

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-16_____

DOCKET NO. UG-16_____

EXHIBIT NO._____(KKS-5)

KAREN K. SCHUH

REPRESENTING AVISTA CORPORATION

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Spokane River License Implementation

ER No: ER Name:
6107 Spokane River Implementation (PM&E)

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$17,134¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,007	84	84	84	84	84	84	84	84	84	84	84	84
2017	17,764	168	168	168	168	168	168	168	168	168	168	168	15,914
2018	763	64	64	64	64	64	64	64	64	64	64	64	64

Business Case Description:

Implementation of Protection, Mitigation and Enhancement (PM&E) programs related to the FERC License for Project 2545. Includes items enforceable by FERC, mandatory conditioning agencies, and through settlement agreements.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Program Business Case



Investment Name:	Spokane River License Implementation	Assessments:	
Requested Amount	\$2,902,000	Financial:	12.00%
Duration/Timeframe	50 Year Program	Strategic:	Community vitality
Dept., Area:	Environmental	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Elvin "Speed" Fitzhugh (Mgr); Bruce Howard (Dir)	Program Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Marian Durkin	Assessment Score:	179
Category:	Mandatory	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	FERC Project No 2545-091	Performance	Capital Cost

Recommend Program Description:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Implementation of Protection, Mitigation and Enhancement (PM&E) programs related to the FERC License for Project 2545. Includes items enforceable by FERC, mandatory conditioning agencies, and through settlement agreements		n/a	\$ 2,902,000	\$ -	\$ -	8

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	We are subject to License enforcement directly from the Federal Energy Regulatory Commission, independent enforcement of certain measures by federal and state agencies under their delegated authorities, and third-party claims by those with whom we entered settlement agreements. We are also subject to citizen lawsuits in certain settings for non-compliance. If the License conditions are not funded, there is the potential for penalties, extensive legal costs, alternative mitigation costs, and/or loss of operation flexibility of the hydro facilities, or the loss of a license to operate in extreme cases.	n/a	\$ -	\$ -	\$ -	20
			\$ -	\$ -	\$ -	8
			\$ -	\$ -	\$ -	0
			\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 3,192,000	\$ -	\$ -	\$ 3,192,000
2014	\$ 2,902,000	\$ 4,315,492	\$ -	\$ 2,232,000
2015	\$ 11,262,000	\$ 4,443,970	\$ -	\$ 519,200
2016	\$ 2,591,000	\$ 4,466,092	\$ -	\$ 12,100,578
2017	\$ 529,000	\$ -	\$ -	\$ 4,270,583
2018	\$ 579,000	\$ -	\$ -	\$ 763,191
2019	\$ -	\$ -	\$ -	\$ 406,350
2020	\$ -	\$ -	\$ -	\$ 512,474
Total	\$ 21,055,000	\$ 13,225,554	\$ -	\$ 23,996,376

Associated Ers (list all applicable):

6107		

ER	2015	2016	2017	2018	2019	Total
6107	\$ 11,262,000	\$ 2,591,000	\$ 529,000	\$ 579,000	\$ -	\$ 14,961,000
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Mandate Excerpt (if applicable):

The Federal Energy Regulatory Commission issued a License to Avista Corporation for a period of 50 years, effective June 18, 2008, to operate and maintain the Spokane River Project No 2545-091, which consists of the Post Falls HED, Upper Falls HED, Monroe Street HED, Nine Mile HED and Long Lake HED.



0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: This License defines how Avista shall operate the Spokane River Project and includes several hundred requirements that we must meet to retain this License. Overall, the License is issued pursuant to the Federal Power Act. It embodies requirements of a wide range of other laws, including the Clean Water Act, the Endangered Species Act, the National Historic Preservation Act, among others. These requirements are also expressed through specific license articles (or Protection, Mitigation and Enhancement Measures), relating to fish, terrestrial resources, water quality, recreation, education, cultural, and aesthetic resources at the Project. In addition, the License incorporates requirements specific to a 50 year settlement agreement between Avista, the Department of Interior and the Coeur d'Alene Tribe, which includes specific funding requirements over the term of the License. Avista entered into additional two-party settlement agreements with local and state agencies, and the Spokane Tribe; these agreements also include funding commitments. The License references our requirements for land management, dam safety, public safety and monitoring requirements, which apply for the term of the License.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 11,262,000	\$ 2,591,000	\$ 529,000	\$ 579,000	\$ -	\$ 14,961,000	

Resources Requirements: (request forms and approvals attached)

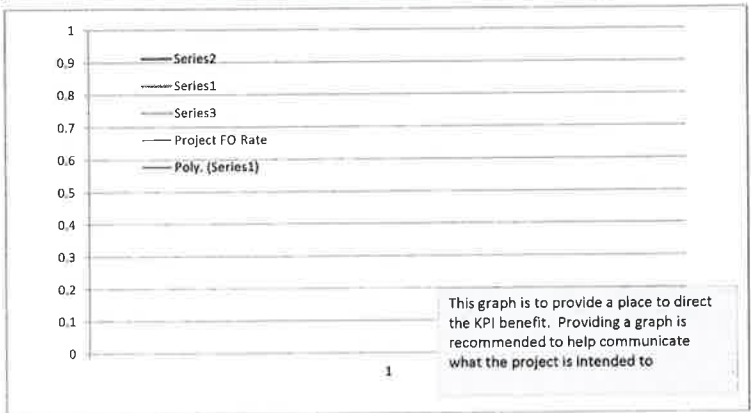
Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

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



Prepared signature _____

Reviewed signature _____
Director/Manager

Other Party Review signature _____
(if necessary) *Margie Stevens*
Director/Manager

The Spokane River License is also subject to specified protection, mitigation and enhancement activities and mandatory conditions by the Idaho Department of Environmental Quality (401 Water Quality Certification, issued June 5, 2008), the Washington Department of Ecology (401 Certification, issued on May 8, 2009), the US Forest Service (Federal Power Act 4(e), issued May 4, 2007), the US Department of Interior (Federal Power Act 4(e), issued January 27, 2009), and articles set forth in Form L-1 (entitled "Terms and Conditions of License for Constructed Major Project Affecting Lands of the United States").

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Spokane River License Implementation Business Case 2016 Washington GRC File

From: Bruce Howard, Director of Environmental Affairs

BT

Date: 2/11/2016

Re: Spokane River License Implementation Investment Considerations

Avista's planned capital investment related to the Spokane River License is driven by the mandatory conditions issued by the Washington Department of Ecology through its Clean Water Act Section 401 process, and subsequent agreements reached in the settlement process. An excerpt from the FERC order issuing Avista's current license to operate the Spokane River project is included in the following pages. Order paragraph numbers 56-83 of the FERC order reflect many of the legal requirements driving the capital investment related to the implementation of the Spokane River License. The full order can be provided upon request.

127 FERC ¶ 61,265
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Suedeen G. Kelly, Marc Spitzer,
and Philip D. Moeller.

Avista Corporation

Project Nos. 2545-091
12606-000

ORDER ISSUING NEW LICENSE AND APPROVING ANNUAL CHARGES
FOR USE OF RESERVATION LANDS

(Issued June 18, 2009)

INTRODUCTION

1. On July 28, 2005, Avista Corporation (Avista) filed applications for new licenses, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),¹ for the continued operation and maintenance of five developments comprising the 137.67-megawatt (MW) Spokane River Hydroelectric Project (Spokane River Project). The project is located on the Spokane River in Spokane, Lincoln, and Stevens Counties, Washington, and in Kootenai and Benewah Counties, Idaho.² The Spokane River Project occupies about 6,460 acres of federal and tribal lands, including about 5,996 acres that are part of the Coeur d'Alene Reservation.³ On January 29, 2009, after a contested relicensing

¹ 16 U.S.C. §§ 797(e) and 808 (2006).

² The five developments comprising the Spokane River Project are operated in a coordinated manner as a single unit of development. Under FPA section 23(b)(1), 16 U.S.C. § 817(1) (2006), the Spokane River Project is required to be licensed because of its location on federal lands.

³ These reservation lands are owned by the United States and held in trust for the Coeur d'Alene Indian Tribe. The Coeur d'Alene Reservation includes the submerged lands of the Coeur d'Alene Lake that lie within the present-day boundaries of the reservation. *See Idaho v. United States*, 533 U.S. 262 (2001). In addition to the Coeur d'Alene Reservation lands, which are administered by the U.S. Department of the

(continued...)

SUMMARY OF LICENSE REQUIREMENTS

56. As summarized below, this license requires numerous measures to protect and enhance fish, wildlife, water quality, recreation, cultural, and aesthetic resources at the project.

A. Minimum Flows

57. To enhance aquatic habitat for the wild rainbow trout population downstream of Post Falls dam, the license requires Avista to maintain a minimum discharge of 600 cfs from the Post Falls dam from June 7 until the Tuesday following Labor Day each year, and reduce the minimum discharge to 500 cfs if the lake level falls below 2,127.75 feet during the summer full-pool period. The contingency for a 500-cfs minimum flow release will help ensure that sufficient water is stored in Coeur d'Alene Lake to maintain lake elevations for summer recreation, and provide for protection of aquatic habitat for rainbow trout in the Spokane River during low-water years.

58. Avista is required to release 46 cfs from the Post Falls development North Channel dam on weekends between the hours of 12:00 noon and 6 p.m. (daily) from Memorial Day weekend through Labor Day to enhance the aesthetic quality of the North Channel bypassed reach.³⁹

59. The license requires Avista to implement a down-ramping rate of no more than four inches per hour downstream of Post Falls dam, and prepare a ramping rate report that documents the effects of a four-inch-per-hour down-ramping rate on rainbow trout, and the anticipated benefits and costs of implementing a more-restrictive ramping rate.

60. The license requires Avista to operate the Monroe Street and Upper Falls dams to provide minimum flows of 850 cfs from June 16 to September 30 and 1,100 cfs from October 1 to March 31 each year. These minimum flow releases will enhance aquatic habitat for rainbow trout and mountain whitefish in the Spokane River. Avista also must conduct an analysis of spawning habitat, spawning success, and rainbow trout population response to flow alterations in the Spokane River below Monroe Street and Upper Falls dams. The analysis will assist in the development of rainbow trout spawning flow releases at Monroe Street dam from April 1 to June 15.

³⁹ The 46-cfs aesthetic flow does not constitute an increase in total releases from Post Falls dam, because compliance monitoring for the 600/500-cfs minimum flow would occur at a gage located downstream of the confluence of powerhouse (i.e., Middle Channel) and North Channel releases.

61. Avista is required to release a year-round minimum aesthetic flow over the Monroe Street dam of 200 cfs between 10:00 a.m. and one-half hour after sunset, and 100 cfs between one-half hour after sunset and 10:00 a.m.⁴⁰

62. Avista is required to release a year-round minimum aesthetic flow through the Upper Falls development's bypassed reach of approximately 500 cfs between 6:00 a.m. and one-half hour after sunset and 100 cfs between one-half hour after sunset and 6:00 a.m. In addition, Avista is required to develop and implement an Upper Falls aesthetics spill plan to evaluate the aesthetic flow release and determine whether modifying the North Channel and South Channel at the Upper Falls development will be necessary.

B. Water Quality

63. The license requires Avista to monitor total dissolved gases (TDG) and implement control and attainment measures at Post Falls and Long Lake dams. The license also includes a requirement for Avista to develop and implement a TDG attainment plan for Nine Mile dam if monitoring indicates that TDG exceeds 110 percent saturation at this dam. Reductions in TDG will improve water quality for aquatic organisms, specifically fish species, inhabiting the project area.

64. The license requires Avista to develop and implement a water temperature attainment plan for Lake Spokane. The plan will include a detailed strategy for maintaining water quality for the protection of aquatic resources in Lake Spokane.

65. The license requires Avista to develop and implement a plan to improve dissolved oxygen conditions at Long Lake dam. Any increases in oxygen levels that are achieved through implementation of this plan will improve conditions for aquatic organisms inhabiting the lake and areas downstream of the dam.

66. The license requires Avista to develop and implement a plan for annually monitoring water quality of Coeur d'Alene Lake within the Coeur d'Alene Indian Reservation. This monitoring will add to existing water quality data and give the Tribe the ability to track water quality parameters over the license term.

C. Aquatic Weeds, Erosion, and Sediment Control

67. Avista is required to develop and implement sediment management plans for Monroe Street dam, Nine Mile reservoir, and Lake Spokane. Implementation of the plans will reduce sedimentation and enhance fish and wildlife habitat in project waters.

⁴⁰ Aesthetic flow releases at Monroe Street dam would contribute to the 850/1,100-cfs minimum flow requirement.

68. Avista must develop and implement a Lake Spokane aquatic weed management program. The program will include monitoring for noxious aquatic weeds, implementing weed treatment actions, and implementing periodic lake drawdown during the winter to control the proliferation of aquatic weeds in Lake Spokane. Avista must also monitor Nine Mile reservoir for the presence of aquatic weeds. If aquatic weeds are detected within Nine Mile reservoir, Avista will develop monitoring and control actions within one year of aquatic weed detection.

69. Avista is required to implement aquatic weed management programs at Coeur d'Alene Lake, both within and outside of the boundary of the Coeur d'Alene Indian Reservation. The programs will provide for education, monitoring, and control of noxious aquatic weeds in project-affected waters of Coeur d'Alene Lake.

70. The license requires Avista to control erosion on sites within the St. Joe River or Coeur d'Alene Lake equivalent to 50 percent of the total linear feet of all erosion sites on the St. Joe River within the Coeur d'Alene Indian Reservation. The license also requires Avista to develop a water quality improvement and erosion control plan that identifies and prioritizes actions to protect and improve water quality and beneficial uses associated with the waters of the Post Falls development.

D. Fisheries and Recreation

71. The license requires Avista to enhance recreational fishing opportunities by annually stocking rainbow trout in Upper Falls reservoir, Nine Mile reservoir, and Lake Spokane. The Upper Falls and Nine Mile reservoir stocking programs will be a continuation of successful programs implemented under the previous license. The Lake Spokane stocking program will be a new requirement of this license. To ensure the effectiveness of the new stocking program at Lake Spokane, Avista will be required to develop and implement a fishery enhancement and creel survey plan. The creel surveys will determine whether the new stocking program at Lake Spokane is successful at creating a viable put-and-take recreational fishery for rainbow trout.

72. Avista is required to develop and implement a fisheries public education and outreach program at the Upper Falls, Monroe Street, Nine Mile, and Long Lake developments. The program will focus on educating the public about fisheries protection and enhancement measures implemented at the developments, and actions that can be taken by the public to minimize their impacts on native fish and sensitive aquatic habitats.

73. The license requires Avista to protect recreation resources at Coeur d'Alene Lake by maintaining the lake level at summer full-pool elevation of 2,128 feet from as early as practicable each year until the Tuesday after Labor Day, and release spring flows to protect spawning and emerging rainbow trout downstream of Post Falls dam.

74. To ensure protection of federally listed bull trout and its designated critical habitat, Avista is required to implement its proposed non-native predator fish removal program. The program will consist of a three-year study of bull trout predation by non-native fish in Coeur d'Alene Lake and the lower St. Joe River, and, if predation is documented, implement measures to reduce the potential for non-native fish predation on bull trout.

75. The license requires Avista to develop and implement a fishery protection and enhancement plan for native Westslope cutthroat trout and bull trout. The plan will include provisions for conducting fish population assessment and monitoring activities, and implementing enhancement actions and a fisheries public education and outreach program specific to Westslope cutthroat trout and bull trout in the Coeur d'Alene Lake basin.

76. The license requires Avista to conduct a three-year assessment of fish populations in an almost five-mile-long stretch of the Spokane River between Upper Falls dam and the City of Spokane's Upriver dam.⁴¹ The assessment will improve management of recreational fishing and provide information on the effects to the Spokane River fishery from operational changes under the new license.

77. Avista is required to develop and implement a recreation plan for the Spokane River developments that would enhance existing, and develop new, project recreation facilities.

78. Avista is required to develop and implement a recreation plan for the Post Falls development that would enhance existing, and develop new, project recreation facilities. The license also requires Avista as part of the recreation plan to conduct an assessment at the proposed Trailer Park Wave Access Site, located immediately downstream from Post Falls dam, to determine the feasibility of developing the site for public access; and, if the site is not feasible, identify an alternative public access site. Additionally, to the extent that flow releases do not cause the licensee to violate Condition No. I (Lake Levels and Discharge Flows) of the Idaho water quality certification, Avista is required to release flows for whitewater boating ranging from a minimum flow of 3,300 cubic feet per second (cfs) to a maximum flow of 5,500 cfs from Post Falls dam into the Spokane River.⁴² Because the recreation plan requires lands at Q'emiln Park and the Trailer Park Wave Access Site to be added to the project boundary, Avista is required to revise and refile its Exhibit G drawings, as discussed later in this order.

⁴¹ See n. 13, *supra*.

⁴² The timing of the flows will be determined by the Trailer Park Wave Access Site assessment required under Article 416.

E. Other Measures

79. To protect bald eagles at the project, the license requires Avista to prepare and implement a bald eagle management plan. The plan will include measures for surveying, monitoring, and protecting bald eagles. In addition, Avista must develop and implement a plan for the Spokane River Project that would provide for an education and interpretive program for bald eagles.

80. Avista will be required to develop and implement a transmission line management plan. The plan will help minimize raptor injuries and mortality, and will include provisions for non-chemical vegetation management in the transmission line corridor.

81. The license requires Avista to develop and implement a Coeur d'Alene Indian Reservation wetland and riparian habitat plan and to restore or replace at least 1,368 acres of wetlands within or adjacent to the Coeur d'Alene Indian Reservation. The license also requires Avista to acquire, restore, and/or enhance a minimum of about 43 acres of wetlands in the Spokane River downstream of Nine Mile dam.

82. The license also requires Avista to develop and implement a land use management plan for the Spokane River Project to protect the scenic quality of the Spokane River and Coeur d'Alene Lake and reflect modifications to the project boundary.

83. Through this license, and pursuant to the programmatic agreements executed by the Commission, Washington State Historic Preservation Officer (SHPO), Idaho SHPO, and the Coeur d'Alene Tribe, Avista will file for Commission approval separate historic properties management plans for the Spokane River (Upper Falls, Monroe Street, Nine Mile, and Long Lake) and Post Falls developments, respectively. In addition, Avista will file for Commission approval an Initial Cultural Resources Response Program and a Cultural Resources Management Plan pertaining to lands within the Coeur d'Alene Indian Reservation.

WATER QUALITY CERTIFICATION

84. Under section 401(a)(1) of the Clean Water Act (CWA),⁴³ the Commission may not issue a license for a hydroelectric project that authorizes any activity that may result in a discharge from the project unless the state certifying agency has either issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year.

⁴³ 33 U.S.C. § 1341(a)(1) (2006).

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Kettle Falls Stator Rewind

ER No: ER Name:

4172 Kettle Falls Stator Rewind

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$7,930¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	7,930	0	0	0	0	0	0	0	0	7,930	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

The Kettle Falls generator is 32 years old and is at the end of its expected life. The stator can be rewound on its scheduled basis during the spring outage of 2016 instead of running it until it fails. This project consists of monitoring the existing machine, developing rewind contract, manufacturing replacement coils, disassembly, coil removal, new coil installation, reassembly, startup, testing and commissioning. The consequences of a stator failure include an unscheduled outage with lost generation, loss of renewable energy credits, long term interruption of fuel supply, collateral damage to the core and hydrogen cooling with resulting safety hazards.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Kettle Falls Stator Rewind	Assessments:	
Requested Amount	\$7,930,000	Financial:	15.04%
Duration/Timeframe	30 Year Project	Strategic:	Life-cycle asset management
Dept., Area:	Generation & Production	Business Risk:	Business Risk Reduction >0 and <= 5
Owner:	Andy Vickers	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston	Assessment Score:	106
Category:	Project	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost

Recommend Project Description:	The Kettle Falls (KF) generator is 32 years old and is at the end of its expected life. The stator can be rewound on its scheduled basis during the spring outage of 2016 instead of running it until it fails. This project consists of monitoring the existing machine, developing rewind contract, manufacturing replacement coils, disassembly, coil removal, new coil installation, reassembly, startup, testing and commissioning. The consequences of a stator failure include an unscheduled outage with lost generation, loss of renewable energy credits, long term interruption of fuel supply, collateral damage to the core and hydrogen cooling with resulting safety hazards. The estimated CIRR is 15.04%.	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
		Scheduled work during spring outage, rather than an unscheduled response to an serious outage	\$ 7,930,000	\$ -	\$ 200	3

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	Run-to-Fail - Continue operation with the existing stator on a run-to-fail basis. A CIRR of 3.12% has been estimated for the capital expenditures, when the stator fails and is replaced as a corrective measure.	n/a	\$ 376,000	\$ -	\$ 1,945,000	9
Stator rewind	The KF stator is at the end of its expected life. The actual rewind would be planned and scheduled to occur during the spring outage of 2016. The estimated CIRR is 15.04%.	Scheduled outage, rather than an extensive,	\$ 7,930,000	\$ -	\$ 200	3
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	\$ -	\$ -	\$ -	\$ -
2015	\$ 2,000,000	\$ 20,000	\$ -	\$ -
2016	\$ 5,930,000	\$ -	\$ -	\$ 2,000,000
2017	\$ -	\$ -	\$ -	\$ 5,930,000
2018	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ -	\$ -	\$ -
2020+	\$ -	\$ -	\$ -	\$ -
Total	\$ 7,930,000	\$ 20,000	\$ -	\$ 7,930,000

Associated Ers (list all applicable):	
4172	

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
4172	\$ 2,000,000	\$ 5,930,000	\$ -	\$ -	\$ -	\$ 7,930,000	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: The recent incident at Colstrip demonstrated the extensive consequences of a stator failure. Collateral damage was extensive, requiring replacement of the core and hydrogen cooling system, and resurfacing of the rotor. The outage was 8 months, even with a rewind kit on site. Damage to the hydrogen cooling system presents an elevated safety risk.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 2,000,000	\$ 5,930,000	\$ -	\$ -	\$ -	\$ 7,930,000	

Milestones (high level targets)

April-15	Machine monitoring	June-16	Re-assemble - install rotor, misc. el.	January-00	open
July-14	Rewind contract - Prep rewinds sp	June-16	Startup testing & commissioning	January-00	open
January-16	Manufacturing - coils, coil delivery	June-16	Return to service	January-00	open
May-16	Disassembly - Mark unit alignment	October-16	Project Close Out	January-00	open
June-16	Coil removal - visual inspection, EI	January-00	open	January-00	open
June-16	Install coils & ckt ring, monitoring s	January-00	open	January-00	open

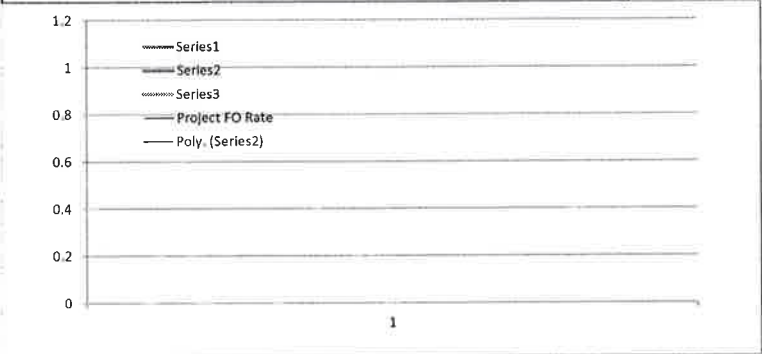
Milestones should be general. Use your judgement on project progress so that progress can

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<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	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 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

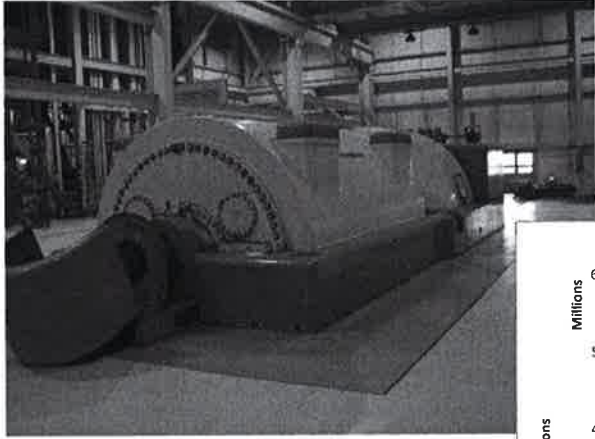


Prepared signature

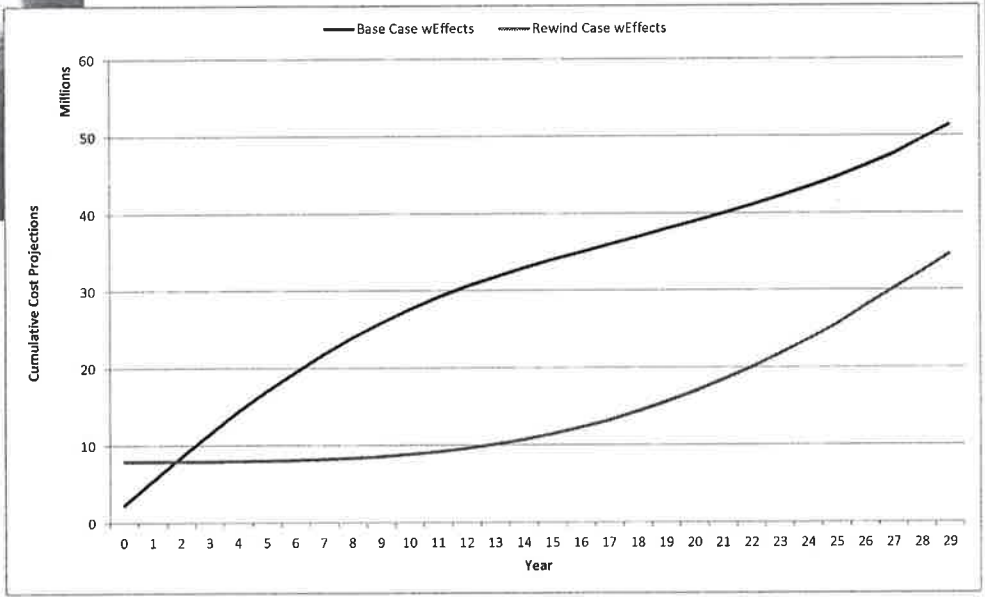
Reviewed signature
Director/Manager

Other Party Review signature *Margie Stevens*
(if necessary) Director/Manager

Kettle Falls Steam Turbine and Generator



Lifetime (30 yr) Cumulative Cost Comparison of Run-to-Fail (Base) & Stator Rewind Cases



To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Kettle Falls Stator Rewind Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply *SK*

Date: 2/11/2016

Re: Kettle Falls Stator Rewind Investment Considerations

The business case summary form for this project illustrates well the driving factors related to this project, including the risks of running the stator to failure and the cost associated with the replacement of the stator in a run-to-fail scenario. Please refer to the business case form for information supporting the need for this project.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Peaking Generation

ER No: ER Name:

4150 Peaking Generation

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	500	0	0	0	0	0	0	500	0	0	0	0	0
2017	500	0	0	0	0	0	0	500	0	0	0	0	0
2018	500	0	0	0	0	0	0	500	0	0	0	0	0

Business Case Description:

This program covers the capital maintenance expenditures required to keep the natural gas-fired peaking units operating at or above their current performance levels. The program will focus on maximizing the ability of these units to start and run when demanded (starting reliability). These plants include Boulder Park, Rathdrum CT, and the Northeast CT.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Program Business Case



Investment Name:	Peaking Generation	Assessments:	
Requested Amount	\$ 500,000	Financial:	12.53%
Duration/Timeframe	10 Year Program	Strategic:	Generating plant performance
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Thomas Dempsey	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston / Andy Vickers	Assessment Score:	93
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost
Recommend Program Description:		O&M Cost	Other Costs
This program covers the capital maintenance expenditures required to keep the natural gas-fired peaking units operating at or above their current performance levels. The program will focus on maximizing the ability of these units to start and run when demanded (starting reliability). These plants include Boulder Park, Rathdrum CT, and the Northeast CT.		Business Risk Score	
			6

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	The overall reliability of all of these assets will decline, resulting in non-starts, non-compliant emissions, and inoperable resources.	n/a	\$ -	\$ -	\$ -	16
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	6
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	\$ 500,000	\$ -	\$ -	\$ 200,000
2015	\$ 500,000	\$ -	\$ -	\$ 500,000
2016	\$ 500,000	\$ -	\$ -	\$ 500,000
2017	\$ 500,000	\$ -	\$ -	\$ 500,000
2018	\$ 500,000	\$ -	\$ -	\$ 500,000
2019	\$ 500,000	\$ -	\$ -	\$ 500,000
2020	\$ 2,500,000	\$ -	\$ -	\$ 500,000
2021				
Total	\$ 5,500,000	\$ -	\$ -	\$ 3,200,000

4150		

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
4150	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,500,000	This program includes some FERC and NERC mandated items. These are expected to be managed as part of the overall program and are not considered as individual items here.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,500,000	Additional Justifications: With wind and other renewables coming online, there has been an increase in the amount of times that these units have been called upon. The value of these units may not be reflected with this new market. Also, the analysis used currently does not contemplate the emergency reserve power value of these units. There are times when energy is unavailable from other sources and the spot price of energy can exceed \$500/MWh. (\$50 - \$80/MWh being normal). This risk is partially modeled in the Business Risk reduction

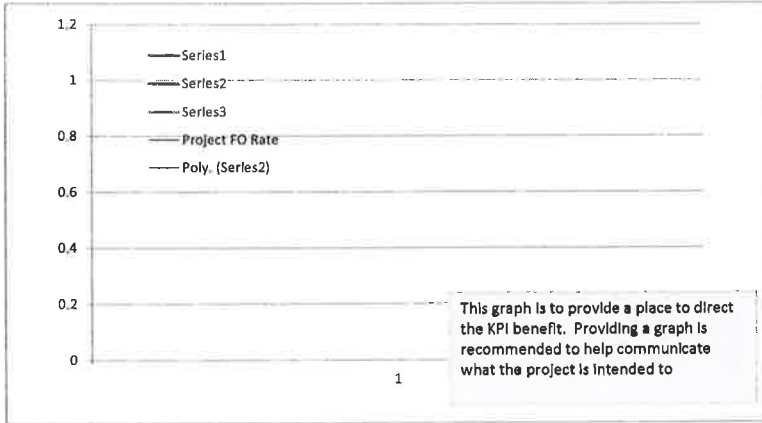
Resources Requirements: (request forms and approvals attached)

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:	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 Stevens* 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

To: Peaking Generation Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply SK

Date: 2/11/2016

Re: Peaking Generation Capital Investment Considerations

According to the Generation Management group, the Peaking Generation business case addresses capital projects primarily driven by reliability considerations at Avista's peaking generation plants. This business case is similar to the Baseload Thermal business case or the Baseload Hydro and Regulating Hydro business cases, in that the work completed through this business case is regular responsive maintenance to keep the generating plants in an operational state.

The chart on the following page illustrates the projects currently planned for completion under the Peaking Generation business case in 2016-2018, along with comments regarding the factors driving the necessity of the completion of these projects.

Location	Project Name	2016	2017	2018	
Rathdrum CT	Install Station Service Isolation Disconnects	\$0.00	\$0.00	\$236,000.00	Eliminated from project list
Boulder Park GS	Gas Regulating Unit Upgrade (All Units)	\$0.00	\$70,000.00	\$150,000.00	The gas regulating units have been causing issues with start reliability and availability for years. Replacement of the GRU's would increase start reliability. Many attempts have been made to calibrate the control loop to correct the issues but have not been successful. If nothing is done, start reliability will continue to decrease causing Avista to miss out on generated MWh's and wear and tear on the machines. Customer related benefits would relate to the reliability of equipment.
Northeast CT	Install new fence for substation area	\$0.00	\$0.00	\$69,293.00	It is common practice to have the substation fenced off separate from the generating site to designate an increase in hazards and overall security. When Northeast CT when it was built, this was not done, potentially due to the condensed layout of the site. This is still a hazardous location and the plan is to install this fence to correct this deficiency and increase security. There are no other alternatives. If there were not done, the hazards would continue to be in an elevated state. In addition, there is increasing activity through the plant site by personnel not familiar with the generation equipment.
Rathdrum CT	Install New fast start software - Unit #2	\$0.00	\$230,000.00	\$0.00	(This project is currently being evaluated to be executed as a standalone project and not part of ER 4150) The current control system allows for fast start capability but requires one unit to be started at a time for emission compliance which effectively only gives us one unit for reserves. Upgrading the fast start system would provide us with both units for reserve calculations. Alternative vendors have been investigated. If nothing was done, we would continue to operate with only one unit in fast start mode. Having additional reserves means that when the market conditions require it, we have more available which means we can either sell additional power or not have to buy additional power. The limitation on fast start capability in the current control system is for emission compliant reasons. This improvement will keep us emission compliant through startup.
Rathdrum CT	Replace Plant PLC - Unit #1	\$0.00	\$100,000.00	\$0.00	The existing PLCs are over 20 years old and have been obsolete. Replacing these PLCs will improve the communication and monitoring capabilities and will maintain the effectiveness of the plant PLC system. No alternatives available. If nothing were to be done, we would continue to have communication and monitoring limitations and the equipment would continue to get more and more obsolete. Troubleshooting and component replacement would become impossible. Customer related benefits would be reliable generation assets.
Rathdrum CT	Replace plant PLC - Unit #2	\$0.00	\$100,000.00	\$0.00	Same as Unit 1 above.
Rathdrum CT	Install New Fast-start software - Unit #1	\$365,000.00	\$0.00	\$0.00	Same as Unit 2 above.
Boulder Park GS	Emission PLC upgrade	\$95,000.00	\$0.00	\$0.00	With the current emissions PLC's, the plants has no control of urea flow. What that means is that all adjustments are manual leading to wasted usage. If urea flow were to be automated, the usage rate would be optimized. Also, we currently have no plc visibility for troubleshooting because the equipment manufacturer locked it down and did not allow access. PLCs are also getting older and becoming obsolete. Due to lack of network communication, manual logs are required which means we have no automated digital recording taking place. This leads to emissions compliance being dependent on manual logs which is not ideal. No alternatives available. If nothing were to be done, we would continue to have no communication ability and the Urea flow adjustments would continue to be manual.
Boulder Park GS	Oil Mist Separator Replacement	\$50,000.00	\$0.00	\$0.00	The equipment originally installed with the plant has been ineffectively scrubbing oil out of the crankcase vent line. This causes small amounts of oil vapor and residue to be emitted to the surrounding environment. This project changes the filtration from static filtration to powered filtration that is much more effective and will essentially eliminate the oil residue being emitted. Multiple equipment manufacturers were considered. Doing nothing would leave the filtration as is and the emission of oil residue would continue.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Colstrip Thermal Capital

ER No: 4116 **ER Name:** Colstrip Capital Additions

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$29,759¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	12,292	1,024	1,024	1,024	1,024	1,024	1,024	1,024	1,024	1,024	1,024	1,024	1,024
2017	12,432	1,036	1,036	1,036	1,036	1,036	1,036	1,036	1,036	1,036	1,036	1,036	1,036
2018	5,035	420	420	420	420	420	420	420	420	420	420	420	420

Business Case Description:

This program is for ongoing capital expenditures associated with normal outage activities on Units 3 & 4 at Colstrip. Every 2 out of 3 years we have outages at Colstrip with higher capital program activities. For non-outage years, the program activities are reduced. Avista votes its 15% share of Unit's 3 & 4 and its approximate 10% share of common facilities to approve or disapprove of the budget proposed by PPLM on behalf of all the owners. Individual projects are reviewed for appropriate rates of return and necessity.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Colstrip 3&4 Capital	Assessments:	
Requested Amount	Estimated Total Capital Expenditure	Financial:	10.00%
Duration/Timeframe	5+ Year Program	Strategic:	Reliability & Capacity
Dept., Area:	Generation Production Substation Support	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Thomas C Dempsey	Program Risk:	Low certainty around cost, schedule and resources
Sponsor:	Jason Thackston		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	95

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
This program is for ongoing capital expenditures associated with normal outage activities on Units 3 & 4 at Colstrip. Every 2 out of 3 years we have outages at Colstrip with higher capital program activities. For non-outage years, the program activities are reduced. Avista votes its 15% share of Unit's 3 & 4 and its approximate 10% share of common facilities to approve or disapprove of the budget proposed by PPLM on behalf of all the owners. Individual projects are reviewed for appropriate rates of return and necessity. 2016 is currently shown.	These programs are required for continued operation of units 3&4	Capital Cost	O&M Cost	Other Costs	0
		\$ 12,800,000	\$ -	\$ -	

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score	
Unfunded Program:	Generally speaking, we can only vote our small share. We do not have the option of unilaterally rejecting the proposed capital projects. We would have to sell our portion of the plant to escape funding these projects. CCR legislation capital impacts are shown beginning in 2016.	n/a	Capital Cost	O&M Cost	Other Costs	Business Risk Score
			\$ 45,000,000	\$ -	\$ -	0
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	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

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2014	\$ 7,414,223	\$ -	\$ -	\$ 7,376,833
2015	\$ 3,644,316	\$ -	\$ -	\$ 3,563,981
2016	\$ 12,292,000	\$ -	\$ -	\$ 12,292,000
2017	\$ 12,432,000	\$ -	\$ -	\$ 12,432,000
2018	\$ 5,035,000	\$ -	\$ -	\$ 5,035,000
2019	\$ 11,938,000	\$ -	\$ -	\$ 11,938,000
2020	\$ 7,604,000	\$ -	\$ -	\$ 7,604,000
Total	\$ 52,755,539	\$ -	\$ -	\$ 60,241,814

4116			

ER	2014	2015	2016	2017	2018	Total	Mandate Excerpt (if applicable):
4116	\$ 7,414,223	\$ 3,644,316	\$ 12,292,000	\$ 12,432,000	\$ 5,035,000	\$ 40,817,539	We have limited input. This provides somewhat of a mandate. Also, this program is a "rollup" of many categories of capital work. Many are, in fact mandated by EPA and other regulatory bodies.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: These projects are reviewed individually by PPLM and the remaining members of the committee. Joint approval is given only where need and/or shareholder/ratepayer needs meet the proper thresholds.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 7,414,223	\$ 3,644,316	\$ 12,292,000	\$ 12,432,000	\$ 5,035,000	\$ 40,817,539	

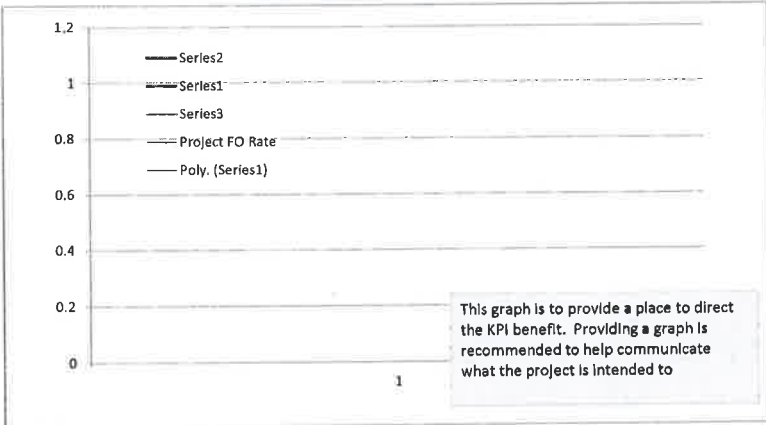
Resources Requirements: (request forms and approvals attached)

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 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



Prepared signature

Reviewed signature
Director/Manager

Other Party Review signature *Margie Stavers*
(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

To: Colstrip Thermal Capital Business Case 2016 Washington GRC File
From: Scott Kinney, Director of Power Supply SK
Date: 2/11/2016
Re: Colstrip Thermal Capital Investment Considerations

As provided by the Generation Management group:

Avista owns 15 percent of Units 3 and 4 of the Colstrip Thermal Generation plant, which is managed by Talen Energy Corporation in consultation with the six owners. As a 15 percent owner, Avista is responsible for paying its share of capital investments in Units 3 and 4. Additionally, Talen Energy Corporation makes certain common investments that benefit Units 1, 2, 3, and 4. Accordingly, Avista is responsible for contributing its share (generally ~10% overall, but varies based on the specific project) of capital investment for these common investments as well.

The planned capital investments are developed in September of the month prior to the year in which the projects are scheduled to be implemented. The 2016 projects are available and can be provided upon further request.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Cabinet Gorge Automation Replacement

ER No: ER Name:

4163 CG HED Automation Replacement

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$2,342¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	2,342	0	0	0	0	0	0	0	0	0	0	0	2,342
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

This project is to replace the unit and station service control equipment with a system compatible with our current standards. The Bailey Net 90 equipment that is installed currently is obsolete in that replacement of the system can only be done through secondary and salvage markets. In addition, the current system does not provide enough inputs and outputs that allow us to implement our standard unit control and monitoring schemes. This work will replace the existing panel and control systems with a new system. The scope of work has been expanded to include replacement governors, voltage regulators, and protective relays.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Cabinet Gorge Automation Replacement	Assessments:	
Requested Amount:	\$2,941,000	Financial:	7.00%
Duration/Timeframe:	6 Year Project	Strategic:	Generating Plant Modernization
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >0 and <= 5
Owner:	Andy Vickers	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston	Assessment Score:	80
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
This for a request to start in 2014. This project is to replace the unit and station service control equipment with a system compatible with our current standards. The Bailey Net 90 equipment that is installed currently is obsolete in that replacement of the system can only be done through secondary and salvage markets. In addition, the current system does not provide enough inputs and outputs that allow us to implement our standard unit control and monitoring schemes. This work will replace the existing panel and control systems with a new system. The scope of work has been expanded to include replacement governors, voltage regulators, and protective relays.	Operational reliability will be improved. Better monitoring from staff will be available.	\$ 99,000	\$ -	\$ -	5

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Unfunded Project:	The present system is old and there are a very limited number of spares should components start to fail. We also do not have the ability to monitor and control the machine consistent with our current practices. Failure to address this will result in an increase in forced outages, but it would be	n/a	\$ -	\$ -	\$ -	6
Alternative 1: Brief name of alternative (if applicable)	Include AVR replacement as part of this project. This would increase the cost and scope of the project, but would minimize additional future outages. The effect of this would be to add about \$350,000 per year of this work.	describe any incremental changes in operations	\$ -	\$ -	\$ -	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

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ 99,000	\$ -	\$ -	\$ -
2015	\$ 500,000	\$ -	\$ -	\$ 30,000
2016	\$ 616,000	\$ -	\$ -	\$ 616,000
2017	\$ 1,726,000	\$ -	\$ -	\$ 1,726,000
2018	\$ -	\$ -	\$ -	\$ -
Total	\$ 2,941,000	\$ -	\$ -	\$ 2,372,000

none			
------	--	--	--

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
none	\$ -	\$ 99,000	\$ 500,000	\$ 616,000	\$ 1,726,000	\$ 2,941,000	not applicable
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 99,000	\$ 500,000	\$ 616,000	\$ 1,726,000	\$ 2,941,000	

Date	Target	Date	Target	Date	Target
May-14	Project Starts	August-16	First Unit Out of Service	August-19	First Unit Out of Service
October-14	Basis of Design	December-16	First Unit Returned to Service	December-19	First Unit Returned to S
February-15	Preliminary Design Complete	August-17	First Unit Out of Service	January-13	open
June-15	Panels Ordered	December-17	First Unit Returned to Service	January-13	open
August-15	Final Design Started	August-18	First Unit Out of Service	January-13	open
February-16	Final Design Completed	December-18	First Unit Returned to Service	January-13	open

Milestones should be general. Use your judgement on project progress so that progress can be measured. Provide at least three milestones per year

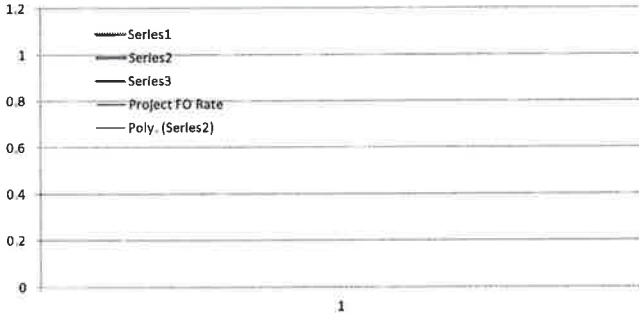
Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> NO or Not Required	Capital Tools:	<input type="checkbox"/> YES - 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: Unit Availability

Fill in the name of the KPI here



Prepared signature

Reviewed signature

Director/Manager

Other Party Review signature
(if necessary)

Margie Stevens
Director/Manager

Six Year Project Cash Flow

	Base	Alternative
2014	\$99,000	\$99,000
2015	\$500,000	\$500,000
2016	\$616,000	\$966,000
2017	\$616,000	\$966,000
2018	\$570,000	\$920,000
2019	\$540,000	\$890,000
	\$2,941,000	\$4,341,000

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Cabinet Gorge Automation Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply SK

Date: 2/11/2016

Re: Cabinet Gorge Automation Capital Investment Considerations

Discussion of the limitations of the current Cabinet Gorge controls, and the corresponding need for replacement and automation, is included in the supporting documentation for the Cabinet Gorge Unit 1 Rehabilitation. See therein at page 28 of this exhibit for this information.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Cabinet Gorge Unit 1 Refurbishment

ER No: ER Name:

4161 CG HED U#1 Refurbishment

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$0¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	14,702	0	0	14,702	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

This is the Capital portion of a major overhaul project planned for Cabinet Gorge Unit 1. The runner hub has significant issues, and will need to be upgraded to allow for frequent cycling with integration of intermittent resources. The present AVR is relatively slow response due to its hybrid design. It also has no limiters for generator protection. A new system will improve both of these. The machine monitoring is to allow for better analysis of machine condition for this critical unit. New protective relays are to be installed and new controls will be integrated with the project to replace the failing Bailey NET90 system. Rehab of this unit will also allow flexibility around minimum flow for fish habitat.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Cabinet Gorge Unit 1 Refurbishment_Rehab	Assessments:	
Requested Amount	Estimated Total Capital Expenditure	Financial:	9.24%
Duration/Timeframe	3 Year Project	Strategic:	Generating Plant Modernization
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Jacob Reidt	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston / Andy Vickers		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	98

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
This is the Capital portion of a major overhaul project planned for Cabinet Gorge Unit 1. The runner hub has significant issues, and will need to be upgraded to allow for frequent cycling with integration of intermittent resources. The present AVR is relatively slow response due to its hybrid design. It also has no limiters for generator protection. A new system will improve both of these. The machine monitoring is to allow for better analysis of machine condition for this critical unit. New protective relays are to be installed and new controls will be integrated with the project to replace the failing Bailey NET90 system. Rehab of this unit will also allow flexibility around minimum flow for fish habitat.	Better voltage control and response for blackstart (NERC), predictable rewind timing	Capital Cost	O&M Cost	Other Costs	4
		\$ 8,567,296	\$ -	\$ -	

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score	
Unfunded Project:	The unit will continue to deteriorate, and we will miss the opportunity of being able to run the plant at 3,000cfs, losing considerable flexibility	n/a	\$ -	\$ 1,550,027	\$ -	12
Alternative 1: Install IRIS Monitoring System Only	Most critical is to install a Partial Discharge Monitoring system to better assess the condition of the generator winding to assist in rewind timing. The unit is also in need of rewedge & re-insulation of the field windings	none	\$ 949,000	\$ 868,026	\$ -	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	\$ 330,000	\$ -	\$ -	\$ -
2013	\$ 5,172,658	\$ -	\$ -	\$ 1,300,000
2014	\$ 3,394,638	\$ -	\$ -	\$ 5,500,000
2015	\$ -	\$ -	\$ -	\$ 8,130,000
2016	\$ -	\$ -	\$ -	\$ 470,000
2017	\$ -	\$ -	\$ -	\$ -
Total	\$ 8,567,296	\$ -	\$ -	\$ 15,400,000

Associated Ers (list all applicable):

4161			

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
4161	\$ 5,172,658	\$ 3,394,638	\$ -	\$ -	\$ -	\$ 8,567,296	not applicable
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 5,172,658	\$ 3,394,638	\$ -	\$ -	\$ -	\$ 8,567,296	

Additional Justifications:
The present AVR is a hybrid design that utilized the rotating exciter equipment. When we perform blackstart testing, the relatively slow response of the AVR system does not allow the unit to maintain a stable voltage output to energize transmission lines and other loads. A new fast response system will remedy this dilemma. New Relays, Unit Control System, and other equipment replacements will be performed to update this machine to modern standards.

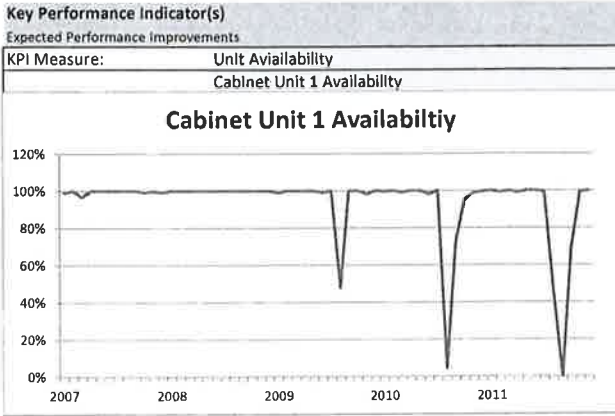
Milestones (high level targets)

October-12	Project Start	October-14	Unit Disassembly Complete	February-16	Machine in Service
November-12	Basis of Design	November-14	Discharge Ring installation	November-14	open
December-12	AVR Ordered	December-14	Stator Re-wedge	January-15	open
March-13	Monitoring Equipment Ordered	January-15	Runner delivered to site	April-15	open
September-13	Equipment Delivered to Site	October-15	Runner installation	April-15	open
November-13	Runner Final Design	January-16	Installation Completion	January-13	open

Milestones should be general. Use your judgement on project progress so that progress can be measured. Provide at least three milestones per year

Resources Requirements: (request forms and approvals attached)

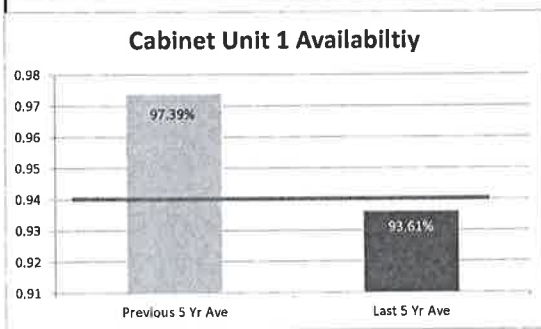
Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required	Capital Tools:	<input 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	Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required



Prepared signature

Reviewed signature Director/Manager

Other Party Review (if necessary) signature *Margie Stevens* Director/Manager



Some other explanation of the chart included above is that you can see that we are experiencing increasing outages over time to address the problems with the unit. These outages are generally increasing over time.

The monitoring system is intended to help us capture when a major outage is likely to occur and then plan accordingly. An asset management study has shown the benefits of a monitoring system that we can use to predict when we should plan for major events rather than perform the work after failure.

The chart at the left shows the decreasing availability that has been experienced over the past ten years due to mechanical problems with the unit. Doing this capital project at the same time as the major maintenance will improve future availability as this will not be needed again.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Cabinet Gorge Unit 1 Rehabilitation Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply *SK*

Date: 2/11/2016

Re: Cabinet Gorge Unit 1 Rehabilitation Capital Investment Considerations

The following pages are an impact assessment (provided by the Generation Management department), which documents the need for the rehabilitation of Cabinet Gorge Unit 1.

Impact Assessment – Replacement of Cabinet Gorge Unit 1 Turbine, Generator and Controls

Participants: Tim Carlberg & Steve Wenke

Due Date: 10/19/12

Risk Score 5 out of 5 with 5 being high (Financial Impacts of loss of Unit)

Compliment Impact - This project will redirect labor from expense to capital. There will be labor scheduling issues as this corresponds with work going on at Little Falls as well.

Turbine Issues

1. We currently have significant operating problems with the Kaplan operator on Unit 1.
2. The problem is the blades stick in a flat position when the unit is at minimum flow. When we call to increase the turbine output, the wicket gates open to allow more water into the turbine, but the blades do not increase in steepness. This creates forces on the blades that damage the runner due to increased forces on the blade trunion (the part where the blade attaches to the hub).
3. We need to manually position the runner blades with a detailed operating procedure. This should be automatic. This operation occurs at least twice a day for 10 months of the year.
4. This is the company's only Blackstart resource and is considered a critical asset under NERC criteria. In part, this is selected as the Blackstart resource because of the Kaplan operation benefits during an isolated system condition.
5. Cabinet Unit 1 is the only unit that can adequately pass the minimum flow through the project without creating water quality concerns (TDG).
6. Even without the sticking problem on the blades described above, the runner that was procured nearly 20 years ago was not specifically designed for this type of operation. If repaired, we would not likely see a sustained trouble free performance due to the design of the current runner. A new runner is necessary.
7. We have been dealing with this problem for more than 15 years and have attempted multiple fixes to address this operating issue but none have worked.
8. We have increased governor operating pressure, replaced the governor, refurbished the oil head, and maintained the hydraulic systems, changed timing on the hydraulic system, and others to address the operating problem.
9. With the changes in the energy supply system due to the addition of intermittent resources (primarily wind), Avista relies more on its own resources to follow the load. Because of the problems on Cabinet Unit 1, we are unable to utilize the plant for this purpose. This requires we use Coyote Springs which is a much more expensive option. The operation necessary for this requires the Kaplan runner to operate smoothly over its entire range of output. This is from flows from 3000 cfs to 9000 cfs.
10. The financial impact of this "regulating" operation has been performed by the Power Supply group and shows the benefits derived. [I don't have those results as I write this assessment, but will provide the results and supplement this document – SEW]

Generator Issues:

1. The generator was rewound with “hard coils” as part of the overhaul completed in 1994.
2. To maintain the generator, a periodic “re-wedge” is necessary to assure the coil remain tight in the stator slots so they are not damaged by normal operation.
3. The generator is seven years overdue for this maintenance.
4. Generator inspections have identified a number of loose wedges that need to be replaced.
5. The generator is exhibiting signs of excessive electrical discharge activity (electrical sparking within the insulation layers).
6. Ozone levels (due to the discharge activity of the sparks breaking down air resulting in ozone) have risen to where they are detectable in the plant at times. This can be an air quality issue for the station operators.
7. A 2011 study is attached here.
8. When the overhaul was done in 1994, the field poles on the generator were not upgraded as a cost savings. This has resulted in these operating at a higher than desired level for the past 20 years. They need to be re-insulated to assure long term reliability.

Other Issues:

1. The turbine discharge ring area has exhibited excessive wear and cavitation and needs to be repaired or replaced. This will be replaced as part of the work to replace the turbine runner.
2. We also have problems with the current unit control system. The technology is 28 years old and no longer supported (Bailey Net 90 system). The limitations of this system do not allow us to monitor Cabinet as we have capabilities on other stations. We have plans to replace this system and this project would be the first phase of that effort. (Cabinet control replacement project)
3. The existing generator Voltage Regulator is partially functional in that it has no upper limitation to prevent generator damage (we must rely on relay operation to trip the unit).
4. The commutator or the rotating exciter has had major problems with arcing and has resulted in a lot of maintenance expense to fix and try to correct this problem. We continue to see striping on this component of the generator.
5. The present system is a “hybrid” system which retains the rotating exciter which does not perform as expected in the current NERC regulatory environment.
6. We have invested in generator monitoring systems for vibration and discharge activity which are no longer functioning and need replaced.
7. The protective relays need to be upgraded to current practices and to accommodate Blackstart operations.

Section 1

Date: August 5, 2011
To: File
From: Steve Wenke
Subject: **Cabinet Gorge HED
Unit 1 Re-Wedge Considerations**

Recommendation:

Based on the information and data collected, we can reasonably defer a re-wedge of Cabinet Unit 1 for another year or two. This is based on assessing the number of loose wedges that are presently an issue on the generator as well as consideration of a number of other factors. While the data shows we are not in a critical point in the life of the generator, failure to re-wedge the generator in a year or two will have a more adverse impact on the service life of the unit.

Background:

Due to budget constraints, we are again facing a decision to delay the re-wedge of Unit 1. The purpose of this discussion is to provide some context of the consequences in delaying a generator re-wedge. This document summarizes various reports and studies to ascertain the status of the generator and the urgency to rewind the generator or not.

Unit Operation:

Cabinet Unit 1 is a Kaplan turbine runner and this unit is runs much of the calendar year in order for Avista to comply with the minimum flows required from the plant. Operating other units at these low flows causes runner performance and maintenance issues. Consequently the generator on Unit 1 has an availability of 97.36% since 1997. (1997 is the limit of my data). The unit is cycled frequently to allow for this minimum flow operation and consequently, the generator on Unit 1 sees frequent temperature cycling, which experience has shown is harder duty than a unit that is run at base load.

Generator Winding System and Vulnerability

A generator winding consists to two primary elements. These are the generator winding and the wedge system. Both of these systems are engineered to work together to achieve a generator performance and reliability.

The winding insulation system is designed to achieve the maximum generator capability (maximize the amount of copper) within a given slot area. Consequently, the winding system is a highly engineered system that relies on precision application of high quality materials

The generator wedge system is required for two primary purposes. One is provide enough restraint to the generator winding to hold it within the generator slot in the event of a severe fault. The second is to secure the winding in place during normal operation to prevent the winding from moving or vibrating, and compromising the winding insulation system.

Properly installed wedges secure the generator winding so that it is held tight against the laminations that make up the stator core. A loose winding will vibrate against the laminations during operation. This has the effect of "sanding" the winding insulation layer, removing a finite amount of insulation material.

Specifically, in the case of the Cabinet Gorge windings, the insulation thickness is only:

0.145 in thick for the $13.8 \text{ kV} \sqrt{3} = 7,964 \text{ Volts}$.

Section 1

The insulation design stress is 55.1 V/mil¹. Given this data, you can calculate that the insulation is rated at:

$$0.145 \text{ in} \times 1000 \text{ mil/in} \times 55.1 \text{ V/mil} = 7,989 \text{ Volts.}$$

You can see that the margin of the design against the machine rating is 7,989 / 7,964 = 3.1%. There is very little design margin in the winding.

To contrast this, if vibration due to loose wedges caused just 1/2 mil (0.0005 in) of loss in winding insulation material, the voltage rating of the winding would be decreased to:

$$0.1445 \text{ in} \times 1000 \text{ mil/in} \times 55.1 \text{ V/mil} = 7,962 \text{ Volts.}$$

This is below the 7964 rating of the winding. Because it is only at the end of the generator winding that you actually see the full voltage, the location of where any insulation material is being lost is crucial to if a winding fails or not.

Wedge Tightness Field Investigation 2010

Specifically for Cabinet Gorge, wedge looseness was investigated during an outage in 2010. The results of this testing clearly demonstrated that the wedging system has gotten loose over the past 17 to 18 years². The chart below shows the relative results.

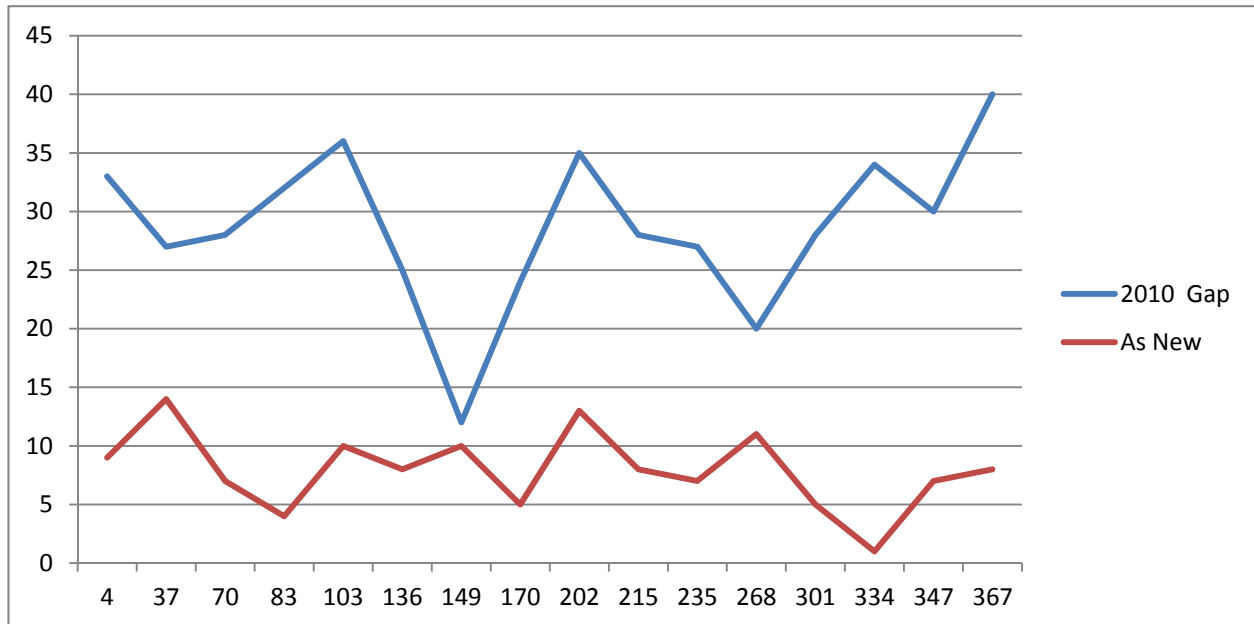


Figure 1
Cabinet Gorge Unit 1 Wedge Tightness Comparison

It is clear from this chart that the wedges have been consistently loosening over the course of time. The horizontal scale is in mils of tightness as measured through pin-holes on the wedging system. While the gap continues to grow, we are not at a critical stage yet. It is estimated that 6% of the wedges are beyond manufacturer's tolerance levels. The manufacturers recommendations are that a re-wedge should be performed with 25% of the wedges are beyond manufacturer tolerance.

¹ Source – Cabinet Gorge Rewind Proposal from Siemens-Westinghouse. Rewind Evaluation Sheet. Q:\G&P Files\Captial Projects#\Cabinet Gorge HED\Cabinet Gorge Unit 3\Rewind Documents\Rewind Evaluation.xls

² Cabinet Gorge Unit 1 was placed in service in spring of 1994. The winding was manufactured and installed in 1993.

Risk Assessment

Based on the discussion above, I asked the Asset Management group to run analysis on the Cabinet Generator winding to help understand the consequences of the loose wedge condition.

Using Avista's experience data, the asset management model projects that we would be facing a generator rewind (and core replacement) at age 28 years, or in 2022. Due to the vibration we are experiencing, we made an assumption that the loose wedges have increased the risk of failure by 10%. With this slight change in risk of failure, the model shows that we should rewind the generator in 26 years. Two years earlier than we would otherwise do. We can assume an \$8,000,000 cost to rewind the generator, based on the recent Noxon rewinds. If we you determine the present value of an \$8M expenditure in eight years, and subtract it from the present value of \$8M in 10 years, the actual risk cost we are facing is about \$400,000 in direct costs³. Of more consequence would be any type of lost opportunity costs due to an unplanned outage and the replacement power required.

The \$257,000 estimate to re-wedge the unit is clearly warranted when based on a simple two year life extension possibility. When an economic optimization is done, this type of study suggests that a re-wedge on a unit like Cabinet Unit 1 should be performed anytime after the winding is six years old.

Partial Discharge Analysis

Finally, an assessment was made using the Partial Discharge couplers installed on the Cabinet Unit 1 generator. Typically, when wedges become loose, the partial discharge activity on a generator winding tends to increase. Based on the amount of increase, estimates can be made as to the extent of the looseness of the stator winding within the slot. (The actual looseness can be attributed to several mechanisms - the most common is loose wedges.)

Avista contracted with IRIS to perform this test. IRIS connected their PD-IV test equipment on the couplers installed on Unit 1. Unfortunately, the A phase and B phase couplers were not working so we were only able to get data from the C phase. IRIS completed their report on using the data that was captured and concluded that there was no abnormal data to indicate any particular winding issue that needed attention.

Conclusion

Without question, the life of a generator that is used as much as Cabinet Unit 1 would be maximized by properly maintaining the machine in terms of frequent visual and mechanical inspections, keeping the generator clean from oils and other debris, and making sure all of the wedges are installed and working properly.

While the field testing data is clear that the wedges have become loose over the course of time, the other information presented here indicates that we have not reached a critical juncture yet. It needs to be kept in mind that the other information used here is based on analytical tools and limited field data.

Based on the information collected and the analysis above, we should be able to defer a generator re-wedge for another year or two with a minimal risk of winding failure. That being said, it is clear that our overall interests are clearly best served by investing the relatively modest amount of maintenance funds to re-wedge the unit.

Attachments:

³ Assumes a present value of \$8,000,000 for the rewind, discounted at 4% for 8 years = \$5.84M against \$8,000,000 for the rewind discounted at 4% for 10 years = \$5.40M = \$440,000. The 4% is the assumed escalation we might see due to copper commodity prices and general escalation.

1. IRIS Partial Discharge Test Report
2. IRIS Interpretation of PD Results
3. Cabinet Gorge HED – Unit 1 Stator Tapping Results October 4, 2010
4. Cabinet Gorge Rewind Proposal from Siemens-Westinghouse. Rewind Evaluation Sheet

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Post Fall South Channel Replacement

ER No: 4162 **ER Name:** PF S Channel Gate Replacement

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$0¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	14,092	0	13,313	0	779	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Avista had planned to maintain the south channel gates to comply with FERC Dam Safety directives. When a pre-construction underwater investigation was done, it was discovered that the condition of the concrete structure was very poor and would not handle the planned work. This has resulted in an effort to evaluate options. This item includes an engineering investigation into options and project estimates. It is anticipated that much of the existing concrete structure will be removed and replaced with a new concrete structure, new gates and hoist systems to automate the operation.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Investment Name:	Post Fall South Channel Replacement	Assessments:	
Requested Amount	Estimated Total Capital Expenditure	Financial:	0.00%
Duration/Timeframe	3 Year Project	Strategic:	Generating Plant Modernization
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >0 and <= 5
Owner:	Andy Vickers	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston		
Category:	Mandatory		
Mandate/Reg. Reference:	CFR Title 18, Chapter I, Subchapter B, Part 12	Assessment Score:	55

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Avista had planned to maintain the south channel gates to comply with FERC Dam Safety directives. When a pre-construction underwater investigation was done, it was discovered that the condition of the concrete structure was very poor and would not handle the planned work. This has resulted in an effort to evaluate options. This item includes an engineering investigation into options and project estimates. It is anticipated that much of the existing concrete structure will be removed and replaced with a new concrete structure, new gates and hoist systems to automate the operation.	Gate operations would be automated.	\$ 11,008,000	\$ (5,000)		5

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Unfunded Project:	n/a	\$ -	\$ -	\$ -	20
<i>Alternative 1: Brief name of alternative (if applicable)</i>	At the time this case is being submitted, no alternatives are known.	\$ -	\$ -	\$ -	5
<i>Alternative 2: Brief name of alternative (if applicable)</i>	Describe other options that were considered	\$ -	\$ -	\$ -	0
<i>Alternative 3 Name: Brief name of alternative (if applicable)</i>	Describe other options that were considered	\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 63,830	\$ -	\$ -	\$ 63,830
2013	\$ 950,000	\$ -	\$ -	\$ 1,119,000
2014	\$ 1,920,000	\$ -	\$ -	\$ 6,444,000
2015	\$ -	\$ -	\$ -	\$ 6,300,000
2016	\$ -	\$ -	\$ -	\$ 700,000
2017	\$ -	\$ -	\$ -	\$ -
Total	\$ 2,870,000	\$ -	\$ -	\$ 14,563,000

Associated Ers (list all applicable):

new			

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
new	\$ 960,000	\$ 1,950,000	\$ -	\$ -	\$ -	\$ 2,910,000	CFR 18.I.B Part 12; 2007 FERC Inspection Report, July 10, 2007 Letter to FERC with Plan and Schedule; 2011 FERC Inspection Report and Part 12 Report Recommendation and August 13, 2012 letter to FERC requesting extension Additional Justifications: The sequence of correspondance described above presents the highlights of discussions. This project has also been discussed at numerous meetings and inspections with FERC Dam Safety Inspectors and the FERC Regional Engineer. Expectation of addressing gate structural concerns on this structure are well understood.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 960,000	\$ 1,950,000	\$ -	\$ -	\$ -	\$ 2,910,000	

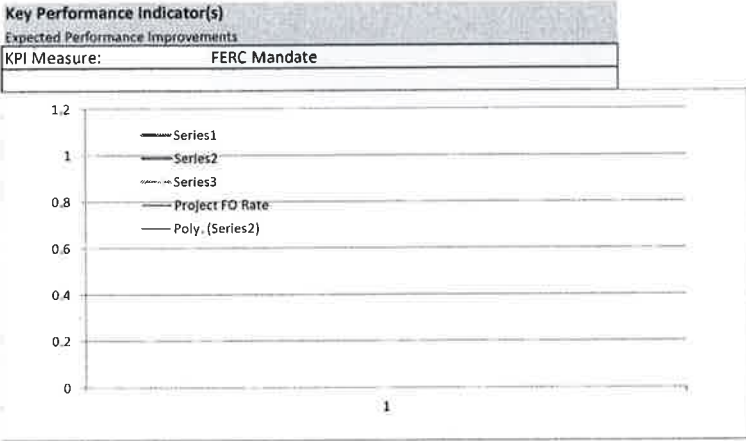
Milestones (high level targets)

September-12	Project Kick-Off	February-16	90% Transfer to Plant	January-13	open
March-13	Design Basis Complete	April-16	Construction Complete	January-13	open
July-13	Gate Supply Bids Out	October-16	Project Closed Out	January-13	open
September-13	Gate Supply Awarded	January-13	open	January-13	open
January-14	Issue Construction RFP	January-13	open	January-13	open
May-14	Installation Contract Awarded	January-13	open	January-13	open

Milestones should be general. Use your judgement on project progress so that progress can be measured. Provide at least three milestones per year

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 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
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	Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required



Prepared signature

Reviewed signature
Director/Manager

Other Party Review signature *Maggie Stevens*
(if necessary) Director/Manager

Because of the timing of the discovery of the concrete condition, the initial budget estimate was made very quickly within a two week time period which did not allow for much investigation of what would be needed for the project. As a result, the original request has been increased as we have learned about the needed work to address this issue.

Additional Information: The original plan had contemplated a single spillgate in place of the current six gates, expecting to reduce construction costs. However, upon further scoping work, it was determined that going to a single gate design would require removal of six post tension anchors that were installed in the 1990's for dam stability. This forced a change in scope to include six gates, increasing the cost.

Also, the project will now require a cofferdam to facilitate the necessary construction. That along with the access improvements needed to perform the site construction have also increased the cost over the original estimate.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Post Falls South Channel Gate Replacement Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply SK

Date: 2/11/2016

Re: Post Falls South Channel Gate Replacement Capital Investment Considerations

The following pages are an excerpt of the Post Falls South Channel basis of design report (provided by the Generation Management department), which documents the analysis performed to select the final design for the Post Falls South Channel Gate Replacement. This project addresses the need to comply with FERC Dam Safety directives and the replacement of deteriorated concrete, as outlined on the business case form. The full report can be provided upon request.

Post Falls South Channel Basis of Design Report



Post Falls South Channel Basis of Design Report

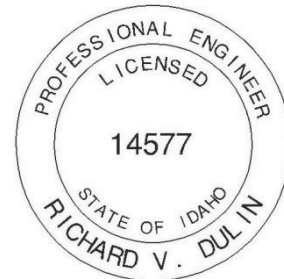
April 10, 2013



Original Signed by: Richard V. Dulin, PE

4/10/2013

Date Original Signed



Contents

1.0 Introduction.....	1
1.1 Purpose of Report.....	1
1.2 Historical Background	1
1.3 Project Description	1
1.4 Project Objectives	2
1.5 Field Observations	2
1.6 Survey and Datum.....	6
2.0 Operational Requirements.....	8
2.1 Hydraulic Capacity	8
2.2 Opening under Full Differential Head	10
2.3 Closing under Full Differential Head.....	11
2.4 Local and Remote Control.....	11
2.5 Minimization of Leakage.....	12
2.6 Emergency Power.....	13
2.7 Single Actuator for Each Gate.....	13
2.8 Maintenance.....	13
2.9 Gate Opening Speed	13
2.10 Power Requirements.....	14
3.0 Permitting Requirements.....	15
4.0 Load Analysis.....	16
4.1 Hydrostatic Load.....	16
4.2 Frictional Force	16
4.3 Dead Weight.....	16
4.4 Buoyancy	17
4.5 Hydrodynamic Forces	17
4.6 Summary of Gate Forces	18
5.0 Gate Alternatives.....	19
5.1 Rehabilitation of Existing Gate	19

5.2 Sluice Gate.....20

5.3 Fixed-Wheel Gate22

5.4 Slide Gate.....24

6.0 Hoist Alternatives..... 26

6.1 Hydraulic Actuator.....26

6.2 Rising Stem Actuator.....27

6.3 Wire-Rope Hoist.....28

7.0 Bulkheads..... 30

8.0 Concrete Improvements 32

8.1 Structural Stability Checks.....32

8.2 Effects on Existing Post-Tensioned Anchors34

8.3 Pier Shapes Analysis35

8.4 Existing Concrete.....36

8.5 Consolidation Grouting Program39

8.6 Concrete Repair Concepts42

8.7 Apron Repair Concepts43

9.0 Concepts for Walkway and Access 45

10.0 Electrical and Control Building Alternatives..... 46

10.1 Existing Mule House46

10.2 New Building.....46

11.0 Concepts for Temporary Cofferdam Alternatives..... 50

11.1 Cofferdam Location.....50

11.2 Supporting Information50

11.3 Sheet Pile / Stone Mound Cofferdam50

11.4 Super Sack Cofferdam51

11.5 Construction Considerations.....51

12.0 Summary of Preliminary Construction Cost Estimate..... 53

13.0 Alternatives Evaluation..... 56

14.0 Conclusions 59

15.0 References 60

List of Appendices

Appendix A Drawings

Appendix B Schedule

Appendix C Calculations

- 01 – Gate Forces
- 02 – Existing Post-Tensioned Anchor and Stability Checks
- 03 – Gate Structural Analysis
- 04 – Hoist Frame Structural Analysis
- 05 – Pier Shape Analysis
- 06 – Hydraulic Analysis

Appendix D Existing Concrete Reference Information

- 2012 Inspection Photos
- 2012 Dive Inspection Notes
- 1990 Geotechnical Report Concrete Cores

Appendix E Budinger & Associates Geotechnical Exploration and Analysis for Cofferdam

Appendix F Basis of Design Review Meeting Presentation

Appendix G Basis of Design Review Meeting Minutes

Appendix H Preliminary Construction Cost Estimate

List of Tables

Table 1: Summary of Key Elevations from Original South Channel Design Drawings and Avista December 2012 Survey	7
Table 2: Flow Test Data from USGS Gage (12419000) Downstream of the Post Falls HED.....	9
Table 3: Summary of Gate Forces (these are approximate estimates of the forces to demonstrate the general direction of the forces)	18
Table 4: Pros and Cons of Sluice Gates	21
Table 5: Life-Cycle Cost Sources for Sluice Gates	21
Table 6: Pros and Cons of Fixed-Wheel Gates.....	23
Table 7: Life-Cycle Cost Sources for Fixed-Wheel Gates	24
Table 8: Pros and Cons of Slide Gates	25
Table 9: Life-Cycle Cost Sources for Slide Gates	25
Table 10: Pros and Cons of Hydraulic Cylinders.....	27
Table 11: Pros and Cons of Rising Stem Actuators	28
Table 12: Pros and Cons of Wire-Rope Hoists	29
Table 13: Summary Results – AECOM Additional Stability Checks.....	34
Table 14: Concrete Test Values (GCI, 1990).....	37
Table 15: Concrete Permeability Results (GCI, 1990).....	37
Table 16: Concrete Properties Determined from the Petrographic Analysis (CTL, 2013).....	39
Table 17: Pros and Cons for the New Building Alternatives	49
Table 18: Summary of Pros and Cons for Cofferdam Alternatives.....	52
Table 19: Summary of Preliminary Construction Costs	54
Table 20: Summary of Alternatives for the Gates and Hoists, Piers, and Cofferdams.....	55
Table 21: Summary of Comments on Criteria for Selecting Gates and Hoists.....	56
Table 22: Summary of Evaluation of the New Electrical and Controls Building Alternatives	57
Table 23: Summary of Evaluation of the Cofferdam Alternatives.....	58

List of Figures

Figure 1: View of Entrance to Path to South Channel Dam and Parking Area.....	
Figure 2: View Looking Down Path to South Channel Dam.....	
Figure 3: View of Downstream Side of South Channel Dam Shows Deterioration of the Concrete.....	
Figure 4: View of Downstream Concrete Apron; Erosion of the Apron Has Occurred	
Figure 5: View of Upstream Side of South Channel Dam and Gates in the Closed Position	
Figure 6: View of Mule House on North Side of the Top of the Dam	
Figure 7: Spillway Gates in the Full Open Position	
Figure 8: Major Components of a Sluice Gate (from Rodney Hunt)	
Figure 9: Typical Fixed-Wheel Gate Arrangement in Plan View (from Rodney Hunt).....	
Figure 10: Example Grout Used for the Consolidation Grouting (from Sika Corporation).....	41
Figure 11: South Channel Apron Undercutting and Dimensions (Avista, 2012).....	
Figure 12: Example Steel Building (from Butler)	
Figure 13: Example Precast Building (from CXT, Inc.).....	

1.0 Introduction

1.1 Purpose of Report

In November 2012, Avista Corporation (Avista) entered into a contract with AECOM Technical Services, Inc. (AECOM) to evaluate alternatives and proceed with final design for the replacement of the spillway gates and actuators and the repair of the concrete dam at the South Channel of the Post Falls Hydroelectric Development (HED) (Federal Energy Regulatory Commission [FERC] Project No. 2545-05).

The purpose of this report is to present the operational and permitting requirements that have been established through analysis and discussion with Avista operations and engineering staff and to present the evaluation of gate and actuator alternatives and concrete repair alternatives to provide a basis for selecting a final alternative to proceed with final design.

1.2 Historical Background

The Post Falls HED is located on the Spokane River approximately nine miles downstream of Lake Coeur d'Alene in Post Falls, Idaho. Construction of the project was originally completed in 1906. The dams in all three channels and the hydroelectric plant were originally developed by Frederick Post between 1904 and 1906. The Washington Water Power Company, now Avista, acquired the development in 1906.

When originally completed, the Post Falls HED included the existing three dams across the river channels and a powerhouse integrated into the Middle Channel Dam. The original powerhouse contained three 2.25-megawatt (MW) Francis turbines for a total installed capacity of 6.75 MW. A fourth unit was installed in 1906 and a fifth in 1908; increasing the capacity another 4.5 MW. In 1942, modifications were made to the development that allowed for a 1.5-foot increase in the forebay water surface elevation. In 1980, the Washington Water Power Company added a sixth unit of 3.5 MW to Post Falls HED, bringing the total installed capacity to the current 14.75 MW (FERC Application, 2005).

1.3 Project Description

The North Channel Dam includes a 431-foot-long gated spillway with a crest elevation of 2114 feet and a capacity of 34,740 cubic feet per second (cfs) at water surface elevation 2128 feet. The spillway gates consist of a motor-operated 100-foot-wide by 14-foot-high rolling sector gate and eight motor-operated 12-foot-high tainter gates, seven of which are 21 feet wide and one of which is 12 feet wide.

The Middle Channel Dam is a 215-foot-long, 64-foot-high concrete gravity dam. The powerhouse is integrated into the dam. The dam crest elevation is at 2133 feet. The Middle Channel Dam includes six 56-foot-long, 11.25-foot-diameter riveted steel penstocks and an integral 6-unit powerhouse. The total hydraulic capacity of the powerhouse is 5,400 cfs. There are six double horizontal Francis turbine-generator units in the powerhouse numbered 1 through 6 from river-right to left. Unit Nos. 1 through 5 have a hydraulic capacity of 850 cfs and produce 2.25 MW each. Unit No. 6 was installed in 1980 with a higher capacity of 1150 cfs and produces 3.5 MW.

The Post Falls Powerhouse intake system originally consisted of six timber vertical gates with steel frame support racks that were lifted by means of rack and pinions. The original gate timbers were replaced around 1969. The timber gates and steel frame support racks were replaced in 2012 and 2013 with vertical fixed-wheel gates. These gates are now actuated by individual electric wire-rope hoists. Substantial completion of the installation of the new gates occurred in January 2013.

The South Channel Dam, which is the focus of this project, is a 130-foot-long, 37-foot-high concrete gravity dam. The top of the dam is approximately at elevation 2135 feet. The dam includes a 76-foot-long gated spillway section as well as a 40-foot-long overflow section with a crest elevation of approximately 2128.5 feet and a stated capacity of 3,030 cfs (additional discussion on the spillway capacity of the South Channel is provided in Section 2.1 of this report). Additionally, there is a concrete gravity section on the north side of the dam that is 14 feet long and has a crest elevation of approximately 2135 feet. The mule house building is located on this section.

The spillway gates consist of six locally operated 8-foot-wide by 15-foot-high steel vertical sluice gates. The gates are operated by a rack and pinion system similar to the old gates at the Middle Channel. The rack and pinion are operated by a single mule that is housed in a small building on the north side of the dam and travels on two rails to enter into position to operate each gate. Drawings of the South Channel Dam are provided in Appendix A of this report.

The Post Falls HED impounds the uppermost nine miles of the Spokane River between the Lake Coeur d'Alene outlet and the dams, and it influences the water levels in the 23-mile-long Lake Coeur d'Alene and portions of the St. Joe, St. Maries, and Coeur d'Alene rivers. The summer normal full-pool elevation is 2128 feet. The impoundment has a surface area of 40,402 acres, a maximum depth of 209 feet, and a usable storage volume of 223,100 acre-feet, based on an operating range of 9 feet at the dams and 7.5 feet in the lake (FERC Application, 2005).

1.4 Project Objectives

The objective of the Post Falls South Channel project is to evaluate alternatives for replacement of the gates, actuators, and concrete repair. Once an alternative is selected, the spillway gate assembly, actuator, control system, and concrete repairs will be designed and put out to bid in two separate packages; one for manufacture of the gates, guiding and embedded parts, and actuators; and the other for construction and installation of the gate assembly and concrete repairs. The installation of the new gate system and repairs to the concrete are estimated to be completed by the end of 2014.

1.5 Field Observations

On Wednesday, November 7, 2012, AECOM staff (Patrick Willis, Rick Dulin, and Mark Graeser) visited the project site as part of the kick-off meeting for the project. The following is a brief summary of observations made during the site visit. Additional discussion on these items is provided throughout the remainder of the report.

Parking Area

The parking area at the entrance to the path to the South Channel was identified as a potential contractor staging and laydown area. This would need to be coordinated with the staff at Q'emiln Park and the City of Post Falls.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Replace Cabinet Gorge Gantry Crane

ER No: ER Name:

4178 CG HED – Gantry Crane Replacement

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$3,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	3,500	0	0	0	0	0	0	0	0	0	3,500	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

The gantry crane at Cabinet Gorge is original equipment and is now more than 70 years old. This is a critical asset needed to function without problems in order to service the powerhouse. We have experienced problems with this unit, as recently as last year during the Cabinet Gorge Unit 1 project. The controls are antiquated and have had problems. The integrity of the condition of the crane, the state of the controls, and the inability to directly pick the Unit 1 rotor, the GSU's and to manage the tailgates make replacing the crane with a modern and fully functioning crane a needed item.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Project Business Case



Investment Name:	Replace Cabinet Gorge Gantry Crane	Assessments:	
Requested Amount	\$3,530,000	Financial:	4.23%
Duration/Timeframe	2 Year Project	Strategic:	Reliability & capacity
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Jacob Reidt	Project Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Jason Thackston / Andy Vickers		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	50

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
The gantry crane at Cabinet Gorge is original equipment and is now more than 70 years old. This is a critical asset needed to function without problems in order to service the powerhouse. We have experienced problems with this unit, as recently as last year during the Cabinet Gorge Unit 1 project. The controls are antiquated and have had problems. The integrity of the condition of the crane, the state of the controls, and the inability to directly pick the Unit 1 rotor, the GSU's and to manage the tailgates make replacing the crane with a modern and fully functioning crane a needed item.	describe any incremental changes that this Project would benefit present operations	Capital Cost	O&M Cost	Other Costs	4
		\$ 3,500,000	\$ (5,000)	\$ -	

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
Unfunded Project:	n/a	Capital Cost	O&M Cost	Other Costs	16
The present crane was ordered prior to final design and resulted in the crane being too small to pick all of the loads required without having to perform an "engineered pick". This means Avista must pay for a load test each time we need to pull the rotor on Unit 1. In addition, we have had to perform a variety of other projects to keep the crane functioning. The crane is limited in that we can't directly pick up transformers and tailgates. In order for the crane to be utilized, we have developed several "work arounds". There are concerns about the condition of the crane.		\$ 2,000,000	\$ 10,000	\$ -	
Alternative 1: Brief name of alternative (if applicable)	There would be a modest increase in reliability and simplicity.	\$ 2,500,000	\$ 12,000	\$ -	4
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	\$ -	\$ -	\$ -	\$ -
2015	\$ 30,000	\$ -	\$ -	\$ -
2016	\$ 3,500,000	\$ -	\$ -	\$ 100,000
2017	\$ -	\$ -	\$ -	\$ 3,400,000
2018	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ -	\$ -	\$ -
2020+	\$ -	\$ -	\$ -	\$ -
Total	\$ 3,530,000	\$ -	\$ -	\$ 3,500,000

Associated Ers (list all applicable):

4178			

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
4178	\$ 30,000	\$ 3,500,000	\$ -	\$ -	\$ -	\$ 3,530,000	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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 30,000	\$ 3,500,000	\$ -	\$ -	\$ -	\$ 3,530,000	

Milestones (high level targets)

1/0/2016	Crane Procurement	January-00	open	January-00	open
October-16	Installation	January-00	open	January-00	open
December-16	Work Complete	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



January-00 open

January-00 open

January-00 open

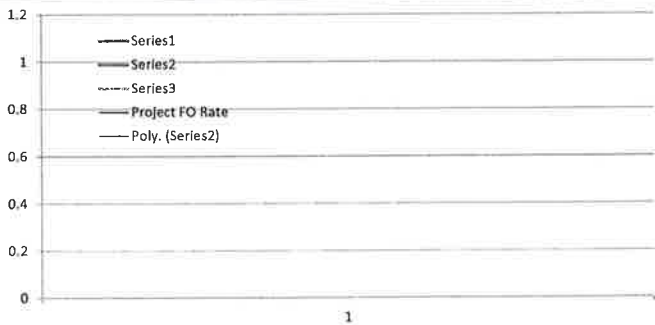
Resources Requirements: (request forms and approvals attached)

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: 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 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

You can see from the risk scoring that even operating a new, fully functional crane is still a risky enterprise. Operating the existing crane in its present condition needs to be carefully considered.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Cabinet Gorge Gantry Crane Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply SK

Date: 2/11/2019

Re: Cabinet Gorge Gantry Crane Investment Considerations

The Generation Management department, has provided elaboration on the problems alluded to on the business case summary sheet. During the course of the Cabinet Gorge Refurbishment, the gantry crane has broken down four times, leading to the crane's capabilities being restricted or the crane being inoperable.

The four instances in which there were issues with the crane, along with the resulting down-time leading to loss of productivity, were as follows:

- Relay/contactor problem – approximately six days of inoperability
- Gear/bearing problem – approximately three weeks of inoperability
- Brake problem – reduced operability over a couple of days while being repaired
- Main hoist motor problem – approximately two-three weeks of inoperability

These instances, coupled with the age of the crane as outlined in the business case summary (over 70 years old) and the crane's necessity to service the powerhouse, justify the need for the replacement of this unit, in order to continue to be able to reliably service and maintain the Cabinet Gorge generation facility.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Kettle Falls CT Control Upgrade

ER No: ER Name:

4177 KF CT Control Upgrade

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$667¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	667	0	0	0	0	0	0	667	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

This project will replace the Solar Combustion Turbine HMI software and hardware, upgrade PLC controls platform, and Fire Protection system at Avista's Kettle Falls Generating Station. The current controls are outmoded, with spare parts and software support no longer available.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Project Business Case



Investment Name:	Kettle Falls CT Control Upgrade	Assessments:	
Requested Amount	\$ 666,610	Financial:	7.00%
Duration/Timeframe	1 Year Project	Strategic:	Reliability & capacity
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Andy Vickers	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	87

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
This project will replace the Solar Combustion Turbine HMI software and hardware, upgrade PLC controls platform, and Fire Protection system at Avista's Kettle Falls Generating Station. The current controls are outmoded, with spare parts and software support no longer available.	describe any incremental changes that this Project would benefit present operations	Capital Cost	O&M Cost	Other Costs	1
		\$ 666,610	\$ (82,300)	\$ -	

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
			Capital Cost	O&M Cost	Other Costs	
Unfunded Project:	Failure to fund this project will result in the system continuing to deteriorate, and the HMI upgrade portion will be done on O&M.	n/a	\$ -	\$ 82,300	\$ -	9
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -
2015	\$ -	\$ -	\$ -	\$ -
2016	\$ 666,610	\$ (82,300)	\$ -	\$ -
2017	\$ -	\$ -	\$ -	\$ 666,610
2018	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ -	\$ -	\$ -
2020+	\$ -	\$ -	\$ -	\$ -
Total	\$ 666,610	\$ (82,300)	\$ -	\$ 666,610

Associated Ers (list all applicable):

4177			

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
4177	\$ -	\$ 666,610	\$ -	\$ -	\$ -	\$ 666,610	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 666,610	\$ -	\$ -	\$ -	\$ 666,610	

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)

April-16	Begin	January-00	open	January-00	open
June-16	Project Complete	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

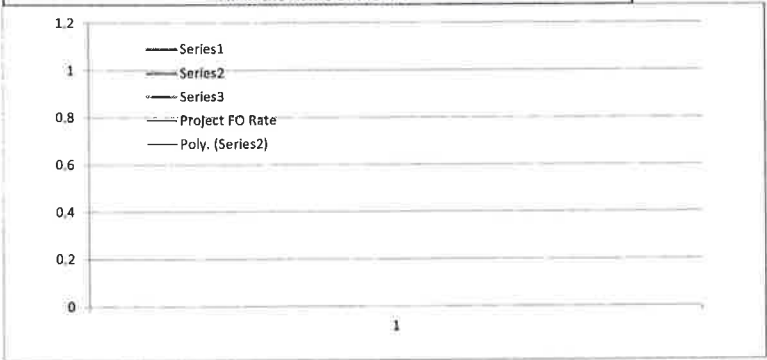
Milestones should be general. Use your judgement on project progress so that progress can

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<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	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 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



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

To: Kettle Falls CT Controls Upgrade Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply *SK*

Date: 2/11/2016

Re: Kettle Falls CT Controls Upgrade Capital Investment Considerations

The following page (provided by the Generation Management department) presents consideration of the factors driving the upgrade of the CT controls system at Kettle Falls.

