AVISTA CORP.
RESPONSE TO REQUEST FOR INFORMATION

JURISDICTION:	WASHINGTON	DATE PREPARED:	07/15/2015
CASE NO.:	UE-150204 & UG-150205	WITNESS:	Don Kopczynski/Tara Knox
REQUESTER:	ICNU	RESPONDER:	Larry La Bolle
TYPE:	Data Request	DEPT:	State & Federal Regulation
REQUEST NO.:	ICNU – 076 Supplemental	TELEPHONE:	(509) 495-4710
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REQUEST:

Please refer to Exhibit No.__(DFK-5), page 23. Please provide Avista's proposed: a) digital meter installation schedule, according to rate schedule; and b) allocation of digital meter installation costs, per year, according to rate schedule.

RESPONSE:

The Company's preliminary estimate of the expected capital costs associated with the Washington advanced metering project, by year, is provided in Exhibit No._(DFK-1T), Illustration No. 5, page 14. The costs for the metering project will be allocated to each rate schedule based on the metering that is ultimately installed for customers served under that rate schedule. The Company anticipates at this time that the costs for the metering project will be principally applied to rate schedules other than schedule 025. This is the case because we expect that many of the industrial customers we serve will continue to be metered under the Company's existing MV-90 program. The basis for the allocation of metering costs among rate schedules is provided in Exhibit No._(TLK-2), page 5, lines 6-8, and in the related work papers TLK-E-135-137.

SUPPLEMENTAL RESPONSE:

In the Company's previous response, we referred to the initial preliminary capital estimate developed and approved for the advanced metering project in late 2014, as presented in Exhibits No._(DFK-1T and DFK-5). Avista has noted that its initial preliminary estimate would be revised through the course of implementation as new information is developed in support of the project, most notably, when we have firm costs from vendors for various solutions. Though the Company has no firm pricing at this point, and will not have firm prices for most of the required solutions until the end of 2015, and into early 2016, we have made revisions to the initial preliminary capital and O&M estimates based on the best information available to the Company at this time.

Capital Revisions

The table, below, presents the initial preliminary project capital cost categories, as described in Exhibit No._(DFK-5), pages 20-23. The costs in the table show the initial preliminary budget as presented in Exhibit No._(DFK-5), and the costs reflecting the most-recent revisions, referenced above.

Description	July 2015 Revision	Initial Budget
Electric Meters	$ 35,829,062.40	$ 33,830,016.00
Electric Meter Labor - in house	$ 9,054,202.59	$ 3,389,938.72
Electric Meter Labor - contract	$ 7,464,774.25	$ 6,815,950.03
Gas Modules	$ 8,942,246.42	$ 8,443,322.80
Gas Module Labor - contract	$ 5,555,646.75	$ 4,261,977.50
Head End Hardware	$ 4,922,650.48	$ 4,922,650.48
Head End Software	$ 5,140,000.00	$ 859,650.00
Head End Labor - Internal	$ 21,592,959.72	$ 9,075,925.85
Network Communications - Hardware	$ 30,105,294.83	$ 26,152,769.50
Network Communications - Software	$ 3,522,185.00	$ 3,015,100.00
Network Communications - Labor	$ 19,938,151.52	$ 29,268,731.80
Customer Communications	$ 4,500,000.00	$ 5,500,000.00
AFUDC	$ 7,361,195.68	$ 6,591,694.62
Additional Project Costs (Spread Across All Units)	$ 1,624,231.37	
Totals	**$ 165,552,601.00**	**$ 142,127,727.31**

An additional change to the revised estimated capital costs, which is embedded in the revised cost categories shown above, and in the project total of $165.6 million, is an increase in the financial contingency for the project, in the amount of $5.8 million. A brief explanation of the reasons for the changes in each capital cost category, is provided below.

Electric Meters – Increase in the equipment loading charges applied to the meters.

Electric Meter Labor / Avista – Upward revision of the estimate of the internal labor resources required to install the advanced meters.

Electric Meter Labor / Contract – Increase in the initial estimate of the contract labor resources required for meter installation.

Gas Modules – Increase in the equipment costs associated with the natural gas modules.

Gas Module Labor / Contract – Increase in the initial estimate of the contract labor resources required to install the natural gas modules.

Head-End Software – Increase in the initial estimate for the meter data management system based on more refined technical specifications, and recent discussions with potential vendors.

Head-End Labor / Avista – Increase in the initial estimate of labor resources, and a transfer of labor from other areas, needed to install and integrate the meter data management system.

Network Communication Hardware – Increase in the initial estimate of the contract labor resources required for network installation.

Network Communication Software – Increase in the initial estimate of the network software costs.

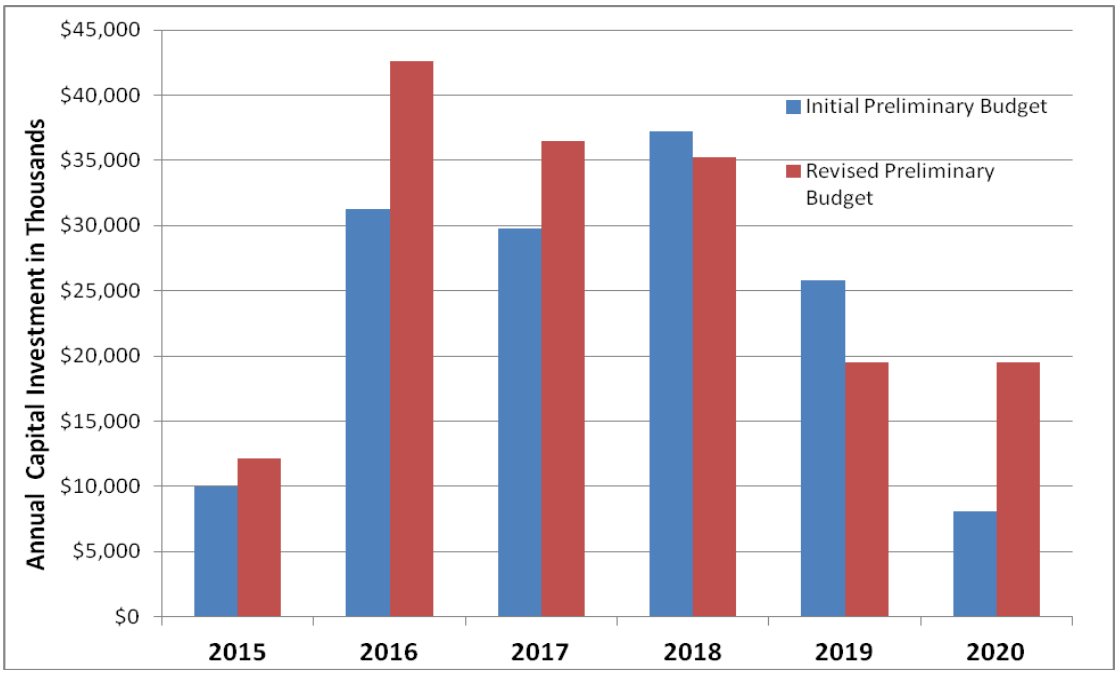
Network Communication Labor – Reduction, representing a shift in the initial estimate of labor resources to other elements of the project, such as Head-End Labor, above.

Customer Communications – Reduction in the initial estimate of the costs for customer communications required to support the project.

AFUDC – Increase reflecting the greater capital costs associated with the project.

Additional Project Costs – Recognition of additional costs associated with implementation of the advanced metering system.

In addition to changes in project costs by category, Avista also revised the initial preliminary forecast of annual capital spending during each year of implementation. The illustration, below, shows the initial forecast of annual capital expenditures for the Washington advanced metering project, as provided in Exhibit_No. (DFK-1T), page 14, and the most-recent revisions of the forecast, as described above.



