the same methodology used by Avista for years, as reflected
17 in its annual PGAs. Given that CUB’s understanding of capacity release revenue which
18 “informs CUB’s recommended rate spread”¹⁶ is in fact misinformed, CUB’s rate spread
19 should be rejected.

20 **Q. What is the Company’s response to CUB’s “analysis” comparing the rates**
21 **of Avista’s Oregon customers to the rates of Avista’s Washington and Idaho customers?**

22 A. Such an analysis is too simplistic and not appropriate. One should not simply
23 compare the rates, cost of service results or other state-specific rate-making components to

¹⁶ Id. at p. 32, lines 16-18.

1 another state. Each state has its own unique service characteristics, some of which include the
2 proportion of urban to rural customers, weather conditions, customer mix, etc. For example,
3 in Washington, the average use-per-customer for residential customers is 68 therms per
4 month. For Oregon, the average use is 46 therms. In Washington, there is simply a higher
5 level of billing determinants (usage) to spread the Company's costs over, which results in
6 lower rates. In Oregon, given the warmer overall climate in Avista's service territory versus
7 its Washington/Idaho jurisdictions, there is less overall usage to spread costs over. As a
8 result, customers in Oregon have higher rates. Pointing to higher rates, without further
9 analysis as to why rates are higher, is inappropriate.

10 Further, customer classes served on particular rate schedules will be different between
11 the states. For example, in Idaho and Washington, residential customers are served on
12 Schedule 101. That schedule is also applicable to small commercial customers. In Oregon,
13 small commercial customers are not included in Residential Schedule 410. Further, CUB
14 asserts that Avista's interruptible customers pay lower rates than they would under Northwest
15 Natural's rates, and therefore should receive the average increase.¹⁷ First, CUB provides no
16 analysis to support that position, unlike the other parties in this case who filed cost of service
17 studies. Second, CUB fails to define "interruptible". Two of the Company's schedules (440
18 and 456) are interruptible, and it is unclear as to which schedule CUB is referring to. In short,
19 there are many factors that impact the rates charged by utilities, and simplistic comparisons to
20 other utilities' rates should be rejected.

21 **Q. What is the Company's response to CUB's proposed rate spread whereby**
22 **"no customer class gets any more than 3 times the increase of any other class"?**¹⁸

¹⁷ Id. at p. 43, lines 6-8.

¹⁸ Id. at lines 3-4.

1 A. First, such a proposal is arbitrary in nature, and is not based on a cost of
2 service/LRIC study. The effects of such a spread would actually move Schedule 456 from
3 1.66 to 1.74 on a relative margin-to-cost ratio (using the Company’s originally-filed revenue
4 requirement) – even further away from unity. If one were to apply CUB’s rate spread to the
5 Company’s original revenue requirement, the overall margin increase for Schedule 456 would
6 be \$739,000, or 21.8%, versus a margin reduction of \$231,000, or 7.0% proposed by Avista.
7 Schedule 456 as shown in three independent LRIC studies filed in this case is deserving of a
8 revenue reduction.

9 In addition, CUB’s proposed rate spread is unclear as to whether the “3 times”
10 increase is on a billing or margin basis. CUB simply fails to provide a level of detail and
11 specificity that Avista believes the Commission should have in order to evaluate their
12 proposal. As such, CUB’s rate spread should be rejected.

13 **Q. Given the positions of the Parties, what is the Company’s rate spread**
14 **proposal in its Reply testimony?**

15 A. The Company’s filed rate spread proposal is informed by its LRIC results as
16 well as the results from the other LRIC studies, and is reasonable and appropriate. The
17 Company continues to support the same level of revenue decreases for Schedules 424, 444,
18 and 456. Further, Schedule 440 should receive no rate change as originally filed. For
19 Schedules 410 and 420, a pro-rata allocation based on the Company’s proposed 50%
20 movement towards unity should be used for purposes of spreading the revised natural gas
21 revenue requirement of \$6.7 million. Page 1 of Exhibit No. 1901 shows the spread of the
22 revised revenue requirement to each service schedule, and Page 2 shows the proposed rates,
23 incorporating the agreed-upon basic charges contained in the Partial Settlement Stipulation.

1 **Q. Did the terms of the proposed Partial Settlement Stipulation affect the**
2 **Company’s rate spread proposal in its Reply testimony?**

3 A. No, the terms of the proposed Partial Settlement Stipulation did not affect the
4 Company’s rate spread proposal. However, it should be noted that the revenue reductions
5 related to the 7.0% margin reduction for Schedule 424, 444, and 456 are slightly different
6 than what was included in the Company’s original filing. In the Partial Settlement Stipulation
7 in this case, the Parties accepted Staff’s load forecast. That load forecast affects 2016
8 “Present Revenues”. Because the agreed-upon “Present Revenue” is now slightly different
9 from what the Company filed as “Present Revenue”, the 7.0% margin reduction from present
10 revenue results in a slightly different revenue decrease for those schedules.