Facility Name	Project Name	Budget Year	Cost	Project Description	Drivers	Alternatives	Risks	Benefits
Kettle Falls CT	CT Controls Upgrade	2017	\$ 715,000	Upgrade the Solar Taurus 70 Turbine TT4000 HMI software and hardware. Upgrade the controls to the newest offered turbine controls PLC platform which Includes PLC processor and compatible IO modules. Replace the fire protection System.	The HMI is currently running on a Windows 2000 software which is not supported. We do not have access to Windows 2000 machines through ET. The Allen Bradley PLC5 ControlNet1.25 is no longer supported by Solar. The fire protection system is no longer supported and has cause a number of forced outages over recent years due to device failures.	Continue to operate on the current system and do not upgrade.	Increased down time on the Combustion Turbine if the systems are not upgraded. Risk of the fire system not responding in case of an emergency. The last annual maintenance in 2015 from Solar the technicians had extreme difficulty performing work and interfacing with our outdated controls.	Reliability

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Kettle Falls Reverse Osmosis

ER No: ER Name:

4175 KFGS Reverse Osmosis System

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$4,750¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	4,750	0	0	0	0	0	0	0	0	4,750	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Kettle Falls GS needs a long term solution to achieve environmental permit compliance, improve the well water supply chemistry and replace an aging demineralization system. Currently, several short term solutions have been employed with increasing and unsustainable operation costs. This project will design and install a new water treatment system at Kettle Falls.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Kettle Falls RO System	Assessments:	
Requested Amount	\$4,750,000	Financial:	6.71%
Duration/Timeframe	1 Year Project	Strategic:	Reliability & capacity
Dept., Area:	Generation & Production	Business Risk:	Business Risk Reduction >15
Owner:	Jacob Reidt	Project Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Jason Thackston / Andy Vickers	Assessment Score:	79
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
Kettle Falls GS needs a long term solution to achieve environmental permit compliance, improve the well water supply chemistry and replace an aging demineralization system. Currently, several short term solutions have been employed with increasing and unsustainable operation costs. This project will design and install a new water treatment system at Kettle Falls.	Environmental permit compliance	\$ 4,750,000	\$ (480,000)	\$ -	4

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	National Pollutant Discharge Elimination System (NPDES) permit violation, Third party intervention (e.g. Riverkeeper, NGO, etc.)	n/a	\$ -	\$ -	\$ -	25
Unfunded Project:	Continued use of expensive chemicals. \$40,000/month. Risk associated with deionization system.	n/a	\$ -	\$ 480,000	\$ -	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

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2015	\$ -	\$ -	\$ -	\$ -
2016	\$ 4,750,000	\$ -	\$ -	\$ 4,750,000
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ -	\$ -	\$ -
2020	\$ -	\$ -	\$ -	\$ -
2021+	\$ -	\$ -	\$ -	\$ -
Total	\$ 4,750,000	\$ -	\$ -	\$ 4,750,000

Associated Ers (list all applicable):

4175			

ER	2016	2017	2018	2019	2020	Total
4175	\$ 4,750,000	\$ -	\$ -	\$ -	\$ -	\$ 4,750,000
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 4,750,000	\$ -	\$ -	\$ -	\$ -	\$ 4,750,000

Mandate Excerpt (if applicable):
provide brief citation of the law or regulation and a reference number if possible

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)

January-16	Engineering	January-00	open	January-00	open
February-16	Procurement	January-00	open	January-00	open
July-16	Commissioning	January-00	open	January-00	open
September-16	Complete	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open
January-00	open	January-00	open	January-00	open

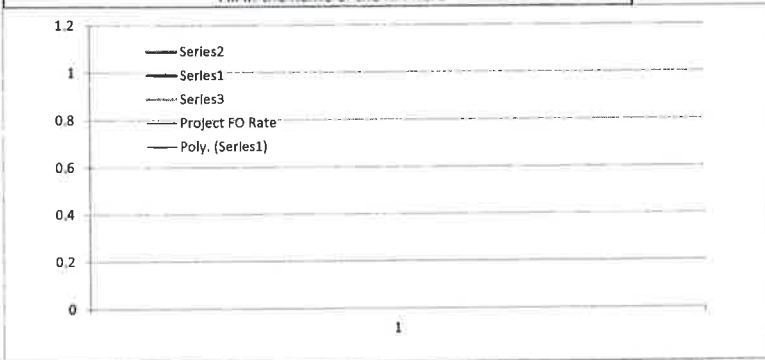
Milestones should be general. Use your judgement on project progress so that progress can

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input checked="" 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	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 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



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

To: Kettle Falls RO System Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply SK

Date: 2/11/2016

Re: Kettle Falls RO System Investment Considerations

The business case summary form for this project illustrates well the driving factors related to this project, including the risks of non-compliance with environmental compliance and the cost associated with maintaining compliance under the present scenario. Please refer to the business case form for information supporting the need for this project.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Nine Mile Rehab Program

ER No: 4140 **ER Name:** Nine Mile Redevelopment

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$25,759¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	73,193	249	249	249	249	249	249	62,842	1,014	659	6,483	361	338
2017	3,814	0	0	0	0	0	0	0	0	0	0	0	3,814
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

This program is to rehabilitate and modernize the 4 unit Nine Mile HED. This program includes projects to replace Units 1 and 2 which are more than 100 years old and are past their useful life. In addition, a new warehouse will be constructed, new tail race gate system will be added, new grounding and communications will be added, a barge landing will be added, a cottage will be removed and another remodeled, a new panel room will be added, Units 3 & 4 will be overhauled and modernized, the powerhouse will be restored, a new access gates and controls will be added and other improvements will be made.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Project Business Case



Investment Name:	Nine Mile Rehab Program	Assessments:	
Requested Amount	\$90,913,000	Financial:	14.00%
Duration/Timeframe	8 Year Project	Strategic:	Generating Plant Modernization
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Jacob Reidt	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston / Andy Vickers	Assessment Score:	112
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
This program is to rehabilitate and modernize the 4 unit Nine Mile HED. This program includes projects to replace Units 1 and 2 which are more than 100 years old and are past their useful life. In addition, a new warehouse will be constructed, new tail race gate system will be added, new grounding and communications will be added, a barge landing will be added, a cottage will be removed and another remodeled, a new panel room will be added, Units 3 & 4 will be overhauled and modernized, the powerhouse will be restored, a new access gates and controls will be added and other improvements will be made.	Increase capacity, energy, and renewable credits. (REC's)	\$ 90,913,000	\$ -	\$ -	4

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	n/a	\$ -	\$ -	\$ -	16
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	\$ -	\$ -	\$ -	4
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	\$ 10,612,838	\$ -	\$ -	\$ 10,612,838
2013	\$ 15,379,000	\$ -	\$ -	\$ 11,399,000
2014	\$ 21,505,000	\$ -	\$ -	\$ 26,700,000
2015	\$ 10,193,000	\$ -	\$ -	\$ 29,144,917
2016	\$ 6,000,000	\$ -	\$ -	\$ 12,491,000
2017	\$ 13,315,000	\$ -	\$ -	\$ 7,859,000
2018	\$ 5,409,000	\$ -	\$ -	\$ 5,409,000
2019	\$ 1,015,000	\$ -	\$ -	\$ 1,015,000
2020	\$ -	\$ -	\$ -	\$ -
Total	\$ 72,816,000	\$ -	\$ -	\$ 94,017,917

Associated Ers (list all applicable):

4140		

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
4140	\$ 15,379,000	\$ 21,505,000	\$ 10,193,000	\$ 6,000,000	\$ 13,315,000	\$ 66,392,000	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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 15,379,000	\$ 21,505,000	\$ 10,193,000	\$ 6,000,000	\$ 13,315,000	\$ 66,392,000	

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
Contract Labor: Yes No

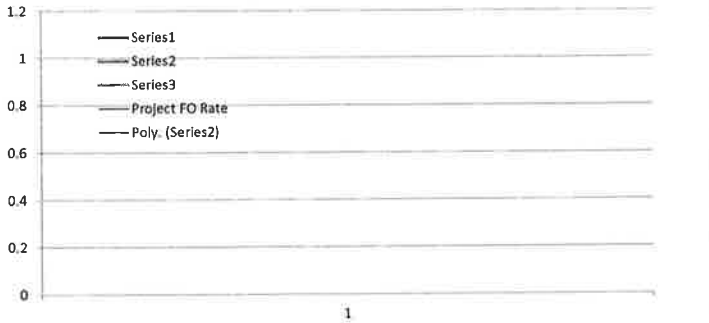
Enterprise Tech: YES - attach form NO or Not Required
Facilities: YES - attach form NO or Not Required

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



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

To: Nine Mile Rehabilitation Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply *SK*

Date: 2/11/2016

Re: Nine Mile Rehabilitation Capital Investment Considerations

The following pages are an excerpt of the Spokane River System Hydro Assessment Summary Report (provided by the Generation Management department), which documents the analysis performed to determine whether the upgrade of the Nine Mile generating facility or other alternatives provided better value, and which ultimately determined that the rehabilitation of the Nine Mile facility was the preferred alternative. The full report can be provided upon request.



Spokane River System Hydro Assessment

Summary Report

November 2012

Prepared by:



**Under Contract:
R-36760**

Table of Contents

Acronym List	2
Executive Summary	3
1 Background	5
2 Evaluation	5
Phase I	5
Phase II	6
Phase III	6
Risk Evaluation	7
3 Results/Recommendation	8
4 Recommended Alternative 5 Description	10
5 Future Upgrade Decisions	11
Appendix A: Scoring Matrix	13
Appendix B: Risk Evaluation	14

Acronym List

FERC	Federal Energy Regulatory Commission
HED	Hydroelectric Development
HMI	Hydro Modernization Initiative
IRP	Integrated Resource Plan
MW	Megawatt
REC	Renewable Energy Credit
RPS	Renewable Portfolio Standard
SRA	Spokane River Assessment

Executive Summary

In 2011, plans to address ongoing maintenance and operational issues at the Nine Mile Hydroelectric Development (HED) by replacing the Units 1 and 2 turbines were complicated by unexpected failures of the newer vintage turbine in Unit 4. This prompted Avista to initiate a review of the Nine Mile HED to determine the best course of action. Encouraged by initial economic findings at Nine Mile, Avista staff also decided it was prudent to conduct a broader assessment of the entire Spokane River Project¹ to determine if upgrading Nine Mile was the best Spokane River investment or if other Spokane River upgrades could provide comparable or better value to Avista's stakeholders. This broader evaluation led to the Spokane River Assessment (SRA). The SRA evaluated current conditions of the Spokane River Project and potential improvements.

The SRA was performed in three phases by a cross functional Project Team. A phased approach was selected, which provide multiple opportunities to assess and report on project progress and direction to a cross functional Policy Team. The Project Team relied upon smaller specialized groups, called Task Groups, to provide more detailed evaluations (i.e. financial, operation and maintenance, safety, and regulatory/permitting considerations).

In Phase I, the team developed a SRA framework, which included establishing the cross-functional Project Team, identifying goals and criteria, identifying the upgrade alternatives for the Spokane River plants, and developing the tools necessary to research, quantify, and evaluate the various upgrade alternatives.

In Phase II, the team developed reconnaissance level engineering evaluations to determine estimates of potential power generation and associated construction costs. The information from these studies was evaluated by the Financial Task Group to determine if a supportive business case could be made for any of the upgrade alternatives. During the development of the engineering evaluations, three factors changed which led the Financial Task Group and the Project Team to determine not to continue to evaluate any upgrade alternatives with the exception of Nine Mile. These factors were:

1. Significant declines in natural gas prices,
2. A stalled federal carbon cap and trade program (carbon tax), and
3. Passage of a Washington State biomass bill that qualifies Avista's Kettle Falls Project for renewable energy credit (REC) and satisfies Avista's foreseeable need for additional RECs to meet its Washington State renewable portfolio standard (RPS) requirements.

These factors should be periodically monitored and, if significant changes are noted, the potential upgrade alternatives that were "mothballed" should be reassessed. Avista renews its integrated resource plan (IRP) every two years. These factors are considered in that process. In between IRP cycles, should any of these factors significantly change; a simple algorithm relying upon these four factors can be used to determine whether an update of the SRA is warranted.

Following the evaluation of potential alternatives, the SRA Project Team determined the only plant that warranted further evaluation was the Nine Mile HED due to its chronic maintenance and operational issues. These issues are primarily a result of aging equipment, reservoir sedimentation, and damage to submerged equipment from the sediment. The team further concluded that long-term regulatory and

¹ Includes Post Falls, Upper Falls, Monroe Street, Nine Mile, and Long Lake Hydroelectric Developments.

license concerns could result from continued operation without addressing the existing equipment, technology, and sediment management challenges.

In Phase III, the Project Team evaluated five alternatives at Nine Mile HED. Four of the alternatives would replace the existing powerhouse with a new, higher capacity powerhouse. The fifth alternative would consist of both an upgrade and a rehabilitation of the existing plant.

The Project Team conducted a structured evaluation process to evaluate the alternatives at Nine Mile. One tool employed by the team was an evaluation matrix which considered specific criteria tailored to the Nine Mile site. The matrix provides a common set of key metrics to evaluate the financial, operation and maintenance, environmental and permitting, and safety aspects of each alternative.

As a result of the evaluation, the Project Team determined the highest ranked option was Alternative 5, which was the previously planned upgrade of Units 1 and 2 coupled with rehabilitation of Units 3 and 4.

The Project Team also strongly recommends that Alternative 5 include modeling the project's sediment bypass system to identify modifications to improve the system's reliability and efficiency. These considerations are necessary because the system has not performed up to its potential and because hydraulic conditions in the forebay will be changed by adding higher capacity turbines in Units 1 and 2.

The financial value of Alternative 5 was \$68M better than the highest-ranked and lowest-cost New Powerhouse Alternative (Alternative 4).

Based on the evaluation matrix, the Project Team agreed that Alternative 4 (built in the footprint of the existing powerhouse structure) ranked the highest of the new powerhouse alternatives.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Generation DC Supplied System Update

ER No: ER Name:

4174 Gen DC Supplied System Upgrade

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$4,019¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	700	0	0	0	0	0	0	0	0	0	350	0	350
2017	1,033	0	0	0	0	0	0	0	0	0	1,033	0	0
2018	1,220	0	0	0	0	0	0	0	0	0	1,220	0	0

Business Case Description:

This project will update existing DC systems to meet Avista's current Generation Plant DC System Standard. Change DC System configurations to more easily comply with the NERC requirements for inspection and testing. Address battery room environmental conditions to optimize battery life. Replace any legacy UPS systems with an inverter system. Address auxiliary equipment based on life cycle.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Generation DC Supplied System Update	Assessments:	
Requested Amount	\$8,141,000	Financial:	5.52%
Duration/Timeframe	6 Year Program	Strategic:	Reliability & capacity
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Glen Farmer	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston / Andy Vickers	Assessment Score:	88
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This project will update existing DC systems to meet Avista's current Generation Plant DC System Standard. Change DC System configurations to more easily comply with the NERC requirements for inspection and testing. Address battery room environmental conditions to optimize battery life. Replace any legacy UPS systems with an inverter system. Address auxiliary equipment based on life cycle. This program anticipates starting engineering and design in 2015.	describe any incremental changes that this Program would benefit present operations	\$ 961,000	\$ -	\$ -	2

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	n/a	\$ 250,000	\$ -	\$ 75,000	15
Alternative 1: Replace in conjunction with larger project.	describe any incremental changes in operations	\$ 700,000	\$ 25,000	\$ 75,000	2
Alternative 2: Replace as components fail.	describe any incremental changes in operations	\$ 300,000	\$ 100,000	\$ 75,000	0
Alternative 3 Name: Brief name of alternative (if applicable)	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
2015	\$ 682,000	\$ -	\$ -	\$ 382,000
2016	\$ 961,000	\$ -	\$ -	\$ 961,000
2017	\$ 1,315,000	\$ -	\$ -	\$ 1,315,000
2018	\$ 1,743,000	\$ -	\$ -	\$ 1,743,000
2019	\$ 1,740,000	\$ -	\$ -	\$ 1,740,000
2020	\$ 1,700,000	\$ -	\$ -	\$ 1,700,000
2021				
Total	\$ 8,141,000	\$ -	\$ -	\$ 7,841,000

4174		

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
4174	\$ 682,000	\$ 961,000	\$ 1,315,000	\$ 1,743,000	\$ 1,740,000	\$ 6,441,000	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 682,000	\$ 961,000	\$ 1,315,000	\$ 1,743,000	\$ 1,740,000	\$ 6,441,000	Additional Justifications: This program makes compliance with NERC PRC-005 Reliability Standard more tenable and significantly reduces plant outage times now <u>required</u> for periodic testing to meet the standard.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

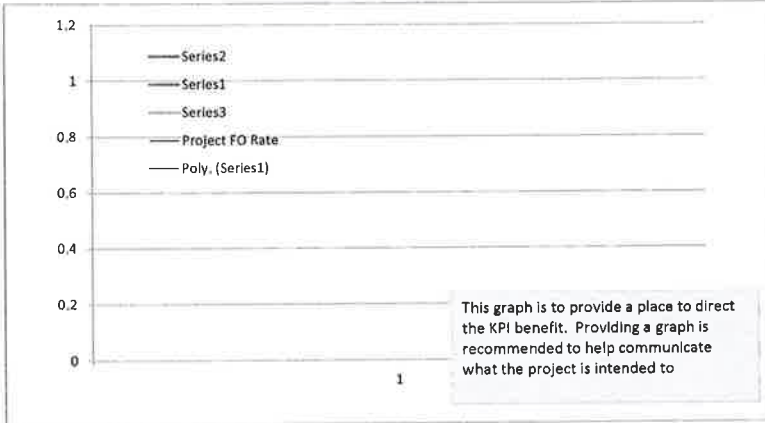
Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

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



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

		Capital Cost	
Previous			
2015	\$	100,000	
2016	\$	700,000	
2017	\$	700,000	
2018	\$	700,000	
2019	\$	700,000	
2020	\$	700,000	
2021	\$	800,000	
2022	\$	800,000	
2023	\$	800,000	
2024	\$	800,000	
2025	\$	800,000	
Total	\$	7,600,000	\$ 4,700,000

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template
	10/29/2015	Updated w/ 5 yr approvals

To: Generation DC Battery Systems Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply SK

Date: 2/11/2016

Re: Generation DC Battery Systems Investment Considerations

The following pages are a summary of the Generation DC Battery Systems program (provided by the Generation Management department), which summarizes the considerations driving this program.

Activity Summary

General Information

Project:	Generation DC Supplied System Update	Date:	4/24/15
Plant Manager:	Hydro: Mike Gonnella, Thermal: Thomas Dempsey	Revision	5/15/15
Plant Name:	<i>System Wide Proposal</i>	Date:	
ER#:		Priority	Primary
		Category:	

Problem Identification

Problem Equipment Replacement/Upgrade

Category:

Problem Description: Currently the Generation Battery Replacement Program addresses battery bank replacements and chargers. At the 14 plants there are currently 44 different battery banks. This program will not replace the need for the current Battery Replacement Program. With updates to the DC System Standards, changes in NERC requirements for inspection and testing, addressing HVAC conditions of existing battery rooms, and auxiliary equipment supporting the DC systems the current program needs to be updated. The new Program will be referred to as the Generation DC Supplied System Update. This includes replacing any legacy Uninterruptable Power Supplies (UPS) systems with an inverter with appropriate static bypass switches and manual bypass systems.

Proposed Activity Information

Activity Objectives:

The objectives of this activity are to complete a design and implementation plan to meet the following:

1. Update existing DC systems to meet our current Generation Plant DC System Standard.
2. Change DC System configurations to more easily comply with the NERC requirements for inspection and testing.
3. Address battery room environmental conditions to optimize battery life.
4. Replace any legacy UPS systems with an inverter system.
5. Address auxiliary equipment based on life cycle.

General Activity Requirements:

1. Generation Plant DC System Standard:
 - 1.1 Current Load List, Inverters, Battery Chargers, Bypass switches, Battery Racks, Batteries, Redundant battery banks.
 - 1.2 Hydrogen Sensing and Fire Alarming, Eyewash Station, Lighting.
 - 1.3 Wall separation of Batteries and Auxiliary equipment,
 - 1.4 PLC monitoring, Operating Screen Updates.
 - 1.5 DC Panels, Disconnect Switches, Voltage Conversion Devices for communication equipment that operate at different voltages.
 - 1.6 Drawings, Construction Documents, I/O list, Plans, Schedules, Manuals, As-Builts.
2. Replace UPS System:
 - 2.1. Install inverter in place of UPS and size it to meet critical loads.
 - 2.2. Provide a static bypass system to allow for bumpless transfer.
 - 2.3. Provide a manual means to service the inverter system – from an independent AC source as bypass.
3. Battery Room Conditions:
 - 3.1. Most of the battery rooms are over 30 years old and need to be evaluated to meet the above HVAC requirements. Temperature has the largest effect on the battery life. 15 degrees above rated temperature

Section 1

can reduce battery life by 50%.

- 3.2. Floor coatings, containment walls, door seals and lighting in the rooms need to be updated.
- 3.3. There is a need to have two areas, one for the batteries and one for the supporting axially equipment.

4. Auxiliary Equipment evaluation:

This auxiliary equipment is currently replaced based on failure, breakdown, and repairs. It is not all done at the same time so we have several cases where charges might be only ten years old but the monitoring of the system is nonexistent or no more capability to bring in monitoring points. We only get the system back to a working state. The following items will be evaluated:

- 4.1. Chargers, Switches, Disconnects, Panels, Circuits, PLC I/O, Instruments, Motors, Louvers & Ducting.

Schedule Constraints:

- 1. In order to meet a Plant scheduled outage time frame the design and ordering of equipment must be done well in advance of doing the work.
- 2. There are long-lead times for batteries 12 weeks minimum.
- 3. Crew availability (electric shop) is limited each year.
- 4. Coordination of plant de-energizing times during the work.
- 5. Physical space to construct new battery rooms to meet current practices.
- 6. Requested budget would execute this program at one station each year.

Estimated Cost: \$700,000 per year

Cost Basis: Professional Judgment, Previous Experience, Little Falls DC Supplied System reconfigure and update.

Impact of Inaction: If no action is taken, we would continue our current practice of replacing only the battery banks and the loss of life expectancy due to temperature and other environmental conditions will continue. Reliability of the DC System will be reduced. NERC required testing and inspection will take more time to plan, coordinate and implement. The serviceability of the existing system will be affected. As problems arise there will need to be a focus on buying a variety of spares and other devices to bring the system back to normal.

Planning Decision (To Be Completed by GPSS Planning Manager)

Proceed with Planning?

X
Yes

No

		X
O&M	Program	Specific Activity
Proposed Funding Mechanism		

Date of Decision:

Notes:

In support of this project, comprehensive investigations were conducted at each plant. The example to follow is based on the Little Falls DC Battery System. It was finished at the beginning of 2015 and it meets all of the requirements above. This project would identify potential issues with the DC and AC-UPS panels and circuits, but would not address them.

Generation DC Supplied System Update Project Plan

1. Introduction

In the current budgeted Generation Battery Replacement Program was set up to replace generating station batteries and chargers if necessary based on an interval basis. As battery testing has been implemented, some of these replacement projects have focused on condition based problems and have deferred the plans of the battery program. In the current program there is no provisions to meet the NERC requirements, Avista DC system standards or life cycle of the auxiliary equipment to support and monitor the battery banks. The only time we have addressed these issues are during a set of major upgrade projects like Little Falls & Nine Mile. Little Falls is the best example to follow for all of the plants.

2. Objectives

The objectives of this activity are to create a more reliable DC System that continues to protect the plant and generating equipment by implementing the new DC System Design Standard. Additionally, this effort will provide remote operation and monitoring capabilities, incorporate previous service expansions, support future system expansion, improve operator safety at the plant, and ensure regulatory compliance.

3. Performance Measures

To ensure the successful completion of this project can be demonstrated, the following performance measures have been developed. Once this project is completed:

- 3.1 Reliability will be improved as there will be no forced DC outages due battery bank failure or auxiliary equipment failure.
- 3.2 Remote operation and monitoring capabilities will be realized.
- 3.3 The room separation will allow better temperature control and serviceability of the DC system.
- 3.4 NERC requirements for inspection and testing will be easier to perform and will not compromise the plant operation.
- 3.5 The plant DC Systems at each plant will be the same for operations to monitor.

4. Requirements

Any alternative developed to meet the project objectives must:

- 4.1 Use current standards for DC systems.
- 4.2 Allow for NERC requirements for inspection and testing.
- 4.3 Address the battery room conditions for containment, reduced life and action plan based on testing results.
- 4.4 Have a plan for auxiliary equipment breakdown and failures.

5. Alternative Analysis Summary

four alternatives were identified to address the problem. The alternatives included 1) no action, 2) address the DC system standards as we are doing other system or unit upgrades. 3) Replace parts as they fail with the goal of making it like our standard over time. 4) Establish an independent DC system replacement program to bring plants to a standard as quickly as possible.

All of the alternatives described above were considered.

The “no action” alternative (Alternative 1) allows for the scope of any maintenance work to balloon into a large project as if a problem arises there is not defined plan to address the problem. This can extend outages and leaves the plant exposed for extended time frames for repairs and/or replacement parts. At that time of the failure we would temporarily restore the system back to working condition with the

Section 1

knowledge that we have to address it later.

Alternative 1, No Action is not tenable. This alternative places plant equipment at risk if a key element of the DC system were to fail, particularly the battery system. It also does not provide an easier means to perform required NERC testing and does not provide a means to plan for replacements costing more money. Also, critical AC loads served from the UPS have increased to the point where we can no longer get a UPS that is of necessary size. We either have to install more UPS system, creating more maintenance work and increasing the NERC testing requirements. It also does not address any other issues that our design standard is intending to address.

For alternative two, when we address the DC system as part of another capital project then the scope of the DC system upgrade project is often a lower level effort and is subordinated to the primary project. The desired plans are skewed and we may not get the final system installed to our standard.

Alternative 2 (replace in conjunction with larger plant upgrades) was evaluated. The table below shows the current upgrade plans. While planning and scoping management can address the concerns about making sure the DC Supplied Systems can be fully addressed, we do not have plans to work through all of the plants. This would leave the program incomplete.

Year	Plant	Comments	Cost
2014	Little Falls	Example to follow	\$700k
2015	Nine Mile	Being addressed by Units 1&2 project	\$650k
2015	GCC	Just battery bank replacement.	\$250k
2016	Monroe Street	Doing design in 2015. Basis of design done. Install 2016	\$700k
2017	Cabinet Gorge	Start Design in 2016 install in 2017. Existing problems.	\$700k
2018	Long Lake	Do design in conjunction with Unit Upgrades.	\$700k
2019	Post Falls	Do design with plant rebuild.	\$700k
2020	Kettle Falls	Steam Turbine & Gas Turbine DC System.	\$700k
?	Upper Falls	No upgrade plans	\$800k
?	Coyote Springs II	No upgrade plans	\$800k
?	Boulder Park	No upgrade plans	\$800k
?	Northeast	No upgrade plans	\$800k
?	Noxon Rapids	No upgrade plans	\$800k
?	Rathdrum	No upgrade plans	\$800k

The third alternative of replacing parts as they fail doesn't address any of the requirements for Standards, NERC inspection and testing, or the room itself. The parts fail at different time and we are subject to more outages. Clearly replacing failed parts and components is a more costly item than performing planned work.

Alternative 3 of replacing as components fail and gradually build out to our standard has the benefit of minimizing the costs of this program. However, it would be unpredictable and if we waited to failure it would require a "drop in" type of response for a major Balance of Plant system. This would make labor planning impossible and would place the plant at a higher likelihood of forced outages and equipment damages if we wait for failure. While NERC required testing and other condition monitoring by operators would significantly reduce this likelihood, it would not change the unplanned nature of pursuing this alternative.

The fourth alternative (Construct new systems as part of programmatic effort) would allow for a

Section 1

programmatic approach to upgrading the station DC systems. While it may be more cost initially, it will save time and expense over the life cycle of the station with the flexibility it provides to address future maintenance and the ability to perform NERC required testing. It also has the benefit allowing a schedule to be established for both the engineering and the installation. Both of these resources are constrained and it would allow options of contracting or in-house consideration.

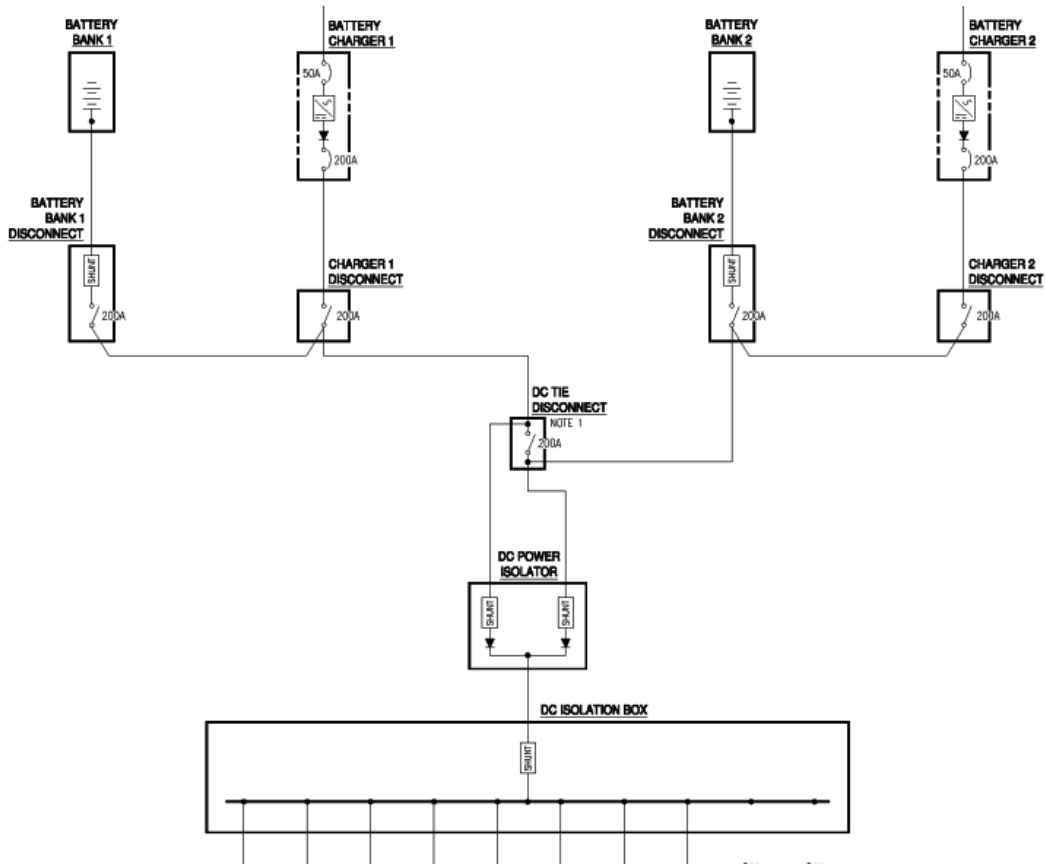
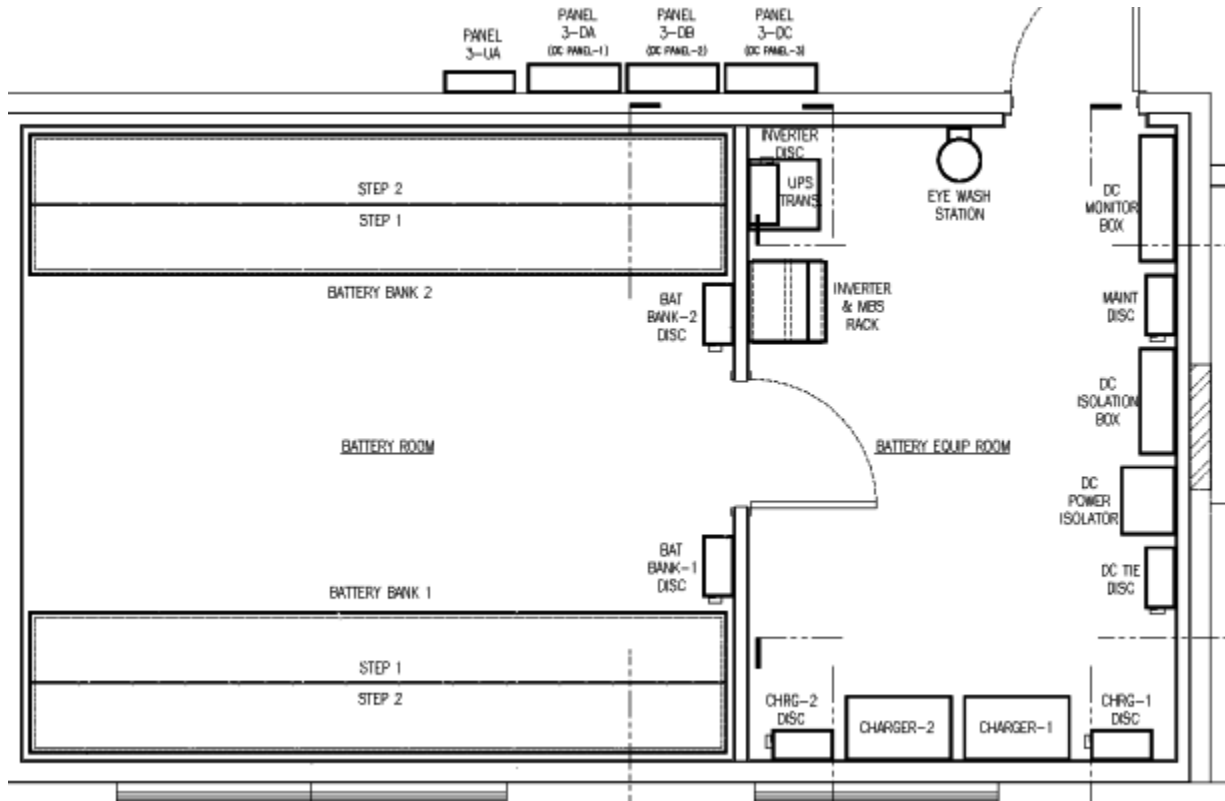
The overall plan for the Generation DC System Update will address the following plants for the years specified. The first year will consist of the Initiation, Planning and Design phase. The second year will consist of the Construction, Monitoring & Control and Closeout phase of the project:

Year	Plant	Comments	Cost
2014	Little Falls	Example to follow	\$700k
2015	Nine Mile	Being addressed by Units 1&2 project	\$650k
2015	GCC	Just battery bank replacement.	\$250k
2016	Monroe Street	Doing design in 2015. Basis of design done. Install 2016	\$700k
2017	Cabinet Gorge	Start Design in 2016 install in 2017. Existing problems.	\$700k
2018	Long Lake	Do design in conjunction with Unit Upgrades.	\$700k
2019	Post Falls	Do design with plant rebuild.	\$700k
2020	Kettle Falls	Steam Turbine & Gas Turbine DC System.	\$700k
2021	Upper Falls	Increase adjustment, 20 year life for DC system.	\$800k
2022	Coyote Springs II	20 year life for DC system.	\$800k
2023	Boulder Park	20 year life for DC system.	\$800k
2024	Northeast	20 year life for DC system.	\$800k
2025	Noxon Rapids	20 year life for DC system.	\$800k
2026	Rathdrum	20 year life for DC system.	\$800k

Using Little Falls as an example we have standardized on a number of things for reasons of quality, life cycles, breakdowns and constructability. There are 34 drawings that show the electrical, mechanical, protection, control, monitoring, calculations, details and arrangement of equipment for the new Generation DC System.

Below is Little Falls Layout of the Battery Room, auxiliary equipment in the Battery Equip Room and some on the outside wall. Also is the overall one-line for the Little Falls DC System:

Section 1



6. Preferred Alternative Description

An evaluation matrix was developed and scored. The system is based on a “Boxing Style 10 Point Must System” which means the best alternative to address the criteria is ranked at a 10. All other rankings are based relative to that alternative being a “10”. From this effort it was determined the preferred alternative is to proceed with alternative 4, creating a new program.

Generation DC Supplied System Update						
Alternative Evaluation						
Criteria Alternative	Plant Outage Risk	NERC Testing Compatibility	Maintenance Flexibility	Cost	Schedule	Resource Impacts
Alternative 1	3	3	3	10	5	4
Alternative 2	8	9	8	8	9	9
Alternative 3	5	7	7	9	6	6
Alternative 4	10	10	10	9	10	10
					Scores	
					Alternative 1	28
					Alternative 2	51
					Alternative 3	40
					Alternative 4	59

The other plants that are on schedule for battery bank replacements have also been looked at and the overriding theme is the system as a whole should be addressed which resulted in the above schedule.

7. Acquisition Strategy & Key Assumptions

The overall DC systems are the same for each plant. The only thing that is different is the ampacity of the battery banks. This is a small cost difference compared to the overall project cost. Based on the number of Units and auxiliary systems involved the ampacity of the banks will be in three different sizes.

Key assumptions in the development of the resource loaded schedule include:

- 7.1 Design will be performed using Avista resources as the Project Manager. Coffman Engineering will be used to create the design. The previous design will be used as a guiding template for requirements, calculations, drawings, lists, specifications and schedules.
- 7.2 There will be one major procurement package that will have staged deliveries (Battery banks, racks, panels, switches, disconnects, chargers, invertors, mechanical, lighting, tray, piping, controller, instruments and wire) followed by implementation. Multiple Factory Acceptance Testing will be part of this procurement.
- 7.3 Equipment vendors will be able to support the planned procurement and implementation schedule.
- 7.4 Material costs include Avista overhead and sales tax.
- 7.5 Avista resources include applicable overhead rates.

Section 1

- 7.6 Equipment and material costs will be subject to stores and purchasing overheads (12.2%).
- 7.7 Travel time for crew will be overtime (to maintain a 40-hour work week); assume 12 hours per week for travel time.
- 7.8 Travel time for the relay tech during closeout phase will be overtime; assume 8 hours per week for travel time and bunkhouse charges.
- 7.9 Two vehicles are required per week for crew transportation.
- 7.10 The cost of using the bunkhouse at Noxon Rapids or Cabinet Gorge to house the crew is \$1,200 per week (plus overheads).
- 7.11 Engineering travel costs are estimated at \$150 per week (one trip per week).
- 7.12 Construction management will span the duration of the activity. Engineering labor will be assigned a total of one month per construction management activity.
- 7.13 An X08 Relay Tech resource will be assigned for the duration of construction.
- 7.14 Checkout, testing and commissioning, and as-builts will be required at project closeout.

Major interfaces for the project include:

- 7.15 A consulting engineering firm with the ability to engage in mechanical, civil and electrical, control systems and protection engineering.
- 7.16 Planned outages must be submitted to the generation dispatch schedulers for approval.
- 7.17 Any major permitting must be coordinated through Avista's Environmental Group in consultation with appropriate regulatory agencies.

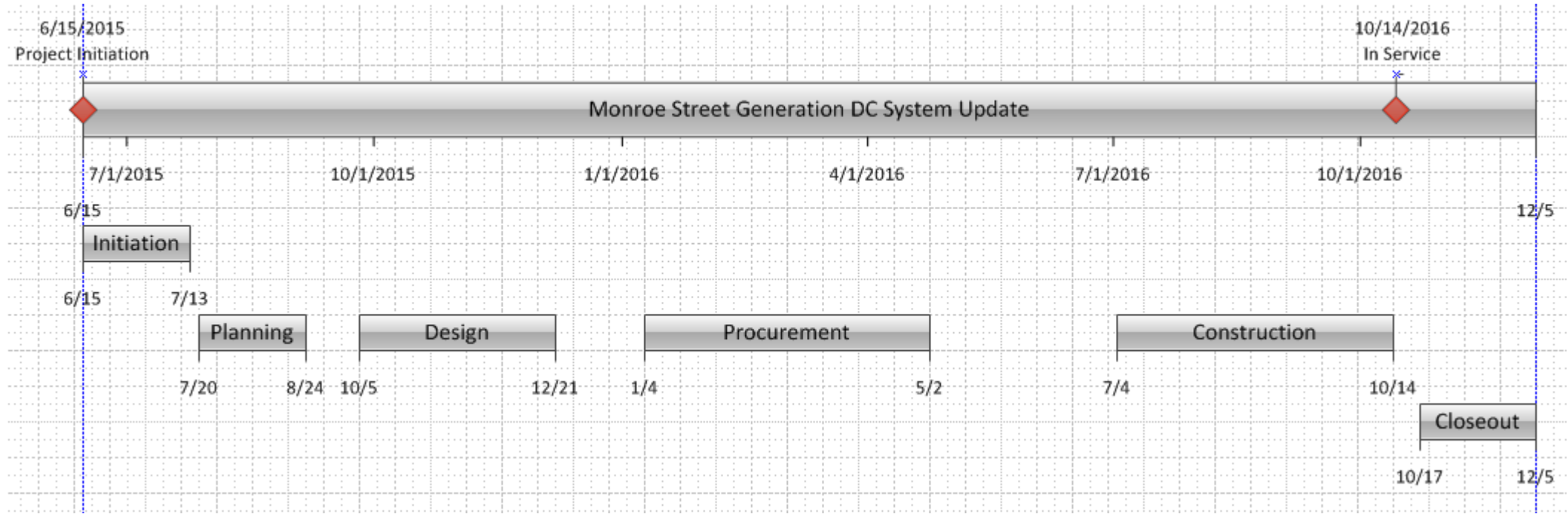
8. Schedule Constraints

- 8.1 Implementing a solution will require the DC system be de-energized and can only occur during low water or annual outage. We will need to have battery trailer available to cover some load.
- 8.2 There are long-lead times for some of the equipment; the longest is approximately 4 months based on previous experience.
- 8.3 Crew availability (electric shop) is limited.

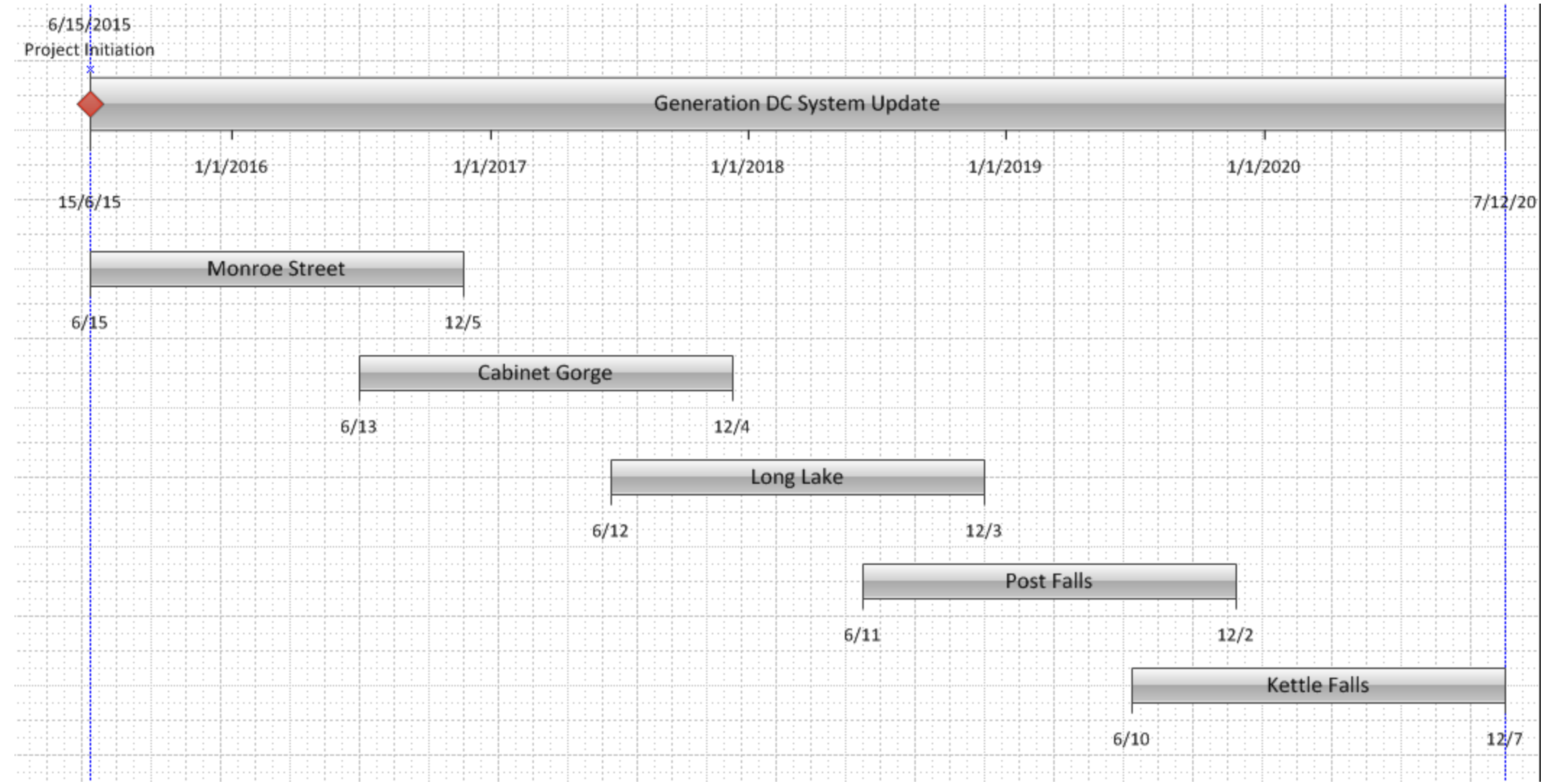
9. Resource Loaded Schedule

It is estimated that each project will have duration of approximately 18 months and a total budgeted cost of \$700, 000.

Section 1
Time Line for Monroe Street Project:



Section 1
Time Line for First Five Generation Plant Projects:



**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Coyote Springs LTSA

ER No: ER Name:

4142 CS2 LTSA Capital Add

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$2,180¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	730	0	0	183	0	0	183	0	0	183	0	0	183
2017	730	0	0	183	0	0	183	0	0	183	0	0	183
2018	720	0	0	180	0	0	180	0	0	180	0	0	180

Business Case Description:

This program covers the capital accruals required to execute the LTSA with GE for Coyote Springs Unit 2. This is the same as the current LTSA item. This program will fluctuate to account for the variable operating hours and operating conditions that feed into the LTSA formula.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Investment Business Case



Investment Name:	Coyote Springs LTSA	Assessments:	
Requested Amount	\$800,000	Financial:	High - Exceeds 12% CIRR
Duration/Timeframe	5+ Year Program	Strategic:	Life Cycle Programs
Dept., Area:	Generation Production Substation Support	Operational:	Operations require execution to perform at current levels
Owner:	Thomas Dempsey	Business Risk:	ERM Reduction >0 and <= 5
Sponsor:	Jason Thackston	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 capital accruals required to execute the LTSA with GE for Coyote Springs Unit 2. This is the same as the current LTSA item. This program will fluctuate to account for the variable operating hours and operating conditions that feed into the LTSA formula.	This program assures best response times to outages and forced outages	\$ 800,000	\$ -	\$ -	10

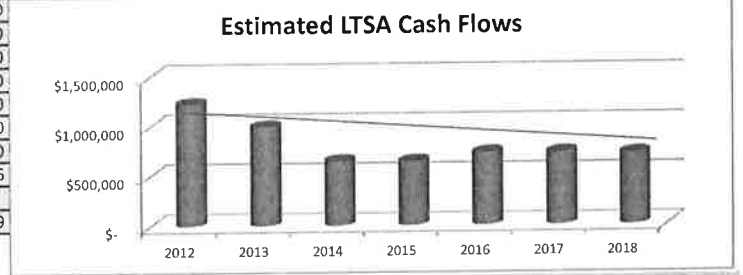
Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo : This is a contract with GE to provide the necessary services, parts, and labor to maintain the Frame 7EA gas turbine, which is the major component of the Coyote Springs Unit 2 combined cycle plant (CCCT).	n/a	\$ 800,000	\$ -	\$ -	15
Alternative 1: Brief name of alternative (if applicable) none	n/a	\$ -	\$ -	\$ -	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
2012-2016

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 10,000	\$ -	\$ -	\$ 10,000
2012	\$ 1,232,735	\$ -	\$ -	\$ 2,231,043
2013	\$ 998,299	\$ -	\$ -	\$ 1,000,000
2014	\$ 649,943	\$ -	\$ -	\$ 711,000
2015	\$ 644,712	\$ -	\$ -	\$ 1,030,000
2016	\$ 730,000	\$ -	\$ -	\$ 730,000
2017	\$ 730,000	\$ -	\$ -	\$ 730,000
2018	\$ 720,000	\$ -	\$ -	\$ 720,000
2019	\$ 710,000	\$ -	\$ -	\$ 710,000
2020	\$ 400,236	\$ -	\$ -	\$ 400,236
Future	\$ 2,451,565	\$ -	\$ -	\$ -
Total	\$ 9,277,491	\$ -	\$ -	\$ 8,272,279

Associated Ers (list all applicable):

4143			
------	--	--	--



Mandate Excerpt (if applicable):
n/a

Additional Justifications:
This LTSA is a contractual agreement between Avista and GE.

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 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

Key Performance Indicator(s)
Expected Performance Improvements
KPI Measure: Unit Availability

Prepared signature

Reviewed signature _____
Director/Manager

Other Party Review signature _____
(if necessary) *Margie Stevens* Director/Manager

[Large empty rectangular box for content]

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Coyote Springs LTSA Project Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply SK

Date: 2/11/2016

Re: Coyote Springs LTSA Project Investment Considerations

The following page contains a valuation summary (provided by the Generation Management department), which summarizes the benefits of the renegotiated LTSA driving the capital investment under this business case.

LTSA Renegotiation Project- Final Valuation Summary

LTSA Payment Savings

30% discount plus escalation holiday to a maximum independent benefit of \$3,000,000

	Discounted NPV	Actual	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Old Contract	24,520,000	33,764,613	1,752,508	3,027,574	3,110,832	3,196,380	3,284,281	3,374,598	3,467,400	3,562,753	3,660,729	3,761,399	1,566,159	-	-	-	-	-
New Contract	15,554,000	21,143,511	1,226,756	2,108,836	2,108,836	2,108,836	2,108,836	2,108,836	2,108,836	2,108,836	2,108,836	2,108,836	937,230	-	-	-	-	-
LTSA Payment Savings	8,966,000	12,621,101	525,752	918,738	1,001,996	1,087,544	1,175,444	1,265,762	1,358,564	1,453,917	1,551,893	1,652,563	628,929	-	-	-	-	-

Enhancement Package & Services

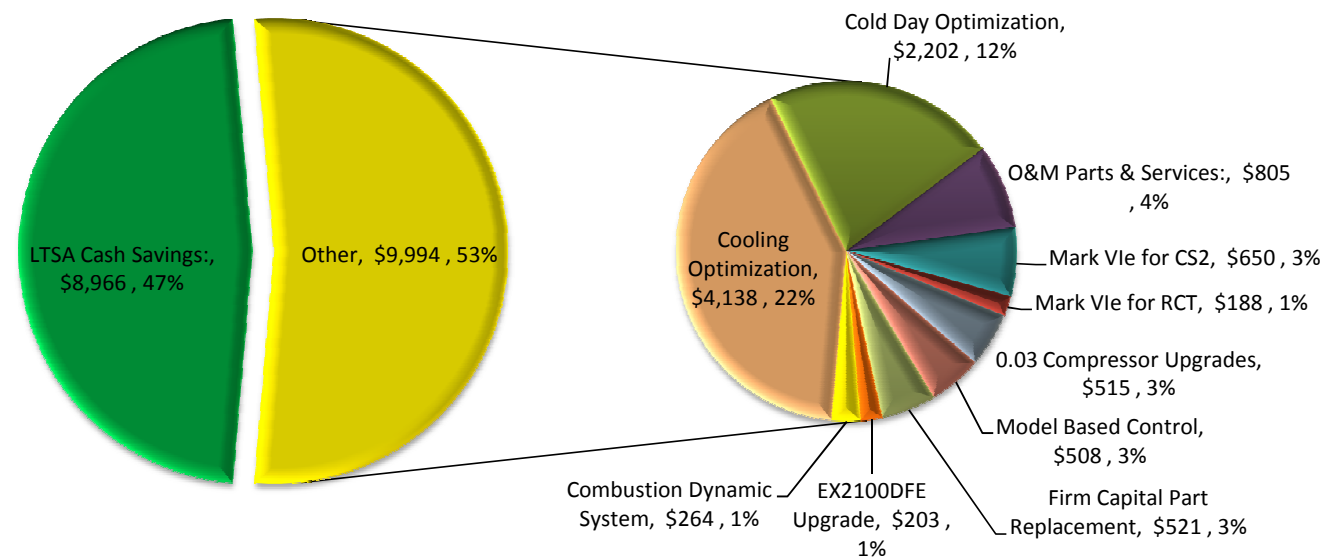
	Discounted NPV	Actual	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
15 Y NPV Cold Day Optimization	2,202,000	3,835,682	-	112,247	179,505	195,185	202,650	207,253	228,505	218,415	228,005	238,024	332,207	336,779	345,255	383,756	421,401	206,494
15 Y NPV Cooling Optimization	4,138,000	7,273,595	-	239,118	321,234	338,257	352,244	367,635	391,862	404,853	425,037	446,325	645,541	655,795	674,566	757,034	838,033	416,061
Routine Maintenance Spares	334,000	461,760	20,207	41,254	42,400	43,578	44,789	46,033	47,312	48,627	49,978	51,367	26,216	-	-	-	-	-
CDM Ownership	264,000	500,000	-	-	-	-	-	-	-	-	-	-	500,000	-	-	-	-	-
RCT Part Refurbishment and FSE	471,000	500,000	-	425,000	75,000	-	-	-	-	-	-	-	-	-	-	-	-	-
EX2100DFE Upgrade	203,000	284,802	-	26,609	27,348	28,108	28,889	29,691	30,516	31,364	32,236	33,131	16,909	-	-	-	-	-
Mark VIe for CS2	650,000	914,015	-	85,395	87,768	90,206	92,713	95,289	97,936	100,658	103,454	106,329	54,267	-	-	-	-	-
Mark VIe for RCT	188,000	200,000	-	200,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Model Based Control	508,000	714,764	-	66,779	68,635	70,542	72,502	74,516	76,587	78,715	80,902	83,150	42,437	-	-	-	-	-
Firm Capital Part Replacement	521,000	986,469	-	-	-	-	-	-	-	-	-	-	986,469	-	-	-	-	-
0.03 Compressor Upgrade	515,000	515,000	515,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Enhancement & Svc Benefits	9,994,000	16,186,089	535,207	1,196,402	801,889	765,876	793,786	820,418	872,719	882,632	919,612	958,325	2,604,048	992,575	1,019,821	1,140,790	1,259,434	622,555

Total Project Benefit Summary

	Discounted NPV	Actual	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Totals Annual Project Benefits	\$ 18,960,000	28,807,190	1,060,959	2,115,140	1,803,885	1,853,420	1,969,230	2,086,180	2,231,283	2,336,549	2,471,505	2,610,888	3,232,977	992,575	1,019,821	1,140,790	1,259,434	622,555
Capital Investment	\$ (3,771,000)	(4,000,000)																
Total	\$ 15,189,000	24,807,190																

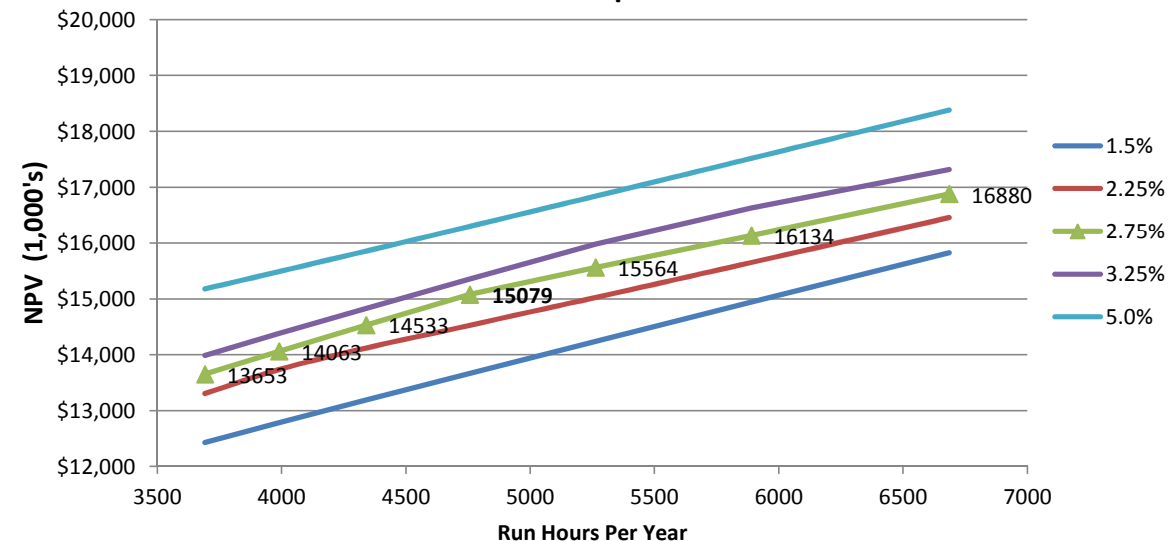
Items	Descriptions
Capital Investment	- This is the cost for the capital components of the enhancement pkg. We estimate an approximate 50% discount compared with list pricing
15 Y NPV Cold Day Optimization	- This is a software package that optimizes the control of the gas turbine at low ambient temperatures to increase output and improve efficiency
15 Y NPV Cooling Optimization	- This is a package of mechanical modifications that optimizes use of cooling air throughout the gas turbine during operations for increased output and improved efficiency
Routine Maintenance Spares	- Spares necessary for routine maintenance during normal operation. These were not covered in the original contract.
CDM Ownership	- We take ownership of the combustion dynamics monitoring system. This unit would cost about \$700,000 at the end of the contract to replace. Necessary for reliability
RCT Part Refurbishment and FSE	- GE has agreed to repair all parts removed from the machine at Rathdrum for use in the next Hot Gas Path inspection
EX2100DFE Upgrade	- Updates the existing gas turbine exciter control system. It will now match the other three generators on site.
Mark VIe for CS2/Discount for RCT	- Replaces obsolete control systems at Rathdrum and Coyote Springs 2. Needed for Cold Day and Cooling Optimization
Model Based Control	- Includes enhanced transient stability and autotune- this eliminates our need for periodic paid tuning. Also needed for Cold Day Optimization
Firm Capital Part Replacement	- Certain big capital parts now have firm replacement schedules and may not be left installed under a Condition Base Maintenance program- unless we mutually agree on compensation back.
0.03 Compressor Upgrade	- We were able to reduce the cost of a compressor upgrade project as part of this negotiation effort.

Cash, Enhancement Package, & Benefit Breakout



Key Assumptions: Inflation 2.75%, Internal Discount 6.58%, Annual Run Hours 4,757

Influence of Inflation and Run Hours per Year on Net Present Value



**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Noxon Station Service

ER No: ER Name:

4171 Noxon Station Service

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$2,767¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,477	0	0	0	0	0	0	0	0	0	0	1,477	0
2017	1,172	0	0	0	0	0	0	0	0	0	0	1,159	13
2018	118	0	0	0	118	0	0	0	0	0	0	0	0

Business Case Description:

An engineering study has shown that the station service equipment at Noxon is over-rated and may not interrupt a close in fault should one occur. In addition, as the plant load has shifted, we would no longer be able to operate all five units if one of the station service transformers failed. This project replaces station service equipment and cables. The replacements include Station Service transformers A&B, 2000A Bus Ducts from Station Service transformers to Power Centers, replace Power Centers and Tie Bus, Motor Control Centers 1 through 4, 1,000 kVA Emergency Generator, Motor Control Center 4 PLC, and the Emergency Load Center.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Noxon Station Service	Assessments:	
Requested Amount	Estimated Total Capital Expenditure	Financial:	4.06%
Duration/Timeframe	4 Year Project	Strategic:	Generating plant performance
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Andy Vickers	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston	Assessment Score:	80
Category:	Project		
Mandate/Reg. Reference:	n/a		

Recommend Project Description:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
An engineering study has shown that the station service equipment at Noxon is over-rated and may not interrupt a close in fault should one occur. In addition, as the plant load has shifted, we would no longer be able to operate all five units if one of the station service transformers failed. This project replaces station service equipment and cables. The replacements include Station Service transformers A&B, 2000A Bus Ducts from Station Service transformers to Power Centers, replace Power Centers and Tie Bus, Motor Control Centers 1 through 4, 1,000 kVA Emergency Generator, Motor Control Center 4 PLC, and the Emergency Load Center.		The service breaker issue requires more extensive switching than if this project is performed.	\$ 3,110,118	\$ (50,000)	\$ -	2

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	If no action is taken, there is a risk of catastrophic switch gear failure and generator unit forced outage for up to a year. Additionally, forced load shedding under certain operational scenarios could be necessary.	n/a	\$ -	\$ 50,000	\$ -	9
Alternative 1: Brief name of alternative (if applicable)	Bring in new External Source for Station Service from outside the plant. This would involve tapping a feeder and constructing new line across the river and constructing a new station service system including new transformer, power center, and cables.	describe any incremental changes in operations	\$ 4,000,000	\$ -	\$ -	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

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2015	\$ 343,228	\$ -	\$ -	\$ 343,228
2016	\$ 1,477,106	\$ -	\$ -	\$ 1,477,106
2017	\$ 1,171,577	\$ -	\$ -	\$ 1,171,577
2018	\$ 118,208	\$ -	\$ -	\$ 118,208
2019	\$ -	\$ -	\$ -	\$ -
2020+	\$ -	\$ -	\$ -	\$ -
Total	\$ 3,110,118	\$ -	\$ -	\$ 3,110,119

Associated Ers (list all applicable):

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
0	\$ 343,228	\$ 1,477,106	\$ 1,171,577	\$ 118,208	\$ -	\$ 3,110,118	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 343,228	\$ 1,477,106	\$ 1,171,577	\$ 118,208	\$ -	\$ 3,110,118	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)

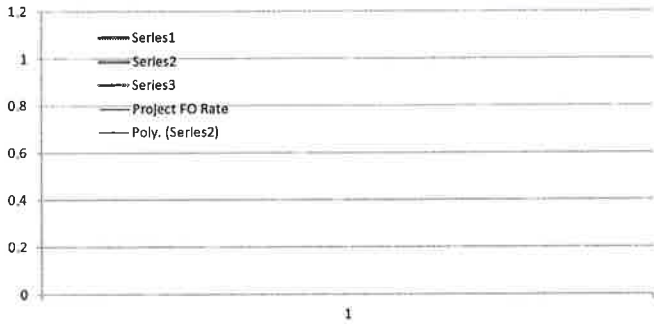
January-15	Project Mgmt	April-18	Project Mgmt	January-00	open
January-15	Design	July-15	Design	January-00	open
April-15	Procurement	October-16	Procurement	January-00	open
July-15	Permitting	September-15	Permitting	January-00	open
October-16	Construction	January-18	Construction	January-00	open
January-17	Closeout	April-18	Closeout	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:	<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



Prepared signature

Reviewed signature
Director/Manager

Other Party Review signature *Margie Stewens*
(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

To: Noxon Station Service Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply *SK*

Date: 2/11/2016

Re: Noxon Station Service Capital Investment Considerations

The following pages are a memo (provided by the Generation Management department), which documents the purpose and scope of the Noxon Station Service project, including the driving factors of the need for this investment.



GENERATION & PRODUCTION ENGINEERING GROUP MEMO

To: File
 From: Jon Harms
 Subject: Noxon Rapids HED – 480V Station Service – Basis of Design Report – REV 1
 Filename: File: G:\Generation\Hydro Plants\Noxon Rapids HED\Plant Electrical\AC Station Service\SS - DESIGN\DSN-NEW-2013-15\NOX SS - BOD\Noxon HED – 480V Station Service BOD.doc
 Date: December 5, 2013
 CC: Steve Wenke, Alan Lackner, Glen Farmer, Mike Gonnella, Lyle Wiltse

Feb. 4, 2015 – FINAL TRANSMITTAL

The previous memo had mentioned options A and B. Option A was decided upon which includes built in capacity for major equipment so that nearly all the 480V load could be handled by a single AC source (SS A or SS B) should the other one fail. Option B is deleted from this final transmittal.

Feedback Needed : It is requested of the Noxon plant personnel that they provide feedback on this memo by Friday January 30th. Input is needed so that any concerns regarding functionality or operation of the new Power Centers A & B and/or the Emergency Load Center, etc. can be incorporated in the design up front. *Thank you in advance!*

A final memo will be sent out after feedback has been received and reviewed.

1. Scope:

- A. **Define the Purpose and Scope:** A majority of the components of the Noxon 480V Station Service (SS) need to be replaced due to electrical capacity and rating issues, including having been in service for up to 50 years. These components include:
- Station service (SS) Transformers (Xfmrs) A & B
 - Power Centers (PC) A & B
 - PC A to SS Xfmr A Bus Duct
 - PC B to SS Xfmr B Bus Duct
 - PC A to PC B Bus Duct
 - Motor Control Center (MCC) 4
 - Emergency Load Center (ELC) including its feeders (in service since mid-90's)
- Minor work also needs to be completed on other areas of the SS including completion of a couple of projects started several years ago.
- B. **Employees Involved in this Proposal:** Steve Wenke, John Hamill, Alan Lackner, Lyle Wiltse, and Jon Harms have been involved in recent discussions for this project.

2. Discussion

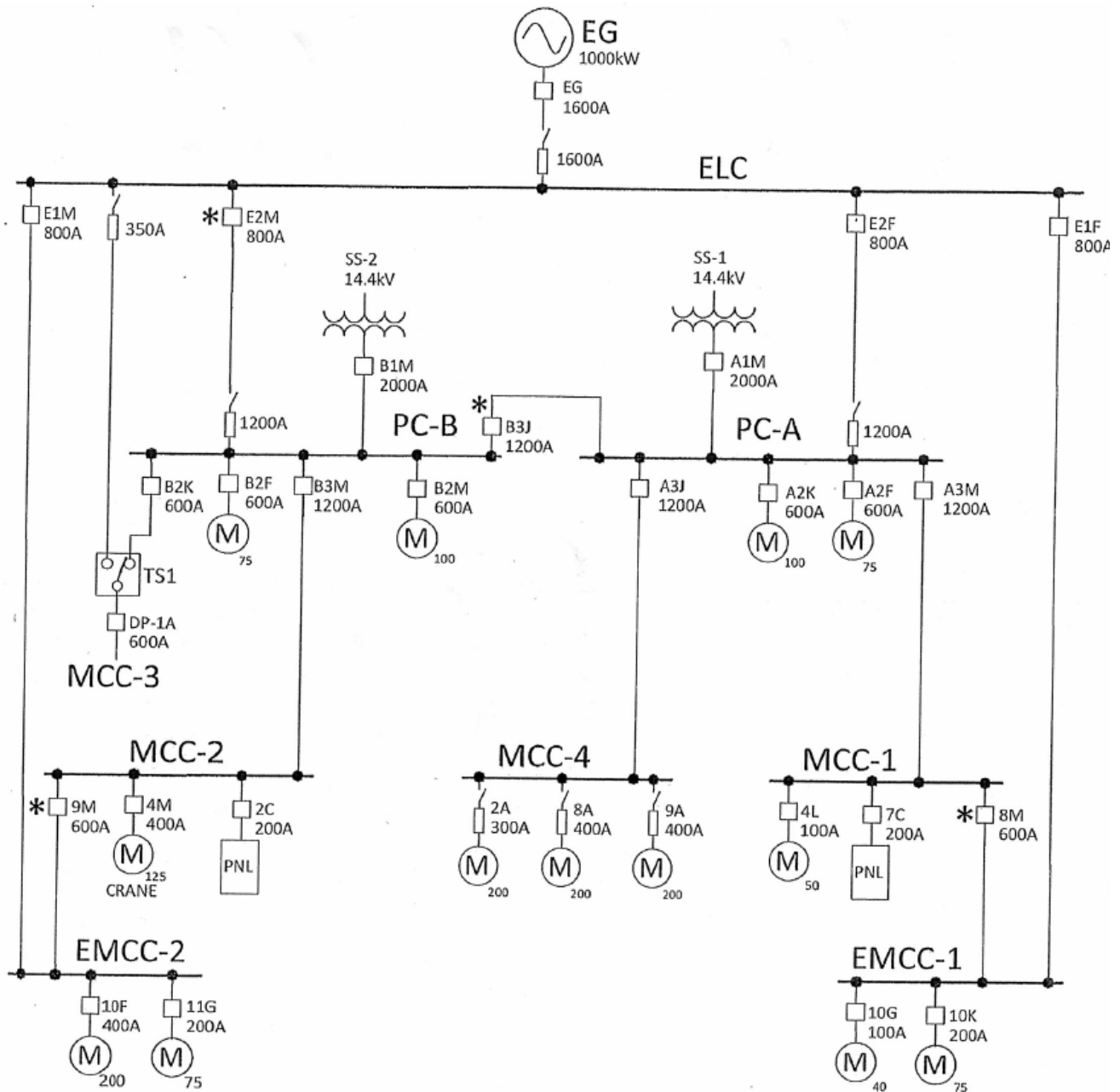
A. Further Definition of the Project Scope:

Two options exist for the upgrade of the station service based on ampacity of equipment. Each option calls for equipment to be replaced with new equipment that has adequate fault duty bracing.

Section 1

Option A – Two each 2.6/3 MVA OA/FA SS Xfmrs, Power Centers, & Bus Ducts with larger ampacity

This option would allow one xfmr to be out of service with station load carried by the remaining xfmr / equipment



NOTES:

- 1 - ON PC-A & PC-B ALL BREAKERS SHOWN. ON MCC'S & EMCC'S ALL MOTOR LOADS 40HP AND ABOVE SHOWN AND ONLY LARGEST BREAKERS SHOWN FOR OVERCURRENT COORDINATION PURPOSES.
- 2 - BREAKERS OPERATED NORMALLY OPEN SHOWN WITH AN ASTERISK (*). BREAKER INTERLOCKS NOT SHOWN.
- 3 - FIVE 60HP HEADGATE MOTORS ON MCC3 NOT SHOWN DUE TO INFREQUENT USE.

NOXON RAPIDS HED - 480V STATION SERVICE - PARTIAL ONE-LINE DIAGRAM

Section 1

Since the late 1990's several Noxon 480V station service (SS) projects have been undertaken. A few of them were not finished. The following memo pulls together all electronic information that could be found on these projects: *G:\Generation\Hydro Plants\Noxon Rapids HED\Plant Electrical\AC Station Service\SS - DESIGN\DSN-NEW-2013-15\NOX SS - A DESIGN MEMO'S\Nox HED - Stn Svc - Review of Past Work - July 2013.doc*

In the last few months an overcurrent coordination study and a load flow study were completed for the Noxon 480V Station Service. As a result of these two studies and several discussions with Avista Operations and Engineering personnel, the following station service equipment at Noxon should be replaced/upgraded:

FINAL DESIGN – Items underlined are final work direction/decision

- 1 - Station Service 14.4kV/480V, 1500/1725kVA Transformers A & B
 - *Undersized, will be rated 2500kVA (with ONAN cooling) to allow for onsite in-service spare*
 - *Low PCB content (8 & 11PPM), xfmrs should be replaced per Environmental Dept.*
 - *No spare*
 - *In service over 50 years*
- 2 - 2000A Bus Ducts from SS Xfmrs to Power Centers A&B
 - *Undersized for a full load case when a SS xfmr out of service, new ones will be 3200A to match breaker ampacity.*
 - *Due to plant water leaks in the ceiling – all new bus ducts will be NEMA 3R rated.*
 - *Inadequate 25kAIC fault duty bracing (best they had in the late 1950's), should be at least 65kAIC.*
 - *Existing 35 feet of 2000A bus duct from SS Xfmrs to PC Main Breaker is unprotected. Xfmr lo-side CT is on the downstream side of the PC Main Breaker instead of being a lo-side bushing CT.*
- 3 - Power Centers A & B
 - *2000A bus has inadequate ampacity and 25kAIC bracing, will be 3200A / 65kAIC.*
 - *2000A main breakers are undersized should other xfmr be out of service, will be rated 3200A*
 - *PC-A 800AF breakers have failing KAIC rating should Emerg. Gen. be synched to the 14.4kV system*
 - *PC-A 800AF breakers have marginal KAIC rating under normal operating conditions*
 - *PC-B 800AF breakers have marginal KAIC rating should Em. Gen. be synched to the 14.4kV system*
 - *PC-B Tie Breaker B3J undersized at 1200A, will be rated 2000A*
 - *No spare 1600AF or 2000AF breakers*
- 4 - Power Centers A & B Tie Bus
 - *Has inadequate fault duty bracing (25kAIC), should be at least 65kAIC.*
 - *1200A rating is undersized should one SS transformer be out of service, will be 2000A*
- 5 - Motor Control Centers 1 and 2
 - *Replaced in their entirety about 10 years ago, have appropriate KAIC rating*
 - *Main breakers are appropriately rated, Status of spare parts unknown*
- 6 - Motor Control Center 3
 - *Replaced in its entirety about 10 years ago, has appropriate KAIC rating*
 - *600A transfer switch TS1 not operating properly – will be fixed/replaced*
 - *Status of spare parts unknown*
- 7 - Motor Control Center 4
 - *Has inadequate fault duty bracing*
 - *In service 50+ years*
 - *will be replaced in its entirety*
- 8 - 1000 kVA Emergency Generator (EG)
 - *Installed in 2007*
 - *Integration into SS system never completed – PLC job needs to be completed*
- 9 - Emergency Load Center (ELC)

Section 1

- *Undersized, not able to carry full output of Emergency Generator,*
- *Should be replaced with a 1600A Load Center with adequate sized breakers (Load Flow Study showed E1M, E2M, E1F are adequately sized at 800A, E2F will be sized at 1200A),*
- *Only the Power Center A feeder (for E2F) needs to be reconducted as a result of the Load Flow Study to allow for larger ampacity.*

B. **Control of Breakers** It is suggested that Power Center A, Power Center B, and the Emergency Load Center each have a two-position, maintained contact, LOCAL / REMOTE selector switch. Operation of either of the three switches would be identical:

LOCAL – all breaker control (TRIP / CLOSE) done solely at the breaker itself. PLC control disabled.

REMOTE – TRIP/CLOSE control able to be done remotely via the PLC / Wonderware screen. Local trip/close functions still work.

Breakers to be controlled via each of the Local/Remote switches to be as follows

Power Center A: AIM – Main incoming breaker (SS Xfmr A low-side bkr)

A3J – MCC-4

A3M – MCC-1

Power Center B: B1M – Main incoming breaker (SS Xfmr B low-side bkr)

B2K – MCC-3

B3M – MCC-2

B3J – Tie breaker to Power Center A

Emergency Load Center:

Each of the four breakers

C. **Possible Project Constraints** (*Needed Outages, Environmental, Permitting, etc.*): During construction, portions of the station service will be de-energized. Ideally the applicable station service outage would coincide with possible upcoming work in the 230kV switchyard when GSU's A or B are out of service. As mentioned above, the Environmental department requests that the existing SS xfmr's be retired so that the trace amounts of PCB's in them be removed from service.

A structural engineer has verified that the additional weight of a heavier station service transformer is able to be supported by the GSU xfmr deck with no concern. The existing transformers weigh about 15100 lbs each. The engineer analyzed the structure for the weight of a 3MVA xfmr (about 20,264 lbs per one manf). We will be installing ones slightly lighter than the 3MVA weight.

D. **Construction Scheduling:** In discussion with Mike Gonnella, the 2014 construction year has a heavy work load for the electric shop. The Noxon station service job will need to be completed by a 5 man crew that could include two Avista journeymen and 3 journeymen out of the union hall with industrial electrician experience. *REVISION 1 - The project got approved with construction starting October 2016 to early 2018 with a break during March – July 2017.*

With the project needing parts of the station service de-energized, Per Patrick Maher, Noxon has 3-unit (or less) water from late July through the end of March. Outages to the station service would need to occur during these 8 months. We could run unit 5 and two other units (1&2, or 3&4) so that the other GSU/Station Service could be taken out of service.

Howard Johnson and Jon Harms visited Noxon during November 20, 2013 to estimate the amount of electrical crew time that would be needed for this project. The following was determined as we looked at each area of work:

1. 14.4kV/480 Xfmr A – 3 weeks
2. Xfmr A to Power Center A 480V Buswork – 4 weeks

Section 1

3. Power Center A – 4 weeks
4. Station Service A PLC Installation (no removal – new install) – 2 weeks
5. 14.4kV/480 Xfmr B – 3 weeks
6. Xfmr B to Power Center B 480V Buswork – 4 weeks
7. Power Center B – 3 weeks
8. Station Service B PLC Installation (no removal – new install) – 2 weeks
9. Power Centers A to B 480V Buswork – 3 weeks
10. MCC 4 – 3 weeks
11. Power Center A to MCC 4 Feeder – 1 week
12. MCC 4 Branch Circuits – install cable tray / conduit runs – 2 weeks
13. MCC 4 mounted Panel SP-1 conduit runs – 1 week
14. Emergency Load Center – 3 weeks
15. Emergency Generator Loose Ends – 1 week

TOTAL estimated electric crew time is 39 weeks, or close to 10 months

It is proposed to do the project over two years, with all the equipment being purchased the first year and then the tasks being split into two 5 month segments.

3. Alternatives

Do Nothing

Doing nothing is not an option due to the existing Noxon 480V station service equipment having too low a fault interrupting (kAIC) rating. U.S. manufacturers in the late 1950's offered a maximum of 25kAIC bracing on low voltage switchgear. The fault duty at Noxon Power Centers A & B is between 33-40kA which exceeds the existing equipment rating by up to 60%. Whereas some of the breakers in the PC A & B have sufficient kAIC ratings, should a fault occur and a breaker properly clear it, the buswork may cause the switchgear to be inoperable due to mechanical damage from short circuit forces.

Option A

Preferred Alternative.

Option B

Equipment pricing should be close to a wash (compared to Option A) given that we would purchase a 3rd SS xfmr but save some on other equipment. Avista does not have another 14.4kV bus in its system so we do not stock another xfmr that could be used temporarily until a replacement would be ordered and received. For a worst case loading scenario, ampacities would be exceeded and strict load reduction would be required that could impair normal operations of plant equipment. Jon Harms sees no merit to option B.

4. Recommendation

Budgetary estimates were received from vendors for each area of major equipment to be ordered – Option A prices shown.

Section 1

Description	Material \$
3 MVA Xfmrs A & B	\$ 147,000
Xfmrs A & B Throat Connectors	\$ 25,000
PC-Xfmr & PC Tie Bus Duct	\$ 86,600
Power Centers A & B	\$ 300,000
Emergency Load Center	\$ 98,900
ELC Feeders	\$ 35,400
ELC Feeder Cable Tray / Conduit	\$ 9,000
MCC # 4	\$ 96,000
MCC 4 Cable Tray / Conduit	\$ 12,000
Pwr Center PLC	\$ 28,000

The Option A CPR was completed including electric shop labor estimates discussed with Howard Johnson. Prices were as follows:

Total Materials Cost	\$ 938,448
Total Construction Labor Cost	\$ 892,564
Total Engineering Labor Cost	\$ 296,319
Total Contract Cost	\$ -
Project Cost SubTotal	\$ 2,127,331
Contingency	\$ 319,100
Add 1002 Overhead (6.25%)	\$ 132,958
AFUDC (8.22%)	\$ 154,941
Total Project Cost	\$ 2,734,329

REVISION 1 - The Project was approved by Andy Vickers and Jason Thackston in 2014 for \$3,110,118.

A copy of the CPR is located at G:\Generation\ Hydro Plants\Noxon Rapids HED\Plant Electrical\AC Station Service\SS - DESIGN\DSN-NEW-2013-15\NOX SS - BUDGET - CPR\NOXON SS Project Data Entry Form.xls

The longest lead time items are the low voltage switchgear. A bid package is being worked on at the present (January, 2015) time and will be sent out as soon as possible. Lead time for the recently purchased Little Falls low voltage switchgear ran 10 ½ months.

The lead times for the 3MVA transformers are slightly shorter than low voltage switchgear. The transformers sit outside of the powerplant and would need to be the first item worked on during late summer while the weather is still agreeable.

5. Other Data to be Included

All other research data regarding this project may be found in the following two documents:

Noxon Rapids HED – 480V Station Service Short Circuit and Overcurrent Coordination Study

G:\Generation\ Hydro Plants\Noxon Rapids HED\Plant Electrical\AC Station Service\Pwr Center - MCC Overcurrent Coordination - 2013\Nox HED-Stn Svc-PC-MCC's Coordination Review.doc

Noxon Rapids HED – 480V Station Service Load Flow and Voltage Drop Study

G:\Generation\ Hydro Plants\Noxon Rapids HED\Plant Electrical\AC Station Service\SS - Load Studies-Motor Starting\Load Study - 2013\Noxon SKM Load Flow Study.doc

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Little Falls Plant Upgrade

ER No: ER Name:

4152 Little Falls Powerhouse Redevelopment

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$21,400¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	22,892	0	13,060	900	1,552	0	0	7,140	240	0	0	0	0
2017	11,470	0	0	6,920	0	0	0	320	0	0	0	260	3,970
2018	4,780	0	0	0	4,780	0	0	0	0	0	0	0	0

Business Case Description:

The existing Little Falls equipment ranges in age from 60 to more than 100 years old. We have experienced an increase in forced outages at Little Falls over the past six years, increasing from about 20 hours in 2004 to several hundred hours in the past several years, due to equipment failures on a number of different pieces of equipment. This project will replace nearly all of the older and less reliable equipment with new equipment. This includes replacing two of the turbines, all four generators, all generator breakers, three of the four governors, all of the AVR's, removing all four generator exciters, replacing the unit controls, changing the switchyard configuration, replacing the unit protection system, and replacing and modernizing the station service.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Investment Business Case



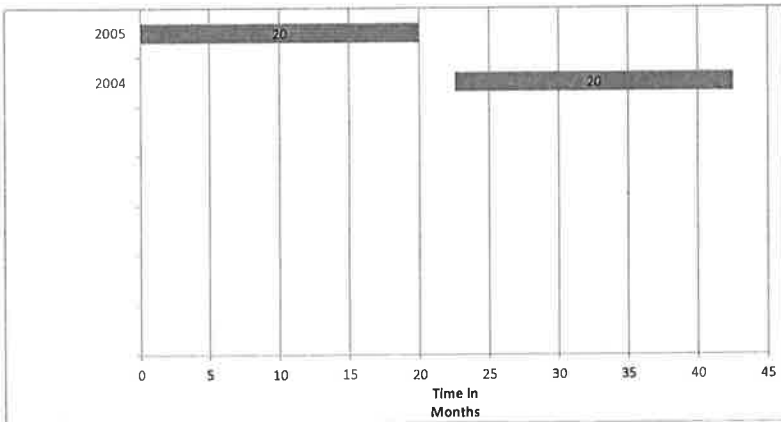
Investment Name:	Little Falls Plant Upgrade (Revised)	Assessments:	
Requested Amount	\$56,100,000	Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	8 Year Project	Strategic:	Generating Fleet Modernization
Dept., Area:	GPSS	Operational:	Operations improved beyond current levels
Owner:	Jacob Reidt	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Jason Thackston / Andy Vickers	Project/Program Risk:	High certainty around cost, schedule and resources
Category:	Project	Assessment Score:	104.5
Mandate/Reg. Reference:	n/a	Cost Summary - Increase/(Decrease)	

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
The existing Little Falls equipment ranges in age from 60 to more than 100 years old. We have experienced an increase in forced outages at Little Falls over the past six years, increasing from about 20 hours in 2004 to several hundred hours in the past several years, due to equipment failures on a number of different pieces of equipment. This project will replace nearly all of the older and less reliable equipment with new equipment. This includes replacing two of the turbines, all four generators, all generator breakers, three of the four governors, all of the AVR's, removing all four generator excitors, replacing the unit controls, changing the switchyard configuration, replacing the unit protection system, and replacing	there would be some performance improvement	\$ 56,100,000	\$ (20,000)	\$ -	3
Cost Summary - Increase/(Decrease)					

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo : Forced outages and emergency repairs would continue to increase, reducing the reliability of the plant. At some point, personnel may need to be placed back in the plant.	n/a	\$ -	\$ 20,000	\$ 150,000	12
Alternative 1: Brief name of alternative (if applicable) This would replace the two items that are currently in the most critical condition, and then continue to use the remaining equipment. This continues to rely on this older equipment for reliability purposes. This would only minimally improve the Forced Outage rate for the plant.	Major personnel safety would be addressed	\$ 5,000,000	\$ 20,000	\$ -	9
Alternative 2: Brief name of alternative (if applicable) This would replace the major cost items, but the station service reliability would continue to cause an increasing unplanned outages. However, the replacement and down time costs would be much less	Would reduce the outage times	\$ 51,000,000	\$ -	\$ -	0
Alternative 3 Name : Brief name of alternative (if applicable) 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
Previous	\$ 1,800,000	\$ -	\$ -	\$ 1,800,000
2012	\$ 3,200,000	\$ -	\$ -	\$ 2,000,000
2013	\$ 6,500,000	\$ -	\$ -	\$ 5,000,000
2014	\$ 9,400,000	\$ -	\$ -	\$ 9,500,000
2015	\$ 8,800,000	\$ -	\$ -	\$ 8,800,000
2016	\$ 9,400,000	\$ -	\$ -	\$ 9,400,000
2017	\$ 8,800,000	\$ -	\$ -	\$ 10,000,000
2018	\$ 6,200,000	\$ -	\$ -	\$ 2,000,000
2019	\$ -	\$ -	\$ -	\$ -
Future	\$ 2,000,000	\$ -	\$ -	\$ -
Total	\$ 56,100,000	\$ -	\$ -	\$ 48,500,000

Milestones (high level targets)

January-10	Project Started	11/1/2015	Lighting Complete	Apr-18	Unit 1 Complete
March-12	AVR/BKR Replacement Complete	12/1/2015	kup Gen Install Complete		
January-14	Warehouse Complete	12/1/2015	ontrol Room Complete		
January-14	Crane Overhaul Complete	Apr-16	it 1 Overhaul Complete		
February-15	Station Service Overhaul Complete	Apr-17	it 4 Overhaul Complete		
10/30/2015	Unit 3 Overhaul Complete	Dec-17	Headgate Overhaul Complete		

Associated Ers (list all applicable):

4102					
4103					

Mandate Excerpt (if applicable):

This is not a mandated item.

Additional Justifications:

Because of the age and condition of all of the equipment at the plant, all of the equipment has been qualified as obsolete in accordance with the obsolescence criteria tool. The Asset Management tool has been applied to Little Falls and also supports this project. The Asset Management studies that have been done to date are still subject to further refinements, but the general conclusions support this project. There are many items in this 100 year old facility which do not meet modern design standards, codes, and expectations. This project will bring Little Falls to a place where it can be relied on for another 50 to 100 years. Finally, this project will need to be worked in coordination with our Indian Relations group as the Little Falls project is part of a settlement agreement with the Spokane Tribe.

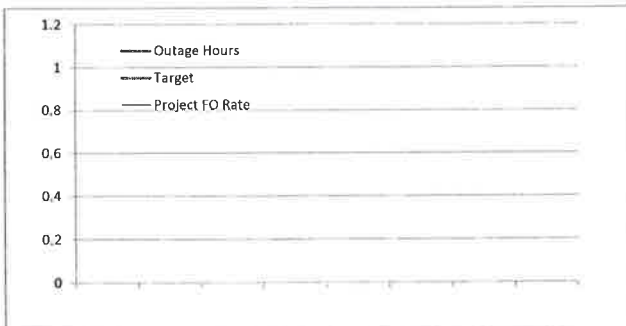
Resources Requirements: *(request forms and approvals attached)*

Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input type="checkbox"/> High Probability	Enterprise Tech:	<input 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 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

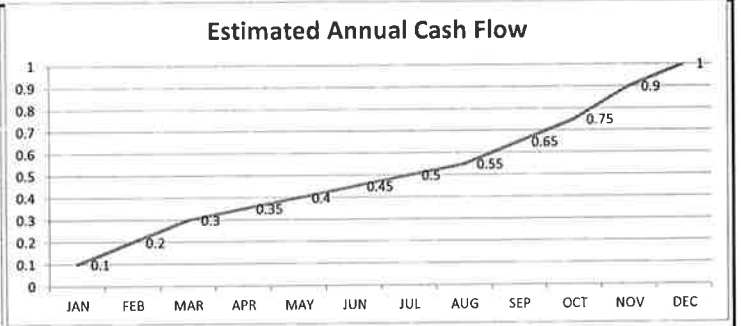
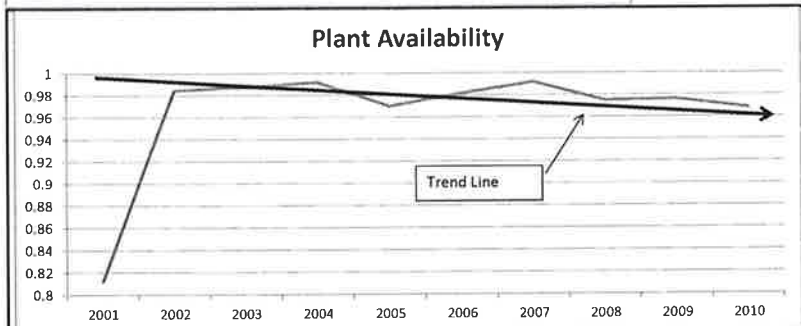
KPI Measure: Forced Outage Hours



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens* Director/Manager
(if necessary)



2015 Business Case Update: Station service was completed in February 2015, the final project required to support the unit upgrade work. Work is ongoing on unit 3. Delays in major material have the overhaul running 3 months behind. This delay will only affect unit 1's schedule by one month (completion moving from March 2016 to April 2016) because of efficiencies in the work and additional personal availability.

The remaining unit upgrades (Units 1, 2 & 4) have accurate estimations based on the full scope discovered during unit 3 overhaul. The headgate project (scheduled for design to begin late 2015 or early 2016) will be the final project in the program with slight budget and schedule unknowns. Current estimations are based from similar work completed at Post Falls in 2012, but final numbers will not be available until final design is completed and construction contract awarded. The construction piece of this work is scheduled for 2017.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Little Falls Plant Upgrade Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply SK

Date: 2/11/2016

Re: Little Falls Plant Upgrade Capital Investment Considerations

The following pages are the project initiation charter for the little Falls Plant Upgrade (provided by the Generation Management department), which documents the driving factors of the need for this investment.



Project Name: Little Falls Modernization Program

Project ID: ER-4152

1 Key Roles

- Executive Steering Committee:
 - Andy Vickers, General Production Sub Support Director
 - Bruce Howard, Director Environmental Affairs
 - Scott Kinney, Director Power Supply
- Project Sponsor: Andy Vickers
- Program Manager: Brian Vandenburg
- Project Manager: Brian Vandenburg
- Project Management Team Stakeholders:
 - Jacob Reidt, Construction Contractors and Project Management Manager
 - Steve Wenke, Chief Engineer
 - Glen Farmer, Electrical Engineering Manager
 - Kristina Newhouse, Controls Engineering Manager
 - PJ Henscheid, Mechanical Engineering Manager
 - Mike Gonnella, Hydro Operations and Maintenance Manager
 - Jerry Cox, Spokane River Plant Operations Manager
 - Bob Wiesbeck, Project Delivery Manager
 - Randy Pierce, General Foremen, Mechanic Shop
 - Brad McNamara, General Foremen, Electric Shop
 - Jeff Vogel, Lead Relay Tech
 - Michele Drake, Hydro Compliance Services
 - Speed Fitzhugh, Spokane River License Manager

2 Statement of Mission Need

2.1 Business Need/Project Objectives

Little Falls Program State: Prior to the upgrade projects beginning in 2012, much of the plant equipment was the original installed equipment from 1912. Two of the four turbine runners were the original, and two were replaced in 1999 and 2001. The generator exciters are the original DC generators with an amplidyne control system installed in the 1940's replace a manual control system. The generators were last rewound between 1956 and 1968. Three of the four generator governors use a customized Distributed Control System (DCS) and limiter torque's to drive the wicket gates installed around 1989.

From 2006 to 2010, the number and duration of forced outages at Little Falls has increased due to equipment failure. A decision has been made to modernize the Little Falls Plant to increase operational reliability which equates to Decision Gate-0 (DG-0)¹ representing approved mission need in the project management lifecycle and documented via the approved business case. The Little Falls Plant Modernization Program will replace equipment at the end of useful life associated with the generating units to reduce equipment failure forced

¹ Decision Gates are used in Project Management practices to represent key project milestones that identify the exit point from one phase of the project, and entry into the succeeding phase, only upon approval by appropriate authority. Each decision marks an increase in commitment of resources and is based on a successful and complete preceding phase.

Project Initiation Charter



Planning Phase Approval

outages. Replacement of the equipment responsible for the majority of the outages will be prioritized first, followed by plant preparation for the large generation unit upgrades. Yearly projects to replace the majority of the generator’s components will then conclude the modernization of Little Falls by the 2018 timeframe with a total modernization program budget estimated at ~\$59M (refer also to Section 6.0 for estimate accuracy based on phase of project). The total program, inclusive of all subprojects, is roughly estimated as outlined in the following table. Refined estimates will be developed for each project as project planning progresses and a performance baseline is developed.

Little Falls Management Program		
Project Description	Estimated \$	Estimated Construction Window
Exciter and Switchgear Upgrade	\$3.5M	COMPLETE
Plant Prep Work		
Bridge Crane Refurbishment	\$876K	COMPLETE
Long Lake Warehouse	\$1.4M	COMPLETE
Station Service Infrastructure	\$3.0M	COMPLETE
Compressed Air System	\$100k	COMPLETE
DC System	\$800K	COMPLETE
Unit 3 Overhaul	\$14.8M	CONSTRUCTION UNDERWAY
Plant Work		
Lighting	\$500k	COMPLETE
New Control Room	\$600k	DESIGN UNDERWAY
		Est. Construction Start: April 2016 – June 2016
Backup Generator	\$600k	DESIGN UNDERWAY
		Est. Construction Start: July 2016 – September 2016
Unit 1 Overhaul	\$9M	DESIGN UNDERWAY
		Est. Construction Start: February 2016 – January 2017
Plant Work		
Sump	\$400k	April 2016 – May 2016
Plant Security System	\$200k	June 2016 – July 2016
HVAC	\$400k	June 2016 – July 2016
Downstream Warning System	\$400k	June 2016 – August 2016
Unit 2 Overhaul	\$9M	January 2017 – December 2017
Plant Work		
Head Gate Refurbishment	\$4M	July 2017 – December 2017
Unit 4 Overhaul	\$9M	January 2018 – December 2018

Primary LFMP objectives include:

- Replace equipment at the end of useful life associated with the generating units to reduce equipment failure forced outages and loss generation through a series of logically sequenced projects conducted annually through 2018.