To determine the overall cost impact associated with these capital additions, Avista revised its initial project financial model, provided in the workpapers of Company witness Mr. Kopczynski, under the tab labeled "AMI Financials." The revised model is provided as ICNU_DR_076 Supplemental Attachment A. As shown in the model in column "T," lines 28 through 48, the overall cost impact related to the increase in estimated capital costs, measured as the change in the net present value of the overall project revenue requirement, is $24.9 million, or approximately 10.9 percent.

Operations & Maintenance Costs

The Company's initial preliminary estimate of the annual O&M costs required to support the fully-deployed project was $5,191,063, which was escalated at two percent annually over the life of the project. Avista has made two revisions to this initial preliminary forecast. The estimate of the required O&M costs has been increased from $5.19 million, above, to $5,400,023, which is also subject to the two percent annual adjustment. The second adjustment involves "phasing in" the full O&M costs over the period of the deployment of the advanced metering system. In its initial financial model, noted above, the Company inadvertently applied the O&M costs, associated with the fully deployed advanced metering system, to each year of the implementation of the project, resulting in an overestimate of the lifecycle operating costs for the system. The net effect of these two O&M adjustments is a $20.8 million reduction (or approximately 9.1 percent) in the overall net present value of the revenue requirement associated with the advanced metering system. These two changes to the Company's initial financial model are shown in ICNU_DR_076 Supplemental Attachment B, in the "AMI Financials" tab, under column "N," lines 28 through 48.

Net Effect of Capital and O&M Revisions

The overall cost impact of these revisions in estimated capital and O&M costs, as described above, is an increase of $4.1 million in the overall net present value of the revenue requirement for the project, or 1.8 percent. Revisions to the Company's initial financial model, reflecting the changes described above in the estimated capital and O&M costs, are provided in ICNU_DR_076 Supplemental Attachment C, under the "AMI Financials" tab. The Company is also continuing to refine its preliminary estimate of offsetting quantifiable benefits. It is anticipated that those estimated benefits will increase.

In addition to the advanced metering project costs noted above, Avista is also in the process of developing a business case for a network communications system that would support a variety of utility functions. Some of these functions include distribution grid modernization and operation, SCADA telemetry to all substations, physical and infrastructure security, field mobility workforce solutions, replace leased fiber and telecommunications facilities, and support of advanced metering in Washington, and subsequently in Idaho. The Company believes the value associated with this network communications system will support its development, likely irrespective of the benefits provided to advanced metering. However, because the network communications project will have an association with the advanced metering system now being deployed by the Company, we will evaluate the costs and benefits of each project in parallel to ensure the costs and benefits of the communications network are properly allocated. Avista is presently engaged in the process of identifying use cases to be evaluated as part of the communications network project, and subsequently, will be preparing a Capital Project Business Case for the program.

State Income Tax Rate 0.00%
Federal Income Tax Rate 35.00%
Discount Factor 6.58%
Capital Class .... 3 (1) General Structures.
(2) Generation, Transmission, and Distribution.
(3) Other Equipment.
(4) Transportation Equipment.
55,223
Book Life (Years) 15
Property Tax Rate 1.50%
O&M Escalation Factor 3.00%
0.0142
1.00

Debt	53.00%	5.72%	3.03%	1.97%
Preferred Stock	0.00%	0.00%	0.00%	0.00%
Common Equity	47.00%	9.80%	4.61%	4.61%
			7.64%	6.58%

Principal 247,810,375
Interest 6.58%
Term 21
Levelized Gr. Mar. Requirement 22,103,037

Lev ROE 2,253,167
NPV equity 25,261,604 74,248,886

IRR CALC
247,810,375 pv princ
20,557,386 pv lvlized margin
5.90% IRR

Gross Revenue	100.0000%
Uncollectables	0.2660%
Commission Fees	0.2000%
Washington Excise Tax	3.8627%
Franchise Fees	0.0000%
Misc. Revenue Items	4.3287%
Before State Income Tax	95.6713%
State Income Tax	0.0000%
Before Federal Income Tax	95.6713%
Federal Income Tax	33.4850%
Conversion Factor	62.1863%