11 **Q. What are the effects of the revised revenue requirement for each service**
12 **schedule?**

13 A. Table No. 4 below provides the revised revenue requirement for each service
14 schedule:

15 **Table No. 4:**

Rate Schedule	Reply Revenue Request	Revenue % Change (Margin)	Revenue % Change (Revenue)
Residential Schedule 410	\$4,697	13.7%	7.2%
General Service Schedule 420	\$2,312	17.1%	7.6%
Large General Service Schedule 424	(\$46)	-7.0%	-1.3%
Interruptible Service Schedule 440	\$0	0.0%	0.0%
Seasonal Service Schedule 444	(\$3)	-7.0%	-1.5%
Transportation Service Schedule 456	(\$219)	-7.0%	-6.9%
Overall	\$6,741	12.9%	6.4%

21 **Q. Is it the Company’s expectation that further rate decreases would be**
22 **necessary in future general rate case proceedings for some rate schedules?**

23 A. No, the Company does not expect to request further rate decreases for certain
24 schedules in the near future, if the Commission approves the Company’s rate spread proposal

1 in this Docket. The rate decreases in this case, as filed by the Company, will make
2 meaningful progress towards moving all rate schedules towards unity. Further progress, in
3 our view, can be made through the application of greater or lesser (including zero) rate
4 increases in future proceedings.

5 **Q. Does this conclude your Reply testimony?**

6 **A. Yes it does.**

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-___

PATRICK D. EHRBAR
Exhibit No. 1901

Rate Spread and Rate Design

Avista Utilities
Proposed Revenue Increase by Schedule
Oregon - Gas
Pro Forma 12 Months Ended December 31, 2016
(000s of Dollars)

Line No.	Type of Service	Schedule Number	Distribution Revenue Under Present Rates	Proposed GRC Increase	Distribution Revenue Under Proposed Rates	Therms (000s)	Distribution Revenue Percentage Increase	Billed Revenue Under Present Rates (1)	Proposed GRC Increase	Billed Revenue Under Proposed Rates	Billed Revenue Percentage Increase
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	Residential	410	\$34,352	\$4,697	\$39,049	48,035	13.7%	\$65,254	\$4,697	\$69,950	7.2%
2	General Service	420	13,509	2,312	15,821	26,415	17.1%	30,343	\$2,312	\$32,655	7.6%
3	Large General Service	424	651	(46)	605	4,331	-7.0%	3,411	(\$46)	\$3,365	-1.3%
4	Interruptible Service	440	460	0	460	3,951	0.0%	2,293	\$0	\$2,293	0.0%
5	Seasonal Service	444	45	(3)	42	265	-7.0%	214	(\$3)	\$211	-1.5%
6	Transportation Service	456	3,127	(219)	2,908	37,221	-7.0%	3,177	(\$219)	\$2,958	-6.9%
7	Special Contract	447	213	0	213	0	0.0%	213	\$0	\$213	0.0%
8	Total		\$52,357	\$6,741	\$59,098	120,217	12.9%	\$104,905	\$6,741	\$111,646	6.4%

(1) Does not include the effects of the November 1, 2015 rate changes.

Type of Service	Schedule Number	Original Proposed General Increase	Percentage of Total Increases	Reply Spread 6.741 Million	Revenue Spread Rationale
Residential	410	\$5,924	67.01%	\$4,697	Pro-rata allocation of original increase
General Service	420	\$2,917	32.99%	\$2,312	Pro-rata allocation of original increase
Large General Service	424	-\$48		-\$46	7% distribution revenue reduction
Interruptible Service	440	\$0		\$0	No increase or decrease
Seasonal Service	444	-\$3		-\$3	7% distribution revenue reduction
Transportation Service	456	-\$233		-\$219	7% distribution revenue reduction
Special Contract	447	\$0		0	No increase or decrease
Total		\$8,557		\$6,741	

Avista Utilities
Comparison of Present & Proposed Gas Rates
Oregon - Gas

<u>Present Base Rates</u>	<u>Change</u>	<u>Proposed Base Rates</u>
Residential Service Schedule 410		
\$8.00 Customer Charge	\$1.00/month	\$9.00 Customer Charge
All Therms - \$0.54073/Therm	\$0.07597/therm	All Therms - \$0.61670/Therm
General Service Schedule 420		
\$14.00 Customer Charge	\$3.00/month	\$17.00 Customer Charge
All Therms - \$0.43901/Therm	\$0.07202/therm	All Therms - \$0.51103/Therm
Large General Service Schedule 424		
\$50.00 Customer Charge	\$0.00/month	\$50.00 Customer Charge
All Therms - \$0.13887/Therm	-\$0.01051/therm	All Therms - \$0.12836/Therm
Interruptible Service Schedule 440		
All Therms - \$0.11652/Therm	\$0.00000/therm	All Therms - \$0.11652/Therm
Seasonal Service Schedule 444		
All Therms - \$0.17155/Therm	-\$0.01201/therm	All Therms - \$0.15954/Therm
Transportation Service Schedule 456		
\$275.00 Customer Charge	\$0.00/month	\$275.00 Customer Charge
1st 10,000 Therms - \$0.14978/Therm	-\$0.01090/therm	1st 10,000 Therms - \$0.13888/Therm
Next 20,000 Therms - \$0.09014/Therm	-\$0.00656/therm	Next 20,000 Therms - \$0.08358/Therm
Next 20,000 Therms - \$0.07409/Therm	-\$0.00539/therm	Next 20,000 Therms - \$0.06870/Therm
Next 200,000 Therms - \$0.05799/Therm	-\$0.00422/therm	Next 200,000 Therms - \$0.05377/Therm
Over 250,000 Therms - \$0.02942/Therm	-\$0.00214/therm	Over 250,000 Therms - \$0.02728/Therm

Schedule 456 Monthly Minimum Charge
18,750 @ \$0.08359 = \$1,567.31