Secondary LFMP objectives include:

- Provide early integrated planning across all key stakeholders during development of the baseline to anticipate risks and allow for more reliable cost and schedule estimation during the planning stages thereby increasing reliability of the performance baseline.
- Provide a framework for a documented and systematic way to collect and analyze data for future projects, identify and control risks, control variances identified in the data analysis, and report results during the project execution phase.



- Provide for the ability for each modernization project to be managed in a standalone fashion, as well as within an overall program work breakdown structure thereby providing the ability to be integrated into the overall Little Falls Modernization Project for the comprehensive programmatic/management view.
- Evaluate and rank projects using integrated stakeholder input from the project planning activities against matrix planning categories (e.g. Personnel and Public Safety, Potential Environmental Issue; Regulatory Mandate, On-going Maintenance issue, Decrease Future Operating Costs (Time, Materials), Increase Efficiency (Revenues – Power Usage), Obsolete parts and equipment, and Risk of Imminent Equipment Failure) to support development of annual work plans used for Capital Planning.
- Improve understanding of impacts to decisions (e.g. resources/time).
- Collect lessons learned to be applied to future projects for continuous improvement.

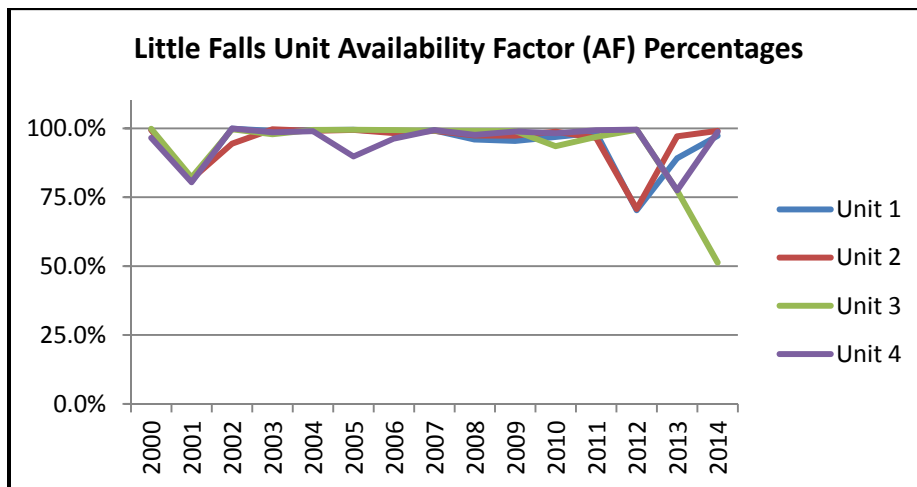
2.2 Regulatory Drivers

Tribal Employment Rights Ordinance (TERO) requires that all employers who are engaged in operating a business on reservations give preference to qualified Indians in all aspects of employment, contracting, and other business activities.

Little Falls is listed on the National Register of Historic Places as having significance to the history of their community state, or the nation.

2.3 Metrics Demonstrating Need

A summary of GPSS unit failure percentages at Little Falls from 2000 to 2014 to document current unit condition is as follows:



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Unit 1	99.4%	99.5%	98.8%	99.3%	95.9%	95.4%	96.9%	98.4%	70.3%	89.1%	97.3%
Unit 2	99.1%	99.4%	98.3%	99.1%	97.4%	97.3%	98.8%	96.5%	70.8%	97.1%	99.1%
Unit 3	99.4%	99.5%	99.3%	99.1%	99.1%	99.0%	93.5%	96.9%	99.5%	77.4%	99.5%
Unit 4	98.9%	89.8%	96.3%	99.4%	97.7%	98.8%	98.2%	99.3%	99.6%	77.5%	98.7%



2.4 Measures to Determine Project Success

Primary objectives will be met when plant operation and reliability metrics for each unit are improved then maintained over time thereby benefitting customers, and project completion is on time and within budget to the approved performance baseline while maintaining compliance with all environmental requirements.

If the secondary objectives are met, it will improve accuracy of cost and schedule estimation, which in turn improves resource planning for engineering, functional area support, and crafts. By including each project as part of a programmatic work breakdown structure (WBS), it will provide a management roll-up capability for greater portfolio management of resources.

2.5 Impact if Not Approved

This program replaces aging, failing equipment. If not approved, the following outcomes could be seen:

- If a generator fails prior to replacement, it is estimated that the outage would result in a two year unplanned down-time of lost generation.
- Personnel safety is at increased risk for unit failure if not undertaken since recent unit failures resulted in catastrophic failures.
- A savings in Operations and Maintenance (O&M) costs is expected and can be realized sooner if undertaken.

3 Assumptions, Risks, and Considerations

3.1 Assumptions: (Expected Conditions)

- Little Falls HED is excluded from the Federal Energy Regulatory Commission (FERC) Spokane River Project licensing.
- Infrastructure requirements (i.e. plant prep work listed in the table in Section 2.1) at the site will be completed prior to undertaking the unit work.
- An approach of buying new parts vs. rehabilitation of old parts will be used since expected conditions based on the age and complexity of the units cannot be effectively predicted.
- Construction will be completed by 2018.
- A steering committee will be established for executive management check in's and approval of decision gates throughout the project lifecycle. The executive steering committee decision gates include the following:
 - DG-0 Approved Mission Need (completed with approval of the capital planning request (CPR))
 - DG-1 Approve Alternatives Evaluation & Selection
 - DG-2 Approve Project Execution Plan (PEP)
 - DG-3 Approve Performance Management Baseline
 - DG-4 Approve Start of Construction
 - DG-5 Approve Start of Operations

3.2 Risks: (Potential Deviations)

- Runoff and annual maintenance requirements are not aligned with the execution schedule for the unit overhaul.



- Drawings are inaccurate and/or institutional knowledge is not well aggregated and documented that resolves differences in existing drawings.
- Equipment is not delivered on time or is delivered with non-conformance to plan specifications.
- Crews are unable to perform the work as planned.
- Accuracy of resource allocation for baseline estimation is limited since only a total breakdown of man hours by month was collected during Unit 3.

3.3 Considerations

- Mid-management project team stakeholder input will be sought at a minimum to (1) identify resources upon approval of the charter, (2) ensure functional requirements are comprehensively defined by the project team at the onset of the project, (3) ensure adequate criteria and options are evaluated prior to selection of alternatives based on the complexity of the project, and (4) review the final design documents to ensure requirements were successfully met. This will allow for transfer of institutional knowledge within Avista to the project team.

4 Applicable Interfaces

Stakeholder interfaces requiring assigned resources in order to achieve the project objectives are as follows (check all that apply). The specific roles and responsibilities, frequency/ type of communication, and agreed upon engagement points will be documented in a communication plan:

- | | |
|---|--|
| <input checked="" type="checkbox"/> General Engineering | <input checked="" type="checkbox"/> Construction Manager |
| <input checked="" type="checkbox"/> Electrical Engineering | <input checked="" type="checkbox"/> Master Scheduler |
| <input checked="" type="checkbox"/> Controls Engineering | <input checked="" type="checkbox"/> Crews |
| <input checked="" type="checkbox"/> Mechanical Engineering | <input checked="" type="checkbox"/> Environmental |
| <input type="checkbox"/> Civil Engineering | <input checked="" type="checkbox"/> Cultural/SHPO Resources |
| <input checked="" type="checkbox"/> Design Engineering | <input type="checkbox"/> Hydro/FERC Licensing |
| <input type="checkbox"/> Substation Engineering | <input checked="" type="checkbox"/> Network Communication (IT/ET) |
| <input type="checkbox"/> Distribution Engineering | <input checked="" type="checkbox"/> Supply Chain – Contracts (Bid) |
| <input type="checkbox"/> Transmission Engineering | <input checked="" type="checkbox"/> Supply Chain – Materials/Equipment |
| <input checked="" type="checkbox"/> Operations Engineering | <input type="checkbox"/> Real Estate |
| <input checked="" type="checkbox"/> Operations (Electric/Gas/Hydro) | <input checked="" type="checkbox"/> Legal |
| <input type="checkbox"/> Gas Engineering | <input checked="" type="checkbox"/> Corporate Communications |
| <input checked="" type="checkbox"/> Protection Engineering | <input type="checkbox"/> Corporate Marketing |
| <input type="checkbox"/> SCADA Engineering | <input type="checkbox"/> Fleet |
| <input checked="" type="checkbox"/> Facilities | <input checked="" type="checkbox"/> Rates and Regulatory |
| <input checked="" type="checkbox"/> Asset Management | <input checked="" type="checkbox"/> Project Accounting |

5 Resource Requirements and Schedule

5.1 High Level Project Deliverables

To meet the primary project objective, a final project execution plan which includes the following, will be completed for all projects.

Project Initiation Charter



Planning Phase Approval

PROJECT PHASE	DELIVERABLE	DELIVERABLE DESCRIPTION
Initiation Phase		
	Charter	Document that briefly outlines the project identification number, key management resources, project profile of business need and project objectives, high level deliverables, project artifacts, assumptions/constraints, key integrated planning resources needed across functional areas, and a planning cost estimate used to establish the authority of the Project Manager and provide parameters for the project resources and negotiation of support with functional managers for execution of the project phases.
	Stakeholder Assigned Resources List	Document identifying the list of key stakeholders by name and role that will serve as the technical, managerial, or advisory support to the project.
Planning Phase		
	Planning Kick-Off Meeting Minutes	Meeting minutes documenting the project team kick-off following approval of the charter and assignment of resources to the integrated project team to discuss the charter business need and project objectives, high level deliverables, project artifacts, and assumptions/constraints in preparation for defining the functional requirements.
Project Execution Plan Document consolidating all planning elements into a single document used to guide both project execution and project control, document planning assumptions and decisions, facilitate communication among stakeholders, and document approved scope, cost, and schedule baselines.	Functional Requirements Matrix	Clear definition of the project, the problem or opportunity being solved, and what success looks like, from both the current state and desired end state, and project constraints any solution must meet as defined by the integrated project team.
	Work Breakdown Structure (WBS) – Conceptual and Final	Conceptual document outline of the WBS that will allow the project manager to identify functional responsibilities and be used to facilitate detailed stakeholder development of the project schedule with dependencies and budget estimates. Final provided upon completion of the detailed project schedule development at the appropriate level required to manage the project. Seven (7) project phase areas common to all projects should be included in the WBS structure, then specific project details defined below for Avista consistency: <ul style="list-style-type: none"> • Project Management • Investigation • Design • Procure/Contract • Permitting • Construction • Verify/Startup/Checkout
	Project Team Roles/Responsibilities	Document identifying the list of key stakeholders by name and role that will serve as the technical, managerial, or advisory support to the planning phase of the project.
	Communication Plan	Document describing type of communication frequency with stakeholders to achieve the project measurement baseline. The plan elaborates on identification of roles and responsibilities by identifying the lead and support functions for each key document to be produced during the project (a.k.a. circle/dot matrix) and types/frequency of communication.
	Risk Plan	Document identifying the broad risks, likelihood of occurring, and consequence determination of whether there is opportunity or loss potential associated with it. This risk plan is considered the conceptual phase in order to assist in defining the appropriate technical solution to be illustrated in the planning documents and project schedule.
	Governance Process	Document integrating a framework for resolving issues and managing problems to the Performance Measurement

Project Initiation Charter



Planning Phase Approval

PROJECT PHASE	DELIVERABLE	DELIVERABLE DESCRIPTION
		Baseline as they arise during the life cycle for project planning and execution. This includes changes to the project's scope, schedule, charter, or budget which are documented and provided to a decision-making body.
	Document/Data Management Plan	Definition of the file structure and minimum documents to be maintained in the electronic project file. Files typically address: why the project was initiated, the scope of the project, expenditures on the project, official communication records associated with the project, final commissioning of the project, and project personnel.
	Project Schedule	Integrated project schedule containing defined task and subtasks, durations, dependencies, and functional responsibilities that will support network analysis. The tool (e.g. MS Project, Primavera) will be selected by the Avista Project Manager.
	Budget Estimates by project	Integrated project schedule containing resource loading of hours and cost of individuals assigned to complete the work identified in the project schedule.
Engineering Design Packages	Phase 0	Alternatives Analysis/Feasibility Study (5%-10%)
	Phase 1	Conceptual Design (30% - 50%)
	Phase 2	Preliminary Engineering (50% - 75%)
	Phase 3	Design Execution (90%)
	Phase 4	Completed Construction Drawings and Specifications (100%)
	Statement of Work	Document combined with the plans and specifications that is submitted to Supply Chain with a contract request to assemble a construction bid package.
	Bid Package	Package developed using a team consisting of Supply Chain, the Construction Contracts Administrator, and the engineer/project manager used to solicit bids from contractors to execute the work.
	Construction Transmittal	Package that includes the design drawings, specifications, accounting information (what project numbers the crews are to charge their time to), vendor data sheets, and any special instructions for executing the work.
Executing Phase		
	Pre-Construction Meeting Minutes	Meeting to go over any final instructions, roles, clarify any questions regarding work scope and schedule, environmental requirements, and discuss safety requirements.
	Commission Testing and Acceptance Plan	Document that ensures the new equipment is going to function as it was designed and works properly. Instrument and control settings and functions must be confirmed and documented. The engineer prepares a commissioning plan and works with the relay shop general foreman and plant operations to coordinate this step.
Closing Phase		
	Operation & Maintenance/Instruction Manual	Compilation of equipment literature and manuals provided by the vendor, along with engineer prepared list of minimum maintenance requirements and frequency for maintenance. Equipment manuals, O&M manuals, and other O&M procedures will be provided to the Maintenance Engineer to be entered into Maximo to generate future work orders to perform the recommended periodic maintenance.
	Lessons Learned Document	A document capturing lessons learned from stakeholders on all phases of the project.
	Final Project Summary Report	Report summarize design steps along the way, important design considerations, comparison of the planned vs. the actual project schedule, the budgeted costs vs. actual costs, summary of change orders and scope changes that affected



PROJECT PHASE	DELIVERABLE	DELIVERABLE DESCRIPTION
		the schedule and costs, list of applicable project drawings (both reference and new drawings), files/records created, key project stakeholders that participated, contractors/vendors involved, and associated contract costs.

5.2 What will NOT be delivered?

No other plant systems other than what is outlined in this document will be delivered as part of the Little Falls program. Of special note is the Little Falls spillgate overhaul will specifically be excluded from this program.

6 Planning Cost Estimate

As identified in Section 2.1, the anticipated cost of the Little Falls Program is \$58M. Refined estimates will be developed as project planning progresses and a performance baseline is developed.

Cost estimates are by definition prepared with less than complete information and have inherent levels of risk and uncertainties. The basis for the planning cost estimate as follows:

- The initial estimate of \$58M the program was prepared based on judgement estimation at the 1-2% project design which equates to a Class 5 estimate with an accuracy range of -20 to +100% (see Association for the Advancement of Cost Engineering (AACE) International matrix below). The matrix presents the level of project definition, typical end use, methodology, expected accuracy, and preparation effort associated with the cost estimate.²

ESTIMATE CLASS	LEVEL OF PROJECT DEFINITION Expressed as % of complete definition	END USAGE Typical purpose of estimate	METHODOLOGY Typical estimating method	EXPECTED ACCURACY RANGE Typical variation in low and high ranges [a]	PREPARATION EFFORT Typical degree of effort relative to least cost index of 1 [b]
Class 5	0% to 2%	Concept Screening	Capacity Factored, Parametric Models, Judgment, or Analogy	L: -20% to -50% H: +30% to +100%	1
Class 4	1% to 15%	Study or Feasibility	Equipment Factored or Parametric Models	L: -15% to -30% H: +20% to +50%	2 to 4
Class 3	10% to 40%	Budget, Authorization, or Control	Semi-Detailed Unit Costs with Assembly Level Line Items	L: -10% to -20% H: +10% to +30%	3 to 10
Class 2	30% to 70%	Control or Bid/Tender	Detailed Unit Cost with Forced Detailed Take-Off	L: -5% to -15% H: +5% to +20%	4 to 20
Class 1	50% to 100%	Check Estimate or Bid/Tender	Detailed Unit Cost with Detailed Take-Off	L: -3% to -10% H: +3% to +15%	5 to 100

² The Association for the Advancement of Cost Engineering (AACE) International is an international non-profit professional educational association that provides services related to cost estimating, cost/schedule control, and project management to a wide range of professions and industries. AACE defines five levels of cost estimates for a project (reference AACE International Recommended Practice No. 18R-97).

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Base Load Hydro

ER No: ER Name:
4147 Base Load Hydro

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$3,447¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,149	0	0	57	0	0	191	0	0	86	0	451	364
2017	1,149	0	0	57	0	0	191	0	0	86	0	451	364
2018	1,149	0	0	57	0	0	191	0	0	86	0	451	364

Business Case Description:

This program covers the capital maintenance expenditures required to keep the Upper Spokane River Plants operating within 90% of their current performance (this assumes some degradation of performance over time). The program will focus on ways to maintain compliance and reduce overall O&M expenses while maintaining a reasonable unit availability. The Upper Spokane River Plants include Post Falls, Upper Falls, Monroe Street, and Nine Mile.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Program Business Case



Investment Name:	Base Load Hydro	Assessments:	
Requested Amount	\$ 800,000	Financial:	14.19%
Duration/Timeframe	10 Year Program	Strategic:	Generating plant performance
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Mike Gonnella	Program Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Jason Thackston / Andy Vickers	Assessment Score:	88
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This program covers the capital maintenance expenditures required to keep the Upper Spokane River Plants operating within 90% of their current performance (this assumes some degradation of performance over time). The program will focus on ways to maintain compliance and reduce overall O&M expenses while maintaining a reasonable unit availability. The Upper Spokane River Plants include Post Falls, Upper Falls, Monroe Street, and Nine Mile.	This program would systematically upgrade various equipment to improve	\$ 800,000	\$ -	\$ -	6
		Annual Cost Summary - Increase/(Decrease)			

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	n/a	\$ 450,000	\$ -	\$ -	16
Alternative 1: Brief name of alternative (if applicable)	Current Unit availability has been declining over the past several years (see graph below). The status quo would anticipate a continuation of this general decline. This is due to the relative lower priority of these plants when contrasted to other generating assets.	\$ 650,000	\$ -	\$ -	6
Alternative 2: Brief name of alternative (if applicable)	Funding of this program at something above the historical amount would result in some improvement, but would continue the declining rate of availability.	\$ -	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,200,000	\$ -	\$ -	\$ 1,149,000
2015	\$ 800,000	\$ -	\$ -	\$ 299,000
2016	\$ 1,149,000	\$ -	\$ -	\$ 1,149,000
2017	\$ 1,149,000	\$ -	\$ -	\$ 1,149,000
2018	\$ 1,149,000	\$ -	\$ -	\$ 1,149,000
2019	\$ 1,149,000	\$ -	\$ -	\$ 1,149,000
2020	\$ 4,000,000	\$ -	\$ -	\$ 1,149,000
Total	\$ 10,596,000	\$ -	\$ -	\$ 7,193,000

Associated Ers (list all applicable):	
4000	4106
4003	4109
4004	4117
4104	

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
4147	\$ 800,000	\$ 1,149,000	\$ 1,149,000	\$ 1,149,000	\$ 1,149,000	\$ 5,396,000	Some FERC and NERC mandated items are included in this program. These are expected to be managed as part of the overall program and are not considered as individual items here.
4106	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
4004	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
4117	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 800,000	\$ 1,149,000	\$ 1,149,000	\$ 1,149,000	\$ 1,149,000	\$ 5,396,000	Additional Justifications: The historical availability for the base load hydro plants has been declining over the past ten years due to deteriorating equipment and a need to replace some equipment and systems that are very old. The age of these plants (Post Falls - 105 years old, Nine Mile - 103 years old, and Upper Falls - 90 years old) also create some issues due to the investments that have been made to address immediate problems rather than a programmatic approach as indicated by this program.

Resources Requirements: (request forms and approvals attached)

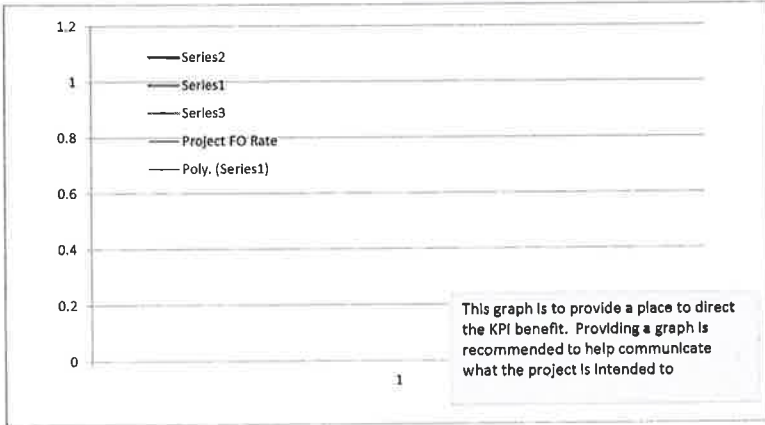
Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

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



Prepared signature

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

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Base Load Hydro and Regulating Hydro Business Cases 2016 Washington GRC File
From: Scott Kinney, Director of Power Supply SK
Date: 2/11/2016
Re: Base Load Hydro and Regulating Hydro Investment Considerations

According to the Generation Management Department, both the Base Load Hydro and Regulating Hydro business cases are programs which provide capital funds to accomplish small scale improvements and replacements of infrastructure for Avista's eight hydro-electric generating plants. The projects accomplished under these business cases can be characterized as those that "keep the lights on" (i.e., regular responsive maintenance).

The projects which are accomplished under these two hydro programs are diverse in nature, but generally involve the addition of new features to enhance operating efficiency or replacement of infrastructure which has become obsolete. Examples of projects which were accomplished in 2015 include:

- Replacement of old folding doors on the Post St. sub with rollup doors.
- Lighting projects at Cabinet Gorge and Long Lake to install LED lighting fixtures.
- Fabrication of a replacement bulkhead for Long Lake and Little Falls. Our existing bulkhead was found not to meet current structural codes and a bulkhead was needed for spill gate repair at Long Lake.
- Updated computer hardware and software for the generation control network.
- Surveillance camera replacement.
- Rehabilitation of operator housing at Cabinet Gorge and Noxon.
- Dam leakage monitoring upgrades at Long Lake to meet FERC requirements.
- Updating an obsolete generator temperature monitoring system at Long Lake.
- Transformer deck drainage system upgrades at Noxon to ensure that oil from the transformer deck does not reach the river.
- An upgraded deck jib crane at Cabinet Gorge to support overhaul of the Unit 1 turbine.
- Sand depots and sanding/plow vehicle shelters at Noxon and Cabinet Gorge. (This eliminates trips to the county sand depot.)

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Regulating Hydro

ER No: ER Name:

4148 Regulating Hydro

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$10,599¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	5,786	500	500	677	0	35	707	305	0	1,060	205	100	1,698
2017	3,533	0	0	177	0	0	707	0	0	1,060	0	0	1,590
2018	3,533	0	0	177	0	0	707	0	0	1,060	0	0	1,590

Business Case Description:

This program covers the capital maintenance expenditures required to keep these plants operating at their current performance. The program will work to improve the reliability of these plants so that their value can be maximized in both the energy and ancillary markets. Plants included are Long Lake, Little Falls, Noxon Rapids, and Cabinet Gorge.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Investment Business Case

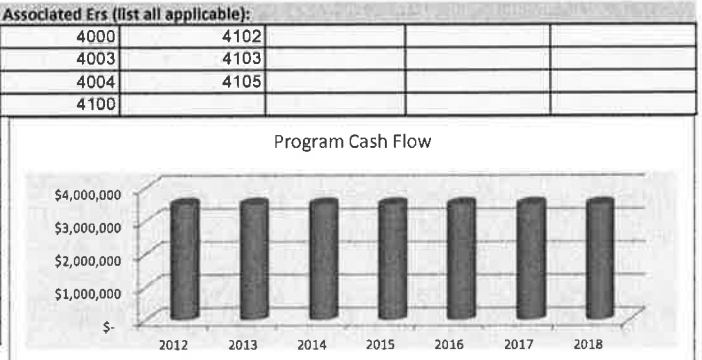


Investment Name:	Regulating Hydro	Assessments:	
Requested Amount	\$3,500,000	Financial:	High - Exceeds 12% CIRR
Duration/Timeframe	20 Year Program	Strategic:	Generating Fleet Modernization
Dept., Area:	GPSS	Operational:	Operations improved beyond current levels
Owner:	Andy Vickers	Business Risk:	Business Risk Reduction >0 and <= 5
Sponsor:	Jason Thackston	Program Risk:	High certainty around cost, schedule and resources
Category:	Program	Assessment Score:	88
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 capital maintenance expenditures required to keep these plants operating at their current performance. The program will work to improve the reliability of these plants so that their value can be maximized in both the energy and ancillary markets. Plants included are Long Lake, Little Falls, Noxon Rapids, and Cabinet Gorge.	describe any incremental changes that this Program would benefit present operations	\$ 3,500,000	\$ -	\$ -	10

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Status Quo :	Current work has been done to achieve a relatively high availability rate for these assets. Work has been prioritized according to equipment needs.	n/a	\$ 1,890,000	\$ -	\$ -	15
Alternative 1: Brief name of alternative (if applicable)	We could reduce spending to reduced levels for a small decrease in overall availability, but would reduce ancillary services from plants (i.e. no Cabinet Gorge reserves, load following services, etc.).	describe any incremental changes in operations	\$ 2,200,000	\$ -	\$ -	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):					
2012-2016					4000	4102				
	Capital Cost	O&M Cost	Other Costs	Approved	4003	4103				
Previous	\$ 1,890,000	\$ -	\$ -	\$ 1,890,000	4004	4105				
2012	\$ 3,500,000	\$ -	\$ -	\$ 2,533,000	4100					
2013	\$ 3,500,000	\$ -	\$ -	\$ 2,233,000						
2014	\$ 3,500,000	\$ -	\$ -	\$ 2,833,000						
2015	\$ 3,500,000	\$ -	\$ -	\$ 4,853,000						
2016	\$ 3,500,000	\$ -	\$ -	\$ 3,533,000						
2017	\$ 3,500,000	\$ -	\$ -	\$ 3,533,000						
2018	\$ 3,500,000	\$ -	\$ -	\$ 3,533,000						
2019	\$ -	\$ -	\$ -	\$ 3,533,000						
2020	\$ -	\$ -	\$ -	\$ -						
Future	\$ 3,500,000	\$ -	\$ -	\$ -						
Total	\$ 29,890,000	\$ -	\$ -	\$ 28,474,000						



Mandate Excerpt (if applicable):
Within this program, there are some FERC and NERC mandated items that are included. These are expected to be managed as part of the overall program and are not considered as individual items here.

Additional Justifications:
The magnitude of the value of this program is not evident with the scoring system used. The CIRR calculated for this program is 54.07% for each reduction of 1% in availability. Sustaining this program is very important for this class of assets. While the purpose of this program is to sustain the current level of unit availability for these plants; individually, we have experienced a decline in the availability of Little Falls due to aging equipment and failures of that equipment. This is being addressed in a separate project request. Additionally, efforts will be made within this program to improve what is commonly referred to as the ancillary services from these generating assets. This include installing blow down systems to allow for spinning reserves, moving load following demands to all of these plants, voltage regulating needs, etc. This will also include some elements of hydro license compliance as related to plant operations and equipment.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability

Contract Labor: YES NO

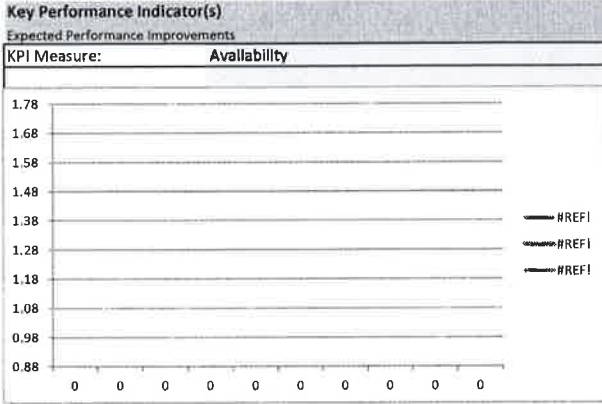
Enterprise Tech: ES - attach form NO or Not Required

Facilities: ES - attach form NO or Not Required

Capital Tools: ES - attach form NO or Not Required

Fleet: ES - attach form NO or Not Required

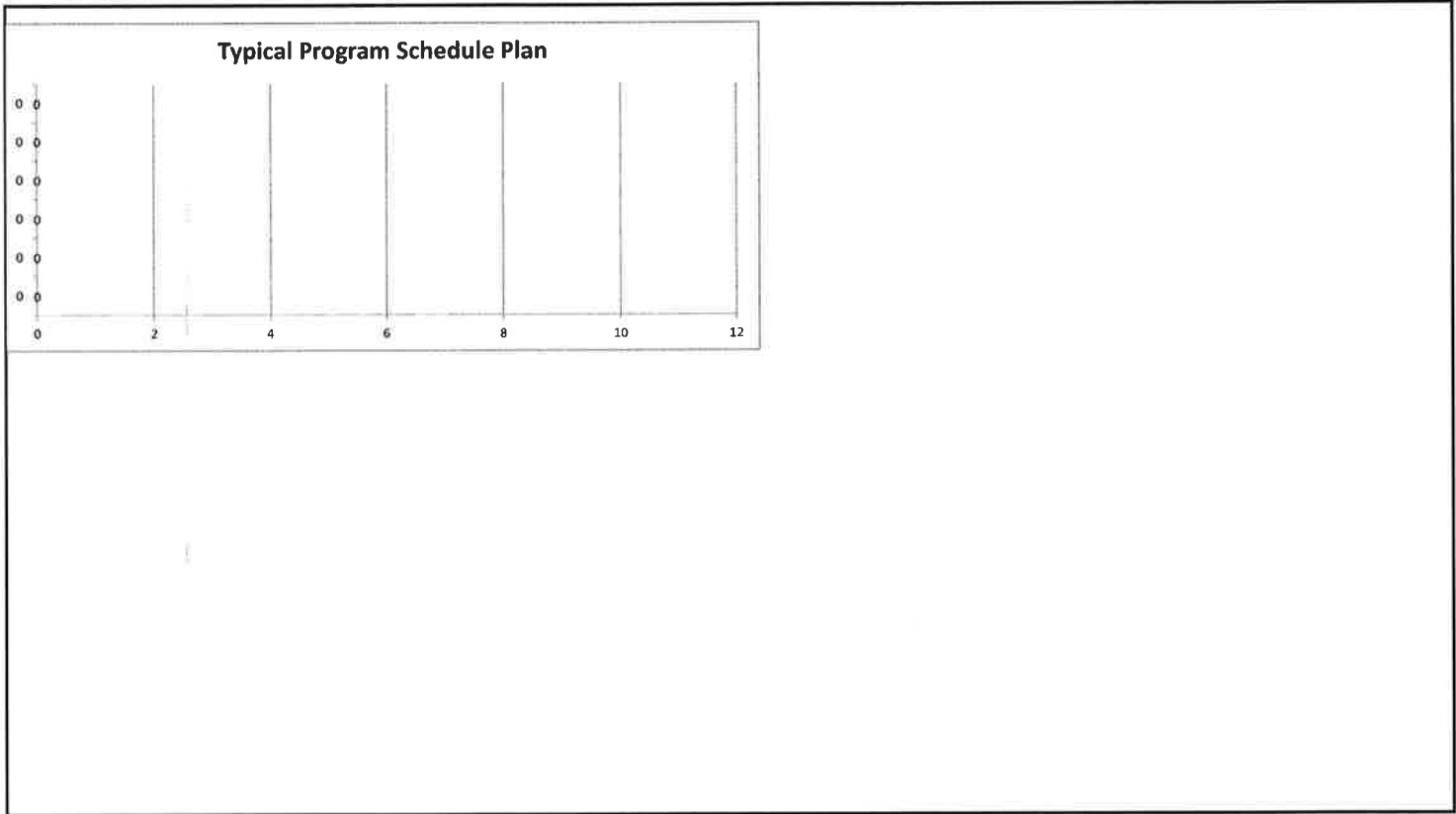
Capital Investment Business Case



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens* Director/Manager
(if necessary)



To be completed by Capital Planning Group	
Rationale for decision	Review Cycles 2012-2016
	Date
	Template

To: Regulating Hydro Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply *SK*

Date: 2/11/2016

Re: Regulating Hydro Capital Investment Considerations

Due to the similarities between the Base Load Hydro and Regulating Hydro business cases, both have been discussed together in the supporting documentation included for the Base Load Hydro business case. See therein at page 114 of this section for this information.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Base Load Thermal Plant

ER No: ER Name:
4149 Base Load Thermal

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$6,600¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,200	0	0	0	0	0	0	1,810	0	0	0	0	390
2017	2,200	0	0	0	0	0	0	1,810	0	0	0	0	390
2018	2,200	0	0	0	0	0	0	1,810	0	0	0	0	390

Business Case Description:

This program is necessary to sustain or improve the existing operating costs the major Base Load generating stations. This program is specifically for Coyote Springs 2, Colstrip, Kettle Falls, and Lancaster. Work includes replacement of items identified through asset management decisions and programs necessary to maintain reliable and low operating costs of these plants. As this program proceeds, it is expected that forced outage rates and forced derates of these facilities will decrease to a level one standard deviation less than the current average resulting in more economic benefits for the project.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Base Load Thermal Plant	Assessments:	
Requested Amount	\$6,500,000	Financial:	High - Exceeds 12% CIRR
Duration/Timeframe	ongoing Year Program	Strategic:	Generating Fleet Modernization
Dept., Area:	GPSS / Power Supply	Operational:	Operations require execution to perform at current levels
Owner:	Thomas Dempsey	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Jason Thackston / Andy Vickers	Program Risk:	High certainty around cost, schedule and resources
Category:	Program	Assessment Score:	94
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 is necessary to sustain or improve the existing operating costs the major Base Load generating stations. This program is specifically for Coyote Springs 2, Colstrip, Kettle Falls, and Lancaster. Work includes replacement of items identified through asset management decisions and programs necessary to maintain reliable and low operating costs of these plants. As this program proceeds, it is expected that forced outage rates and forced derates of these facilities will decrease to a level one standard deviation less than the current average resulting in more economic benefits for the project.	This will improve the forced outage rate for these plants by an overall 0.1%	\$ 2,200,000	\$ -	\$ -	8

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo :	These plants continue to age and their economic performance has degraded over time. These degrades have been offset with work that is included in a program like this. Currently, each plant is managed independent of the other,	n/a	\$ -	\$ -	\$ -	15
Alternative 1: Brief name of alternative (if applicable)	The program can be reduced in amount and effectiveness in accomplishing the Goal	current trend would be reduced.	\$ 5,500,000	\$ -	\$ -	10
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):				
2012-2016					Current ER 4148				
	Capital Cost	O&M Cost	Other Costs	Approved					
Previous	\$ 6,520,910	\$ -	\$ -	\$ 6,520,910					
2012	\$ 6,500,000	\$ -	\$ -	\$ 6,877,000					
2013	\$ 6,500,000	\$ -	\$ -	\$ 7,500,000					
2014	\$ 6,500,000	\$ -	\$ -	\$ 2,300,000					
2015	\$ 2,200,000	\$ -	\$ -	\$ 2,020,000					
2016	\$ 2,200,000	\$ -	\$ -	\$ 2,200,000					
2017	\$ 2,200,000	\$ -	\$ -	\$ 2,200,000					
2018	\$ 2,200,000	\$ -	\$ -	\$ 2,200,000					
2019	\$ 2,200,000	\$ -	\$ -	\$ 2,200,000					
2020	\$ 2,200,000	\$ -	\$ -	\$ 2,200,000					
Future									
Total	\$ 39,220,910	\$ -	\$ -	\$ 36,217,910					

Mandate Excerpt (if applicable):
 Within the program there are a number of regulatory mandates for air emissions and monitoring that must be complied with. There are numerous NERC requirements that must also be met. These mandates are included within the amount listed above.

Additional Justifications:
 As these plants degrade, we expose ourselves to increasing forced outage rates and must acquire replacement energy and capacity from the market. This can leave significant exposure for shareholders in a particular year.

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)

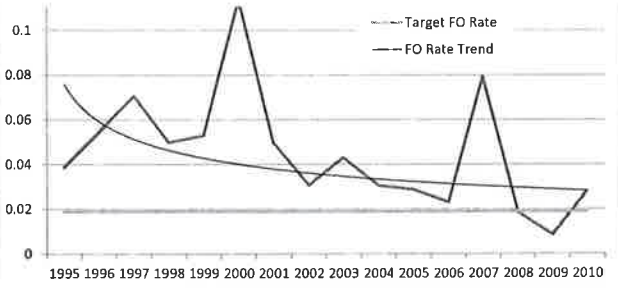
Expected Performance Improvements

KPI Measure:	Forced Outage Rate
0.12	FO Rate

Prepared signature

Section 1

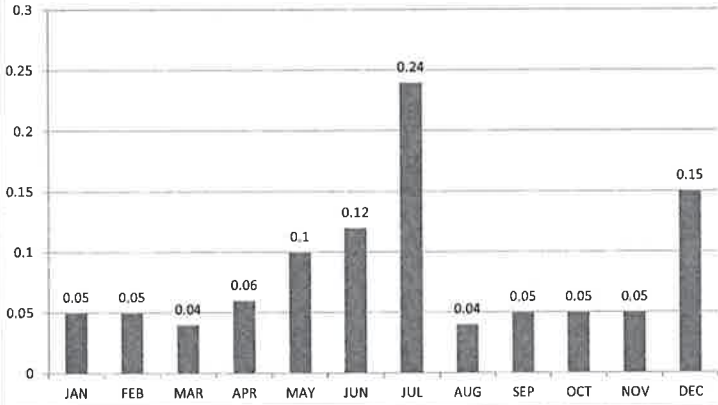
Capital Investment Business Case



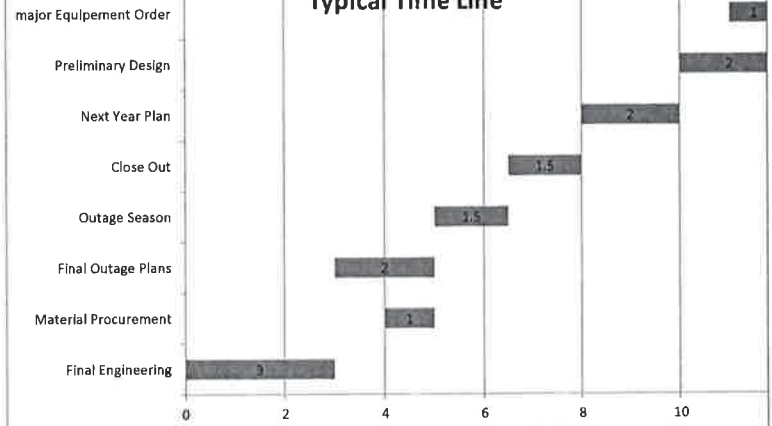
Reviewed signature _____ Director/Manager

Other Party Review signature Margi Stevens _____ Director/Manager
(if necessary)

Anticipated Cash Flow



Typical Time Line



To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Base Load Thermal Business Case 2016 Washington GRC File

From: Scott Kinney, Director of Power Supply *SK*

Date: 2/11/2016

Re: Base Load Thermal Capital Investment Considerations

According to the Generation Management department, the Base Load Thermal business case addresses capital projects primarily driven by reliability considerations at Avista's base load thermal generation plants (those not covered by other business cases—such as Colstrip Thermal Capital and Coyote Springs II LTSA). This business case is similar to the Peaking Generation business case or the Baseload Hydro and Regulating Hydro business cases, in that the work completed through this business case is regular responsive maintenance to keep the generating plants in an operational state.

The chart on the following page illustrates significant projects currently planned for completion under the Base Load Thermal business case in 2016-2018, along with comments regarding the factors driving the necessity of the completion of these projects.

Facility Name	Project Name	Budget Year	Cost	Project Description	Drivers	Alternatives	Risks	Benefits
Coyote Springs 2	Hot Reheat Attemperator Replacement	2016	\$ 150,000	Upgrade the Hot Reheat Attemperator from a single spray nozzle to multiple spray nozzle configuration, and to install an Inconel (metal alloy) liner	The current attemperator has experienced frequent warping and cracking on the liner due to poor atomization from the spray nozzle, and erosion of the spray nozzle resulting in excessive maintenance expenses and risk of the liner migrating down the steam line.	Only replace the liner, which was completed in 2012. This has proven to be only a temporary repair.	If nothing is done, there is risk of the liner liberating from the steam pipe, potentially causing steam turbine or steam valve damage	By upgrading to a multi-nozzle configuration, that allows for a more uniform - better atomized spray - and Inconel liner, the concern of the liner warping and cracking, and spray nozzle deterioration, is drastically reduced.
Kettle Falls GS	Ash MCC Replacement	2016	\$ 330,000	Replace the Ash Motor Control Centers with new Allen Bradley Intellicenter MCC's.	We are no longer able to source replacement parts of the Gould MCC's which are no longer manufactured. (We recently purchased a spare breaker from a junk yard to get the parts needed to repair a current breaker)	Continue to operate on the current system and do not upgrade.	Increased down time on the main unit. With REC's and the need for Renewable power from Kettle availability is critical. Failure of the ash system would limit the unit to only natural gas firing at half the output and eliminate 50MW's of renewable REC's	Reliability
Kettle Falls GS	Demineralizer Building MCC Replacement	2017	\$ 757,000	Replace the Demineralizer Building MCC with new Allen Bradley Intellicenter MCC's. This project will also include replacing the existing cooling tower fan motor controllers with VFD's and reversing gearboxes.	We are no longer able to source replacement parts of the Gould MCC's which are no longer manufactured. We ran for a few months in 2014 limited on cooling ability due to not having spare parts for the cooling tower fans. We were able to get parts from the boiler MCC project that was completed in 2014 to get the cooling tower fans operating in fast mode again.	Continue to operate on the current system and do not upgrade.	Increased down time on the main unit. With REC's and the need for Renewable power from Kettle availability is critical. The plant would not be able to operate if the demineralizer MCC's failed.	Reliability
Kettle Falls GS	PLC #5 Migration	2016	\$ 100,000	Migrate the Balance of Plant PLC #5 areas include fuel yard, water treatment and ash handling.	The PLC #5 has become legacy system in the lifespan of controllers. It is becoming more costly to maintain and adding new functionality to the Plant using the PLC #5 is limited and cost more than just migrating to ControlLogix. We have an existing ControlLogix PLC. We would also see an overall performance enhancement of being able to add functionality for plant operation in many areas.	Continue to operate on the current system and do not upgrade.	Increased down time on the main unit. With REC's and the need for Renewable power from Kettle availability is critical. The PLC #5 continues to have "glitches" and failures. These failures trip off critical equipment and limits operations of the plant. There have been control failures in PLC #5 that have caused the ash system to trip which caused plugging in the hoppers and put employees at risk to clear the hot ash.	Reliability, Safety
Kettle Falls GS	Replace 13.8kV - 480V Transformers	2016	\$ 550,000	Replace the original station service transformers (4) this is a two year project replacing two each year starting in 2016.	The transformers are at end of life and are currently being operated in an abnormal configuration to keep the standby transformer isolated instead of energized due to the sever breakdown of insulation.	Continue to operate on the current system and do not upgrade. There are no repairs available to our transformers and replacement is most cost effective.	In 2014 GPSS Central Maintenance Electrical crews identified serious breakdown of the transformer insulation. A change to the SOP was implemented to mitigate the risk of a transformer breaker. Transformer failure creates a safety concern and could affect plant output for an extended outage as replacements many not be easily procured.	Safety, Reliability

Facility Name	Project Name	Budget Year	Cost	Project Description	Drivers	Alternatives	Risks	Benefits
Kettle Falls GS	Asphalt Landfill Access Road	2017	\$ 220,000	Asphalt the landfill access road from HWY 395 to the landfill access gate approximately 1.2 miles of roadway.	Paving the landfill road will reduce fugitive dust from blowing onto neighboring properties and homes. The 1.2 mile gravel roadway is a yearly maintenance issue with road grading and dust control. The wash boarded road causes excessive maintenance on the ash truck due to the vibrations and shaking.	Continue current maintenance plan of grading and oiling the access roadway.	Potential environmental lawsuit(s) from neighboring property owners due to fugitive dust. Potential fines from the Department of Ecology.	Environmental, Avoided Costs
Kettle Falls GS	Asphalt Plant Roadways	2017	\$ 77,000	Asphalt the heavy traffic areas including around the plant stack from the ash house to the rock box and around the administration building to the demineralizer building.	Paving around the facility will reduce fugitive dust around the plant which helps for the air operating permit with the Department of Ecology. This will also eliminate the continues cost of oil and grading the back haul road at the plant site.	Continue current maintenance plan of grading and oiling the roadways.	Potential environmental lawsuit(s) from neighboring property owners due to fugitive dust. Potential fines from the Department of Ecology.	Environmental, Avoided Costs
Kettle Falls GS	Fuel Yard MCC Replacement	2018	\$ 345,000	Replace the Fuel Yard Motor Control Centers with new Allen Bradley Intellicenter MCC's.	We are no longer able to source replacement parts of the Gould MCC's which are no longer manufactured.	Continue to operate on the current system and do not upgrade.	Increased down time on the main unit. With REC's and the need for Renewable power from Kettle availability is critical. Failure to the Fuel Yard MCC's could have a serious impact on wood sourcing into the plant. If the system was unable to operate for an extended amount of time source mills would be forced to take hog fuel to another facility which could have a negative impact on Kettle for many years. The \$6+ million fuel contract depend on Kettle being able to offload trucks and fuel the plant.	Reliability
Kettle Falls GS	Install Production Well #2	2018	\$ 215,000	Install new full capacity production well and associated piping.	This is the final phase of Avista building an independent water supply system to meet KF needs. Currently there is only one full capacity production well in service. This will allow the plant to keep water to the facility if there were to be a pump failure. At this time the plant is still connected to the City water system as an emergency backup. This second pump will allow the plant to meet the required minimum pumping capacity of 2000 gpm for fire protection as required by insurance.	Continue to operate on the current system and do not upgrade.	The plant will need to continue to rely on the City of Kettle Falls for system back up and fire protection at a new "industrial" water rate imposed by the City for Avista.	Avoided Costs
Kettle Falls GS	Hammer Hog Replacement	2018	\$ 200,000	Replace the original hammer hog.	Remove the existing hammer hog and replace with new system. This project will include options for installing VFD to reduce energy consumption. The entire fuel handling system is at end of life and due for major repairs/replacement. The hammer hog would through put would be increase to allow quicker truck turn time of our contractors.	Continue to operate on the current system and do not upgrade.	The system has the ability to by-pass oversized wood fuel. This would allow large pieces of wood to enter into the fuel feed system of the boiler. Large pieces of wood cause reduced output of the main unit due to bridging and plugging of the wood feeders. Its critical to maintain wood fuel at the boiler designed specification of less than 4"	Reliability

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Clark Fork Settlement Agreement

ER No: ER Name:

6100 Clark Fork License/Compliance

6103 Clark Fork Implement PME Agreement

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$33,392¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	6,094	0	2,120	25	0	0	25	0	0	25	0	0	3,899
2017	4,226	0	0	581	0	0	581	0	0	581	0	0	2,481
2018	32,545	0	0	613	0	0	613	0	0	613	0	0	30,705

Business Case Description:

Implementation of Protection, Mitigation and Enhancement (PM&E) programs. License is issued to Avista Corporation for a period of 45 years, effective March 1, 2001, to operate and maintain the Clark Fork Project No. 2058. The License includes hundreds of specific legal requirements, many of which are reflected in License Articles 404-430. These Articles derived from a comprehensive settlement agreement between Avista and over 20 other parties, including the States of Idaho and Montana, various federal agencies, five Native American tribes, and numerous Non-Governmental Organizations. We are required to develop, in consultation with the Management Committee, a yearly work plan and report, addressing all PM&E measures of the License. In addition, implementation of these measures is intended to address ongoing compliance with Montana and Idaho Clean Water Act requirements, the Endangered Species Act (fish passage), and state, federal and tribal water quality standards as applicable. License articles also describe our operational requirements for items such as minimum flows, ramping rates and reservoir levels, as well as dam safety and public safety requirements.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Program Business Case



Investment Name:	Clark Fork Settlement Agreement	Assessments:	
Requested Amount	\$52,461,752	Financial:	High - Exceeds 12% CIRR
Duration/Timeframe	45 Year Program	Strategic:	Other
Dept., Area:	Environmental	Operational:	Operations require execution to perform at current levels
Owner:	Tim Swant (Mgr), Bruce Howard (Dir)	Business Risk:	ERM Reduction >10 and <= 15
Sponsor:	Marian Durkin	Program Risk:	Moderate certainty around cost, schedule and resources
Category:	Mandatory	Assessment Score:	174
Mandate/Reg. Reference:	n/a	Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Implementation of Protection, Mitigation and Enhancement (PM&E) programs. License is issued to Avista Corporation for a period of 45 years, effective March 1, 2001, to operate and maintain the Clark Fork Project No. 2058. The License includes hundreds of specific legal requirements, many of which are reflected in License Articles 404-430. These Articles derived from a comprehensive settlement agreement between Avista and over 20 other parties, including the States of Idaho and Montana, various federal agencies, five Native American tribes, and numerous Non Governmental Organizations. We are required to develop, in consultation with the Management Committee, a yearly work plan and report, addressing all PM&E measures of the License. In addition, implementation of these measures is intended to address ongoing compliance with Montana and Idaho Clean Water Act requirements, the Endangered Species Act (fish passage), and state, federal and tribal water quality standards as applicable. License articles also describe our operational requirements for items such as minimum flows, ramping rates and reservoir levels, as well as dam safety and public safety requirements.		\$ 9,313,795	\$ -	\$ -	4

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program: If the PM&Es are not funded, there is potential for penalties/fines, new license requirements or alternative enforcement and higher mitigation costs, and/or loss of operational flexibility of the hydro facilities; in addition, we are subject to direct enforcement or lawsuits regarding the settlement.	n/a	\$ -	\$ -	From Moderate to Extreme	20
		\$ -	\$ -	\$ -	0
		\$ -	\$ -	\$ -	0
		\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):	
5 years of costs					6103	6100
	Capital Cost	O&M Cost	Other Costs	Approved		
Previous	\$ 17,918,568	\$ -	\$ -	\$ 19,725,537		
2015	\$ 9,927,956	\$ -	\$ -	\$ 5,515,546		
2016	\$ 9,313,795	\$ -	\$ -	\$ 9,313,795		
2017	\$ 13,475,510	\$ -	\$ -	\$ 13,475,510		
2018	\$ 10,602,275	\$ -	\$ -	\$ 10,602,275		
2019	\$ 6,962,843	\$ -	\$ -	\$ 6,962,843		
2020	\$ 12,107,329	\$ -	\$ -	\$ 12,107,329		
2021+	\$ -	\$ -	\$ -			
Total	\$ 80,308,276	\$ -	\$ -	\$ 77,702,835		

Mandate Excerpt (if applicable):
Article 401. The licensee shall comply with the terms and conditions of this license in accordance with the Clark Fork Settlement Agreement (CFSA) (License Application Volume III) Entered into January 28, 1999, in addition to the articles set forth within the FERC project 2058-014

Additional Justifications:
The CFSA establishes processes and includes measures for resolving a wide range of complex and conflicting areas of interest to 27 various parties. Under this agreement, Avista will work with a Management Committee comprised of one representative of each of the parties to implement the PM&E measures.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

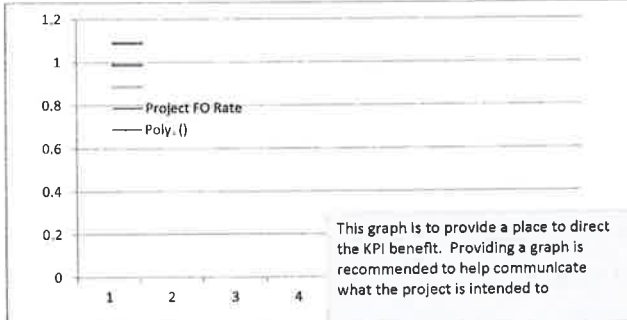
Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

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



Prepared signature _____

Reviewed signature _____

Director/Manager

Other Party Review signature _____
 (if necessary) *Marjorie Skewens*
 Director/Manager

Capital Budget Projections

	2016	2017	2018	2019	2020	
ER 6103	4,023,795	4,225,510	4,352,275	4,482,843	4,617,329	Core PMEs: assumes 3% labor change, 3% ave GDP and int adjustment (10 year historical review)
	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	(2,000,000)	CPG revised capital total
	4,900,000	8,700,000	7,500,000	-	-	Per Bruce Howard: decrease capital base by \$2,000,000 2016-2020
Guy	1,850,000	1,900,000	-	-	-	Cabinet Gorge fishway: assumed to be started July 2016 and all work completed by end of 2018. (permitting included)
Bruce	240,000	350,000	450,000	280,000	390,000	Spillway Crest modifications for TDG- assumes repairs to Bay 2 are complete in 2013 and revised design are completed in late 2013 early 2104. Modify 1 bay in 2014, 2 bays in 2015, 2 bays in 2016, and 2 bays in 2017. \$500k in years 2018-2020 are for mitigation fund
Min Flow	100,000	100,000	100,000	100,000	500,000	Tributary traps for downstream passage: assumes feasibility study in 2016, final design in 2017 with construction to begin in 2018. New feasibility study in 2019, final design in 2020.
ER 6100	100,000	100,000	100,000	100,000	100,000	Noxon Rapids fishway: assumes final design and contracts completed by end of 2018. Construction to begin mid 2019 and completed by end of 2020. (permitting included)
B04	9,313,795	13,475,510	10,602,275	6,962,843	12,107,329	Ongoing non-PME capital for facilities maintenance.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	Date	Template

To: Clark Fork Settlement Agreement Business Case 2016 Washington GRC File

From: Bruce Howard, Director of Environmental Affairs 

Date: 2/11/2016

Re: Clark Fork Settlement Agreement Investment Considerations

Avista's planned capital investment related to the Clark Fork Settlement Agreement is driven by the agreements reached in the settlement process. An excerpt from the FERC order issuing Avista's current license to operate the Clark Fork River project is included in the following pages. License articles 404-430 of the FERC order reflect many of the legal requirements driving the capital investment related to the Clark Fork Settlement Agreement. The full order can be provided upon request.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: James J. Hoecker, Chairman;
William L. Massey, Linda Breathitt,
and Curt Hébert, Jr.

Avista Corporation

Project No. 2058-014

ORDER ISSUING NEW LICENSE

(Issued February 23, 2000)

On February 17, 1999, Avista Corporation (Avista)¹ filed an application for a new license pursuant to Sections 15 and 4(e) of the Federal Power Act (FPA),² for the continued operation and maintenance of the Noxon Rapids Hydroelectric Project No. 2075 and Cabinet Gorge Hydroelectric Project No. 2058. The projects are located on the Clark Fork River in Bonner County, Idaho, and Sanders County, Montana.³ The Noxon Rapids Project occupies 913 acres of United States land within the Idaho Panhandle, Lolo, and Kootenai National Forests. The Cabinet Gorge Project occupies 356 acres of United States land within the Idaho Panhandle and Kootenai National Forests. Although the projects have been operated under separate licenses, Avista is seeking a single new license that would encompass both projects, and has renamed the two as the Clark Fork Project.

¹Avista changed its name from the Washington Water Power Company effective January 1, 1999.

²16 U.S.C. §§ 791(e), 808.

³The Clark Fork is a navigable water of the United States at least from Pend Oreille Lake in Idaho to the mouth of the Jocko River in Montana. See Montana Power Company, 8 FPC 751,753.

BACKGROUND

The original licenses for the Cabinet Gorge Project and the Noxon Rapids Project were issued on January 9, 1951, and May 12, 1955, respectively,⁴ and will both expire on February 28, 2001.⁵ With its new license application, Avista filed a collaboratively-prepared draft environmental assessment, a Settlement Agreement, five resource management plans and supporting data. The Settlement Agreement is described below.

Notice of the application was published, and comments were received. Timely motions to intervene in this proceeding were filed by the State of Montana (Montana), U.S. Department of Agriculture's Forest Service, and U.S. Department of the Interior. The State of Idaho filed an untimely motion to intervene on May 12, 1999.⁶ None of the motions filed are in opposition to issuing a new license. However, Bob and Betsy Best and Charlton Mills (legal counsel representing eight owners of private lands in the lower Clark Fork River downstream of the Cabinet Gorge Dam) filed protests. The concerns of the protestors are discussed below.

Commission staff issued a Draft Environmental Impact Statement (EIS) that evaluated the potential impacts of the two projects. Numerous comments on the Draft EIS were filed, and the Commission staff considered these comments in preparing the Final EIS, which was issued in February 2000.⁷ We have fully considered the motions and comments received from interested agencies and individuals in determining whether, and under what conditions, to issue this license.

⁴10 FPC 657; 14 FPC 731.

⁵On February 7, 1995, Avista filed a request to accelerate the expiration date of the license for the Noxon Rapids Project from April 30, 2005, to February 28, 2001. The Commission issued an order on June 2, 1995, accelerating the expiration date to February 28, 2001. Under the Commission's regulations, 18 CFR 16.4(a)(2), this request for acceleration of the expiration date was deemed to be the Notice of Intent to file for a new license for the Noxon Rapids Project.

⁶A notice granting late intervention was issued August 12, 1999.

⁷References in this order to the EIS are to the Final EIS unless otherwise specified. Comments on the Draft EIS were received from the Montana State Historic Preservation Office, the U.S. Environmental Protection Agency, Idaho Department of Fish and Game, U.S. Department of the Interior, Montana Department of Environmental Quality, U.S. Forest Service, Calvin H. Ryder, River Care, and Avista Corporation.

Section 1

Project No. 2058-014

-29-

The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus 4 percentage points (400 basis points).

Article 203. If the Licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

Article 204. Within 60 days of the effective date of this license, the Licensee shall file for approval revised Exhibit G and Exhibit F drawings. Exhibit G shall be revised to reflect the current licensee name (Avista Corporation), combined project name and number (Clark Fork Project, FERC No. 2058), and boundary changes approved by this order. Exhibit F drawings shall be revised to reflect the current licensee name and the combined project name and number approved by this order.

Article 205. Within 45 days of the effective date of the license, the Licensee shall file three original sets of aperture cards of the approved drawings. The drawings must be reproduced on silver or gelatin 35 mm microfilm. All microfilm must be mounted on type D (3-1/4" x 7-3/8") aperture cards. The Licensee shall submit one copy of Form FERC-587 with the aperture cards.

Prior to microfilming, the FERC Drawing Number shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number must be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (e.g., F-1, G-1, etc.), Drawing Title, and date of this license must be typed on the upper left corner of each aperture card.

Two sets of the aperture cards shall be filed with the Secretary of the Commission, ATTN: OHL/Division of Licensing and Compliance. The third set of aperture cards shall be filed with Commission's Portland Regional Office.

Article 401. The Licensee shall comply with the terms and conditions of this license in accordance with the Clark Fork Settlement Agreement (License Application

Project No. 2058-014

-30-

Volume III) entered into January 28, 1999, in addition to the articles set forth below in this license.

Article 402. The Licensee shall develop, in consultation with the Management Committee, which is comprised of one representative of each of the 27 parties to the Settlement,⁴⁷ an Administrative Plan and Annual Report (Annual Report) to be filed for Commission approval on or before April 15 of each year, addressing all the resource Protection, Mitigation and Enhancement (PM&E) measures in license Articles 404 through 430 that are proposed to be implemented, and describing any changes from the filed PM&E measures. The Annual Report will provide a summary of the PM&E measures implemented, funds expended, and assess resource benefits gained in the previous calendar year. The Annual Report will also include annual implementation plans for each PM&E measure proposed for implementation. Each implementation plan will include a summary of the projected annual budget, as well as key actions, tasks, and decisions to be undertaken in the current calendar year. In the event the Management Committee identifies any unresolved issue with regard to the implementation of the Settlement Agreement, the Annual Report will include an explanation of such issues. The Commission reserves the right to make changes to the Annual Report and the implementation plans.

Article 403. In the case of any PM&E measure that establishes a fund or an amount of money to be made available by the Licensee on an annual basis, the funds shall be adjusted for inflation using the Gross Domestic Product-Implicit Price Deflator, as reported by the Bureau of Economic Analysis, U.S. Department of Commerce, and described in Paragraph 23 of the Settlement Agreement. Unexpended funds shall be carried over annually for expenditure in following years and the amount of any unexpended funds carried forward shall, at the end of the year in question and each year thereafter, be increased by the yield in percent per year, compounded daily, on U.S. Treasury securities at a constant maturity of one year, as reported in the Federal Reserve Statistical Release H-15 (Daily Update on Selected Interest Rates for January 1), or the most recent reporting date prior to January 1 of the given year.

Article 404. The Licensee shall fund and implement, in consultation with the Management Committee, the Idaho Tributary Habitat Acquisition and Fishery Enhancement Program (Appendix A of the Settlement Agreement) to mitigate continuing losses of fish and fish habitat due to the operation of the project. In the Annual Report

⁴⁷See n. 18, *supra*, for a list of the parties.

Project No. 2058-014

-31-

required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 405. The Licensee shall fund and implement, in consultation with the Management Committee, the Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B of the Settlement Agreement) to mitigate losses of fish, habitat, and recreational fisheries due to continued operation of the project. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 406. The Licensee shall fund and implement, in consultation with the Management Committee, the Native Salmonid Restoration Plan (License Application Volume IV.A in accordance with the Settlement Agreement and Appendix C thereof) to mitigate the continuing effects of the project as obstructions to fish passage, and to achieve the goal of increasing the long term population viability of native salmonids in the Lake Pend Oreille - lower Clark Fork River system. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 407. The Licensee shall fund and implement, in consultation with the Management Committee, the Bull Trout Protection and Public Education Project (Appendix D of the Settlement Agreement) for the purpose of increasing the viability of bull trout populations by reducing poaching, accidental harvest, and habitat loss thereby mitigating impact to these species caused by the continued operation of the project. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 408. The Licensee shall develop and implement, in consultation with the Management Committee, the Watershed Councils Program (Appendix E of the Settlement Agreement) to improve conditions for aquatic life inhabiting those streams, including macroinvertebrates and native fish species such as bull trout, westslope cutthroat trout, and mountain whitefish. The associated protection and enhancement of tributary streams and the aquatic life inhabiting them will serve as mitigation and resource enhancements to offset impacts to aquatic life due to continued power peaking operations of the project. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 409. The Licensee shall fund and implement, in consultation with the Management Committee, the Support of the Tri-State Implementation Council Water Quality Monitoring Program (Appendix F1 of the Settlement Agreement) to provide a

Project No. 2058-014

-32-

systematic, long-term monitoring of nutrients and metals to monitor and determine the role of the project as nutrient and/or retention sinks. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 410. The Licensee shall fund and implement, in consultation with the Management Committee, the Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals PM&E (Appendix F2 of the Settlement Agreement) to provide for monitoring of Noxon Reservoir during periods when reservoir stratification is possible and if temperature and dissolved oxygen (DO) benchmarks as identified in the PM&E are met, to initiate more intensive monitoring of nutrient and metals levels. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E.

Article 411. The Licensee shall fund and implement, in consultation with the Management Committee, the Aquatic Tissue Analysis PM&E (Appendix F3 of the Settlement Agreement) to analyze aquatic organism tissues for the presence of heavy metals and other toxic substances. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 412. The Licensee shall fund and implement, in consultation with the Management Committee, the Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities (Appendix F4 of the Settlement Agreement) to provide for the development and implementation of a plan to minimize or eliminate the impact of project related maintenance, construction, and emergency activities to water quality and associated resources of the Clark Fork River and Lake Pend Oreille. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 413. The Licensee shall fund and implement, in consultation with the Management Committee, the Dissolved Gas Supersaturation Control, Mitigation, and Monitoring PM&E (Appendix F5 of the Settlement Agreement) to provide for the study, control, mitigation, and monitoring of gas supersaturation and the associated biological resource impacts in the Clark Fork-Pend Oreille system related to spill at the Clark Fork Project. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 414. The Licensee shall fund and implement, in consultation with the Management Committee, the Land Use Management Plan (License Application Volume IV.B), in accordance with the Settlement Agreement and Appendix G thereof, to ensure that project lands can reasonably satisfy a variety of competing resource demands and for

Project No. 2058-014

-33-

the purpose of ensuring the implementation of a land use classification system, a land and reservoir use permitting system, and appropriate monitoring and enforcement mechanisms. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 415. The Licensee shall fund and implement, in consultation with the Management Committee, the Recreation Resources Management Plan (License Application Volume IV.C), in accordance with the Settlement Agreement and Appendix H thereof, to maintain and manage appropriate recreational facilities at the project and to develop new recreational facilities in the vicinity of the project to effectively meet recreation demand during the term of the new license. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 416. The Licensee shall fund and implement, in consultation with the Management Committee, the Aesthetics Management Plan (License Application Volume IV.D), in accordance with the Settlement Agreement and Appendix I thereof, to provide for the protection and enhancement of aesthetic resources associated with the project and to mitigate for project-related impacts to those resources. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 417. The Licensee shall fund and implement the Wildlife, Botanical, and Wetland Management Plan (License Application Volume IV.E), in accordance with the Settlement Agreement and Appendix J thereof, to provide organization and presentation of the various wildlife, botanical, and wetland PM&E measures within a single, comprehensive management plan. Initially these measures include: (a) wildlife habitat acquisition, enhancement and management (Article 418); (b) black cottonwood habitat protection and enhancement (Article 419); (c) wetlands protection and enhancement (Article 420); (d) bald eagle monitoring and protection (Article 421); (e) peregrine falcon monitoring and protection (Article 422); (f) common loon monitoring and protection (Article 423); (g) Clark Fork Delta habitat protection and mitigation (Article 424); (h) forest habitat protection and enhancement (Article 425); and, (i) reservoir islands protection (Article 426). In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for these PM&E measures.

Article 418. The Licensee shall fund and implement, in consultation with the Management Committee, the Wildlife Habitat Acquisition, Enhancement, and Management Program (Appendix K of the Settlement Agreement) to mitigate for the potential effects to wildlife resources and habitat due to the continued operation of the

Project No. 2058-014

-34-

project. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 419. The Licensee shall fund and implement, in consultation with the Management Committee, the Black Cottonwood Habitat Protection and Enhancement PM&E (Appendix L of the Settlement Agreement) to provide for the protection and enhancement of black cottonwood trees and stands on Licensee-owned project lands. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 420. The Licensee shall fund and implement, in consultation with the Management Committee, the Wetlands Enhancement Program PM&E (Appendix M of the Settlement Agreement) to provide for the protection and enhancement of wetland areas within the project boundary. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 421. The Licensee shall fund and implement, in consultation with the Management Committee, the Bald Eagle Monitoring and Protection PM&E (Appendix N1 of the Settlement Agreement) to provide for the monitoring and protection of bald eagle occurrence and nest sites, which could be negatively affected by project operations or project related human activities associated with recreation or other land use activities. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 422. The Licensee shall fund and implement, in consultation with the Management Committee, the Peregrine Falcon Monitoring and Protection PM&E (Appendix N2 of the Settlement Agreement) to provide for the monitoring of peregrine falcon occurrence and nesting activity and the protection of nest sites which might be negatively affected by the project related human activities associated with recreation or other land use activities. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 423. The Licensee shall fund and implement, in consultation with the Management Committee, the Common Loon Monitoring and Protection Program PM&E (Appendix N3 of the Settlement Agreement) to provide for the monitoring of common loon occurrence and nesting activity and the protection of nest sites which might be negatively affected by project operations or project related human activities related to recreation or other land use activities. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Section 1

Project No. 2008-014

-35-

Article 424. The Licensee shall fund and implement, in consultation with the Management Committee, the Clark Fork Delta Habitat Protection and Mitigation Program PM&E (Appendix O of the Settlement Agreement) to prevent the loss of wildlife habitat in the Clark Fork Delta, or mitigate for that loss, to an extent comparable to the estimated loss of habitat that would occur from the continued operation of the project. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 425. The Licensee shall fund and implement, in consultation with the Management Committee, the Forest Habitat Protection and Enhancement PM&E (Appendix P of the Settlement Agreement) to provide for the protection and enhancement of specific parcels of Licensee-owned land along the reservoirs which have been identified as having significant wildlife habitat value. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 426. The Licensee shall fund and implement, in consultation with the Management Committee, the Reservoir Islands Protection PM&E (Appendix Q of the Settlement Agreement) to provide for the protection of islands owned by the Licensee in the project areas to maintain the unique and high quality wildlife habitat functions and values of these islands. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 427. The Licensee shall fund and implement the Programmatic Agreement Among the Kootenai Tribe of Idaho, Confederated Salish and Kootenai Tribes of the Flathead Reservation, Coeur d'Alene Tribe, Kalispel Tribe, Federal Energy Regulatory Commission, Forest Service, Avista Corporation, Advisory Council on Historic Preservation, Idaho State Historic Preservation Office, and Montana State Historic Preservation Office for the Clark Fork Heritage Resource Program executed on December 30, 1998 (Appendix R of the Settlement Agreement).

Article 428. The Licensee shall fund and implement, in consultation with the Management Committee, the Erosion Fund and Shoreline Stabilization Guidelines Program PM&E (Appendix S of the Settlement Agreement) to design and implement effective erosion control measures to protect important resource values on lands affected by project induced erosion. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 429. The Licensee shall fund and implement, in consultation with the Management Committee, the Project Operations Package (Appendix T of the Settlement Agreement) to mitigate the effects of the project. The Licensee shall maintain the

Project No. 2058-014

-36-

following operational limits in accordance with the terms of the Settlement Agreement and Appendix T thereof:

I. (a) General operating limits for the Noxon Rapids development:

Table with 2 columns: Parameter and Value. Rows include Maximum Forebay Elevation (2,331.0 feet), Minimum Forebay Elevation (2,327.0 feet), Minimum Forebay Elevation (2,321.0 feet), and Maximum Forebay Draft Rate (2 feet per day, 5 feet per week).

(b) General operating limits for the Cabinet Gorge development:

Table with 2 columns: Parameter and Value. Rows include Maximum Forebay Elevation (2,175.0 feet), Minimum Forebay Elevation (2,168.0 feet), and Minimum Total Project Discharge (5,000 cfs).

In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 430. The Licensee shall fund and implement, in consultation with the Management Committee, the Additional Operations Mitigation Program (Appendix T of the Settlement Agreement) to mitigate the effects of the project. The Licensee shall fund and implement a broader ecosystem approach to achieving fishery goals, in lieu of changing project operations. In the Annual Report required by Article 402, the Licensee shall include the annual implementation plan for this PM&E measure.

Article 431. The Licensee shall comply with the terms of the Letter Agreement dated January 7, 1999, between Avista Corporation and the U. S. Army Corps of Engineers regarding the coordination of the operations of the Cabinet Gorge development with the operations of the Albeni Falls Project (Volume I License Application, Appendix B).

48 Net draft is the decrease in elevation as measured between two times, at the beginning and end of the period.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Generation / Production

Business Case Name: Hydro Safety Minor Blanket

ER No: ER Name:

6001 Hydro Generation Minor Blanket

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$240¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	75	0	0	19	0	0	19	0	0	19	0	0	19
2017	80	0	0	20	0	0	20	0	0	20	0	0	20
2018	85	0	0	21	0	0	21	0	0	21	0	0	21

Business Case Description:

This project funds periodic capital purchases and projects to ensure public safety at hydro facilities, on and off water, in context of FERC regulatory and license requirements.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 1

Capital Program Business Case



Investment Name:	Hydro Safety Minor Blanket
Requested Amount	\$65,000
Duration/Timeframe	Lifetime Year Program
Dept., Area:	Environmental
Owner:	Michele Drake (Coor); Bruce Howard (Dir)
Sponsor:	Marian Durkin
Category:	Mandatory
Mandate/Reg. Reference:	FERC Hydro Public Safety Guidelines

Assessments:	
Financial:	MH - >= 9% & <12% CIRR
Strategic:	Other
Operational:	Operations require execution to perform at current levels
Business Risk:	ERM Reduction >10 and <= 15
Program Risk:	Moderate certainty around cost, schedule and resources
Assessment Score:	160

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
This project funds periodic capital purchases and projects to ensure public safety at hydro facilities, on and off water, in context of FERC regulatory and license requirements.	n/a	\$ 65,000	\$ -	\$ -	4

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
Alternative 1: Funded	Funding of this program reduces liability risk and improves public safety on and near the hydro facilities. These requirements come from Federal Law and are referenced as part of our hydro licenses from FERC.		Capital Cost	O&M Cost	Other Costs	
Alternative 1: Funded	Funding of this program reduces liability risk and improves public safety on and near the hydro facilities. These requirements come from Federal Law and are referenced as part of our hydro licenses from FERC.	n/a	\$ 65,000	\$ -	\$ -	20
Alternative 2: Unfunded	Potential compliance issues and possible fines imposed. Potential for loss of life or injury and increased legal litigation associated with recreational liability.		\$ -	\$ -	from moderate to extreme	4

Program Cash Flows
5 years of costs

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ 40,000
2014	\$ 65,000	\$ -	\$ -	\$ 88,000
2015	\$ 70,000	\$ -	\$ -	\$ 70,000
2016	\$ 75,000	\$ -	\$ -	\$ 75,000
2017	\$ 80,000	\$ -	\$ -	\$ 80,000
2018	\$ 80,000	\$ -	\$ -	\$ 85,000
2019	\$ -	\$ -	\$ -	\$ 80,000
2020	\$ -	\$ -	\$ -	\$ 80,000
2021+	\$ -	\$ -	\$ -	\$ -
Total	\$ 370,000	\$ -	\$ -	\$ 558,000

Associated Ers (list all applicable):

Current ER	6001

Mandate Excerpt (if applicable):

Section 10(c) of the Federal Power Act authorizes the FERC to establish regulations requiring owners of hydro projects under its jurisdiction to operate and properly maintain such projects for the protection of life, health and property. Title 18, Part 12, Section 42 of the Code of Federal Regulations states that, "To the satisfaction of, and within a time specified by the Regional Engineer an applicant, or licensee must install, operate and maintain any signs, lights, sirens, barriers or other safety devices that may reasonably be necessary".

Additional Justifications:

Hydro Public Safety measures as described in the Federal Energy Regulation Commission (FERC) publication "Guidelines for Public Safety at Hydropower Projects" and as documented in Avista's Hydro Public Safety Plans for each of its hydro facilities.

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

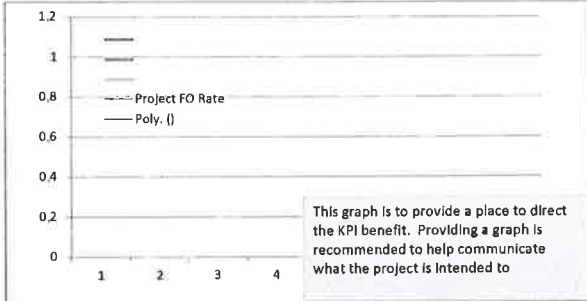
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).



Key Performance Indicator(s)

Expected Performance Improvements

KPI Measure: FERC's Annual Dam Safety Inspections, Public Use Inspection (conducted approximately once every five years) and review & approval of Avista's submittals.



Prepared signature

Reviewed signature

Director/Manager

Other Party Review (if necessary) signature

Marilyn Stevens
Director/Manager

Capital Budget Projections

	2014	2015	2016	2017	2018	
ER 6003	65,000	70,000	75,000	80,000	80,000	Dam Safety anticipated need for safety equipment
H04	65,000	70,000	75,000	80,000	80,000	
ER 7108	265,000	195,000	125,000	125,000	125,000	Franchising / Permit Renewals assume 40 year Railroad permit renewals on existing substations & equipment on the John Wayne Pioneer Trail

HED	Year	Description	Est Cost
Cabinet Gorge	2014	K-rated gate at main entrance, S. entrance, and overlook entrance (all equipped with intercom, card swipe, and CCTV)	\$65,000
Noxon Rapids	2015	K-rated gate at main entrance, S. entrance, and near substation (all equipped with intercom, card swipe, and CCTV)	\$70,000
Long Lake	2016	K-rated gate at main entrance (equipped with intercom, card swipe, and CCTV)	\$25,000
Nine Mile	2016	K-rated gate at main entrance (equipped with intercom, card swipe, and CCTV)	\$25,000
Post Falls	2016	K-rated gate at main entrance (equipped with intercom, card swipe, and CCTV)	\$25,000
Long Lake	2017	Down Stream Warning System	\$80,000
Nine Mile	2018	Down Stream Warning System	\$80,000

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Hydro Safety Minor Blanket Program Business Case 2016 Washington GRC File
From: Bruce Howard, Director of Environmental Affairs BT
Date: 2/11/2016
Re: Hydro Safety Investment Considerations

The Code of Federal Regulations, Title 18, §12.42 states the following, which mandates the installation of public safety measures related to Avista's hydro-electric generation facilities.

§12.42 Warning and safety devices.

To the satisfaction of, and within a time specified by, the Regional Engineer, an applicant or licensee must install, operate, and maintain any signs, lights, sirens, barriers, or other safety devices that may reasonably be necessary or desirable to warn the public of fluctuations in flow from the project or otherwise to protect the public in the use of project lands and waters.

The table on the following page includes currently planned safety improvements through the year 2020.

HED	Year	Description	Est Cost	Status
Upper Falls	2016	New Hydro Public Safety sign at Division St Bridge for boater take-out	\$15,000	Underway
Long Lake	2016	New boater safety floats, cable, and grabline	\$10,000	on hold... waiting for crew
Noxon Rapids	2016	New Fence	\$50,000	waiting for contractor
Nine Mile	2016	New grabline	\$10,000	on hold... waiting for crew
Nine Mile	2016	New gate, fence, signage, and access at 7-Mile Bridge boat launch	\$20,000	waiting for county
Noxon Rapids	2016	New boater safety cable	\$250,000	determining who will pay
Cabinet Gorge	2016	New (adjustable) Grabline	\$10,000	Should be done by Jan 2016
Post Falls	2016	New electronic sign on Spokane St Bridge	\$15,000	no movement
Spokane River	2017	Hydro public safety and security CCTV refresh	\$70,000	Working w security group
Spokane River	2017	Storage facility for hydro safety materials and equipment	\$10,000	no movement
Clark Fork	2018	Hydro public safety and security CCTV refresh	\$70,000	Working w security group
Clark Fork	2018	Storage facility for hydro safety materials and equipment	\$10,000	Maybe near Nat resource office
Nine Mile	2019	New boater safety cable	\$200,000	no movement
Post Falls	2019	New boater safety cable	\$200,000	no movement
Upper Falls	2019	New boater safety cables and (adjustable) grabline(s)	\$150,000	no movement
All	2020	Gates, buoys, fencing, and signage refresh	\$55,000	no movement
Cabinet Gorge	2020	New boater safety cable	\$150,000	no movement

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: General

Business Case Name: Long term Campus Re-Structuring Plan

ER No: ER Name:
7126 Long term Campus Re-Structuring Plan

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$7,450¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	9,550	0	0	0	0	0	0	0	0	0	6,700	0	2,850
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Construct a new warehouse in 2012 and remodel the old warehouse in the Service Building 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.

O&M Offsets are gained due to line trucks and employees not having to travel and off-load waste maters that are recyclable or hazardous. Offsets are anticipated to be approximately \$43,000 in 2016 and \$60,000 in 2017 for a total of \$103,000 on a system level. Washington's allocated portion of these offsets are \$81,000 Electric and \$22,000 Natural Gas.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

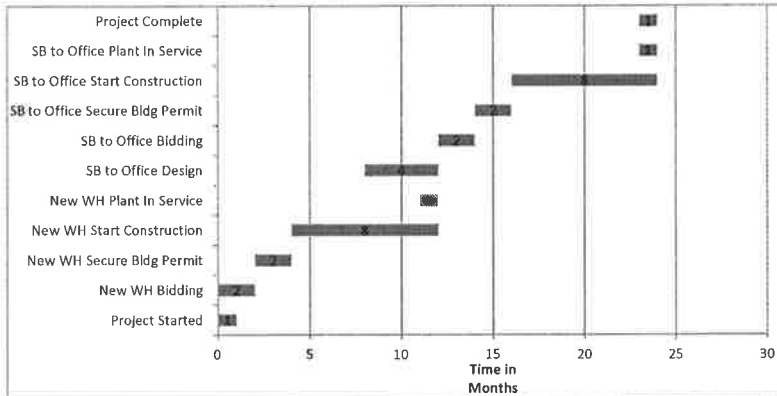


Investment Name:	COF Long-Term Restructuring Plan	Assessments:	
Requested Amount	\$23,450,000	Financial:	High - Exceeds 12% CIRR
Duration/Timeframe	5 Year Project	Strategic:	Other
Dept., Area:	Facilities	Operational:	Operations improved beyond current levels
Owner:	Mike Broemling & Eric Bowles	Business Risk:	ERM Reduction >0 and <= 5
Sponsor:	Heather Rosentrater	Project/Program Risk:	High certainty around cost, schedule and resources
Category:	Project	Assessment Score:	100.5
Mandate/Reg. Reference:	n/a	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	\$ -	\$ -	\$ -	6
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	\$ -	\$ -	\$ 8,000,000
2016	\$ 4,000,000	\$ -	\$ -	\$ 4,000,000
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ -	\$ -	\$ -	\$ -
Future	\$ -	\$ -	\$ -	\$ -
Total	\$ 23,450,000	\$ -	\$ -	\$ 23,950,000

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)

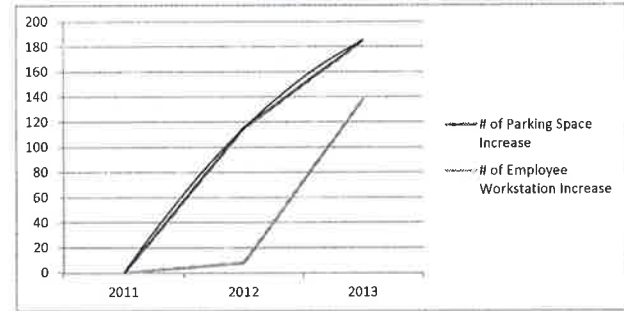
Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

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

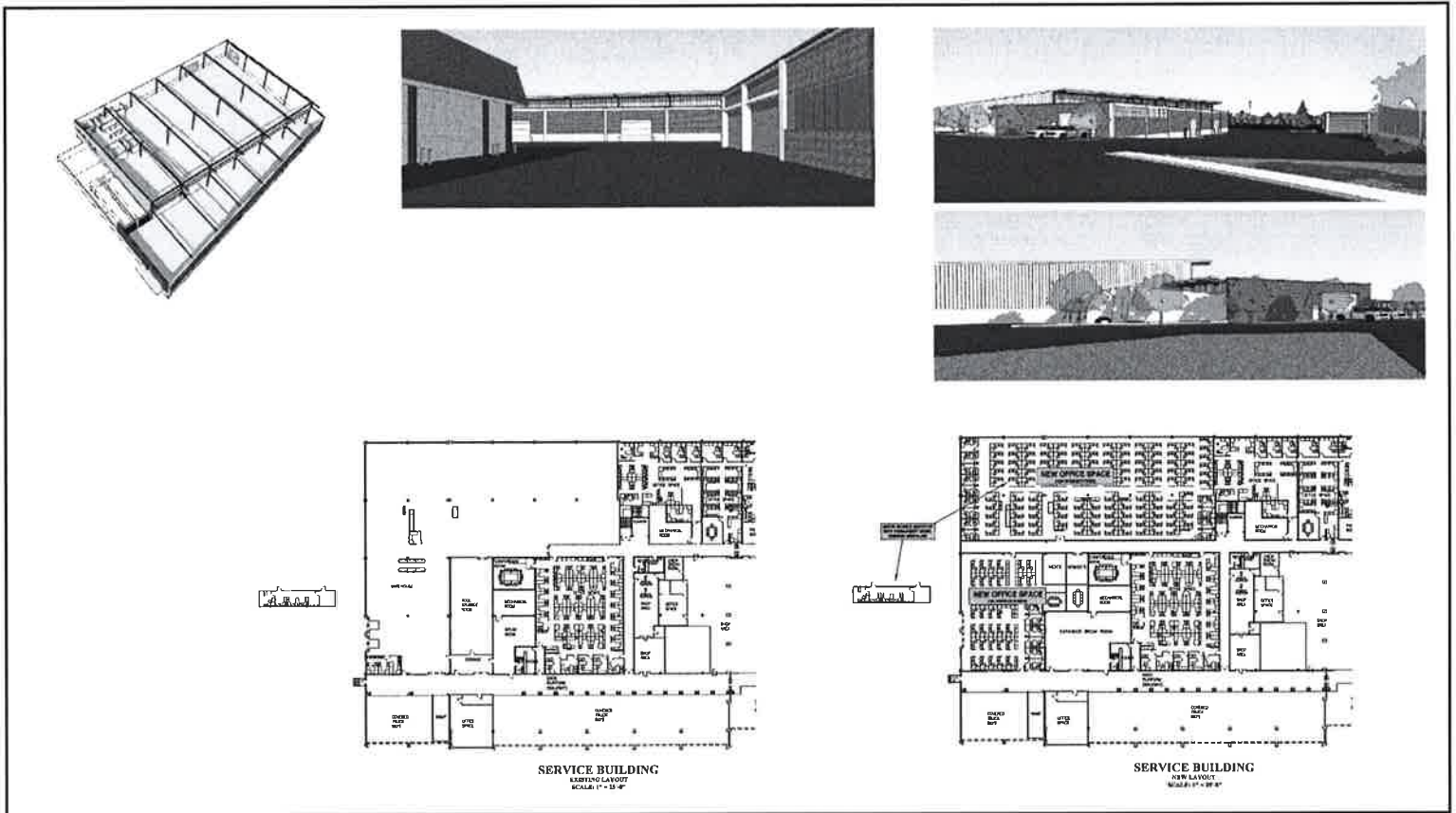
KPI Measure: Total Net Increase of Parking Spaces and Employee Workstations vs. 2011 total



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

To: Central Office Facilities Long Term Restructuring (Phase 1) Business Case 2016
Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery



Date: 2/15/2016

Re: Central Office Facilities Long Term Restructuring (Phase 1) Capital Investment
Considerations

In addition to the Central Office Facilities Restructuring (Phase 1) business case, the facilities group has provided additional information regarding this project, included below.

The original design and layout of the Central Operating Facility in 1955 was to serve the needs of a growing Utility and to centralize scattered offices into one central location. Expanding needs within the Utility business, in addition to the growth of the Company's territory, mandate the need to update and repurpose the Central Operating Facility to meet the needs of a Utility business in 2014.

As regulatory requirements and business needs arise, we need to provide the facilities necessary to meet those ever changing requirements and needs. New environmental standards and legal requirements from the WA State Dept. of Ecology and other entities have triggered the need for both the New Asset Recovery and Investment Recovery Buildings to ensure that we efficiently and legally recycle Transformers and reclaim used equipment to promote sustainability and recycling. A new wash bay facility will be furnished with modern equipment and technologies. This facility will also serve to collect wastewater per the environmental legal standards also stated above, which will improve our ability to meet these requirements. The two proposed warehouse storage yard expansions will consolidate all warehouse storage into one defined area directly adjacent to the new warehouse building, creating efficiencies in pick times, organization, and inventory control.

The Campus Restructuring Plan should position Avista for success in the next 50 years. If we do not proceed with these investments, we run the risk of deferring maintenance, increased O&M costs due to patch-working facilities to increase their already past end-of-life spans, renting unowned properties for our people, vehicles, and equipment, decreasing efficiency due to the same people, vehicles, and equipment being off-site away from their respective work groups, and risking unsafe mixture of field crew traffic with office parking and employees.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: General

Business Case Name: New Airport Hangar

ER No: ER Name:

7136 New Airport Hangar

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	1,500	0	0	0	0	0	0	0	0	0	0	0	1,500
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

In 2017 Avista will lose the lease on the existing airport hangar. The owner is losing their lease and the hangar will be demolished. Avista will have to lease a new space or buy land and build a hangar. There is one more option, we could lease the property and build a hangar on the leased property in exchange for a 30 to 50-year lease.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	New Airport Hangar	Assessments:	
Requested Amount	\$1,500,000	Financial:	7.00%
Duration/Timeframe	1 Year Project	Strategic:	Customer Cost Management
Dept., Area:	Facilities Management	Business Risk:	Business Risk Reduction >0 and <= 5
Owner:	Mike Broemeling	Project Risk:	Low certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater		
	Project		
Mandate/Reg. Reference:	Losing existing lease	Assessment Score:	46

Recommend Project Description:	In 2017 Avista will lose the lease on the existing airport hangar. The owner is losing their lease and the hangar will be demolished. Avista will have to lease a new space or buy land and build a hangar. There is one more option, we could lease the property and build a hangar on the leased property in exchange for a 30 to 50 year lease.	Performance	Retain storage space for company airplane.	Capital Cost	\$ 1,500,000	O&M Cost	\$ -	Other Costs	\$ -	Business Risk Score	0
---------------------------------------	--	--------------------	--	---------------------	--------------	---------------------	------	--------------------	------	----------------------------	---

			Annual Cost Summary - Increase/(Decrease)			
		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Alternatives:						
Unfunded Project:	A new hanger must be constructed or leased by 2017. If not, we will no longer have a place to store the company airplane.	n/a	\$ -	\$ -	\$ -	0
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	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

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ -	\$ -	\$ -	\$ -
2015	\$ -	\$ -	\$ -	\$ -
2016	\$ -	\$ -	\$ -	\$ -
2017	\$ 1,500,000	\$ -	\$ -	\$ 1,500,000
2018	\$ -	\$ -	\$ -	\$ -
Total	\$ 1,500,000	\$ -	\$ -	\$ 1,500,000

Associated Ers (list all applicable):

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
H07	\$ -	\$ -	\$ -	\$ -	\$ 1,500,000	\$ 1,500,000	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ 1,500,000	\$ 1,500,000	

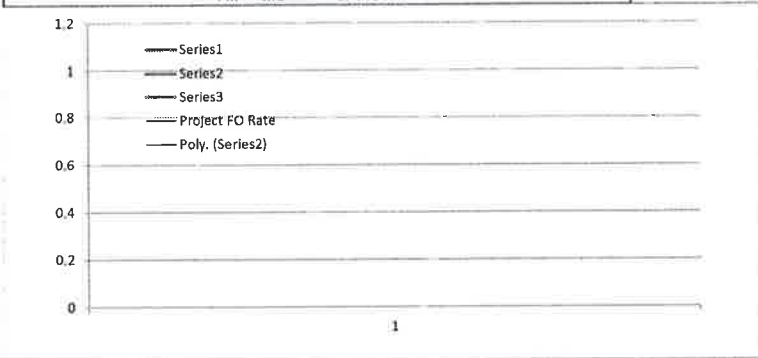
Milestones (high level targets)

March-17 start construction
August-17 Plant in service

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:	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 Maggi 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

To: Airport Hangar Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery



Date: 2/15/2016

Re: Airport Hangar Capital Investment Considerations

In addition to the Airport Hangar business case, the facilities group has provided additional information regarding this project, included below.

The current airport hangar used by Avista is owned by the Airport, and leased to a third party. The third party had sub-leased the hangar to Avista for the storage of the Company's plane.