225,314,466
22,495,909

PV GM 230,481,153
TERM 21
LEVELIZED 20,557,386

Capital Additions

(a)	Tax Basis (b)	Book Basis (c)	Rate Base BOP (d)	Accum. Book Deprec. (e)	Tax Deprec. (f)	Book Dep. on Tax Basis (g)	Deferred Taxes (h)	Rate Base EOP (i)	Book Deprec. (j)	Average Rate Base (k)	Interest Expense (l)	Equity Return (m)	O&M & A&G Expense (n)	Property Taxes (o)	Misc. Revenue Items (p)	State Income Tax (q)	Federal Income Taxes (r)	Total Gross Marg Reqmnt (s)	Present Val Gross Marg Reqmnt (t)	ACTUAL ROR BY YEAR (u)	Savings or margin by year (v)
Total => Period	165,552,601	165,552,601			165,552,601	180,420,601	(5,203,800)		180,420,601		9,431,146	14,349,037	148,861,449	4,492,967	16,527,365	0	7,726,405	381,808,968	247,810,375		
1	12,157,944	12,157,944	12,157,944	1,892,065	1,736,884	1,892,065	(54,313)	10,320,193	1,892,065	11,239,068	170,272	259,061	5,191,063	182,369	354,468	0	139,494	8,188,792	7,683,271	-69.04%	0
2	42,633,364	42,633,364	52,953,557	5,610,507	9,068,083	3,718,442	1,872,374	47,362,740	3,718,442	50,158,148	1,519,792	2,312,291	5,346,795	793,489	675,782	0	1,245,080	15,611,670	13,743,647	-13.39%	5,065,379
3	36,500,857	36,500,857	83,863,597	11,966,756	17,782,212	6,356,249	3,999,087	73,508,261	6,356,249	78,685,929	2,384,184	3,627,421	5,507,199	1,285,225	955,292	0	1,953,227	22,068,797	18,228,781	-7.19%	10,398,340
4	35,256,966	35,256,966	108,765,227	20,714,932	22,952,860	8,748,177	4,971,639	95,045,412	8,748,177	101,905,319	3,087,731	4,697,835	5,672,415	1,718,736	1,196,948	0	2,529,604	27,651,445	21,430,047	-2.11%	17,719,329
5	19,497,938	19,497,938	114,543,350	31,288,272	24,217,137	10,573,340	4,775,329	99,194,681	10,573,340	106,869,015	3,238,131	4,926,662	5,842,587	1,879,982	1,317,257	0	2,652,818	30,430,777	22,128,127	-2.59%	19,501,391
6	19,505,532	19,505,532	118,700,213	43,161,728	23,180,013	11,873,456	3,957,295	102,869,462	11,873,456	110,784,837	3,356,781	5,107,181	6,017,865	2,013,965	1,408,008	0	2,750,021	32,527,276	22,192,469	-2.96%	20,783,309
7	0	0	102,869,462	55,685,368	20,740,863	12,523,640	2,876,028	87,469,794	12,523,640	95,169,628	2,883,640	4,387,320	6,198,401	1,835,863	1,366,020	0	2,362,403	31,557,287	20,201,514	-2.71%	21,706,504
8	0	0	87,469,794	68,209,008	16,600,149	12,523,640	1,426,778	73,519,376	12,523,640	80,494,585	2,438,986	3,710,800	6,384,353	1,648,008	1,298,724	0	1,998,123	30,002,635	18,020,630	-1.47%	22,670,706
9	0	0	73,519,376	80,732,648	12,483,667	12,523,640	(13,990)	61,009,726	12,523,640	67,264,551	2,038,116	3,100,896	6,575,884	1,460,154	1,238,298	0	1,669,713	28,606,701	16,121,471	0.31%	23,677,739
10	0	0	61,009,726	93,256,288	8,256,047	12,523,640	(1,493,658)	49,979,744	12,523,640	55,494,735	1,681,490	2,558,307	6,773,160	1,272,299	1,184,820	0	1,377,550	27,371,267	14,472,985	2.88%	24,729,504
11	0	0	49,979,744	104,293,128	5,053,873	11,036,840	(2,094,038)	41,036,942	11,036,840	45,508,343	1,378,903	2,097,935	6,976,355	1,084,445	1,072,506	0	1,129,657	24,776,640	12,292,266	9.95%	25,827,989
12	0	0	41,036,942	115,329,968	2,610,672	11,036,840	(2,949,159)	32,949,261	11,036,840	36,993,101	1,120,891	1,705,382	7,185,645	918,892	1,035,486	0	918,283	23,921,420	11,135,323	15.90%	26,975,268
13	0	0	32,949,261	126,366,808	870,142	11,036,840	(3,558,344)	25,470,765	11,036,840	29,210,013	885,063	1,346,582	7,401,215	753,339	1,002,104	0	725,082	23,150,226	10,111,077	24.84%	28,173,510
14	0	0	25,470,765	137,403,648	0	11,036,840	(3,862,894)	18,296,819	11,036,840	21,883,792	663,079	1,008,843	7,623,251	587,787	971,106	0	543,223	22,434,129	9,193,433	39.59%	29,424,977
15	0	0	18,296,819	148,440,488	0	11,036,840	(3,862,894)	11,122,873	11,036,840	14,709,846	445,708	678,124	7,851,949	422,234	941,107	0	365,144	21,741,106	8,359,426	68.76%	30,732,034
16	0	0	11,122,873	159,072,064	0	10,631,575	(3,721,051)	4,212,349	10,631,575	7,667,611	232,329	353,477	8,087,507	256,682	893,686	0	190,334	20,645,589	7,448,150	156.99%	32,097,151
17	0	0	4,212,349	167,877,262	0	8,805,198	(3,081,819)	(1,511,030)	8,805,198	1,350,660	40,925	62,265	8,330,132	97,208	785,881	0	33,528	18,155,138	6,145,356	821.00%	29,140,859
18	0	0	(1,511,030)	174,044,653	0	6,167,391	(2,158,587)	(5,519,834)	6,167,391	(3,515,432)	(106,518)	(162,061)	8,580,036	(34,870)	649,577	0	(87,264)	15,006,292	4,765,925	-439.54%	30,726,572
19	0	0	(5,519,834)	177,820,117	0	3,775,464	(1,321,412)	(7,973,885)	3,775,464	(6,746,859)	(204,430)	(311,030)	8,837,438	(127,381)	534,014	0	(167,478)	12,336,597	3,676,169	-289.71%	32,398,572
20	0	0	(7,973,885)	179,770,417	0	1,950,300	(682,605)	(9,241,580)	1,950,300	(8,607,733)	(260,814)	(396,816)	9,102,561	(184,013)	452,344	0	(213,670)	10,449,891	2,921,717	-267.83%	34,161,556
21	0	0	(9,241,580)	180,420,601	0	650,184	(227,565)	(9,664,200)	650,184	(9,452,890)	(286,423)	(435,778)	9,375,637	(213,267)	400,681	0	(234,650)	9,256,385	2,428,254	-275.49%	36,020,472
22	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(309,054)	-5.35%	0
23	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(289,975)	-5.35%	0
24	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(272,074)	-5.35%	0
25	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(255,278)	-5.35%	0
26	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(239,519)	-5.35%	0
27	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(224,733)	-5.35%	0
28	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(210,859)	-5.35%	0
29	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(197,842)	-5.35%	0
30	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(185,629)	-5.35%	0
31	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(174,169)	-5.35%	0
32	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(163,417)	-5.35%	0
33	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(153,329)	-5.35%	0
34	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(143,863)	-5.35%	0
35	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(134,982)	-5.35%	0
36	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(126,649)	-5.35%	0
37	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(118,831)	-5.35%	0
38	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(111,495)	-5.35%	0
39	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(104,612)	-5.35%	0
40	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(98,154)	-5.35%	0
41	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(92,095)	-5.35%	0
42	0	0	(9,664,200)	180,420,601	0	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(86,409)	-5.35%	0
43	0	0	(9,664,200)	180,420,601		0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(81,075)	-5.35%	0
44	0	0	(9,664,200)	180,420,601		0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(76,070)	-5.35%	0
45	0	0	(9,664,200)	180,420,601		0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(71,374)	-5.35%	0
46	0	0	(9,664,200)	180,420,601		0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(66,968)	-5.35%	0
47	0	0	(9,664,200)	180,420,601		0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(62,834)	-5.35%	0
48	0	0	(9,664,200)	180,420,601		0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(58,955)	-5.35%	0
49	0	0	(9,664,200)	180,420,601		0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(55,315)	-5.35%	0
50	0	0	(9,664,200)	180,420,601		0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(51,900)	-5.35%	0

51		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(48,697)
52		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(45,690)
53		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(42,870)
54		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(40,223)
55		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(37,740)
56		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(35,410)
57		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(33,224)
58		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(31,173)
59		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(29,249)
60		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(27,443)
61		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(25,749)
62		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(24,159)
63		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(22,668)
64		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(21,269)
65		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(19,956)
66		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(18,724)
67		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(17,568)
68		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(16,483)
69		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(15,466)
70		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(14,511)
71		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(13,615)
72		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(12,775)
73		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(11,986)
74		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(11,246)
75		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(10,552)
76		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(9,900)
77		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(9,289)
78		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(8,716)
79		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(8,178)
80		(9,664,200)	180,420,601	0	0	(9,664,200)	0	(9,664,200)	(292,825)	(445,520)	0	(223,020)	(54,352)	0	(239,895)	(1,255,612)	(7,673)

(a) Time Period in Years
(b) Capital Additions Tax Basis
(c) Capital Additions Book Basis
(d) Rate Base Beginning of Period = Previous(i) + Previous(c)
(e) Accumulated Depreciation = Previous(e) + (j)
(f) Tax Depreciation = Modified ACRS Schedules Times The Tax Basis
(g) Book Depreciation on Tax Basis = Straight Line Depreciation of Tax Basis
(h) Deferred Taxes = [(f)-(g)] * Federal Income Tax Rate
(i) Rate Base End of Period = (d) - (j) - (h)
(j) Book Depreciation = Straight Line Per Book Life
(k) Average Rate Base = [(d) + (i)] / 2
(l) Interest Expense = Weighted Cost of Debt * (k)
(m) Equity Return = [Weighted Cost of Preferred + Weighted Cost of Common] * (k)
(n) Operating and Maintenance Expense = Previous(n) * [1 + O&M Escalation Factor]
(o) Property Taxes = Property Tax Rate * (d)
(p) Miscellaneous Revenue Items = Revenue Requirements * Miscellaneous Revenue Items Percentage
(q) State Income Tax = [Revenue Requirement - [(g) + (l) + (m) + (n) + (o) + (p)] * State Income Tax Rate
(r) Federal Income Taxes = [Revenue Requirements - [(g) + (l) + (n) + (o) + Miscellaneous Revenue Items + State Tax] * Federal Income Tax Rate
(s) Total Revenue Requirements = (j) + (l) + (m) + (n) + (o) + (p) + (q) + (r)
(r) Present Value Revenue Requirements = Total Revenue Requirements / [1 + Discount Factor] ^ [(a) - .5]

Revenue Requirements = [(j) + (l) + (m) + (n) + (o) - Federal Income Tax Rate * [(g) + (l) + (n) + (o)]] / Conversion Factor