The Airport only allows all hangar leasees three renewals on their leases prior to the Airport having the option of reclaiming the building and property. In 2017, the third renewal period will expire, at which point the Airport has the option to reclaim the building and property from said separate entity, thus terminating our sub-lease. At that point, we will not have a building in which to store the company plane.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: General

Business Case Name: Clark Fork Engineering Building

ER No: ER Name:

7142 Clark Fork Engineering Building

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,089¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	1,089	0	0	0	0	0	0	0	0	0	0	0	1,089
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Construct Engineering/Operations office at Cabinet Gorge HED for use by Plant Engineers, Plant Manager, and visiting Staff. The existing building has been converted from a former guest house, and is in poor condition, and inadequate for current needs. This building serves as our headquarters in this area, and presents a very poor image to the public.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Clark Fork Engineering Building	Assessments:	
Requested Amount	\$ 1,089,356	Financial:	0.00%
Duration/Timeframe	1 Year Project	Strategic:	Life-cycle asset management
Dept., Area:	GPSS	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Mike Gonnella	Project Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Jason Thackston	Assessment Score:	51
Category:	Project		
Mandate/Reg. Reference:	n/a		

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Construct Engineering/Operations office at Cabinet Gorge HED for use by Plant Engineers, Plant Manager, and visiting Staff. The existing building has been converted from a former guest house, and is in poor condition, and inadequate for current needs. This building serves as our headquarters in this area, and presents a very poor image to the public.	Would provide more efficient work layout, and more secure document storage	\$ 1,089,356	\$ (20,000)	\$ -	2

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	Current building was not designed as an office, and is inadequate for the purpose without extensive remodeling. There are no meeting facilities, poor document storage, and it is not ADA compliant. Offices are converted bedrooms. Building lacks central HVAC and is poorly insulated.	\$ -	\$ 20,000	\$ -	8
Remodel Existing building	Extensive remodel of existing building, would include rrehab of virtually everything but the shell of the building. Roof, windows, wiring, access, change in floor layout. This option would preclude its use as a guest facility.	\$ 700,000	\$ -	\$ -	2
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	\$ -	\$ -	\$ -	\$ -
2015	\$ -	\$ -	\$ -	\$ -
2016	\$ 1,089,356	\$ -	\$ -	\$ -
2017	\$ -	\$ -	\$ -	\$ 1,089,356
2018	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ -	\$ -	\$ -
2020+	\$ -	\$ -	\$ -	\$ -
Total	\$ 1,089,356	\$ -	\$ -	\$ 1,089,356

Associated Ers (list all applicable):

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
0	\$ -	\$ 1,089,356	\$ -	\$ -	\$ -	\$ 1,089,356	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 1,089,356	\$ -	\$ -	\$ -	\$ 1,089,356	

Milestones (high level targets)

January-16	Begin Construction	January-00	open	January-00	open
December-16	Structure Complete	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

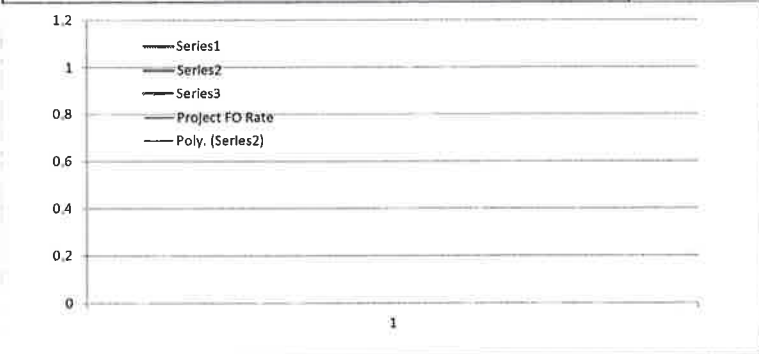
Milestones should be general. Use your judgement on project progress so that progress can

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability:	<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	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 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



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
	10/29/2015 Updated w/ approval for 2017 per 5 yr plan

To: Clark Fork Engineering Building Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/11/2016

Re: Clark Fork Engineering Building Capital Investment Considerations

As documented in the business case, this project entails the construction of an engineering/operations building at the Cabinet Gorge Hydro facility. The current facilities were not designed as an office and do not provide the requisite capabilities sought in an office building. Additionally, given the age of the Cabinet Gorge facility, the condition of the current building has degraded significantly.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: General

Business Case Name: New Downtown Network Building

ER No: ER Name:

7139 Netwk Bldg Purchase and Renovation

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$6,300¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	9,600	0	0	0	0	0	0	0	0	0	0	9,600	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Purchase a 2.32 acre lot located at 1717 W. 4th St., with two existing 22,000 SF and a 6,700 SF office bldgs. Provide a new service center for the Downtown Network electric crews, GPSS Out Oper/Utilitymen, and downtown gas service. Renovate the 6,700 SF building, build a new 17,000 SF warehouse, 10,000 SF of new vehicle canopies, and approximately 20,000 SF of new storage/parking lots. This will consolidate the downtown crews and equip onto one site rather than several sites that are scattered around downtown, as well as new equipment such as overhead cranes and welding bays. In addition, renovate the existing 22,000 square foot building for office space for Project Atlas, AMI, and Steamplant IS/IT, instead of leasing space for the expected 4-5 years of those projects. This building can house further special office needs past the 4-5 years mark.

O&M Offsets occur in this business case as the Company reduces expenses related to leased property throughout the Spokane area. Offsets are expected to be \$229,000 annually beginning in 2016. Washington's portion of these offsets are \$122,000 Electric and \$34,000 Natural Gas.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 2

Capital Project Business Case



Investment Name:	New Downtown Netwk Bldg	Assessments:	
Requested Amount	\$6,600,000	Financial:	
Duration/Timeframe	2 Year Project	Strategic:	Customer Cost Management
Dept., Area:	Facilities	Business Risk:	Business Risk Reduction - None
Owner:	Vance Ruppert/Eric Bowles	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Broemeling/H Rosentrater	Assessment Score:	49
Category:	Project		
Mandate/Reg. Reference:	n/a		

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Purchase a 2.32 acre lot located at 1717 W. 4th St., with two existing 22,000 SF and a 6,700 SF office bldgs. Provide a new service center for the Downtown Network elec crews, GPSS Out Oper/Utilitymen, and downtown gas service. Renovate the 6,700 SF building, build a new 17,000 SF warehouse, 10,000 SF of new vehicle canopies, and approximately 20,000 SF of new storage/parking lots. This will consolidate the downtown crews and equip onto one site rather than several sites that are scattered around downtown, as well as new equipment such as overhead cranes and welding bays. In addition, renovate the existing 22,000 SF bldg for office space for Project Atlas (AFM), AMI, and Steamplant IS/IT, instead of leasing space for the expected 4-5 years of those projects. This bldg can house further special office needs past the 4-5 years mark.	Consolidate downtown crews. Provide owned rather than rented office space.	\$ 6,600,000	\$ (265,000)	\$ -	4

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Unfunded Project:	n/a	\$ -	\$ 265,000	\$ -	8	
Alternative 1: Brief name of alternative (if applicable)	Purchase 627 E. Sprague. Asking price was \$1M over the 1717 W. 4th St. lot. Less advantageous and potential planning layout issues for downtown network and office space needs.	Consolidate downtown crews. Provide owned rather than rented office space.	\$1,000,000 (one time) \$25K - \$50K remodeling going forward for about 5 years?	\$ (265,000)	\$ -	4
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	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ -	\$ -	\$ -	\$ -
2015	\$ 3,300,000	\$ -	\$ -	\$ 3,300,000
2016	\$ 3,300,000	\$ -	\$ -	\$ 6,300,000
2017+	\$ -	\$ -	\$ -	\$ -
Total	\$ 6,600,000	\$ -	\$ -	\$ 9,600,000

Associated Ers (list all applicable):

7139		

ER	2013	2014	2015	2016	2017+	Total	Mandate Excerpt (if applicable):
TBD	\$ -	\$ -	\$ 3,300,000	\$ 3,300,000	\$ -	\$ 6,600,000	n/a
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: Mirabeau lease is due for renewal. Would like to resolve issue before long-term lease is signed. In addition, approximately \$25,000 worth of telecom fiber has to be pulled to Mirabeau for our special projects. Once lease is over, we will not recoup this investment. If it is possible to avoid the Mirabeau lease and the Steam Plant lease (along with parking fees) and/or equivalent leases into the future for 20 years by having the AAA site, that value supports \$2.5M of capital investment.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ 3,300,000	\$ 3,300,000	\$ -	\$ 6,600,000	

Milestones (high level targets)

July-15	Lot purchased & closed
August-15	Begin Office Bldg renovation/construction
December-15	Office Bldg renovation complete, move in Atlas/AMI/Steamplant
March-16	Begin Downtown Network Bldg construction
December-16	Downtown network Bldgs complete

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 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

YES

YES - attach form

NO or Not Required

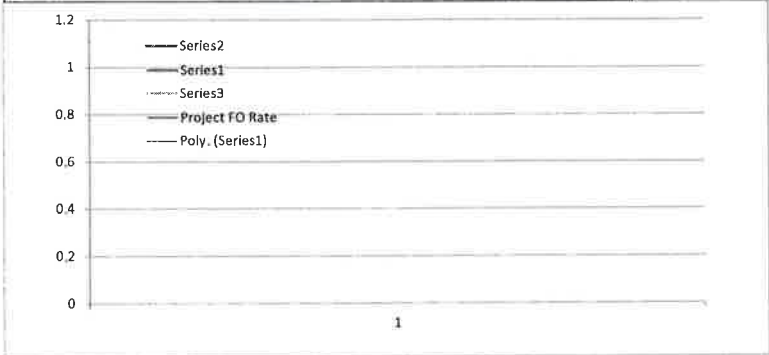
YES - attach form

NO or Not Required

Key Performance Indicator(s)

Expected Performance Improvements

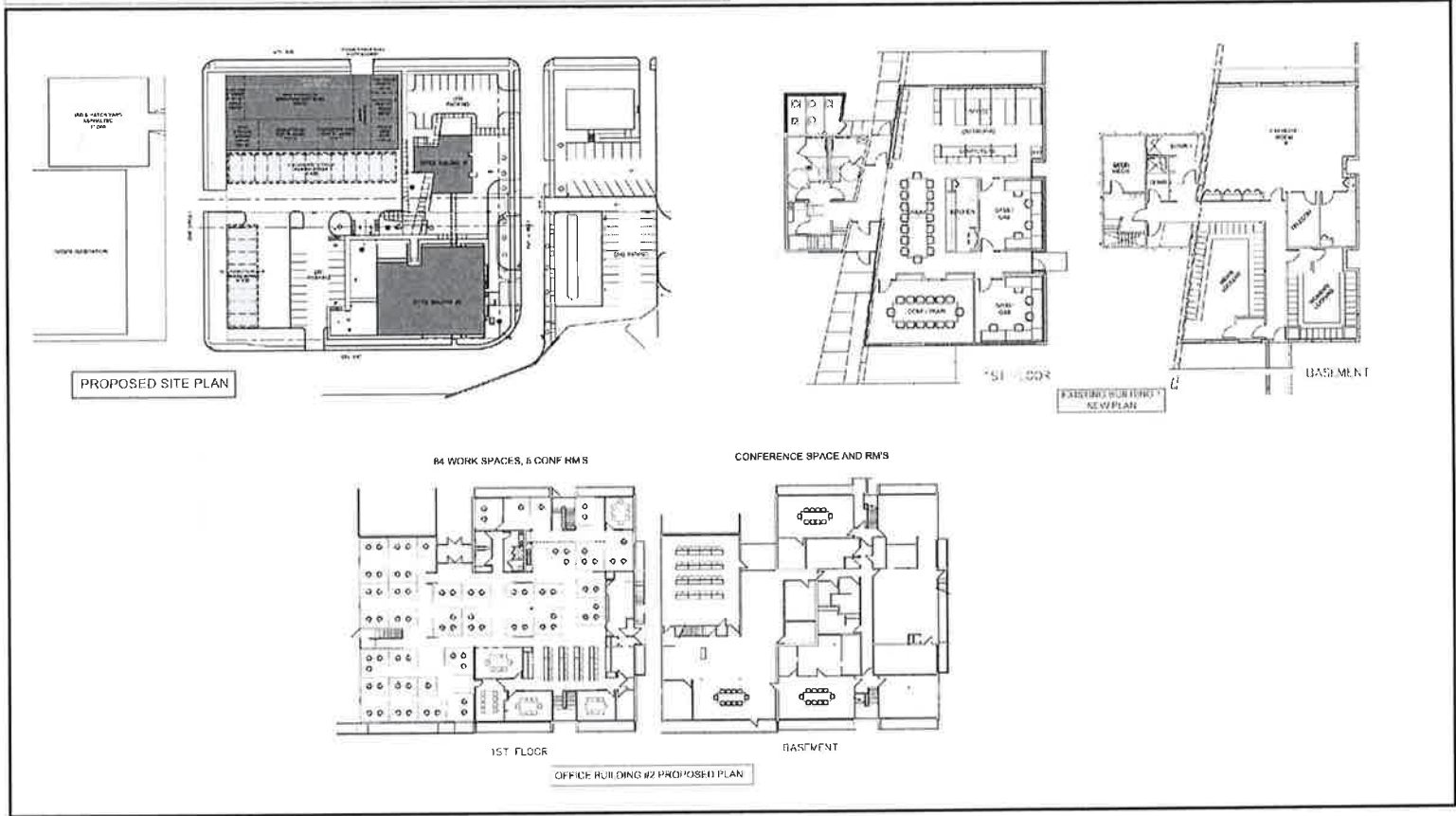
KPI Measure: Fill in the name of the KPI here
 Fill in the name of the KPI here



Prepared Vance Ruppert x2235

Reviewed Eric Bowles, Mike Broemeling
Director/Manager

Other Party Review (if necessary) *Margji Stevens*
Director/Manager



To be completed by Capital Planning Group

Rationale for decision

Review Cycles	
2012-2016	
Date	Template

To: New Downtown Network Building Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery



Date: 2/15/2016

Re: New Downtown Network Building Capital Investment Considerations

In addition to the New Downtown Network Building business case, the facilities group has provided additional information regarding this project, included below.

The Downtown Network facilities will enable the consolidation of the downtown network crews and equipment onto one site rather than several sites that are scattered around downtown. This will improve the efficiency of the operations of the downtown network crews. Additionally, the new facility will provide new equipment such as overhead cranes and welding bays, which supports the operation of the downtown network.

Additionally, the Mirabeau lease is due for renewal. Without the completion of this new network building, approximately \$25,000 worth of telecom fiber would have to be pulled to Mirabeau to support projects that would be housed there. At the termination of that lease, we would not recoup that investment. This building should make it possible to avoid the Mirabeau lease and the Steam Plant lease (along with parking fees) and/or equivalent leases into the future for 20 years by consolidating operations at this new location.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: General

Business Case Name: Apprentice/Craft Training

ER No: 7200 **ER Name:** Appren Craft Train

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$180¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	60	0	0	15	0	0	15	0	0	15	0	0	15
2017	60	0	0	15	0	0	15	0	0	15	0	0	15
2018	60	0	0	15	0	0	15	0	0	15	0	0	15

Business Case 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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



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:	102
Category:	Mandatory	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	296-05 WAC & Chpt 49 04 RCW	Performance	Capital Cost

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
"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."	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.	\$ -	\$ 20,000	\$ -	6
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	\$ -	\$ -	\$ -	2
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	\$ 120,000	\$ -	\$ -	\$ 120,000
2015	\$ 60,000	\$ -	\$ -	\$ 60,000
2016	\$ 60,000	\$ -	\$ -	\$ 60,000
2017	\$ 60,000	\$ -	\$ -	\$ 60,000
2018	\$ -	\$ -	\$ -	\$ 60,000
2019	\$ -	\$ -	\$ -	\$ 60,000
2020	\$ -	\$ -	\$ -	\$ 60,000
Total	\$ 180,000	\$ -	\$ -	\$ 360,000

Associated Ers (list all applicable):
7200

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
7200	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 300,000	See Below
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: The proper training of apprentices is governed by the Washington State Apprenticeship Rules and Act (Chpt 296-05 WAC & Chpt 49 04 RCW) as well as numerous other Washington State Labor and Industries WAC/RCW regulations. And by the Federal Department of Labor under Apprentice Labor Standards 29 CFR Part 29 and the Fitzgerald Act-National Apprenticeship Act and other DOL regulations and rules. Compliance/safety training for journey workers is mandated by multiple rules/regulations at the federal level via OSHA and at the state level via WAC/RCW.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 300,000	

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)

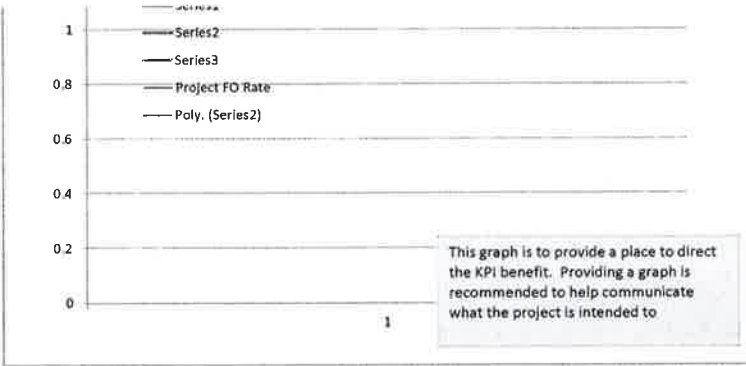
Expected Performance Improvements

KPI Measure: Fill in the name of the KPI here

Fill in the name of the KPI here

Prepared N Thorson





Reviewed signature _____
Director/Manager

Other Party Review signature *Margie Stavers* _____
(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

To: Apprentice Training Business Case 2016 Washington GRC File
From: Heather Rosentrater, Vice President, Energy Delivery *HR*
Date: 1/29/2016
Re: Apprentice Training Business Case Investment Considerations

Per communication with Jeremy Gall, Training and Development Manager, the Apprentice Training business case capital investment program provides for tools, materials, and equipment used for training apprentices and journey workers across 11 skill crafts or trades. This training consists of hands-on skills development that builds competency in a safe learning environment that may not always be available or controllable in the field.

In addition to creating a safe and skilled workforce, this training helps Avista to deliver timely training on new and emerging technologies as well as meet several federal and state regulations, including:

- Department of Labor, Standards of Apprenticeship – Title 29 CFR 29.5 (b)(4) and (b)(9) – Apprentice on the job training and related instruction.
- Department of Labor, Occupational Safety and Health Standards – Title 29 CFR 1910.269 (a)(2) – Electric Power Generation, Transmission, and Distribution training.
- Department of Transportation, Transportation of Natural Gas and Gas by Pipeline: Minimum Federal Safety Standards - Title 49 CFR 192.805 (h) – Qualification of Pipeline Personnel, Qualification Program training.
- State of Washington – WAC 480-93-013 (4) – Covered Tasks: Equipment and facilities used by pipeline company for training and qualification of employees.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: General

Business Case Name: Structures and Improvements and Furniture

ER No: ER Name:

7001 Structures & Improvements

7003 Office Furniture

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$10,800¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	3,600	297	299	309	299	300	298	298	297	308	299	299	298
2017	3,600	297	299	309	299	300	298	298	297	308	299	299	298
2018	3,600	297	299	309	299	300	298	298	297	308	299	299	298

Business Case Description:

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, Expansions, Remodels, 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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 2

Capital Program Business Case



Investment Name:	Structures and Improvements and Furniture	Assessments:	
Requested Amount	\$3,600,000	Financial:	10.50%
Duration/Timeframe	5 Year Program	Strategic:	Life-cycle asset management
Dept., Area:	Facilities	Business Risk:	Business Risk Reduction >0 and <= 5
Owner:	Eric Bowles	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Broemeling/H Rosentrater		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	85

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			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, Expansions, Remodels, 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	Capital Cost	O&M Cost	Other Costs	4
		\$ 3,600,000	No Increase.	\$ -	

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score	
Unfunded Program:	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 systems 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.	\$0 capital would drive up O&M and risk major failure	\$ -	\$1,000,000 (varies)	\$ -	9
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	\$ 2,000,000	\$500,000 (varies)	\$ -	4
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
2015	\$ 4,600,000	\$ -	\$ -	\$ 5,000,000
2016	\$ 3,600,000	\$ -	\$ -	\$ 3,600,000
2017	\$ 3,600,000	\$ -	\$ -	\$ 3,600,000
2018	\$ 3,600,000	\$ -	\$ -	\$ 3,600,000
2019	\$ 3,600,000	\$ -	\$ -	\$ 3,600,000
2020	\$ 3,600,000	\$ -	\$ -	\$ 3,600,000
2021	\$ 3,600,000	\$ -	\$ -	\$ -
Total	\$ 26,200,000	\$ -	\$ -	\$ 23,000,000

Associated Ers (list all applicable):			
7001	7003		

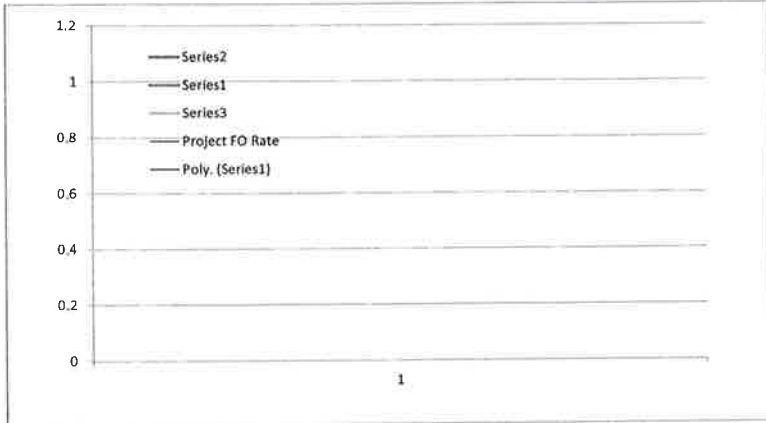
ER	2016	2017	2018	2019	2020	Total	Mandate Excerpt (if applicable):
7001	\$ 3,300,000	\$ 3,300,000	\$ 3,300,000	\$ 3,300,000	\$ 3,300,000	\$ 16,500,000	provide brief citation of the law or regulation and a reference number if possible
7003	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 1,500,000	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: Facilities has 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.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 3,600,000	\$ 3,600,000	\$ 3,600,000	\$ 3,600,000	\$ 3,600,000	\$ 18,000,000	

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 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 *Margie Stevens* 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
	10/29/2015	Updated w/ Spokane Construction approval, Noxon/Clark Fork Facility approval and 2016-2020 5 year plan.

To: Structures and Improvements Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/11/2016

Re: Structures and Improvements Business Case Investment Considerations

The following pages have been provided by the facilities group and elaborate upon the Structures and Improvements business case.



Structures and Improvements / Furniture

Facilities Program ER-7001 / 7003

1. Purpose of the Program

Avista owns and leases facilities in eastern Washington, the Idaho panhandle, and southern Oregon that support utility operations. In all, there are over 80 buildings in 42 locations, totaling over 700,000 square feet.

The current plant value (original acquisition and improvements) of facilities (exclusive of land) is over \$50 million and the estimated annual depreciation is approximately \$900,000. These amounts represent the dollar values in the year of investment with no consideration to inflation or replacement cost.

Providing a detailed and accurate capital plan takes into account age, condition, and utility of the structures and systems of all company facilities (roof, exterior shell, electrical, lighting, HVAC, plumbing, appearance, etc.) It also takes into account multiple requests and projects that help increase efficiency or meet regulatory needs in all areas of utility operations, including both electric and gas, as well as warehouse, security, and environmental operations.

2. Capital Budget Estimation Values

The estimated average replacement cost for company facilities generally fall in the range of \$100 - \$250 per square foot. (Replacement costs vary by building type and use breakdown – warehouse, garage, office, etc.) Based on these costs, total replacement costs for 700,000 square feet would be over \$100,000,000 at \$150 per square foot. Based on an average 35 year useful life of any company facility, the annual depreciation amount would be about \$2,800,000 per year (without inflation). This would be the approximate annual capital requirement for maintenance due to the depreciation. In fact, annual maintenance requirements will vary from year to year and will not be linear.

Furniture assets (Avista book value) total approximately \$5,000,000 with estimated annual depreciation of approximately \$36,000. The depreciable life for furniture is 10 years. Replacement value for furniture is estimated at \$5,000 per workstation. For 1,400 employees, replacement cost is approximately \$7,000,000. Capital requirements based on 10 year replacement would be \$700,000 per year (without inflation). If we were to extend past the depreciable life and calculate at a 15 year replacement, the capital requirement would be approximately \$460,000 yearly.

Thus, estimated total capital requirements for maintenance and furniture replacement only, AT A MINIMUM, are as follows:

Section 2

- Company Facilities Yearly \$2,800,000
- Furniture Yearly \$460,000
- TOTAL \$3,260,000

3. Project Itemization within the Program

Over the past two years (2014 and 2015), individual projects within the program that exceeded a dollar value of \$50,000 are as follows:

2015

- Beacon Yard – GPSS Bldg – replace electrical systems – CNC table support
- CDA – Remodel CDA Fleet Maintenance Shop
- CDA – Replace HVAC system in Service Center
- Kellogg – Asphalt, Sidewalk, and Entry replacements
- Medford – Build Canopy on side of Bldg, fill ramp
- Mission COF – 4th Floor Distribution Dispatch Reorganization
- Mission COF – Replace Emergency Generator
- Mission COF – Construct new parking spots and safety sidewalk
- Mission COF – Install Mass Notification System for 70's Addition
- Mission COF – Remodel 70's Addition Restrooms
- Miscellaneous Sites – Purchase Furniture

2014

- Mission COF – Remodel Restrooms 1st Floor / Basement
- Mission COF – Centralized UPS and ATS for Corp/SCADA
- Mission COF – Replace Boilers in Main Plant
- Mission COF – Purchase several Ross Court Properties
- CDA – New Pole Yard
- Deer Park – New Asphalt Yard and Environmental Clean Up
- Dollar Road – Gas Pressure Controlmen Crane Safety Modification
- La Grande – Asphalt in front of Office and back area
- Miscellaneous Sites – Purchase Furniture

4. Alternatives Considered and Associated Consequences

At this time, the only available alternative is to stop all capital funding sources, or reduce funding sources. Alternatives such as renting facilities built by others could also be explored, but it would be at a great increase in cost to our O&M budget.

The associated consequences with not fully funding a capital budget are as follows:

- Regular necessary replacement of maintenance items of company facilities and their systems would be deferred. Failure could occur frequently.
- Cost increases in O&M due to Facilities crews time in implementing services to extending life of company facilities and their systems. Also cost increases due to

purchasing replacement parts and materials to extend said systems. Currently our Facilities crews process about 3500 – 4000 work orders yearly. That number can be expected to rise if proper replacement is not done.

- Cost increases in O&M due to Operations and Avista employee time due to inefficient use of space due to lacking facilities and systems. For example, no heat/AC to office personnel. Electrical systems that cannot handle new equipment loads. No time savings for snow melt systems.

5. Customer-Related Benefits

The Structures and Improvements Program provides customer related benefits in the following categories:

- Reliability
 - Projects under this program allow for quicker response times from operations personnel. This includes but is not limited to: snow melt systems for trucks, efficient warehouse storage and picking, streamlining vehicle traffic patterns and turnarounds, providing proper adjacencies for tools and materials, protecting investments in fleet vehicles and equipment from the elements.
- Safety
 - Projects under this program allow for increased safety. This includes but is not limited to: bringing electrical, HVAC, and plumbing systems up to current building codes and standards, providing new fire alarm and security alarm systems, increasing lighting and new layouts for increased visibility, effectively separating administrative personnel from field crews and vehicles.
- Cost Savings
 - Projects under this program allow for cost savings. This is mainly due to the replacement of depreciated or near end of life items that would require increased funding in the O&M budget to extend the lives of these items past their useful dates, when a capital investment can cancel out the increased O&M funding. See “Consequences” section 4 for more information.



**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: General

Business Case Name: Capital Tools and Stores Equipment

ER No: ER Name:

7005 Stores Equip

7006 Tools Lab & Shop Equipment

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$7,200¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,400	344	344	344	56	56	56	56	56	56	344	344	344
2017	2,400	344	344	344	56	56	56	56	56	56	344	344	344
2018	2,400	344	344	344	56	56	56	56	56	56	344	344	344

Business Case Description:

The Capital Tool Program provides proper tooling & equipment necessary to perform required companywide work safely & efficiently, as well as helping to ensure Avista meets all compliance requirements. This program also provides material handling & storage equipment to company storerooms (forklift, storage bins, racking, etc.) which helps increase warehouse response and efficiency to crews.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 2

Capital Program Business Case



Investment Name:	Capital Tools and Stores	Assessments:	
Requested Amount	\$2,400,000	Financial:	MH ->= 9% & <12% CIRR
Duration/Timeframe	Ongoing Year Program	Strategic:	Life-cycle asset management
Dept., Area:	Supply Chain	Business Risk:	Business Risk Reduction >0 and <= 5
Owner:	Mike Broemeling	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Cody Krogh		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	89

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
The Capital Tool Program provides proper tooling & equipment necessary to perform required companywide work safely & efficiently, as well as helping to ensure Avista meets all compliance requirements. This program also provides material handling & storage equipment to company storerooms (forklift, storage bins, racking, etc.) which helps increase warehouse response and efficiency to crews.	NA	\$ 2,400,000	\$ -	\$ -	0

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	NA	\$ -	\$ -	\$ -	0
Alternative 1: Repair all capital tools & equipment		\$ -	\$ 1,200,000	\$ -	0
Alternative 2: Add Loaners in Lieu of Repairs		\$ 665,000	\$ 40,000	\$ -	0
Alternative 3 Name :	Describe other options that were considered	\$ -	\$ -	\$ -	0

Program Cash Flows				
	Capital Cost	O&M Cost	Other Costs	Approved
2015	\$ 2,348,325	\$ -	\$ -	\$ 3,358,325
2016	\$ 2,400,000	\$ -	\$ -	\$ 2,400,000
2017	\$ 2,400,000	\$ -	\$ -	\$ 2,400,000
2018	\$ 2,400,000	\$ -	\$ -	\$ 2,400,000
2019	\$ 2,400,000	\$ -	\$ -	\$ 2,400,000
2020	\$ 3,000,000	\$ -	\$ -	\$ 3,000,000
2021+	\$ 3,150,000	\$ -	\$ -	\$ -
Total	\$ 18,098,325	\$ -	\$ -	\$ 15,958,325

Associated Ers (list all applicable):	
7005	
7006	

ER	2016	2017	2018	2019	2020	Total	Mandate Excerpt (if applicable):
7005	\$ 720,000	\$ 720,000	\$ 720,000	\$ 720,000	\$ 900,000	\$ 3,780,000	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
7006	\$ 1,680,000	\$ 1,680,000	\$ 1,680,000	\$ 1,680,000	\$ 2,100,000	\$ 8,820,000	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000	\$ 3,000,000	\$ 12,600,000	Additional Justifications: Increased budget 2016 - 2020 amount by 5% to account for inflation.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

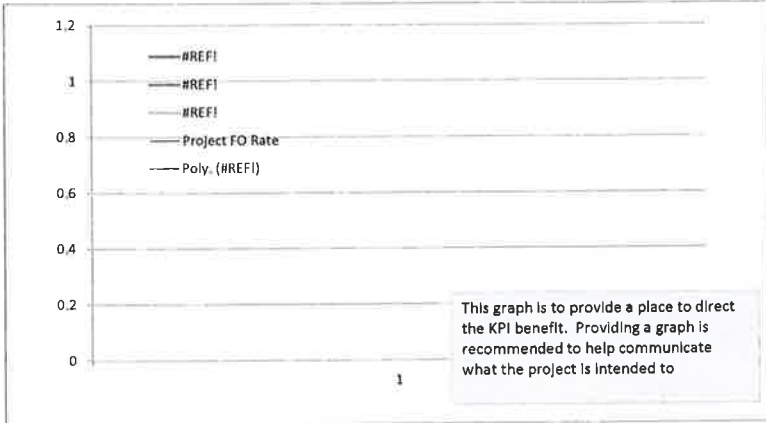
Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

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



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens* 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
	10/21/2015	Refreshed business case saved to Sharepoint. Former version can be accessed in the Archive folder - "2015 Capital Tools and Stores Business Case"
	10/29/2015	Updated w/ current approvals through Oct and 2016-2020 5 yr plan

To: Capital Tools and Stores Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/11/2016

Re: Capital Tools and Stores Capital Investment Considerations

As documented in the business case, this business case entails the acquisition of necessary tools and equipment to perform operational work in the field. Given that the Company's operational personnel regularly make use of tools and that operations also depend on well-functioning storerooms, the need to continually maintain the tools and stores equipment supporting operations is clear. The business case provides good analysis of alternative options and the rationale behind this program.

Additionally, the supply chain group provided an overview of how tools and stores purchases are prioritized under this business case. The prioritization process considers, among other factors, whether the request will address a safety issue, the cost of the request, and the relative criticality (i.e., an emergency replacement compared to a planned purchase).

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: General

Business Case Name: COF Long-Term Restructuring Plan Phase 2

ER No: ER Name:

7131 COF Long Term Restructuring Plan Phase 2

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$26,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,991	0	0	36	0	0	0	0	0	0	0	0	2,956
2017	8,979	0	0	0	0	0	0	0	0	2,979	0	0	6,000
2018	12,040	0	0	0	0	0	0	0	0	0	0	0	12,040

Business Case Description:

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 building to Office Space, and increase parking lot size and build 2-story parking structure. Our parking lots will be beyond max capacity. The Fleet Garage is over 50 years 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 building 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 come back to Mission campus. Increasing the COF lot size will allow for efficient space and multiple uses on campus.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 2

Capital Project Business Case



Investment Name:	COF 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:	Heather Rosentrater		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	86

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 come back to Mission campus. Increasing the COF lot size will allow for efficient space and multiple uses on campus.	State of the art fleet building. Service vehicles contained to north campus. Employee vehicles near main GOB.	\$ 43,500,000	\$ -	\$ -	2

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
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
2020	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -	JUSTIFICATIONS:	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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

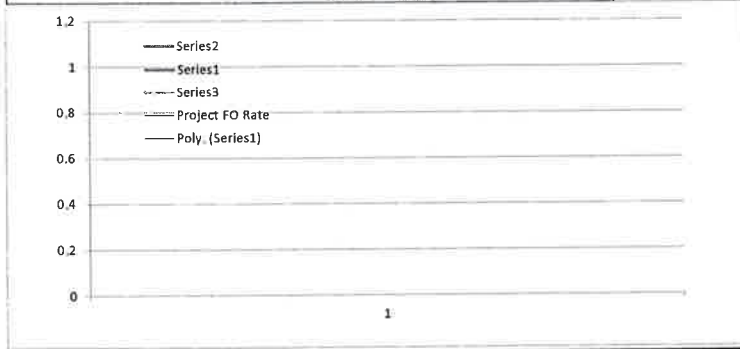
Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: 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: 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 Margi 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

To: Central Office Facilities Long Term Restructuring (Phase 2) Business Case 2016
Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery



Date: 2/15/2016

Re: Central Office Facilities Long Term Restructuring (Phase 2) Capital Investment
Considerations

In addition to the Central Office Facilities Restructuring (Phase 2) business case, the facilities group has provided additional information regarding this project, included below.

The driving factors behind this business case are similar to those of Phase 1 of the Central Office Facilities Restructuring project, including the age of the existing facilities (over 50 years old), and the changing needs related to business process and regulatory requirements. This business case addresses the need to update Fleet and Shop Services to provide the space necessary to do their work in a manner reflecting the technology, business processes, and regulatory requirements of the present. The new fleet facility will enable Fleet Services to service natural gas vehicles and the Company's largest line trucks, while the shops for Shop Services will be value engineered to meet the current and future needs of their respective functions.

Additionally, as discussed in Karen Schuh's direct testimony at Exhibit No. __ (KKS-1T), the Company's parking lots are beyond maximum capacity. The Company currently leases space from Burlington Northern for additional employee parking. This lease space could be at risk in the future, if Burlington needs the space. Additionally, once Fleet is relocated, there will be a distinct separation between operational/service vehicles and employee vehicles. This separation will increase safety by eliminating intermingling of pedestrians in work areas. The office building & parking garage is projected to allow the Call Center and any leased facilities to come back to the COF.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Aldyl A Replacement

ER No: 3008 **ER Name:** Aldyl -A Pipe Replacement

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$58,848¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	18,885	990	1,010	1,256	1,343	1,681	1,669	1,498	1,828	1,918	1,846	1,347	2,498
2017	19,263	1,009	1,029	1,279	1,369	1,715	1,703	1,528	1,866	1,956	1,884	1,374	2,551
2018	20,700	1,081	1,101	1,365	1,470	1,845	1,833	1,643	2,009	2,100	2,027	1,474	2,752

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

Capital Program Business Case



Investment Name:	Aldyl A Replacement_mains and bending stress	Assessments:	
Requested Amount	\$16,967,429MM	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	20 Year Program	Strategic:	Life-cycle asset management
Dept., Area:	Gas Delivery	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Michael Whitby	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Faulkenberry/H Rosentrater		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	106

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			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	Capital Cost	O&M Cost	Other Costs	15
		\$ 18,885,272	\$ -	\$ -	

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			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	20
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. 6/16/2015 Update Note: Service tap remediation accelerated to a five year time frame (2013-2017) and decelerated main pipe for same time frame.	As Aldyl A is removed, O&M expense associated with repairing the increasing leaks will be eliminated in proportion	\$ 17,552,196	\$ (60,000)	\$ -	15
Alternative 2: Brief name of alternative (if applicable)	2015 Update: Starting in 2018 the GFRP will more than double the amount of main pipe footage to be replaced on an annual basis. This main pipe replacement increase from approximately 20 miles per year to 44.5 miles will be significant with respect to available resources and new cost impacts that are currently unknown. As such, the budget request for 2018 and beyond have been recalibrated to reflect the most current system wide cost experience average of \$88 per/linear foot. Capital budget requests for 2018 and beyond may be adjusted once new contractor pricing and cost estimates are finalized.	describe any incremental changes in operations	\$ 20,700,000	\$ -	\$ -	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	\$ 51,380,529	\$ -	\$ -	\$ 51,380,529
2016	\$ 18,885,272	\$ -	\$ -	\$ 18,885,272
2017	\$ 19,262,977	\$ -	\$ -	\$ 19,262,977
2018	\$ 20,700,000	\$ -	\$ -	\$ 20,700,000
2019	\$ 21,159,533	\$ -	\$ -	\$ 21,159,533
2020	\$ 21,629,267	\$ -	\$ -	\$ 21,629,267
2021	\$ 22,109,429	\$ -	\$ -	\$ -
Total	\$ 175,127,007	\$ -	\$ -	\$ 153,017,578

Associated Ers (list all applicable):			
3008			

ER	2016	2017	2018	2019	2020	Total	Mandate Excerpt (if applicable):
3008	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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.



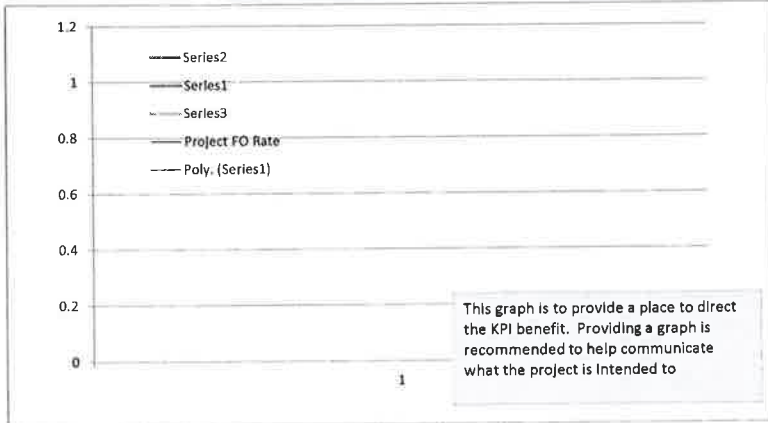
Resources Requirements: (request forms and approvals attached)

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



Prepared signature

Reviewed signature

Director/Manager

Other Party Review (if necessary) signature
Marilyn Stevens
Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program

Historical Information Only:

- 1. Budget request for 2014, 2015, and 2016 were revised with updated budget projections based on new models and information.
2. WA UTC Docket UG-120715 Commission Policy on Accelerated Replacement of Pipeline with Elevated Risk was issued on December 31, 2012.
3. Avista's Two-Year Plan (2014-2015) For Managing Select Pipe Replacement In Avista Utilities Natural Gas System (Docket #UG-120715) submitted to the WA UTC May 31 2013 and approved Fall of 2013.

2015 Update Refresh Information:

- 1. Budget request for 2015, 2016, and 2017 is bases on historical information referenced above and annual costs includes escalation only.
2. Avista's Two-Year Plan (2016-2017) For Managing Select Pipe Replacement In Avista Utilities Natural Gas System (Docket #UG-120715) submitted to the WA UTC May 29 2015, awaiting approval. All work shall comply with WA UTC approved Two-Year Plans and the WA UTC's policy on Accelerated Replacement of Pipeline Facilities with Elevated Risk.

To be completed by Capital Planning Group

Table with columns: Rationale for decision, Review Cycles (2012-2016), Date, Template. Includes multiple empty rows for data entry.

GFRP 2016 CAPITAL WORK PLAN SUMMARY (MAJOR & MINOR)					2016 BUDGET \$		18,885,272
PROJECT TYPE / PERFORMED BY	PROJECT LOCATION	MILES	FEET/UNIT	BUDGET	%	%	
MAIN PIPE (MAJOR)/ NPL CONTRACT	NORTH SPOKANE 2016	5.56	28,357	\$ 2,348,544	61%	67%	
	FAIRWOOD EAST 2016	4.14	21,839	\$ 1,744,758			
	GENESSEE, ID 2016	3.48	28,829	\$ 2,047,829			
	MEDFORD EAST 2016	4.39	24,235	\$ 1,195,837			
	N/E KLAMATH FALLS 1-2016	4.98	24,284	\$ 2,156,141			
	MAJOR MAIN PIPE TOTAL	24.7	130,574	\$ 11,597,237			
	MINOR MAIN PIPE TOTAL (UNFUNDED)			\$ -			0%
PRIORITY AA SCHOOL SERVICES GAS DISTRICTS	KELLOGG	0.19	1,000	\$ 100,000	6%	67%	
	KLAMATH FALLS	0.19	1,000	\$ 100,000			
	MEDFORD	0.38	2,000	\$ 200,000			
	ROSEBURG	0.28	1,500	\$ 150,000			
	SPOKANE	0.38	2,000	\$ 200,000			
	MINOR MAIN PIPE TOTAL (UNFUNDED)	1.43	7,500	\$ -			
	COEUR D'ALENE	0.11	585	\$ 62,475			
	COLVILLE	0.11	580	\$ 60,900			
	GOLDENDALE/STEVENSON	0.06	300	\$ 31,500			
	KELLOGG	0.04	220	\$ 23,100			
	KLAMATH FALLS	0.08	410	\$ 43,050			
	LA GRAHDE	0.02	125	\$ 13,125			
	LEWISTON	0.09	960	\$ 51,450			
	CLARKSTON	0.09	490	\$ 51,450			
MEDFORD	0.17	1,415	\$ 148,575				
PULLMAN	0.08	600	\$ 42,000				
MOSCOW	0.04	400	\$ 42,000				
ROSEBURG	0.20	1,075	\$ 112,875				
SANDPOINT	0.10	550	\$ 57,750				
SPOKANE	0.53	2,897	\$ 304,185				
MINOR MAIN PIPE TOTAL	1.80	10,837	\$ 1,044,435				
STTR (MAJOR)/ NPL CONTRACT	CLARKSTON & ADJ. (ASOTIN) 2016		550	\$ 718,000	31%	33%	
	PULLMAN & ADJ. 2016		414	\$ 878,000			
	COLVILLE/CHEWELAH 2016		227	\$ 454,000			
	SOUTH HILL SPOKANE 2016 (PHASES 1, 4 & 7)		589	\$ 1,024,200			
	DEER PARK 2016		81	\$ 162,000			
	KELLOGG & ADJ. 2016		277	\$ 554,000			
	MOSCOW & ADJ. 2016		519	\$ 638,000			
	KLAMATH FALLS 2016		716	\$ 1,432,000			
	MAJOR STTR TOTAL		3,862	\$ 5,810,200			
	MINOR STTR TOTAL			\$ -			
STTR (MINOR)/ GAS DISTRICTS	SPOKANE DIST. - (DOWNTOWN (37) & ISO STEEL (35)) OTIS ORCH. (8) AIR		84	\$ 210,000	2%	33%	
	BITZVILLE DIST. - SPANGLE (6) CHENEY (6)		14	\$ 95,000			
	GOLDENDALE/STEVENSON DIST.		37	\$ 44,400			
	ROSEBURG DIST.		120	\$ 144,000			
	MINOR STTR TOTAL		255	\$ 433,400			
INSPECTION (CONTINGENCY FOR UNKNOWN REQUIREMENTS)				\$ -	0%		
PROJECT BUDGET SUMMARY				\$ 18,885,272	100%		
TOTAL PROJECT COSTS				\$ 18,885,272	100%		
TOTAL APPROVED BUDGET				\$ 18,885,272	100%		
DELTA (\$ OVER/UNDER)				\$ -	0%		
BUDGET REQUEST/ADJUSTMENTS SUMMARY				\$ 18,885,272	100%		
2016 BUDGET REQUEST				\$ 18,885,272	100%		
ADDITIONAL REQUEST FOR \$				\$ -	0%		
SUMMARY BY PROJECT TYPE / PERFORMED BY				\$ 18,885,272	100%		
PROJECT TYPE / PERFORMED BY	MILES	FEET	STTR UNITS	BUDGET	%	%	
NPL MAIN PIPE	24.7	130,574		\$ 11,597,237	61%	67%	
NPL STTR			3,862	\$ 5,810,200	31%	33%	
DISTRICT MAIN PIPE	-	-		\$ -	0%	0%	
DISTRICT STTR			255	\$ 433,400	2%	2%	
DISTRICT SCHOOLS	1.80	10,837		\$ 1,044,435	6%	6%	
TOTALS	26.5	141,411	3,217	\$ 18,885,272	100%	100%	

To: Aldyl-A Replacement Program Capital Investment File
From: Mike Faulkenberry, Director of Natural Gas *WGF*
Date: 2-11-16
Re: Summary of Investment Considerations for Aldyl-A Replacement Program

The purpose of this memorandum is to formally document the considerations involved in the development of capital the investment business case, Aldyl-A Replacement.

This program, in Washington, is the result of Docket #UG-120715 and covers the replacement of pre-1987 Aldyl-A pipe in Avista's natural gas distribution system.

A number of documents supporting the Aldyl-A replacement program have been submitted in previous dockets, and can be provided again, upon request.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Overbuilt Pipe Replacement

ER No: 3006 **ER Name:** Overbuilt Pipe Replacement Blanket

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$2,700¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	900	72	74	82	74	75	73	73	73	82	75	74	73
2017	100	7	8	11	8	8	8	7	8	11	8	8	8
2018	100	7	8	11	8	8	8	8	8	11	9	8	8

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

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:	Jeff Webb	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Faulkenberry/H Rosentrater		
Category:	Mandatory		
Mandate/Reg. Reference:	49 CFR 192.361(f)	Assessment Score:	131

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
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	Capital Cost	O&M Cost	Other Costs	
		\$ 900,000	\$ -	\$ -	4

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score	
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	\$ -	\$ -	\$ 500,000
2016	\$ 900,000	\$ -	\$ -	\$ 900,000
2017	\$ 900,000	\$ -	\$ -	\$ 900,000
2018	\$ 900,000	\$ -	\$ -	\$ 900,000
2019	\$ -	\$ -	\$ -	\$ 900,000
2020				\$ 900,000
Total	\$ 5,400,000	\$ -	\$ -	\$ 6,670,000

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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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:	
--------------	--

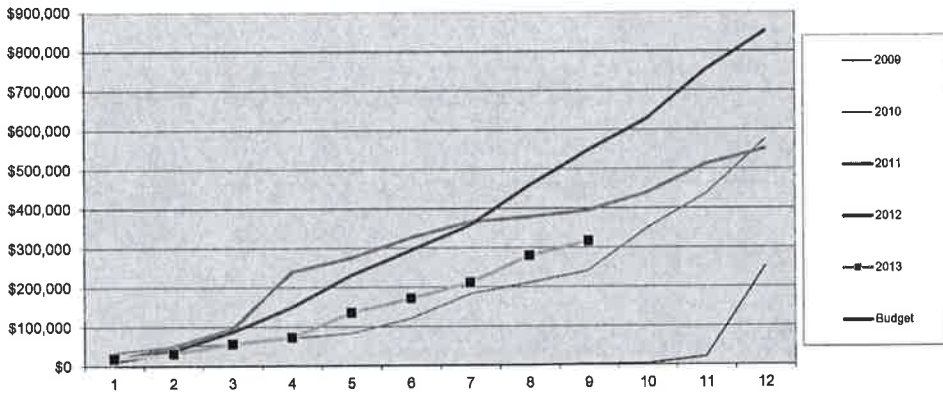
Prepared signature

Reviewed signature
Director/Manager

Other Party Review signature
(if necessary) Director/Manager

Margie Stevens

**ER 3006 - Spending
Overbuilt Pipe Replacement Minor Blanket**



To be completed by Capital Planning Group
Rationale for decision

Review Cycles
2012-2016

--

Date	Template

To: Gas Overbuilt Pipe Replacement Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas *myf*

Date: 2-2-16

Re: Summary of Investment Considerations for Gas Overbuilt Pipe Replacement Program

The purpose of this memorandum is to formally document the considerations involved in the development of capital the investment business case, Gas Overbuilt Pipe Replacement Program.

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 Avista's access to pipe. According to CFR 192 Subpart M, particular maintenance must be performed on the gas distribution system. One of these maintenance items is a leakage survey. Leakage surveys are typically performed by walking directly above the gas facilities while operating leak detection equipment. This of course become impossible if access to the ground above the gas pipe is hindered. Additionally, CFR 192.361 states that a service line installed under a building must be incased in a conduit.

All types of overbuilds will be addressed with this program, however the primary focus of the project is overbuilds in manufactured/mobile home developments. Due to the dynamic nature of mobile home parks, there is a higher propensity for overbuilds to occur at these locations. Mains and services may have originally been designed and installed assuming a short single wide mobile home would always be in that location. As owner/renters change and home sizes change, the gas facilities have a high probability of being encumbered during these changes.

Recently all the known mobile home parks with overbuilds have been analyzed and risk ranked using Avista's Distribution Integrity Management Plan (DIMP) tools. This allows each district to better prioritize the projects in their respective areas and complete the projects with the highest risk first.

The new facilities being installed under this program provide a higher level of safety to both the public and company employees due to both its location and the newer pipe material.

As an alternative to moving the gas facilities, Avista could attempt to enforce our "rights" and try to force the renters or mobile home parks owners to be liable for these fixes, however the original piping typically has weak or no easement protection. Additionally the negative PR associated with such a situation would be difficult to overcome.

If work under this program is not completed, Avista could face fines related to the federal codes mentioned above. Additionally, there is a moderate level of risk being taken because of the liability associated with a leak causing an incident.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Regulator Station Reliability Replacement

ER No: ER Name:

3002 Regulator Reliable - Blanket

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$2,400¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	800	38	39	58	58	64	88	88	81	89	70	64	63
2017	800	38	39	58	58	64	88	88	81	89	70	64	63
2018	800	38	39	58	58	64	88	88	81	89	70	64	63

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

Capital Program Business Case



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:	Jeff Webb	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Faulkenberry/H Rosentrater		
Category:	Program		
Mandate/Reg. Reference:	PHMSA CFR 192.739	Assessment Score:	75

Recommend Program Description:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
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.		describe any incremental changes that this Program would benefit present operations	\$ 600,000	\$ -	\$ -	1
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	\$ -	\$ -	\$ 800,000
Total	\$ 5,400,000	\$ -	\$ -	\$ 5,525,000

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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Total	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 800,000	\$ 4,000,000		Additional Justifications: Approximately 50% of the spending is required to satisfy the replacement of antiquated equipment or have an elevated safety risk. Approximately 50% of the spending is strategic and provides enhancements that facilitate operation and maintenance.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: ES IO

Enterprise Tech: YES - attach form IO or Not Required
 Facilities: YES - attach form IO or Not Required
 Capital Tools: YES - attach form IO or Not Required
 Fleet: YES - attach form IO 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

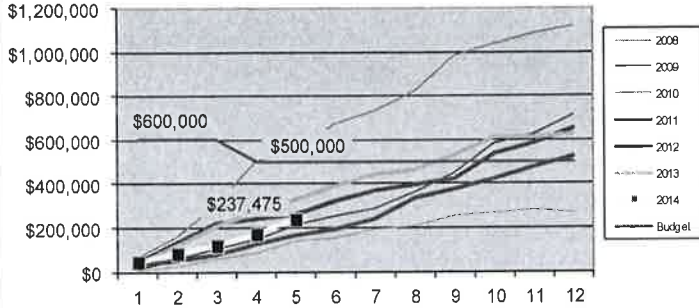
ER 3002 - Regulator

Section 3

Capital Program Business Case



Reliability Minor Blanket



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	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	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 exceedence, 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 exceedence, 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	
	Date	Template

To: Gas Regulator Stn Replacement Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas *MJF*

Date: 2-4-16

Re: Summary of Investment Considerations for Gas Regulator Stn Replacement Program

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case, Gas Regulator Stn Replacement Program.

This annual program will replace or upgrade existing regulator stations and meter stations to current Avista standards. Additionally it will address enhancements that will improve system operating performance, enhance safety, replacement of inadequate or antiquated equipment that is no longer supported, and ensure the reliable operation of metering and regulating equipment. Another benefit to the rebuild is the chance to increase the station capacity.

Another category of work in this program is moving stations located underground in a vault to a more traditional above ground location. Stations located in vaults are difficult to work on because of the limited working room for tools and individuals. Additionally, water in the vault can make maintenance more difficult.

These stations require annual maintenance per CFR 192.739, if the equipment at the stations is obsolete and replacement/maintenance parts are no longer available, then proper maintenance cannot be completed. This incomplete maintenance could make Avista out of compliance and lead to fines from the various state utility commissions.

An alternative to rebuilding an entire station would be to replace only the individual components that are antiquated or outdated. If this course were chosen, the work would be less productive and the opportunity to bring the entire station up to current standards would be lost.

The customers benefit from these types of projects by having a safer, well maintained distribution system. Also this is a prudent way to spend resources because many deficiencies at a stations can be remedied under just one project.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Replace Deteriorating Steel Gas Systems

ER No: ER Name:

3001 Replace Deteriorating Gas System

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$3,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,000	51	51	62	70	90	89	80	99	100	99	70	138
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

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; its primary focus is to address corrosion related pipe issues.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

Capital Investment Business Case



Investment Name:	Repl. Deteriorating Steel Gas Systems	Assessments:	
Requested Amount	\$1,000,000	Financial:	<= 0% CIRR
Duration/Timeframe	On-Going	Strategic:	Life Cycle Programs
Dept., Area:	Gas Operations	Operational:	Operations improved beyond current levels
Owner:	Mike Faulkenberry	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Heather Rosentrater	Program Risk:	Moderate certainty 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
		Annual Cost Summary - Increase/(Decrease)			

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.	\$ -	\$ -	\$ -	6
Alternative 1: Pipe Installation	Strategically replace sections of at-risk steel piping.	\$ 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	\$ -	\$ -	\$ 900,000					
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					
2020				\$ 1,000,000					
Total	\$ 6,200,000	\$ -	\$ -	\$ 7,645,000					

Mandate Excerpt (if applicable):
N/A

Additional Justifications:
This program has been executed historically using a qualitative assessment method at the district level.

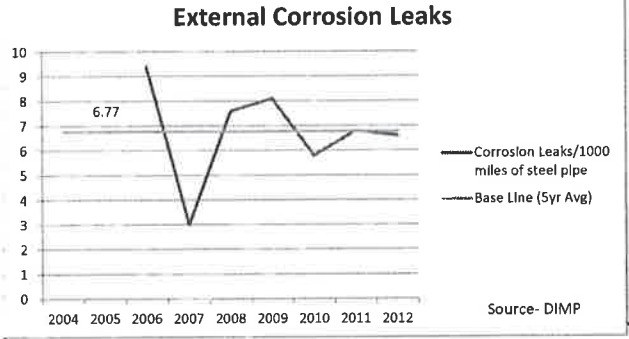
Resources Requirements: (request forms and approvals attached)

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

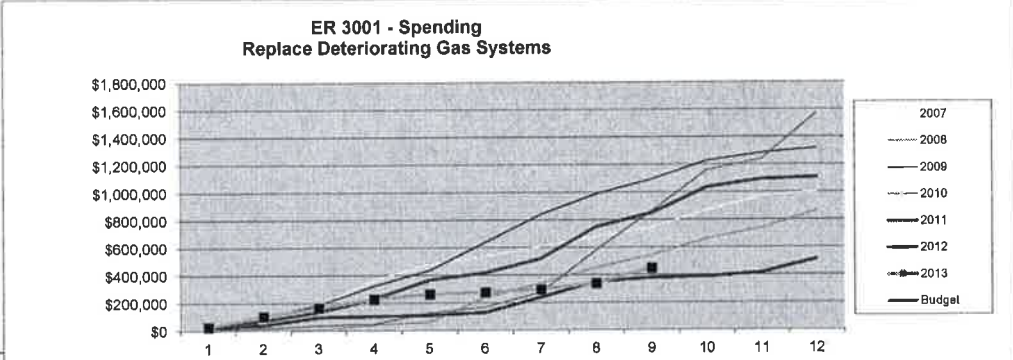


Prepared signature

Reviewed signature Director/Manager

Other Party Review signature (if necessary) Marilyn Stevens Director/Manager

This space is to be used for photographs, charts, or other data that may be useful in evaluating the Program




Business Case	Reduction	Upward Score	Downward 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	\$ - \$2MM - \$4MM	< Once / 10 years	4 - Potential for regulators to impose serious restrictions or Board or management to make leadership change	< Once / 10 years	1 - 4,500 Customer-hours	< Once / 10 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
				\$ - Isolate & spill with 0 to low level PCBs, no migration, air emission minor & evidence, 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	\$ < \$200K	< Once / 50 years	1 - No likely impact on media or regulatory relationship	< Once / 50 years	1 - 4,500 Customer-hours	< Once / 50 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
				\$ - Isolate & spill with 0 to low level PCBs, no migration, air emission minor & evidence, standard clean-up	< Once / 50 years	1 - Potential for injury Public health infrastructure impact up to 48 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 2012-2016	
	Date	Template

To: Gas Deteriorated Steel Pipe Replacement Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas 

Date: 2-3-16

Re: Summary of Investment Considerations for Gas Deteriorated Steel Pipe Replacement Program

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case, Gas Deteriorated Steel Pipe Replacement Program.

This annual program will replace the aging infrastructure associated with steel gas piping. These sections of pipe 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, buried threaded connections, obsolete pipe sizes, no protective coating (bare steel), or coating quality problems.

Recently all the known deteriorated pipe sections have been analyzed and risk ranked using Avista's Distribution Integrity Management Plan (DIMP) tools. This allows each district to better prioritize the projects in their respective areas and complete the projects with the highest risk first.

If resources were not being focused on this program, then operationally there would be challenges when having to work on the odd pipe sizes. Standard stopper fittings don't fit this pipe, that limits the flexibility Operations has to manage emergencies if shut down of the facilities is required and a valve is not located in a convenient place. Additionally, this program allows Operations to be proactive about replacing leak prone pipe, it can be done systematically and more methodically as opposed to just reactively fixing leaks after they have been identified. Working in a reactive mode does not allow for synergies between other utility and road work, it is more difficult to schedule crews.

Another advantage to replacing pipe systematically is it allows time for better analysis and planning to determine if larger pipes are needed for additional capacity, as opposed to haphazardly fixing leaks without a long range plan in place.

The customers and the public benefit from a safer, less leak prone system that is easier to manage in an emergency and is thoughtfully planned out.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Gas Telemetry Deployment

ER No: ER Name:

3117 Gas Telemetry Deployment

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,200¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	400	25	28	39	31	34	32	30	33	44	35	31	39
2017	400	25	28	39	31	34	32	30	33	44	35	31	39
2018	400	25	28	39	31	34	32	30	33	44	35	31	39

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

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:	Heather Rosentrater		
Category:	Program		
Mandate/Reg. Reference:	CFR 192.741	Assessment Score:	81

Recommend Program Description: 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.	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
	describe any incremental changes that this Program would benefit present operations	Capital Cost	O&M Cost	Other Costs	
		\$ 400,000	\$ -	\$ -	1

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
Unfunded Program:	No further enhancements or maintenance of the existing telemetry system. Existing mechanical pressure recorders are expensive to fix and replace.	n/a	Capital Cost	O&M Cost	Other Costs	
			\$ -	\$ 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

Program Cash Flows				
	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 370,000	\$ -	\$ -	\$ 315,000
2015	\$ 370,000	\$ -	\$ -	\$ 250,000
2016	\$ 370,000	\$ -	\$ -	\$ 400,000
2017	\$ 370,000	\$ -	\$ -	\$ 400,000
2018	\$ 370,000	\$ -	\$ -	\$ 400,000
2019	\$ -	\$ -	\$ -	\$ 400,000
2020	\$ -	\$ -	\$ -	\$ 400,000
Total	\$ 1,480,000	\$ -	\$ -	\$ 2,250,000

Associated Ers (list all applicable):			
3117			

ER	2015	2016	2017	2018	2019	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 telemetering or recording pressure gauges to indicate the gas pressure in the district. Additional Justifications: Increased gas telemetry sites will also aide in the installation and monitoring of Automatic Shut Off or Remote Control Valves (ASO/RCV). Disaster Recovery - new telemetry sites are IP addressable to help in the event the primary dispatch center (Mission) is not available.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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: 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 Program

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Gas Telemetry Program Capital Investment File
From: Mike Faulkenberry, Director of Natural Gas *WJA*
Date: 2-3-16
Re: Summary of Investment Considerations for Gas Telemetry Program

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case, Gas Telemetry Program.

This program will continue the installations of gas telemetry throughout Avista's gas service territory. Further enhancing the telemetry sites will increase the visibility the Gas Control Room has of the gas system to help analyze operational concerns and monitor cold weather performance.

This program will also replace the current mechanical pressure recording charts with electronic pressure recording devices. These mechanical charts are located permanently at regulator stations and have also been used to monitor the low pressure areas during the cold weather months. The data from these portable charts is also used to validate the SynerGee model every year. The mechanical charts are labor intensive because the paper charts have to be changed every week and then mailed into Gas Planning. Gas Planning would then have to review every chart and log the lowest pressure that occurred. With the new electronic pressure recorders, Gas Planning and the Gas Control Room get electronic data every morning from each device for the last 24 hours. This data can be represented graphically to quickly analyze any anomalies. Additionally, alarm points can be set in the devices to alert the Gas Control Room of any abnormal operating condition.

These types of projects enhance our Disaster Recovery efforts by updating existing telemetry and adding new sites. Gas Supply also benefits from this data by having independent measurement points to check against the pipeline's values and to receive more timely information from the field.

The customers and general public benefit from Avista having good "visibility" to the gas distribution system. This allows for a quicker response and better decision making from the Gas Control Room and Operations when an emergency situation happens.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Gas Planned Meter Change-out (“PMC”) Program - Capital Replacements

ER No: 3055 **ER Name:** Gas Meter Replacement Non-Revenue

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$3,279¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	3,728	284	289	317	302	310	319	316	316	339	315	306	317
2017	2,790	204	209	238	223	232	242	238	239	261	237	227	239
2018	1,713	239	239	239	239	239	239	50	47	58	44	42	40

Business Case Description:

This annual program will provide for replacement of gas meters and associated measurement equipment that are completed in association with the Gas Planned Meter Change out (PMC) program. Avista is required by commission rules and an approved Tariff in WA, ID, and OR to test meters for accuracy and ensure proper metering performance. Execution of this program on an annual basis will ensure the continuation of reliable gas measurement. This program will include the labor and minor materials associated with the PMC program. Major materials (meters, regulators, and ERTs) will be charged to the appropriate growth ERs.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

Capital Program Business Case



Investment Name:	Gas PMC Program	Assessments:	
Requested Amount	\$1,000,000	Financial:	High - Exceeds 12% CIRR
Duration/Timeframe	On-Going Year Program	Strategic:	Reliability & Capacity
Dept., Area:	Gas Engineering	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Mike Faulkenberry	Program Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater		
Category:	Mandatory		
Mandate/Reg. Reference:	WAC 480-90-348, IDAPA 31.31.01.151-200, OAR	Assessment Score:	185

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
This annual program will provide for replacement of gas meters and associated measurement equipment that are completed in association with the Gas Planned Meter Change out (PMC) program. Avista is required by commission rules and an approved Tariff in WA, ID, and OR to test meters for accuracy and ensure proper metering performance. Execution of this program on an annual basis will ensure the continuation of reliable gas measurement. This program will include the labor and minor materials associated with the PMC program. Major materials (meters, regulators, and ERTs) will be charged to the appropriate growth ERs.		Capital Cost	O&M Cost	Other Costs	
		\$ 1,000,000	\$ -	\$ -	0

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score	
Status Quo :	Avista would be out of compliance with state administrative requirements in WA, ID, and OR related to gas measurement and could face fines if not completed.	n/a	\$ -	\$ -	\$ -	0
Alternative 1:	Replacement gas meters, ERTs, and regulators as part of the gas meter PMC program and complete strategic enhancement of the telemetry and measurement technology systems.		\$ 1,000,000	\$ -	\$ -	0
Alternative 2:			\$ -	\$ -	\$ -	0
			\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,000,000	\$ -	\$ -	\$ 1,175,000
2015	\$ 1,030,000	\$ -	\$ -	\$ 1,130,000
2016	\$ 1,060,900	\$ -	\$ -	\$ 1,060,900
2017	\$ 1,092,727	\$ -	\$ -	\$ 1,092,727
2018	\$ 1,125,509	\$ -	\$ -	\$ 1,125,509
2019	\$ -	\$ -	\$ -	\$ 1,159,274
2020	\$ -	\$ -	\$ -	\$ 1,194,052
Total	\$ 5,309,136	\$ -	\$ -	\$ 7,937,462

3055		

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
3055	\$ -	\$ 1,000,000	\$ 1,030,000	\$ 1,060,900	\$ 1,092,727	\$ 4,183,627	see below
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 1,000,000	\$ 1,030,000	\$ 1,060,900	\$ 1,092,727	\$ 4,183,627	

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:	# of meter changed out vs. # required (this changes annually)

Prepared signature

Reviewed signature

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 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/Benefits)	Likelihood	Legal, Regulatory, External Business Affairs	Likelihood	Customer Service and Reliability (# customers * duration of an outage)	Likelihood
Gas P/MC Program Capex Replacements	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	1 - 1500 Customer-hours	< Once / 10 years
				Environmental	Likelihood	Safety and Health: Public	Likelihood	Safety and Health: Employee	Likelihood
						1 - Potential for injury	< Once / 10 years	1 - Potential for injury	< Once / 50 years
						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 direct impact on media or regulatory relationships	< 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	< Once / 50 years	1 - Potential for injury	< Once / 50 years				
		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

To: Gas PMC Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas 

Date: 1/29/16

Re: Summary of Investment Considerations for Gas PMC Program

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case, Gas PMC Program.

This annual program will provide for replacement of gas meters and associated measurement equipment that are completed in association with the Gas Planned Meter Change-out (PMC) program. Avista is required by commission rules and an approved Tariff in WA, ID, and OR to test meters for accuracy and ensure proper metering performance. Execution of this program on an annual basis will ensure the continuation of reliable gas measurement and compliance with the applicable tariffs. This program includes only the labor and minor materials associated with the PMC program. Major materials (meters, regulators, and ERTs) will be charged to the appropriate Gas Growth Programs.

Avista's statistical gas meter sampling program, aka the Gas PMC program, and associated tariffs driven by state code requirements (Oregon: OAC Chapter 860, Division 023 "Service Standards", Section 0015 "Testing Gas and Electric Meters"; Idaho: IDAPA 31.31.01.000 "Service Rules for Gas Utilities", Rules 151-200 "Standards for Service", Washington: WAC Chapter 480-90 "Gas companies – Operations", Section 333 "Initial accuracy of meters", Section 348 "Metering tolerance", Section 343 "Statement of meter test procedures", and Section 348 "Frequency of periodic meter tests.") are based on ANSI Z1.9 "Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming". Sample sizes and acceptance criteria are defined in the ANSI standard. Annually the test results of gas meters that have been removed from the field are analyzed and a determination of the accuracy of each meter family is made. If the analytics determine a meter family (defined as a manufacturer year and model/size) is no longer metering accurately enough to meet the tariff, then that entire meter family will be replaced. Conversely, if the analytics determine a meter family is performing well, the sample size (number of meters in that family required to be tested) can be reduced.

The alternative to completing this program every year would make Avista out of compliance and could lead to fines from the various state utility commissions.

The benefit of this program to the customers is a high confidence level of the accuracy of every gas meter on the distribution system.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: NSC Greene St HP Gas Main

ER No: 3304 **ER Name:** NSC Greene St HP Gas Main

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	1,500	0	0	0	0	0	0	0	0	0	0	0	1,500
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Due to the North-South Corridor Project, a relocate of the 20" HP gas main on N. Greene St will be required.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

Capital Project Business Case



Investment Name:	NSC Greene ST HP	Assessments:	
Requested Amount	\$1,500,000	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:	High certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater		
Category:	Mandatory		
Mandate/Reg. Reference:	WSDOT Mandate	Assessment Score:	131

Recommend Project Description:	Annual Cost Summary - Increase/(Decrease)				Business Risk Score
	Performance	Capital Cost	O&M Cost	Other Costs	
Due to the North-South Corridor Project, a relocate of the 20" HP gas main on N. Greene St will be required. This work will likely happen around 2018.		\$ 1,500,000	\$ -	\$ -	1

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Unfunded Project: If unfunded, Avista would be in violation of franchise agreements.		\$ -	\$ -	\$ -	8
Relocate gas main as described above.		\$ 1,500,000	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -
2015	\$ -	\$ -	\$ -	\$ -
2016	\$ -	\$ -	\$ -	\$ -
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ 1,500,000			\$ 1,500,000
2019	\$ -			\$ -
Total	\$ 1,500,000	\$ -	\$ -	\$ 1,500,000

Associated Ers (list all applicable):

3xxx			

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
3xxx	\$ -	\$ -	\$ -	\$ -	\$ 1,500,000	\$ 1,500,000	Existing main located in public right of way, franchise agreements dictate that we must relocate our facilities if conflicts arise.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ 1,500,000	\$ 1,500,000	

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)

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:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required	Capital Tools:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
Contract Labor:	<input checked="" type="checkbox"/> ES	<input type="checkbox"/> O		Facilities:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required	Fleet:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required



Key Performance Indicator(s)
Expected Performance Improvements
KPI Measure:

Prepared signature

Reviewed signature
Director/Manager

Other Party Review signature
(if necessary) *Margie Skewes*
Director/Manager

name here

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Reinforcement, Hwy 2 (Kaiser), Spokane WA

ER No: 3237 **ER Name:** US2 N Spo Gas HP Reinforce (Kaiser Prop)

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$2,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	2,000	0	0	0	0	0	0	0	0	0	0	0	2,000
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

This project will reinforce the area north of the Kaiser property along Hwy 2. The distribution system in this area is not able to reliably serve customers on a design day. Additionally, Avista serves the Inland Asphalt plant located north of this location that is not able to be reliability served in the spring and fall. Completion of this reinforcement will improve pressures in the US2 Kaiser area. Approximately 8,000' of 6" HP steel will be installed. Engineering to start in 2014, construction planned for 2015. This project is the top reinforcement priority for the Spokane area.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

Capital Investment Business Case



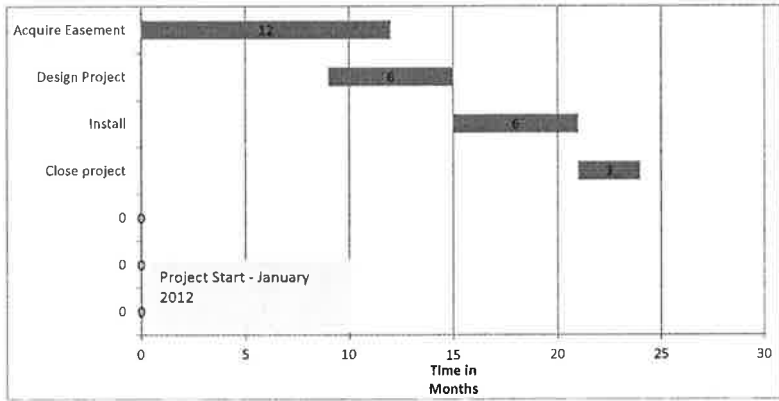
Investment Name:	Reinforcement, Hwy 2 (Kaiser), Spokane WA	Assessments:	
Requested Amount	\$ 1,400,000	Financial:	Low - >0% and < 5% CIRR
Duration/Timeframe	no. years: 1 Year Project: 2014	Strategic:	Reliability & Capacity
Dept., Area:	Gas Engineering	Operational:	Operations not impacted by execution
Owner:	Mike Faulkenberry	Business Risk:	ERM Reduction >0 and <= 5
Sponsor:	Heather Rosentrater	Project/Program Risk:	Moderate certainty around cost, schedule and resources
Category:	Project	Assessment Score:	34
Mandate/Reg. Reference:	WAC 480-90-148(2)(d)	Cost Summary - Increase/(Decrease)	

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This project will reinforce the area north of the Kaiser property along Hwy 2. The distribution system in this area is not able to reliably serve customers on a design day. Additionally, Avista serves the Inland Asphalt plant located north of this location that is not able to be reliability served in the spring and fall. Completion of this reinforcement will improve pressures in the US2 Kaiser area. Approximately 8,000' of 6" HP steel will be installed. Engineering to start in 2014, construction planned for 2015. This project is the top reinforcement priority for the Spokane area.	describe any incremental changes that this project would benefit present operations	\$ 1,400,000	\$ -	\$ -	6
		Cost Summary - Increase/(Decrease)			

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Status Quo :	Inability to reliability serve all customers on the north side of the Kaiser near Hwy 2.	n/a	\$ -	\$ -	\$ -	6
Alternative 1: Brief name of alternative (if applicable)	Capital Pipe Installations (8000') - Install additional pipe to reinforce and loop existing gas distribution system to increase system capacity and reliability.	describe any incremental changes in operations	\$ 1,400,000	\$ -	\$ -	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

Timeline

Construction Cash Flows (CWIP)



	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 43,500	\$ -	\$ -	\$ 43,500
2012	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ 5,000
2014	\$ -	\$ -	\$ -	\$ 6,500
2015	\$ -	\$ -	\$ -	\$ -
2016	\$ 50,000	\$ -	\$ -	\$ -
2017	\$ 1,350,000	\$ -	\$ -	\$ 1,300,000
2018	\$ -	\$ -	\$ -	\$ -
Future	\$ -	\$ -	\$ -	\$ -
Total	\$ 1,443,500	\$ -	\$ -	\$ 1,355,000

Milestones should be general. In some cases it may be as simple as project start, project complete. Use your judgment on project progress so that progress can be measured.

Milestones (high level targets)

- August-16 Acquire easement
- December-16 Design pipe installation
- November-17 Install pipe
- December-17 Project complete and closed

Associated Ers (list all applicable):

Current ER	3237					
------------	------	--	--	--	--	--

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."

Additional Justifications:

This project requires a easement through the Kaiser Property to be completed. The project schedule is dependant upon acquisition of the appropriate easements. This project is a strategic reinforcement and is addressing pressure issues related to operation of the asphalt plant north of Hwy 2 during the shoulder months and enhancements to the gas system to accommodate future growth in the area of the old Kaiser property. This project CIRR will increase with growth in the area within or near the Kaiser property.

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 (if necessary) Director/Manager


This space is to be used for photographs, charts, or other data that may be useful in evaluating the project

Table with columns: Business Case, ERM Risk Reduction, Status Quo Raw Score, Risk on Completion Raw Score, Status Quo Risk (Financial Impact, Likelihood, Legal, Regulatory, External Business Affairs, Customer Service and Reliability), Risk upon Completion (Financial Impact, Likelihood, Legal, Regulatory, External Business Affairs, Customer Service and Reliability).

To be completed by Capital Planning Group

Table with columns: Rationale for decision, Review Cycles (Date, Template).

To: Gas N Spokane Hwy 2 HP Main Reinforcement Project Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas 

Date: 2-4-16

Re: Summary of Investment Considerations for Gas N Spokane Hwy 2 HP Main Reinforcement Project

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case Gas N Spokane Hwy 2 HP Main Reinforcement Project.

This project will install approximately 8,000' of 6" HP gas main and one regulator station along Hwy 2 in North Spokane, south of Farwell Rd. This will be an extension of the existing HP main and will bring additional capacity to this area. The current distribution system is not able to reliably serve customers on a design day. Additionally, Avista serves the Inland Asphalt plant located north of this location and it is not able to be reliably served in the spring and fall due to capacity limitation on the distribution system.

Completion of this reinforcement will improve the capacity in the Hwy 2, Kaiser area. Engineering is currently budgeted to start in 2016, and construction in 2017. Because this project is the top reinforcement priority for the Spokane area and because it has already been delayed several years, a request to the Capital Budget Group has been made to fund construction of this project in 2016.

Recently a new utility corridor was established for the majority of this route. The project manager is working with Real Estate and other departments to check the feasibility of using that corridor.

Without this project, Avista is at risk of not having sufficient capacity to serve over 3,000 firm customers in the north Spokane area on a design day scenario.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Gas Replacement Street & Highway

ER No: 3003
ER Name: Gas Replace-St&Hwy

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$13,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	4,500	221	226	296	319	388	438	410	450	469	428	333	521
2017	1,185	53	54	81	85	95	135	134	124	131	105	95	94
2018	1,185	53	54	81	85	95	135	134	124	131	105	95	94

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

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:	Heather Rosentrater	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	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo :	Avista would be out of compliance with established franchise agreements and/or permits if work is not completed.	\$ -	\$ -	\$ -	16
Alternative 1:	Relocate facilities in conflict with street and highway projects where established franchise agreements and/or permits exist.	\$ 4,500,000	\$ -	\$ -	2
Alternative 2:		\$ -	\$ -	\$ -	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	3003				
					3302				
2012	\$ 2,200,000	\$ -	\$ -	\$ 2,200,000	3297				
2013	\$ 4,500,000	\$ -	\$ -	\$ 4,550,000					
2014	\$ 4,500,000	\$ -	\$ -	\$ 4,300,000					
2015	\$ 4,500,000	\$ -	\$ -	\$ 3,750,000					
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					
2020				\$ 4,500,000					
Total	\$ 29,200,000	\$ -	\$ -	\$ 32,800,000					

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

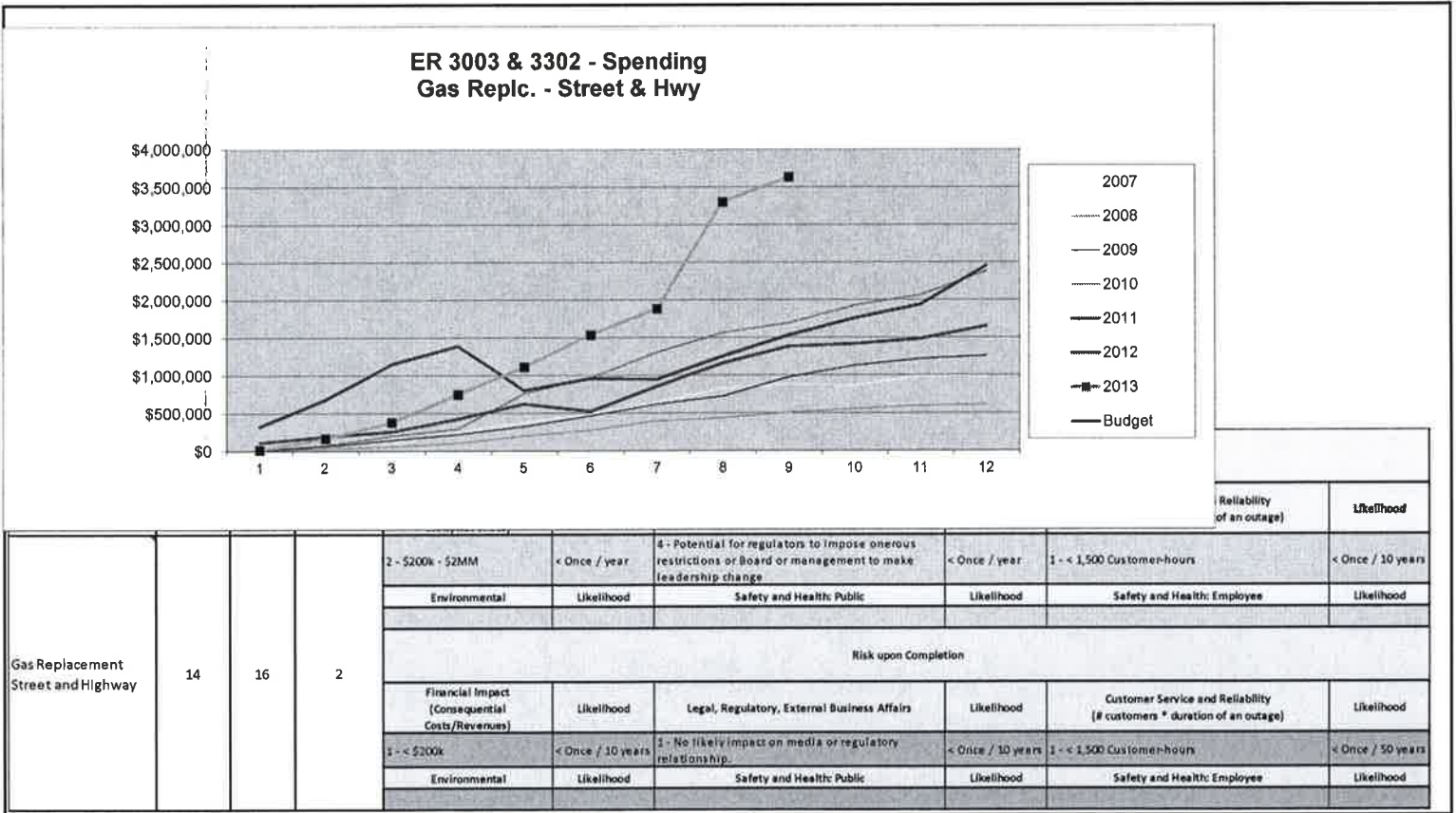
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

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



To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	2017-2021
	Date	Template

To: Gas Replacement Street and Highway Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas 

Date: 2-1-16

Re: Summary of Investment Considerations for Gas Replacement Street and Highway Program

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case, Gas Replacement Street and Highway Program.

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. These franchise agreements are long term contracts between Avista and the various municipalities, and they stipulate the rights and privileges of both parties. In most cases, Avista is required under these franchise agreements to relocate facilities when they are in conflict with road or highway improvements.

Avista has great relationships with the many road and highway departments throughout WA, ID, and OR. Normally when these municipalities have public improvement projects in design phase, Avista has the opportunity to review the plans and identify any potential conflicts. There are times when, because of those relationships, the municipality has been able to modify the design such that the gas facilities are no longer in conflict. However when an amicable resolution can't be met, and if required per the franchise agreement, Avista will relocate the gas facilities to avoid the conflict.

The nature of this work is considered "work in request of others". If the conflicts are not resolved through design changes or relocation of the gas facilities, Avista could be charged with delay of a project. This would not only be a financial burden on the company, but it would also greatly damage the working relationship between Avista and the municipality.

The benefit to the customers is that Avista usually installs the gas facilities in the public right of way as opposed to easements. Easements protect Avista financially against relocations but there are downsides such as access for maintenance. When in the public right of way, access is rarely an issue because of the very nature the area. Additionally, easements are more labor intensive to acquire since approval from every homeowner along a route is required.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Isolated Steel Replacement

ER No: 3007 **ER Name:** Isolated Steel Replacement

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$9,620¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	3,550	202	213	280	260	310	303	277	322	371	332	262	418
2017	2,301	139	149	203	172	197	191	177	198	246	208	174	246
2018	1,906	119	130	179	144	162	156	146	159	206	168	147	191

Business Case Description:

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 Idaho and Oregon also to assure cathodically isolated steel is identified and replaced as needed. Inspections will increase in 2015 for three years, resulting in higher budgets for 2015-2017.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

Capital Program Business Case



Investment Name:	Gas Isolated Steel Replacement Program
Requested Amount	\$3,450,000
Duration/Timeframe	On-Going Year Program
Dept., Area:	Gas Operations
Owner:	Jeff Webb
Sponsor:	Faulkenberry/H Rosentrater
Category:	Program
Mandate/Reg. Reference:	WAC Docket PG-100049, 49CFR192.455&157

Assessments:	
Financial:	7.00%
Strategic:	Reliability & capacity
Business Risk:	Business Risk Reduction >0 and <= 5
Program Risk:	High certainty around cost, schedule and resources

Recommend Program Description: 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. Inspections will increase in 2015 for three years, resulting in higher budgets for 2015-2017.	Assessment Score:	64	Annual Cost Summary - Increase/(Decrease)			
	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
	describe any incremental changes that this Program would benefit present operations	\$ 3,400,000	\$ -	\$ -	1	

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
Unfunded Program:	Avista would be out of compliance with Docket PG-100049 and 49 CFR 192.455 & 457.	n/a	\$ -	\$ -	\$ -	4
Alternative 1: Complete as described above.	Complete programmatic replacement of isolated steel pipe	Reduction in Reg Stn maintenance.	\$ 3,450,000	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -
2014	\$ 2,598,333	\$ -	\$ -	\$ 1,758,333
2015	\$ 3,450,000	\$ -	\$ -	\$ 1,315,000
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
2020	\$ 2,750,000	\$ -	\$ -	\$ 2,750,000
Total	\$ 21,168,333	\$ -	\$ -	\$ 18,193,333

Associated Ers (list all applicable):

3007		

ER	2014	2015	2016	2017	2019	Total	Mandate Excerpt (if applicable):
3007	\$ 3,450,000	\$ 3,550,000	\$ 2,750,000	\$ 2,850,000	\$ 2,850,000	\$ 15,450,000	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.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications:
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 3,450,000	\$ 3,550,000	\$ 2,750,000	\$ 2,850,000	\$ 2,850,000	\$ 15,450,000	

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 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

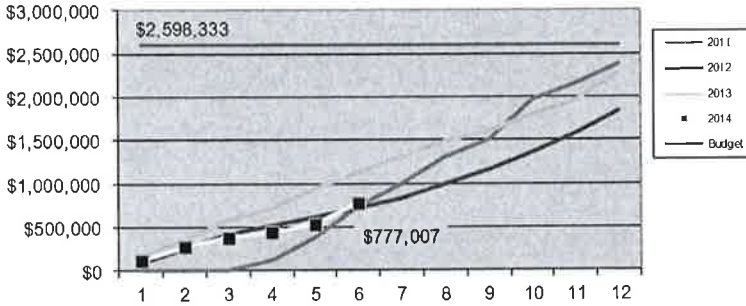
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)

Expected Performance Improvements
KPI Measure:

Prepared signature

ER 3007 - Isolated Steel Pipe Replacement Minor Blanket



Reviewed signature
Director/Manager


er 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 Program

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Gas Isolated Steel Replacement Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas 

Date: 2-2-16

Re: Summary of Investment Considerations for Gas Isolated Steel Replacement Program

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case, Gas Isolated Steel Replacement Program.

The program objective is to identify and document isolated steel pipe sections, including isolated risers, and to replace each riser or pipeline section within a specified timeframe after its identification. The program started in November 2011 and should be completed by November 2021. Isolated portions of pipe including risers, service pipe and main will be replaced as required to meet the requirements of 49 CFR 192.455 & .457 and in accordance with WUTC Docket PG-100049. This program will be conducted in ID and OR also to assure cathodically isolated steel is identified and replaced as needed.

Once the isolated sections of steel pipe are identified, projects are created to replace them with new pipe. This new pipe could be either steel or PE. Management of the cathodic protection (CP) zone will drive the decision between steel and PE pipe.

Per the agreement, isolated steel risers are being replaced at a rate of at least 10% per year, starting in 2011, and short sections of isolated steel main are replaced within one year of discovery.

The alternative to completing this program would be to not finish the work within the timeframe dictated by the WUTC. This would be a direct violation of a stipulated agreement between Avista and the WUTC and likely result in financial penalties.

Work completed under this program results in a safer gas distribution system to both the public and Avista employees. Older pipe with uncertain CP history is being replaced with new PE pipe that does not require CP and is less likely to leak.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Cathodic Protection

ER No: ER Name:

3004 Cathodic Protection-Minor Blanket

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$3,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,000	52	54	76	73	83	99	96	96	108	90	78	95
2017	375	18	19	27	27	30	41	41	38	42	33	30	29
2018	375	18	19	27	27	30	41	41	38	42	33	30	29

Business Case Description:

This annual program will replace existing and install new cathodic protection systems to ensure compliance with 49 CFR 192, Subpart I - "Requirements for Corrosion Control" that requires pipelines be protected against external corrosion by means of a cathodic protection system. This program will ensure appropriate cathodic protection levels are maintained, reduce corrosion related failures, help prevent leaks within steel pipeline systems and enhance public safety.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Cathodic Protection, Natural Gas	Assessments:	
Requested Amount	\$950,000	Financial:	9.00%
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:	Moderate certainty around cost, schedule and resources
Sponsor:	Don Kopczyński	Assessment Score:	138
Category:	Mandatory	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	49 CFR 192, Subpart I - "Requirements for Corrosion Control"	Performance	Capital Cost

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This annual program will replace existing and install new cathodic protection systems to ensure compliance with 49 CFR 192, Subpart I - "Requirements for Corrosion Control" that requires pipelines be protected against external corrosion by means of a cathodic protection system. This program will ensure appropriate cathodic protection levels are maintained, reduce corrosion related failures, help prevent leaks within steel pipeline systems and enhance public safety.	describe any incremental changes that this Program would benefit present operations	\$ 950,000	\$ -	\$ -	4

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Unfunded Program:	Avista would be out of compliance in portions of its gas distribution system.	n/a	\$ -	\$ -	\$ -	12
Alternative 1: Project as described above.	Install new and replace existing cathodic protection system.	describe any incremental changes in operations	\$ 800,000	\$ -	\$ -	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
2014	\$ 800,000	\$ -	\$ -	\$ 700,000
2015	\$ 950,000	\$ -	\$ -	\$ 775,000
2016	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000
2017	\$ 1,250,000	\$ -	\$ -	\$ 1,250,000
2018	\$ 1,250,000	\$ -	\$ -	\$ 1,250,000
2019	\$ 1,250,000	\$ -	\$ -	\$ 1,250,000
2020	\$ 1,250,000	\$ -	\$ -	\$ -
Total	\$ 8,250,000	\$ -	\$ -	\$ 6,725,000

Associated Ers (list all applicable):			
3004			

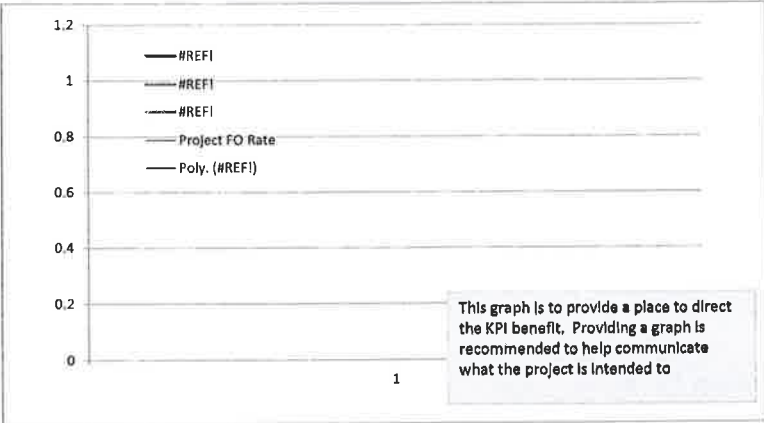
ER	2014	2015	2016	2017	2019	Total	Mandate Excerpt (if applicable):
3004	\$ 950,000	\$ 1,000,000	\$ 1,250,000	\$ 1,250,000	\$ 1,250,000	\$ 5,700,000	49 CFR 192.455(a) "Except as provided in paragraphs (b), (c), and (f) of this section, each buried or submerged pipeline installed after July 31, 1971, must be protected against external corrosion, including the following: (2) It must have (cont. below)
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 950,000	\$ 1,000,000	\$ 1,250,000	\$ 1,250,000	\$ 1,250,000	\$ 5,700,000	

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 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

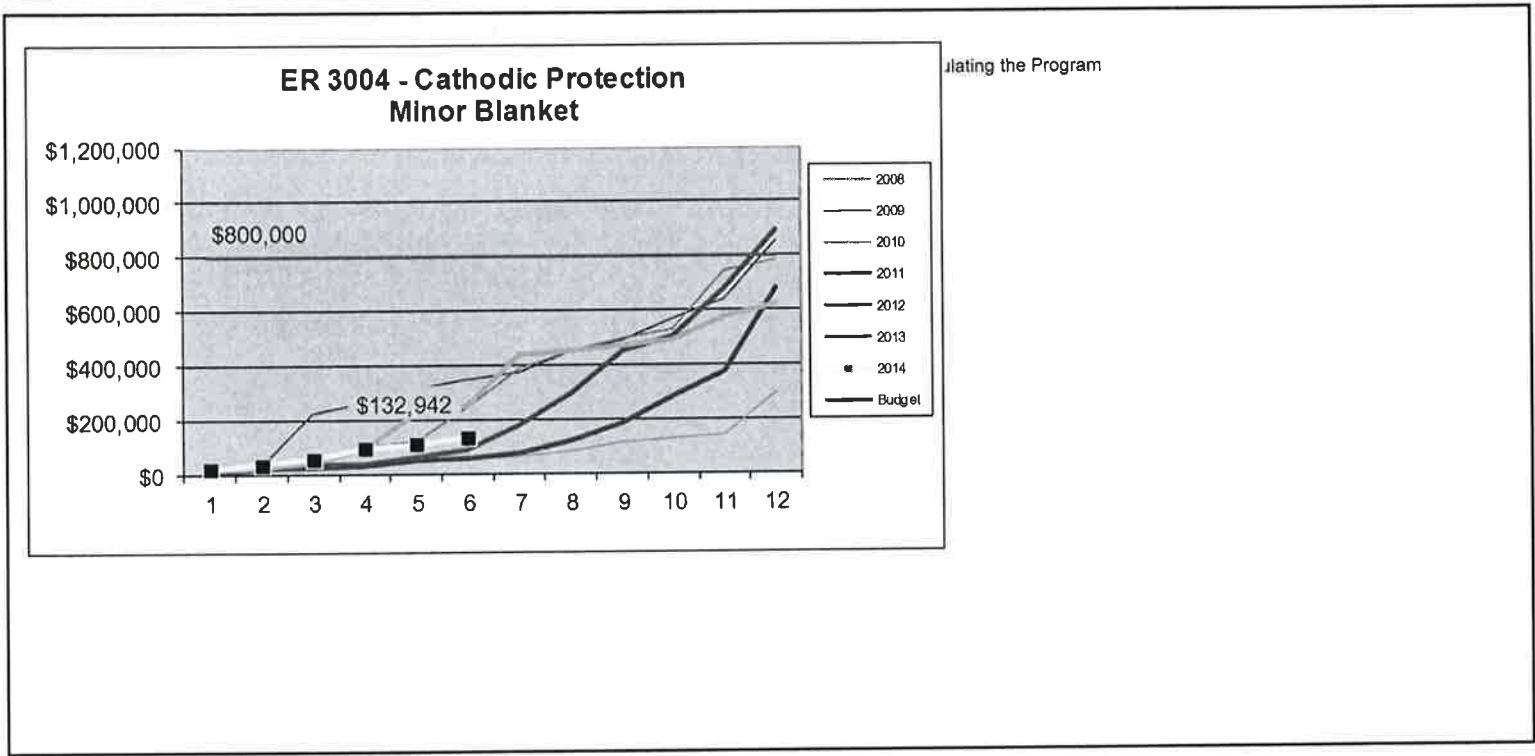
KPI Measure:	Fill in the name of the KPI here
	Fill in the name of the KPI here



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature Director/Manager
(if necessary) *Margie Stevens*



To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Gas Cathodic Protection Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas *WJF*

Date: 1/29/16

Re: Summary of Investment Considerations for Gas Cathodic Protection Program

The purpose of this memorandum is to formally document the considerations involved in the development of capital investment business case, Gas Cathodic Protection Program.

This annual program will replace existing and install new cathodic protection (CP) systems to ensure compliance with 49 CFR 192, Subpart I - "Requirements for Corrosion Control". This federal code requires pipelines be protected against external corrosion by means of a CP system. This program will ensure appropriate CP levels are maintained, reduce corrosion related failures, help prevent leaks within steel pipeline systems, and enhance public safety.

Typical types of projects installed under this work type may include (but are not limited to) CP deep and shallow anode wells, Remote Monitoring Units (RMU), CP rectifiers, shorted casing remediation, replacement of gas mains to improve CP system performance (other than isolated steel). These projects are typically completed under specific work orders and are normally one to six months in duration from project start to completion.

The driving need for this program is the replacement of aging CP system components. Once these components reach the end of their useful life, they must be replaced to ensure compliance with federally mandated codes.

Modernization of the CP system is another category of work completed under this program. RMU's are now being installed throughout Avista's system. RMU's allow the CP Technicians to control and monitor the settings and output of rectifiers. These units aide in the troubleshooting of a CP system and can provide early detection of abnormal operating conditions.

If this program were not financially supported at the current level, the effectiveness of the CP systems would eventually diminish to the point of being out of compliance with federal code. Avista could face financial penalties for being in violation and more importantly the steel gas facilities would not be properly protected against external corrosion. This would increase our risks related to both employee and public safety.

For customers and the general public, it is critical to ensure the CP systems are replaced and updated on a regular basis so to continue providing effective protection. This will preserve the current high levels of public safety and ensure compliance with federal code.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Gas Non-Revenue Program

ER No: ER Name:

3005 Gas Distribution Non-Revenue Blanket

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$18,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	6,000	366	381	475	451	514	526	495	543	607	545	459	639
2017	2,560	188	199	245	206	211	214	212	208	254	212	210	202
2018	2,560	188	199	245	206	211	214	212	208	254	212	210	202

Business Case Description:

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."

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



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:	Heather Rosentrater	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".	describe any incremental changes that this Program would benefit present operations	\$ 5,600,000	\$ -	\$ -	8

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	\$ -	\$ -	\$ -	8
Alternative 1: Brief name of alternative (if applicable)	Complete installation and/or upgrade of non-revenue assets.	\$ 5,600,000	\$ -	\$ -	2
Alternative 2: Brief name of alternative (if applicable)		\$ -	\$ -	\$ -	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	\$ 14,172,690	\$ -	\$ -	\$ 18,372,690					
2015	\$ 6,000,000	\$ -	\$ -	\$ 8,500,000					
2016	\$ 6,000,000	\$ -	\$ -	\$ 6,000,000					
2017	\$ -	\$ -	\$ -	\$ 6,000,000					
2018	\$ -	\$ -	\$ -	\$ 6,000,000					
2019	\$ -	\$ -	\$ -	\$ 6,000,000					
2020				\$ 6,000,000					
Total	\$ 12,000,000	\$ -	\$ -	\$ 38,500,000					

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).

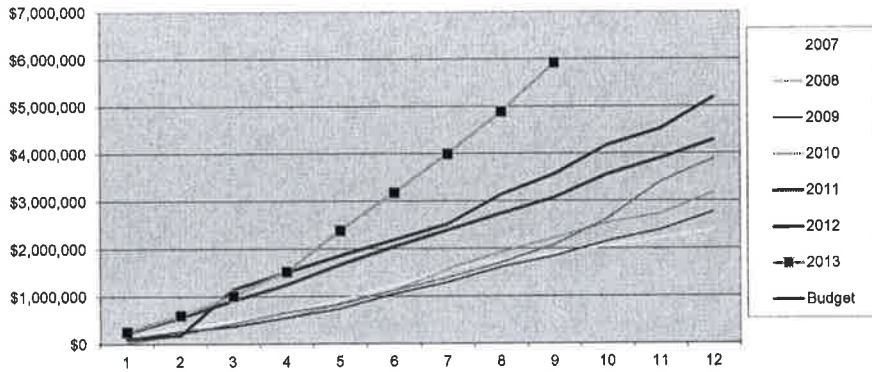
Key Performance Indicator(s)
Expected Performance Improvements
KPI Measure:

Prepared signature

Reviewed signature
Director/Manager

Other Party Review signature *Margie Stevens*
(if necessary) Director/Manager


**ER 3005 - Spending
Gas Dist. Non-Rev. Blanket**



To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template
	10/29/2015	Updated w/ Sept CPG approval and 5 yr plan for 2016-2020

To: Gas Non-Revenue Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas 

Date: 2/5/16

Re: Summary of Investment Considerations for Gas Non-Revenue Program

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case, Gas Non-Revenue Program.

This annual program will replace sections of existing gas piping and facilities that require replacement to improve the operation of the gas system but are not directly linked to new revenue or capacity. The work covered by this program may include (but is not limited to) improvements in equipment and/or technology to enhance system operation and/or maintenance, replacement of obsolete facilities, replacement of pipe and facilities that are at the end of their useful life or have failed, projects to improve public safety, and customer requested work.

The work in this program is mostly reactionary and is difficult to predict aside from using historical trends. The following situations are typical triggers for such work: shallow facilities found by excavation (the excavation may or may not be related to gas construction), relocation of facilities as requested by others (except for road and highway relocations), and leaks on mains or services.

When shallow facilities are discovered, an appropriate response to the situation is determined. If the response is capital in nature, then the project is funded from this program. These types of projects allow Avista to remain in compliance, avoid financial penalties, and operate the gas facilities in a safe manner.

If requested by others (typically customers) to relocate facilities, Avista is bound by the tariff to do so at the customer's expense. Under certain circumstances, Avista may choose these opportunities to perform additional work beyond the immediate request to improve or update the gas system. An example might be to replace an existing steel service with PE. This would eliminate the possibility of future deficiencies with the cathodic protection system on the steel pipes and reduces future maintenance related to that steel service. The charges for this additional work are put to this Program.

When leaks are found on the system, it is sometime advantageous to replace a section of main or service as opposed to just repairing the leak. Avista looks at the long term fix when possible, not just addressing the immediate concern but considers what is the right thing to do in these situations. This type of betterment falls under this program.

Customer related benefits include improved safety and reliability from having facilities at the proper depth and from reduced leak rates of new plastic pipe versus older steel.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Natural Gas Distribution

Business Case Name: Gas Reinforcement

ER No: 3000 **ER Name:** Gas Reinforce-Minor Blanket

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$3,600¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,200	57	59	82	86	100	125	121	122	129	110	93	116
2017	545	23	24	35	39	44	63	63	58	60	49	44	43
2018	545	23	24	35	39	44	63	63	58	60	49	44	43

Business Case Description:

This annual program will identify and provide for necessary capacity reinforcements of the existing natural gas distribution system in WA, ID, and OR. Avista has an obligation to provide adequate service for customers with firm gas service rates on design day conditions. 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. Specific ER's may be added to this Business Case as they are defined as Reinforcement Projects.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 3

Capital Program Business Case



Investment Name:	Gas Reinforcement	Assessments:	
Requested Amount	\$1,200,000	Financial:	7.00%
Duration/Timeframe	On-going Year Program	Strategic:	Reliability & capacity
Dept., Area:	Gas Operations	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Jeff Webb	Program Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Faulkenberry/H Rosentrater		
Category:	Program		
Mandate/Reg. Reference:	WAC 480-90-148(2)(d), IDAPA 31.31.01.151, OR	Assessment Score:	91

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
This annual program will identify and provide for necessary capacity reinforcements of the existing natural gas distribution system in WA, ID, and OR. Avista has an obligation to provide adequate service for customers with firm gas service rates on design day conditions. 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. 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	Capital Cost	O&M Cost	Other Costs	4
		\$ 1,200,000	\$ -	\$ -	

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
Unfunded Program:	n/a	Capital Cost	O&M Cost	Other Costs	15
Without these projects, some customers that have signed up for firm service and have paid for firm gas supplies to Avista may not be served on a cold winter day.		\$ -	\$ -	\$ -	
Alternative 1: Pipe Installation	describe any incremental changes in operations	\$ 1,100,000	\$ -	\$ -	4
Alternative 2: Uprate Alternative	describe any incremental changes in operations	\$ 50,000	\$ 100,000	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
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. This option will only address a single issue in a single location, whereas the reinforcement program will address multiple locations.					

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000
2016	\$ 1,200,000	\$ -	\$ -	\$ 1,200,000
2017	\$ 1,200,000	\$ -	\$ -	\$ 1,200,000
2018	\$ 1,200,000	\$ -	\$ -	\$ 1,200,000
2019	\$ 1,200,000	\$ -	\$ -	\$ 1,200,000
2020	\$ 1,200,000	\$ -	\$ -	\$ 1,200,000
2021+	\$ 1,200,000	\$ -	\$ -	\$ -
Total	\$ 8,200,000	\$ -	\$ -	\$ 7,000,000

3000		

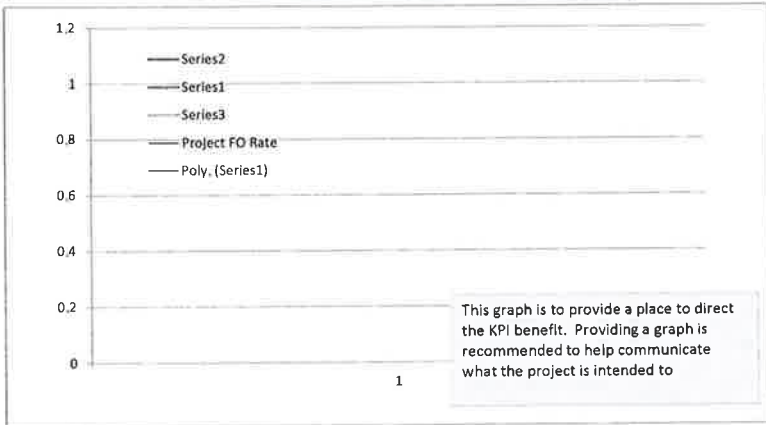
ER	2016	2017	2018	2019	2020	Total	Mandate Excerpt (if applicable):
3000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 6,000,000	WAC 480-90-148(2)(d), IDAPA 31.31.01.151, OR Tariff - Rule 14(A)(2)
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications:
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 6,000,000	

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 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: Fill in the name of the KPI here
 Fill in the name of the KPI here



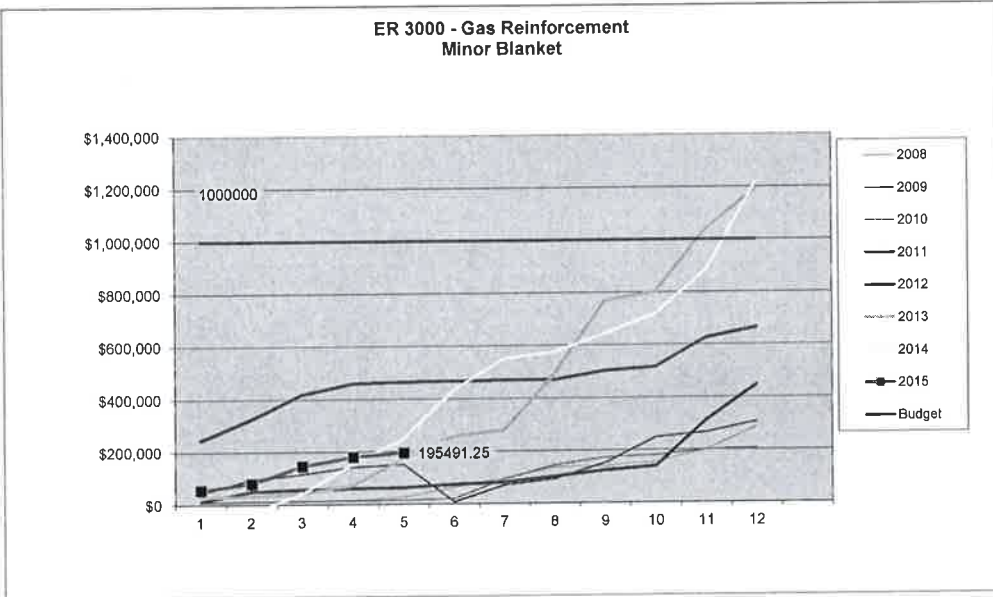
Prepared signature _____

Reviewed signature _____
Director/Manager

Other Party Review signature *Margi Stevens* _____
(if necessary) Director/Manager

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."


**ER 3000 - Gas Reinforcement
Minor Blanket**



To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Gas Reinforcement Program Capital Investment File

From: Mike Faulkenberry, Director of Natural Gas 

Date: 1/31/16

Re: Summary of Investment Considerations for Gas Reinforcement Program

The purpose of this memorandum is to formally document the considerations involved in the development of the capital investment business case, Gas Reinforcement Program.

This annual program will identify and provide for necessary capacity reinforcements to the existing natural gas distribution system in WA, ID, and OR. Avista has an obligation to serve by providing adequate service for customers with firm gas service rates on design day conditions. 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. Specific ER's may be added to this Business Case as they are defined as reinforcement projects.

Typical projects completed under this Business Case may include (but are not limited to) upsizing existing mains, looping, and installing new regulator stations. When a reinforcement is done by looping a system (bringing in a second source to an area), there is a secondary benefit of higher reliability to the area. Most of these projects will have a unique project number assigned to them, but the lower cost projects may be completed under the blanket project numbers set up for each district.

Projects that are identified in this program are prioritized by a gas system planning model. This model analyzes actual meter data from each customer, extrapolates that data to predict a demand at design temperature conditions, and then analyzes each gas distribution system to determine if reinforcements are necessary. If system capacities are not sufficient the model can also be used to determine the benefits of different types of projects. Once the projects are identified, they are risk ranked based on the number of customers affected and the temperature levels at which the risks begin.

For those areas that have insufficient capacity to serve firm customers on a design day, a cold weather action plan has been developed. This plan outlines particular activities that could be implemented such as the manual on-sight monitoring of system pressures, requesting a media blast to request a temporary thermostat turndown, taking extraordinary measures to manually improve the capacity of the system by bypassing regulator stations or manually shedding load, and/or preparing relight lists (to restore service to customers who lost gas service).

Avista has determined it is not appropriate to rely upon a cold weather action plan for the safe and reliable operation of the natural gas distribution system. Operating in this mode requires Avista employees to work outdoors in extremely cold situations, which results in increased operations and maintenance expense (O&M expense) due to overtime pay and increased safety risks to our employees performing the manual intervention (i.e., working outdoors in cold, snowy, and icy conditions). Additionally, these activities are last-ditch efforts to maintain service, and they do not represent a guarantee that service will be able to be maintained to customers paying a firm gas rate.

The majority of customers using gas are using it for space heating. Should a gas outage occur during a cold weather event due to insufficient capacity of a distribution system, there would be a high level of risk associated with the health and safety of the individuals, and the potential damage to the buildings due to freezing water pipes. Completion of these reinforcement projects greatly reduce this risk.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Gas Underground Storage

Business Case Name: Jackson Prairie Storage

ER No: ER Name:

7201 Jackson Prairie Storage

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$3,502¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,175	17	60	62	112	223	210	208	170	103	3	3	3
2017	1,117	93	93	93	93	93	93	93	93	93	93	93	93
2018	1,210	101	101	101	101	101	101	101	101	101	101	101	101

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 4

Capital Program Business Case



Investment Name:	Jackson Prairie	Assessments:	
Requested Amount	\$ 1,200,000	Financial:	12.00%
Duration/Timeframe	20+ Year Program	Strategic:	Reliability & capacity
Dept., Area:	Natural Gas Resources	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Jody Morehouse	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Jason Thackston	Assessment Score:	109
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost

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	\$ 1,200,000	\$ -	\$ -	1

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	n/a	\$ -	\$ -	\$ -	12
Alternative 1: Brief name of alternative (if applicable)	describe any incremental changes in operations	\$ -	\$ -	\$ -	1
Alternative 2: Brief name of alternative (if applicable)	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
Alternative 3 Name: Brief name of alternative (if applicable)	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 539,000	\$ -	\$ -	\$ 539,000
2015	\$ 1,356,300	\$ -	\$ -	\$ 1,356,300
2016	\$ 1,175,000	\$ -	\$ -	\$ 1,175,000
2017	\$ 1,117,000	\$ -	\$ -	\$ 1,117,000
2018	\$ 1,210,000	\$ -	\$ -	\$ 1,210,000
2019	\$ 1,085,000	\$ -	\$ -	\$ 1,085,000
2020+	\$ 1,200,000	\$ -	\$ -	\$ 1,200,000
Total	\$ 7,682,300	\$ -	\$ -	\$ 7,682,300

7201		

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
7201	\$ 1,356,300	\$ 1,175,000	\$ 1,117,000	\$ 1,210,000	\$ 1,085,000	\$ 5,943,300	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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 1,356,300	\$ 1,175,000	\$ 1,117,000	\$ 1,210,000	\$ 1,085,000	\$ 5,943,300	

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 IO or Not Required
 Facilities: YES - attach form IO or Not Required
 Capital Tools: YES - attach form IO or Not Required
 Fleet: YES - attach form IO 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

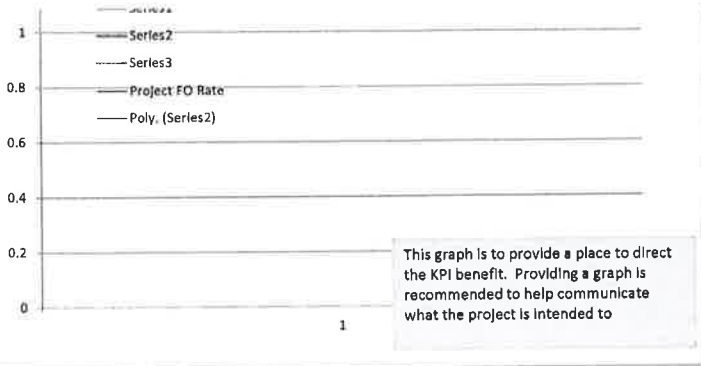
KPI Measure: Fill in the name of the KPI here

Prepared signature



Section 4

Capital Program Business Case



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

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Jackson Prairie Storage Business Case 2016 Washington GRC File

From: Jody Morehouse, Director of Gas Supply 

Date: 2/11/2016

Re: Jackson Prairie Storage Capital Investment Considerations

As discussed in my direct testimony (Exhibit No. __JM-1T), Avista is a one-third owner of the Jackson Prairie underground gas storage facility. Puget Sound Energy is the operator of this facility and manages the capital work performed on behalf of the joint owners.

Avista is contractually required to invest its proportion of the costs associated with the capital maintenance performed by Puget Sound Energy. Not fulfilling this obligation would dilute Avista's ownership percentage and reduce the Company's ability to utilize the facility in the manner described in my direct testimony.

This requirement, as well as examples of investment completed under this business case, is well explained within the business case form.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Transportation

Business Case Name: Fleet Budget

ER No: ER Name:

7000 Transportation Equip

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$21,060¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	5,660	471	471	474	471	471	471	471	471	474	471	471	471
2017	7,700	641	641	645	641	642	641	641	641	644	641	641	641
2018	7,700	641	641	645	641	642	641	641	641	644	641	641	641

Business Case Description:

Fleet utilizes a Vehicle Replacement Model analysis program to determine which vehicles are 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 of vehicles in total and the replacement of over 600 assets.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

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:	Heather Rosenzrater		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	75

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	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program: Replace only on failure	Unreliable equipment, failed commitments	\$ -	\$ 2,135,679	\$ -	9
Reduced 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	\$ -	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -
2014	\$ 7,595,175	\$ -	\$ -	\$ 5,700,406
2015	\$ 7,700,000	\$ -	\$ -	\$ 8,270,000
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
2020+	\$ -	\$ -	\$ -	\$ -
Total	\$ 50,142,536	\$ -	\$ -	\$ 44,770,406

Associated Ers (list all applicable):

7000			

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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: ES NO

Enterprise Tech: ES - attach form NO or Not Required
 Facilities: ES - attach form NO or Not Required
 Capital Tools: ES - attach form NO or Not Required
 Fleet: ES - 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).

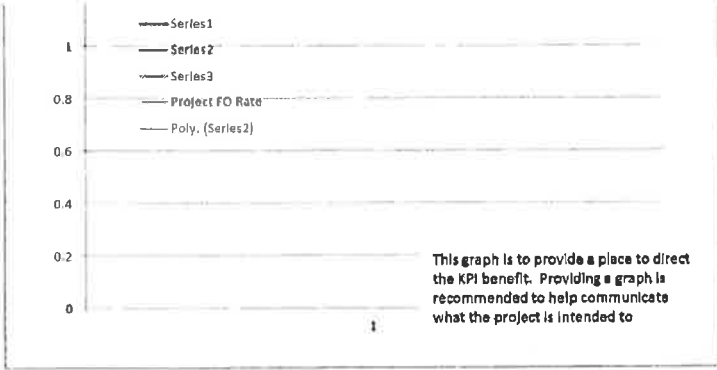
Key Performance Indicator(s)

Expected Performance Improvements

KPI Measure: Fill in the name of the KPI here
 Fill in the name of the KPI here

Prepared signature

Capital Program Business Case



Reviewed signature Director/Manager

Other Party Review signature Director/Manager
(if necessary) *Nancy 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

To: Fleet Budget Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/11/2016

Re: Fleet Budget Capital Investment Considerations

As discussed in the business case sheet, Avista manages its vehicle fleet using a vehicle replacement model. The following pages comprise an excerpt from the most recent Vehicle Replacement Summary provided by the Company's vehicle replacement model vendor. The full summary can be provided upon request.

Utilimarc
Your Total Fleet Solution



Avista 2014 Vehicle Replacement Summary

Contents

SUMMARY	3
RESULTS	4
REPLACEMENT CRITERIA.....	4
ANNUAL VEHICLES TO REPLACE.....	5
REPLACEMENT STRATEGY COMPARISON	6
AGING TABLE.....	7
INDEX.....	8
AVISTA 2013 CLASS SPECIFIC INPUTS	8
METHODOLOGY	9
INTRODUCTION.....	9
DEFINITIONS	10
CALCULATIONS AND EXAMPLES	11
REGRESSION ANALYSIS.....	13
INTEREST ADJUSTMENTS.....	13

Summary

- Utilimarc's Vehicle Replacement Model (VRM) uses fleet data from Avista to develop company specific replacement criteria for each vehicle class in fleet. This analysis is unique to the behavior and characteristics of the Avista fleet.
- The inputs for the Utilimarc VRM include:
 - Company specific trending parts and labor cost for each vehicle class
 - Company specific purchase price for each vehicle class
 - Company specific annual usage patterns (mileage) for each vehicle class
 - Company specific loaded productive labor rate and mechanic productivity
- Vehicles are identified as candidates for replacement when over their recommended replacement age or replacement life to date mileage, whichever occurs first.
- Based on these results, Utilimarc recommend replacing 66 vehicles annually, with an annual capital cost of \$5,507,798. This estimate does not include trailers or power operated equipment.
- Avista has chosen to replace 66 vehicles annually, with an annual capital cost of \$5,507,798. This estimate does not include trailers or power operated equipment.
- Acting on these recommendations will result in predictable future capital needs, parts and labor cost, technician labors hours needed and number of work orders generated annually.

Results

Replacement Criteria

The table below contains your custom replacement criteria by vehicle class, along with Utilimarc's recommendations. A vehicle is identified as a candidate for replacement when it reaches its replacement range for age or lifetime mileage, whichever occurs first. Replacing within these ranges guarantees operating within 1% of the lowest total ownership cost of the vehicle over its lifetime.

Class	Units Count	Custom Age	Custom Lifetime Mileage	Recommended Range	Recommended Lifetime Mileage Range
Light Duty Pickup	96	8	98,569	6 - 9	73,927 - 110,891
Medium Duty Pickup	73	8	106,870	7 - 10	93,512 - 133,588
Heavy Duty Pickup	20	6	111,649	5 - 8	93,041 - 148,865
Van - Cargo 250	14	13	123,150	12 - 15	113,677 - 142,096
Dump Truck	35	13	80,357	11 - 15	67,994 - 92,719
Light Duty Service...	116	6	75,541	4 - 7	50,361 - 88,131
Medium Duty Service...	3	15	110,270	13 - 17	95,568 - 124,973
Heavy Duty Service...	16	18	127,025	16 - 21	112,911 - 148,196
Stake Truck	83	11	74,152	9 - 13	60,670 - 87,635
Light Duty Bucket	44	9	149,691	8 - 10	133,059 - 166,323
Medium Duty Bucket	23	10	118,335	9 - 12	106,502 - 142,002
Heavy Duty Bucket	20	18	140,295	17 - 21	132,500 - 163,677
Digger Derrick	40	19	109,752	17 - 22	98,199 - 127,081
Mobile Crane	10	22	68,026	19 - 25	58,750 - 77,303

The following notes were entered into the online VRM to document your decision making process:

Annual Vehicles to Replace

The table below contains your custom number of vehicles to replace each year and the cost of replacing those units, along with Utilimarc's recommendations. These calculations are based on Avista's fleet demographics as of 2013.

Class	Custom # of Vehicles	Custom Replacement Cost	Recommended # of Vehicles	Recommended Replacement Cost
Light Duty Pickup	12	\$491,352	12	\$491,352
Medium Duty Pickup	9	\$369,333	9	\$369,333
Heavy Duty Pickup	3	\$153,312	3	\$153,312
Van - Cargo 250	1	\$62,945	1	\$62,945
Dump Truck	3	\$417,576	3	\$417,576
Light Duty Service...	19	\$1,203,308	19	\$1,203,308
Medium Duty Service...	0	\$0	0	\$0
Heavy Duty Service...	1	\$187,371	1	\$187,371
Stake Truck	8	\$644,256	8	\$644,256
Light Duty Bucket	5	\$654,120	5	\$654,120
Medium Duty Bucket	2	\$366,922	2	\$366,922
Heavy Duty Bucket	1	\$286,017	1	\$286,017
Digger Derrick	2	\$671,286	2	\$671,286
Mobile Crane	0	\$0	0	\$0
Total	66	\$5,507,798	66	\$5,507,798

The following notes were entered into the online VRM to document your decision making process:

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Mobility in the Field

ER No: ER Name:

5144 Mobility in the Field

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	650	100	0	0	100	0	0	150	0	0	150	0	150
2018	850	0	0	200	0	0	200	0	0	200	0	0	250

Business Case Description:

This program is to increase the Company's 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. The first phase is the project called "Visibility in the Field", which will assist in Leak Survey and Gas Service Dispatch by providing spatial maps in the field using a mobile device.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 6

Capital Program Business Case



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	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
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	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
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 the phone; Return trips into the field to re-gather missing information.	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 primarily be a tablet such as an iPad.	\$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					5144				
	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)	\$ 540,000					
2016	\$ 320,000	\$ 350,000	\$ (425,000)	\$ 500,000					
2017	\$ 400,000	\$ 400,000	\$ (472,000)	\$ 500,000					
2018	\$ -	\$ -	\$ -	\$ 500,000					
Total	\$ 1,660,000	\$ 1,176,000	\$ (1,489,000)	\$ 2,730,000					

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)

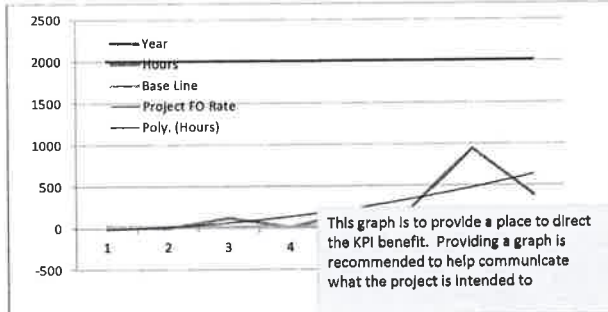
Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

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: To be determined by each project
 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

To: Mobility in the Field Business Case 2016 Washington GRC File

From: Jim Kensok, Vice President, Chief Information Officer



Date: 2/11/2016

Re: Mobility in the Field Capital Investment Considerations

As described in the Mobility in the Field business case, a number of opportunities have been identified where mobile technology use in the field would provide improved operational capabilities and efficiencies.

The IS/IT department has provided the following additional information regarding this project.

The driving need of the blanket is to provide more spatial map data in the field, using a mobile device which results in efficiency gained for our field employees. Our customer benefits with these new capabilities and efficiencies. The benefits include operations improvements to reduce compliance risk, reduce duplicate effort, more timely entry of data along with improved tools and information in the field to better serve our customers.

Continuing to operate without improving our mobility in the field would result in printing paper maps, making multiple return trips to the office to get the information, making decisions without up to date information in the field, working with our customer without having the information in the field where we could better serve them. Customers have mobile devices in cell phones and mobiles apps at their fingertips. They have an expectation that our field personnel would have similar access to mobile tools and information to work most efficiently in their interest. Without moving forward with more mobile tools and capability Avista will resort to much less efficient ways to operate and serve our customer.

The projects currently in process are:

- CSR Facility Viewer
- View Outages Map
- Electric System Status
- Leak Survey Phase II

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Next Generation Radio Refresh

ER No: ER Name:

5106 Next Generation Radio System

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$518¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	6,000	0	6,000	0	0	0	0	0	0	0	0	0	0
2017	375	375	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Investment Name:	Next Generation Radio Refresh	Assessments:	
Requested Amount	\$ 27,611,005	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:	Walter Roys/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.	\$ 27,611,005	\$ -	\$ -	0

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
Status Quo : The Federal Communications Commission (FCC) released a mandate that all privately operated radio systems move from a "wide" 25kHz channel bandwidth to a "narrow" 12.5 kHz channel bandwidth by Jan 1, 2013. Avista's current Land Mobile Radio (LMR) System does not support a narrowband configuration and therefore needs replacing. The LMR system is a critical component of Avista's communication infrastructure for Gas and Electric crews, System Operations, and Distribution Dispatch.	n/a	\$ -	\$ -	\$ -	0
Alternative 1: Brief name of alternative (if applicable) Not performing this system replacement would place Avista in a non-compliant status with the FCC resulting in monetary fines and the eventual revocation of Avista's radio licenses. System replacement was governed by formal Request for Information (RFI) and Request for Proposal (RFP) process and documentation set forth by the Supply Chain/Purchasing department.	describe any incremental changes in operations	\$ -	\$ -	\$ -	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

Timeline Construction Cash Flows (CWIP)

	Capital Cost	O&M Cost	Other Costs	Approved
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	\$ -	\$ -	\$ 3,400,207
2015	\$ 27,000	\$ -	\$ -	\$ 5,518,026
2016	\$ 1,400,000	\$ -	\$ -	\$ 518,048
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ -	\$ -	\$ -	\$ -
Future	\$ -	\$ -	\$ -	\$ -
Total	\$ 27,701,675	\$ -	\$ -	\$ 27,611,005

Rebaselined after completion of Design & Planning

Milestones (high level targets)		
February-08	Project Started	December-15 year end actual
December-11	year end actual	December-16 year end actual
December-12	year end actual	December-17 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:

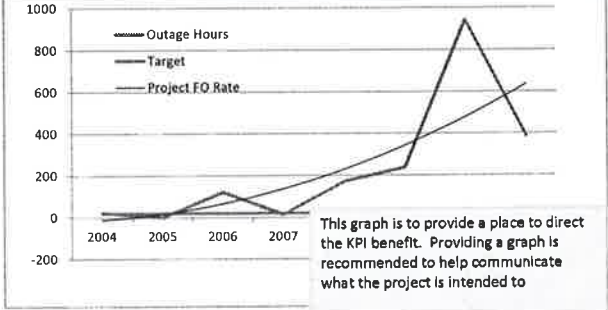
Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: ES NO

Enterprise Tech: ES - attach form NO or Not Required
 Facilities: ES - attach form NO or Not Required
 Capital Tools: ES - attach form NO or Not Required
 Fleet: ES - 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



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

To: Next Generation Radio Business Case 2016 Washington GRC File

From: Jim Kensok, Vice President, Chief Information Officer 

Date: 2/11/2016

Re: Next Generation Radio Capital Investment Considerations

The following information the Next Generation Radio business case has been provided by the IS/IT (information systems/information technology) department:

- **Please discuss the type(s) of work completed under this business case.**

The projects in this business case are itemized as follows:

- NGR Final Phase [completed] – this project’s scope included the engineering and delivery of a 220 MHz narrow-band VHF Land Mobile Radio system (LMR) to replace the FCC directed retirement of our wide-band VHF LMR System.
- NGR Oregon – this project’s scope involves delivery of Avista’s 220 MHz narrow-band LMR System into its Oregon service territory.
- LMR Equipment and Circuit and Decommissioning – this project’s scope is to remove, decommission, and retire all wide-band Land Mobile Radio equipment from Avista’s mountain top sites and office locations.
- Flagstaff Mountain LMR Enhancements – this project’s scope is to engineer and deliver a monopole (tower) to support Avista’s Land Mobile Radio and Microwave antenna systems. The Flagstaff mountain site provides LMR network coverage for Avista’s service territory.

- **What is driving the need for this project/program/blanket?**

The primary driver of this program’s work is an FCC Narrow-Banding Mandate for all privately operated land mobile radio systems. Avista’s legacy LMR equipment is incapable of narrow-banding which further drives the need for replacement.

A secondary driver is to replace legacy infrastructure that is beyond its useful life. Aging infrastructure presents risk to Avista such as increased failure rate, inefficient work practice, and employee/public safety incident due to LMR system failure.

- **What alternatives have been considered in lieu of completion of this project/program/blanket?**

Avista’s requirement to provide reliable communication coverage for its rural service territory limits the options available for deployment. Avista contracted the services of Gillespie, Prudhon, & Associates (GP&A), a Telecommunications Engineering firm with over 27 years of experience, to help perform an extensive Request for Information (RFI)

and Request for Proposal (RFP) to select the final system solution, equipment vendor, and system implementer.

- **What are the consequences associated with not completing work under this project/program/blanket?**

Consequences associated with not completing this work include (but are not limited to):

- A non-compliance status with the FCC in reference to the narrow-banding mandate
- FCC monetary fines for use of wide-band licensed frequencies
- FCC order to cease operation on wide-band licensed frequencies
- Increased failure rate, inefficient work practice, higher employee/public safety incident risk

- **What are the customer-related benefits associated with this project?**

Customer related benefits include (but are not limited to):

- Increased reliability and redundancy. The new system was designed and built to minimize single points of failure to ensure maximum system up-time.
- The system promotes employee and customer safety by facilitating enhanced communication between Gas and Electric crews, Dispatch, and System Operations across Avista's service territory during normal business activities as well as outage and emergency situations.
- Replacing legacy equipment reduces risk of failure. Reduction in equipment failures can lead to decreased operate and maintain costs.
- An increase in system capacity (talk channels) positions Avista to better service its customers
- Vehicle locate (GPS) functionality with the new system increases the safety of our crews and contractors
- The new LMR system can accommodate additional narrow-banding mandates from the FCC.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Enterprise Security

ER No: 5014 **ER Name:** Security Systems

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$9,600¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,360	0	124	0	579	0	0	0	0	279	0	0	378
2017	2,500	100	50	250	500	50	250	50	500	150	50	500	50
2018	4,400	0	0	1,100	0	0	1,100	0	0	1,100	0	0	1,100

Business Case 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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 6

Capital Program Business Case



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		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	92

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.	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
		\$ 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

Program Cash Flows				
	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	\$ -	\$ -	\$ 1,950,000
2016	\$ 1,885,000	\$ -	\$ -	\$ 3,200,000
2017	\$ 1,885,000	\$ -	\$ -	\$ 3,200,000
2018	\$ -	\$ -	\$ -	\$ 3,200,000
2019	\$ -	\$ -	\$ -	\$ 3,200,000
2020	\$ -	\$ -	\$ -	\$ 3,200,000
Total	\$ 9,425,000	\$ -	\$ -	\$ 21,395,000

Associated Ers (list all applicable):		
5014		

ER	2013	2014	2015	2016	2017	Total
						\$ -
						\$ -
						\$ -
5014	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 9,425,000
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 1,885,000	\$ 9,425,000

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.

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).

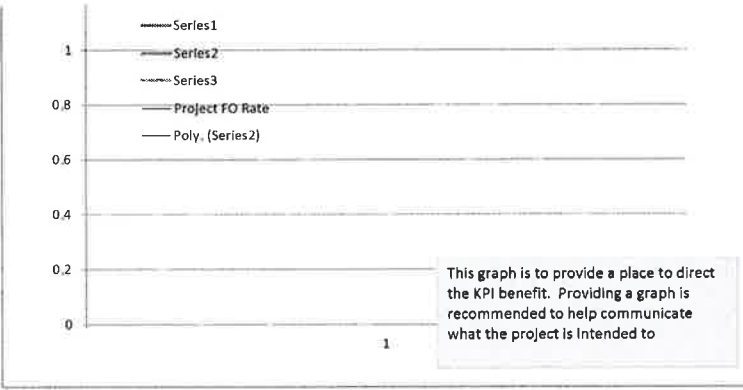
Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: ES NO
 Enterprise Tech: ES - attach form NO or Not Required
 Facilities: ES - attach form NO or Not Required
 Capital Tools: ES - attach form NO or Not Required
 Fleet: ES - 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

Prepared signature



Reviewed signature Director/Manager

Other Party Review (if necessary) signature *Margie Stevens* Director/Manager

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

2015 Projects

- PKI Refresh
- CVA Hardware Refresh
- Web Services Security (O&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

2014 Projects

- SIEM & Qflow Refresh
- Controlled Access based on need to know
- SSPWR Internet Access
- Itron Security Appliances (SGDP) Refresh
- Asset management - Authorized & Unauthorized SW
- Identity Management Solution
- Controlled Use of Admin Privileges
- Password Vault

2016 Projects

- Asset mgt/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
	12/28/2015	Dec release \$550000

To: Enterprise Security Business Case 2016 Washington GRC File

From: Jim Kensok, Vice President, Chief Information Officer



Date: 2/12/2016

Re: Enterprise Security Capital Investment Considerations

The discussion of this business case in Company Witness Karen Schuh's direct testimony at Exhibit No.__(KKS-1T) provides additional information beyond the business case summary form, which elaborates on the driving factors related to this project, including regulatory requirements.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Customer Facing Technology

ER No: 5151 **ER Name:** Customer Facing Technology

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$11,450¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	286	0	0	0	91	0	104	91	0	0	0	0	0
2017	4,000	0	0	1,000	0	0	1,000	0	0	1,000	0	0	1,000
2018	4,000	500	250	250	250	250	500	250	250	500	250	500	250

Business Case Description:

To enhance customer engagement across digital channels making Avista easy to do business with and providing our customers with tools and resources to effectively manage their energy use and bill payment and management. Provide access to new products and services such as online service/job request tracking and appointment scheduling, and mobile energy management in the home. Additionally includes a customer relationship management system (CRM) to provide better personalization and tracking of customer interactions to allow us to grow our business.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 6

Capital Program Business Case



Investment Name:	Customer Facing Technology	Assessments:	
Requested Amount	\$5,000,000	Financial:	7.00%
Duration/Timeframe	5 Year Program	Strategic:	Customer engagement & value
Dept., Area:	Customer Solutions, Enterprise Technology	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Stephanie Myers	Program Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Kevin Christie	Assessment Score:	86
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
To enhance customer engagement across digital channels making avista easy to do business with and providing our customers with tools and resources to effectively manage their energy use and bill payment and management. Provide access to new products and services such as online service/job request tracking and appointment scheduling, and mobile energy management in the home. Additionally includes a customer relationship management system (CRM) to provide better personalization and tracking of customer interactions to allow us to grow our business.	Improved usability and enhanced capabilities for customers across digital channels to increase overall	\$ 5,000,000	\$ 300,000	\$ -	6
See attached timeline of customer capabilities tab titled "Customer Capabilities".					

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	New technologies continue to emerge at a rapid pace. The company has already funded the development of foundational systems that will better allow us to keep pace with customer expectations and demands. The timing is right to keep the momentum going with new technologies. Customers continue to demand a user experience and access to data and tools comparable to technology industry leaders such as Amazon, Nordstrom, Ebay, Zappos, Alaska Airlines, Southwest Airlines, Mint, and more. By not continuing to invest in these customer facing technology tools, we jeopardize our reputation and the trust our customers already have for us. To support growth strategies, customer facing technology is key.	n/a	\$ -	\$ -	\$ -	12
Slower Pace/Less Customer Capabilities Alternative	Implement customer capabilities at a slower pace than outlined in the attached information. The compass project has put this type of work on hold for nearly 4 years, and slowing the pace of customer facing technologies is not an ideal approach.	describe any incremental changes in operations	\$ 2,500,000	\$ 150,000	\$ -	6
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	\$ -	\$ -	\$ -	\$ -
2016	\$ 5,000,000	\$ 300,000	\$ -	\$ 3,550,000
2017	\$ 4,000,000	\$ 240,000	\$ -	\$ 4,075,000
2018	\$ 3,000,000	\$ 180,000	\$ -	\$ 3,825,000
2019	\$ 4,000,000	\$ 240,000	\$ -	\$ 3,550,000
2020	\$ 3,000,000	\$ 180,000	\$ -	\$ 3,942,500
2021+	\$ -	\$ -	\$ -	\$ -
Total	\$ 19,000,000	\$ 1,140,000	\$ -	\$ 18,942,500

Associated Ers (list all applicable):			
5151			

ER	2016	2017	2018	2019	2020	Total	Mandate Excerpt (if applicable):
5151	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	None
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: See the tab titled "Customer Capabilities"

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

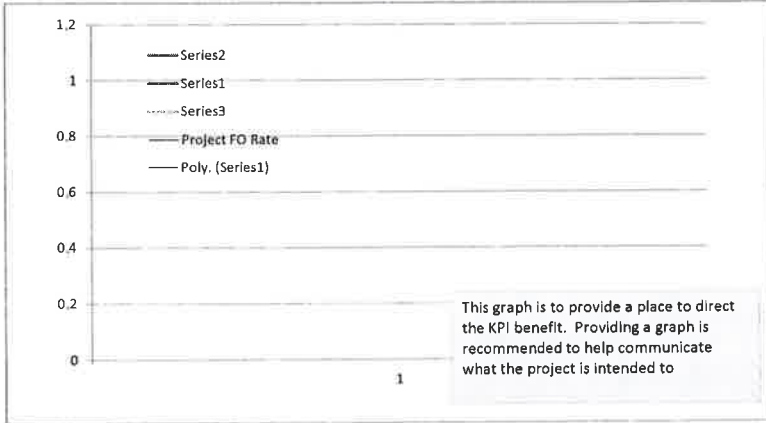
Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

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



Prepared signature _____

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 2016-2020	
	Date	Template
	Sep-15	2016 budget approved \$3,550,000

Web	Web portal designed specifically for C/I customers, including enhanced energy reporting, automated C/I prescriptive rebate forms, energy saving tips and insights	Pure							
Web	Web portal designed specifically for SMB customers, including enhanced energy reporting, automated prescriptive rebate forms, energy saving tips and insights	Pure							
Web	Ability to request and track service/construction jobs including receive notifications of appointments, due dates (request re-light, gas service, temporary meter).	Pure							
Web	Ability for customers to schedule appointments within a specified time block/window.	Pure							
Notifications	Ability for customer to receive name and photo of service person when in route	Pure							
Notifications	Ability for customer to receive post-work survey (mindshare)	Pure							
Payments	Provide customers with the ability to pay via kiosks in various locations	Pure							
Web	Ability for customers to see a personalized view of their account data online	Pure							
Web	Ability for the customers to see personalized content online based on profile	Pure							
Social Media	Ability for customers to transact with Avista via social media	Pure							
CRM	Ability to view customer interactions in one view	Hybrid							
CRM	Ability to manage email development, sending, and tracking in one system, including unsubscribes	Hybrid							
CRM	Task management/service tracking that notifies customer of due dates and outcomes (construction project management system) <i>This is the backend of "track my job"</i>	Hybrid							
CRM	Centralized communication system	Hybrid							
CRM	Ability to manage interactions with current and future customers. Ability to organize, automate, and synchronize sales, marketing, customer service, and technical support (C/I DSM engineering activities). Ability to manage customer projects and tasks associated with them. Ability to take photos in the field and attach to a project.	Hybrid							
Web	Ability to capture website interaction from the actual user's perspective. Ability to track and identify customer transaction and navigation issues on the web, and to react in a timely fashion with resolution. (TealLeaf)	Hybrid							
Web	Ability to proactively manage the user experience on the web and measure performance for continual improvement. Recognize patterns early and adjust content dynamically. (web analytics)	Hybrid							
CRM	Ability to market to customer based on predictive analytics	Hybrid							
CRM	Manage customer leads and opportunities (funnel)	Hybrid							
CRM	Case management for customers (claims, trouble tickets, new work)	Hybrid							
CRM	Case management for employees	Hybrid							
CRM	Personalized messages consistent across channels (letters, emails, newsletters)	Hybrid							
CRM	DSM portfolio cost effectiveness measurement	Hybrid							
CRM	Measure ROI and cost effectiveness on marketing campaigns	Hybrid							
CRM	Tracking of strategic revenue generating initiatives	Hybrid							
Web	The next best thing (battery storage, smart city, EVs, distributed generation)	Pure							
Mobile App	The next best thing (battery storage, smart city, EVs, distributed generation)	Pure							

To: AvistaUtilities.com and Customer Facing Technology Business Cases 2016 Washington GRC File

From: Jim Kensok, Vice President, Chief Information Officer *Jim Kensok*

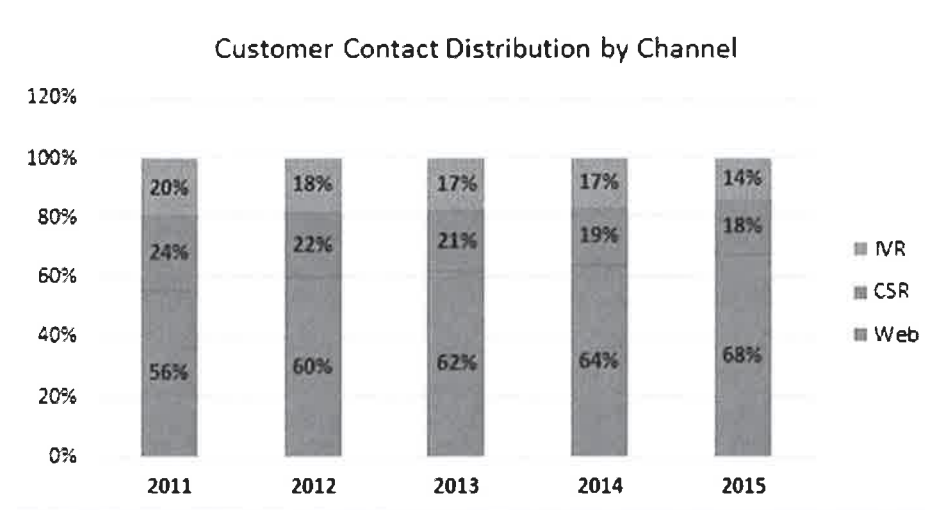
Date: 2/11/2016

Re: AvistaUtilities.com and Customer Facing Technology Capital Investment Considerations

The following information the AvistaUtilities.com and Customer Facing Technology business cases has been provided by the IS/IT (information systems/information technology) department:

The drivers of the investments in the AvistaUtilities.com redesign and the Customer Facing Technology business cases are similar. That is, these projects are driven by the fact that the Company's website is the most highly used channel for interactions between our customers and Avista.

The following chart demonstrates the growth in the use of the web as a channel for customer contact since 2011, illustrating that web traffic has increased to represent over two-thirds of total customer contacts for Avista:



Over this same period the usefulness of the website to our customers has declined, all while web traffic has grown, as shown in the following illustration:



Given the degradation of customers' satisfaction with the website and the degradation of the task completion rate, and the increased usage of the website, the need to additional investment in the website is clear.

For additional information regarding the scope of customer facing technology, please see the following page.

What's included in Customer Facing capital to date?

2015-2016 capital

Web & Mobile	Enhanced Storm Center	Customer Preferences	IVR/EVP	Notifications
<ul style="list-style-type: none"> • New customer-focused user experience • New visual identity fully implemented • Enhanced self-serve customer transactions • Responsive web design for seamless web and mobile experience • Native mobile app for iOS and Android featuring storm viewing and reporting, payments, and energy management 	<ul style="list-style-type: none"> • Enhanced outage viewing and reporting tool across responsive web, and native app 	<ul style="list-style-type: none"> • Customer preference collection and storage engine • Increased functionality for business to create customer lists without ET dependence • Allows collection of TCPA permissions • Allows multiple emails and phone numbers for customers across notification channels • Provides management portal to monitor and report on all activity 	<ul style="list-style-type: none"> • IVR refresh • Enterprise wide communications engine • RFP and selection of new EVP solution 	<ul style="list-style-type: none"> • Outbound text and email notifications across storm, planned outage, billing and payments • Inbound text for reporting outage, pay bill • Ability to set and receive usage alerts via email or text (AMI customers)



**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: High Voltage Protection for Substations

ER No: ER Name:
5142 High Voltage Protection Upgrade

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$415¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	887	0	0	114	194	68	148	199	57	70	36	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

High Voltage Protection to personnel and Telco equipment by fiber integration, demark relocation, & equipment remediation at suburban and rural substations.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Investment Name:	High Voltage Protection for Substations_Revise	Assessments:	
Requested Amount	\$4,371,844	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	6 Year Project	Strategic:	Reliability & Capacity
Dept., Area:	Enterprise Technology	Operational:	Operations require execution to perform at current levels
Owner:	Jacob Reidt/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:	Yes	Cost Summary - Increase/(Decrease)	

Recommend Project Description:	High Voltage Protection to personnel and Telco equipment by fiber integration, demark relocation, & equipment remediation at suburban and rural substations.	Performance	describe any incremental changes that this project would benefit present operations	Capital Cost	\$ 4,337,314	O&M Cost	\$ (374,500)	Other Costs	\$ -	ERM Risk Score	3
---------------------------------------	--	--------------------	---	---------------------	--------------	---------------------	--------------	--------------------	------	-----------------------	---

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
Status Quo :	Not repairing this situation has potential to increase the risk to Avista and/or telephone company personnel working near substations and the risk of damage to communications equipment caused by electrical faults.	n/a	\$ -	\$ -	\$ 1,000,000	15
Alternative 1: Brief name of alternative (if applicable)	High Voltage Protection to personnel and equipment by fiber integration, demark relocation, & equipment remediation at suburban and rural substations.	16 substations integrated onto fiber network, reducing	\$ 4,337,314	\$ (48,600)	\$ -	3
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

Timeline

Construction Cash Flows (CWIP)

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 1,243,989	\$ -	\$ -	\$ 1,243,989
2012	\$ 997,355	\$ (18,000)	\$ -	\$ 997,355
2013	\$ 696,500	\$ (37,300)	\$ 12,000	\$ 696,500
2014	\$ 565,000	\$ (53,200)	\$ 12,000	\$ 565,000
2015	\$ 419,028	\$ (53,200)	\$ 12,000	\$ 419,028
2016	\$ 415,442	\$ (53,200)	\$ 12,000	\$ 415,442
2017	\$ -	\$ (53,200)	\$ 12,000	\$ -
2018	\$ -	\$ (53,200)	\$ 12,000	\$ -
Future	\$ -	\$ (53,200)	\$ 12,000	\$ -
Total	\$ 4,337,314	\$ (374,500)	\$ 84,000	\$ 4,337,314

Rebased after completion of Design & Planning

Milestones (high level targets)

October-11	Major Procurement	January-13	First fiber project close	December-14	RLH Construction
December-11	Previous Spend 2011	February-13	First remediation project close	December-15	RLH Construction
October-12	Major Procurement	March-13	Second remediation project close	December-16	RLH Construction
December-12	Previous Spend 2012	April-13	Future GridNet Sites engineering		
		July-13	HVP Shop labor finishes		
		December-13	Finalize GridNet Installation		

Associated Ers (list all applicable):

5119					
------	--	--	--	--	--

Mandate Excerpt (if applicable):

Under CenturyLink (FKA Qwest) tariff Number 1 section 13.7 requires that the customer provide high voltage protection for communication circuits in high voltage areas. Please notes below for additional information

Additional Justifications:

In order to balance the need for communications from devices at substation locations with safety of personnel and equipment, high voltage protection & isolation standards have arisen. Telco companies have the ability or desire to turn off communication circuits to substations until Avista works with them to electrically isolate the copper coming into the substation. This effects Phone, Modem, SCADA, and / or Metering & Monitoring systems at the substations. This set of projects was created to mitigate this tariff risk as well as the lower likelihood (but more expensive) risks to personnel and equipment.

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

Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens* Director/Manager
 (if necessary)

This space is to be used for photographs, charts, or other data that may be useful in evaluating the project

Please see the follow link for CenturyLink (FKA Qwest) Tariff No. 1 that outlines the requirements for High Voltage Protection Circuits.
http://www.centurylink.com/centurylink/qwest.com%3A8000%2Fidc%2Fgroups%2Fpublic%2Fdocuments%2Ftariff%2Ffcc1_s013p021.pdf

This project was started in 2011 under ER5005 and is being moved out of ER5005 into its own Business Case.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: High Voltage Protection Business Case 2016 Washington GRC File

From: Jim Kensok, Vice President, Chief Information Officer 

Date: 2/11/2016

Re: High Voltage Protection Capital Investment Considerations

The following information regarding the High Voltage Protection business case has been provided by the IS/IT (information systems/information technology) department:

Q: What is driving the need for this project/program/blanket?

A: The purpose of the High Voltage Protection Business Case is to eliminate possible harm to communications personnel or damage to equipment during high voltage fault events at substations. This is accomplished by replacing conductive communications wire between the telephone company point of demarcation and the substation with a non-conductive solution. Telco companies may exercise the right to stop service to locations that do not meet this requirement. The projects in the business case aim to mitigate this risk

Q: Please discuss the type(s) of work completed under this business case.

A: A multi-year refresh plan has been developed by organizing the work by substation location. Work is organized into two initiatives. First, connect urban substation communications to the Avista private fiber optic network. Secondly, remediate rural substations with a copper to fiber conversion solution.

Q: What alternatives have been considered in lieu of completion of this project/program/blanket?

A: The alternatives to not addressing this Business Case is to leave current communication methods as is. However, as discussed in the following section, this alternative is not acceptable.

Q: What are the consequences associated with not completing work under this project/program/blanket?

A: The Institute of Electrical and Electronics Engineers (IEEE) published protection standards that Telephone companies use to minimize risk to their employees during faults at high voltage locations. CenturyLink (formerly known as Qwest) tariff Number 1 section 13.7 requires that the customer provide high voltage protection for communication circuits in high voltage areas. If Avista does not perform this work the impact could include tariffs for non-compliance,

and eventual suspension of service resulting in loss of phone communications to affected substations, and loss of SCADA telemetry and command/control communications.

Q: What are the customer-related benefits associated with this project?

A: Safety. Not addressing High Voltage Protection on substation communications has potential to increase the risk to Avista and/or telephone company personnel working near substations and the risk of damage to communications equipment caused by electrical faults.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Project Atlas

ER No: 5147 **ER Name:** AFM COTS Migration

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$35,995¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	3,800	0	0	0	0	0	0	0	0	3,800	0	0	0
2017	11,500	0	0	0	0	0	0	0	0	11,500	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

The project is to migrate AFM to a COTS application which aligns to our AFM Roadmap and strategic goals for Agile Technology Platforms. The project will include the replacement of Gas and Electric CDT, EDIT, and OMT/ADMS applications. The selection of the COTS solution will occur after business requirements are gathered and an RFI/RFP process is completed. The O&M estimates are related to the RFI/RFP process, licensing maintenance fees and when parts of the system go live during the course of the project.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Project Atlas	Assessments:	
Requested Amount	\$41,000,000	Financial:	8.00%
Duration/Timeframe	4 Year Project	Strategic:	Agile Technology Platforms
Dept., Area:	Enterprise Technology	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Laura Vickers	Project Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater	Assessment Score:	76
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
The project is to migrate AFM to a COTS application which aligns to our AFM Roadmap and strategic goals for Agile Technology Platforms. The project will include the replacement of Gas and Electric CDT, EDIT, and OMT/ADMS applications. The selection of the COTS solution will occur after business requirements are gathered and an RFI/RFP process is completed. The O&M estimates are related to the RFI/RFP process, licensing maintenance fees and when parts of the system go live during the course of the project.	describe any incremental changes that this Project would benefit present operations	\$ 41,000,000	\$ 3,500,000	\$ -	12

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
Unfunded Project:	Describe the current condition of the asset(s) and problems that need to be corrected	n/a	Capital Cost	O&M Cost	Other Costs	
<i>Alternative 1: AFM COTS Migration TBD</i>	Describe other options that were considered	describe any incremental changes in operations			\$ -	12
<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	\$ 3,000,000	\$ 500,000	\$ -	\$ 25,000
2015	\$ 10,000,000	\$ 1,000,000	\$ -	\$ 2,002,256
2016	\$ 13,000,000	\$ 1,000,000	\$ -	\$ 10,000,000
2017	\$ 15,000,000	\$ 1,000,000	\$ -	\$ 10,265,000
2018				\$ 15,730,000
2019				\$ 10,000,000
2020				\$ 10,000,000
Total	\$ 41,000,000	\$ 3,500,000	\$ -	\$ 58,022,256

Associated Ers (list all applicable):

5147			

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
5147	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	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)

- July-14 - June 15 Plan
- July 15 - June 16 Design & Construct
- July 16 - June 17 Deploy
- June 17 - December 17 Train

Milestones should be general. Use your judgement on project progress so that progress can

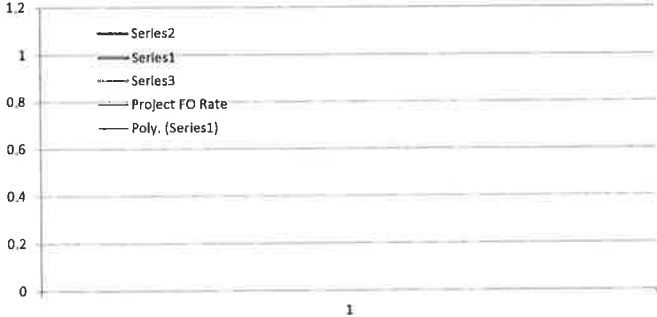
Resources Requirements: (request forms and approvals attached)

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: 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 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

To: Avista Facility Management System Replacement (aka AFM COTS or Project Atlas)
Business Case 2016 Washington GRC File

From: Jim Kensok, Vice President, Chief Information Officer



Date: 2/11/2016

Re: AFM COTS Capital Investment Considerations

The following pages comprise an excerpt from the business case report prepared for this project. This excerpt includes the cover, executive summary, and table of contents. The complete document is available upon request.

Project Atlas Business Case **Draft**

(Note: Not internally reviewed by DNV GL)

Avista Corporation

Prepared by KEMA, Inc.

July 6, 2015 (version 2.2) with Review Edits Incorporated



Copyright © 2015, [KEMA, Inc./KEMA Services, Inc.]

This document, and the information contained herein, is the exclusive, confidential and proprietary property of [KEMA, Inc./KEMA Services, Inc.] and is protected under the trade secret and copyright laws of the United States and other international laws, treaties and conventions. No part of this work may be disclosed to any third party or used, reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system, without first receiving the express written permission of [KEMA, Inc./KEMA Services, Inc.] Except as otherwise noted, all trademarks appearing herein are proprietary to [KEMA, Inc./KEMA Services, Inc.]

Executive Summary

The purpose of this business case is to describe, qualitatively, the business value of Project Atlas technology investments and the rationale for replacing legacy systems with commercial solutions. This business case describes the risks of not replacing certain technologies, business drivers that justify replacement, industry solutions, a cost description, a benefits analysis, and replacement planning.

Background

Avista Facility Management (AFM) is the legacy system that Project Atlas intends to upgrade. AFM is comprised of a suite of applications designed over the Esri GIS. The foundational GIS will continue to be ArcGIS in the future state. AFM applications that will eventually be replaced include electric design, gas design, gas and electric edit, the Outage Management Tool and gas outage management.

What AFM Tools Do

The following is a brief discussion of AFM tools.

- **GIS:** The Geographic Information System (GIS) serves as the foundational data structure on which AFM applications are built or rely upon. The AFM GIS is the system of record for spatial electric and gas facility data and provides the connectivity model to support AFM applications.
- **Engineering Analysis:** A commercial tool, Synergi, is used for engineering analysis. Synergi relies on the GIS network model for analysis. Synergi will continue to be the engineering analysis tool and there are no plans for its replacement.
- **Outage Management Tool (OMT):** An in-house developed application that supports outage analysis and management. OMT has technological limitations and is a tool that is planned to be replaced.
- **Electric Design Tool (EDT):** An application for the design of electric facilities. EDT is an AFM application candidate for replacement.
- **Gas Design Tool (CDT):** The gas design tool, designated CDT (Construction Design Tool), is the application for the design of gas facilities. CDT is also an AFM application candidate for replacement.
- **Electric and Gas Edit:** Editors use edit tools inherent in the GIS for data edits prior to committing final data changes and additions to the GIS. The current edit tools will be replaced during a later project phase.
- **Gas Outage Management:** The current process uses GIS trace and analysis tools to identify isolations valves and customers impacted for gas outage management. There is

need for a commercial solution that is designed for gas outage management for tracing and generation of the isolation plan.

- Distribution Management System (DMS). A commercial application used to monitor and control the distribution grid. DMS relies on the GIS data model as the as-operated model. Current plans are to not replace DMS.

Justification for System Replacement

AFM in-house developed and maintained applications like EDT, CDT and OMT have reached the limits of their technological age. There are technical and business risks associated with these tools that must be addressed by newer commercial solutions. The need for change includes the following reasons:

- Avista can take advantage of commercial tools that provide improved application functions and capabilities and reliability that are currently lacking in AFM tools
- The costs to extend the life of legacy technologies are better invested in newer solutions
- Internal resources used to support these tools are better utilized in supporting other systems and applications
- Support and maintenance of tools can be shifted to the solution vendor
- A decision has been made that OMT will not be interfaced with new system like the Advanced Metering Infrastructure's (AMI) meter data management system
- Customer service can be enhanced with better tools
- Utility worker productivity can be improved with better tools
- Asset data integrity can be improved with better tools and methods
- The increasingly complex distribution grid requires improved IT systems to manage effectively.

EDT and CDT will be replaced by a commercial design tool. OMT will be replaced by a commercial Outage Management System (OMS), or by an Advanced Distribution Management System (ADMS). This decision is still under study, as well as the selection of a gas and electric edit tool and gas outage management.

System Enhancements

In addition to the above mentioned AFM system changes, certain commercial tools can extend value to the design tool and the OMS. These additional capabilities are considered under Project Atlas. Two tools in particular include mobile design tool and mobile tool.

The mobile design tool is an extension of the electric and gas construction design tool for use in the field. It enables functionality for a designer to perform designs at a job site, and is compatible with the office design tool.

The mobile tool provides field personnel with capabilities such as electronic receipt of construction work orders; viewing GIS data in the field; capturing as-built configuration and materials used electronically; and capture asset and compliance data electronically. It takes advantage of a variety of data sources including keying of data, bar code scanner, and GPS positional data.

Customer Benefits

Improvement of customer experience is at the core of AFM system replacement and enhancements. These new tools will enable Avista workers, office and field, to respond to customer requests faster, provide information to customers that are more accurate, timely and complete, and improve customer experience when they interact with Avista.

Utility Benefits

Avista benefits of upgrading AFM tools include improved worker productivity, improved asset data integrity, and the opportunity to reengineer work processes and methods, supporting a continual improvement program. New commercial solutions also provide Avista with the ability to meet changing demands of customers, enable effective operation of an increasingly complex and dynamic distribution grid, and provide the opportunity to create new service offerings to customers.

Table of Contents

Executive Summary	i
Background.....	i
What AFM Tools Do	i
Justification for System Replacement	ii
System Enhancements	ii
Customer Benefits	iii
Utility Benefits.....	iii
1. Introduction.....	1-1
1.1 Project Atlas Business Case.....	1-1
1.2 Business Case Structure	1-1
1.3 Assumptions	1-1
1.3.1 Project Assumptions	1-1
1.3.2 Business Case Assumptions	1-2
2. Avista Legacy System	2-1
2.1 Avista Facility Management.....	2-1
2.2 Justification for System Replacement	2-2
2.3 General Business Drivers for System Replacement	2-2
2.4 Drivers for Replacement by Application.....	2-2
2.4.1 Design Tool.....	2-3
2.4.2 Mobile Design Tool	2-3
2.4.3 Mobile Tool.....	2-4
2.4.4 Outage Management System	2-5
2.4.5 Edit Tool	2-7
2.4.6 Gas Outage Management	2-7
2.5 Risk Assessment	2-9
2.5.1 Design Tool.....	2-9
2.5.2 Mobile Design Tool	2-10
2.5.3 Mobile Tool.....	2-11
2.5.4 Outage Management System	2-12
2.5.5 Edit Tool	2-14
2.5.6 Gas Outage Management	2-14
3. Industry Solutions	3-16
3.1 Definitions	3-16
3.2 Industry Offerings and Trends.....	3-16
3.2.1 Design Tool.....	3-16
3.2.2 Mobile Design Tool	3-16

Table of Contents

3.2.3	Mobile Tool.....	3-17
3.2.4	Outage Management System	3-17
3.2.5	Edit Tool	3-18
3.2.6	Gas Outage Management	3-18
3.3	Advantages of Commercial Solutions	3-19
4.	Cost Components	4-1
4.1	Procurement	4-1
4.2	Services	4-1
4.3	Internal Labor.....	4-1
4.4	Warranties and Support.....	4-1
5.	Benefits Analysis	5-2
5.1	Deriving Benefits	5-2
5.2	Design Tool Benefits.....	5-3
5.2.1	Quantifiable Benefits.....	5-3
5.2.2	Non-Quantifiable Benefits	5-4
5.3	Mobile Design Tool.....	5-6
5.3.1	Quantifiable Benefits.....	5-6
5.3.2	Non-Quantifiable Benefits	5-7
5.4	Mobile Tool	5-8
5.4.1	Quantifiable Benefits.....	5-8
5.4.2	Non-Quantifiable Benefits	5-9
5.5	Outage Management System.....	5-11
5.5.1	OMS Value Proposition.....	5-12
5.5.2	Quantifiable Benefits.....	5-12
5.5.3	Non-Quantifiable Benefits	5-15
5.6	Edit Tool.....	5-17
5.6.1	Quantifiable Benefits.....	5-17
5.6.2	Non-Quantifiable Benefits	5-17
5.7	Gas Outage Management	5-19
5.7.1	Quantifiable Benefits.....	5-19
5.7.2	Non-Quantifiable Benefits	5-20
5.8	Societal Benefits.....	5-22
5.9	Strategic Benefits.....	5-24
6.	Replacement Planning	6-1
6.1	Replacing Legacy Systems.....	6-1
6.2	Planning for Replacement.....	6-1

Table of Contents

6.3	Evaluation of Replacement Options	6-1
6.4	Expected Life of New Systems	6-2
A.	List of Acronyms.....	1

List of Figures

Figure 1	AFM Conceptual Model	2-1
Figure 2	Design Tool Risk Table	2-9
Figure 3	Mobile Design Risk Table	2-10
Figure 4	Mobile Tool Risk Table	2-11
Figure 5	Electric Outage Management Risk Table	2-12
Figure 6	Edit Tool Risk Table	2-14
Figure 7	Gas Outage Management Risk Table	2-14
Figure 8	Design Tool Quantifiable Benefits	5-3
Figure 9	Design Tool Non-Quantifiable Benefits	5-5
Figure 10	Mobile Design Tool Quantifiable Benefits	5-6
Figure 11	Mobile Design Tool Non-Quantifiable Benefits	5-7
Figure 12	Mobile Tool Quantifiable Benefits	5-8
Figure 13	Mobile Tool Non-Quantifiable Benefits	5-9
Figure 14	OMS Quantifiable Benefits	5-13
Figure 15	OMS Non-Quantifiable Benefits	5-15
Figure 16	Edit Tool Quantifiable Benefits	5-17
Figure 17	Edit Tool Non-Quantifiable Benefits	5-18
Figure 18	Gas Outage Management Quantifiable Benefits	5-19
Figure 19	Gas Outage Management Non-Quantifiable Benefits	5-20
Figure 20	Table of Societal Benefits	5-22
Figure 21	Table of Strategic Benefits	5-24
Figure 22	Replacement Planning Table	6-1
Figure 23	System Life Expectancy Table	6-2

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: AvistaUtilities.com Redesign

ER No: 5143 **ER Name:** AU.com & AVANet Redevelopment

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	5,536	0	0	0	5,536	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Refresh of the AvistaUtilities.com website to improve navigation, updating the look and feel of the overall site, creating a new homepage layout, and improving self-service and search functionality for customers. Since 2008, web usage on the AvistaUtilities.com site has increased by more than 55% and usability standards have since then changed to incorporate the emergence of mobile app technologies. The refresh includes improved functionality to allow for more customer self-serve use on our website.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

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)	\$ 4,085,000
2016	\$ -	\$ 100,000	\$ (100,000)	\$ 2,208,000
2017	\$ -	\$ 100,000	\$ (100,000)	\$ -
2018				
2019				
2020				
Total	\$ 1,500,000	\$ 500,000	\$ (450,000)	\$ 7,759,452

Associated Ers (list all applicable):

5143			

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
5143	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	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)

See Tab "Milestones"

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: ES NO

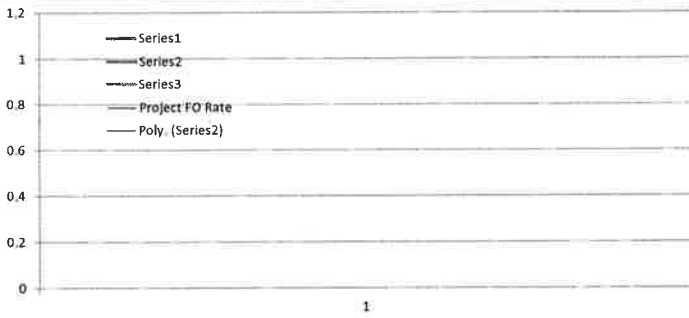
Enterprise Tech: ES - attach form NO or Not Required
 Facilities: ES - attach form NO or Not Required

Capital Tools: ES - attach form NO or Not Required
 Fleet: ES - 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



Prepared signature _____

Reviewed signature _____
 Director/Manager

Other Party Review signature *Maggi Stevens* _____
 (if necessary) Director/Manager

- Attachment 1: Project Charter
- Attachment 2: Charter Addendum for AU.com
- Attachment 2: Charter Addendum for AVAnet

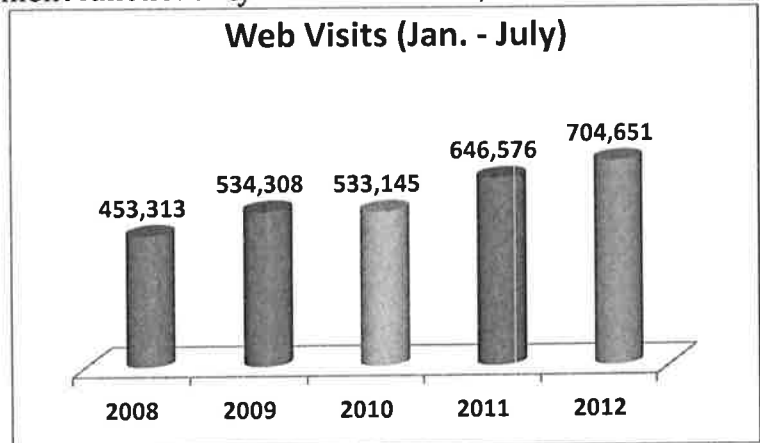
To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template
	12/28/2015	Updated w/ Dec release and 2016 additional funds request approval.

Initiation Project Charter Addendum

Background

Interest in interacting with Avista via the web continues to increase. In fact, **since 2002, our web usage has increased 282%**. To capture this growing market, and to drive costs out of the business by providing more self-service functionality, AvistaUtilities.com was launched in January 2008 on the new SharePoint platform. This launch provided customers with increased self-service transaction functionality, as well as enhanced content management functionality. Since its launch, mobile services have been added and the site usage continues to grow. Since 2008 alone, we've seen an **increase in web usage by more than 55%**. To date, we conservatively process more than **\$250,000 per day in transactions through the web** and an average of 68% of all customer contacts are made through electronic channels—with 42% belonging to the web and 26% belonging to the EVP. We've experienced a **12% increase in web transactions over 2011 alone**. All this tells us what we already know—the web is a critical and increasingly important channel for our customers who are interested in self-service.



While we've continued to make improvements to our web site since our launch in 2008, we now find ourselves with outdated functionality and usability that's far from perfect. Currently, while our website still ranks well among industry standards and with our own metrics such as Forsee and Net Insights, usability standards have grown at a rapid pace. With the emergence of the iPhone and other mobile app technologies, customers are looking for easier and faster ways to self-serve. Currently, according to Forsee data, **14% of our customers are not successful** in completing online transactions via the web, and must alternately pick up the phone to make contact with a customer service rep, thus driving up our cost of service. Estimated data shows that if we could help just one out of four of these customers self-serve, we could potentially **cut 24,000 calls per year and save nearly \$100,000 per year**.

Annual Impact	Est. Calls Avoided	Est. Savings in Avoided Call Center Labor
Could not find online payment option	5,000	\$19,000
Could not find what they needed	3,000	\$13,000
Process was too confusing/Unable to complete	16,000	\$65,000
Total	24,000	\$97,000

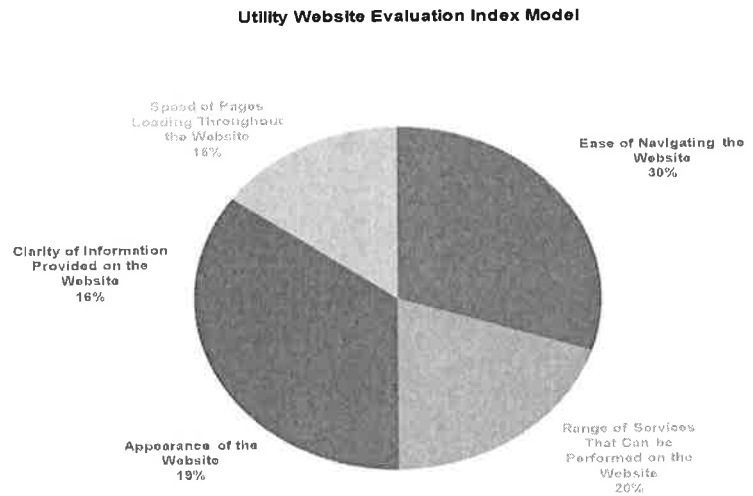
Refreshing AvistaUtilities.com will drive better results

In 2011, the multi-stakeholder AU.com management team determined there were four primary areas of focus for updating the site: improving navigation, updating the look and feel of the overall site, creating a new homepage layout, and improving self-service and search functionality.

These categories were developed based on multiple sources of data from Net Insights, E-Source, JD Power, Sixth Man Marketing,

Acquity and Forsee. Because our site was originally developed in 2006-2007 and launched in 2008, standards and best practices have greatly involved. Understanding that **five years in the web world is an eternity**, standards such as **text heavy pages** are no longer considered acceptable by customers. With the emergence of app driven devices like the iPhone, customers are looking for quicker ways to get the information they need. Indeed, **80% of web traffic is**

focused on transactions, yet billing and payment options remains one of our top searched items. In addition, while our navigation/information architecture remains product focused, more and more sites are moving toward customer focused layouts. According to JD Power, **30% of a customer’s satisfaction is driven by the ease of navigating the site**, with another 20% driven by the range of services that can be performed.



The goals for the refreshed AvistaUtilities.com website are:

- Navigation**
 - Revise information architecture
 - Improve usability
- Home Page**
 - Update with new visual identity, voice/tone in copy
 - Redesign home page
- Look and Feel**
 - Update with new visual identity
 - Redesign secondary and tertiary pages, including My Account
- Search & Self-Service**
 - Proactively manage search functionality
 - Evaluate 3rd party products to increase self-service functionality.

Phase 0 aka Web Botox™ (estimated)

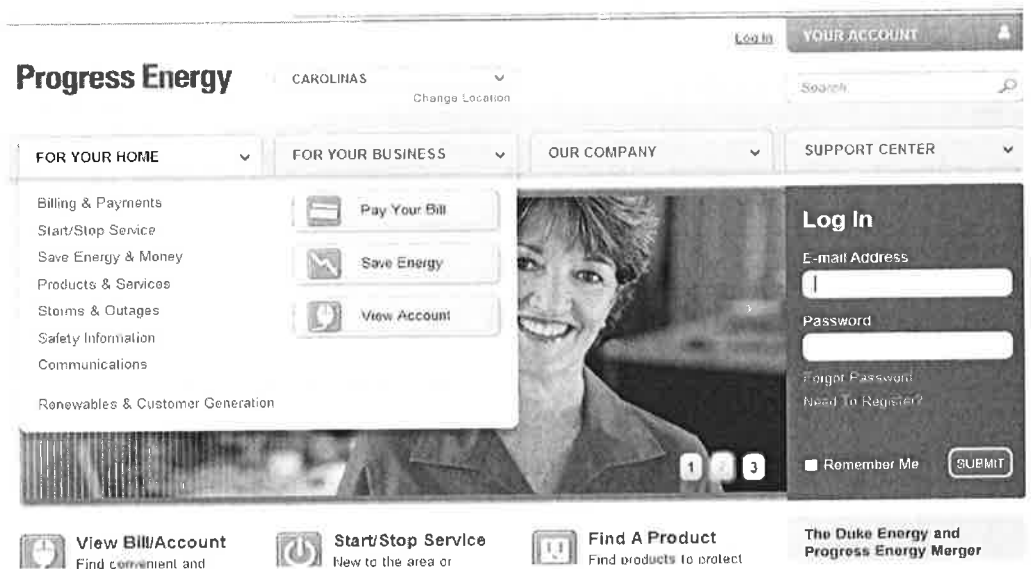
With the pending launch of the refreshed company brand, there is a need to escalate the look and feel of the web to coincide with the external launch for this effort. Given all the priorities established for the web, to meet this tight deadline, we propose a Web Botox™, which would include updating the colors throughout the site, including text, and dropping the top and bottom arcs. This will allow us to better plan for Phases I-III. **Target launch date: January 7, 2013**



Phase 1 (estimated)—Home page re-design and revised navigation

Phase I will include the redesign of the navigation, which is currently product focused, to be more customer focused.

Current Forsee ratings indicate our navigation rated the lowest from our customers. They indicate there are too many clicks, and the layout and options are confusing and unorganized. In addition, the left navigation, which was originally launched as a work around to some top navigation limitations, is redundant. The home page needs to be improved to allow for easier to read content, multiple

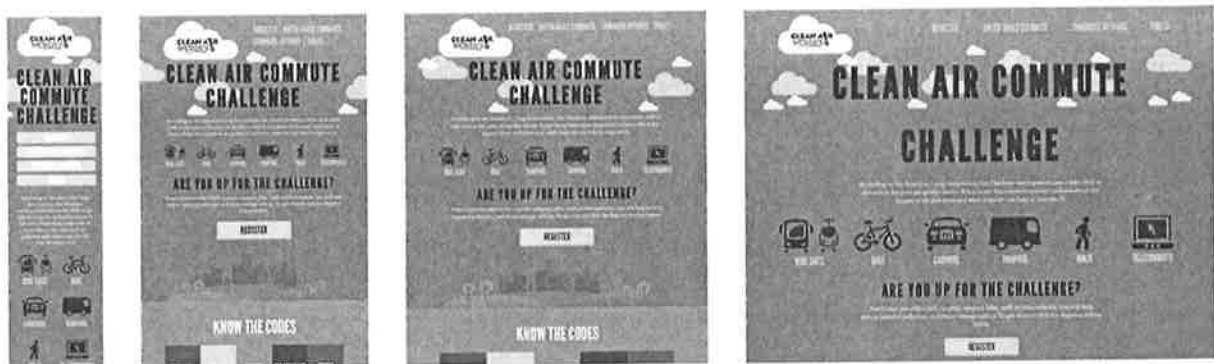


promotional areas and a super footer for ease of navigating. The promotion rotator needs to be updated to include buttons that are relatable to the content. Text styles will be improved for increased readability and navigation size will be increased. The updated site should have a clear eye to the future, which will include access by more and more mobile users. It is recommended that we pursue a responsive design site (see below). **Target launch date: April 30, 2013**



Sample homepage wireframe from usability study. Top half of page only.

Clean Air Commute Challenge



Sample of responsive web design. As screen is resized, content is automatically resized.

Phase II (estimated)—Improved self-service functionality and internal knowledge base

Phase II will include the delivery of improved self-service functionality including the launch of a third party knowledge base and self-service software system. Self-service functionality to be improved includes realignment of processes to mirror current industry best practices as identified by Acquity, E-Source and Sixth Man such as making new user login more salient, create error message screens, create transaction flows that follow intuitive mental processes and allow address inputs that do not create confusion or limitations for the customer. Avista’s web practices need to be upgraded to more closely match what consumer’s now expect on the web when performing a transaction. Other areas of focus will be web forms, intuitive address entry, chunking out form content, creating progress bars for forms and processes and labeling items more clearly. *For details on recommendations, see Sixth Man Marketing’s usability report and Acquity’s web analysis overview. Target launch date: August 30, 2013*



Six Best Practices of Web Self-Service according to Forrester Research

Let customers ask questions using natural language	Don't hide web self-service functionality	Use compelling and inviting visuals to engage customers	Deliver one right answer—search consistent across all channels	Improve likelihood of resolution with links to relevant material	Display resolution path—ways to call, contact always present
--	---	---	--	--	--

Phase III (estimated)—My Account & Remaining Self-Service Improvements

Phase III will include revising the My Account page to make information easier to read and place links in intuitive places that map to the content. The My Account should be more engaging and easy to read, more closely mirroring the printed bill. Because more than \$250,000 per day is processed through the website, additional care should be taken in ensuring the best possible experience is presented to the customer, including evaluating bringing the bill pay functionality internal. Accessibility issues such as screen readers, text resizing, and translation services should be evaluated to ensure we are meeting ADA standards. In addition, self-service functionality identified for updating but not able to be completed by Phase II, should be completed by Phase III. **Target launch date: February 28, 2014**

Details of each section can be seen in the 2012 Web Planning deck dated 8-16-2012. A detailed scope of work is also available.

To: AvistaUtilities.com and Customer Facing Technology Business Cases 2016 Washington
GRC File

From: Jim Kensok, Vice President, Chief Information Officer 

Date: 2/11/2016

Re: AvistaUtilities.com and Customer Facing Technology Capital Investment Considerations

The drivers of the investments in the AvistaUtilities.com redesign and the Customer Facing Technology business cases are similar. Therefore, the discussion of the investment considerations for both of these business cases has been combined – please see the Customer Facing Technology business case for the combined presentation of these considerations.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Enterprise Business Continuity Plan

ER No: 5010 **ER Name:** Enterprise Business Continuity

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,350¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	664	0	0	234	0	0	0	0	0	0	430	0	0
2017	450	0	0	0	0	225	0	0	0	0	225	0	0
2018	450	0	0	225	0	0	0	0	0	0	225	0	0

Business Case Description:

Avista has developed an Enterprise Business Continuity Program (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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Enterprise Business Continuity Plan	Assessments:	
Requested Amount	\$450,000	Financial:	0.00%
Duration/Timeframe	5 Year Program	Strategic:	Other
Dept., Area:	Enterprise Technology	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Clay Storey/Jim Corder	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Jim Kensok	Assessment Score:	66
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Avista has developed an Enterprise Business Continuity Program (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	\$ 450,000	\$ -	\$ -	0

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	This is a risk mitigation program	\$ -	\$ -	\$ -	6
Alternative 1: Brief name of alternative (if applicable)	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.	\$ -	\$ -	\$ -	0
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	\$ -	\$ -	\$ -	\$ -
2015	\$ 450,000	\$ -	\$ -	\$ 300,000
2016	\$ 450,000	\$ -	\$ -	\$ 450,000
2017	\$ 450,000	\$ -	\$ -	\$ 450,000
2018	\$ 450,000	\$ -	\$ -	\$ 450,000
2019	\$ 450,000	\$ -	\$ -	\$ 450,000
2020	\$ 450,000	\$ -	\$ -	\$ 450,000
Total	\$ 2,700,000	\$ -	\$ -	\$ 2,550,000

Associated Ers (list all applicable):			
5010			

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
5010	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 2,250,000	N/A
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: Support of the Enterprise Business Continuity Program 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,
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 2,250,000	

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

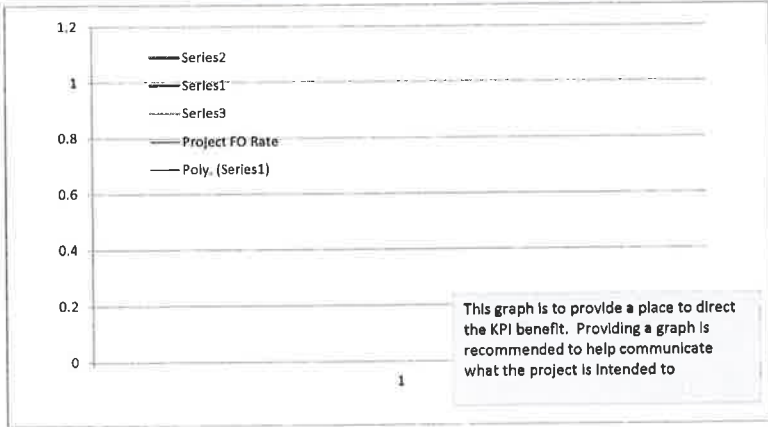
Capital Tools: YES - attach form NO or Not Required

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



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
	12/28/2015	Refreshed 2015
		December release \$150,000

To: Enterprise Business Continuity Business Case 2016 Washington GRC File

From: Jim Kensok, Vice President, Chief Information Officer 

Date: 2/12/2016

Re: Enterprise Business Continuity Capital Investment Considerations

The business case summary form for this project illustrates well the driving factors related to this project, including the risks the inability to respond to emergency events requiring the restoration of business continuity. Please refer to the business case form for information supporting the need for this project.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Technology Expansion to Enable Business Process

ER No: 5006 **ER Name:** Information Technology Expansion Program

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$38,546¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,742	104	237	137	182	144	161	549	175	141	140	585	187
2017	13,700	1,225	475	1,425	1,725	325	1,125	2,125	275	1,125	1,725	575	1,575
2018	14,100	175	175	3,075	300	175	3,075	200	275	3,075	200	175	3,200

Business Case Description:

This program facilitates the technology growth throughout the company. This includes technology expansion for the entire workforce, business process automation and increases in technology to support efficient business processes.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Technology Expansion to Enable Business Pro	Assessments:	
Requested Amount	\$ 7,539,088	Financial:	7.00%
Duration/Timeframe	10 Year Program	Strategic:	Agile Technology Platforms
Dept., Area:	Enterprise Technology	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Andy Leija/Jim Corder	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Jim Kensok		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	81

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This program facilitates the technology growth throughout the company. This includes technology expansion for the entire workforce, business process automation and increases in technology to support efficient business processes.		\$ 7,539,088	\$ -	\$ -	5

		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Alternatives:						
Unfunded Program:	Without funding this program will not be able to deliver technology assets and application enhancement to provide for growth of the technology base or improvements to in-house developed applications. A consequence of not funding this program will be the loss of 20+ application FTE's who possess business knowledge that is not quickly or easily replaced.	n/a	\$ -	\$ -	\$ -	15
Alternative 1: Brief name of alternative (if applicable)	This program facilitates the technology growth throughout the company. This includes technology expansion for the entire workforce, business process automation and increases in technology to support efficient business processes.		\$ 7,539,088	\$ -	\$ -	5
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	\$ 23,304,217	\$ -	\$ -	\$ 18,076,385	
2015	\$ 8,083,991	\$ -	\$ -	\$ 7,539,088	
2016	\$ 7,559,940	\$ -	\$ -	\$ 12,736,526	
2017	\$ 8,330,445	\$ -	\$ -	\$ 11,741,310	
2018	\$ -	\$ -	\$ -	\$ 14,067,922	
2019	\$ -	\$ -	\$ -	\$ 15,412,378	
2020+	\$ -	\$ -	\$ -	\$ 14,864,295	
Total	\$ 23,974,376	\$ -	\$ -	\$ 76,361,519	

Associated Ers (list all applicable):		
5006		

amounts same as 2012 less 820k moved to new Enterprise Security business case

ER	2015	2016	2017	2018	2019	Total
5006	\$ 8,083,991	\$ 7,559,940	\$ 8,330,445	\$ -	\$ -	\$ 23,974,376
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 8,083,991	\$ 7,559,940	\$ 8,330,445	\$ -	\$ -	\$ 23,974,376

Mandate Excerpt (if applicable):
na

Additional Justifications:
Technology Expansion was reduced in 2012 because the security specific items are being moved to an Enterprise Security business case. The CIRR for this business case is an approximation because the items in this business case are so interconnected with other department's initiatives it is very difficult to calculate.