TAX DEPRECIATION

Class =>		3																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Rate	Capital		12,157,944	42,633,364	36,500,857	35,256,966	19,497,938	19,505,532	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.14286		1	1,736,884																			
0.24490		2	2,977,480	6,090,602																		
0.17493		3	2,126,789	10,440,911	5,214,512																	
0.12495		4	1,519,135	7,457,854	8,939,060	5,036,810																
0.08925		5	1,085,097	5,327,039	6,385,095	8,634,431	2,785,475															
0.08925		6	1,085,097	3,805,028	4,560,782	6,167,501	4,775,045	2,786,560														
0.08925		7	1,085,097	3,805,028	3,257,701	4,405,358	3,410,774	4,776,905	0													
0.04461		8	542,366	3,805,028	3,257,701	3,146,684	2,436,267	3,412,103	0	0												
0.00000		9	0	1,901,874	3,257,701	3,146,684	1,740,191	2,437,216	0	0	0											
0.00000		10	0	0	1,628,303	3,146,684	1,740,191	1,740,869	0	0	0	0										
0.00000		11	0	0	0	1,572,813	1,740,191	1,740,869	0	0	0	0	0									
0.00000		12	0	0	0	0	869,803	1,740,869	0	0	0	0	0	0								
0.00000		13	0	0	0	0	0	870,142	0	0	0	0	0	0	0							
0.00000		14	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
0.00000		15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
0.00000		16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
0.00000		17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
0.00000		18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0.00000		19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0.00000		20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1			12,157,944	42,633,364	36,500,857	35,256,966	19,497,938	19,505,532	0	0	0	0	0	0								

BOOK DEPRECIATION ON TAX BASIS

Class =>		3																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Rate	Capital		12,157,944	42,633,364	36,500,857	35,256,966	19,497,938	19,505,532	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.03333		1	405,265																			
0.06667		2	810,530	1,421,112																		
0.06667		3	810,530	2,842,224	1,216,695																	
0.06667		4	810,530	2,842,224	2,433,390	1,175,232																
0.06667		5	810,530	2,842,224	2,433,390	2,350,464	649,931															
0.06667		6	810,530	2,842,224	2,433,390	2,350,464	1,299,863	650,184														
0.06667		7	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0													
0.06667		8	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0												
0.06667		9	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0											
0.06667		10	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0										
0.06667		11	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0									
0.06667		12	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0								
0.06667		13	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0							
0.06667		14	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0						
0.06667		15	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0					
0.03333		16	405,265	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0	0				
0.00000		17	0	1,421,112	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0	0	0			
0.00000		18	0	0	1,216,695	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0	0	0	0		
0.00000		19	0	0	0	1,175,232	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0	0	0	0	0	
0.00000		20	0	0	0	0	649,931	1,300,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		21	0	0	0	0	0	650,184	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0.00000	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		12,157,944	42,633,364	36,500,857	35,256,966	19,497,938	19,505,532	0	0	0	0	0	0	0	0	0	0	0	0	0

BOOK DEPRECIATION ON BOOK BASIS

Class =>		3																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Rate	Capital		12,157,944	42,633,364	36,500,857	35,256,966	19,497,938	19,505,532	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.03333		1	405,265																			
0.06667		2	810,530	1,421,112																		
0.06667		3	810,530	2,842,224	1,216,695																	
0.06667		4	810,530	2,842,224	2,433,390	1,175,232																
0.06667		5	810,530	2,842,224	2,433,390	2,350,464	649,931															
0.06667		6	810,530	2,842,224	2,433,390	2,350,464	1,299,863	650,184														
0.06667		7	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0													
0.06667		8	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0												
0.06667		9	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0											
0.06667		10	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0										
0.06667		11	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0									
0.06667		12	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0								
0.06667		13	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0							
0.06667		14	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0						
0.06667		15	810,530	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0					
0.03333		16	405,265	2,842,224	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0	0				
0.00000		17	0	1,421,112	2,433,390	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0	0	0			
0.00000		18	0	0	1,216,695	2,350,464	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0	0	0	0		
0.00000		19	0	0	0	1,175,232	1,299,863	1,300,369	0	0	0	0	0	0	0	0	0	0	0	0	0	
0.00000		20	0	0	0	0	649,931	1,300,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		21	0	0	0	0	0	650,184	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000		72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0.00000	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00000	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		12,157,944	42,633,364	36,500,857	35,256,966	19,497,938	19,505,532	0	0	0	0	0	0	0	0	0	0	0	0	0

pv of contribution to fixed costs	-17,234,788
Interest	6.58%
Term	50
levelized cont. to fixed costs	-1,182,856
per kwh	-$2.95714

(w)	(x)	(y)	(z)	(aa)	(ab)	(ac)	(ad)	(ae)	(af)	(ag)	(ah)				
YR	NEW CUST	CUML CUST	RES LOAD @ 12,000 KWH EA	COMM CUST	COMM LOAD	TOTAL CUST	TOTAL LOAD	REVENUE REQ	ESTIMATED MARGIN	ANNUAL (SHORTFALL) EXCESS	CUMULATIVE (SHORTFALL) EXCESS			Inter. Revenue Requirement	Net Book BOP
													254,120,789		
												-247,810,375			
1	0	0	0	0	0	0	0	8,188,792	0	(8,188,792)	(8,188,792)	0		8,188,792	12,157,944
2	0	0	0	0	0	0	0	15,611,670	5,065,379	(10,546,291)	(18,735,082)	5,065,379		15,611,670	52,899,243
3	0	0	0	0	0	0	0	22,068,797	10,398,340	(11,670,457)	(30,405,539)	10,398,340		22,068,797	85,681,658
4	0	0	0	0	0	0	0	27,651,445	17,719,329	(9,932,116)	(40,337,655)	17,719,329		27,651,445	114,582,375
5	0	0	0	0	0	0	0	30,430,777	19,501,391	(10,929,386)	(51,267,041)	19,501,391		30,430,777	125,332,137
6	0	0	0	0	0	0	0	32,527,276	20,783,309	(11,743,967)	(63,011,008)	20,783,309		32,527,276	134,264,329
7	0	0	0	0	0	0	0	31,557,287	21,706,504	(9,850,783)	(72,861,791)	21,706,504		31,557,287	122,390,873
8	0	0	0	0	0	0	0	30,002,635	22,670,706	(7,331,929)	(80,193,720)	22,670,706		30,002,635	109,867,233
9	0	0	0	0	0	0	0	28,606,701	23,677,739	(4,928,961)	(85,122,681)	23,677,739		28,606,701	97,343,593
10	0	0	0	0	0	0	0	27,371,267	24,729,504	(2,641,763)	(87,764,444)	24,729,504		27,371,267	84,819,953
11	0	0	0	0	0	0	0	24,776,640	25,827,989	1,051,349	(86,713,095)	25,827,989		24,776,640	72,296,313
12	0	0	0	0	0	0	0	23,921,420	26,975,268	3,053,849	(83,659,247)	26,975,268		23,921,420	61,259,473
13	0	0	0	0	0	0	0	23,150,226	28,173,510	5,023,284	(78,635,962)	28,173,510		23,150,226	50,222,633
14	0	0	0	0	0	0	0	22,434,129	29,424,977	6,990,848	(71,645,115)	29,424,977		22,434,129	39,185,793
15	0	0	0	0	0	0	0	21,741,106	30,732,034	8,990,928	(62,654,186)	30,732,034		21,741,106	28,148,953
16	0	0	0	0	0	0	0	20,645,589	32,097,151	11,451,562	(51,202,624)	32,097,151		20,645,589	17,112,113
17	0	0	0	0	0	0	0	18,155,138	29,140,859	10,985,721	(40,216,903)	29,140,859		18,155,138	6,480,537
18	0	0	0	0	0	0	0	15,006,292	30,726,572	15,720,280	(24,496,623)	30,726,572		15,006,292	(2,324,661)
19	0	0	0	0	0	0	0	12,336,597	32,398,572	20,061,976	(4,434,647)	32,398,572		12,336,597	(8,492,052)
20	0	0	0	0	0	0	0	10,449,891	34,161,556	23,711,664	19,277,017	34,161,556		10,449,891	(12,267,516)
21	0	0	0	0	0	0	0	9,256,385	36,020,472	26,764,087	46,041,104	36,020,472		9,256,385	(14,217,816)
22	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	47,296,715	0		(1,255,612)	(14,868,000)
23	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	48,552,327	0		(1,255,612)	(14,868,000)
24	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	49,807,939	0		(1,255,612)	(14,868,000)
25	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	51,063,551	0		(1,255,612)	(14,868,000)
26	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	52,319,162	0		(1,255,612)	(14,868,000)
27	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	53,574,774	0		(1,255,612)	(14,868,000)
28	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	54,830,386	0		(1,255,612)	(14,868,000)
29	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	56,085,998	0		(1,255,612)	(14,868,000)
30	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	57,341,609	0		(1,255,612)	(14,868,000)
31	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	58,597,221	0		(1,255,612)	(14,868,000)
32	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	59,852,833	0		(1,255,612)	(14,868,000)
33	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	61,108,444	0		(1,255,612)	(14,868,000)
34	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	62,364,056	0		(1,255,612)	(14,868,000)
35	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	63,619,668	0		(1,255,612)	(14,868,000)
36	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	64,875,280	0		(1,255,612)	(14,868,000)
37	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	66,130,891	0		(1,255,612)	(14,868,000)
38	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	67,386,503	0		(1,255,612)	(14,868,000)
39	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	68,642,115	0		(1,255,612)	(14,868,000)
40	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	69,897,726	0		(1,255,612)	(14,868,000)
41	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	71,153,338	0		(1,255,612)	(14,868,000)
42	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	72,408,950	0		(1,255,612)	(14,868,000)
43	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	73,664,562	0		(1,255,612)	(14,868,000)
44	0	0	0	0	0	0	0	(1,255,612)	0	1,255,612	74,920,173	0		(1,255,612)	(14,868,000)
45				0	0							-445,520		(1,255,612)	(14,868,000)
46												-445,520		(1,255,612)	(14,868,000)
47												-445,520		(1,255,612)	(14,868,000)
48												-445,520		(1,255,612)	(14,868,000)
49												-445,520		(1,255,612)	(14,868,000)
50												-445,520		(1,255,612)	(14,868,000)
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(445,520)	(1,255,612)	(14,868,000)