Resources Requirements: (request forms and approvals attached)

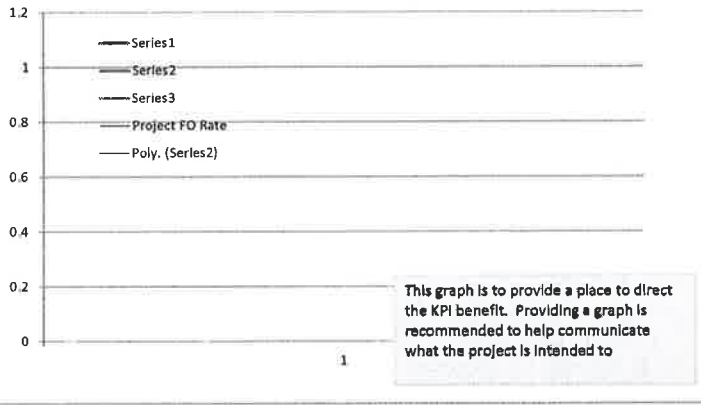
Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: Yes No

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

Prepared signature



Reviewed signature Director/Manager

Other Party Review signature *Margi Stevens* Director/Manager
(if necessary)

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

To: Technology Expansion to Enable Business Processes Business Case 2016 Washington
GRC File

From: Jim Kensok, Vice President, Chief Information Officer



Date: 2/11/2016

Re: Technology Expansion to Enable Business Processes Capital Investment Considerations

The following pages regarding the Technology Expansion to Enable Business Processes business case have been provided by the IS/IT (information systems/information technology) department:

TECHNOLOGY EXPANSION

Q: If the work undertaken in the business case is not itemized at a project/program milestone level of disaggregation, please itemize significant components of work. If a blanket, please discuss the type(s) of work completed under blanket.

A: The Technology Expansion business case contains a collection of project work that focuses on supporting operation, customer-facing and back office systems, including adherence to application license requirements, increase in system storage, and network resiliency. Below are the top 2016 projects (by spend) in this business case.

Project Name	Estimate at Complete (EAC)
West of Spokane Ring (WSR) - Phase 2 of 8	\$ 560,800.00
Virtual Hold/Call-back Assist - Call Center	\$ 532,595.00
Wireless Expansion to Warehouse Yards (WA Sites)	\$ 305,510.00
2016 DS Expansion - Citrix/Nutanix	\$ 296,600.00
IT for Mission Facilities (blanket)	\$ 247,283.00
West of Spokane Ring (WSR) - Phase 1 of 8 GDN to H&W	\$ 236,382.00
Wireless Expansion to Warehouse Yards (ID Sites)	\$ 216,976.00
Enterprise Mobility Management (EMM)	\$ 216,080.00

Q: What is driving the need for this project/program/blanket?

A: Technology Expansion projects are driven by customer and business needs. This can include expansion of equipment or systems to accommodate staff growth, automate a business process, or enhance customer experience.

Q: What alternatives have been considered in lieu of completion of this project/program/blanket?

A: Technology expansion projects are governed by formal steering committees that help direct priority of project work based on impact to customers, customer/employee safety, and critical back office systems. Additionally, projects follow standardized procurement guidelines set forth by the Supply Chain and Purchasing department that incorporate Requests for Information (RFI) and Requests for Proposal (RFP) documentation.

Q: What are the consequences associated with not completing work under this project/program/blanket?

A: Not completing this work would limit Avista’s ability to improve business processes and reduce risk around support and maintenance of Avista’s electric and gas infrastructure.

Q: What are the customer-related benefits associated with this project?

A: Some benefits include (but are not limited to):

- Technology expansion helps promote safety for our Operations crews by facilitating reliable and timely communication channels
- Technology expansion helps promote service quality by providing mobile employees access to information in the field that allows them to better service and inform customers

TECHNOLOGY EXPANSION

- Technology expansion allows for closer monitoring of our substation health and performance
- Technology expansion allows Avista's Gas infrastructure inspectors access to computing technology to more efficiently capture and report gas leaks, which increases safety

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Technology Refresh to Sustain Business Process

ER No: ER Name:

5005 Information Technology Refresh Program

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$49,895¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	18,001	1,140	1,841	1,784	584	896	2,042	2,671	960	2,237	497	1,541	1,808
2017	17,250	1,266	1,266	2,016	1,266	1,266	2,066	1,266	1,266	1,416	1,366	1,316	1,474
2018	17,900	500	500	3,650	500	500	3,950	500	500	3,150	500	500	3,150

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Technology Refresh to Sustain Business Proce	Assessments:	
Requested Amount	\$ 15,417,613	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:	Andy Leija/Jim Corder	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Jim Kensok	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 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	\$ 15,417,613		\$ -	15
		Annual Cost Summary - Increase/(Decrease)			

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.	\$ -		\$ 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.	\$ 15,417,613	\$ -	\$ -	15
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	Associated Ers (list all applicable):			
5 years of costs	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 19,993,532	\$ -		\$ 21,084,249
2014	\$ 12,129,043	\$ -	\$ -	\$ 15,362,243
2015	\$ 13,949,536	\$ -	\$ -	\$ 14,704,833
2016	\$ 15,417,613	\$ -	\$ -	\$ 15,417,613
2017	\$ 17,765,455	\$ -	\$ -	\$ 17,765,455
2018	\$ 16,711,533	\$ -	\$ -	\$ 16,711,533
2019	\$ 17,491,022	\$ -	\$ -	\$ 19,491,022
2020	\$ 24,212,366	\$ -	\$ -	\$ 26,212,366
Total	\$ 137,670,100	\$ -	\$ -	\$ 146,749,314

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. Manufactures 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.

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 (if necessary) signature *Margi Stevens*
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

To: Technology Refresh to Sustain Business Processes Business Case 2016 Washington GRC
File

From: Jim Kensok, Vice President, Chief Information Officer



Date: 2/11/2016

Re: Technology Refresh to Sustain Business Processes Capital Investment Considerations

The following pages regarding the Technology Refresh to Sustain Business Processes business case has been provided by the IS/IT (information systems/information technology) department:

TECHNOLOGY REFRESH

Q: If the work undertaken in the business case is not itemized at a project/program milestone level of disaggregation, please itemize significant components of work. If a blanket, please discuss the type(s) of work completed under blanket.

A: The Technology Refresh business case contains a collection of project work that focuses on replacing aging technology to maintain reliability that supports business processes and operations. Below are the top 2016 projects (by spend) in this business case.

Project Name	Estimate at Complete (EAC)
Rugged Laptop Refresh - Phase II	\$ 3,025,859.00
Citrix Xen Refresh	\$ 1,983,944.00
Endpoint Configuration Management System (HP CAE Refresh)	\$ 1,468,834.00
Power Plan Upgrade	\$ 1,348,965.00
Office Communicator & Voicemail Refresh	\$ 1,136,516.00
Avaya Call Center Refresh	\$ 1,003,088.00
Dry Creek to Lolo Fiber Refresh	\$ 920,005.00
Enterprise Voice Portal (EVP) - Refresh	\$ 861,877.00
Spokane Grid Automation Backhaul Refresh	\$ 790,576.00

Q: What is driving the need for this project/program/blanket?

A: Aging technology is the driving factor behind this collection of project work. As technology ages, it presents risk to Avista in the form of increased failure rate, inefficient work practice, and employee/public safety incident due to system failures.

Q: What alternatives have been considered in lieu of completion of this project/program/blanket?

A: Technology refresh projects are governed by formal steering committees that help direct priority of project work based on impact to customers, safety (customer and employee), and critical back office systems.

Q: What are the consequences associated with not completing work under this project/program/blanket?

A: Not replacing aging technology increases Avista’s risk in the form of failure rate, inefficient work practices, and public/employee safety.

Q: What are the customer-related benefits associated with this project?

A: Benefits include (but are not limited to):

- Replacing aging technology improves reliability by ensuring that systems are supported and secure. (ex: upgrading server Operating Systems (OS) from unsupported 2003 to 2008/2012)
- Replacing aging communication technology improves safety to both our customers and employees by facilitating timely and reliable communication and information sharing

Section 6

TECHNOLOGY REFRESH

- Replacing aging computing devices improves service quality of our operations teams by ensuring technology is available when needed most (ex: outage or emergency response).
- Replacing aging technology can reduce the risk of costs associated with supporting and maintaining legacy equipment and applications

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Enterprise Technology

Business Case Name: Microwave Refresh

ER No: ER Name:

5121 Microwave Replacement with Fiber

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$10,129¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	4,543	0	0	0	1,610	0	0	0	0	0	0	965	1,967
2017	4,000	0	0	0	1,500	0	0	0	500	0	0	0	2,000
2018	2,500	0	0	750	0	0	750	0	0	750	0	0	250

Business Case Description:

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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 6

Capital Project Business Case



Investment Name:	Microwave Refresh	Assessments:	
Requested Amount	\$ 24,529,063	Financial:	10.50%
Duration/Timeframe	7 Year Project	Strategic:	Reliability & capacity
Dept., Area:	Enterprise Technology	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Jacob Reidt/Jim Corder	Project Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Jim Kensok		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	84

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
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 replacement	\$ 24,529,063	\$ -	\$ -	8

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	n/a	\$ -	\$ -	\$ -	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.	\$ -	\$ -	\$ -	8
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	\$ 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	\$ 2,666,679	\$ -	\$ -	\$ 1,186,679
2016	\$ 3,160,000	\$ -	\$ -	\$ 3,504,000
2017	\$ 3,100,000	\$ -	\$ -	\$ 4,785,000
2018	\$ 4,175,000	\$ -	\$ -	\$ 1,840,000
2019	\$ 1,800,000	\$ -	\$ -	\$ 1,900,000
2020	\$ 2,000,000	\$ -	\$ -	\$ 1,900,000
Total	\$ 24,529,063	\$ -	\$ -	\$ 21,643,257

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

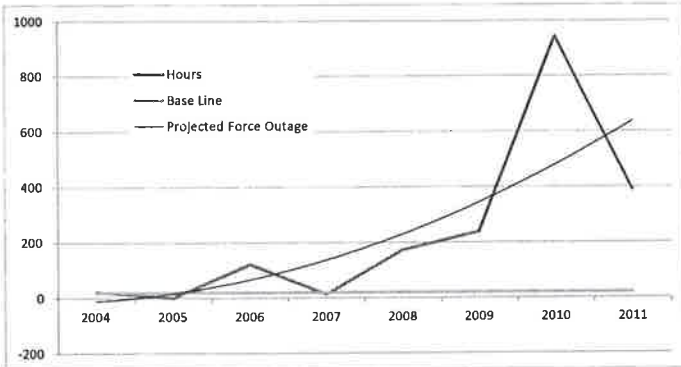
Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: 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:	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
(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
	10/29/2015	Updated w/ 2016-2020 5 year plan approvals

To: Microwave Refresh Business Case 2016 Washington GRC File

From: Jim Kensok, Vice President, Chief Information Officer



Date: 2/11/2016

Re: Microwave Refresh Capital Investment Considerations

The following information regarding the Microwave Refresh business case has been provided by the IS/IT (information systems/information technology) department:

Q: What is driving the need for this project/program/blanket?

A: The purpose of the Microwave Refresh Business Case is to replace end of life communications equipment with current technology in order to mitigate communication failures that could impact operation of the bulk electric system. This infrastructure provides communications paths and circuits that are utilized to provide transmission protection, automated generation control, Remedial Action Schemes (RAS), Distribution Management System communications, Energy Management System communications, and radio communications to field personnel.

The technological objective is to provide more reliable, redundant, high speed, secure, converged data communications that is scalable.

Q: If the work undertaken in the business case is not itemized at a project/program milestone level of disaggregation, please itemize significant components of work. If a blanket, please discuss the type(s) of work completed under blanket.

A: A multi-year refresh plan has been developed by organizing the work by refreshing specific communication paths that provide the specific circuits for the business functions stated above. The following variables were used to prioritize the refresh plan:

- Age and operational stability of the radio equipment
- Physical condition of the tower and antenna
- Business drivers requiring additional capacity or path redundancy

Q: What alternatives have been considered in lieu of completion of this project/program/blanket?

A: The alternatives to not addressing this Business Case is not replacing the end of life, end of support equipment and maintain the infrastructure from spare parts which are becoming more and more scarce. It should be noted that some parts are only available in the used market.

Q: What are the consequences associated with not completing work under this project/program/blanket?

A: Remaining at the status quo will increase Avista's risk of failure of these critical communication systems. Reliability of the Bulk Electric System could be affected by loss of command/control, voice, and telemetry communications due to aged, end of life equipment that is no longer supported and difficult to find replacement parts.

Q: What are the customer-related benefits associated with this project?

A: These communication systems support the operational data and relay and protection schemes of the electrical and gas transmission systems that allow Avista to provide safe and reliable power to customers. System Operations, dispatch, and crews will benefit from a more reliable voice and network communications infrastructure serving operations, storm response, maintenance, service calls, and distribution automation.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Meter Minor Blanket

ER No: ER Name:

2073 Meter Minor Blanket

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$900¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	347	29	29	29	29	29	29	29	29	29	29	29	29
2017	347	29	29	29	29	29	29	29	29	29	29	29	29
2018	347	29	29	29	29	29	29	29	29	29	29	29	29

Business Case Description:

Meter Minor Blanket is used for replacement of failed, damaged or improper meters at service locations where a meter has previously been installed. There are several events that could lead to a meter needing replacement including: meter check orders where the meter is found to be damaged or stopped, meter tests where the meter is found to be out of accuracy tolerance, or inspection orders where the service is altered requiring a different meter type. Meters are replaced in order to ensure that each customer is properly billed for their electric usage, which means maintaining properly working meters at each service point. The risk of not maintaining the meters is inaccurate billing, estimated bills, and re-bill work by the Customer Service department.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Minor Meter Blanket	Date:	2013
Requested Amount	\$300,000 annually		
Duration/Timeframe	Ongoing Year Program	Assessments:	
Dept., Area:	Electric Meter Shop	Financial:	12.56%
Owner:	Dan Austin	Strategic:	Reliability & capacity
Sponsor:	Howell/H Rosentrater	Business Risk:	Business Risk Reduction >5 and <= 10
Category:	Program	Program Risk:	High certainty around cost, schedule and resources
Mandate/Reg. Reference:	n/a	Assessment Score:	93
Recommend Program Description:	Meter Minor Blanket is used for replacement of failed, damaged or improper meters at service locations where a meter has previously been installed. There are several events that could lead to a meter needing replacement including: meter check orders where the meter is found to be damaged or stopped, meter tests where the meter is found to be out of accuracy tolerance, or inspection orders where the service is altered requiring a different meter type. Meters are replaced in order to ensure that each customer is properly billed for their electric usage, which means maintaining properly working meters at each service point. The risk of not maintaining the meters is inaccurate billing, estimated bills, and re-bill work by the Customer Service department.		
	Performance	Capital Cost	O&M Cost
	Reduce overtime from meter reading and bill estimation	\$ 300,000	\$ 120
			Other Costs
			\$ -
			Business Risk Score
			2

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	The Turtle meters will be hand read when they can and estimated through the winter.	n/a	\$ -	\$ 14,515	\$ -	12
Alternative 1: Brief name of alternative (if applicable)	Replace with Fixed Network	Could only cover a percentage of the meters and limited wireless coverage. In the long term plan this area would be a	\$ 55,000	\$ 60	\$ -	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						Associated Ers (list all applicable):	
	Year (xxxx)	Capital Cost	O&M Cost	Other Costs	Approved		
	Previous	\$ 105,000	\$ -	\$ -	\$ 430,000	2073	
Year 1	2015	\$ 300,000	\$ -	\$ -	\$ 250,000		
Year 2	2016	\$ 300,000	\$ -	\$ -	\$ 300,000		
Year 3	2017	\$ 300,000	\$ -	\$ -	\$ 300,000		
Year 4	2018	\$ 300,000	\$ -	\$ -	\$ 300,000		
Year 5	2019	\$ 300,000	\$ -	\$ -	\$ 300,000		
Year 6	2020	\$ 300,000	\$ -	\$ -	\$ 300,000		
	Total	\$ 1,905,000	\$ -	\$ -	\$ 2,180,000		

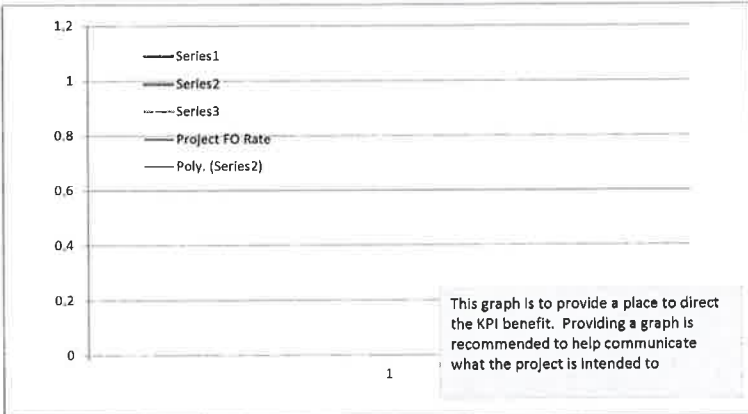
ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
2073	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
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.

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"/> ES - attach form	<input type="checkbox"/> IO or Not Required
Contract Labor:	<input type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> IO or Not Required
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> IO or Not Required
				Fleet:	<input type="checkbox"/> YES - attach form	<input type="checkbox"/> IO 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 _____ date _____

Reviewed signature _____ Director/Manager _____ date _____

Other Party Review signature *Margie Stevens* _____ Director/Manager _____ date _____
 (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
	Date
	Template

To: Meter Minor Blanket Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/12/2016

Re: Meter Minor Blanket Capital Investment Considerations

This programmatic business case is driven by the maintenance considerations described in more detail within my direct testimony at Exhibit No. __ (HLR-1T). Additional information regarding the importance of maintenance in terms of maintaining Avista's system can be found therein.

The business case description has been updated to better communicate the drivers of this program, as well as the consequences of not investing in this program. Namely, the program provides for the replacement of failed, damaged, or otherwise improperly functioning meters at existing service locations. Without this investment, inaccurate billing of electric usage would result.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Electric Replacement/Relocation

ER No: ER Name:

2056 Distribution Line Relocations

2061 WSDOT Franchise Requirements Construction

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$8,050¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,750	175	189	248	598	192	183	180	178	244	191	192	180
2017	1,670	93	103	142	103	105	99	97	95	527	104	105	97
2018	1,652	124	134	172	134	136	130	128	126	170	135	136	128

Business Case Description:

This annual program will replace sections of existing infrastructure that require replacement due to relocation or improvement of streets or highways. Requirements may come from our franchise agreements, permits, or WA DOT. 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.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Elec Replacement and Relocation	Date:	9/10/2015
Requested Amount	\$ 2,750,000		
Duration/Timeframe	On-going Year Program		
Dept., Area:	Electric Operations	Assessments:	
Owner:	Bryan Cox	Financial:	7.00%
Sponsor:	Don Kopczynski	Strategic:	Other
Category:	Mandatory	Business Risk:	Business Risk Reduction >10 and <= 15
Mandate/Reg. Reference:	Franchise Agreements and Permits	Program Risk:	Moderate certainty around cost, schedule and resources
		Assessment Score:	144

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
This annual program will replace sections of existing infrastructure that require replacement due to relocation or improvement of streets or highways. Requirements may come from our franchise agreements, permits, or WA DOT. 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	\$ 2,750,000	\$ -	\$ -	2

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Avista would be out of compliance with established franchise agreements and/or permits if work is not completed.	n/a	\$ -	\$ -	\$ -	16
Alternative 1: Recommended Program	Relocate facilities in conflict with street and highway projects where established franchise agreements and/or permits exist. 2016 inc 350k for CDA 15th St road widening project: TX & DX.	describe any incremental changes in operations	\$ 2,750,000	\$ -	\$ -	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

	Year (xxxx)	Capital Cost	O&M Cost	Other Costs	Approved
	Previous	\$ -	\$ -	\$ -	\$ 6,352,430
Year 1	2015	\$ 2,400,000	\$ -	\$ -	\$ 3,125,000
Year 2	2016	\$ 2,750,000	\$ -	\$ -	\$ 2,750,000
Year 3	2017	\$ 2,600,000	\$ -	\$ -	\$ 2,600,000
Year 4	2018	\$ 2,700,000	\$ -	\$ -	\$ 2,700,000
Year 5	2019	\$ 2,800,000	\$ -	\$ -	\$ 2,800,000
Year 6	2020	\$ 3,000,000	\$ -	\$ -	\$ 3,000,000
	Total	\$ 16,250,000	\$ -	\$ -	\$ 23,327,430

2056	2061

ER	2015	2016	2017	2018	2019	Total
2056	\$ 2,400,000	\$ 2,750,000	\$ 2,600,000	\$ 2,700,000	\$ 2,800,000	\$ 13,250,000
2061	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 2,400,000	\$ 2,750,000	\$ 2,600,000	\$ 2,700,000	\$ 2,800,000	\$ 13,250,000

Mandate Excerpt (if applicable):
Franchise agreements, typical state highway and R/R permits and WA Department of Transportation 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 railroads.

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 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

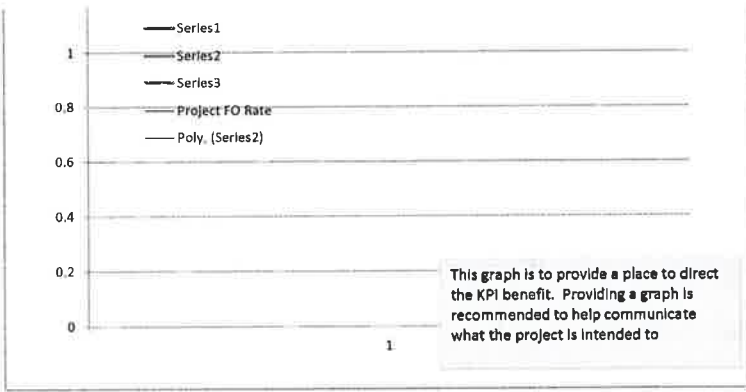
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)
Expected Performance Improvements

KPI Measure:	Fill in the name of the KPI here
	Fill in the name of the KPI here

Prepared signature

date



Reviewed signature _____ Director/Manager _____ date _____

Other Party Review signature Margie Stevens _____ Director/Manager _____ date _____
(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

Version: 1.7.2016

To: Electric Replacement and Relocation Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery HR

Date: 2/12/2016

Re: Electric Replacement and Relocation Capital Investment Considerations

This programmatic business case is driven by the compliance considerations described within my direct testimony at Exhibit No. __ (HLR-1T). Additional information regarding the importance of maintenance in terms of maintaining Avista's system can be found therein.

As discussed in the business case, Avista installs many of its facilities in public right-of-way under established city and county franchise agreements and permits or under Washington State Department of Transportation franchise agreements. In most cases, under these agreements, the Company is obligated to relocate its facilities when changes to given rights-of-way result in conflict with Avista's assets. The result is a reactive maintenance-type investment, where the existing facility is a component within the distribution or transmission system that must be moved in order to maintain downstream reliability from the given facility and there is no discretion when the relocation is mandated by franchise agreement.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Distribution Minor Rebuild

ER No: 2055 **ER Name:** Electric Distribution Minor Blanket

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$26,610¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	8,609	628	693	949	690	706	667	652	641	931	698	704	651
2017	6,375	463	512	709	511	522	492	481	473	695	517	521	480
2018	6,466	469	520	718	518	530	500	488	479	704	524	528	487

Business Case Description:

This program is for distribution minor rebuild as requested by the customer or initiated by Avista. Examples of construction work includes replacing meters, services, transformers, primary overhead or underground lines, or devices. This also includes addressing trouble related jobs (i.e. replacing burnt or damaged poles).

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Distribution Minor Rebuild	Assessments:	
Requested Amount	\$ 8,300,000	Financial:	7.00%
Duration/Timeframe	On-Going Year Program	Strategic:	Reliability & capacity
Dept., Area:	Operations	Business Risk:	Business Risk Reduction >15
Owner:	Bryan Cox	Program Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Don Kopczynski		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	102

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
This program is for distribution minor rebuild as requested by the customer or initiated by Avista. Examples of construction work includes replacing meters, services, transformers, primary overhead or underground lines, or devices. This also includes addressing trouble related jobs (i.e. replacing burnt or damaged poles).	describe any incremental changes that this Program would benefit present operations	\$ 8,300,000	\$ -	\$ -	4

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Unfunded Program: If we do not respond, we would not be addressing the minor rebuild jobs to maintain our distribution system. This program also includes responding to trouble calls. There would be potential public safety issues if our crews do not respond.	n/a	\$ -	\$ -	\$ -	20
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

Program Cash Flows	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2014	\$ 8,500,000	\$ -	\$ -	\$ 8,300,000
2015	\$ 8,300,000	\$ -	\$ -	\$ 11,003,000
2016	\$ 8,609,000	\$ -	\$ -	\$ 8,609,000
2017	\$ 9,867,270	\$ -	\$ -	\$ 8,867,270
2018	\$ 10,133,288	\$ -	\$ -	\$ 9,133,288
2019	\$ 10,407,287	\$ -	\$ -	\$ 9,407,287
2020	\$ 10,689,505	\$ -	\$ -	\$ 9,689,505
Total	\$ 66,506,350	\$ -	\$ -	\$ 65,009,350

Associated Ers (list all applicable):
2055

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
2055	\$ 8,300,000	\$ 8,549,000	\$ 8,805,470	\$ 9,069,634	\$ 9,341,723	\$ 44,065,827	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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 8,300,000	\$ 8,549,000	\$ 8,805,470	\$ 9,069,634	\$ 9,341,723	\$ 44,065,827	

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).

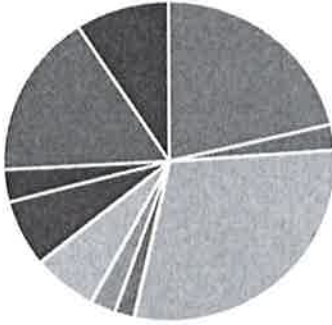
Key Performance Indicator(s)

Expected Performance Improvements

KPI Measure:	Fill in the name of the KPI here
	Fill in the name of the KPI here

Prepared signature

Distribution Minor Rebuild



- Trouble Related
- Joint Use Related
- OH Misc
- Prim OH-UG Conversions
- Service changes
- Transformer changes, removals
- UG Primary Related
- Specific Large \$ WO's
- Blanket Work Orders
- Direct to Project Numbers

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	
	Date	Template
	10/29/2015	Updated w/ CPG approvals and 2016-2020 5 yr plan

To: Distribution Minor Rebuild Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/12/2016

Re: Distribution Minor Rebuild Capital Investment Considerations

This programmatic business case is driven by the maintenance considerations described in more detail within my direct testimony at Exhibit No. __ (HLR-1T). Additional information regarding the importance of maintenance in terms of maintaining Avista's system can be found therein.

As discussed in the business case, this program addresses minor rebuild investment on the electric distribution system, which includes work requested by the customer and rebuild work identified by the Company as relatively small portions of the distribution network fail or otherwise require additional attention. The two largest categories of work performed under this business case are general overhead line repair and trouble related rebuilds (i.e., non-discretionary rebuild of structures due to an unplanned trouble or emergency event, such as the replacement of burnt or damaged poles, transformers, or other structures). Additional categories of work performed under this business case include conversions from overhead to underground lines, service changes, transformer changes or removals, or general underground line related repair.

Given the nature of responsive repair work, the failure to invest in this business case would result in diminished reliability relative to the rebuild work needed but not performed. Additionally, the failure to invest in customer related requests may result in a violation of our tariffs.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Storm Related Electric Transmission and Distribution Capital Project

ER No: ER Name:

2051 Electric Transmission Plant-Storm

2059 Failed Electric Dist Plant-Storm

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$9,551¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	3,090	230	250	327	249	254	242	238	234	322	252	253	237
2017	2,645	199	214	277	214	218	208	204	202	273	216	217	204
2018	2,689	206	222	287	221	225	215	204	201	271	215	217	204

Business Case Description:

This program will replace crossarms, poles and structures as required due to storms, fires on distribution and transmission lines.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Storms	Assessments:	
Requested Amount	\$ 3,000,000	Financial:	7.00%
Duration/Timeframe	On-going Year Program	Strategic:	Reliability & capacity
Dept., Area:	Operations	Business Risk:	Business Risk Reduction >15
Owner:	Bryan Cox	Program Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	102
Recommend Program Description:	This program will replace crossarms, poles and structures as required due to storms, fires on distribution and transmission lines.		
	Performance	Capital Cost	Annual Cost Summary - Increase/(Decrease)
	describe any incremental changes that this Program would benefit present operations	\$ 3,000,000	O&M Cost \$ - Other Costs \$ - Business Risk Score 4

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	If we do not replace our failed infrastructure due to storms and fire, Avista will risk having an unreliable system, increased O&M costs to repair, and decreased customer satisfaction.	n/a	\$ -	\$ -	\$ -	25
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

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
2014	\$ 3,300,000	\$ -	\$ -	\$ 9,860,000
2015	\$ 3,000,000	\$ -	\$ -	\$ 4,475,000
2016	\$ 3,090,000	\$ -	\$ -	\$ 3,090,000
2017	\$ 3,182,700	\$ -	\$ -	\$ 3,182,700
2018	\$ 3,278,181	\$ -	\$ -	\$ 3,278,181
2019	\$ 3,376,526	\$ -	\$ -	\$ 3,376,526
2020	\$ 3,278,181	\$ -	\$ -	\$ 3,168,822
Total	\$ 22,505,588	\$ -	\$ -	\$ 30,431,229

Associated Ers (list all applicable):

2051		
2059		

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
2051	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 1,100,000	\$ 5,500,000	provide brief citation of the law or regulation and a reference number if possible
2059	\$ 1,900,000	\$ 1,990,000	\$ 2,082,700	\$ 2,178,181	\$ 2,276,526	\$ 10,427,407	
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 3,000,000	\$ 3,090,000	\$ 3,182,700	\$ 3,278,181	\$ 3,376,526	\$ 15,927,407	

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 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

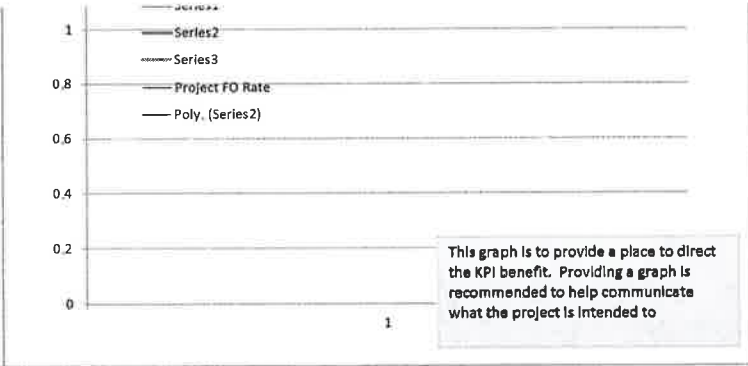
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)

Expected Performance Improvements:

KPI Measure:	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 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

To: Storms Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/12/2016

Re: Storms Capital Investment Considerations

This programmatic business case is driven by the maintenance considerations described in more detail within my direct testimony at Exhibit No. __ (HLR-1T). Additional information regarding the importance of maintenance in terms of maintaining Avista's system can be found therein.

As discussed in the business case, this program addresses the rebuild of Avista's infrastructure following storms or fires. The Company believes the justification of this business case is particularly apparent, given that the infrastructure damaged by storms or fires directly impacts the availability of service to customers served by the impacted facilities. In fact, storm damage is identified as a risk factor in Avista's annual report on Form 10-K, which states:

Damage to facilities may be caused by severe weather, such as snow, ice, wind storms or avalanches. The cost to implement rapid or any repair to such facilities can be significant. Overhead electric lines are most susceptible to damage caused by severe weather.

System repair following storms is non-discretionary investment, which must be made to maintain The Company's ability to serve customers.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Primary Underground Residential Distribution ("URD") Cable Replacement

ER No: ER Name:
2054 Electric Underground Replacement

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,700¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	200	9	9	14	14	16	22	22	21	22	18	16	16
2017	231	10	10	15	16	18	27	27	25	25	21	18	18
2018	460	19	19	29	32	37	55	55	50	51	41	37	37

Business Case Description:

Complete the replacement of the un-jacketed first generation of Primary URD cable.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Investment Name:	Primary URD Cable Replacement 2013	Assessments:	
Requested Amount	\$1,800,000	Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	6 Year Project	Strategic:	Life Cycle Programs
Dept., Area:	Asset Management & Process Improvement	Operational:	Operations improved beyond current levels
Owner:	Kevin Christie	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Jason Thackson	Project/Program Risk:	High certainty around cost, schedule and resources
Category:	Project	Assessment Score:	110
Mandate/Reg. Reference:	n/a	Cost Summary - Increase/(Decrease)	

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
Complete the replacement of the un-jacketed first generation of Primary URD cable	Customer IRR = 10% and avoids an average of 600 outages per year	\$ 1,800,000	\$ -	\$ -	4

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
Status Quo :	Number of Primary URD Cable faults would increase and the cost to repair the cable would also increase. Without this work and the past 4 years of work, the increased O&M costs would sum up to \$8.8 million over the next 5 years.	Increase number of Outage towards 700	\$ -	\$ -	\$ 1,300,000	10
Alternative 1: Primary URD Cable Replacement	Complete the replacement of the un-jacketed first generation of Primary URD cable	Customer IRR = 10% and avoids an average of 600 outages per year	\$ 1,800,000	\$ -	\$ -	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

Timeline

Construction Cash Flows (CWIP)

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 19,852,679	\$ -	\$ -	\$ 19,852,679
2012	\$ 1,800,000	\$ -	\$ -	\$ 1,982,000
2013	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000
2014	\$ 1,000,000	\$ -	\$ -	\$ 750,000
2015	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000
2016	\$ 1,000,000	\$ -	\$ -	\$ 200,000
2017	\$ 1,000,000	\$ -	\$ -	\$ 500,000
2018	\$ 1,000,000	\$ -	\$ -	\$ 1,000,000
2019	\$ -	\$ -	\$ -	\$ -
2020	\$ -	\$ -	\$ -	\$ 800,000
Total	\$ 27,652,679	\$ -	\$ -	\$ 27,084,679

Milestones (high level targets)

November-11	Project Started	December-18	Plant In Service	mm/dd/yy	open
March-12	Project Plan	December-18	Project Complete	mm/dd/yy	open
June-12	Project Design	mm/dd/yy	open	mm/dd/yy	open
March-12	Major Procurement	mm/dd/yy	open	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.	
September-12	Construction Start	mm/dd/yy	open		

Associated Ers (list all applicable):	Current ER	2054					
---------------------------------------	------------	------	--	--	--	--	--

Mandate Excerpt (if applicable):	
----------------------------------	--

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: Primary URD Cable Events
 Avoided Outage Benefits

Metric Description	Projected Avoided Outage Benefit due to URD Cable - Pri Caused Outages	Actual Avoided Outage Benefit due to URD Cable - Pri Outages
2009	\$1,038,613	\$1,056,113
2010	\$1,228,275	\$1,295,225
2011	\$1,368,561	\$1,352,648
2012	\$1,516,159	\$1,481,504
2013	\$1,744,539	\$1,494,738
2014	\$1,898,311	\$1,580,378
2015	\$1,997,052	\$1,720,020

Prepared signature _____

Reviewed signature _____ Director/Manager

Other Party Review signature *Margie Stevens* Director/Manager
 (if necessary)

recommended to help communicate what the project is intended to

Metric Description	Projected Avoided Costs due URD Cable - Pri Caused Outages	Actual Avoided Costs due to URD Cable - Pri Outages
2009	\$1,038,613	\$1,056,113
2010	\$1,228,275	\$1,295,225
2011	\$1,368,561	
2012	\$1,516,159	
2013	\$1,744,539	
2014	\$1,898,311	
2015	\$1,997,052	

ts, or other data that may be useful in evaluating the project

The 10% customer IRR comes from the 2010 5 Year Plan and Budget Summary document
 The ERM values come from the value of avoided outages associate with the early vintage of cable
 The average URD-Primary OMT outage affects an average of 33 customers for 3.5 hours
 Customer-Hours for base case = 700 * 33 * 3.5 = 80,850
 Customer-Hours for base case = 50 * 33 * 3.5 = 5,775

To be completed by Capital Planning Group		Review Cycles	
Rationale for decision	2012-2016		
	Date	Template	

To: URD Cable Project Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/12/2016

Re: URD Cable Project Capital Investment Considerations

This programmatic business case is a business case based upon an asset management program. The Electric Distribution System 2016 Asset Management Plan has been included as Exhibit No.__(HLR-6). Additional information regarding the URD Cable Project business case can be found therein at pages 8 and 42.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Transmission - NERC Low Priority Mitigation

ER No: 2579 **ER Name:** Low Priority Ratings Mitigation

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$6,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,675	0	0	0	0	425	0	0	0	30	50	1,170	0
2017	3,000	0	0	0	0	0	0	0	0	0	0	3,000	0
2018	1,500	0	0	0	0	0	0	0	0	0	0	1,500	0

Business Case Description:

This program reconfigures insulator attachments, and/or rebuilds existing transmission line structures, or removes earth beneath transmission lines in order to mitigate ratings/sag discrepancies found between "design" and "field" conditions as determined by LiDAR survey data. This program was undertaken in response to the October 7, 2012 North American Electric Reliability Corporations (NERC) "NERC Alert" - Recommendation to Industry, "Consideration of Actual Field Conditions in Determination of Facility Ratings". This Capital Program (ER25xx) covers mitigation work on Avista's "Low Priority" 230kV and 115kV transmission lines. Mitigation brings lines in compliance with the National Electric Safety Code (NESC) minimum clearances values. These code minimums have been adopted into the State of Washington's Administrative Code (WAC).

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	NERC Low Priority Mit	Assessments:	
Requested Amount:	\$1,500,000	Financial:	9.00%
Duration/Timeframe:	4 Year Program	Strategic:	Reliability & Capacity
Dept., Area:	TLD Engineering	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Heather Rosentrater	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater		
Category:	Program		
Mandate/Reg. Reference:	October 7, 2010 "NERC Alert" w/r Facility Ratings	Assessment Score:	104

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This program reconfigures insulator attachments, and/or rebuilds existing transmission line structures, or removes earth beneath transmission lines in order to mitigate ratings/sag discrepancies found between "design" and "field" conditions as determined by LiDAR survey data. This program was undertaken in response to the October 7, 2012 North American Electric Reliability Corporations (NERC) "NERC Alert" - Recommendation to Industry, "Consideration of Actual Field Conditions in Determination of Facility Ratings". This Capital Program (ER25xx) covers mitigation work on Avista's "Low Priority" 230kV and 115kV transmission lines. Mitigation brings lines in compliance with the National Electric Safety Code (NESC) minimum clearances values. These code minimums have been adopted into the State of Washington's Administrative Code (WAC).	Regulatory compliance, upgraded facilities, greater clearance, and (in some cases) greater load capabilities.	\$ 1,500,000	\$ -	\$ -	1

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	The unfunded ("do nothing") approach would place Avista at odds with NERC recommendations, and increase the potential for large fines for any outage and/or incident connected with line clearance. Additionally, failure to mitigate would place Avista in violation of NESC code standards and the WAC.	\$ -	\$ -	\$ -	16
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	\$ -	\$ -	\$ -	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	\$ 250,000	\$ -	\$ -	\$ 1,190,000
2015	\$ 500,000	\$ -	\$ -	\$ 500,000
2016	\$ 2,500,000	\$ -	\$ -	\$ 2,000,000
2017	\$ 2,500,000	\$ -	\$ -	\$ 3,000,000
Total	\$ 5,750,000	\$ -	\$ -	\$ 6,690,000

Associated Ers (list all applicable):
2579

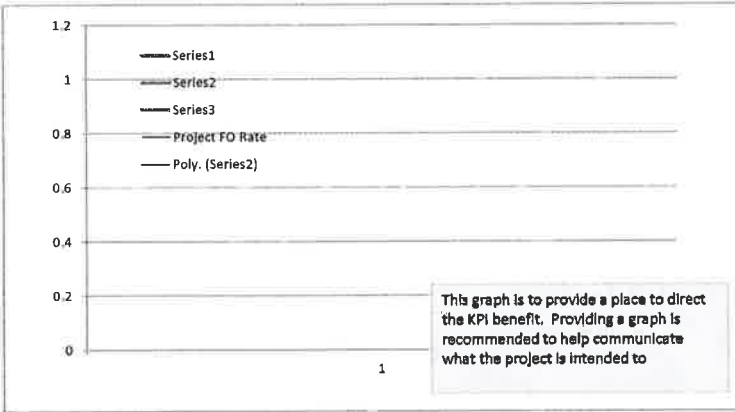
ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
2579	\$ -	\$ 250,000	\$ 500,000	\$ 2,500,000	\$ 2,500,000	\$ 5,750,000	Regulatory: Specific transmission lines require modification/rebuild for increased line clearance. Risk Management: Specific transmission lines require rebuild to reduce potential public injury risks.
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 250,000	\$ 500,000	\$ 2,500,000	\$ 2,500,000	\$ 5,750,000	

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 type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
Contract Labor:	<input checked="" type="checkbox"/> ES	<input type="checkbox"/> O		Facilities:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
				Capital Tools:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
				Fleet:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O 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
(if necessary) *Mary Stevens*
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

To: Transmission – NERC Low Priority Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations **BC**

Date: 2/10/2016

Re: Transmission – NERC Low Priority Capital Investment Considerations

As discussed in the business case, this program represents a response to the North American Electric Reliability Corporation's (NERC) "NERC Alert" – Recommendation to Industry, "Consideration of Actual Field Conditions in Determination of Facility Ratings."

The following pages include the circuits requiring mitigation work in response to the NERC Alert, including the low priority mitigation items.

Priority	Circuit Name	Date Discrepancy found resulting in derate	# of Discrepancies	Rated kV	Explanation of OTHER: kV	Total # of Miles in Circuit	Line De-rated ? Yes, Insert date of de-rate	If Line was not de-rated, explain why	Discrepancy Category
High	Benewah-Pine Creek		20.00	230	Not Required	42.77		Presently Evaluating	Ground /Structure Clearance
High	Cabinet-Noxon		13.00	230	Not Required	18.51		Presently Evaluating	Ground /Structure Clearance
High	Cabinet-Rathdrum w/ Lakeview Tap		10.00	230	Not Required	52.31		Presently Evaluating	Ground /Structure Clearance
High	Hatwai-North Lewiston		2.00	230	Not Required	6.99		Presently Evaluating	Ground /Structure Clearance
High	Lolo-Oxbow		27.00	230	Not Required	63.41		Presently Evaluating	Ground /Structure Clearance
High	Noxon-Pine Creek		24.00	230	Not Required	43.51		Presently Evaluating	Ground /Structure Clearance
Medium	Beacon-Bell #4		1.00	230	Not Required	6.30		Presently Evaluating	Ground /Structure Clearance
Medium	Beacon-Bell #5		1.00	230	Not Required	6.04		Presently Evaluating	Ground /Structure Clearance
Medium	Beacon-Boulder #2 w/ IEP Tap		1.00	115	Not Required	14.00		Presently Evaluating	Clearance to Underbuild
Medium	Beacon-F & C w/ Bell Tap		1.00	115	Not Required	12.17		Presently Evaluating	Ground /Structure Clearance
Medium	Benewah-Boulder		6.00	230	Not Required	26.15		Presently Evaluating	Ground /Structure Clearance
Medium	Benewah-Moscow230		14.00	230	Not Required	44.28		Presently Evaluating	Conductor -Conductor Clearance
Medium	Devils Gap-Stratford w/ Davenport Tap		66.00	115	Not Required	86.36		Presently Evaluating	Ground /Structure Clearance
Medium	Dry Creek-Lolo		2.00	230	Not Required	11.23		Presently Evaluating	Ground /Structure Clearance
Medium	Dry Creek-North Lewiston		2.00	230	Not Required	8.06		Presently Evaluating	Ground /Structure Clearance
Medium	Dry Creek-Talbot		14.00	230	Not Required	28.27		Presently Evaluating	Ground /Structure Clearance
Medium	Hatwai-Lolo		13.00	230	Not Required	8.27		Presently Evaluating	Ground /Structure Clearance
Medium	Hatwai-Moscow		3.00	230	Not Required	18.05		Presently Evaluating	Ground /Structure Clearance
Medium	Hot Springs-Noxon #2		34.00	230	Not Required	70.05		Presently Evaluating	Ground /Structure Clearance
Medium	Lind-Warden		1.00	115	Not Required	21.71		Presently Evaluating	Ground /Structure Clearance
Medium	Ninth & Central-Otis w/ Valleyway Tap		1.00	115	Not Required	16.76		Presently Evaluating	Clearance to Underbuild
Medium	Ninth & Central-Sunset		11.00	115	Not Required	8.63		Presently Evaluating	Ground /Structure Clearance
Medium	North Lewiston-Shawnee		2.00	230	Not Required	34.28		Presently Evaluating	Other (explain in detail field)

Priority	Circuit Name	Date Discrepancy found resulting in derate	# of Discrepancies	Rated kV	Explanation of OTHER: kV	Total # of Miles in Circuit	Line De-rated ? Yes, Insert date of de-rate	If Line was not de-rated, explain why	Discrepancy Category
Medium	Northwest-West Side		1.00	115	Not Required	1.95		Presently Evaluating	Ground /Structure Clearance
Medium	Walla Walla-Wanapum		19.00	230	Not Required	77.78		Presently Evaluating	Ground /Structure Clearance
Low	Addy-Devils Gap		29.00	115	Not Required	43.31		Presently Evaluating	Ground /Structure Clearance
Low	Addy-Gifford		1.00	115	Not Required	20.68		Presently Evaluating	Ground /Structure Clearance
Low	Addy-Kettle Falls		12.00	115	Not Required	27.11		Presently Evaluating	Ground /Structure Clearance
Low	Benewah-Pine Creek		15.00	115	Not Required	45.02		Presently Evaluating	Ground /Structure Clearance
Low	Benewah-Pine Creek: St. Maries Tap		2.00	115	Not Required	7.06		Presently Evaluating	Ground /Structure Clearance
Low	Benton-Othello		11.00	115	Not Required	26.07		Presently Evaluating	Ground /Structure Clearance
Low	CDA-Pine Creek		36.00	115	Not Required	29.75		Presently Evaluating	Ground /Structure Clearance
Low	Chelan-Stratford w/ Headworks Tap		10.00	115	Not Required	49.44		Presently Evaluating	Ground /Structure Clearance
Low	Clearwater-Lolo #1		2.00	115	Not Required	8.63		Presently Evaluating	Ground /Structure Clearance
Low	Clearwater-Lolo #2		1.00	115	Not Required	8.56		Presently Evaluating	Ground /Structure Clearance
Low	Clearwater-North Lewiston		1.00	115	Not Required	3.21		Presently Evaluating	Ground /Structure Clearance
Low	Devils Gap-Lind		14.00	115	Not Required	73.74		Presently Evaluating	Ground /Structure Clearance
Low	Devils Gap-Nine Mile		3.00	115	Not Required	18.78		Presently Evaluating	Ground /Structure Clearance
Low	Eighth & Fancher-Latah Jct w/ Rockford Tap		7.00	115	Not Required	26.27		Presently Evaluating	Ground /Structure Clearance
Low	Grangeville-Nez Perce #1 w/ Wickes Tap		1.00	115	Not Required	27.04		Presently Evaluating	Ground /Structure Clearance
Low	Grangeville-Nez Perce #2 w/ East Grangeville Tap		1.00	115	Not Required	37.80		Presently Evaluating	Ground /Structure Clearance
Low	Latah Jct-Moscow w/ Palouse Tap		7.00	115	Not Required	51.51		Presently Evaluating	Ground /Structure Clearance
Low	Lind-Shawnee		58.00	115	Not Required	75.81		Presently Evaluating	Ground /Structure Clearance
Low	Lolo-Pound Lane		8.00	115	Not Required	10.25		Presently Evaluating	Ground /Structure Clearance
Low	Moscow-Orofino		12.00	115	Not Required	41.59		Presently Evaluating	Ground /Structure Clearance
Low	Moscow-Orofino: Deary Tap		7.00	115	Not Required	21.33		Presently Evaluating	Ground /Structure Clearance

Priority	Circuit Name	Date Discrepancy found resulting in derate	# of Discrepancies	Rated kV	Explanation of OTHER: kV	Total # of Miles in Circuit	Line De-rated ? Yes, Insert date of de-rate	If Line was not de-rated, explain why	Discrepancy Category
Low	Moscow-Terra View		1.00	115	Not Required	11.94		Presently Evaluating	Ground /Structure Clearance
Low	Nez Pierce-Orofino		1.00	115	Not Required	17.27		Presently Evaluating	Ground /Structure Clearance
Low	Othello SS-Warden #1		1.00	115	Not Required	8.28		Presently Evaluating	Ground /Structure Clearance
Low	Othello SS-Warden #2		2.00	115	Not Required	16.56		Presently Evaluating	Ground /Structure Clearance
Low	Otis-Post Falls w/ East Farms Tap		1.00	115	Not Required	7.62		Presently Evaluating	Ground /Structure Clearance
Low	Pine Street-Rathdrum w/ Oldtown and Spirit Lake Taps		1.00	115	Not Required	34.82		Presently Evaluating	Ground /Structure Clearance
Low	Shawnee-South Pullman		1.00	115	Not Required	12.70		Presently Evaluating	Ground /Structure Clearance
Low	Shawnee-Sunset		7.00	115	Not Required	61.51		Presently Evaluating	Ground /Structure Clearance
Low	Shawnee-Sunset: Chambers Tap		1.00	115	Not Required	7.12		Presently Evaluating	Ground /Structure Clearance
Low	Shawnee-Terra View		4.00	115	Not Required	10.05		Presently Evaluating	Ground /Structure Clearance

Priority	Circuit Name	Explanation of OTHER: Discrepancy Details	Remediation Status	Remediation Category	Explanation of OTHER: Remediation work performed to correct discrepancy
High	Benewah-Pine Creek	Not Required	Complete	Raised Transmission Structure	Not Required
High	Cabinet-Noxon	Not Required	Complete	Raised Transmission Structure	Not Required
High	Cabinet-Rathdrum w/ Lakeview Tap	Not Required	Complete	Raised Transmission Structure	Not Required
High	Hatwai-North Lewiston	Not Required	Complete	Grading	Not Required
High	Lolo-Oxbow	Not Required	Complete	Raised Transmission Structure	Not Required
High	Noxon-Pine Creek	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Beacon-Bell #4	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Beacon-Bell #5	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Beacon-Boulder #2 w/ IEP Tap	Not Required	Complete	Other (explain in detail field)	Resurveyed 6-12-2014; No Discrepancy
Medium	Beacon-F & C w/ Bell Tap	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Benewah-Boulder	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Benewah-Moscow230	Not Required	In Progress	Raised Transmission Structure	Not Required
Medium	Devils Gap-Stratford w/ Davenport Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Medium	Dry Creek-Lolo	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Dry Creek-North Lewiston	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Dry Creek-Talbot	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Hatwai-Lolo	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Hatwai-Moscow	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Hot Springs-Noxon #2	Not Required	In Progress	Raised Transmission Structure	Not Required
Medium	Lind-Warden	Not Required	In Progress	Raised Transmission Structure	Not Required
Medium	Ninth & Central-Otis w/ Valleyway Tap	Not Required	Complete	Underbuild Lowered	Not Required
Medium	Ninth & Central-Sunset	Not Required	In Progress	Raised Transmission Structure	Not Required
Medium	North Lewiston-Shawnee	Conductor to Down-Guy	Complete	Other (explain in detail field)	Resurveyed 3-26-2014; Down Guys Insulated

Priority	Circuit Name	Explanation of OTHER: Discrepancy Details	Remediation Status	Remediation Category	Explanation of OTHER: Remediation work performed to correct discrepancy
Medium	Northwest-West Side	Not Required	Complete	Raised Transmission Structure	Not Required
Medium	Walla Walla-Wanapum	Not Required	Complete	Raised Transmission Structure	Not Required
Low	Addy-Devils Gap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Addy-Gifford	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Addy-Kettle Falls	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Benewah-Pine Creek	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Benewah-Pine Creek: St. Maries Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Benton-Othello	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	CDA-Pine Creek	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Chelan-Stratford w/ Headworks Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Clearwater-Lolo #1	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Clearwater-Lolo #2	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Clearwater-North Lewiston	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Devils Gap-Lind	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Devils Gap-Nine Mile	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Eighth & Fancher-Latah Jct w/ Rockford Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Grangeville-Nez Perce #1 w/ Wickes Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Grangeville-Nez Perce #2 w/ East Grangeville Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Latah Jct-Moscow w/ Palouse Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Lind-Shawnee	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Lolo-Pound Lane	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Moscow-Orofino	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Moscow-Orofino: Deary Tap	Not Required	In Progress	Raised Transmission Structure	Not Required

Priority	Circuit Name	Explanation of OTHER: Discrepancy Details	Remediation Status	Remediation Category	Explanation of OTHER: Remediation work performed to correct discrepancy
Low	Moscow-Terra View	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Nez Pierce-Orofino	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Othello SS-Warden #1	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Othello SS-Warden #2	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Otis-Post Falls w/ East Farms Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Pine Street-Rathdrum w/ Oldtown and Spirit Lake Taps	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Shawnee-South Pullman	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Shawnee-Sunset	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Shawnee-Sunset: Chambers Tap	Not Required	In Progress	Raised Transmission Structure	Not Required
Low	Shawnee-Terra View	Not Required	In Progress	Raised Transmission Structure	Not Required

Priority	Circuit Name	Remediation Work Completed Date	Overall Record Comment
High	Benewah-Pine Creek	12/1/2014	
High	Cabinet-Noxon	9/14/2012	
High	Cabinet-Rathdrum w/ Lakeview Tap	10/4/2013	
High	Hatwai-North Lewiston	4/26/2013	
High	Lolo-Oxbow	11/26/2012	
High	Noxon-Pine Creek	10/18/2013	
Medium	Beacon-Bell #4	8/29/2014	
Medium	Beacon-Bell #5	9/15/2014	
Medium	Beacon-Boulder #2 w/ IEP Tap	6/12/2014	
Medium	Beacon-F & C w/ Bell Tap	8/22/2014	
Medium	Benewah-Boulder	10/24/2013	
Medium	Benewah-Moscow230		Phase 1 complete. Phase 2 of 3 to start 8/8/2016
Medium	Devils Gap-Stratford w/ Davenport Tap		Phase 1 complete. Phase 2 of 3 to start 8/29/2016
Medium	Dry Creek-Lolo	10/18/2013	
Medium	Dry Creek-North Lewiston	11/21/2013	
Medium	Dry Creek-Talbot	8/29/2014	
Medium	Hatwai-Lolo	10/31/2013	
Medium	Hatwai-Moscow	9/20/2013	
Medium	Hot Springs-Noxon #2		Phase 1 complete. Phase 2 of 3 to start 7/25/2016
Medium	Lind-Warden		2016 Design. Scheduled for 2016/2017/2018
Medium	Ninth & Central-Otis w/ Valleyway Tap	8/20/2014	
Medium	Ninth & Central-Sunset		On schedule to complete in 2016
Medium	North Lewiston-Shawnee	3/26/2014	

Priority	Circuit Name	Remediation Work Completed Date	Overall Record Comment
Medium	Northwest-West Side	10/6/2014	
Medium	Walla Walla-Wanapum	10/21/2014	
Low	Addy-Devils Gap		2016 Design. Scheduled for 2016/2017/2018
Low	Addy-Gifford		2016 Design. Scheduled for 2016/2017/2018
Low	Addy-Kettle Falls		2016 Design. Scheduled for 2016/2017/2018
Low	Benewah-Pine Creek		On schedule to complete in 2016
Low	Benewah-Pine Creek: St. Maries Tap		On schedule to complete in 2016
Low	Benton-Othello		Phase 2 of 3 delayed to 2016. Fed permitting
Low	CDA-Pine Creek		2016 Design. Scheduled for 2017/2018/2019
Low	Chelan-Stratford w/ Headworks Tap		Scheduled for 2016/2017/2018
Low	Clearwater-Lolo #1		Scheduled for 2016/2017/2018
Low	Clearwater-Lolo #2		Scheduled for 2016/2017/2018
Low	Clearwater-North Lewiston		Scheduled for 2016/2017/2018
Low	Devils Gap-Lind		Phase 2 complete. Phase 3 of 3 to start 3/16/2017
Low	Devils Gap-Nine Mile		On schedule to complete in 2016
Low	Eighth & Fancher-Latah Jct w/ Rockford Tap		Scheduled for 2016/2017/2018
Low	Grangeville-Nez Perce #1 w/ Wickes Tap		Scheduled for 2016/2017/2018
Low	Grangeville-Nez Perce #2 w/ East Grangeville Tap		Scheduled for 2016/2017/2018
Low	Latah Jct-Moscow w/ Palouse Tap		Scheduled for 2016/2017/2018
Low	Lind-Shawnee		2016 Design. Scheduled for 2016/2017/2018
Low	Lolo-Pound Lane		Scheduled for 2016/2017/2018
Low	Moscow-Orofino		Phase 1 Complete. Phase 2 in 2016
Low	Moscow-Orofino: Deary Tap		Scheduled for 2017

Priority	Circuit Name	Remediation Work Completed Date	Overall Record Comment
Low	Moscow-Terra View		Scheduled for 2016/2017/2018
Low	Nez Pierce-Orofino		Scheduled for 2016/2017/2018
Low	Othello SS-Warden #1		On schedule to complete in 2016
Low	Othello SS-Warden #2		On schedule to complete in 2016
Low	Otis-Post Falls w/ East Farms Tap		Scheduled for 2016/2017/2018
Low	Pine Street-Rathdrum w/ Oldtown and Spirit Lake Taps		Scheduled for 2016/2017/2018
Low	Shawnee-South Pullman		Scheduled for 2016/2017/2018
Low	Shawnee-Sunset		Scheduled for 2016/2017/2018
Low	Shawnee-Sunset: Chambers Tap		Scheduled for 2016/2017/2018
Low	Shawnee-Terra View		Scheduled for 2016/2017/2018

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Transmission - NERC Medium Priority Mitigation

ER No: ER Name:

2581 Medium Priority Ratings Mitigation

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$3,251¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,576	0	0	0	0	0	0	0	0	0	0	1,350	1,226
2017	1,000	0	0	0	0	0	0	0	0	0	0	1,000	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

This program reconfigures insulator attachments, and/or rebuilds existing transmission line structures, or removes earth beneath transmission lines in order to mitigate ratings/sag discrepancies found between "design" and "field" conditions as determined by LiDAR survey data. This program was undertaken in response to the October 7, 2012 North American Electric Reliability Corporations (NERC) "NERC Alert" - Recommendation to Industry, "Consideration of Actual Field Conditions in Determination of Facility Ratings". This Capital Program (ER25xx) covers mitigation work on Avista's "Medium Priority" 230kV and 115kV transmission lines, including North Lewiston-Shawnee 230kV, Beacon-Bell #4 230kV, Beacon-Bell #5 230kV, Noxon-Hot Springs #2 230kV, Beacon-Boulder #2 115kV, Beacon-Francis & Cedar 115kV, 9th & Central-Otis 115kV, Northwest-Westside 115kV, Dry Creek-Talbot 230kV, Walla Walla-Wanapum 230kV, Benewah-Moscow 230kV, Devils Gap-Stratford 115kV. Mitigation brings lines in compliance with the National Electric Safety Code (NESC) minimum clearances values. These code minimums have been adopted into the State of Washington's Administrative Code (WAC).

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Investment Name:	NERC Med Priority Mit	Assessments:	
Requested Amount	\$2,500,000	Financial:	9.00%
Duration/Timeframe	2 Year Program	Strategic:	Reliability & Capacity
Dept., Area:	TLD Engineering	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Heather Rosentrater	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater	Assessment Score:	104
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	October 7, 2010 "NERC Alert" w/r Facility Ratings	Performance	Capital Cost
Recommend Program Description:		O&M Cost	Other Costs
This program reconfigures insulator attachments, and/or rebuilds existing transmission line structures, or removes earth beneath transmission lines in order to mitigate ratings/sag discrepancies found between "design" and "field" conditions as determined by LIDAR survey data. This program was undertaken in response to the October 7, 2012 North American Electric Reliability Corporations (NERC) "NERC Alert" - Recommendation to Industry, "Consideration of Actual Field Conditions in Determination of Facility Ratings". This Capital Program (ER25xx) covers mitigation work on Avista's "Medium Priority" 230kV and 115kV transmission lines, including North Lewiston-Shawnee 230kV, Beacon-Bell #4 230kV, Beacon-Bell #5 230kV, Noxon-Hot Springs #2 230kV, Beacon-Boulder #2 115kV, Beacon-Francis & Cedar 115kV, 9th & Central-Otis 115kV, Northwest-Westside 115kV, Dry Creek-Talbot 230kV, Walla Walla-Wanapum 230kV, Benawah-Moscow 230kV, Devils Gap-Stratford 115kV. Mitigation brings lines in compliance with the National Electric Safety Code (NESC) minimum clearances values. These code minimums have been adopted into the State of Washington's Administrative Code (WAC).		Business Risk Score	

		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Alternatives:						
Unfunded Program:	The unfunded ("do nothing") approach would place Avista at odds with NERC recommendations, and increase the potential for large fines for any outage and/or incident connected with line clearance. Additionally, failure to mitigate would place Avista in violation of NESC code standards and the WAC.	Relatively high probability of fines and legal action against Avista.	\$ -	\$ -	\$ -	16
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,693,000	\$ -	\$ -	\$ 1,731,000
2015	\$ 3,294,000	\$ -	\$ -	\$ 3,294,000
2016	\$ -	\$ -	\$ -	\$ 2,251,000
2017	\$ -	\$ -	\$ -	\$ -
Total	\$ 4,987,000	\$ -	\$ -	\$ 7,276,000

2581	

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
2581	\$ -	\$ 1,693,000	\$ 3,294,000	\$ -	\$ -	\$ 4,987,000	Regulatory: Specific transmission lines require modification/rebuild for increased line clearance. Risk Management: Specific transmission lines require rebuild to reduce potential public injury risks.
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 1,693,000	\$ 3,294,000	\$ -	\$ -	\$ 4,987,000	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability

Contract Labor: ES IO

Enterprise Tech: ES - attach form IO or Not Required

Facilities: ES - attach form IO or Not Required

Capital Tools: ES - attach form IO or Not Required

Fleet: ES - attach form IO or Not Required

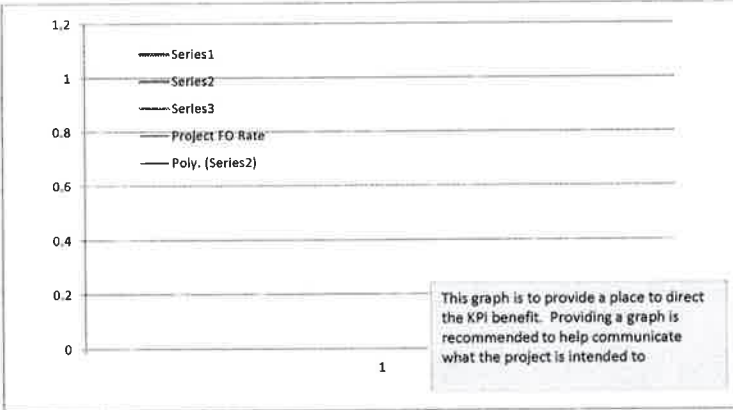
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

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 *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 Program

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Transmission – NERC Medium Priority Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations 

Date: 2/10/2016

Re: Transmission – NERC Medium Priority Capital Investment Considerations

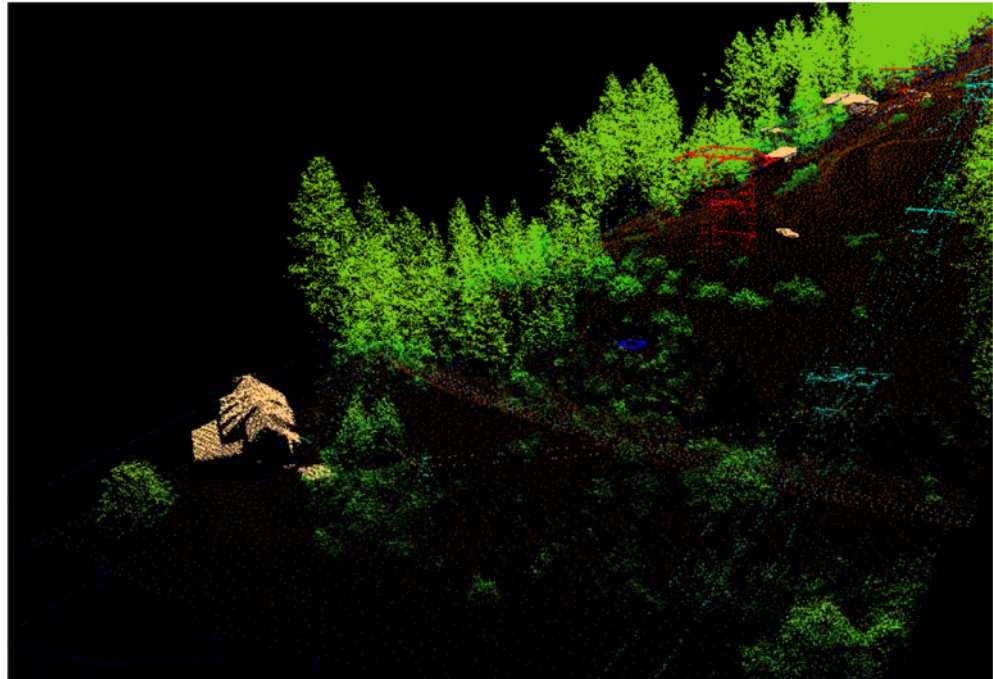
As discussed in the business case, this program represents a response to the North American Electric Reliability Corporation's (NERC) "NERC Alert" – Recommendation to Industry, "Consideration of Actual Field Conditions in Determination of Facility Ratings."

The following pages are an excerpt (including the cover page, executive summary, and introduction) from Avista's *Proposal to The North American Electric Reliability Corporation (NERC) for Mitigating LiDAR Delineated Discrepancies on Avista's "Medium Priority" Transmission Lines*, which detailing Avista's proposed mitigation responses for medium priority transmission lines. The full report is available upon request.



Proposal

To
The North American Electric Reliability Corporation (NERC)
For
Mitigating LiDAR Delineated Discrepancies
On
Avista's "Medium Priority" Transmission Lines



June 14, 2013

Final, Rev. 1

Ken Sweigart

Transmission Line Design

Avista Project Account 09805382-568000

Avista's Transmission Line Design (TLD) Group, along with assistance from its contracted Owner's Engineer completed field condition surveys for "Medium" priority transmission lines to confirm existing line ratings. Avista's transmission system includes about 458 miles of 230kV lines (as part of 20 transmission lines), and another 305 miles of 115kV lines (as part of 32 transmission lines) that are considered "Medium" priority with respect to NERC's request (described in the following section).

Survey results show 102 discrepancies on the "Medium" priority 230kV transmission lines, with an estimated mitigation cost of \$2,666,000. A total of 70 discrepancies were found on the "Medium" priority 115kV transmission lines, with an estimated mitigation cost of \$1,870,000. The total cost of mitigating all "Medium" priority transmission lines is approximately \$4,600,000. It is expected that the mitigation construction work can be accomplished in a 2-3 year time frame.

2 Introduction

On October 7, 2010 the North American Electric Reliability Corporation (NERC) issued a Recommendation to Industry – received as a "NERC Alert" – addressing Consideration of Actual Field Conditions in Determination of Facility Ratings.

NERC and the Regional Entities are concerned that Transmission Owners and Generator Owners have, in some instances, not considered existing field conditions when establishing facility ratings for transmission facilities, including transmission conductors. Transmission Owners should strive to achieve a heightened awareness of the actual operating conditions of their respective transmission conductors and take prompt corrective action as necessary.

The basis of this recommendation was developed from a vegetation contact conductor-to-ground fault. The affected Transmission Owner subsequently discovered significant discrepancies between actual topography and the values used for design. Using a Light Detection and Ranging (LIDAR) technology, the Transmission Owner identified over one hundred (100) previously undetected conductor-to-ground issues.

The NERC Recommendation to Industry is as follows:

Transmission Owners and Generation Owners of transmission facilities that are considered part of the Bulk Electric System should review the current Facility Ratings Methodology for their solely and jointly owned transmission lines to

Section 7

verify that the methodology used to determine facility ratings is based on actual field conditions. Line ratings depend on many limiting factors, including transmission facility placement, tower height, topographical profiles, and maintaining adequate conductor clearances (*i.e.*, conductor-to-ground, conductor-to-conductor) under a variety of ambient and loading conditions.

- Transmission Owners and Generation Owners should determine if their Facility Ratings Methodology will produce appropriate ratings, even when considering differences between design and actual field conditions.
- Transmission Owners and Generation Owners should review their transmission facility ratings to confirm that any differences observed between design and actual field conditions are within the design tolerances as defined by the Registered Entity's Facility Ratings Methodology.

If Transmission Owners and Generation Owners have not previously verified that the facility design, installation, and field conditions are within design tolerances when the facilities are loaded at their rating, the Transmission Owners and Generation Owners should describe its plans to complete an assessment of its facilities to verify whether the actual field conditions conform to the entity's design tolerances in accordance with its Facility Ratings Methodology. Assessments should be structured such that, at a minimum, facilities with the highest impact to bulk power system reliability be performed in 2011, facilities with medium impact to reliability be assessed in 2012, and those facilities with the lowest impact in 2013. The description of the plan for how and when all transmission lines will be assessed should be submitted to NERC by **January 18, 2011**. NERC recommends that the Transmission Owners and Generation Owners perform assessments using methods or technologies with adequate precision to show whether the actual field conditions support the entity's facility ratings. The Transmission Owners and Generation Owners should also explain how these measurements and assessments will be accomplished and the estimated length of time to complete the activity for all applicable facilities. Transmission Owners and Generation Owners requiring an extension beyond the three-year assessment timeframe should submit their justification in the January 18, 2011 report.

During conduct of the assessment, if the Transmission Owners and Generation Owners determine that the actual conductor clearances are not within the entity's design tolerances under existing or design conditions and as a result, facility ratings are in error, the Transmission Owners and Generation Owners should coordinate their findings of the assessment with their respective Reliability Coordinator, Transmission Operator, and Generator Operators. This

Section 7

coordination should include establishing interim mitigation plans to address the assessment findings and any actions required to maintain bulk electric system stability and reliability. Although such plans may include derating of facilities consistent with actual field conditions, consideration should be given to optimizing the overall robustness and reliability of the bulk power system during the remediation period. The entity should also notify its Transmission Planner and Planning Authority of any limitation in the facility ratings due to the interim mitigation plan and update all operating instructions, procedures, SOLs, IROLs, study models and databases used to assess the system during the remediation period.

Additionally, Transmission Owners and Generator Owners must provide a report to the Regional Entity summarizing the assessment findings by December 31, 2011 for high priority facilities, by December 31, 2012 for medium priority facilities, and by December 31, 2013 for lowest priority facilities. This report should identify facilities for which facility ratings are determined to be in error or inconsistent with actual in-field conditions, and an expected timeline for remediation to correct the conditions or modify the facility ratings. If remediation is expected to require a timeframe greater than one year from identification of the issue, the Transmission Owners and Generator Owners should submit a plan to remediate to the Regional Entity for approval. In the situations described, NERC considers actions to maintain the reliability and integrity of the bulk power system to be of paramount importance. NERC recognizes that assessment of existing conditions and any necessary remedial actions require careful planning, coordination, and sequencing to avoid introducing unintended new risks. Therefore, in summary, Transmission Owners and Generation Owners with solely or jointly owned transmission facilities (including generator tie lines, radial lines and interconnection facilities that are included in the scope of the current NERC-approved definition of Bulk Electric System) are to take the following actions:

1. Transmission Owners and Generation Owners must provide a report by January 18, 2011 with a plan to conduct an assessment using a staggered schedule as follows:
 - a. High priority facilities by December 31, 2011
 - b. Medium priority facilities by December 31, 2012
 - c. Lowest priority facilities by December 31, 2013
2. For all transmission facilities (including generator tie lines, radial lines, and interconnection facilities) meeting the following conditions:

Section 7

- a. The existing or as-built conditions are different from the design conditions for the facilities; and
- b. Those differences between actual and design conditions result in incorrect ratings for the facilities

Transmission Owners and Generator Owners should coordinate with each applicable Reliability Coordinator, Transmission Operator, Generator Operator, Planning Authority, and Transmission Planner regarding interim mitigation strategies.

3. Transmission Owners and Generation Owners must provide a report to its Regional Entity summarizing their assessment findings by December 31, 2011, 2012, and 2013 for high, medium, and lowest priority facilities, respectively, identifying facilities for which facility ratings are determined to be in error or inconsistent with actual in-field conditions. This report should also include an expected timeline for remediation to correct the conditions or modify the facility ratings.
4. If Transmission Owners and Generation Owners require longer than one year from the date the issue is identified to remediate an issue, the entity should submit its remediation plan to the Regional Entity for approval.

On May 19, 2011 Branden Sudduth of the Western Electricity Coordinating Council (WECC) responded to Avista's Transmission Line Ratings Plan January 18, 2001.

Branden's response was as follows:

"In your response you indicated that your assessment plan will require an extended timeline. While time extensions can be accepted, NERC has indicated that this should happen only on a limited basis and under extenuating circumstances. In discussing requests such as yours with NERC and the other Regional Entities, it is agreed that entities should strive to keep on schedule with the timeline proposed by NERC. It is important that these assessments be performed in a timely manner to ensure the reliability of the interconnection. However, in looking at your assessment plan, it appears that many of the facilities that you consider high priority may be re-prioritized to the medium priority category in accordance with the recommendations in the attached "criteria" document. We have found that in many instances, re-evaluating assessment plans against the attached "criteria" document and proposing a new prioritization methodology can help in keeping with the schedule. We would encourage you to review the criteria document and propose an updated timeline and/or assessment plan."

The attached “criteria” document was a May 11, 2011 NERC Facility Design, Connections, and Maintenance (FAC) Assessment Plan Review Criteria communication.

In the communication, NERC states the following:

For **Transmission Owners**, recommendations for assessing BES transmission lines are as follows:

High (to be completed by end of 2011)

- Transmission Facilities that are components of an identified IROL or key transfer paths
- Transmission Facilities identified by the Owner as critical to reliability
- Heavily loaded Transmission lines and/or 500kV and above Eastern and Western Interconnections
- Within NPCC, transmission lines defined as Bulk Power Supply (BPS) elements in accordance with NPCC Document A-10, “Classification of Bulk Power System Elements”
- Transmission lines of 345kV in the ERCOT Region

Medium (to be completed by end of 2012)

- Transmission lines 230kV – 499kV in the Eastern and Western Interconnections
- Within NPCC, transmission lines 230kV and higher which are not defined as BPS elements
- For the ERCOT Region, transmission lines 138kV originating from stations containing 345/138kV auto transformers or generation facilities with a name plate rating exceeding 450MW

Low (to be completed by end of 2013)

- Transmission lines below 230kV in the Eastern and Western Interconnections
- Within NPCC, transmission lines 115kV and higher which are not defined as BPS elements
- For the ERCOT Region, transmission lines 138kV or lower not meeting the “medium” criteria listed above

3 Scope of Work

Using the guidelines set forth in the May 11, 2011 NERC Facility Design, Connections, and Maintenance (FAC) Assessment Plan Review Criteria communication; and, in conjunction with Avista Transmission Operation’s *2011 Summer Operating Studies Report* (Rich Hydzik), the following Transmission Lines have been designated as **Medium Priority**:

- Beacon-Bell #4 230kV Transmission Line (6.30 miles)
- Beacon-Bell #5 230kV Transmission Line (6.04 miles)
- Beacon-Boulder 230kV Transmission Line (11.95 miles)

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Noxon Switchyard Rebuild

ER No: ER Name:
2532 Noxon 230 kV Substation - Rebuild

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$13,400¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	11,500	0	0	10,000	0	0	0	0	0	0	1,000	500	0
2017	6,700	0	0	0	0	0	0	0	0	0	5,000	1,700	0
2018	1,700	0	0	0	0	0	0	0	0	0	0	1,700	0

Business Case Description:

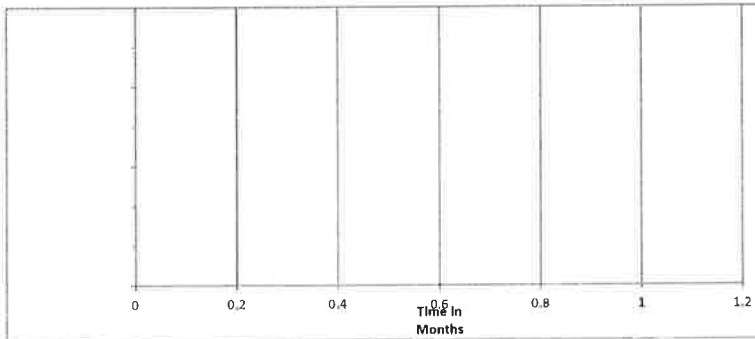
The existing Noxon Rapids 230 kV Switchyard requires reconstruction due to the present age and condition of the equipment in the station. The existing bus is constructed as strain bus (which has suffered a number of recent failures) and is configured as a single bus with a tie breaker separating the East and West buses. The station is the interconnection point of the Noxon Rapids Hydro Electric Dam as well as a principal interconnection point between Avista and BPA, and as such is a significant asset in the reliable operation of the Western Montana Hydro Complex. Equipment outages within the Station (planned or unplanned) can cause significant curtailments of the local generation output. Due to the significance of the station, a complete rebuild will require coordination with Avista's Energy Resources Department and neighboring utilities, primarily BPA. The Noxon Switchyard Rebuild Project is proposed to be a greenfield Double Bus Double Breaker 230 kV switching station to replace the existing Noxon Switchyard.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Investment Name:	Noxon Switchyard Rebuild	Assessments:			
Requested Amount	\$24,950,000	Financial:	Medium - >= 5% & <9% CIRR		
Duration/Timeframe	8 Year Project	Strategic:	Reliability & Capacity		
Dept., Area:	T&D - Substation & Transmission Engineering	Operational:	Operations require execution to perform at current levels		
Owner:	Mike Magruder	Business Risk:	ERM Reduction >0 and <= 5		
Sponsor:	Howell/H Rosentrater	Project/Program Risk:	High certainty around cost, schedule and resources		
Category:	Project	Assessment Score:	79		
Mandate/Reg. Reference:	n/a	Cost Summary - Increase/(Decrease)			
Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
The existing Noxon Rapids 230 kV Switchyard requires reconstruction due to the present age and condition of the equipment in the station. The existing bus is constructed as strain bus (which has suffered a number of recent failures) and is configured as a single bus with a tie breaker separating the East and West buses. The station is the interconnection point of the Noxon Rapids Hydro Electric Dam as well as a principal interconnection point between Avista and BPA, and as such is a significant asset in the reliable operation of the Western Montana Hydro Complex. Equipment outages within the Station (planned or unplanned) can cause significant curtailments of the local generation output. Due to the significance of the station, a complete rebuild will require coordination with Avista's Energy Resources Department and neighboring utilities, primarily BPA. The Noxon Switchyard Rebuild Project is proposed to be a greenfield Double Bus Double Breaker 230 kV switching station to replace the existing Noxon Switchyard.	Improve station reliability by replacing end of life equipment. Improve equipment capacity ratings where possible.	\$ 24,950,000	\$ -	\$ -	1

Alternatives:		Performance	Cost Summary - Increase/(Decrease)			Business Risk Score
			Capital Cost	O&M Cost	Other Costs	
Status Quo :	The existing Noxon Switchyard will continue to present reliability concerns. Outages caused by equipment failure could cause curtailment of generation and reduced interconnection capacity with neighboring utilities.	n/a	\$ -	\$ -	\$ -	6
Alternative 1:	Replace end of life equipment and strain bus in existing station. This still leaves the station as a single bus, which does not improve single contingency outage possibilities as well as other bus configurations would. Installation of voltage control (reactors) would still be required.		\$ 8,500,000	\$ -	\$ -	0
			\$ -	\$ -	\$ -	0
			\$ -	\$ -	\$ -	0

Timeline



Construction Cash Flows (CWIP)

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 2,925,000	\$ -	\$ -	\$ 4,975,018
2015	\$ 5,475,000	\$ -	\$ -	\$ 10,100,000
2016	\$ 3,000,000	\$ -	\$ -	\$ 3,000,000
2017	\$ 4,200,000	\$ -	\$ -	\$ 5,200,000
2018	\$ 4,200,000	\$ -	\$ -	\$ 5,200,000
2019	\$ 5,000,000	\$ -	\$ -	\$ 4,200,000
2020	\$ 3,500,000	\$ -	\$ -	\$ 3,500,000
Total	\$ 28,300,000	\$ -	\$ -	\$ 36,175,018

Milestones (high level targets)

Jan-Dec 2012	Plan/Scope Project; Initiate Permitting	April-16 - Oct-16	Construction of new station; Line Construction
Jan-Dec 2013	Finalize Scope Options; Process Permitting	April-17 - Oct-17	Construction of new station; Line Construction/Termination
April-14	Receive Permit	April-18 - Oct-18	Construction of new station; Line Construction/Termination/BPA Construction
April-14 - Dec-15	Construct Reactor Station & 230 kV Connection	April-19 - Oct-19	Construction of new station; Line Construction/Termination/BPA Construction
April-14 - Dec-15	Upgrade Strain bus and bus switches in old sub	April-20 - Oct-20	Construction of new station; Line Construction/Termination/BPA Construction
Jan-15 - Dec-15	Design rest of new station; replace old breakers	April-20 - Oct-20	Remove & Salvage old station
April-15 - Oct-15	Construction of new station		

Associated Ers (list all applicable):

2532							
------	--	--	--	--	--	--	--

Mandate Excerpt (if applicable):

--

Additional Justifications:

The existing station has not had equipment upgrades since 2007 due to projected plans for a station rebuild. With the decision to pursue a full station upgrade in a new location, the time it will take to construct this new station will require the old station to remain in operation until at least 2020 by current estimates. It has been decided to replace some of the existing equipment to afford safe and reliable operation of the existing station while the new station is constructed.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: ES NO

Enterprise Tech: ES - attach form NO or Not Required
 Facilities: ES - attach form NO or Not Required
 Capital Tools: ES - attach form NO or Not Required
 Fleet: ES - 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)

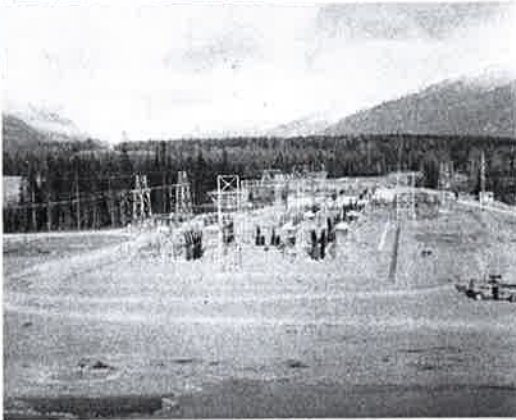
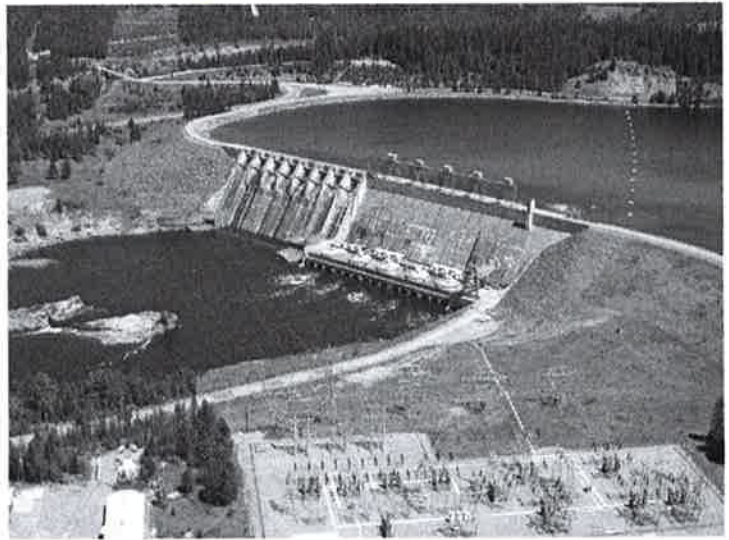
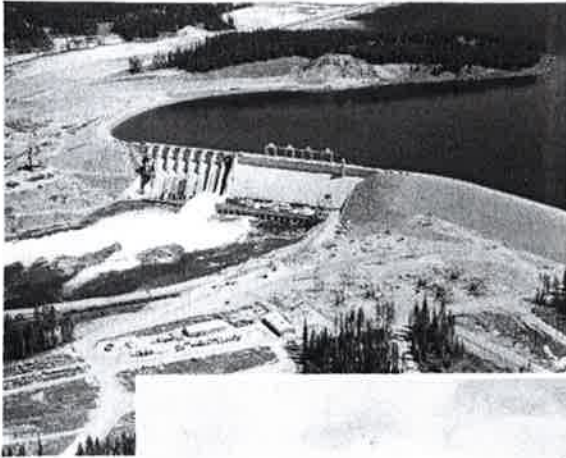
Expected Performance Improvements
 KPI Measure: Complete Reactor Yard/minor station upgrades in 2015.
 Complete remainder of station as time/budget allows.

Prepared _____
 Mike Magruder/Ken Sweigart, T&D - Substations/Transmission

Reviewed _____
 Heather Rosentrater, Director - ENSO

Reviewed _____
 Andy Vickers, Director - GPSS

Margie Stevens



Above: recent picture of the Noxon HED and Switchyard
 Left: Pictures of Noxon Hed and Switchyard shortly after original construction - 1956

Planning and Design Scoping Documents are available upon request.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Noxon Rapids Switchyard Rebuild Project Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *BC*

Date: 2/10/2016

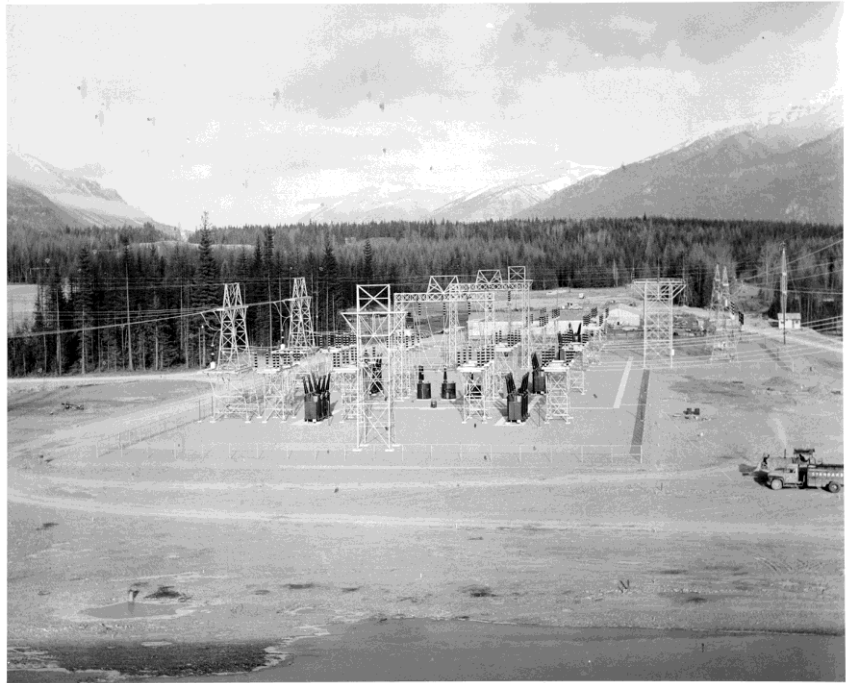
Re: Noxon Rapids Switchyard Rebuild Project Capital Investment Considerations

As discussed in the business case, the existing Noxon Rapids switchyard requires reconstruction due to the present age and condition of the equipment in the station.

The following pages are an excerpt from the *Noxon Rapids Switchyard Rebuild Project* prepared by the System Planning department, which details the underlying need supporting this project. The full report can be provided upon request.

Noxon Rapids Switchyard Rebuild Project

COEUR D'ALENE AREA



TRANSMISSION PLANNING
Prepared by Elizabeth Reese



Noxon Rapids Switchyard Rebuild Project

COEUR D'ALENE AREA

Date Completed:

Prepared By: Elizabeth Reese

With Contributions by: John Gross, Richard Maguire, Tracy Rolstad, and Dean Spratt

The signature below indicates approval by the Director of System Planning. This project report has been conducted with due diligence and has been reviewed by members of the System Planning Group. This approval certifies that this project report is an adequate transmission planning approach for the project of interest.

Scott Waples Director, System Planning

05/18/2012

Date

Version History

Version	Version Date	Action	Change Tracking	Reviewed By
0	18 May, 2012	Final	Planning Review	E. Reese



TABLE OF CONTENTS

1	Executive Summary	4
2	Background	6
3	Problem Statement	7
4	Noxon Switchyard Bus Configuration	8
4.1	Bus Arrangement Background.....	9
4.2	Bus Arrangement Options.....	9
	Option A: Status Quo – No Rebuild	10
	Option B: Double Bus - Double Breaker	10
	Option C: Breaker and a Half	11
	Alternative Options Considered	12
4.3	Comparison of Bus Arrangement Options.....	13
4.4	Transient Stability	16
4.5	Bus Arrangement Summary.....	17
5	Noxon Switchyard Voltage Control	18
5.1	Voltage Control Options	18
	Option 1 – Status Quo	18
	Option 2 – Generator Condensing.....	19
	Option 3 – Bus Reactors	21
	Option 4 – Line Reactor	21
	Option 5 – Line Reactors on Three BPA Transmission Lines.....	23
5.2	Voltage Control Option Comparison	24
5.3	Voltage Control Summary	24
6	Reactor Sizing	25
7	Project Diagram.....	27
8	System Planning Discussion.....	28
9	Future Considerations and Uncertainties	30
10	Conclusion	31
11	Bibliography	32
	Appendix A - Voltage Control Contingency Results	33



Noxon Rapids Switchyard Rebuild Project

COEUR D'ALENE AREA

1 Executive Summary

Noxon Rapids 230 kV Switchyard has been identified by Substation Engineering Department to be in need of being reconstructed because of the present age and condition of the equipment in the switchyard. A high voltage problem has also been identified in the Noxon Switchyard area.

System Planning has completed an assessment to address the following items:

- Bus Arrangement Options,
- Voltage Control Options.

A comprehensive contingency analysis was performed on the bus arrangements which included steady state analysis as well as transient stability analysis. A steady state contingency analysis was performed on the voltage control options.

Bus Configuration:

No Standards violations were observed during the steady state contingency analysis for the present bus arrangement or the two bus reconstruction arrangements that were evaluated. The transient stability simulations were conducted to determine if the bus arrangements would impact the dynamic performance of the system. Acceptable performance was observed for all proposed bus arrangement options based on the applicable Standards.

The current Noxon Switchyard arrangement does not violate the Standards and therefore there is no requirement for a rebuild to meet Planning Standards. If the Noxon Switchyard needs to be reconstructed due to the current condition of the equipment, System Planning recommends the station be constructed as a Double Breaker Double Bus arrangement for the following reasons:

- From a System standpoint, Double Breaker Double Bus (DBDB) is inherently more reliable and provides for more operational flexibility than Breaker and a Half (B&1/2).
- DBDB exceeds all of System Operations' documented requirements for Noxon.



- If we deviate from the existing 230 kV DBDB Standard based on simply meeting “minimum operational requirements”, different requirements may allow for a different 230 kV bus design at each new station (thus Avista has no 230 kV Bus Design Standard).
- All three remaining non DBDB Avista 230 kV stations are expected to be rebuilt as DBDB (due to topological constraints at the various stations) which would make B&1/2 at Noxon a “one off” for our 230 kV system.
- The additional cost (\$2.3M for Greenfield) of DBDB is a low cost “insurance policy” against regulatory risk and future uncertainty at the station.