Washington

Meter Distribution	Electric	Electric %	Electric kWh	Electric kWh %	Gas	Gas %	Gas therms	Gas therms %	Total Meters
Residential	220,110	86.9%	2,524,439,400	56%	140,259	90.5%	107,183,063	60%	360,369
Commercial/Industrial (Rate 025 not represented)	33,222	13.1%	1,983,744,827	44%	14,722	9.5%	72,202,475	40%	47,944
Total	253,332	100.0%	4,508,184,227	100%	154,981	100.0%	179,385,538	100%	408,313
Percent	62%				38%				100.0%
							0.6%		

Adjustable Assumptions	Customer Growth Rate	O&M Escalation
LifeCycle Years	1.40%	3%

Value of old Meters	Depr Rate	Depr Exp	Amort Rate	Amort Exp	DFIT Accrual Reduction
$ 21,000,000	2.92%	$ 613,200.00	10%	$ 2,100,000	$ 520,380.00

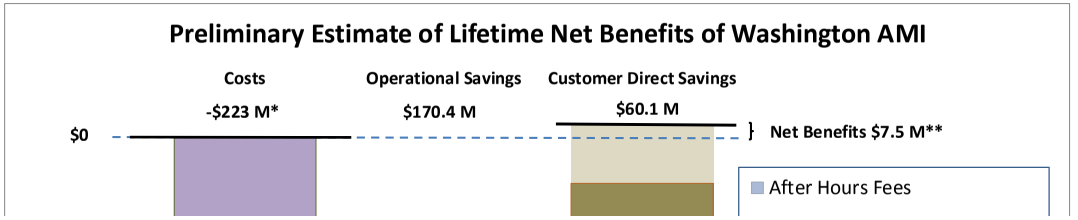
$ 1,486,800
Additional Book Depreciation
For ten years 2016-2025

*manually add into the financial model

Benefit Summary

		1st year %	Percent of Total	CAGR	Weighted CAGR	Total AMI Benefit (for project comparison only)	One time	Permanent Reduction of Annual Cost	Re-deployment of Annual Cost	Avoided Annual Cost	Revenue Shift
Meters											
	Meter Reading	0.5	43%	1.4%	0.60%	$4,842,671	$0	$1,391,190	$3,451,481	$0	$0
	Obtain Special Read		1%	1.4%	0.02%	$204,017	$0	$0	$148,794	$0	$0
	Replace Interval Meters		1%	1.4%	0.02%	$128,500	$130,000	$0	$0	$128,500	$0
Contact Center											
	Bill Inquiry		1%	1.4%	0.01%	$99,756	($68,000)	$0	$99,756	$0	$0
	Estimated Bills		2%	1.4%	0.03%	$266,658	$0	$0	$266,658	$0	$0
	Outage Calls		1%	1.4%	0.01%	$69,498		$0	$69,498	$0	$0
Billing											
	Bill Analysis		1%	1.4%	0.01%	$71,338	($16,000)	$0	$71,338	$0	$0
	Rebills		0.4%	1.4%	0.01%	$43,692	$0	$0	$43,692	$0	$0
Collections											
	Write-Off Reductions					0					
	OSM	1				$453,454		$252,757	$327,075		
	Back-Off Expenses					0					
Outage Management											
	False Positives (NOP)		3%	1.0%	0.03%	$396,967	($32,360)	$0	$396,967	$0	$0
	Restoration		0%		0.00%						
Meter Shop											
	Meter Testing		0%	1.4%	0.01%	$54,150		$0	$54,150	$0	$0
	Meter Repair		0%	1.4%	0.00%		$0				
Field Services											
	Service Remote Switching	0.5	27%	5.0%	1.35%	$3,065,274		$238,612	$1,061,689	$1,764,973	$0
	Problem Customers		0.2%	0.0%	0.00%	$25,896		$0	$25,896	$0	$0
Revenue Protection											
	Theft and Diversion		9%	3.0%	0.28%	$1,053,322					$1,053,322
	Slow Run or Failed Meters		1%	3.0%	0.04%	$169,817		$0	$0	$0	$169,817
	Unbilled Usage		2%	1.4%	0.03%	$235,081		$0	$0	$0	$235,081
	Stopped Meters		2%	1.4%	0.03%	$205,924		$0	$205,924	$0	$0
Engineering											
	Distribution Optimization		0%	3.0%	0.00%	$0	$0				
	CVR		0%	3.0%	0.00%	$0		$0	$0	$994,627	$0
Customer											
Rates Department											
	Modeling Rates		0%	3.0%	0.00%	$16,667		$0	$0	$16,667	$0
Total			**100%**		**2.37%**	**$11,402,681**	**$13,640**	**$1,882,559**	**$6,222,918**	**$2,904,767**	**$1,458,220**

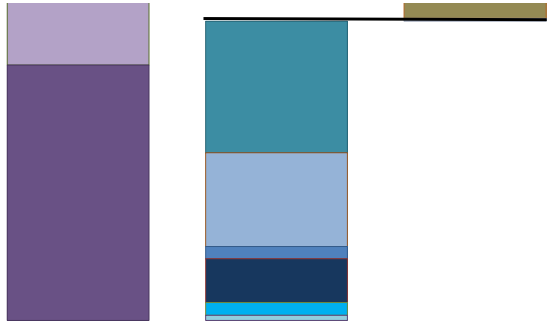
	Costs	Operational Savings	Customer Direct Savings
Gap Plus	0	0	$7,565,589
Gap	0	($52,513,760)	0
Operating Expense	($77,608,318)	$0	$0
Capital Investment	($145,307,246)	$0	$0
Meter Reading	0	($74,955,518)	$0
Remote Rapid Connect	0	($53,228,684)	$0



Outage Management	0	($7,004,787)	$0
Energy Theft and Diversion	0	($24,990,009)	$0
Billing Accuracy	0	($7,229,719)	$0
Utility Studies	0	($2,993,086)	$0
Customer Outage Management	0	0	($25,744,464)
Energy Efficiency	0	0	($25,206,955)
After Hours Fees	0	0	($1,562,341)
	($222,915,564)	($170,401,803)	($52,513,760)
			($7,565,589)
			($60,079,350)

222,915,564
230,481,153

Meter Reading	32.5%
Remote Rapid Connect	23.1%
Outage Management	3.0%
Energy Theft and Diversion	10.8%
Billing Accuracy	3.1%
Utility Studies	1.3%
Customer Outage Management	14.5%
Energy Efficiency	10.9%
After Hours Fees	0.7%



* Includes the NPV of the revenue requirement for capital costs of $145,307,246 (which includes the cost of retirement of existing electric meters) and the NPV of the revenue requirement for operating expenes of $77,608,318, over a 21 year project life.
** Does not include the unquantified customer experience benefits (e.g., text alerts, web portal, access to real time data, etc.)

Benefit Summary

	Percent of Total	CAGR	Weighted CAGR	Total AMI Benefit (for project comparison only)	One time	Permanent Reduction of	Re-deployment of Annual Cost	Avoided Annual Cost	Revenue Shift
Meter Reading									
Meter Reading	31%	1.4%	0.44%	$4,842,671	$0	$1,391,190	$3,451,481	$0	$0
Special Read	1%	1.4%	0.02%	$204,017	$0	$0	$148,794	$0	$0
Remote Rapid Connect									
Account Open, Close, Transfer	11.2%	1.4%	0.16%	$1,728,042		$0	$0	$1,728,042	$0
Credit Reconnects	7.7%	1.4%	0.11%	$1,193,060		$238,612	$954,448	$0	$0
Credit Collections	2.9%	1.4%	0.04%	$453,454		$252,757	$327,075	$0	$0
After Hour Fees	0.7%	1.4%	0.01%	$104,040					
Special Cases	0.2%	1.4%	0.00%	$25,896		$0	$25,896	$0	$0
Reduced Customer Call Time	0.7%	1.4%	0.01%	$107,242		$0	$107,242	$0	$0
Reduced Lost Revenue	0.2%	1.4%	0.00%	$36,931		$0	$0	$36,931	$0
Outage Management									
Customer Savings	14%	1.4%	0.20%	$2,218,195					
Customer Side of Meter	3%	1.0%	0.03%	$396,967	($32,360)	$0	$396,967	$0	$0
Reduced Customer Calls	0%	1.4%	0.01%	$69,498		$0	$69,498	$0	$0
Energy Efficiency									
Conservation Voltage Reduction	8%	1.4%	0.11%	$1,186,709					
Customer Installed Measures	3%	1.4%	0.04%	$491,882					
Energy Theft and Diversion									
Theft and Diversion	7%	3.0%	0.21%	$1,053,322					$1,053,322
Unbilled Usage	2%	1.4%	0.02%	$235,081		$0	$0	$0	$235,081
Slow Run or Failed Meters	1%	3.0%	0.03%	$169,817		$0	$0	$0	$169,817
Stopped Meters	1%	1.4%	0.02%	$205,924		$0	$205,924	$0	$0
Billing Accuracy									

	Estimated Bills	2%	1.4%	0.02%	$266,658	$0	$0	$266,658	$0	$0
	Bill Inquiries	1%	1.4%	0.01%	$99,756	($68,000)	$0	$99,756	$0	$0
	Billing Analysis	0%	1.4%	0.01%	$71,338	($16,000)	$0	$71,338	$0	$0
	Rebilling	0.3%	1.4%	0.00%	$43,692	$0	$0	$43,692	$0	$0
Utility Studies										
	Retail Load Studies	1%	3.0%	0.03%	$145,167	$130,000				
	Meter Sampling	0%	1.4%	0.00%	$54,150		$0	$54,150	$0	$0
	Engineering Studies									
Total		**100%**		**1.53%**	**$15,403,507**	**$13,640**	**$1,882,559**	**$6,222,918**	**$1,764,973**	**$1,458,220**

Direct Customer Benefit Summary

	Annual Customer Cost Savings AMI
Customer Experience	
Web Interface for Interval Data	$0
Text Alerts based on personal energy budget	$0
Better information during high bill inquiries	$0
More timely energy usage information	$0
Energy Efficiency	
CVR Energy usage reduction	$1,186,709
Energy Savings due to better understanding of energy usage	$491,882
Demand Response (future)	$0
Privacy	
Fewer Avista employees on customer property	$0
Outage Restoration	
Improved Estimated Restoration Times during outages	
Reduced Outage Hours due to OMT integration	$2,218,195
Disconnect/Reconnect	
Reduced Time for reconnect after payment	$0
Reduced Reconnect Fee	$104,040
Billing Accuracy	
Elimination of estimated reads	$0
faster open/close/transfer of service	$0
disconnect while home is vacant (landlords)	
Billing Options	
Flexible Billing Schedules	$0
Time of use rate discounts (Future, e.g. night for Electric Vehicles)	$0
Pre-pay programs (future)	$0
Total	**$4,000,826**

Washington

Meter Distribution	Electric	Electric %	Electric kWh	Electric kWh %	Gas	Gas %	Gas therms	Gas therms %	Total Meters
Residential	220,110	86.9%	2,524,439,400	56%	140,259	90.5%	107,183,063	60%	360,369
Commercial/Industrial (Rate 025 not represented)	33,222	13.1%	1,983,744,827	44%	14,722	9.5%	72,202,475	40%	47,944
Total	253,332	100.0%	4,508,184,227	100%	154,981	100.0%	179,385,538	100%	408,313
Percent	62%				38%				100.0%
							0.6%		

Adjustable Assumptions	Customer Growth Rate	O&M Escalation
LifeCycle Years	1.40%	3%

Value of old Meters	Depr Rate	Depr Exp	Amort Rate	Amort Exp	DFIT Accrual Reduction
$ 21,000,000	2.92%	$ 613,200.00	10%	$ 2,100,000	$ 520,380.00