Voltage Issues:

The steady state contingency analysis performed on the present switchyard with respect to the voltage at Noxon Switchyard confirms findings from the Operations group that there are voltage violations at the station under various operating conditions. Based on the simulations performed, the bus reactor option exhibits superior performance of the options considered and is the recommended voltage control option. Whether or not reconstruction is found to be necessary, it is recommended that bus reactors be installed in the Noxon Rapids 230 kV Switchyard.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Street Light Management

ER No: 2584 **ER Name:** Street Light Conversion to LED Fixtures

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$6,960¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,500	240	180	120	90	60	60	60	60	90	120	180	240
2017	2,353	196	196	196	196	196	196	196	196	196	196	196	196
2018	2,377	198	198	198	198	198	198	198	198	198	198	198	198

Business Case Description:

Street Light Maintenance Program. This program is a five-year planned replacement of bulbs and ten-year planned replacement of photocells. This alternative has the starterboards running to failure.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Street Light Management				
Requested Amount	\$475,000				
Duration/Timeframe	Indefinite	2014			
Dept., Area:	Operations				
Owner:	Glenn Madden				
Sponsor:	Cox/H Rosentrater				
Category:	Program				
Mandate/Reg. Reference:	n/a				
Assessments:	Financial:	7.92%			
	Strategic:	Life-cycle asset management			
	Business Risk:	Business Risk Reduction >5 and <= 10			
	Program Risk:	Moderate certainty around cost, schedule and resources			
Assessment Score:	89				
Recommend Program Description:	Annual Cost Summary - Increase/(Decrease)				
	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Street Light Maintenance Program. This program is a 5 year planned replacement of bulbs and 10 year planned replacement of photocells. This alternative has the starterboards running to failure.	7.92%	\$ 475,000	\$ (250,000)	\$ (750,000)	8

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
			Capital Cost	O&M Cost	Other Costs	
Unfunded Program:	The lights are currently maintained based on customer feedback and/or due to being noticed by an Avista employee. Many street lights are out for long periods of time which can put us at risk. We also spend a large amount of time driving from issue to issue.	6.29% 2 - S3 event in 10 years	\$ -	\$ 1,500,000	\$ 1,800,000	16
Alternative 1:	Street Light Maintenance Program. This program is a 5 year planned replacement of bulbs and 10 year planned replacement of photocells. This alternative has the starterboards running to failure.	7.92% 1.5 - S3 event in 10 years	\$ 475,000	\$ (250,000)	\$ (750,000)	8
Alternative 2:	Street Light Maintenance Program. This program is a 5 year planned replacement of bulbs and starterboards and a 10 year planned replacement of photocells.	7.28% 1 - S3 event in 10 years	\$ 890,000	\$ (250,000)	\$ (1,175,000)	12
Alternative 3:	Street Light Maintenance Program. This program is a 5 year planned replacement of bulbs and a 10 year planned replacement of photocells and starterboards.	7.82% 1 - S3 event in 10 years	\$ 895,000	\$ (250,000)	\$ (1,165,000)	12

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ 475,000	\$ (250,000)	\$ -	\$ -
2015	\$ 484,500	\$ (500,000)	\$ -	\$ 2,400,000
2016	\$ 494,190	\$ (750,000)	\$ -	\$ 1,500,000
2017	\$ 504,074	\$ (1,000,000)	\$ -	\$ 2,720,000
2018	\$ -	\$ -	\$ -	\$ 2,740,000
2019	\$ -	\$ -	\$ -	\$ 2,320,000
2020	\$ -	\$ -	\$ -	\$ 4,000,000
Total	\$ 1,957,764	\$ (2,500,000)	\$ -	\$ 11,680,000

2584			
------	--	--	--

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
2584	\$ -	\$ 475,000	\$ 484,500	\$ 494,190	\$ 504,074	\$ 1,957,764	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 475,000	\$ 484,500	\$ 494,190	\$ 504,074	\$ 1,957,764	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: ES NO

Enterprise Tech: ES - attach form NO or Not Required
 Facilities: ES - attach form NO or Not Required
 Capital Tools: ES - attach form NO or Not Required
 Fleet: ES - 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).

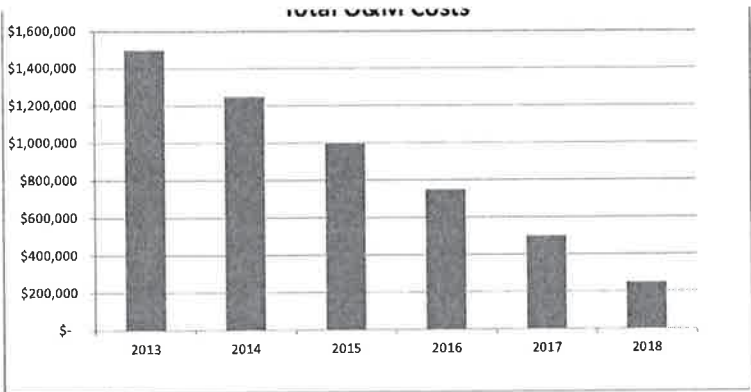
Key Performance Indicator(s)

Expected Performance Improvements

KPI Measure: Monitoring the OM spending on street lights
 Monitor the number of lights maintained per year

Prepared

Total O&M Costs



Reviewed _____
Director/Manager

Other Party Review (if necessary) *Margie Stewens* _____
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

To: Street Light Management Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/12/2016

Re: Street Light Management Capital Investment Considerations

This programmatic business case is a business case based upon an asset management program. The Electric Distribution System 2016 Asset Management Plan has been included as Exhibit No. __ (HLR-6). Additional information regarding the Street Light Management business case can be found therein at pages 9 and 46.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Substation - Capital Spares

ER No: **ER Name:**
2000 Substation – Capital Spares

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$13,830¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	5,200	0	0	0	0	650	0	0	900	3,250	400	0	0
2017	4,565	0	250	0	350	650	0	0	500	2,415	400	0	0
2018	5,065	0	250	565	0	700	0	0	400	2,750	400	0	0

Business Case Description:

This program maintains our fleet of Power Transformers and High Voltage Circuit Breakers. This fleet of critical apparatus is capitalized upon receipt and placed in service for both planned and emergency installations as required. The annual program expenditures may vary significantly in years when an Autotransformer (230/115 kV) is purchased. In years without an Autotransformer purchase, only minor variations will occur based on planned projects as well as replenishing apparatus fleet levels required for adequate capital spares. These are long lead time items so apparatus levels need to be managed.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Substation - Capital Spares	Assessments:	
Requested Amount	\$4,720,000	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	50 Year Program	Strategic:	Life Cycle Programs
Dept., Area:	T&D - Substation Engineering	Operational:	Operations require execution to perform at current levels
Owner:	Heather Rosentrater	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Heather Rosentrater	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 maintains our fleet of Power Transformers and High Voltage Circuit Breakers. This fleet of critical apparatus is capitalized upon receipt and placed in service for both planned and emergency installations as required. The annual program expenditures may vary significantly in years when an Autotransformer (230/115 kV) is purchased. In years without an Autotransformer purchase, only minor variations will occur based on planned projects as well as replenishing apparatus fleet levels required for adequate capital spares. These are long lead time items so apparatus levels need to be managed.	Renew asset life cycle; meet capacity requirements; adequate spare inventory	\$ 4,720,000	\$ -	\$ -	1

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	We will not have vital system capital spares required to maintain our electric system in the event of failures (emergency), planned system improvements (reliability), or obligation to serve (growth). In addition, some of this apparatus may be required for compliance upgrades in reliability and capacity.	n/a	\$ -	\$ 500,000	\$ 250,000	8
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	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
5 years of costs

Associated Ers (list all applicable):

	Capital Cost	O&M Cost	Other Costs	Approved	1006	2000	2001
2012	\$ 3,835,000	\$ -	\$ -	\$ 2,535,000			
2013	\$ 4,865,000	\$ -	\$ -	\$ 5,225,100			
2014	\$ 5,115,000	\$ -	\$ -	\$ 1,950,000			
2015	\$ 9,045,000	\$ -	\$ -	\$ 4,000,000			
2016	\$ 4,265,000	\$ -	\$ -	\$ 4,565,000			
2017	\$ 5,800,000	\$ -	\$ -	\$ 4,200,000			
2018	\$ 3,865,000	\$ -	\$ -	\$ 5,065,000			
2019	\$ -	\$ -	\$ -	\$ 4,025,000			
2020							
Total	\$ 36,790,000	\$ -	\$ -	\$ 31,565,100			
7-year average annual projected spend:				\$ 3,934,300			

Mandate Excerpt (if applicable):

Obligation to serve: Long lead time capital spares are required to meet system needs and service expectations.

Additional Justifications:

Transformers and High Voltage Circuit Breakers (capital spares) are placed in service based on requirements and need. Replacement transformers and breakers are purchased to maintain required capital spares count. This is managed closely by Substation Engineering with annual reviews of capital spares and planned needs. In general, this is a Life Cycle Program for these assets. This Program also includes a Reliability and Capacity (improved reliability and growth) component as well as a Mandatory (Compliance) component. Commodity pricing and manufacturer lead times can be variable which can lead to increased costs and/or delayed receipt.

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"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
Contract Labor:	<input checked="" type="checkbox"/> ES	<input type="checkbox"/> O		Facilities:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
				Capital Tools:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
				Fleet:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required

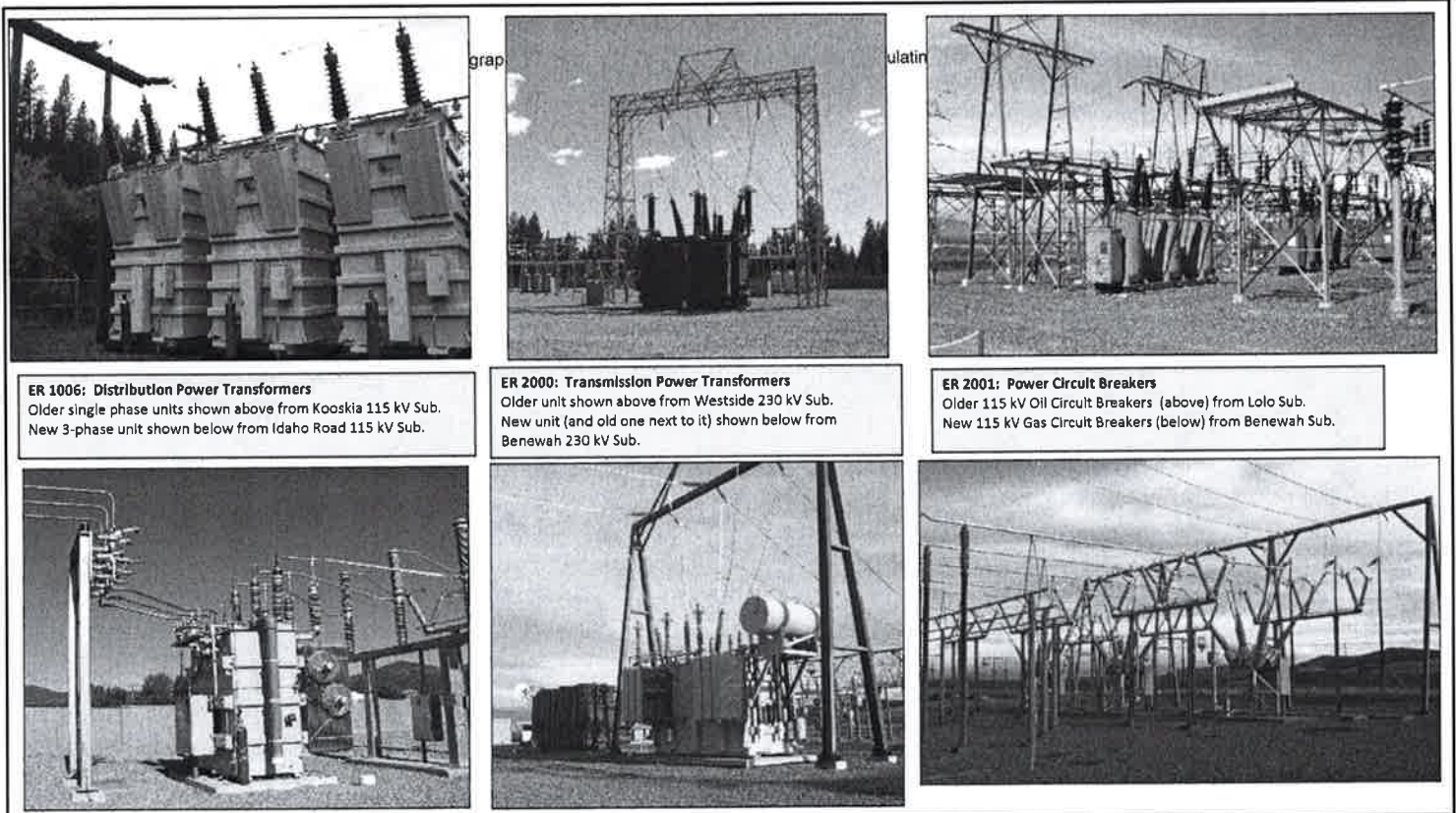
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)	
Expected Performance Improvements	
KPI Measure:	Annual capital spares review and summary report.
	Every capital spare will be justified.

Prepared _____
Mike Magruder, Manager - Substation Engineering

Reviewed _____
Heather Rosentrater, Director - ENSO

Other Party Review signature Maqui Stevens
(if necessary) Director/Manager



ER 1006: Distribution Power Transformers
Older single phase units shown above from Kooskia 115 kV Sub.
New 3-phase unit shown below from Idaho Road 115 kV Sub.

ER 2000: Transmission Power Transformers
Older unit shown above from Westside 230 kV Sub.
New unit (and old one next to it) shown below from Benawah 230 kV Sub.

ER 2001: Power Circuit Breakers
Older 115 kV Oil Circuit Breakers (above) from Lolo Sub.
New 115 kV Gas Circuit Breakers (below) from Benawah Sub.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Substation Capital Spares Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *Be*

Date: 2/12/2016

Re: Substation Capital Spares Capital Investment Considerations

As discussed in the business case, which provides a concrete description of the purpose of the business case, this programmatic business case addresses the maintenance of the Company's fleet of power transformers and high voltage circuit breakers. The Company's ability to provide reliable service is tied to both its ability to promptly repair damaged equipment and its ability to conduct planned system improvements or install new equipment to serve new customer connections.

Each of these instances is predicated upon having the requisite supplies available when needed. Due to the long lead times associated with the acquisition of power transformers and high voltage circuit breakers, a fleet of replacement assets must be maintained. Per communication with Substation Engineering, the Substation Apparatus Engineer regularly monitors the Company's major equipment fleet (substation transformers and high voltage circuit breakers) to ensure that the appropriate amount of spares are in stock.

The consequence of not investing in maintaining appropriate safety stock of these items is the possibility that the Company would be unable to repair damaged equipment or respond to the changing needs of customers (either load growth in an area or other needed improvements related to substation capital equipment), which would negatively impact Avista's ability to reliably serve its customers.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: SCADA - System Operations & Backup Control Center

ER No: 2277
ER Name: SCADA Upgrade

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$2,996¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,002	84	84	84	84	84	84	84	84	84	84	84	84
2017	1,044	87	87	87	87	87	87	87	87	87	87	87	87
2018	920	77	77	77	77	77	77	77	77	77	77	77	77

Business Case Description:

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).

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	SCADA - SOO and BUCC
Requested Amount	Average capital amt 2013-18 is \$986,600
Duration/Timeframe	20 Year Program
Dept., Area:	T&D - SCADA - System Operations
Owner:	Craig Figart/Brad Calbick
Sponsor:	Howell/H Rosentrater
Category:	Program
Mandate/Reg. Reference:	WECC/NERC/FERC

Assessments:	
Financial:	7.00%
Strategic:	Reliability & capacity
Business Risk:	Business Risk Reduction >5 and <= 10
Program Risk:	High certainty around cost, schedule and resources

Recommend Program Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
<p>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). There are multiple risks if these Business Case funds were not expended. The clearest risk would be to public and personnel safety. The control systems supported by this business case provide real-time visibility, situational awareness, and control of Avista's electrical system. Degradation of these capabilities due to lack of capacity, capability, or aging systems would present increased safety risk. Additionally there would be significant compliance risk if these funds were not expended. These control systems provide the capability required to achieve compliance with numerous reliability standards and requirements. For the electrical system these include the NERC standards BAL, COM, CIP, EOP, INT, PER, PRC, TOP, and VAR. For the gas system these include the PHMSA "Pipeline Safety: Control Room Management/Human Factors" rule (49 CFR Parts 192 and 195.) The expenditure of these funds is necessary to operate Avista's electric and gas systems in a safe, reliable, and compliant manner.</p>	Improved performance, upgraded equipment, better status & control, new life cycle.	\$ 1,036,000	\$ 473,926	\$ -	2

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
<p>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.</p>	Severe negative system reliability and compliance impacts	\$ -	\$ 100,000	\$ 500,000	12
<p>Alternative 1: Brief name of alternative (if applicable) Describe other options that were considered</p>	describe any incremental changes in operations	\$ -	\$ -	\$ -	2
<p>Alternative 2: Brief name of alternative (if applicable) Describe other options that were considered</p>	describe any incremental changes in operations	\$ -	\$ -	\$ -	0
<p>Alternative 3 Name: Brief name of alternative (if applicable) Describe other options that were considered</p>	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,090,500	\$ -	\$ -	\$ 1,028,500
2015	\$ 1,020,000	\$ 473,926	\$ -	\$ 735,000
2016	\$ 1,002,000	\$ 487,158	\$ -	\$ 1,002,000
2017	\$ 1,044,000	\$ 503,915	\$ -	\$ 1,044,000
2018	\$ 920,000	\$ 518,323	\$ -	\$ 920,000
2019	\$ 1,013,000	\$ 533,317	\$ -	\$ 1,013,000
2020+	\$ 920,000	\$ 548,312	\$ -	\$ 920,000
Total	\$ 7,009,500	\$ 3,064,951	\$ -	\$ 6,662,500

Associated Ers (list all applicable):

2277		

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
2277	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	<p>NERC reliability standards are being continually changed. New and changed standards are expected which will address emergency operations, transmission operations, critical infrastructure protection, communications, and balancing authority operations. Gas Control Room Management</p> <p>Additional Justifications: This program replaces and/or upgrades existing control center telecommunications and computing systems for a number of reasons including, end of useful life, increased capacity requirements, and new operational and regulatory requirements. Cuts to this program need to be closely evaluated to assure that reliable and compliant operations are not impacted.</p>
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: Yes No

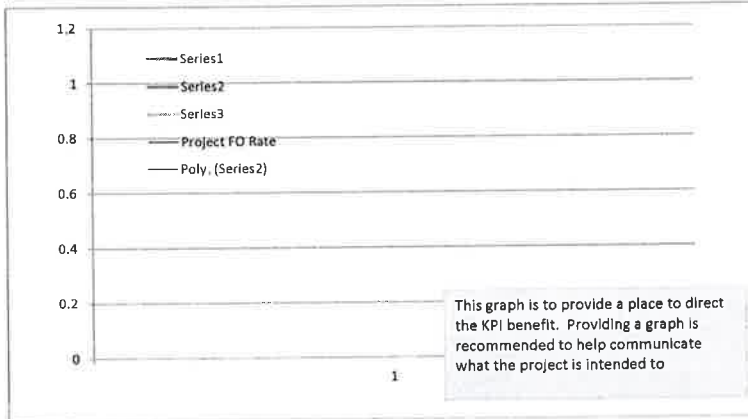
Enterprise Tech: YES - attach form NO or Not Required
 Facilities: YES - attach form NO or Not Required
 Capital Tools: YES - attach form NO or Not Required
 Fleet: YES - attach form NO or Not Required

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

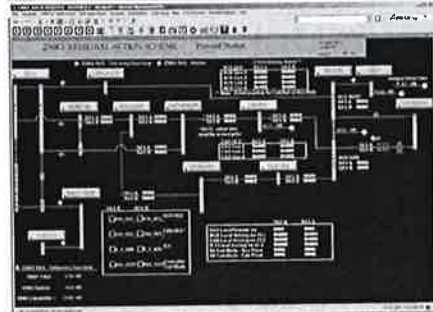
KPI Measure: Fill in the name of the KPI here
 Fill in the name of the KPI here



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature Director/Manager
 (if necessary) *Margie Stevens*



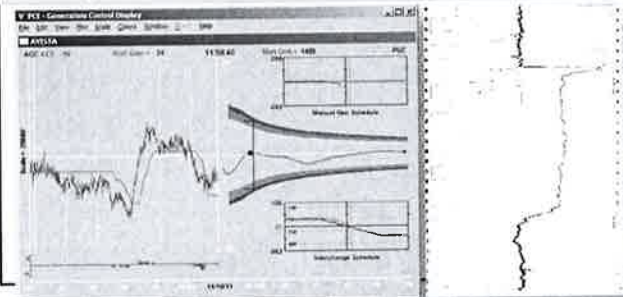
Transmission Operations – Certified System Operators monitor system conditions round-the-clock. They perform switching operations, maintain system voltage, and respond to abnormal conditions. Constant communication occurs with neighboring systems and regional authorities to assure system reliability. 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 Lists

Var Name	Min Value	Max Value	Min Value	Max Value
1. VAR001	0.000	1.000	0.000	1.000
2. VAR002	0.000	1.000	0.000	1.000
3. VAR003	0.000	1.000	0.000	1.000
4. VAR004	0.000	1.000	0.000	1.000
5. VAR005	0.000	1.000	0.000	1.000
6. VAR006	0.000	1.000	0.000	1.000
7. VAR007	0.000	1.000	0.000	1.000
8. VAR008	0.000	1.000	0.000	1.000
9. VAR009	0.000	1.000	0.000	1.000
10. VAR010	0.000	1.000	0.000	1.000

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 unnecessary mechanical stress while maximizing our compliance with control



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-



To be completed by Capital Planning Group

Rationale for decision

Review Cycles
2012-2016

Date	Template

To: SCADA – SOO & BUCC Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations 

Date: 2/12/2016

Re: SCADA – SOO & BUCC Capital Investment Considerations

As discussed in the business case:

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).

There are multiple risks if these Business Case investments are not made. The clearest risk would be to public and personnel safety. The control systems supported by this business case provide real-time visibility, situational awareness, and control of Avista's electrical system. Degradation of these capabilities due to lack of capacity, capability, or aging systems would present increased safety risk. Additionally there would be significant compliance risk if these investments were not made. These control systems provide the capability required to achieve compliance with numerous reliability standards and requirements. For the electrical system these include the NERC standards BAL, COM, CIP, EOP, INT, PER, PRC, TOP, and VAR. For the gas system these include the PHMSA "Pipeline Safety: Control Room Management/Human Factors" rule (49 CFR Parts 192 and 195.) These investments are necessary to operate Avista's electric and gas systems in a safe, reliable, and compliant manner.

Given the significant influence of regulatory compliance on this investment, the need for this investment is clear.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Substation - Asset Mgmt. Capital Maintenance

ER No: ER Name:

2215 System - Replace High Voltage Breakers
 2252 System - Replace/Install Relays
 2253 System - Upgrade Meters
 2275 System - Rock/Fence Restore
 2278 System-Replace Obsolete Reclosers
 2280 System - Replace Obsolete Circuit Switchers
 2283 Millwood Sub - Rebuild
 2293 SCADA - Install/Replace
 2294 System - Batteries
 2336 System - Replace Dist Power Xfmrs
 2425 System - High Voltage Fuse Upgrades
 2449 System - Replace Substation Air Switches
 2481 System-Replace/Install Capacitor Banks
 2492 System-Install Autotransformer Diagnostic Monitor
 2493 System-Replace/Upgrade Voltage Regulators

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$12,300¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	4,118	297	27	447	89	705	114	297	27	487	239	1,350	39
2017	4,151	300	29	450	92	708	117	300	29	490	242	1,353	42
2018	4,192	304	33	454	95	711	120	304	33	494	245	1,356	45

Business Case Description:

This program installs, replaces, or upgrades substation apparatus via Asset Management planning or emergency replacements. All obsolete, end-of-life, or failed apparatus are covered under this program. Apparatus includes panel houses and associated equipment, HV breakers, relays, metering, surge arresters, rock and fence, LV breakers/reclosers, circuit switchers, SCADA systems, batteries and chargers, power transformers, HV fuses, air switches, capacitor banks, autotransformer diagnostic equipment, step voltage regulators, and instrument transformers.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Substation - Asset Mgmt. Capital Maintenance	Assessments:	
Requested Amount	\$4,100,000	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	40 Year Program	Strategic:	Life Cycle Programs
Dept., Area:	T&D - Substation Engineering	Operational:	Operations require execution to perform at current levels
Owner:	Heather Rosentrater	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Heather Rosentrater	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 installs, replaces, or upgrades substation apparatus via Asset Management planning or emergency replacements. All obsolete, end-of-life, or failed apparatus are covered under this program. Apparatus includes panelhouses and associated equipment, HV breakers, relays, metering, surge arresters, rock and fence, LV breakers/reclosers, circuit switchers, SCADA systems, batteries and chargers, power transformers, HV fuses, air switches, capacitor banks, autotransformer diagnostic equipment, step voltage regulators, and instrument transformers.	Renew asset life cycle; remove obsolete, end of life apparatus; upgrade; install new apparatus	\$ 4,100,000	\$ -	\$ -	2

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program: Maintain (to the best of our ability) all obsolete or end-of-life apparatus. Repair or replace equipment on emergency basis only. Some repairs would not be possible due to obsolescence. Considerably more, and longer, customer outages would result.	n/a	\$ 500,000	\$ 1,000,000	\$ 500,000	12
Alternative 1: Brief name of alternative (if applicable) Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	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

5 years of costs	Capital Cost	O&M Cost	Other Costs	Approved
2012	\$ 4,100,000	\$ -	\$ -	\$ 4,100,000
2013	\$ 4,100,000	\$ -	\$ -	\$ 4,582,020
2014	\$ 4,100,000	\$ -	\$ -	\$ 4,100,000
2015	\$ 4,100,000	\$ -	\$ -	\$ 4,100,000
2016	\$ 4,100,000	\$ -	\$ -	\$ 4,100,000
2017	\$ 4,100,000	\$ -	\$ -	\$ 4,100,000
2018	\$ 4,100,000	\$ -	\$ -	\$ 4,100,000
2019	\$ -	\$ -	\$ -	\$ 4,100,000
2020				
Total	\$ 28,700,000	\$ -	\$ -	\$ 33,282,020

Associated Ers (list all applicable):

2210	2215	2252	2253	2260
2275	2278	2280	2293	2294
2326	2336	2343	2397	2425
2449	2481	2492	2493	2505

Mandate Excerpt (if applicable):

Additional Justifications:

In general, this program is required for operations to perform at current levels as assessed above. However, it could easily be argued that the end results of Capital Maintenance actually improve operations beyond current levels as obsolete equipment is often replaced with apparatus of higher capacity and/or newer technology. If prudent, and if time, resources, and funding allow, we will take every opportunity to make improvements to substation operations when we perform Capital Maintenance.

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"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
Contract Labor:	<input checked="" type="checkbox"/> ES	<input type="checkbox"/> O		Facilities:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
				Capital Tools:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
				Fleet:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O 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:	Meet AM Plan Requirements for all Apparatus
	Maintain or Increase annual program spend to meet demand

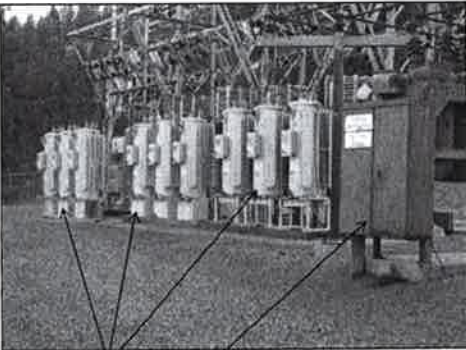
Prepared _____
Mike Magruder, Manager - Substation Engineering

Reviewed _____
Heather Rosentrater, Director - ENSO


Reviewed _____
Andy Vickers, Director - GPSS

Magruder

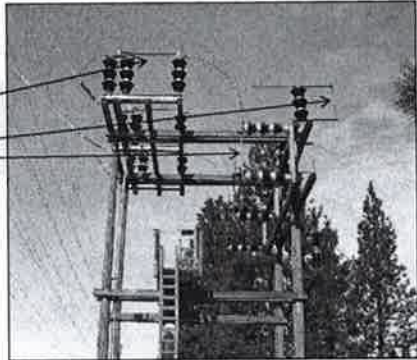
Capital Maintenance - Apparatus



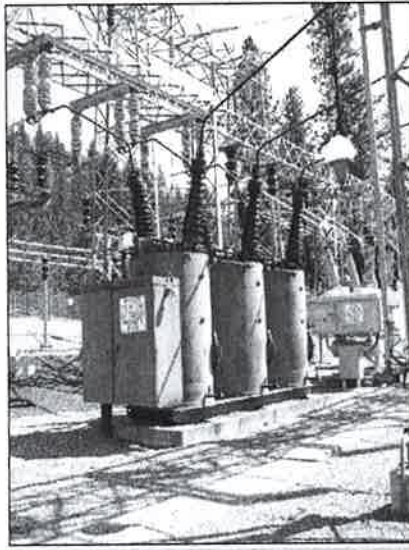
Step Voltage Regulators
LV (13 kv) Breaker
Sunset Substation




Electromechanical Relays
Westside Substation



Hern Substation
115 kv Air Switch
115 kv Spill Gaps (to be replaced with Surge Arresters)
HV Fuses



Sunset Substation - 115 kv Oil Circuit Breaker A-198
HV Breaker - oldest breaker on Avista's system.



Instrument Transformer
Old 3-phase bus PT
Sunset Substation

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Substation Asset Management Capital Maintenance Business Case 2016 Washington
GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *BC*

Date: 2/12/2016

Re: Substation Asset Management Capital Maintenance Capital Investment Considerations

This business case covers investment driven by the Company's asset management programs associated with Avista's electric substations. The business case also covers the replacement of obsolete or end-of-life assets or emergency replacement of damaged or otherwise failed apparatus.

The asset management programs represent proactive maintenance of the Company's substations to optimize lifetime value of Avista's assets. The replacement of obsolete, end-of-life, or failed apparatus represents reactive maintenance that is non-discretionary and must be performed to maintain system operations.

The Electric Substation 2016 System Review performed by Asset Management has been included as Exhibit No. __ (HLR-8) and includes discussion of the ongoing asset management plans.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Substation - Distribution Substation Rebuilds

ER No:	ER Name:		
2204	System Wood Substation Rebuilds	2567	Chester 115 kV - Rebuild Substation
2285	Sunset Sub - Rebuild	2568	Metro 115 kV - Rebuild Substation
2317	Lyons & Standard 115 Sub-Increase Capacity	2569	Gifford 115 kV - Rebuild Substation
2341	Ninth & Central Sub - Increase Capacity &	2889	Mobile Substn–Purchase New Mobile Subs
2502	N. Moscow - Increase Capacity	2590	Deer Park 115 kV Sub – Minor Rebuild
2522	10th & Stewart Dx Int	2395	SE 115 Bus-Upgrd Xfmr and add 12F6
2546	Blue Creek 115 kV - Rebuild	2572	Noxon Construction Sub - Minor Rebuild
2562	Grangeville 115 kV Sub - Rebuild	2573	Little Fall 115 kV Sub – Rebuild
2563	Stratford 115kV - Upgrade Bus	2889	Mobile Substn–Purchase New Mobile Subs
2566	Northwest 115 kV - Rebuild Substation		

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$22,510¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	4,260	0	0	0	0	200	0	610	0	1,050	0	1,900	500
2017	5,640	0	0	0	0	0	0	2,100	0	0	0	1,590	1,950
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

This program replaces and/or rebuilds existing substations as they reach the end of their useful lives, require increased capacity, or cannot accommodate necessary equipment upgrades due to existing physical constraints. Included are Wood Sub rebuilds as well as upgrading stations to current design and construction standards. Some station rebuilds may be initiated by other requirements, including obligation to serve, growth, and external projects (e.g. Smart Grid). Examples of substation rebuilds to be completed under this program in the next 5 years are Big Creek & Kamiah (Wood Subs), Millwood (Life Cycle), Turner (SGIG), Blue Creek (Productivity), Lucky Friday (Growth), and Pine Creek Distribution (Life Cycle).

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Substation - Distribution Station Rebuilds	Assessments:	
Requested Amount	\$8,168,573	Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	50 Year Program	Strategic:	Life Cycle Programs
Dept., Area:	T&D - Substation Engineering	Operational:	Operations improved beyond current levels
Owner:	Mike Magruder	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Howell/H Rosentrater	Program Risk:	High certainty around cost, schedule and resources
Category:	Program	Assessment Score:	105
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 replaces and/or rebuilds existing substations as they reach the end of their useful lives, require increased capacity, or cannot accommodate necessary equipment upgrades due to existing physical constraints. Included are Wood Sub rebuilds as well as upgrading stations to current design and construction standards. Some station rebuilds may be initiated by other requirements, including obligation to serve, growth, and external projects (e.g. Smart Grid). Examples of substation rebuilds to be completed under this program in the next 5 years are Big Creek & Kamiah (Wood Subs), Millwood (Life Cycle), Turner (SGIG), Blue Creek (Productivity), Lucky Friday (Growth), and Pine Creek Distribution (Life Cycle).	Improved performance, upgraded equipment, better status & control, new life cycle.	\$ 8,168,573	\$ -	\$ -	1
		Annual Cost Summary - Increase/(Decrease)			

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Obsolete and/or high loss equipment, deteriorated wood structures, and non-standard construction or equipment would remain in service until failure. Some stations may need additional capacity for growth or may not be suitable for required expansions to meet other (e.g. Regulatory, SGIG) needs.	\$ 1,000,000	\$ 500,000	\$ 250,000	8
Alternative 1: Planned Equipment Replacements.	Continuation of non-standard construction practices and configurations leading to considerably slower and more dangerous working conditions for field crews. This would only allow for minimal improvements to the subs while requiring more O&M to maintain aging infrastructure and equipment.	\$ 1,500,000	\$ 500,000	\$ -	4
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				Associated Ers (list all applicable):				
5 years of costs				2204	2283	2285	2341	2465
	Capital Cost	O&M Cost	Other Costs	Approved	2502	2521	2522	2546
					2563	2565	2566	2567
					2569	2572	2573	2568
2012	\$ 7,750,000	\$ -	\$ -	\$ 7,750,000				
2013	\$ 8,350,000	\$ -	\$ -	\$ 4,798,013				
2014	\$ 7,680,000	\$ -	\$ -	\$ 5,866,082				
2015	\$ 7,635,000	\$ -	\$ -	\$ 837,140				
2016	\$ 5,910,000	\$ -	\$ -	\$ 5,500,000				
2017	\$ 6,180,000	\$ -	\$ -	\$ 6,590,000				
2018	\$ 10,420,000	\$ -	\$ -	\$ 10,420,000				
2019	\$ 10,530,000	\$ -	\$ -	\$ 10,530,000				
2020	\$ 7,400,000	\$ -	\$ -	\$ 7,400,000				
Total	\$ 71,855,000	\$ -	\$ -	\$ 52,291,235				
7-year average projected spend:				\$ 5,965,891				

Mandate Excerpt (if applicable):
Obligation to serve: Specific substations may require rebuild for increased capacity due to load growth.

Additional Justifications:
This program replaces substations that are at the end of their life cycle or require rebuild for other reasons including capacity, reliability, growth, and contractual or regulatory obligations. Some substations, like Lucky Friday, could be standalone projects under the Mandatory category since we have to meet customer load growth. Therefore, cuts to this program need to be closely evaluated.
Program Link: Substation transmission integration budget dollars (\$415k - \$435k) are included in this program.
Program Link: Substation distribution integration budget dollars (\$300k - \$1.15M) are included in this 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 type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> IO 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 type="checkbox"/> YES <input checked="" type="checkbox"/> IO	Facilities: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> IO or Not Required	
	Capital Tools: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> IO or Not Required	
	Fleet: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> IO or Not Required	

Key Performance Indicator(s)
Expected Performance Improvements

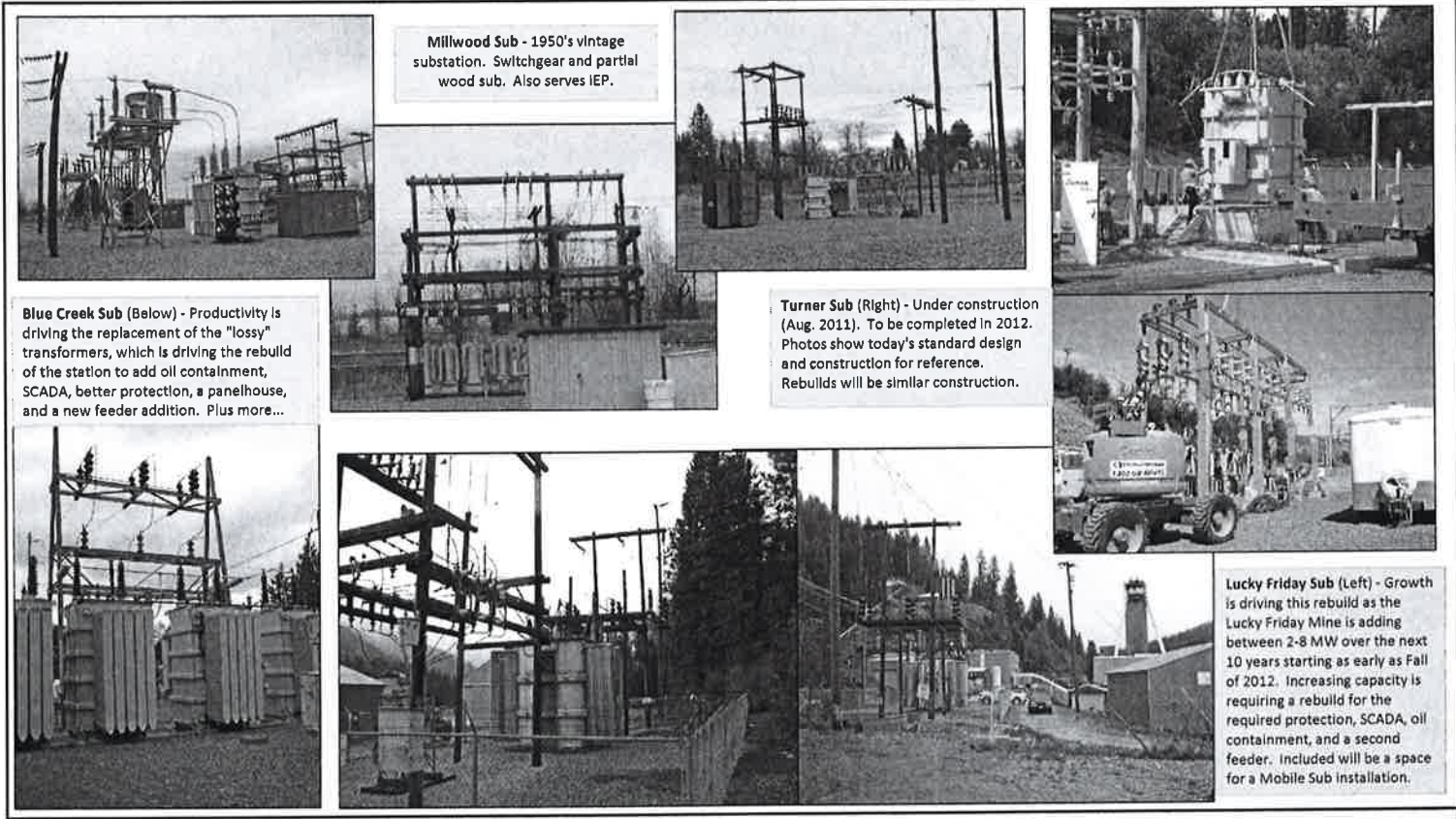
KPI Measure:	Complete 3 rebuilds per year.
	Complete Metro Sub EPC Rebuild by 2018.

Prepared _____
Mike Magruder, Manager - Substation Engineering

Reviewed _____
Heather Rosentrater, Director - ENSO

Reviewed _____
Andy Vickers, Director - GPSS

Mauri Stevens



Millwood Sub - 1950's vintage substation. Switchgear and partial wood sub. Also serves IEP.

Blue Creek Sub (Below) - Productivity is driving the replacement of the "lossy" transformers, which is driving the rebuild of the station to add oil containment, SCADA, better protection, a panelhouse, and a new feeder addition. Plus more...

Turner Sub (Right) - Under construction (Aug. 2011). To be completed in 2012. Photos show today's standard design and construction for reference. Rebuilds will be similar construction.

Lucky Friday Sub (Left) - Growth is driving this rebuild as the Lucky Friday Mine is adding between 2-8 MW over the next 10 years starting as early as Fall of 2012. Increasing capacity is requiring a rebuild for the required protection, SCADA, oil containment, and a second feeder. Included will be a space for a Mobile Sub installation.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Substation Distribution Station Rebuilds Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *Be*

Date: 2/12/2016

Re: Substation Distribution Station Rebuilds Capital Investment Considerations

As discussed on the business case form, this business case covers investment driven by the need to replace or rebuild substations as they reach the end of their useful lives, require increased capacity, or cannot accommodate necessary equipment upgrades due to existing physical constraints. This business case includes the rebuild of wood substations [which are discussed in further detail in the Electric Substation 2016 System Review performed by Asset Management, included as Exhibit No.__(HLR-8)].

The replacement or rebuild of substations due to end-of-life considerations, requirements for increased capacity, or the inability to accommodate necessary equipment due to physical constraints all represent reactive, non-discretionary investments needed to maintain the operability of the Company's substations.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Worst Feeders

ER No: ER Name:
2414 Sys-Dist Reliability-Improve Worst Feeders

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$6,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,500	0	0	0	0	0	0	0	0	100	0	0	1,400
2017	2,499	0	0	0	0	0	0	0	0	0	0	0	2,499
2018	2,000	0	0	0	0	0	0	0	0	0	0	0	2,000

Business Case Description:

Initiating in 2009, ER 2414- "Worst Feeders" was proposed by Asset Management to improve the service reliability of the Company's worst-performing electric distribution circuits. Many rural feeders significantly exceed the Company SAIFI target of 2.1. This program is coordinated through divisional Area Engineers to identify treatment of these feeders. Work plans may include, reconstruction, hardening, vegetation management, conversion from OH to UG, enhanced protection, and relocation.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Underperforming Elec Ckts (Worst FDRs)	Assessments:	
Requested Amount	\$2,000,000	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	on-going Year Program	Strategic:	Life Cycle Programs
Dept., Area:	Engineering/Operations	Operational:	Operations require execution to perform at current levels
Owner:	Rosentrater/James (updated July 16, 2014)	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Heather Rosentrater	Program Risk:	Moderate certainty 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
Initiating in 2009, ER 2414- "Worst Feeders" was proposed by Asset Management to improve the service reliability of the Company's worst-performing electric distribution circuits. Many rural feeders significantly exceed the Company SAIFI target of 2.1. This program is coordinated through divisional Area Engineers to identify treatment of these feeders. Work plans may include, reconstruction, hardening, vegetation management, conversion from OH to UG, enhanced protection, and relocation.	Improve the overall system performance of the Company's "top ten" worst feeders.	\$ 2,000,000	\$ -	\$ -	12
		Annual Cost Summary - Increase/(Decrease)			

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Rural area reliability indices expected to worsen as infrastructure ages and deteriorates. Expect customer contacts to local media and state government and regulatory bodies.	\$ -	\$ -	\$ -	20
50% funding	Funding at \$1,000,000 would restrict current treatment to top five worst feeders.	\$ 1,000,000	\$ -	\$ -	12
25% funding	Funding at 500,000 would restrict treatment to enhanced protection only (adding midline reclosers, additional fusing)	\$ 500,000	\$ -	\$ -	0
	describe any incremental changes in operations	\$ -	\$ -	\$ -	0

Program Cash Flows

5 years of costs

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 6,000,000			\$ 5,050,550
2015	\$ 2,000,000	\$ -	\$ -	\$ 1,665,037
2016	\$ 2,000,000			\$ 1,500,000
2017	\$ 2,000,000			\$ 2,500,000
2018	\$ 2,000,000	\$ -	\$ -	\$ 2,000,000
2019	\$ 2,000,000	\$ -	\$ -	\$ 2,000,000
Total	\$ 10,000,000	\$ -	\$ -	\$ 9,665,037

Associated Ers (list all applicable):

Current ER	2414			
------------	------	--	--	--

Mandate Excerpt (if applicable):

Additional Justifications:

Any supplementary information that may be useful in describing in more detail the nature of the Program, the urgency, etc.

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 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).

Section 7

Capital Program Business Case



Key Performance Indicator(s)
Expected Performance Improvements
KPI Measure: Monitor SAIFI



Prepared signature _____

Reviewed signature _____
Director/Manager

Other Party Review signature *Margie Stevens* _____
(if necessary) Director/Manager

Feeder	7-yr Rank	7-yr Ave	3-yr Rank	3-yr Ave	%Dif 3yr v. 1yr	1-yr Rank	% Dif 1yr v 3yr
GRV1273	1	21.02	1	13.07	38%	3	23%
DER651	2	10.44	2	8.97	14%	12	41%
GIF34F2	3	7.40	7	6.32	15%	4	-50%
SPI12F1	4	7.19	3	7.47	-4%	10	21%
STM633	5	7.18	8	6.08	15%	6	-24%
CHW12F3	6	5.58	14	4.73	15%	24	14%
JPE1287	7	5.37	4	6.82	-27%	30	46%
GIF34F1	8	5.19	17	4.11	21%	11	-32%
VAL12F1	9	5.11	6	6.34	-24%	17	24%
CLV34F1	10	5.01	11	5.29	-6%	5	-61%
ROX751	11	4.97	10	5.34	-7%	118	76%
ODN732	12	4.87	9	6.00	-23%	1	-142%
WEI1289	13	4.70	5	6.78	-44%	53	66%
WAL543	14	4.66	19	4.06	13%	26	0%
VAL12F2	15	3.85	20	3.90	-1%	8	-63%

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Worst Feeders Program Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/12/2016

Re: Worst Feeders Program Capital Investment Considerations

This programmatic business case is a business case based upon an asset management program. The Electric Distribution System 2016 Asset Management Plan has been included as Exhibit No.__(HLR-6). Additional information regarding the Worst Feeders Program business case can be found therein at pages 9 and 57.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Transmission - Asset Management

ER No: ER Name:

2057 Transmission Minor Rebuild

2254 System 115kV Air Switch Upgrade

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$5,396¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,772	148	148	148	148	148	148	148	148	148	148	148	148
2017	1,000	83	83	83	83	83	83	83	83	83	83	83	83
2018	630	86	86	86	86	86	86	19	19	19	19	19	19

Business Case Description:

The Transmission Asset Management Business Case covers the follow-up work to the Wood Pole Inspection in ER 2057, and Air Switch Replacements in ER 2254.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Trans Asset Man
Requested Amount	\$1,400,000
Duration/Timeframe	Indefinite Year Program
Dept., Area:	T&D - TLD Engineering
Owner:	Ken Sweigart
Sponsor:	Howell/H Rosentrater
Category:	Program
Mandate/Reg. Reference:	WECC Standard FAC-501-WECC-1

Assessments:	
Financial:	10.00%
Strategic:	Life-cycle asset management
Business Risk:	Business Risk Reduction >0 and <= 5
Program Risk:	High certainty around cost, schedule and resources

Recommend Program Description:	Annual Cost Summary - Increase/(Decrease)				
	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
The Transmission Asset Management Business Case covers the follow-up work to the Wood Pole Inspection in ER 2057, and Air Switch Replacements in ER 2254.	Customer IRR of 8.9%	\$ 1,400,000	\$ 331,000	\$ -	12

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Without replacing old and worn-out poles and cross-arms, our system will be increasing at risk for more failures and more risk of a major fire. As time moves forward, the number of failures and risk of a major fire will increase and increase the difference in costs between the two alternatives.	Higher risk of a transmission line causing a major fire due to pole or crossarm failures	\$ 3,464,530	\$ -	\$ 1,576,000	15
Alternative 1: Brief name of alternative (if applicable)	Replace wood poles and cross-arms identified by inspection and when a significant portion of the transmission line has reached the end of life for the majority of the poles, replace the transmission structures under a larger project. This also covers replacing Transmission Air Switches located outside of the substations that have reached their end of life. For major rebuilds, new conductors would increase the capacity of the system and help reduce transmission losses	Customer IRR of 8.9% and avoids about 580 events per year	\$ 4,205,000	\$ 331,000	\$ -	12
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	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,315,000	\$ 331,823	\$ -	\$ 3,790,000
2015	\$ 1,370,000	\$ 339,455	\$ -	\$ 1,709,455
2016	\$ 1,425,000	\$ 347,262	\$ -	\$ 1,772,262
2017	\$ 1,425,000	\$ 355,249	\$ -	\$ 1,780,249
2018	\$ 1,480,000	\$ 363,420	\$ -	\$ 1,843,420
2019	\$ 1,530,000	\$ 378,117	\$ -	\$ 1,908,117
2020	\$ 1,970,022			\$ 1,970,022
Total	\$ 8,545,000	\$ 2,115,326	\$ -	\$ 12,803,503

Associated Ers (list all applicable):

2057	2254

ER	2014	2015	2016	2017	2018	Total	Mandate Excerpt (if applicable):
2057	\$ 1,431,823	\$ 1,489,455	\$ 1,547,262	\$ 1,555,249	\$ 1,613,420	\$ 7,637,209	The majority of this Program is mandated under NERC Standards FAC-501-WECC-1. Failure to comply with standard could result in large financial penalties.
2254	\$ 215,000	\$ 220,000	\$ 225,000	\$ 225,000	\$ 230,000	\$ 1,115,000	
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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 1,646,823	\$ 1,709,455	\$ 1,772,262	\$ 1,780,249	\$ 1,843,420	\$ 8,752,209	

Resources Requirements: (request forms and approvals attached)

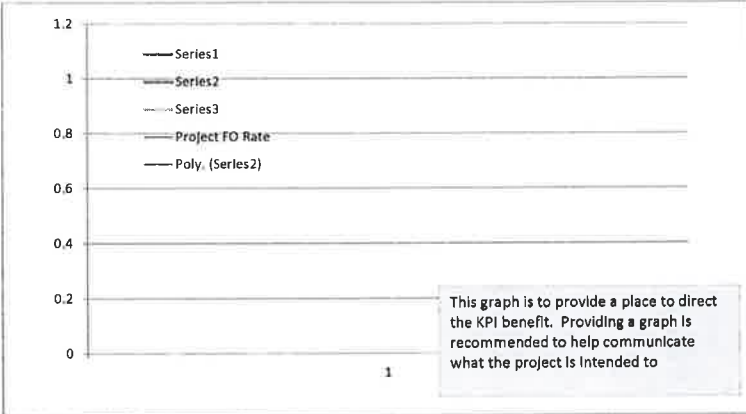
Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input checked="" type="checkbox"/> Medium Probability	<input type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> IO or Not Required
Contract Labor:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO		Facilities:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> IO or Not Required
				Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> IO or Not Required
				Fleet:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> IO 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 *Mary Stevens* 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

To: Transmission Asset Management Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *Be*

Date: 2/12/2016

Re: Transmission Asset Management Capital Investment Considerations

As discussed in the business case form, this business case addresses minor transmission rebuilds (e.g., reconductors or rebuilds, transmission wood pole replacement, etc.) and air switch replacements as identified by the Asset Management group. This investment represents proactive maintenance driven by asset management considerations.

The Electric Transmission System 2016 Asset Management Plan discusses these items in more detail, please see therein at Exhibit No.__(HLR-7).

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Distribution Transformer Change-Out Program ("TCOP")

ER No: ER Name:

2535 TCOP Related Distribution Rebuilds

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$5,800¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	7,654	806	718	630	586	542	542	542	542	586	630	718	806
2017	7,354	758	682	606	568	530	530	530	530	568	606	682	758
2018	3,453	564	496	428	394	360	360	68	68	102	136	204	272

Business Case Description:

The Distribution Transformer Change-Out Program has three main drivers. First, the pre-1981 distribution transformers that are targeted for replacement average 42 years of age and are a minimum of 30 years old. Their replacement will increase the reliability and availability of the system. Secondly, the transformers to be replaced are inefficient compared to current standards and their replacement will result in energy savings. Thirdly, pre-1981 transformers have the potential to have pcb containing oil. The transformers to be removed early in the program are those that are most likely to have pcb containing oil and their replacement will reduce the risk of pcb containing oil spills which are a safety, environmental, and a public relations concern.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Distribution Transformer Change-Out Program	Assessments:	
Requested Amount	\$ 7,000,000	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	25 Year Program	Strategic:	Life Cycle Programs
Dept., Area:	Asset Management & Process Improvement	Operational:	Operations require execution to perform at current levels
Owner:	Glenn Madden	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Cox/H Rosentrater	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
The Distribution Transformer Change-Out Program has three main drivers. First, the pre-1981 distribution transformers that are targeted for replacement average 42 years of age and are a minimum of 30 years old. Their replacement will increase the reliability and availability of the system. Secondly, the transformers to be replaced are inefficient compared to current standards and their replacement will result in energy savings. Thirdly, pre-1981 transformers have the potential to have pcb containing oil. The transformers to be removed early in the program are those that are most likely to have pcb containing oil and their replacement will reduce the risk of pcb containing oil spills which are a safety, environmental, and a public relations concern.	When completed save an average of 5.6 MW per hour and eliminate PCB environmental risks	\$ 5,800,000	\$ 105,000	\$ -	3
Annual Cost Summary - Increase/(Decrease)					

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Unfunded Program:	No planned replacement program for distribution transformers. Substantially higher risk of a pcb containing oil spill occurring.	n/a	\$ 4,500,000	\$ 200,000	\$ 900,000	12
Alternative 1: Transformer Change-Out Program	The Distribution Transformer Change-Out Program has three main drivers. First, the pre-1981 distribution transformers that are targeted for replacement average 42 years of age and are a minimum of 30 years old. Their replacement will increase the reliability and availability of the system. Secondly, the transformers to be replaced are inefficient compared to current standards and their replacement will result in energy savings. Thirdly, pre-1981 transformers have the potential to have pcb containing oil. The transformers to be removed early in the program are those that are most likely to have pcb containing oil and their replacement will reduce the risk of pcb containing oil spills which are a safety, environmental, and a public	When completed save an average of 5.6 MW per hour and eliminate PCB environmental risks	\$ 5,800,000	\$ 105,000	\$ -	3
Alternative 2:	Distribution Engineering has proposed that any pole that the TCOP does work on needs to have the guy replaced with the new standard guy insulator (fiber cable).		\$ 200,000	\$ -	\$ -	0
Alternative 3 Name :			\$ -	\$ -	\$ -	0

Program Cash Flows					Associated Ers (list all applicable):				
5 years of costs					Current ER				
	Capital Cost	O&M Cost	Other Costs	Approved					
2012	\$ 7,000,000	\$ 100,000	\$ -	\$ 6,000,000					
2013	\$ 7,200,000	\$ 102,000	\$ -	\$ 2,924,015					
2014	\$ 5,800,000	\$ 105,000	\$ -	\$ 3,944,000					
2015	\$ 5,800,000	\$ 107,000	\$ -	\$ 3,750,000					
2016	\$ 5,800,000	\$ 110,000	\$ -	\$ 2,200,000					
2017	\$ 1,100,000			\$ 1,900,000					
2018				\$ 1,700,000					
Total	\$ 32,700,000	\$ 524,000	\$ -	\$ 22,418,015					

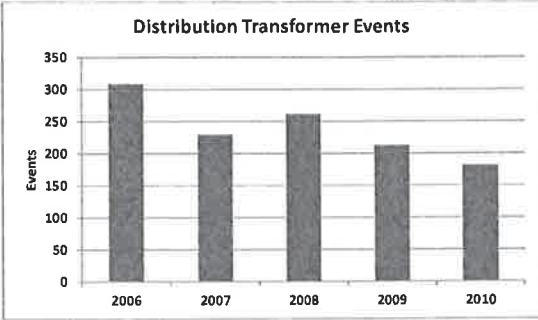
Mandate Excerpt (if applicable):

Additional Justifications:

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:	Distribution Transformer Events Distribution Transformer Oil Spills
	Distribution Transformer Energy Savings



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens* Director/Manager
(if necessary)

2006	309
2007	230
2008	262
2009	213
2010	182

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Distribution Transformer Change Out Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/12/2016

Re: Distribution Transformer Change Out Capital Investment Considerations

This programmatic business case is a business case based upon an asset management program. The Electric Distribution System 2016 Asset Management Plan has been included as Exhibit No.__(HLR-6). Additional information regarding the Distribution Transformer Change Out business case can be found therein at pages 8 and 45.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Tribal Permits and Settlements

ER No: ER Name:

2301 Tribal Permits and Settlements

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$865¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	314	19	20	41	20	21	36	20	20	41	20	21	36
2017	281	19	20	33	20	21	28	20	19	33	20	20	28
2018	250	19	20	26	20	21	20	19	19	25	20	21	19

Business Case Description:

Avista has hydro, transmission/distribution and substation facilities on the Coeur d'Alene, Colville, Flathead (Salish/Kootenai), Nez Perce and Spokane Tribe Reservations. These facilities are essential components of our energy resource and delivery systems. Avista is required to obtain permits from the Bureau of Indian Affairs (BIA) for its facilities on land held in trust by the federal government for Tribes and/or individual tribal members. Through some of its tribal settlements, Avista obtained the necessary tribal consent and BIA permits for its facilities on tribal trust land. However, Avista needs to renew approximately 700 rights of way permits for other facilities on Trust Land. The original permits were obtained 50+ years ago and the renewal process can be time-consuming (multiple years) and costly. Some of the permits may be in a trespass situation. Avista is actively working with the BIA and the Tribes to file renewal applications and complete the renewal process.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Tribal Permits and Settlements
Requested Amount	\$1,430,000
Duration/Timeframe	5 Year Program
Dept., Area:	Energy Resources
Owner:	Toni Pessemier
Sponsor:	Jason Thackston
Category:	Program
Mandate/Reg. Reference:	25 U.S.C. 323 & 357; 25 CFR 169

Assessments:	
Financial:	Exceeds 12% CIRR
Strategic:	Reliability & capacity
Business Risk:	Business Risk Reduction >5 and <= 10
Program Risk:	High certainty around cost, schedule and resources

Recommend Program Description:	Assessment Score:	95			Annual Cost Summary - Increase/(Decrease)		
		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Avista has hydro, transmission/distribution and substation facilities on the Coeur d'Alene, Colville, Flathead (Salish/Kootenai), Nez Perce and Spokane Tribe Reservations. These facilities are essential components of our energy resource and delivery systems. Avista is required to obtain permits from the Bureau of Indian Affairs (BIA) for its facilities on land held in trust by the federal government for Tribes and/or individual tribal members. Through some of its tribal settlements, Avista obtained the necessary tribal consent and BIA permits for its facilities on tribal trust land. However, Avista needs to renew approximately 700 rights of way permits for other facilities on Trust Land. The original permits were obtained 50+ years ago and the renewal process can be time-consuming (multiple years) and costly. Some of the permits may be in a trespass situation. Avista is actively working with the BIA and the Tribes to file renewal applications and complete the renewal process.		Maintaining facilities in existing locations versus costs of having to relocate	\$ 1,430,000	\$ -	\$ -	1	

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	If permits remain expired or allowed to continue to expire, our facilities will be in a trespass situation exposing the company to litigation and poor media exposure. Additional construction would be required to re-route lines.	n/a	\$ 10,000,000	\$ -	\$ 1,000,000	12
Alternative 1: Relocation of facilities	Relocation of distribution, 115kV Transmission and 230kV Transmission facilities off reservation and onto road rights of way or private property would involve unplanned man-hours, fleet and equipment, as well as appraisals, surveys, title reports, easements and compensation.	Restore service to today's system	\$ 10,000,000	\$ -	\$ -	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	\$ 325,000	\$ -	\$ -	\$ 325,000
2014	\$ 500,000	\$ -	\$ -	\$ 500,000
2015	\$ 1,430,000	\$ -	\$ -	\$ 1,430,000
2016	\$ 315,000	\$ -	\$ -	\$ 315,000
2017	\$ 300,000	\$ -	\$ -	\$ 300,000
2018	\$ 250,000	\$ -	\$ -	\$ 250,000
2019	\$ 150,000	\$ -	\$ -	\$ 150,000
2020	\$ 250,000	\$ -	\$ -	\$ 250,000
Total	\$ 3,520,000	\$ -	\$ -	\$ 3,520,000

Associated Ers (list all applicable):			
2301			

ER	2014	2015	2016	2017	2019	Total	Mandate Excerpt (if applicable):
2301	\$ 1,430,000	\$ 315,000	\$ 300,000	\$ 250,000	\$ 150,000	\$ 2,445,000	25 U.S.C. 323 (Tribal Trust Lands); 25 U.S.C. 357 (Allotted Lands) and 25 CFR 169 (process)
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: If Avista is unable to obtain its needed rights of way (ROW) across Tribal Trust, Tribal Fee and Allotted lands, the financial risk to Avista is significant. For example, Avista could be exposed to trespass damages and the requirement that it move, at substantial expense, its lines and facilities. There is potential to complete all necessary permits by 2018. 2019+ years are placeholders at this time.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 1,430,000	\$ 315,000	\$ 300,000	\$ 250,000	\$ 150,000	\$ 2,445,000	

Resources Requirements: (request forms and approvals attached)

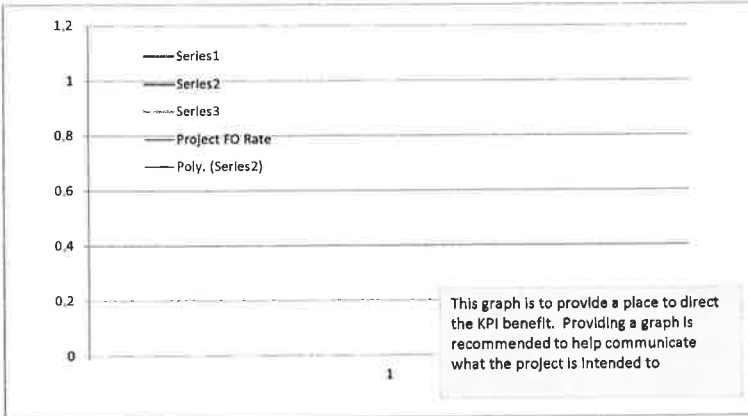
Internal Labor Availability: <input checked="" type="checkbox"/> Low Probability <input type="checkbox"/> Medium Probability <input type="checkbox"/> High Probability	Enterprise Tech: <input type="checkbox"/> YES - attach form <input checked="" type="checkbox"/> NO or Not Required
Contract Labor: <input 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



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Marije Stevens* 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

To: Tribal Permits and Settlements Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *Be*

Date: 2/12/2016

Re: Tribal Permits and Settlements Capital Investment Considerations

As discussed in the business case form, this business case addresses Avista's need to obtain and retain right of way permits for use of the Company's facilities on tribal reservation land. The original right of way permits were obtained over 50 years ago. Many of these permits have expired and are in the process of being renewed. Failure to renew these permits could result in the Company's facilities located on tribal lands being in a trespass situation and may require additional construction to re-route lines around tribal lands.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Westside Rebuild Phase One

ER No: 2531 **ER Name:** Purchase Westside Property

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$2,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,525	0	0	0	0	0	0	0	0	0	0	0	2,525
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Phase I: Extend the existing Westside Substation 115 kV and 230 kV buses to allow for a new 250 MVA Autotransformer 3 installation to eliminate overloads for credible bus outages and tie breaker failure contingencies in the Spokane area. Phase II: Replace Autotransformer 1 with a new 250 MVA unit and remove Autotransformer 2 when the new unit is installed. Phase III: Continue extension of the 230 kV yard to double-breaker, double-bus configuration and review design alternatives for the 115 kV configuration to either breaker-and-a-half or double-breaker, double-bus.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Westside Rebuild One	Assessments:	
Requested Amount	\$2,800,000	Financial:	7.00%
Duration/Timeframe	2 Year Project	Strategic:	Life-cycle asset management
Dept., Area:	T&D - Substations/Transmission	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Mike Magruder	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Howell/H Rosentrater		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	94

Annual Cost Summary - Increase/(Decrease)				
Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Improved performance, upgraded equipment, better status & control, new life cycle.	\$ 2,800,000	\$ -	\$ -	1

Annual Cost Summary - Increase/(Decrease)						
Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score		
Phase I: Extend the existing Westside Substation 115 kV and 230 kV buses to allow for a new 250 MVA Autotransformer 3 installation to eliminate overloads for credible bus outages and tie breaker failure contingencies in the Spokane area. Phase II: Replace Autotransformer 1 with a new 250 MVA unit and remove Autotransformer 2 when the new unit is installed. Phase III: Continue extension of the 230 kV yard to double-breaker, double-bus configuration and review design alternatives for the 115 kV configuration to either breaker-and-a-half or double-breaker, double-bus.						
Alternatives:						
Unfunded Project:	Outages causing loss of 230/115 kV transformer at Bell or Beacon Stations cause the Westside #1 & #2 230/115 kV Transformers to exceed their facility ratings. The overload mitigation may require the shedding of load to maintain an acceptable operating condition.	n/a	\$ 120,000	\$ 75,000	\$ -	10
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -
2015	\$ 1,000,000	\$ -	\$ -	\$ 25,000
2016	\$ 1,800,000	\$ -	\$ -	\$ 2,500,000
2017	\$ -	\$ -	\$ -	\$ -
2018	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ -	\$ -	\$ -
Total	\$ 2,800,000	\$ -	\$ -	\$ 2,525,000

Associated Ers (list all applicable):

2531			

ER	2013	2014	2015	2016	2017	Total	Mandate Excerpt (if applicable):
2531	\$ -	\$ -	\$ 1,000,000	\$ 1,800,000	\$ -	\$ 2,800,000	Completion of Phase I of the Project will eliminate overload of the existing Autotransformers under certain contingencies. This will meet our Compliance obligations to not exceed facility ratings.
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ 1,000,000	\$ 1,800,000	\$ -	\$ 2,800,000	

Milestones (high level targets)

January-15	Sub Design Begins	September-16	Receive new Auto 3 on Pad	January-00	open
August-15	Grading, grounding, fence	October-16	Test, Commission, Energize	January-00	open
October-15	Start Foundations/Steel	January-00	open	January-00	open
January-16	XFMR Relaying/Indication/Control	January-00	open	January-00	open
April-16	Begin buswork & breaker installs	January-00	open	January-00	open
May-16	Install Foundation for Auto 3	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:	<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	Capital Tools:	<input type="checkbox"/> YES - attach form	<input checked="" type="checkbox"/> NO or Not Required
Contract Labor:	<input checked="" type="checkbox"/> YES	<input checked="" type="checkbox"/> NO		Facilities:	<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

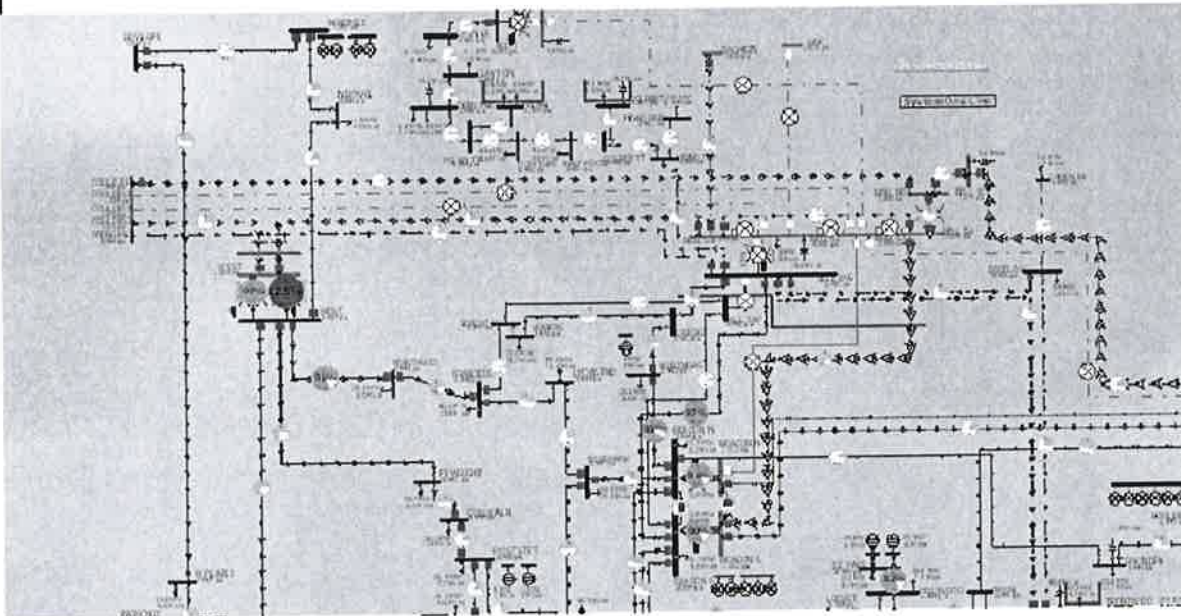
Prepared Mike Magruder - Substation Engineering Manager

Reviewed Heather Rosentrater - Director - ENSO

Other Party Review (if necessary) Andy Vickers - Director - GPSS

Margie Stevens

Below is a visual of the Westside autotransformer overload for a Bell 230 kV bus tie failure.



To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Westside Rebuild Phase One Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *BC*

Date: 2/12/2016

Re: Westside Rebuild Phase One Capital Investment Considerations

Electric substation related capital projects are largely driven by the annual *Avista System Planning Assessment*, prepared by the Transmission System Planning department.

The 2015 system planning assessment, completed December 30, 2015, has been included as a reference in the following pages (an excerpt of the document, including the cover, table of contents, and executive summary have been included in hard copy – due to the voluminous nature of this report, the remainder has been provided via CD-ROM herein at Exhibit No.__(KKS-5), Section 7 – ETD, page 154. Additional information regarding the Westside Rebuild Phase One business case can be found page 242 (of the *Avista System Planning Assessment*).

As referenced in the system planning assessment, and elaborated in the Westside Phase One business case, in the event of outages at either the Bell or Beacon substations, the Westside station #1 & #2 transformers exceed their facility ratings, which may ultimately require the shedding of load to maintain operations, negatively impacting reliability.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Distribution Wood Pole Management (“WPM”)

ER No: ER Name:

2060 Wood Pole Mgmt

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$35,540¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	7,840	967	976	1,010	975	877	872	870	869	131	100	100	93
2017	12,000	848	958	1,392	954	980	914	889	870	1,362	968	977	887
2018	15,700	1,110	1,254	1,822	1,248	1,283	1,196	1,163	1,138	1,782	1,266	1,278	1,160

Business Case Description:

Distribution Wood Pole Management Program inspects all Electric Distribution Feeders on a 20 year cycle and repairs or replaces wood poles, crossarms, missing lightning arresters, missing grounds, bad cutouts, bad insulating pins, bad insulators, leaking transformers, replaces guy wires not meeting current code requirements on poles replaced by WPM, and replaces pre-1981 transformers.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Distribution Wood Pole Management			
Requested Amount	Estimated Total Capital Expenditure			
Duration/Timeframe	Indefinite	Year Program		
Dept., Area:	Asset Maintenance			
Owner:	Glenn Madden (Manager)			
Sponsor:	Cox/H. Rosentrater			
Category:	Program			
Mandate/Reg. Reference:	NESC - See WPM Compliance Plan for details			
Assessments:	Financial: 7.42%			
	Strategic: Life-cycle asset management			
	Business Risk: Business Risk Reduction >5 and <= 10			
	Program Risk: High certainty around cost, schedule and resources			
Assessment Score:	93	Annual Cost Summary - Increase/(Decrease)		
Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs
Distribution Wood Pole Management Program inspects all Electric Distribution Feeders on a 20 year cycle and repairs or replaces wood poles, crossarms, missing lightning arresters, missing grounds, bad cutouts, bad insulating pins, bad insulators, leaking transformers, replaces guy wires not meeting current code requirements on poles replaced by WPM, and replaces pre-1981 transformers	Customer IRR = 7.42% and avoids an average of 1,700 additional events per year	\$ 11,172,022	\$ 530,943	\$ 5,996,350
				Business Risk Score
				15

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Status Quo : No Wood Pole Management	Run wood poles and associated equipment to failure	Increase OMT events by 1,700 events	\$ 8,186,361	\$ -	\$ 6,834,467	25
Alternative 1: Distribution Wood Pole Management - 20 Year Inspection Cycle	Distribution Wood Pole Management Program inspects all Electric Distribution Feeders on a 20 year cycle and repairs or replaces wood poles, crossarms, missing lightning arresters, missing grounds, bad cutouts, bad insulating pins, bad insulators, leaking transformers, and replaces pre-1981 transformers. Note: does not cover the additional costs associated with the backlog that is related to new requirements such as additional grounding and anchor rod replacements.	describe any incremental changes in operations	\$ 10,712,022	\$ 530,943	\$ 5,996,350	15
Alternative 2: Distribution Wood Pole Management - 20 Year Inspection Cycle with Guy Wire	Distribution Wood Pole Management Program inspects all Electric Distribution Feeders on a 20 year cycle and repairs or replaces wood poles, crossarms, missing lightning arresters, missing grounds, bad cutouts, bad insulating pins, bad insulators, leaking transformers, replaces guy wires not meeting current code requirements on poles replaced by WPM, and replaces pre-1981 transformers.	describe any incremental changes in operations	\$ 11,172,022	\$ 530,943	\$ 5,996,350	0
Alternative 3 Name : Distribution Wood Pole Management - 10 Year Inspection Cycle with Guy Wire	Distribution Wood Pole Management Program inspects all Electric Distribution Feeders on a 10 year cycle and repairs or replaces wood poles, crossarms, missing lightning arresters, missing grounds, bad cutouts, bad insulating pins, bad insulators, leaking transformers, replaces guy wires not meeting current code requirements, and replaces pre-1981 transformers	describe any incremental changes in operations	\$ 17,296,437	\$ 961,699	\$ 4,920,632	0

Program Cash Flows				
	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ 21,393,700		\$ -	\$ 18,767,986
2015	\$ 11,500,000			\$ 10,600,000
2016	\$ 11,200,000	\$ 543,155	\$ 4,564,898	\$ 7,840,000
2017	\$ 14,700,000	\$ 555,648	\$ 4,574,638	\$ 12,000,000
2018	\$ 14,700,000	\$ 570,094	\$ 4,588,630	\$ 15,700,000
2019	\$ 14,700,000	\$ 584,916	\$ 4,611,573	\$ 16,060,000
2020	\$ 14,700,000	\$ 600,124	\$ 4,634,631	\$ 14,700,000
2021+	\$ 15,700,000	\$ 615,728	\$ 4,657,804	\$ -
Total	\$ 118,593,700	\$ 3,469,665	\$ 27,632,174	\$ 95,667,986

Associated Ers (list all applicable):			
2060			

ER	2016	2017	2018	2019	2020	Total	Mandate Excerpt (if applicable):
2060	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	The current WPM program complies with the following part of the National Electric Safety Code: 013, 121, 212 A, 212 B, and 261 A.2
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	

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

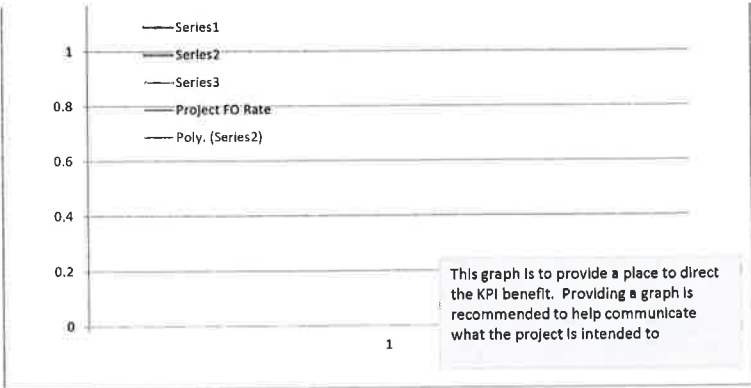
Check the appropriate box. The internal and contract labor boxes should be checked to indicate if the resource owners have been contacted and to provide a general sense of how likely staff will be provided (this does not require a firm commitment).

Key Performance Indicator(s)

Expected Performance Improvements

KPI Measure: WPM Related OMT Events
 Miles of Followup work completed compared to the annual goal

Prepared signature



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

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template
	Jul-15	Refreshed business case. Old version saved in archive folder on Sharepoint.
	Oct-15	\$700,000 approved in 2015 to accelerate 2016 spending due to reduction to meet overall budget

To: Distribution Wood Pole Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/12/2016

Re: Distribution Wood Pole Capital Investment Considerations

This programmatic business case is a business case based upon an asset management program. The Electric Distribution System 2016 Asset Management Plan has been included as Exhibit No.__(HLR-6). Additional information regarding the Distribution Wood Pole business case can be found therein at pages 8 and 25.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Substation - New Distribution Substations

ER No: ER Name:

2274 Tamarack 115Kv Sub-Construction
2322 Downtown West Sub - Property
2443 Greenacres 115-13kV Sub - New Construct
2583 Lewiston Mill Road- Dx Line Integration
2587 Irvin 115-13 kV Sub - Add Distribution Station

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$5,375¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,794	2,394	400	0	0	0	0	0	0	0	0	0	0
2017	275	0	0	0	0	0	0	0	0	0	0	275	0
2018	3,400	0	0	0	0	0	0	2,000	0	0	0	0	1,400

Business Case Description:

This program adds new distribution substations to the system in order to serve new and growing load as well as for increased system reliability and operational flexibility. New substations under this program will require planning and operational studies, justifications, and approved Project Diagrams prior to funding. This documentation will be included with this business case. Planned new substation projects include Tamarack (NE Moscow), Greenacres and Irvin (Spokane Valley), Hillyard and Downtown West (Spokane). Out years include construction for these and design and construction for 1 new substation per year on average depending on need and justifications.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Substation - New Distribution Stations	Assessments:	
Requested Amount	\$1,430,714	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	50 Year Program	Strategic:	Reliability & Capacity
Dept., Area:	T&D - Substation Engineering	Operational:	Operations require execution to perform at current levels
Owner:	Mike Magruder	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Howell/H Rosentrater	Program Risk:	High certainty around cost, schedule and resources
Category:	Program	Assessment Score:	80
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 adds new distribution substations to the system in order to serve new and growing load as well as for increased system reliability and operational flexibility. New substations under this program will require planning and operational studies, justifications, and approved Project Diagrams prior to funding. This documentation will be included with this business case. Planned new substation projects include Tamarack (NE Moscow), Greenacres and Irvin (Spokane Valley), Hillyard and Downtown West (Spokane). Out years include construction for these and design and construction for 1 new substation per year on average depending on need and justifications.	Improved performance, reliability, operational flexibility; Obligation to Serve.	\$ 1,430,714	\$ -	\$ -	1
		Annual Cost Summary - Increase/(Decrease)			

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Without adding new substations as justified, we would not be able to adequately meet our obligation to serve.		\$ 250,000	\$ 250,000	9
Alternative 1: Extend Feeders; Increase Substation Capacities	Extension of distribution feeders from neighboring substations and increased capacity at those substations would be required at a minimum. The negative impact is most certainly reduced reliability and difficulty in long term maintenance and system operation. Increased liability would result.	\$ 1,000,000	\$ 150,000	\$ -	6
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	Associated Ers (list all applicable):				
5 years of costs					
	Capital Cost	O&M Cost	Other Costs	Approved	
					2274
					2321
					2322
					2398
					2443
					2459
					2479
					2480
					2587
2012	\$ 1,275,000	\$ -	\$ -	\$ 250,000	
2013	\$ 8,220,000	\$ -	\$ -	\$ 525,000	
2014	\$ 1,400,000	\$ -	\$ -	\$ 3,086,665	
2015	\$ 2,750,000	\$ -	\$ -	\$ 4,480,000	
2016	\$ 425,000	\$ -	\$ -	\$ 425,000	
2017	\$ 1,500,000	\$ -	\$ -	\$ 1,500,000	
2018	\$ 3,450,000	\$ -	\$ -	\$ 3,450,000	
2019	\$ 2,250,000	\$ -	\$ -	\$ 2,250,000	
2020	\$ 2,500,000	\$ -	\$ -	\$ 2,500,000	
Total	\$ 23,770,000	\$ -	\$ -	\$ 18,466,665	
7-year average projected spend:				\$	1,959,524

Mandate Excerpt (if applicable):
Obligation to serve: Substations will need to be added to the system as justified for increased capacity and operational reliability requirements due to load growth.

Additional Justifications:
New distribution substations added to the system for load growth and reliability are critical to the long term operation of the system. As load demands increase and customer expectations rise regarding reliability, incremental distribution substation capacity is required. This allows for improved operational flexibility, better system reliability, and easier routine maintenance scheduling as equipment is more easily taken out of service because load can be transferred.
Program Link: Substation transmission integration budget dollars (\$20k - \$3.45M) are included in this program. The Bovill Sub transmission line is budgeted for \$3.45M in 2013.
Program Link: Substation distribution integration budget dollars (\$25k - \$500k) are included in this program. The Bovill Sub distribution integration is budgeted for \$500k in 2013.

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 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: Energize new subs before need as justified.

Prepared



Mike Magruder, Manager - Substation Engineering

Reviewed

Heather Rosentrater, Director - ENSO

Reviewed

Mary Stevens
Andy Vickers, Director - GPSS

Justification
Tamarack will initially unload 2 feeders - Moscow 115 512 and 514. These are long feeders that serve both suburban and rural load. The Moscow 115 transformers are loaded to 63% and 89% (Winter 2009), with more load projected primarily west of Moscow. Shifting load between Moscow stations would allow us to better configure feeds for the town, particularly from North Moscow - which is in a less than ideal location.

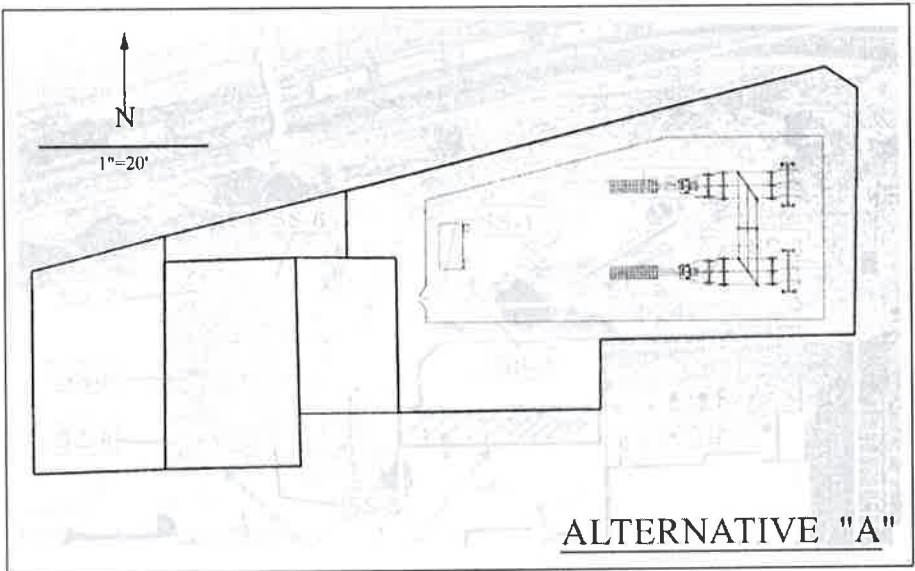
Potential Tamarack Location

AVISTA
Utility
Green Acres 115-138V Substation
ER2443

Cost Estimate
ERC142 -
Distribution \$5,300,000

Greenacres

Scope: This project is to build a general expansion of the app purchased property in the Greenacres area. This substation will be built on the 115-138V line and will serve a large portion of the area. The substation will be located on the 115-138V line and will serve a large portion of the area. The substation will be located on the 115-138V line and will serve a large portion of the area.



Upper Left: Project Diagram and preliminary justification for Tamarack Sub (NE Moscow).
Lower Left: Project Diagram and Scope for Greenacres Sub (Spokane Valley).
These Project Diagrams and associated background Information via Distribution Planning studies are a requirement for any new substations to be funded under this Program. Each study will be included with the Business Case for reference.

Above: Shown is a preliminary design for a potential new substation in the University District in downtown Spokane. The property has been secured and as electric load increases in the U-District, this new substation will need to be constructed ahead of the need to ensure we have the required capacity and system reliability. In addition, this new sub will improve overall operational flexibility to serve all of our electric load in the U-District vicinity. Construction could occur in the next 3-10 years depending on the load growth.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: Substation – New Distribution Stations Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/12/2016

Re: Substation – New Distribution Stations Capital Investment Considerations

Electric substation related capital projects are largely driven by the annual *Avista System Planning Assessment*, prepared by the Transmission System Planning department.

The 2015 system planning assessment, completed December 30, 2015, has been included as a reference in the following pages (an excerpt of the document, including the cover, table of contents, and executive summary have been included in hard copy – due to the voluminous nature of this report, the remainder has been provided via CD-ROM herein at Exhibit No. ___(KKS-5), Section 7 – ETD, page 154.

The investment included in this case for the 2016 through June 2018 period relates to the placement into service of a mobile substation and work on the Downtown West substation and the Greenacres substation. See pages 239 and 240, respectively, in the system planning assessment for further discussion of these two projects.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: South Region Voltage Control

ER No: 2580 **ER Name:** South Region Voltage Control

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$5,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	5,000	0	0	0	0	0	0	0	0	0	0	0	5,000
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Avista's south region 230 kV, primarily around Lewiston-Clarkston, experiences excessive high voltage during light load periods. Voltages exceed equipment ratings over 35% of the time. Operation of equipment outside of equipment ratings imposes potential legal and regulatory risks to the Company on top of increasing large scale outage possibilities. The ability to control MVAR flow at our BPA interconnection will also reduce power factor penalty charges. The expected IRR, including effects, is 6.38%. With automatic control, existing over-voltages can be reduced, if not eliminated, on the 230kV buses at Dry Creek, Lolo, and N. Lewiston, as well as Moscow and Shawnee.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Project Business Case



Investment Name:	S. Region Voltage Ctrl	Assessments:	
Requested Amount	\$5,500,000	Financial:	7.00%
Duration/Timeframe	2 Year Project	Strategic:	Life-cycle asset management
Dept., Area:	Substation Engineering	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Mike Magruder	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Howell/H Rosentrater		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	94

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Avista's south region 230 kV, primarily around Lewiston-Clarkston, experiences excessive high voltage during light load periods. Voltages exceed equipment ratings over 35% of the time. Operation of equipment outside of equipment ratings imposes potential legal and regulatory risks to the Company on top of increasing large scale outage possibilities. The ability to control MVAR flow at our BPA interconnection will also reduce power factor penalty charges. The expected IRR, including effects, is 6.38%. With automatic control, existing overvoltages can be reduced, if not eliminated, on the 230kV buses at Dry Creek, Lolo, and N.Lewiston, as well as Moscow and Shawnee.	Control of overvoltages in the south region	\$ 5,702,511	\$ 13,809	\$ 351,822	4

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Unfunded Project: Voltage currently exceeds equipment rated voltage over 35% of the time, resulting in legal and even regulatory risks. The company incurs BPA leading power factor charges at the Hatwai interconnection. Estimated IRR, including effects, is 7.65 %.	n/a	\$ 438,469	\$ 55,526	\$ 361,996	12
Alternative 1: South region reactor station The project, as proposed by Transmission Operations, would consist of two 50 MVAR reactor banks, similar to the proposed Noxon project.	Capability to compensate for transmission capacitance	\$ 5,702,511	\$ 13,809	\$ 351,822	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	\$ -	\$ -	\$ -	\$ -
2013	\$ -	\$ -	\$ -	\$ -
2014	\$ 3,500,000	\$ -	\$ -	\$ -
2015	\$ 2,000,000	\$ -	\$ -	\$ 25,000
2016	\$ -	\$ -	\$ -	\$ 5,000,000
2017+	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ -	\$ 5,025,000

2580		

ER	2013	2014	2015	2016	2017+	Total	Mandate Excerpt (if applicable):
2580	\$ -	\$ 3,500,000	\$ 2,000,000	\$ -	\$ -	\$ 5,500,000	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 3,500,000	\$ 2,000,000	\$ -	\$ -	\$ 5,500,000	

Date	Target	Date	Target	Date	Target
September-15	Physical/Structural Design Begins	December-16	Project Energized - In Service	January-00	open
October-15	Construction Transmittal	February-17	Project Cleanup/Closeout Complete	January-00	open
January-16	Mech Crew Begins Construction	January-00	open	January-00	open
April-16	Phys/Struct Const. Complete	January-00	open	January-00	open
June-16	Reactors Arrive On Site	January-00	open	January-00	open
June-16	Electrical Construction Begins	January-00	open	January-00	open

Milestones should be general. Use your judgement on project progress so that progress can

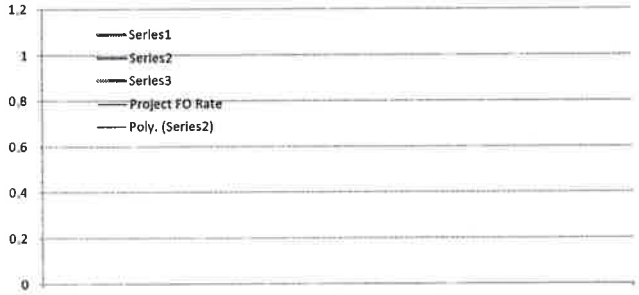
Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input checked="" type="checkbox"/> Medium Probability	<input type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required	Capital Tools:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
Contract Labor:	<input checked="" type="checkbox"/> ES	<input type="checkbox"/> O		Facilities:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required	Fleet:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required

Key Performance Indicator(s)

Expected Performance Improvements

KPI Measure: South region 230kV buses are not to exceed overvoltage, with the reactors in service and under automatic control

230kV bus overvoltage monitor



Prepared _____
Mike Magruder, T&D - Substation Engineering Mgr.

Reviewed _____
Heather Rosentrater, Director - ENSO

Other Party Review _____
(if necessary) *Margie Stevens* Director/Manager

Reference Document: April 9, 2013 Memo from Dean Spratt/Rip Divis to Substation Engineering
Reference Document: July 3, 2013 South Region Reactor Study Presentation from Rob Gray

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template

To: South Region Voltage Control Business Case 2016 Washington GRC File
From: Bryan Cox, Director of Transmission & West Electric Operations *BC*
Date: 2/12/2016
Re: South Region Voltage Control Capital Investment Considerations

Electric substation related capital projects are largely driven by the annual *Avista System Planning Assessment*, prepared by the Transmission System Planning department.

The 2015 system planning assessment, completed December 30, 2015, has been included as a reference in the following pages (an excerpt of the document, including the cover, table of contents, and executive summary have been included in hard copy – due to the voluminous nature of this report, the remainder has been provided via CD-ROM herein at Exhibit No. __ (KKS-5), Section 7 – ETD, page 154. Additional information regarding the South Region Voltage Control business case can be found therein at page 126 (of the *Avista System Planning Assessment*).

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Washington AMI

ER No: ER Name:
2586 Washington AMI

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$119,855¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	79,663	0	0	79,663	0	0	0	0	0	0	0	0	0
2018	42,758	0	0	26,158	0	0	0	0	0	16,600	0	0	0

Business Case Description:

Avista is committed to offering its customers information and choices that help them manage their energy costs, and it views advanced metering infrastructure as an enabling technology key to this mission. The Washington AMI Project will install an advanced metering system to include meters, communication network, back office systems, and data repository. The project is slated for the years 2015 - 2020. The range of customer benefits associated with advanced metering includes near real-time energy use information, energy alerts, more accurate billing, greater privacy, improved energy efficiency and remote service reconnect. These systems also serve to reduce operating costs for the benefit of customers, including reduced field services, theft loss prevention, energy efficiency, outage management, utility planning, and employee safety. In addition to these benefits, advanced metering enables customer engagement tools that will Avista to connect with customers in ways they prefer. A parallel business case for "Network Expansion" will be submitted to support the AMI project and its use cases as well as other Avista use cases outside of AMI. The "Network Expansion" project will provide a private network solution for meter data transport, reducing the need for public carrier cellular backhaul, thus must be constructed in conjunction with the AMI project to support meter data transport.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Project Business Case



Investment Name:	Washington AMI	Assessments:	
Requested Amount	\$ 165,552,601	Financial:	6.90%
Duration/Timeframe	6 no. years	Strategic:	Customer Experience
Dept., Area:	Engineering	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Laura Vickers	Project Risk:	Moderate certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	83

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Avista is committed to offering its customers information and choices that help them manage their energy costs, and it views advanced metering infrastructure as an enabling technology key to this mission. The Washington AMI Project will install an advanced metering system to include meters, communication network, back office systems, and data repository. The project is slated for the years 2015 - 2020. The range of customer benefits associated with advanced metering includes near real-time energy use information, energy alerts, more accurate billing, greater privacy, improved energy efficiency and remote service reconnect. These systems also serve to reduce operating costs for the benefit of customers, including reduced field services, theft loss prevention, energy efficiency, outage management, utility planning, and employee safety. In addition to these benefits, advanced metering enables customer engagement tools that will Avista to connect with customers in ways they prefer. A parallel business case for "Network Expansion" will be submitted to support the AMI project and its use cases as well as other Avista use cases outside of AMI. The "Network Expansion" project will provide a private network solution for meter data transport, reducing the need for public carrier cellular backhaul, thus must be constructed in conjunction with the AMI project to support meter data transport.	Improves the quality of customer service, reduces O&M costs for customers, and optimizes distribution system efficiency.	\$ 165,552,601	*See Below	\$ (15,403,507)	4

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project:	Conventional meters will remain in service and customers will continue to have few tools to actively manage their energy use, and will not realize any of the other service benefits. Avista will be unable to capture any of the O&M savings for customers resulting from the proposed deployment.	No customer service or O&M savings benefits.	\$ -	\$ -	\$ -	15
<i>Same as proposed project but with different communication network technology.</i>	Washington meters would be replaced with a combination of RF and Powerline carrier meters depending on the urban/rural density of customers. This option is highly likely, and the project plan right now is to optimally mix technologies to keep cost as low as possible while still implementing the intended functionality of the AMI system.	Same as proposed project.	\$ 165,552,601	*See Below	\$ (15,403,507)	4
<i>Installation of AMR meters in Washington.</i>	The automated meter reading option will not be viable because it does not provide the customer service and operational savings for customers of a system that has interval data and secure two-way communications with remote operations capability.	Reduces some O&M costs to customers.	\$ -	\$ -	\$ -	0
<i>Alternative 3 Name : Brief name of alternative (if applicable)</i>			\$ -	\$ -	\$ -	0

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
Previous	\$ -	\$ -	\$ -	\$ -
2015	\$ 10,000,000	\$ -	\$ -	\$ 900,000
2016	\$ 44,791,308	\$ -	\$ -	\$ 31,429,026
2017	\$ 36,500,857	\$ 1,404,546	\$ -	\$ 37,842,742
2018	\$ 35,256,966	\$ 2,865,274	\$ -	\$ 50,582,940
2019	\$ 19,497,938	\$ 4,383,869	\$ -	\$ 19,655,556
2020	\$ 19,505,532	\$ 5,962,062	\$ -	\$ 19,650,747
Total	\$ 165,552,601	\$ 14,615,751	\$ -	\$ 160,061,011

Associated Ers (list all applicable):

2586			

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
2586	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	

Additional Justifications:
Some of the customer benefits of AMI are not quantifiable today, though they will contribute positively to the quality of service from Avista. In addition, new customer tools and uses of interval data will evolve and deliver future value to the customer, as the industry continues to move toward the digitization of energy-use information.