$ 1,486,800
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Benefit Summary

		1st year %	Percent of Total	CAGR	Weighted CAGR	Total AMI Benefit (for project comparison only)	One time	Permanent Reduction of Annual Cost	Re-deployment of Annual Cost	Avoided Annual Cost	Revenue Shift
Meters											
	Meter Reading	0.5	43%	1.4%	0.60%	$4,842,671	$0	$1,391,190	$3,451,481	$0	$0
	Obtain Special Read		1%	1.4%	0.02%	$204,017	$0	$0	$148,794	$0	$0
	Replace Interval Meters		1%	1.4%	0.02%	$128,500	$130,000	$0	$0	$128,500	$0
Contact Center											
	Bill Inquiry		1%	1.4%	0.01%	$99,756	($68,000)	$0	$99,756	$0	$0
	Estimated Bills		2%	1.4%	0.03%	$266,658	$0	$0	$266,658	$0	$0
	Outage Calls		1%	1.4%	0.01%	$69,498		$0	$69,498	$0	$0
Billing											
	Bill Analysis		1%	1.4%	0.01%	$71,338	($16,000)	$0	$71,338	$0	$0
	Rebills		0.4%	1.4%	0.01%	$43,692	$0	$0	$43,692	$0	$0
Collections											
	Write-Off Reductions					0					
	OSM	1				$453,454		$252,757	$327,075		
	Back-Off Expenses					0					
Outage Management											
	False Positives (NOP)		3%	1.0%	0.03%	$396,967	($32,360)	$0	$396,967	$0	$0
	Restoration		0%		0.00%						
Meter Shop											
	Meter Testing		0%	1.4%	0.01%	$54,150		$0	$54,150	$0	$0
	Meter Repair		0%	1.4%	0.00%		$0				
Field Services											
	Service Remote Switching	0.5	27%	5.0%	1.35%	$3,065,274		$238,612	$1,061,689	$1,764,973	$0
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Engineering											
	Distribution Optimization		0%	3.0%	0.00%	$0	$0				
	CVR		0%	3.0%	0.00%	$0		$0	$0	$994,627	$0
Customer											
Rates Department											
	Modeling Rates		0%	3.0%	0.00%	$16,667		$0	$0	$16,667	$0
Total			**100%**		**2.37%**	**$11,402,681**	**$13,640**	**$1,882,559**	**$6,222,918**	**$2,904,767**	**$1,458,220**

	Costs	Operational Savings	Customer Direct Savings
Gap Plus		0	0 $7,565,589
Gap	0	($52,513,760)	0
Operating Expense	($77,608,318)	$0	$0
Capital Investment	($145,307,246)	$0	$0
Meter Reading	0	($74,955,518)	$0
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			($7,565,589)
			($60,079,350)

222,915,564
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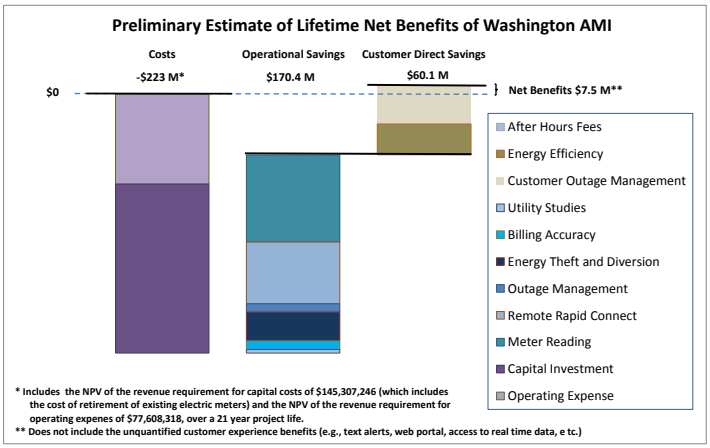
Billing Accuracy	3.1%
Utility Studies	1.3%
Customer Outage Management	14.5%
Energy Efficiency	10.9%
After Hours Fees	0.7%



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Remote Rapid Connect									
Account Open, Close, Transfer	11.2%	1.4%	0.16%	$1,728,042		$0	$0	$1,728,042	$0
Credit Reconnects	7.7%	1.4%	0.11%	$1,193,060		$238,612	$954,448	$0	$0
Credit Collections	2.9%	1.4%	0.04%	$453,454		$252,757	$327,075	$0	$0
After Hour Fees	0.7%	1.4%	0.01%	$104,040					
Special Cases	0.2%	1.4%	0.00%	$25,896		$0	$25,896	$0	$0
Reduced Customer Call Time	0.7%	1.4%	0.01%	$107,242		$0	$107,242	$0	$0
Reduced Lost Revenue	0.2%	1.4%	0.00%	$36,931		$0	$0	$36,931	$0
Outage Management									
Customer Savings	14%	1.4%	0.20%	$2,218,195					
Customer Side of Meter	3%	1.0%	0.03%	$396,967	($32,360)	$0	$396,967	$0	$0
Reduced Customer Calls	0%	1.4%	0.01%	$69,498		$0	$69,498	$0	$0
Energy Efficiency									
Conservation Voltage Reduction	8%	1.4%	0.11%	$1,186,709					
Customer Installed Measures	3%	1.4%	0.04%	$491,882					
Energy Theft and Diversion									
Theft and Diversion	7%	3.0%	0.21%	$1,053,322					$1,053,322
Unbilled Usage	2%	1.4%	0.02%	$235,081		$0	$0	$0	$235,081
Slow Run or Failed Meters	1%	3.0%	0.03%	$169,817		$0	$0	$0	$169,817
Stopped Meters	1%	1.4%	0.02%	$205,924		$0	$205,924	$0	$0
Billing Accuracy									
Estimated Bills	2%	1.4%	0.02%	$266,658	$0	$0	$266,658	$0	$0
Bill Inquiries	1%	1.4%	0.01%	$99,756	($68,000)	$0	$99,756	$0	$0
Billing Analysis	0%	1.4%	0.01%	$71,338	($16,000)	$0	$71,338	$0	$0
Rebilling	0.3%	1.4%	0.00%	$43,692	$0	$0	$43,692	$0	$0
Utility Studies									
Retail Load Studies	1%	3.0%	0.03%	$145,167	$130,000				
Meter Sampling	0%	1.4%	0.00%	$54,150		$0	$54,150	$0	$0
Engineering Studies									
Total	**100%**		**1.53%**	**$15,403,507**	**$13,640**	**$1,882,559**	**$6,222,918**	**$1,764,973**	**$1,458,220**

Direct Customer Benefit Summary

	Annual Customer Cost Savings AMI
Customer Experience	
Web Interface for Interval Data	$0
Text Alerts based on personal energy budget	$0
Better information during high bill inquiries	$0
More timely energy usage information	$0
Energy Efficiency	
CVR Energy usage reduction	$1,186,709
Energy Savings due to better understanding of energy usage	$491,882
Demand Response (future)	$0
Privacy	
Fewer Avista employees on customer property	$0
Outage Restoration	
Improved Estimated Restoration Times during outages	
Reduced Outage Hours due to OMT integration	$2,218,195
Disconnect/Reconnect	
Reduced Time for reconnect after payment	$0
Reduced Reconnect Fee	$104,040
Billing Accuracy	
Elimination of estimated reads	$0
faster open/close/transfer of service	$0
disconnect while home is vacant (landlords)	
Billing Options	
Flexible Billing Schedules	$0
Time of use rate discounts (Future, e.g. night for Electric Vehicles)	$0
Pre-pay programs (future)	$0
Total	**$4,000,826**

Washington

Meter Distribution	Electric	Electric %	Electric kWh	Electric kWh %	Gas	Gas %	Gas therms	Gas therms %	Total Meters
Residential	220,110	86.9%	2,524,439,400	56%	140,259	90.5%	107,183,063	60%	360,369
Commercial/Industrial (Rate 025 not represented)	33,222	13.1%	1,983,744,827	44%	14,722	9.5%	72,202,475	40%	47,944
Total	253,332	100.0%	4,508,184,227	100%	154,981	100.0%	179,385,538	100%	408,313
Percent	62%				38%				100.0%
							0.6%		

Adjustable Assumptions	Customer Growth Rate	O&M Escalation
LifeCycle Years	1.40%	3%

Dan Burgess	Knowledge Response Center Solution - Facilities	Software for Building service maintenance

Value of old Meters	Depr Rate	Depr Exp	Amort Rate	Amort Exp	DFIT Accrual Reduction
$ 21,000,000	2.92%	$ 613,200.00	10%	$ 2,100,000	$ 520,380.00

$ 1,486,800
Additional Book Depreciation
For ten years 2016-2025

*manually add into the financial model

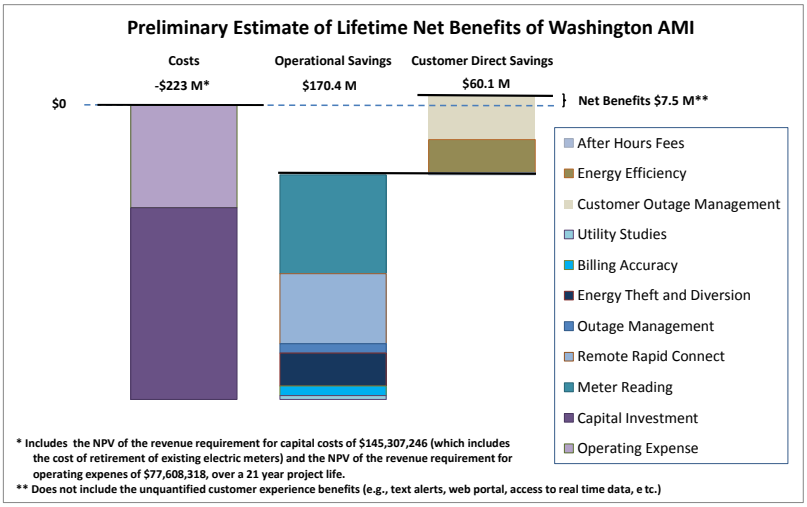
Benefit Summary

		1st year %	Percent of Total	CAGR	Weighted CAGR	Total AMI Benefit (for project comparison only)	One time	Permanent Reduction of Annual Cost	Re-deployment of Annual Cost	Avoided Annual Cost	Revenue Shift
Meters											
	Meter Reading	0.5	43%	1.4%	0.60%	$4,842,671	$0	$1,391,190	$3,451,481	$0	$0
	Obtain Special Read		1%	1.4%	0.02%	$204,017	$0	$0	$148,794	$0	$0
	Replace Interval Meters		1%	1.4%	0.02%	$128,500	$130,000	$0	$0	$128,500	$0
Contact Center											
	Bill Inquiry		1%	1.4%	0.01%	$99,756	($68,000)	$0	$99,756	$0	$0
	Estimated Bills		2%	1.4%	0.03%	$266,658	$0	$0	$266,658	$0	$0
	Outage Calls		1%	1.4%	0.01%	$69,498		$0	$69,498	$0	$0
Billing											
	Bill Analysis		1%	1.4%	0.01%	$71,338	($16,000)	$0	$71,338	$0	$0
	Rebills		0.4%	1.4%	0.01%	$43,692	$0	$0	$43,692	$0	$0
Collections											
	Write-Off Reductions					0					
	OSM	1				$453,454		$252,757	$327,075		
	Back-Off Expenses					0					
Outage Management											
	False Positives (NOP)		3%	1.0%	0.03%	$396,967	($32,360)	$0	$396,967	$0	$0
	Restoration		0%		0.00%						
Meter Shop											
	Meter Testing		0%	1.4%	0.01%	$54,150		$0	$54,150	$0	$0
	Meter Repair		0%	1.4%	0.00%		$0				
Field Services											
	Service Remote Switching	0.5	27%	5.0%	1.35%	$3,065,274		$238,612	$1,061,689	$1,764,973	$0
	Problem Customers		0.2%	0.0%	0.00%	$25,896		$0	$25,896	$0	$0
Revenue Protection											
	Theft and Diversion		9%	3.0%	0.28%	$1,053,322					$1,053,322
	Slow Run or Failed Meters		1%	3.0%	0.04%	$169,817		$0	$0	$0	$169,817
	Unbilled Usage		2%	1.4%	0.03%	$235,081		$0	$0	$0	$235,081
	Stopped Meters		2%	1.4%	0.03%	$205,924		$0	$205,924	$0	$0
Engineering											
	Distribution Optimization		0%	3.0%	0.00%	$0	$0				
	CVR		0%	3.0%	0.00%	$0		$0	$0	$994,627	$0
Customer											
Rates Department											
	Modeling Rates		0%	3.0%	0.00%	$16,667		$0	$0	$16,667	$0
Total			**100%**		**2.37%**	**$11,402,681**	**$13,640**	**$1,882,559**	**$6,222,918**	**$2,904,767**	**$1,458,220**

	Costs	Operational Savings	Customer Direct Savings
Gap Plus	0	0	$7,565,589
Gap	0	($52,513,760)	0
Operating Expense	($77,608,318)	$0	$0
Capital Investment	($145,307,246)	$0	$0
Meter Reading	0	($74,955,518)	$0
Remote Rapid Connect	0	($53,228,684)	$0
Outage Management	0	($7,004,787)	$0
Energy Theft and Diversion	0	($24,990,009)	$0
Billing Accuracy	0	($7,229,719)	$0
Utility Studies	0	($2,993,086)	$0
Customer Outage Management	0	0	($25,744,464)
Energy Efficiency	0	0	($25,206,955)
After Hours Fees	0	0	($1,562,341)
	($222,915,564)	($170,401,803)	($52,513,760)
			($7,565,589)
			($60,079,350)

222,915,564
230,481,153

Meter Reading	32.5%
Remote Rapid Connect	23.1%
Outage Management	3.0%
Energy Theft and Diversion	10.8%
Billing Accuracy	3.1%
Utility Studies	1.3%
Customer Outage Management	14.5%
Energy Efficiency	10.9%
After Hours Fees	0.7%



*** Includes the NPV of the revenue requirement for capital costs of $145,307,246 (which includes the cost of retirement of existing electric meters) and the NPV of the revenue requirement for operating expenes of $77,608,318, over a 21 year project life.**

**** Does not include the unquantified customer experience benefits (e.g., text alerts, web portal, access to real time data, e tc.)**

Benefit Summary

	Percent of Total	CAGR	Weighted CAGR	Total AMI Benefit (for project comparison only)	One time	Permanent Reduction of	Re-deployment of Annual Cost	Avoided Annual Cost	Revenue Shift
Meter Reading									
Meter Reading	31%	1.4%	0.44%	$4,842,671	$0	$1,391,190	$3,451,481	$0	$0
Special Read	1%	1.4%	0.02%	$204,017	$0	$0	$148,794	$0	$0
Remote Rapid Connect									
Account Open, Close, Transfer	11.2%	1.4%	0.16%	$1,728,042		$0	$0	$1,728,042	$0
Credit Reconnects	7.7%	1.4%	0.11%	$1,193,060		$238,612	$954,448	$0	$0
Credit Collections	2.9%	1.4%	0.04%	$453,454		$252,757	$327,075	$0	$0
After Hour Fees	0.7%	1.4%	0.01%	$104,040					
Special Cases	0.2%	1.4%	0.00%	$25,896		$0	$25,896	$0	$0
Reduced Customer Call Time	0.7%	1.4%	0.01%	$107,242		$0	$107,242	$0	$0
Reduced Lost Revenue	0.2%	1.4%	0.00%	$36,931		$0	$0	$36,931	$0
Outage Management									
Customer Savings	14%	1.4%	0.20%	$2,218,195					
Customer Side of Meter	3%	1.0%	0.03%	$396,967	($32,360)	$0	$396,967	$0	$0
Reduced Customer Calls	0%	1.4%	0.01%	$69,498		$0	$69,498	$0	$0
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Engineering Studies									
Total	**100%**		**1.53%**	**$15,403,507**	**$13,640**	**$1,882,559**	**$6,222,918**	**$1,764,973**	**$1,458,220**

Dan Burgess

Knowledge Response Center
Solution - Facilities

Software for Building
service maintenance

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disconnect while home is vacant (landlords)	
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Total	**$4,000,826**