Milestones (high level targets)

April '2017 Initial Deployment Complete, First meters placed in Service
June '2017 MDM In Service

March '2021 Collector Infrastructure
Milestones should be general. Use your judgement on project

June '2017 Head End Infrastructure in Service
 June '2017 Data Analytics in Service
 September '2019 Residential Meter Installation Complete
 March '2021 Commercial Meter Installation Complete

Use your judgement on project progress so that progress can

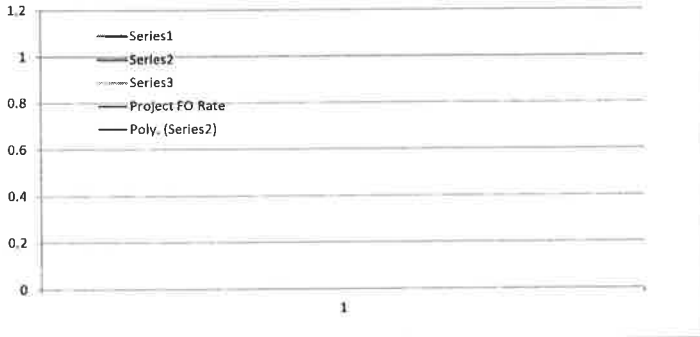
Resources Requirements: (request forms and approvals attached)

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: Fill in the name of the KPI here
Fill in the name of the KPI here



Prepared signature *Van Ad*

Reviewed signature *J. Raman*
Director/Manager

Other Party Review signature *Margi Stevens*
(if necessary) Director/Manager

Reviewed Signature
Chairman, President & CEO

Reviewed Signature
President Avista Utilities, SR VP Corp

Reviewed Signature *Dr. P.*
Vice President of Energy Delivery

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	Date	Template
	2012-2016	

To: Washington AMI Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/12/2016

Re: Washington AMI Capital Investment Considerations

Please see my direct testimony at Exhibit No. __ (HLR-1T) for discussion of the Washington AMI Business Case.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Harrington Voltage Conversion from 4 kV to 13 kV

ER No: 2289 **ER Name:** Harrington Conversion to 13 kV

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,550¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,150	0	0	0	0	1,100	50	0	0	0	0	0	1,000
2017	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Harrington Voltage Conversion. Harrington is the last area Avista serves at the legacy 4 kV voltage. This voltage is obsolete for serving utility distribution systems and we have very limited spare equipment to continue service at this voltage. The substation is very old and the transformer will be difficult and time consuming to replace if it fails. We do not have 4 kV on our mobile substations, so all the customers served by Harrington feeders will be out of service until the transformer is replaced. This could easily be up to 48 hours. There is no reason to delay this needed upgrade to our standard distribution class voltage and equipment. Minor system efficiencies also result.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Project Business Case



Investment Name:	Harrington Upgrades	Assessments:	
Requested Amount:	\$3,000,000	Financial:	7.00%
Duration/Timeframe:	1 Year Project	Strategic:	Reliability & Capacity
Dept., Area:	T&D - Substations/Distribution	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Heather Rosentrater	Project Risk:	High certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater		
Category:	Project		
Mandate/Reg. Reference:	n/a	Assessment Score:	87

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
Harrington Voltage Conversion. Harrington is the last area Avista serves at the legacy 4 kV voltage. This voltage is obsolete for serving utility distribution systems and we have very limited spare equipment to continue service at this voltage. The substation is very old and the transformer will be difficult and time consuming to replace if it fails. We do not have 4 kV on our mobile substations, so all the customers served by Harrington feeders will be out of service until the transformer is replaced. This could easily be up to 48 hours. There is no reason to delay this needed upgrade to our standard distribution class voltage and equipment. Minor system efficiencies also result.	Removes long term outage risk for sub failures; reduces losses; standardizes system	\$ 3,000,000	\$ -	\$ -	1

Alternatives:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score	
		Capital Cost	O&M Cost	Other Costs		
Unfunded Project:	Do nothing. This option poses increased risk for the Company and exposes Harrington customers to potentially long outages. The substation has reached end of life and its equipment is obsolete. Unplanned restoration costs will be more expensive as a result.	n/a	\$ 300,000	\$ 100,000	\$ 1,000,000	6
Unfunded Project: Cont'd	The existing station also has high voltage fuses protecting the transformer that are over-dutied, meaning they may not function as needed for a fault. This is one of five remaining stations with this type of fusing.	describe any incremental changes in operations	\$ -	\$ -	\$ -	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	\$ 3,000,000	\$ -	\$ -	\$ 40,000
2015	\$ -	\$ -	\$ -	\$ 1,600,000
2016	\$ -	\$ -	\$ -	\$ 1,550,000
2017+	\$ -	\$ -	\$ -	\$ -
Total	\$ 3,000,000	\$ -	\$ -	\$ 3,190,000

Associated Ers (list all applicable):

2289		

ER	2013	2014	2015	2016	2017+	Total	Mandate Excerpt (if applicable):
2289	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ 3,000,000	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ 3,000,000	

Additional Justifications:
If the substation transformer fails, our spare units are at Ritzville and they are very old. We have tested them and so far, they are good. We have another option to install a 115/13 kV transformer and then a 13/4 kV transformer to serve the load. Doing nothing is simply not in the best interest of our customers or shareholders. This is the only 4 kV distribution system we own and operate and it needs to be upgraded to a standard utility voltage class.

Milestones (high level targets)

January-14	Begin Design	July-14	Remove & Salvage Old Substation	January-00	open
March-14	Start Distribution Line Work	August-14	Start Substation Construction	January-00	open
May-14	Transmit Substation Rebuild	October-14	Complete Substation Construction	January-00	open
June-14	Install Mobile Substation	October-14	Transfer Load from Mobile to Sub	January-00	open
June-14	Start Distribution Cutover Process	November-14	Return Mobile to Spokane	January-00	open
July-14	Complete Cutover Process	January-00	open	January-00	open

Resources Requirements: (request forms and approvals attached)

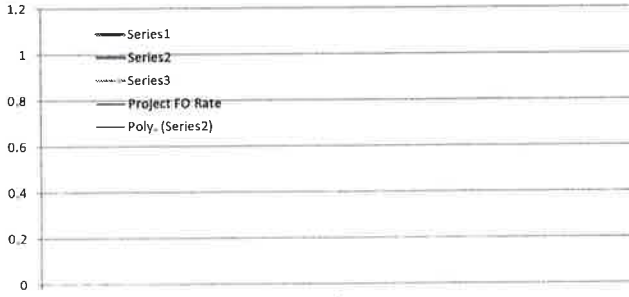
Internal Labor Availability:	<input type="checkbox"/> Low Probability	<input type="checkbox"/> Medium Probability	<input checked="" type="checkbox"/> High Probability	Enterprise Tech:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required	Capital Tools:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required
Contract Labor:	<input checked="" type="checkbox"/> ES	<input checked="" type="checkbox"/> O		Facilities:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O or Not Required	Fleet:	<input type="checkbox"/> ES - attach form	<input checked="" type="checkbox"/> O 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

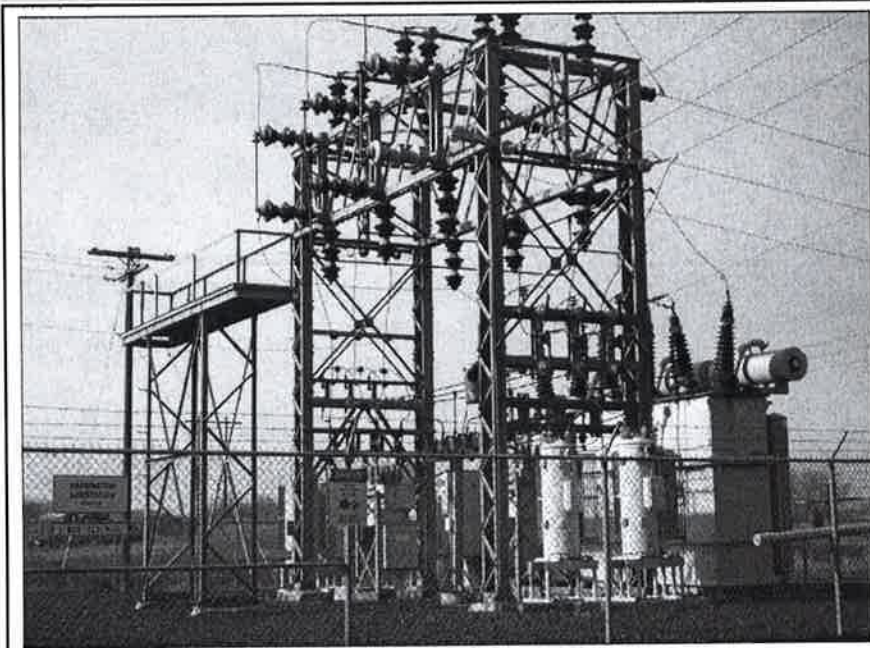


Prepared Mike Magruder/Dave James, T&D Substations/Distribution

Reviewed Heather Rosentrater, Director - ENSO

Reviewed Andy Vickers, Director - GPSS

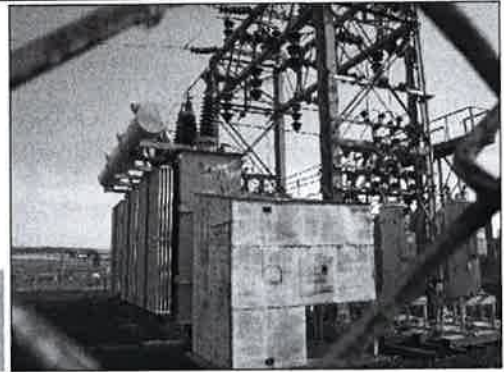
Reviewed *Marcy Stevens*
Bryan Cox, Director - West Operations



Harrington 115-4 kV Substation.




Harrington 115-4 kV Transformer.



Harrington Metering/Control Enclosure next to three 1-phase 115-4 kV Transformers and 4 kV Voltage Regulators for Feeder 4F1.

To be completed by Capital Planning Group

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Harrington Upgrades Business Case 2016 Washington GRC File
From: Heather Rosentrater, Vice President, Energy Delivery 
Date: 2/12/2016
Re: Harrington Upgrades Capital Investment Considerations

Electric substation related capital projects are largely driven by the annual *Avista System Planning Assessment*, prepared by the Transmission System Planning department.

The 2015 system planning assessment, completed December 30, 2015, has been included as a reference in the following pages (an excerpt of the document, including the cover, table of contents, and executive summary have been included in hard copy – due to the voluminous nature of this report, the remainder has been provided via CD-ROM herein at Exhibit No. __ (KKS-5), Section 7 – ETD, page 154. Additional information regarding the Harrington Upgrades business case can be found therein at page 63 (of the *Avista System Planning Assessment*).

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Downtown Spokane Electric Network

ER No: ER Name:

2058 Spokane Electric Network Increase Capacity

2237 Metro FDR Upgrade

2251 Post St PILC

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$6,900¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,300	115	115	144	144	144	144	288	288	288	288	173	173
2017	2,300	115	115	144	144	144	144	288	288	288	288	173	172
2018	2,300	115	115	144	144	144	144	288	288	288	288	173	172

Business Case Description:

Avista owns and maintains an underground electric network that serves the core business district of downtown Spokane. Topology in the Network is unique to Avista electric distribution and requires specialized material, equipment, tooling, and training to perform maintenance repair, planned replacement, and capacity growth projects. The scope of annual capital replacements and additions includes: 7,500 feet of secondary cable, 7,500 feet of primary cable, 10 refurbished manholes & vaults, 10 transformer replacements, and 20 street light replacements.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Spokane Elec. Network	Assessments:	
Requested Amount	\$2,300,000 annually	Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	n/a Year Program	Strategic:	Life Cycle Programs
Dept., Area:	Engineering	Operational:	Operations require execution to perform at current levels
Owner:	Rosentrater/James (updated July 16, 2014)	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Heather Rosentrater	Program Risk:	High certainty around cost, schedule and resources
Category:	Program	Assessment Score:	97
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 owns and maintains an underground electric network that serves the core business district of downtown Spokane. Topology in the Network is unique to Avista electric distribution and requires specialized material, equipment, tooling, and training to perform maintenance repair, planned replacement, and capacity growth projects. The scope of annual capital replacements and additions includes: 7500 feet of secondary cable, 7500 feet of primary cable, 10 refurbished manholes & vaults, 10 transformer replacements, and 20 street light replacements.	Investments necessary to maintain current operations and to extend the life of current assets.	\$ 2,300,000	\$ 348,251	\$ 215,000	6

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Unfunding Network operations assumes zero PM activities and an eventual loss system functionality.	n/a	\$ -	\$ -	\$ -	25
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	6
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	2058	2237	2251
	Capital Cost	O&M Cost	Other Costs	Approved		CapX Repl.	Metro PILC	Post St PILC
Previous	\$ 6,750,000			\$ 6,338,007				
2015	\$ 2,300,000	\$ 348,250	\$ 215,000	\$ 2,100,000				
2016	\$ 2,300,000	\$ 348,250	\$ 215,000	\$ 2,300,000				
2017	\$ 2,300,000	\$ 348,250	\$ 215,000	\$ 2,300,000				
2018	\$ 2,300,000	\$ 348,250	\$ 215,000	\$ 2,300,000				
2019	\$ 2,300,000	\$ 348,250	\$ 215,000	\$ 2,300,000				
2020				\$ 2,300,000				
Total	\$ 11,500,000	\$ 1,741,250	\$ 1,075,000	\$ 13,600,000				
	CapX Specific	O&M	O&B					

Mandate Excerpt (if applicable):
Various WUTC tariff schedules are associated with customer classifications in downtown Spokane. NES/WAC govern public and worker safety.

Additional Justifications:
Service to the core business district in Spokane is afforded a much higher level of service reliability than other urban or rural areas. This reflects the importance of continuous service to hospitals, law enforcement, city government, banking, legal, commerce, and retail sectors of the local economy.

Resources Requirements: (request forms and approvals attached)

Internal Labor Availability: Low Probability Medium Probability High Probability
 Contract Labor: YES NO

Enterprise Tech:
 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: Plan to Actual

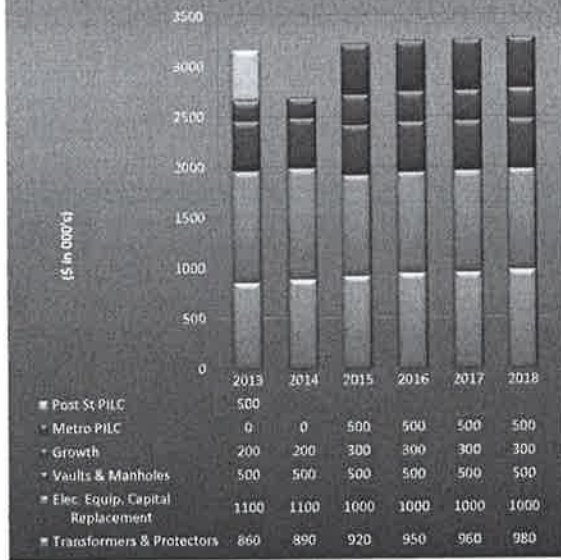


Prepared signature

Reviewed signature
Director/Manager

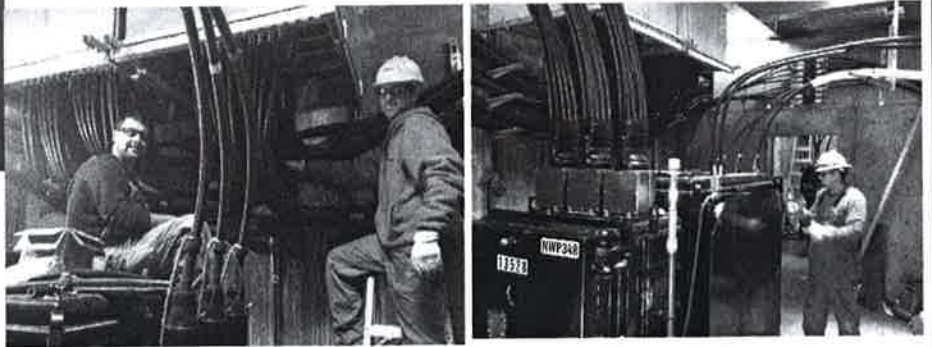
Other Party Review signature *Margie Stevens*
(if necessary) Director/Manager

Spokane Sec. Network (2013-2018)



2014 Work Plan (actuals)

NETWORK	Sec. Cable	Prim. Cable	Xmfr	Vault/MH	St. LI	Lost Time	Vehicle	Injury
Jan	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0
Mar	160	2628	0	0	1	0	0	1
Apr	1000	1794	4	0	2	0	0	0
May	2000	1886	0	0	1	0	0	0
Jun	2506	668	0	1	0	0	0	0
Jul								
Aug								
Sep								
Oct								
Nov								
Dec								
Tot	5666	7178	4	1	4	0	0	1
YE Target	7500	7500	10	10	20	0	0	0



To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	2012-2016	
	Date	Template
	10/29/2015	Updated w/ Sept release of funds and 2016-2020 5 yr plan

To: Spokane Electric Network Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/12/2016

Re: Spokane Electric Network Capital Investment Considerations

This programmatic business case is driven by the maintenance considerations described in more detail within my direct testimony at Exhibit No. __ (HLR-1 T). Additional information regarding the importance of maintenance in terms of maintaining Avista's system can be found therein.

Avista owns and maintains an underground electric network that serves the core business, financial and city government district of downtown Spokane from Division Street to Cedar and from Interstate 90 to the Spokane River. It is operated as a networked secondary system. Most mid to large cities in the United States operate similar electric grids. The system is configured to allow a single element forced outage (transformer, cable segment) without impact to customers. Outages can and do occur but those generally involve substation equipment failures or failures associated with work in progress. Like most utilities that operate networked secondary systems, Avista uses dedicated cable crew resources specifically trained to operate, construct, inspect and maintain these systems. All equipment and cables are located beneath city streets and adjacent properties.

Topology in the Network is unique to Avista electric distribution and requires specialized material, equipment, tooling and training to perform maintenance repair, planned replacement and capacity growth projects. The scope of annual capital replacements and additions includes: 7500 feet of secondary cable, 7500 feet of primary cable, 10 refurbished manholes & vaults, 10 transformer replacements, and 20 street light replacements.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: SCADA Completion

ER No: 2600
ER Name: SCADA Completion

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$8,500¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	1,000	0	0	0	0	0	500	0	0	0	500	0	0
2018	4,000	0	500	0	0	1,500	0	0	500	0	0	1,500	0

Business Case Description:

This project will complete the installations of SCADA and EMS/DMS capability to all Avista substations. This will provide System Operations with clear visibility, indication, and control at every sub. In addition, Grid Modernization will have the necessary communications infrastructure for complete installation and operation on all feeders. System Planning, Asset Management, Operations, and Engineering will have real time and historical data to support efficient, flexible, and safe operation and design of the system for the future.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Project Business Case



Investment Name:	SCADA Completion
Requested Amount:	\$115,000,000
Duration/Timeframe:	15 Year Project
Dept., Area:	T&D - Substations
Owner:	Mike Magruder
Sponsor:	Howell/H Rosentrater
Category:	Project
Mandate/Reg. Reference:	n/a

Assessments:	
Financial:	8.00%
Strategic:	Reliability & capacity
Business Risk:	Business Risk Reduction >5 and <= 10
Project Risk:	Moderate certainty around cost, schedule and resources

Recommend Project Description:	Performance	Annual Cost Summary - Increase/(Decrease)			Business Risk Score
		Capital Cost	O&M Cost	Other Costs	
This project will complete the installations of SCADA and EMS/DMS capability to all Avista substations. This will provide System Operations with clear visibility, indication, and control at every sub. In addition, Grid Modernization will have the necessary communications infrastructure for complete installation and operation on all feeders. System Planning, Asset Management, Operations, and Engineering will have real time and historical data to support efficient, flexible, and safe operation and design of the system for the future.	Real time indication and control for all subs; 3-phase data; Grid Modernization	\$ 7,670,000	\$ -	\$ -	1

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Project: Presently only have full SCADA with EMS/DMS capability at 35 substations. Another 35 do not have any SCADA and 90 have limited SCADA with obsolete equipment, minimal room for expansion, etc. Present priorities will never allow us to get to all subs.	n/a	\$ 300,000	\$ 50,000	\$ -	6
Alternative 1: Brief name of alternative (if applicable) Describe other options that were considered	describe any incremental changes in operations	\$ -	\$ -	\$ -	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	\$ -	\$ -	\$ -	\$ -
2016	\$ 1,000,000	\$ -	\$ -	\$ -
2017	\$ 3,500,000	\$ -	\$ -	\$ 2,500,000
2018	\$ 5,000,000	\$ -	\$ -	\$ 6,000,000
2019	\$ 7,670,000	\$ -	\$ -	\$ 7,670,000
2020	\$ 7,670,000	\$ -	\$ -	\$ 7,670,000
2021	\$ 9,000,000	\$ -	\$ -	\$ -
Total	\$ 33,840,000	\$ -	\$ -	\$ 23,840,000

Associated Ers (list all applicable):

NEW			

ER	2016	2017	2018	2019	2020	Total	Mandate Excerpt (if applicable):
NEW	\$ 1,000,000	\$ 3,500,000	\$ 5,000,000	\$ 7,670,000	\$ 7,670,000	\$ 24,840,000	provide brief citation of the law or regulation and a reference number if possible
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ 1,000,000	\$ 3,500,000	\$ 5,000,000	\$ 7,670,000	\$ 7,670,000	\$ 24,840,000	

Milestones (high level targets)

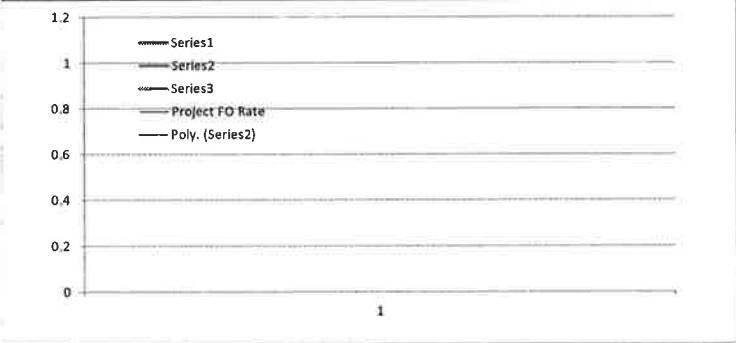
December-16	Start project; 2 Substations	December-22	Continue project; 10 Substations	January-00	Continue project; 10 Substations
December-17	Expand project; 4 Substations	December-23	Continue project; 10 Substations	January-00	Continue project; 9 Substations
December-18	Expand project; 6 Substations	December-24	Continue project; 10 Substations	January-00	Finish project; 9 Substations
December-19	Expand project; 8 Substations	December-25	Continue project; 10 Substations	January-00	open
December-20	Continue project; 8 Substations	December-26	Continue project; 10 Substations	January-00	open
December-21	Expand project; 9 Substations	December-27	Continue project; 10 Substations	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:	<input type="checkbox"/> Low Probability	<input checked="" type="checkbox"/> Medium Probability	<input type="checkbox"/> High Probability	Enterprise Tech:	<input checked="" type="checkbox"/> ES - attach form	<input type="checkbox"/> O or Not Required	Capital Tools:	<input type="checkbox"/> ES - attach form	<input type="checkbox"/> O or Not Required
Contract Labor:	<input checked="" type="checkbox"/> ES	<input type="checkbox"/> O		Facilities:	<input type="checkbox"/> ES - attach form	<input type="checkbox"/> O or Not Required	Fleet:	<input type="checkbox"/> ES - attach form	<input type="checkbox"/> O 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 signature

Reviewed signature
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

To: SCADA Completion Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *BC*

Date: 2/12/2016

Re: SCADA Completion Capital Investment Considerations

This business case effectively describes the purpose of and need for the investment covered by the business case. Additionally, per Substation Engineering, SCADA communication abilities are need to achieve the full capabilities of improvements made under the grid modernization business case.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Transmission - Reconductors and Rebuilds

ER No: ER Name:

2310 West Plains Transmission Reinforce
 2423 System Transmission: Rebuild Condition
 2457 Benton-Othello 115 Recond
 2550 Burke-Thompson A&B 115kV Transmission Rebuild Project
 2556 CDA-Pine Creek 115kV Transmission Line: Rebuild
 2557 9CE-Sunset 115kV Transmission Line: Rebuild
 2564 Devils Gap-Lind 115kV Transmission Rebuild Project
 2574 Chelan-Stratford 115kV - Rebuild Columbia River Xing
 2575 Garden Springs-Silver Lake 115kV – Rebuild H&W –SLK
 2576 Addy-Devils Gap 115kV - Rec/Rbld 266 & 397 Cond
 2577 Benawah-Moscow 230kV - Structure Replacement
 2582 Beacon-Bell-Francis & Cdr-Waikiki 115kV – Reconfigure

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$61,889¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	21,159	0	0	0	6,600	0	0	0	0	3,600	0	2,275	8,684
2017	22,330	0	0	0	0	0	0	0	0	0	0	22,330	0
2018	14,550	0	0	0	0	0	0	0	0	0	0	14,550	0

Business Case Description:

This program reconductors and/or rebuilds existing transmission lines as they reach the end of their useful lives, require increased capacity, or present a risk management issue. Projects include: ER 2310 - West Plains Transmission Reinforcement, ER 2550 - Pine Creek-Burke-Thompson, ER 2557 9CE-Sunset Rebuild, ER 2423 - System Condition Rebuild, ER 2457 Benton-Othello Rebuild, ER2556 CDA-Pine Creek Rebuild, ER 2564 Devils Gap-Lind Major Rebuild, ER 2574 - Chelan-Stratford River Crossing Rebuild, ER 2576a Addy-Devils Gap Reconductor, ER 2575 Garden Springs-Silver Lake Rebuild, ER 2582 BEA-BEL-F&C-WAI Reconfiguration, ER 2577 BEN-M23 Rebuild, ER 25xa - Out-Year Transmission Rebuild.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Tx - Recon and Reblids	Assessments:	
Requested Amount	\$20,000,000	Financial:	10.00%
Duration/Timeframe	50 Year Program	Strategic:	Life-cycle asset management
Dept., Area:	T&D - TLD Engineering	Business Risk:	Business Risk Reduction >5 and <= 10
Owner:	Ken Sweigart	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Howell/H Rosentrater		
Category:	Program		
Mandate/Reg. Reference:	n/a	Assessment Score:	101

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
This program reconductors and/or rebuilds existing transmission lines as they reach the end of their useful lives, require increased capacity, or present a risk management issue. Projects include: ER 2310 - West Plains Transmission Reinforcement, ER 2550 - Pine Creek-Burke-Thompson, ER 2557 9CE-Sunset Rebuild, ER 2423 - System Condition Rebuild, ER 2457 Benton-Othello Rebuild, ER2556 CDA-Pine Creek Rebuild, ER 2564 Devils Gap-Lind Major Rebuild, ER 2574 - Chelan-Stratford River Crossing Rebuild, ER 2576a Addy-Devils Gap Reconductor, ER 2575 Garden Springs-Silver Lake Rebuild, ER 2582 BEA-BEL-F&C-WAI Reconfiguration, ER 2577 BEN-M23 Rebuild, ER 25xa - Out-Year Transmission Rebuild.	Improved performance (reduced losses), upgraded facilities, greater clearance, new life cycle, and greater load capabilities.	\$ 20,000,000	\$ -	\$ -	1

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Transmission lines that would be rebuilt and/or reconducted under this program have 1) high loss conductor, or 2) deteriorated wood structures, or 3) corroded or deteriorated materials, or 4) insufficient clearance, or 5) inadequate capacity.	\$ -	\$ -	\$ -	8
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	\$ -	\$ -	\$ -	0
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
2014	\$ 11,446,742	\$ -	\$ -	\$ 6,760,000
2015	\$ 23,412,946	\$ -	\$ -	\$ 18,812,946
2016	\$ 26,536,134	\$ -	\$ -	\$ 19,036,134
2017	\$ 28,102,393	\$ -	\$ -	\$ 20,852,393
2018	\$ 26,000,000	\$ -	\$ -	\$ 22,000,000
2019	\$ 12,000,000	\$ -	\$ -	\$ 15,000,000
2020	\$ 17,500,000	\$ -	\$ -	\$ 17,500,000
Total	\$ 144,998,215	\$ -	\$ -	\$ 119,961,473

Associated Ers (list all applicable):

2310	2549	2550	2557
2423	2457	2556	2564
2574	25xa	2576	2582
2577	2575		

ER	2014	2015	2016	2017	2018	Total	Mandate Excerpt (if applicable):
2310	\$ -	\$ 25,000	\$ 1,000,000	\$ -	\$ -	\$ 1,025,000	Provide brief citation of the law or regulation and a reference number if possible
2549	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2550	\$ 3,700,000	\$ 3,500,000	\$ -	\$ -	\$ -	\$ 7,200,000	
2557	\$ -	\$ 25,000	\$ 900,000	\$ -	\$ -	\$ 925,000	
2423	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 12,500,000	
2457	\$ 2,500,000	\$ 3,600,000	\$ 3,500,000	\$ -	\$ -	\$ 9,600,000	
2556	\$ 25,000	\$ -	\$ 4,500,000	\$ 5,750,000	\$ 2,500,000	\$ 12,775,000	
2564	\$ 2,346,742	\$ 3,947,144	\$ 4,050,558	\$ -	\$ -	\$ 10,344,444	
2574	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ 350,000	
25xa	\$ -	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 8,000,000	
2576	\$ -	\$ -	\$ -	\$ 25,000	\$ 2,000,000	\$ 2,025,000	
2582	\$ -	\$ -	\$ 25,000	\$ 2,000,000	\$ -	\$ 2,025,000	
2577	\$ 25,000	\$ 7,815,802	\$ 8,060,576	\$ 8,302,393	\$ -	\$ 24,203,771	
2575	\$ -	\$ -	\$ -	\$ 25,000	\$ 2,000,000	\$ 2,025,000	
25xb	\$ -	\$ -	\$ -	\$ 7,500,000	\$ 7,500,000	\$ 15,000,000	
25xc	\$ -	\$ -	\$ -	\$ -	\$ 7,500,000	\$ 7,500,000	
Total	\$ 11,446,742	\$ 23,412,946	\$ 26,536,134	\$ 28,102,393	\$ 26,000,000	\$ 115,498,215	Additional Justifications: Obligation to serve: Specific transmission lines require rebuild or reconductor for increased capacity due to load growth. Risk Management: Specific transmission lines require rebuild to reduce potential public injury risks. Addition of dollars for ER25xa in response to latest interpretation of FAC-11 (Standard for Reliability Coordinator) intended to remove copper wire bottlenecks while increasing System Operations response flexibility.

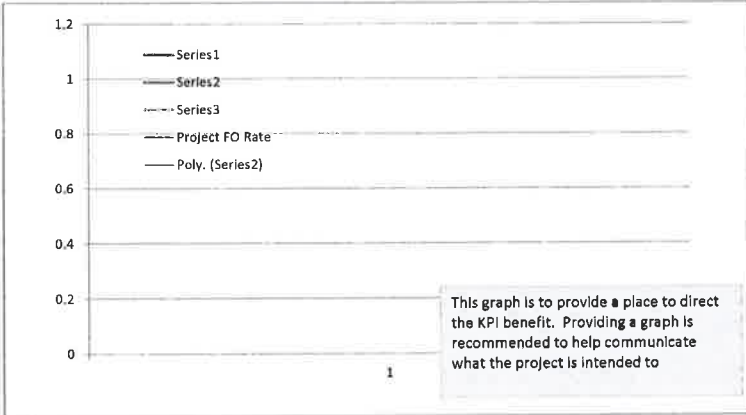
Resources Requirements: (request forms and approvals attached)

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



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens* 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														
	<table border="1"> <thead> <tr> <th>Date</th> <th>Template</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	Date	Template												
Date	Template														

To: Reconductors and Rebuilds Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *BC*

Date: 2/12/2016

Re: Reconductors and Rebuilds Capital Investment Considerations

Electric transmission related capital projects are largely driven by the annual *Avista System Planning Assessment*, prepared by the Transmission System Planning department. The 2015 system planning assessment, completed December 30, 2015, has been included as a reference in the following pages (an excerpt of the document, including the cover, table of contents, and executive summary have been included in hard copy – due to the voluminous nature of this report, the remainder has been provided via CD-ROM herein at Exhibit No.__(KKS-5), Section 7 – ETD, page 154.

The Reconductors and Rebuilds business case includes the following projects which are expected to be placed in service from 2016-2018:

- 9CE-Sunset 115kV Transmission Line: Rebuild
- Addy-Devils Gap 115kV - Rec/Rbld 266 & 397 Cond
- Beacon-Bell-Francis & Cdr-Waikiki 115kV - Reconfig
- Benewah-Moscow 230kV - Structure Replacement
- Burke-Thompson A&B 115kV Transmission Rebuild Proj
- CDA-Pine Creek 115kV Transmission Line: Rebuild
- Devils Gap-Lind 115kV Transmission Rebuild Proj
- Garden Springs-Silver Lake 115kV - Rebuild H&W-SLK
- System Transmission:Rebuild Condition
- Benton-Othello 115 Recond
- West Plains Transmission Reinforce (Garden Springs to Sunset Tx Line Rebuild)
- Cabinet-Noxon 230kV Transm Line Rebuild Project

The following table provides an index of where within the *Avista System Planning Assessment* discussion of each of these projects can be found.

ER Name	2015 Avista System Planning Assessment (Pg #)
9CE-Sunset 115kV Transmission Line: Rebuild	193
Addy-Devils Gap 115kV - Rec/Rbld 266 & 397 Cond	37
Beacon-Bell-Francis & Cdr-Waikiki 115kV - Reconfig	241
Benewah-Moscow 230kV - Structure Replacement	150
Burke-Thompson A&B 115kV Transmission Rebuild Proj	105
CDA-Pine Creek 115kV Transmission Line: Rebuild	91
Devils Gap-Lind 115kV Transmission Rebuild Proj	63
Garden Springs-Silver Lake 115kV - Rebuild H&W-SLK	242
System Transmission:Rebuild Condition	85
Benton-Othello 115 Recond	39
West Plains Transmission Reinforce (Garden Springs to Sunset Tx Line Rebuild)	236
Cabinet-Noxon 230kV Transm Line Rebuild Project	107

Additionally, the Reconductors and Rebuilds business case is informed by Avista's electric transmission system asset management plans. The Electric Transmission System 2016 Asset Management Plan has been included as an exhibit at Exhibit No.__(HLR-7). See therein for additional information.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Spokane Valley Transmission Reinforcement

ER No: ER Name:

2446 Irvin Sub - New Construction

2474 Beacon-Boulder #2 115: Capacity Upgrade

2552 Opportunity 115 kV Switching Station

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$7,565¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1,340	0	0	250	0	0	0	0	0	0	0	1,040	50
2017	7,200	0	0	0	0	0	5,450	0	0	0	0	1,750	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

The Spokane Valley Transmission Reinforcement Project includes rebuilding 4.4 miles of the Beacon - Boulder #2 115 kV Transmission Line, constructing the new Irvin Switching Station, rebuilding 1.75 miles of the Irvin - Opportunity 115 kV Tap, installing circuit breakers at Opportunity Substation, and constructing a new 2.2 mile 115 kV transmission line from Irvin to Millwood/IEP. The completion of these projects are required to mitigate existing and future performance and reliability issues of the Transmission System in the Spokane Valley.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Investment Business Case



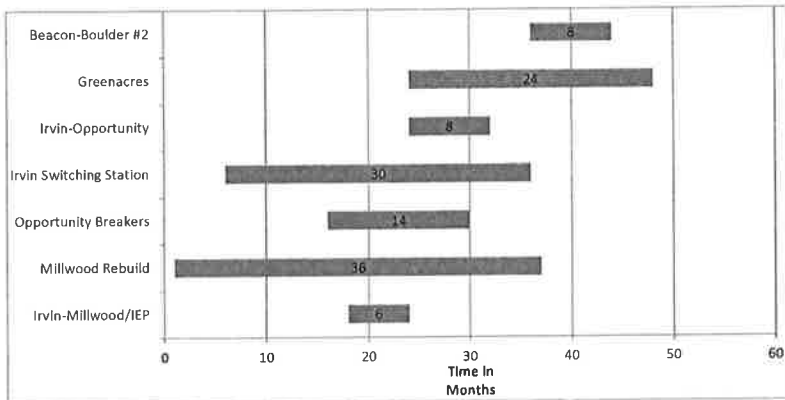
Investment Name:	Spokane Valley Transmission Reinforcement	Assessments:	
Requested Amount	\$13,736,503	Financial:	Medium - >= 5% & <9% CIRR
Duration/Timeframe	5 Year Project	Strategic:	Reliability & Capacity
Dept., Area:	T&D - Substation & Transmission Engineering	Operational:	Operations require execution to perform at current levels
Owner:	Mike Magruder	Business Risk:	ERM Reduction >0 and <= 5
Sponsor:	Howell/H Rosentrater	Project/Program Risk:	High certainty around cost, schedule and resources
Category:	Project	Assessment Score:	78.5
Mandate/Reg. Reference:	n/a	Cost Summary - Increase/(Decrease)	

Recommend Project Description:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
The Spokane Valley Transmission Reinforcement Project includes rebuilding 4.4 miles of the Beacon - Boulder #2 115 kV Transmission Line, constructing the new Irvin Switching Station, rebuilding 1.75 miles of the Irvin - Opportunity 115 kV Tap, installing circuit breakers at Opportunity Substation, and constructing a new 2.2 mile 115 kV transmission line from Irvin to Millwood/IEP. The completion of these projects are required to mitigate existing and future performance and reliability issues of the Transmission System in the Spokane Valley.	Ability to serve load growth in area and provide operational flexibility to maintain equipment	\$ 13,736,503	\$ -	\$ -	1

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score	
Status Quo :	Heavy thermal loading (>90%) is projected to occur on local transmission lines in the near term planning horizon. Presently the Beacon - Boulder #2 Transmission Line cannot be taken out of service to be maintained/rebuilt due to operational constraints serving IEP's new synchronous motor load.	n/a	\$ -	\$ -	\$ -	6
Alternative 1: Partial Transmission System Upgrades	Upgrade existing Transmission System by installing capacitor banks and rebuilding 115 kV transmission lines with 795 ACSS conductor. Further capital expenditures will be required going forward.	Thermal load reduced in near term planning horizon	\$ 9,600,000	\$ -	\$ -	4
Alternative 2: Irvin Plan Minus IRV-MIL 115 kV Line	Construct all items in proposed Project except the new 115 kV transmission line from Irvin to Millwood/IEP. Ability to serve IEP is still constrained.	Thermal load reduced in near term planning horizon	\$ 9,500,000	\$ -	\$ -	4
Alternative 3 Name : Brief name of alternative (if applicable)	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
Previous	\$ 40,559	\$ -	\$ -	\$ 40,559
2012	\$ 1,739,494	\$ -	\$ -	\$ 3,700,000
2013	\$ 951,987	\$ -	\$ -	\$ 966,944
2014	\$ 1,849,624	\$ -	\$ -	\$ 1,820,000
2015	\$ 2,914,045	\$ -	\$ -	\$ 2,900,000
2016	\$ -	\$ -	\$ -	\$ 3,815,000
2017	\$ -	\$ -	\$ -	\$ 3,750,000
2018	\$ -	\$ -	\$ -	\$ -
Future	\$ -	\$ -	\$ -	\$ -
Total	\$ 7,495,709	\$ -	\$ -	\$ 16,992,503

Milestones (high level targets)

October-15	Opportunity Sub Energized	September-17	Energize Irvin Substation
February-16	Greenacres Sub Energized	September-17	Complete Beacon-Boulder Reconnector
April-16	Opportunity Sub Project Closeout Complete	December-17	Complete All Project Closeouts
April-16	Grading Begins at Irvin		
August-16	Foundations/Steel Construction Begins - Irvin		
August-16	Greenacres Sub Project Closeout Complete		
November-16	Proposed begin Electric Construction - Irvin		

Associated Ers (list all applicable):

1006	2001	2446	2474	2526	2552
------	------	------	------	------	------

Mandate Excerpt (if applicable):

With continued load growth, violation of TPL-002, R1 (ability to supply projected customer demands under N-1 contingency conditions) will likely occur.

Additional Justifications:

In 2009, The Irvin Project report was reviewed and approved by stakeholders in the Engineering, Operations, and Planning Groups at Avista. A superior project, or collection of projects, was selected to mitigate existing and future performance and reliability issues of the Transmission System in the Spokane Valley. These projects, identified as Option 4a in The Irvin Project, and reiterated in the System Planning Interoffice Memorandum SP-2009-03 – Summary – Irvin (Spokane Valley Transmission Reinforcement) Project are illustrated in Project Diagram SP-0220 – Irvin Project. Further updates are provided in Interoffice Memorandum SP-2011-07 - Spokane Valley Transmission Reinforcement (Irvin Project). All documents are posted on Transmission System Planning SharePoint Site.

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 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:	Fill in the name of the KPI here
	Fill in the name of the KPI here

Prepared _____
Mike Magruder/Ken Sweigart, T&D Substations/Transmission

Reviewed _____
Heather Rosentrater, Director - ENSO

Reviewed _____
Andy Vickers, Director - GPSS

Margie Stevens

Below is the approved Project Diagram for the "Irvin Project" and power simulation plot indicating thermal overload on transmission lines during specific outage scenarios

- Replace 4.37 miles of 556 AAC conductor with 795 AAC or better.
- Rebuild Millwood, 20 MVA Transformers & 4 Feeders. Normally Open (SCADA controlled) provides Back-Up service for IEP Load.
- New Irvin Switching Station, Breaker & a Half, 115kV 33.5 MVAR Capacitor Bank and two 20 MVA Transformers & 4 Feeders.
- Replace 1.74 miles of 4/0 ACSR conductor with 795 AAC or better. New structures, potentially a double circuit line.
- Convert Opportunity to a Switching Station (Single Bus). Two AVA Feeders and four MEWCO Feeders.
- New 2.19 miles Single Circuit 556 AAC (IEP Tap). Possible double circuit Irvin to Millwood/IEP line.

Project Completion, all facilities in service by year end 2013.

NO.	Date	REVISION NOTES	BY	CKD

Irvin Project
Project Diagram: SP-0220
AVISTA Corp.
SPOKANE, WASHINGTON

ORIGINAL DATE	APPROVAL
	<i>[Signature]</i>

To be completed by Capital Planning Group

<p>Rationale for decision</p>	<p>Review Cycles 2012-2016</p>	
	Date	Template

To: Spokane Valley Transmission Reinforcement Business Case 2016 Washington GRC File
From: Bryan Cox, Director of Transmission & West Electric Operations *BC*
Date: 2/12/2016
Re: Spokane Valley Transmission Reinforcement Capital Investment Considerations

Electric transmission related capital projects are largely driven by the annual *Avista System Planning Assessment*, prepared by the Transmission System Planning department.

The 2015 system planning assessment, completed December 30, 2015, has been included as a reference in the following pages (an excerpt of the document, including the cover, table of contents, and executive summary have been included in hard copy – due to the voluminous nature of this report, the remainder has been provided via CD-ROM herein at Exhibit No. __ (KKS-5), Section 7 – ETD, page 154. Additional information regarding the Spokane Valley Transmission Reinforcement business case can be found therein at page 189.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Colstrip Transmission Capital Additions

ER No: ER Name:

2214 Colstrip Transmission-PNACI Capital Additions

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,389¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	568	23	23	34	40	45	68	68	62	62	51	45	45
2017	398	33	33	33	33	33	33	33	33	33	33	33	33
2018	432	36	36	36	36	36	36	36	36	36	36	36	36

Business Case Description:

For capital upgrades and replacement and for O&M expenses for the jointly owned 500 kV Colstrip Transmission System. Program funding is used as transmission assets reach end-of-life, requiring replacement or upgrade. Under the Colstrip Project Transmission Agreement (among Avista, NorthWestern Energy, PacifiCorp, Portland General Electric and Puget Sound Energy), Avista is obligated to fund capital and O&M expenses commensurate with Avista's ownership share in these facilities. Such facilities include hardware, software, and operating system upgrades to meet new operating standards and requirements. Some upgrades may be initiated by NERC reliability standards, growth, and third-party projects (e.g. transmission or generation interconnections required by FERC policy). Examples of upgrades under this program include: 500 kV breaker replacements, dual communication path construction to meet NERC standards, 500 kV relay upgrades and 500 kV tower erosion mitigation. One of the Broadview 600 MVA 500/230 kV autotransformers failed in the Fall of 2013. The Replacement for the Broadview transformer was budgeted to be funded in 2015 (Avista share estimated to be approximately \$125,000 with estimated \$91,000 insurance credit in 2015). Planned purchase of a spare 600 MVA 500/230 kV autotransformer in 2015 - Avista share estimated to be approximately \$450,000.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Investment Name:	Colstrip Transmission	Assessments:	
Requested Amount	\$491,434	Financial:	7.00%
Duration/Timeframe	20 Year Program	Strategic:	Reliability & capacity
Dept., Area:	Transmission	Business Risk:	Business Risk Reduction >10 and <= 15
Owner:	Jeff Schlect/Heather Rosentrater	Program Risk:	High certainty around cost, schedule and resources
Sponsor:	Don Kopczyński	Assessment Score:	97
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	Program	Performance	Capital Cost
Recommend Program Description:	For capital upgrades and replacement and for O&M expenses for the jointly owned 500 kV Colstrip Transmission System. Program funding is used as transmission assets reach end-of-life, requiring replacement or upgrade. Under the Colstrip Project Transmission Agreement (among Avista, NorthWestern Energy, PacifiCorp, Portland General Electric and Puget Sound Energy), Avista is obligated to fund capital and O&M expenses commensurate with Avista's ownership share in these facilities. Such facilities include hardware, software, and operating system upgrades to meet new operating standards and requirements. Some upgrades may be initiated by NERC reliability standards, growth, and third-party projects (e.g. transmission or generation interconnections required by FERC policy). Examples of upgrades under this program include: 500 kV breaker replacements, dual communication path construction to meet NERC standards, 500 kV relay upgrades and 500 kV tower erosion mitigation. One of the Broadview 600 MVA 500/230 kV autotransformers failed in the Fall of 2013. The Replacement for the Broadview transformer is budgeted to be funded in 2015 (Avista share estimated to be approximately \$125,000 with estimated \$91,000 insurance credit in 2015). Planned purchase of a spare 600 MVA 500/230 kV autotransformer in 2015 - Avista share estimated to be approximately \$450,000.	Improved performance, upgraded equipment, better status & control, new life cycle.	\$ 491,434
			O&M Cost
			Other Costs
			Business Risk Score
			4

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 due to breach of contract with other joint owners. Obsolete equipment would remain in service until failure.	Severe negative system reliability and compliance impacts	\$ -	\$ -	\$ -	16
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	\$ 368,887	\$ 392,583	\$ -	\$ 218,887
2015	\$ 491,434	\$ 329,778	\$ -	\$ 491,434
2016	\$ 496,535	\$ 302,751	\$ -	\$ 568,044
2017	\$ 515,928	\$ 295,977	\$ -	\$ 397,853
2018	\$ 591,507	\$ 296,871	\$ -	\$ 432,306
2019	\$ 421,521	\$ 292,209	\$ -	\$ 372,097
2020	\$ 359,797	\$ -	\$ -	\$ 359,797
Total	\$ 3,245,609	\$ 1,910,168	\$ -	\$ 2,840,418

2214	

ER	2015	2016	2017	2018	2019	Total	Mandate Excerpt (if applicable):
2214	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	NERC reliability standards are being continually developed and revised. New and revised standards are expected to address emergency operations, transmission operations, critical infrastructure protection, communications, and balancing authority operations. (See
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	Additional Justifications: This program is for capital replacement and upgrades and for operations and maintenance expenses for the jointly owned 500 kV Colstrip Transmission System. Cuts to this program need to be closely evaluated to assure that reliable and compliant operations are not impacted and that Avista would not be in breach of contract with other joint transmission owners.

Resources Requirements: (request forms and approvals attached)

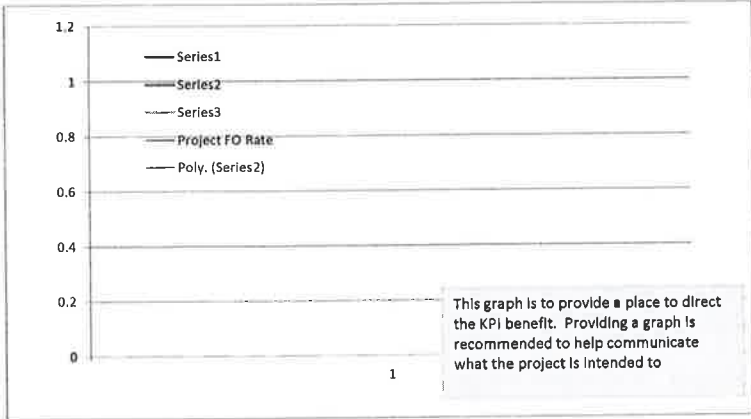
Check the appropriate box. The internal and contract

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).

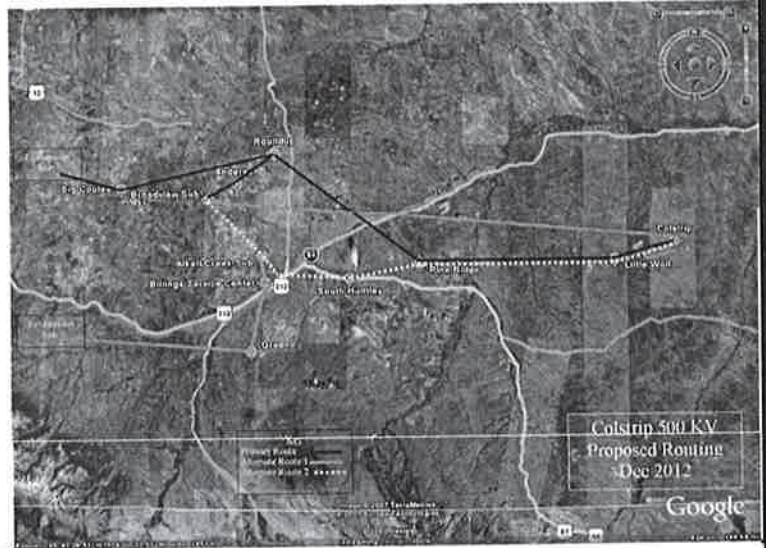
Key Performance Indicator(s)
 Expected Performance Improvements
 KPI Measure:



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens* Director/Manager
 (if necessary)



To be completed by Capital Planning Group

Rationale for decision

Review Cycles
2012-2016

Date	Template

To: Colstrip Transmission Business Case 2016 Washington GRC File

From: Bryan Cox, Director of Transmission & West Electric Operations *BC*

Date: 2/12/2016

Re: Colstrip Transmission Capital Investment Considerations

As discussed in Avista's 2015 Electric Integrated Resource Plan (IRP), Avista owns an 11 percent interest in 495 miles of double circuit 500 kV lines between Colstrip and Townsend, Montana. As discussed in my direct testimony—Exhibit No. __ (BAC-1T), Northwestern Energy manages this transmission line and manages the capital work performed on behalf of the joint owners.

Avista is contractually required to invest its proportion of the costs associated with the capital maintenance performed by Northwestern Energy. Not fulfilling this obligation could result in contractual breach.

This requirement, as well as examples of investment completed under this business case, is well explained within the business case form.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Distribution Grid Modernization

ER No: ER Name:

2470 Dist Grid Modernization

2599 Grid Mod Automation

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$35,000¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	6,359	244	451	703	710	824	734	536	494	548	457	367	291
2017	10,393	867	866	866	866	866	866	866	866	866	866	866	866
2018	11,450	954	954	954	954	954	954	954	954	954	954	954	954

Business Case Description:

The Distribution Grid Modernization Program provides value to customers and shareholders by improving Grid Reliability, Energy Savings and Operational Ability through a systematic and managed upgrade of our aging distribution system. This program seeks cost effective opportunities to increase service quality performance and system availability through the identification of locations that would benefit from the addition of switched capacitor banks, regulators and smart grid devices. The long-term plan represented by the IRR of 6.4% aims to upgrade 6 feeders per year to cover the whole distribution system in a 60 year cycle. This coordinates well with Wood Pole Management's 20 year cycle. The average cost to rebuild each feeder is estimated to be \$3.5M.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Distribution Grid Modernization
Requested Amount	See Plan Below
Duration/Timeframe	Indefinite Year Program
Dept., Area:	Distribution Engineering
Owner:	Troy A. Dehnel
Sponsor:	Don Kopczynski
Category:	Program
Mandate/Reg. Reference:	Federal & State Clear Zone Mitigation Directives

Assessments:	
Financial:	6.4% Customer IRR
Strategic:	Life-cycle asset management
Business Risk:	Business Risk Reduction >15
Program Risk:	High certainty around cost, schedule and resources

Recommend Program Description:	133	Annual Cost Summary - Increase/(Decrease)			
The Distribution Grid Modernization Program provides value to customers and shareholders by improving Grid Reliability, Energy Savings and Operational Ability through a systematic and managed upgrade of our aging distribution system. This program seeks cost effective opportunities to increase service quality performance and system availability through the identification of locations that would benefit from the addition of switched capacitor banks, regulators and smart grid devices. The long-term plan represented by the IRR of 6.4% aims to upgrade 6 feeders per year to cover the whole distribution system in a 60 year cycle. This coordinates well with Wood Pole Management's 20 year cycle. The average cost to rebuild each feeder is estimated to be \$3.5M.	Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
	When completed save an average of 1,970 MWh* annually & Reduce Outages	\$ 21,000,000	\$ -	\$ 198,000	4

Alternatives:		Performance	Annual Cost Summary - Increase/(Decrease)			
Unfunded Program:	No systematic plan for whollistic address of conductors, reconfiguring services for better access, or adding devices that benefit the performance of the feeder.	n/a	Capital Cost	O&M Cost	Other Costs	Business Risk Score
			\$ 120,000	\$ -	\$ 1,980,000	25
Alternative 1: Brief name of alternative (if applicable)	The Dist Grid Modernization Program provides benefits to customers, employees, and shareholders by replacing problematic poles, cross-arms, cut-outs, transformers, conductor, etc. In addition, adding switched capacitor banks and smart grid devices is of benefit due to increased energy efficiency and system reliability.	When completed save an average of 1,970 MWh* annually & Reduce Outages	\$ 21,000,000	\$ -	\$ 198,000	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	\$ 7,308,357	\$ -	\$ -	\$ 7,308,357
2014	\$ 8,686,019	\$ -	\$ -	\$ 9,586,000
2015	\$ 11,000,000	\$ -	\$ -	\$ 12,310,000
2016	\$ 12,000,000	\$ -	\$ -	\$ 7,000,000
2017	\$ 13,000,000	\$ -	\$ -	\$ 13,000,000
2018	\$ 15,000,000	\$ -	\$ -	\$ 15,000,000
2019	\$ 18,000,000	\$ -	\$ -	\$ 21,000,000
2020	\$ 21,000,000	\$ -	\$ -	\$ 20,800,000
Total	\$ 105,994,376	\$ -	\$ -	\$ 106,004,357

Associated Ers (list all applicable):

Dist Grid Moderni	2470
Sandpoint SG	2570
Grid Mod Automata	2599

ER	2015	2016	2017	2018	2019	Total
Dist Grid Modernization	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2470	\$ 11,000,000	\$ 11,000,000	\$ 13,000,000	\$ 15,000,000	\$ 15,000,000	\$ 65,000,000
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sandpoint SG	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2570	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Grid Mod Automation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2599	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 11,000,000	\$ 11,000,000	\$ 13,000,000	\$ 15,000,000	\$ 15,000,000	\$ 65,000,000

Mandate Excerpt (if applicable):
WSDOT Target Zero, an FHWA mandated initiative in MAP-21, requires that utilities move all non-breakaway structures out of the clear zone as defined in the 10/2005 AASHTO "A Guide for Accommodating Utilities Within Highway Right-of-Way. WA State law requires that we complete this task by year 2030.

Additional Justifications:
WAC 468-34-350 - Control Zone Guidelines, WAC 468-34-300 - Overhead Lines Location, RCW 47.32.130 Dangerous Objects and Structures as Nuisances, RCW 47.44.010 Wire and Pipeline and Tram and Railway Franchises - Application Rules on Hearing and Notice, RCW 47.44.020 Grant of Franchise - Condition - Hearing.

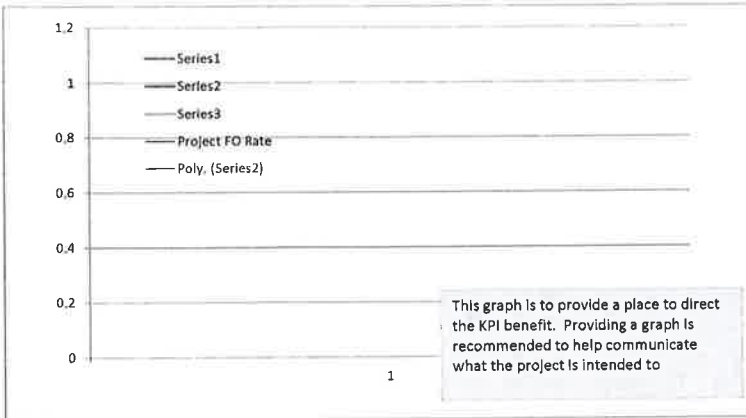
Resources Requirements: (request forms and approvals attached)

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 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 type="checkbox"/> NO or Not Required
	Capital Tools: <input type="checkbox"/> YES - attach form <input type="checkbox"/> NO or Not Required
	Fleet: <input checked="" type="checkbox"/> YES - attach form <input 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)

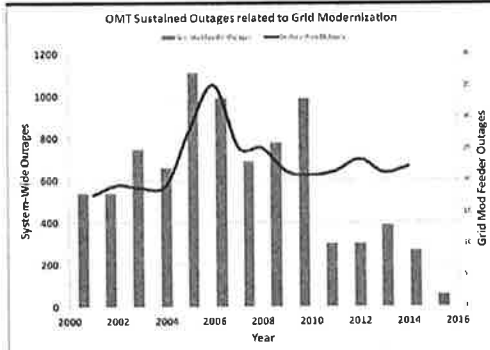
Expected Performance Improvements
KPI Measure: EVM, CPI, SPI
Fill in the name of the KPI here



Prepared signature

Reviewed signature Director/Manager

Other Party Review signature *Margie Stevens* Director/Manager
(if necessary)

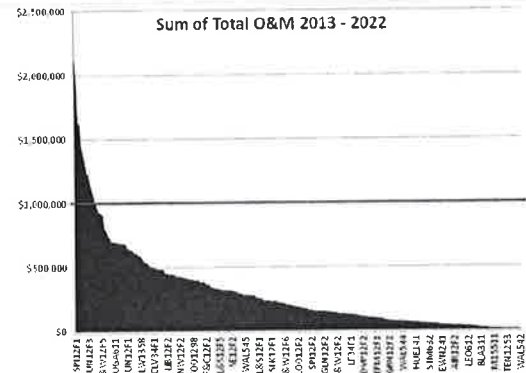
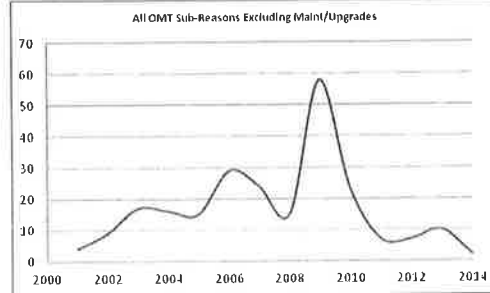


Estimated Outage Costs by Feeder Projected out 10 Years

Feeder	2022
SPI12F1	\$2,185,995
NE12F4	\$2,074,839
NE12F2	\$1,440,185
SE12F4	\$1,414,351
FWT12F2	\$1,370,184
COB12F1	\$1,328,172
CDA122	\$1,230,638
SUN12F3	\$1,220,204
C&W12F5	\$1,088,570
PUL116	\$1,043,097
CLV34F1	\$1,011,177

Actual Energy Savings

Feeder	Service Area	Year Complete	Annual Energy Savings (MWh)
SCE12F4	Spokane, WA (9th & Central)	2009	601
BEA12F1	Spokane, WA (Beacon)	2012	972
F&C12F2	Spokane, WA (Francis & Cedar)	2012	570
BEA12F5	Spokane, WA (Beacon)	2013	885
CDA121	Coeur d'Alene, ID	2013	438
OTH502	Othello, WA	2014	21
RAT231	Rathdrum, ID	2014	148
M23621	Moscow, ID	2015	562
WIL12F2	Wilbur, WA	2015	1,403
WAK12F2	Spokane, WA (Waikiki)	2016	175
RAT233	Rathdrum, ID	2019	471
SPI12F1	Northport, WA (Spirit)	2019	127
Total			6373



To be completed by Capital Planning Group

Rationale for decision

Review Cycles
2012-2016

Date	Template
10/29/2015	Updated w/ Sept CPG approval and 5 yr plan approvals

To: Distribution Grid Modernization Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery *HR*

Date: 2/12/2016

Re: Distribution Grid Modernization Capital Investment Considerations

This programmatic business case is a business case based upon an asset management program. The Electric Distribution System 2016 Asset Management Plan has been included as Exhibit No. __ (HLR-6). Additional information regarding the Distribution Grid Modernization business case can be found therein at pages 7 and 52.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Segment Reconductor and FDR Tie Program

ER No: ER Name:

2514 Distribution - Spokane North & West

2515 Distribution - CdA East & North

2516 Distribution - Pullman & Lewis Clark

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$11,885¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	2,856	0	0	0	0	0	0	0	50	0	0	150	2,656
2017	3,175	59	59	73	73	73	73	147	147	147	147	88	2,088
2018	652	45	45	56	56	56	56	56	56	56	56	56	56

Business Case Description:

The Company's Distribution Grid system includes 18,000 circuit miles of overhead and underground primary conductors. As load and generation patterns shift, certain areas (segments) of the system become thermally overloaded. These constrained portions of the system are identified through systematic planning studies or from operational studyworks conducted by Area Engineers. In addition, FDR 'Tie' switches are installed to allow load shifts between FDR circuits to balance loads and in response to either maintenance or forced outages.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Segment Reconnector & FDR Tie Program	Assessments:	
Requested Amount	\$4,000,000/year	Financial:	0.00%
Duration/Timeframe	on-going Year Program	Strategic:	Life-cycle asset management
Dept., Area:	Distribution Engineering	Business Risk:	Business Risk Reduction - None
Owner:	David Howell	Program Risk:	Low certainty around cost, schedule and resources
Sponsor:	Heather Rosentrater	Assessment Score:	33
Category:	Program	Annual Cost Summary - Increase/(Decrease)	
Mandate/Reg. Reference:	n/a	Performance	Capital Cost
Recommend Program Description:		O&M Cost	Other Costs
The Company's Distribution Grid system includes 18,000 circuit miles of overhead and underground primary conductors. As load and generation patterns shift, certain areas (segments) of the system become thermally overloaded. These constrained portions of the system are identified through systematic planning studies or from operational studyworks conducted by Area Engineers. In addition, FDR 'Tie' switches are installed to allow load shifts between FDR circuits to balance loads and in response to either maintenance or forced outages.		Business Risk Score	
		Electric Delivery Capacity	\$ 4,000,000
			\$ -
			\$ -
			4

Alternatives:		Performance	Capital Cost	O&M Cost	Other Costs	Business Risk Score
Unfunded Program:	Avista's Distribution System Planning criteria (e.g. 500 A Plan) mandates performance levels for distribution circuits including capacity and voltage requirements. This program is aimed at maintaining compliance with planning criteria.	n/a	\$ -	\$ -	\$ -	16
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

Program Cash Flows

	Capital Cost	O&M Cost	Other Costs	Approved
2015	\$ 3,735,000	\$ -	\$ -	\$ 3,735,000
2016	\$ 3,810,000	\$ -	\$ -	\$ 3,810,000
2017	\$ 4,175,000	\$ -	\$ -	\$ 4,175,000
2018	\$ 3,900,000	\$ -	\$ -	\$ 3,900,000
2019	\$ 4,000,000	\$ -	\$ -	\$ 4,000,000
2020	\$ 4,000,000	\$ -	\$ -	\$ 4,000,000
2021+	\$ 4,000,000	\$ -	\$ -	\$ -
Total	\$ 27,620,000	\$ -	\$ -	\$ 23,458,505

Associated Ers (list all applicable):

2514	2515	2516

ER	2016	2017	2018	2019	2020	Total
2514	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 10,000,000
2515	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 5,000,000
2516	\$ 810,000	\$ 1,175,000	\$ 900,000	\$ 1,000,000	\$ 1,000,000	\$ 4,885,000
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 3,810,000	\$ 4,175,000	\$ 3,900,000	\$ 4,000,000	\$ 4,000,000	\$ 19,885,000

Mandate Excerpt (if applicable):

Avista Distribution Planning Criteria (500 Amp)

Additional Justifications:

This program is a foundational element of the Company's overall effort to maintain the electric delivery system. While many of the asset management program such as WPM, TCOP, Worst Feeders, and Grid Mod are targeted efforts to maintain reliability, this program specifically identifies thermal, voltage, and capacity 'tie' constraints. The program represents the collective effort of distribution planners and area engineers to manager our ability to serve customer load, efficiently, and securely.

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: Scada Variable Limit (6/29/15)
1620, 93F, Area Load 2007 MW

Prepared

Loading (A) Rating (A) % Ldg

Top 10 (% Of Rated) Feeders

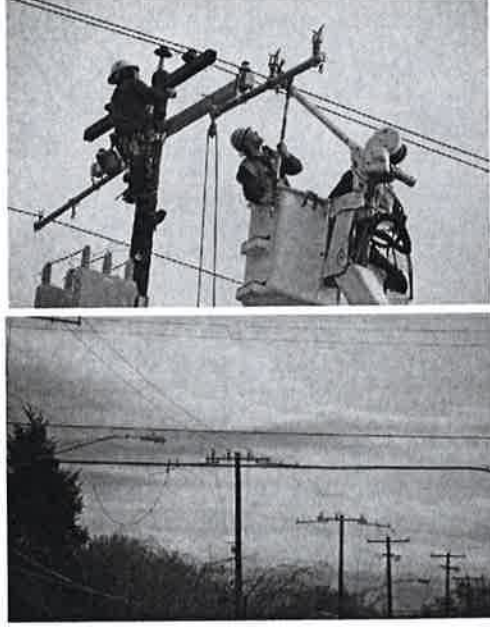
Item	Location	Category	Value 1	Value 2	Value 3
1	HOLBROOK	CB	1206	443.0	454.2
2	10TH_STW	CB	1253	425.2	538.3
3	POUNDLN	CB	1201	410.8	538.3
4	LIBRTYLK	CB	12F3	420.0	559.3
5	WAIKIKI	CB	12F2	418.0	559.3
6	LOLO	CB	1359	306.0	435.6
7	CDALENE	CB	125	389.2	554.7
8	WAIKIKI	CB	12F3	392.0	559.3
9	CRTCHFLD	CB	1210	375.0	538.3
10	ROSSPARK	CB	12F1	443.0	641.7

Reviewed signature Director/Manager

Other Party Review signature (if necessary) Director/Manager

Margie Stevens
Director/Manager

ROX 751 - Reconnector (see 2414) Mica Peak Cnv to URD COB 12F2 Green Bluff Tie LOO 12F2 Deer Lk Narrows Xing COB 12F1 Recond Midway 1 MI DEE 12F2 Bear Lk-Antler Tie DEE 12F2 Recond to LOO 12F1 SOT 522/523 - Recond- 6A WAS781 - Interset Poles LL - Cnv OH to UG (USFWS) LIB 12F2 - Henry Rd Tie CHE 12F1-12F4 Tie on Bowdish U District FDR Tie Trent Ave DEE 12F2 - Recond 2/0 ACSR LIB 12F1-EFM 12F2 Rocky Hill Tie BKR 12F2 - Tie to EFM 12F1 3HT 12F7 Tie U District Loop BKR 12F3 Recond 2/0 CU on Mission EFM 12F1 - State Ln Bridge - Conv OH/UG 9CE 12F4 Recond 336 9CE 12F2 - Tie to Chester 12F2 SLK 12F1 - Recond 2.1 mi C&W 12F4 - Tie to 3HT 12F7 9CE 12F3 Thierman/Mission Rcd 1 mi BKR 12F1 - Liberty Lk 12F2 on Mission CHW12F2- Angel Pk Recond 0.75mi GRN12F1 Tie to CLV12F2 4.5 mi GIF 34F1 - CHW 12F3 FDR Tie CLV 34F1- Kelly Hill Rblld CHW 12F2- Flowery Trail Recond GIF 34F1 Midline GRN 12F2 Recond 4.1 Mi Old Kettle Rd CHW 12F4 Recond near Ctnwd Road CLV 12F4 Recond 1.6 mi KET 12F2 - Chg FDR Voltage to 13.2 kV DVP 12F2- Recond 6 miles Hwy 2 SPG 761 - Recond Small CU LIN 711 - Convert to 25 kv - tie Rox751 LIB 12F3 Rcd W Side Lib Lk NW 12F3 tie INT 12F1 Strong Rd URD COB 12F2 Bernhill Rd Rcd 2 ACSR 3HT 12F1-12F5 Tie at Iron Bridge BKR 12F3 Recond 1 mi-Central Premix COB 12F1 - Split FDR 3HT 12F3 Recond 2/0 Switch #980 MIL 12F2 tie to 12F3 Northwoods URD SIP General Upg WAK 12F1-12F4 Tie BEA 12F6-9CE 12F1 Havana Rcd 1/0 ACSR FWT 12F4 - C&W 12F5 River Xing INT 12F2 Recond 2 mile-Rutter Pkwy INT 12F2 - DEE 12F1 Improve Tie SUN 12F4 - Reconnector 2/0 @ SIA SUN 12F2 - Replace Sw 475 w/ Recloser DEE 12F1 Midline (protection req.) Crapo Removal (aka Big R) 8 miles 3HT 12F5-F2 TIE C&W 12F1-12F5 2/0 C&W 12F4-SUN 12F1 SUN 12F4-12F2 #2CU MIL 12F2-12F3 URD Northwoods AIR 12F2-SUN 12F4 URD SIA Flint Rd DEE 12F1 Tie on Wildrose (again) NE 12F2 Tie at Kaiser MEA 12F1-Tie at Kaiser ROS 12F2-3HT 12F7 Tie DEE 12F2-MIL 12F1 DTW East (move to sub) Flint Road Sub SUN 12F4 replace midline 249R CLV Area Switched Banks ORI 12F1- ARD 12F2 FDR Tie (OH, UG) LF34F1- Midline CLV 34F1 Midline OSB 521 - Recond/Viper for Coeur Mine OLD - Dx Tie Recond DAL 131 Recond 1.5 mi DAL 131 - Recond 1.4 mi DAL 131 - Recond 0.8 ml (lakeshore) DAL 133 - Add 1-ph 3.1 miles PF 213 - Recond 1.2 mi Riverbend Pk HUE 142 - Extend 3ph 0.5 mi DAL 134- Coldwater Ck Loop BLU 321 Recond 3 mi (Silver Beach) LKV 343 - Conv 6 mi to UG PVW 241 - Ext 1 mi BLU 321- Recond 1.2 mi PIN 442- Recond 1 mi OGA 611 - Recond 1.5 mi PIN 441 - Reconnector FDR Tie SPT 4521 - River Xing & Reloc at Sundowner OLD 721 - create UG loop for Ind Pk PVW 243 - Cap Bank Riverbend Comm PF 213 - Recond McGuire Road BLU 321 - Rblld & UG near Tony's Rest CDA 125- Recond #6 Crapo Dalton & 17th STM 633 - Convert 3 Laterals to UG HUE142 - Recond 1 mile on Atlas to 2/0 ACSR CKF711 Red Fir Ln conv to UG SPT4523 - Recond 1.8 mi at sub PIN441- Finish 2013 proj. IDR253- Church RD UG conv. Reliability SPT4521- Reroute hvy tree area WAL542- remove abandoned FDR BLU321-Add 3rd ph Wolfodge lat CDA 124-Recond NIC Loop HOL 1206 - Recond 3700' SLW 1358 Extend ORO 1281 TEN 1253 - 1 mi recond & regs CFD 1210 - Recond #6 CU PAL 312 - Rcd #4ACSR to Viola MOS 515 tie to 512 CFD 1211-ext 556 trunk 2miles DRY 1209-rebuild 5mi towards Silcott LOL 1359 - 2-3miles of lateral rblld PDL1201 tie to DRY 1208 PDL 1203 - 3ph loop, so portion TEN 1255 - recond .75 mi at 5th & Cedar TEN 1257 - 1 mi lateral rblld ORO 1281 - 1 mi recond at sub WSU Steam plant - cable & conduit CFD 1211- Regs at 1.5 miles GRV 1273- Regs at Orogrande and E City SWT 2403 - Cap bank at Lapwai WIK1279 - extend 2 ph Hwy 95 & Denver GRV 1272 tie to WIK 1278 so of hwy LMR-NLEW13 - tie & river xing DRY 1208 tie to PDL 1202 - Fair & 13th SLW 1348 tie to SLW 1358 - 25th & 8th TEN 1256 - midline TEN 1257 tie to LOL 1266 ORO 1281-midline KOO 1299-midline JPE 1287-midline KAM-KOO tieline LEO 611-U/B with M115-N Lew Recond TUR 112 -Extend FDR 1 mile SPU Bishop Blvd URD Inc Cap.



To be completed by Capital Planning Group

Rationale for decision

Review Cycles
2012-2016

Date	Template

To: Segment Reconductor and FDR Tie Program Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/12/2016

Re: Segment Reconductor and FDR Tie Program Capital Investment Considerations

This programmatic business case is a business case based upon an asset management program. The Electric Distribution System 2016 Asset Management Plan has been included as Exhibit No.__(HLR-6). Additional information regarding the Segment Reconductor and FDR Tie Program business case can be found therein at pages 9 and 59.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Distribution Line Protection

ER No: 2276 **ER Name:** Distribution Line Protection

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$375¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	125	1	1	4	4	18	18	18	20	20	20	3	0
2017	125	1	1	4	4	18	18	18	20	20	20	3	0
2018	125	1	1	4	4	18	18	18	20	20	20	3	0

Business Case Description:

Avista's Electric Distribution system is configured into a trunk and lateral system. Lateral circuits are protected via fuse-links and operate under fault conditions to isolate the lateral in order to minimize the number of affected customers in an outage. Engineering recommends treatment of the removal and replacement of Chance Cutouts, the removal and replacement of Durabute cutouts and the installation of cut-outs on un-fused lateral circuits. This is a targeted program to ensure adequate protection of lateral circuits and to replace known defective equipment.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Section 7

Capital Program Business Case



Investment Name:	Distribution Line Protection	Assessments:	
Requested Amount	875,000 5-years	Financial:	MH - >= 9% & <12% CIRR
Duration/Timeframe	On-going Year Program	Strategic:	Life Cycle Programs
Dept., Area:	Engineering	Operational:	Operations require execution to perform at current levels
Owner:	Dave James	Business Risk:	ERM Reduction >5 and <= 10
Sponsor:	Rosentrater/Fisher	Program Risk:	Moderate certainty around cost, schedule and resources
Category:	Program	Assessment Score:	93
Mandate/Reg. Reference:	n/a	Annual Cost Summary - Increase/(Decrease)	

Recommend Program Description:	Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
Avista's Electric Distribution system is configured into a trunk and lateral system. Lateral circuits are protected via fuse-links and operate under fault conditions to isolate the lateral minimize the number of affected customers. Engineering recommends treatment of the following: 1. Removal and replacement of Chance Cutouts 2. Removal and replacement of Durabute cutouts 3. Installation of cut-outs on unfused lateral circuits. This is a targeted program to ensure adequate protection of lateral circuits and to replace known defective equipment.	Investments necessary to maintain current operations and to extend the life of current assets.	\$ 250,000	\$ 10,000		8
		Annual Cost Summary - Increase/(Decrease)			

Alternatives:	Performance	Capital Cost	O&M Cost	Other Costs	ERM Risk Score
Unfunded Program:	n/a	\$ -	\$ -	\$ -	15
Alternative 1: Brief name of alternative (if applicable)	Describe other options that were considered	\$ -	\$ -	\$ -	8
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
5 years of costs

	Capital Cost	O&M Cost	Other Costs	Approved
2013	\$ 250,000	\$ 5,000	\$ -	\$ 250,000
2014	\$ 250,000	\$ 10,000	\$ -	\$ 250,000
2015	\$ 125,000	\$ 10,000	\$ -	\$ 125,000
2016	\$ 125,000	\$ 10,000	\$ -	\$ 125,000
2017	\$ 125,000	\$ 5,000	\$ -	\$ 125,000
2018	\$ -	\$ -	\$ -	\$ 125,000
2019	\$ -	\$ -	\$ -	\$ 125,000
2020				
Total	\$ 875,000	\$ 40,000	\$ -	\$ 1,125,000

Associated Ers (list all applicable):

Current ER			
2416	System Wide		

Mandate Excerpt (if applicable):

Additional Justifications:

This program was funded for a 2-year period in the 2009-2010 timeframe. This request allows for completion of the Chance cutout replacements but also includes the installation of devices on unfused laterals.

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:	# Cutout Replacement
	# New Cutout Installation

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,

Spokane, N & W

- Cavenport 12F2 Convert FDR to UG
- Roadbox 751 - Main 2.5 mi
- S Othello 621 - Recond
- Long Lake - Conv OH to UG (USPWS)
- 3HT 12F2 - Waste Water
- Monroe St Secondary CM Recond
- Milwood 12F4 - Recond 0.5 mi
- Colbert 12F1 - Recond 4/2 ACSR
- NE 12F2 - Tie to NE 12F4
- SE 12F2 - Tower MT
- Liberty Lk 12F2 - Henry Rd Tie
- NE 12F1 Recond & Split FDR
- SCE 12F4 - Recond 366
- Fort Wright 12F1 - Recond 1 mi
- Deer Park 12F2 - Recond 2/0 ACSR
- NE 12F2 - Tie to WAK 12F3
- Baker 12F2 - Tie to EFM 12F1
- East Farms 12F1 - Recond 1.5 Mi
- Fort Wright 12F4 - Recond 900'
- SCE 12F1 - Tie to BEA 12F6
- SCE 12F2 - Tie to Wheeler 12F2
- Silver Lk 12F1 - Recond 2.1 mi
- Third & Hatch 12F1 - Tie to 12F7
- CSW 12F4 - Tie to 3HT 12F7
- Crestler 12F4 - Recond 1.75 mi
- SCE 12F3/See 12F1 - Recond 1 mi
- Sunset 12F1 - Recond 1.5 mi
- SCE 12F1 - Tie to SCE 12F3 Brkwy 0.5 mi
- MIL 12F1 Recond 1/0 CU 0.5 mi
- CHE 12F3 Recond 2/0 CU 3 mi
- BKR 12F3 Recond 2/0 ACSR 1 mi

- BKR 12F3 Recond 1 mi
- MIL 12F2 Recond 0.5 mi
- Coville 34F1 - Hwy 25N Recond
- Gifford 34F1 - Replace Neutral
- Orin 12F3 Recond 2.4 mi
- Coville 12F2 - Recond 2 mi
- Coville 12F2 - Recond 4.7 mi Oakshot
- CHW12F2 - Recond 0.25 mi - Split
- Orin 12F2 - Angel Pk Recond 0.75mi
- Orin 12F1 and Cok 12F2 Viper Moline
- GRN12F1 Tie to CLV12F2 4.5 mi
- GIF 34F1 - CHW 12F3 FDR Tie
- Orin 12F2 - Recond 1.2 mi
- GRN12F2 Recond 4.1 Mi Old Kettle Rd
- CLV12F4 Recond 1.6 mi
- KET12F2 - Chg FDR Voltage to 13.2 KV
- CLV34F1 - Kelly Hill Road
- CHW12F2 - Flowery Trail Recond
- GIF34F1&2, CLV34F1 - 3 Molecules
- Coville Area Switched Banks

CDA and E

- Sandpoint 4522 - Recond 0.7 mi
 - Old Town - De Tie Recond
 - Dalton 131 Recond 1.9 mi
 - Dalton 131 - Recond 1.4 mi
 - Avondale 151 - Recond 1.5 mi
 - Dalton 131 - Recond 0.6 mi (lakeshore)
 - Dalton 133 - Add 1 ph 3.1 miles
 - PF 213 - Recond 1.2 mi Riverbend Pk
 - Dalton 134 - Cushman CK Loop
 - Pleasant View 241 - Ext 1 mi
 - Blue Ck 321 - Recond 1.2 mi
 - Dalton 131 - Extend 0.5 mi
 - Pine Ck 424 - Recond 1 mi
 - Wallace 542 - Relocate 1.5 mi to bike tr
 - Ogata 611 - Recond 1.5 mi
 - Rethrum 233-UG 1 mi (Byta Ranch)
 - Lucky Fr 552 - Add FDR
 - CDA - Osprey mitigation
 - Huerter 142 - Extend 3ph 0.6 mi
 - Blue Ck-321 Recond 3 mi
 - Lakeview 343 - Conv 6 mi to UG
 - Wallace 544 Recond for Star Mine
- Palouse & L/C**
- Holtbrook 1206 - Recond 3700'
 - Orino 1281
 - 10th&Stewart 1253 tie to 1256
 - 10th&Stewart 1253 - 1 mi recond & reg
 - S Lewiston 1356 Extend
 - CFD 1210 - Recond #6 CU
 - Palouse 312 - Add Phase
 - Moscow 515 tie to 512
 - Evan 241 Midline Roga

To be completed by Capital Planning Group

Rationale for decision	Review Cycles	
	Date	Template

To: Distribution Line Protection Business Case 2016 Washington GRC File

From: Heather Rosentrater, Vice President, Energy Delivery 

Date: 2/12/2016

Re: Distribution Line Protection Capital Investment Considerations

This programmatic business case is a business case based upon an asset management program. The Electric Distribution System 2016 Asset Management Plan has been included as Exhibit No.__(HLR-6). Additional information regarding the Distribution Line Protection business case can be found therein at pages 9 and 68.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Environmental Compliance

ER No: ER Name:

6000 PCB Identification & Disposal

6101 Forest Service Requirements

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$1,150¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	400	29	29	29	29	29	29	29	29	29	29	29	79
2017	400	31	31	32	33	33	35	35	35	35	34	33	33
2018	350	27	27	28	29	29	31	31	31	31	30	29	29

Business Case Description:

Implementation of Forest Service Special Use Permits (SUP), Waste Oil Disposal, including PCBs, and Environmental Compliance requirements related to storm water management, water quality protection, property cleanup and related issues, etc.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.

Key Performance Indicator(s)
Expected Performance Improvements

KPI Measure: annual meetings with the National Forest Service (NFS)
Environmental Protection Agency
WDOE

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 Margie Stevens Director/Manager
(if necessary)

Capital Budget Projections

	2014	2015	2016	2017	2018	
ER 6000	150,000	150,000	150,000	150,000	150,000	PCB Waste Management
ER 6101	100,000	100,000	100,000	100,000	100,000	Permit Renewal/Implementation
ER 6002	200,000	200,000	200,000	200,000	200,000	Environmental Compliance Pullman Storm Water
E14	450,000	450,000	450,000	450,000	450,000	

Engineers Opinion Cost Estimat...

wista SR 270 Site Storm Treat..

To be completed by Capital Planning Group
Rationale for decision

Rationale for decision	Review Cycles 2012-2016	
	Date	Template

To: Environmental Compliance Business Case 2016 Washington GRC File

From: Bruce Howard, Director of Environmental Affairs



Date: 2/12/2016

Re: Environmental Compliance Capital Investment Considerations

This business case effectively describes the purpose of and need for the investment covered by the business case. The business case details environmental compliance requirements related to Forest Service Special Use Permits (for which failure to comply could result in United States Forest Service enforcement actions, as well as NERC/WECC enforcement actions), Washington State and Environmental Protection Agency (EPA) and Toxic Substance Control Act (TSCA) regulations related to waste oil and PCB containing equipment (for which failure could result in enforcement actions by any of these agencies). These environmental compliance considerations provide support for the necessity of investment under this business case.

**AVISTA UTILITIES
2016-2018 CAPITAL PROJECTS**

Functional Group: Electric Transmission / Distribution

Business Case Name: Franchising for Washington State Department of Transportation (“WSDOT”)

ER No: ER Name:

7108 WSDOT Highway Franchise Consolidation

Approved Business Case Spend Amount 2016-2018 (\$000s - System): \$506¹

Transfer to Plant Amounts (\$000s - System):

Year	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	494	38	40	51	40	41	39	39	38	49	40	41	39
2017	9	1	1	1	1	1	1	1	1	1	1	1	1
2018	3	0	0	0	0	0	0	0	0	0	0	0	0

Business Case Description:

Obtain franchise renewals for existing facilities on WSDOT rights of way. We have hundreds of miles of Transmission and Distribution facilities within WSDOT rights of ways. Maintaining our right to be there allows for the continued operation of those facilities without additional negative impact to our ratepayers or the Company.

¹ The business case amount reflects approved capital expenditures for the years indicated and not transfers to plant.



Investment Name:	Franchising for WSDOT	Assessments:					
Requested Amount	\$265,000	Financial:	Medium - >= 5% & <9% CIRR				
Duration/Timeframe	20 Year Program	Strategic:	Life Cycle Programs				
Dept., Area:	Environmental	Operational:	Operations somewhat impacted by execution				
Owner:	Rod Price (Mgr) Bruce Howard (Dir)	Business Risk:	ERM Reduction >5 and <= 10				
Sponsor:	Marian Durkin	Program Risk:	High certainty around cost, schedule and resources				
Category:	Program	Assessment Score:	81	Annual Cost Summary - Increase/(Decrease)			
Mandate/Reg. Reference:	n/a			Capital Cost	O&M Cost	Other Costs	
Recommend Program Description:	Obtain franchise renewals for existing facilities on WSDOT rights of way. We have hundreds of miles of Transmission and Distribution facilities within WSDOT rights of ways. Maintaining our right to be there allows for the continued operation of those facilities without additional negative impact to our ratepayers or the Company.	Performance	Present operation performance will remain	\$ 265,000		\$ -	Business Risk Score 1
Alternatives:				Annual Cost Summary - Increase/(Decrease)			
Unfunded Program:	Without WSDOT Franchises, we may be evicted from WSDOT property, thus requiring that we relocate our facilities. In addition, we will not be able to add new facilities to WSDOT properties if needed to serve our load or operate our system as required.	Performance	n/a	\$ -	\$ -	moderate to extreme	9
move facilities to private property	This would involve obtaining easements on, or buying, private property and moving all of the existing facilities.	Performance	interrupt services to move facilities	\$ -	\$ -	moderate to extreme	1
				\$ -	\$ -	\$ -	0
				\$ -	\$ -	\$ -	0

Program Cash Flows

5 years of costs

	Capital Cost	O&M Cost	Other Costs	Approved
Previous				\$ 375,000
2014	\$ 265,000	\$ -	\$ -	\$ 165,000
2015	\$ 195,000	\$ -	\$ -	\$ 427,375
2016	\$ 125,000	\$ -	\$ -	\$ 494,100
2017	\$ 125,000	\$ -	\$ -	\$ 9,100
2018	\$ 125,000	\$ -	\$ -	\$ 2,500
2019	\$ -	\$ -	\$ -	\$ 5,600
2020	\$ -	\$ -	\$ -	
2021+	\$ -	\$ -	\$ -	
Total	\$ 835,000	\$ -	\$ -	\$ 1,478,675

Associated Ers (list all applicable):

7108			
------	--	--	--

Mandate Excerpt (if applicable):

provide brief citation of the law or regulation and a reference number if possible

Additional Justifications:

WSDOT will not allow new facilities to be built on franchises that have expired.

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: obtain franchises
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* 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		Review Cycles	
Rationale for decision	2012-2016		
	Date	Template	

To: Franchising for WSDOT Business Case 2016 Washington GRC File

From: Bruce Howard, Director of Environmental Affairs *BH*

Date: 2/12/2016

Re: Franchising for WSDOT Investment Considerations

Avista operates certain of its facilities through franchise agreements with the Washington State Department of Transportation (WSDOT). Therefore, the Company is subject to certain requirements as outlined in the WSDOT Utilities Manual (M 22-87.07, November 2014) that address renewal of franchise agreements and the Control Zone, with which franchise renewal must comply. Maintaining these rights of way requires periodic renewals of our franchises, which is addressed by this business case.

Avista System Planning Assessment

2015 Local Planning Report

Prepared By: *Transmission System Planning*



Scott Waples Director, Asset Management and System Planning

Dec 30, 2015

Date

Version History

Version	Version Date	Action	Change Tracking	Reviewed By
0	Dec 30, 2015	2015 Final Version	Revised from 2014	SAW



TABLE OF CONTENTS

- I EXECUTIVE SUMMARY3**
- II INTRODUCTION 7**
 - 1 REPORT ORGANIZATION7
 - 2 COMPANY DESCRIPTION8
 - 3 LOCAL PLANNING PROCESS.....17
- III PLANNING ASSESSMENT19**
 - 1 ASSESSMENT OVERVIEWS..... 19
 - 2 PERFORMANCE ISSUE PRIORITIZATION.....29
 - 3 BIG BEND AREA..... 32
 - 4 COEUR D’ALENE AREA 77
 - 5 LEWISTON/CLARKSTON AREA..... 121
 - 6 PALOUSE AREA..... 140
 - 7 SPOKANE AREA 161
 - 8 SENSITIVITY ANALYSIS.....256
- APPENDIX A - PLANNING CASES SUMMARY 281**
- APPENDIX B - STEADY STATE CONTINGENCY RESULTS.....**
- APPENDIX C - TRANSMISSION PLANNING STANDARDS, POLICIES, AND PROCEDURES**
- APPENDIX D - SCADA VARIABLE LIMITS.....**
- APPENDIX E - SYSTEM DATA BOOK.....**



I EXECUTIVE SUMMARY

Avista's System Planning Department has completed its annual assessment of the Avista Transmission System as well as select portions of our neighboring transmission systems. The purpose of the Planning Assessment is to determine where the System may have the inability to meet performance requirements as defined in the NERC Reliability Standards and to develop Corrective Action Plans addressing how the performance requirements will be met. Key findings from the assessment include:

Big Bend Area: The Big Bend area transmission system performance will significantly improve upon completion of the Benton – Othello SS 115 kV Transmission Line Rebuild project. Further improvements are made through additional reconductor projects, the Saddle Mountains integration, and the addition of communication aided protection schemes.

Coeur d'Alene Area: Completion of the Coeur d'Alene – Pine Creek 115 kV Transmission Line Rebuild project and Cabinet – Bronx – Sand Creek 115 kV Transmission Line Rebuild project will provide significant transmission system performance in the near and long term planning horizon. The Sandpoint Reinforcement Project and installation of capacitor banks at St. Maries Substation is part of the long range plan for the area.

Lewiston/Clarkson Area: The transmission system in the Lewiston/Clarkson area exhibits relatively good performance. Issues are limited primarily to N-1-1 outages on the 230 kV system and voltage exceeding facility ratings during light loading conditions. Installation of shunt reactors is recommended to mitigate these issues.

Palouse Area: Completion of the Moscow 230 Station Rebuild project in 2014 has mitigated several performance issues. The remaining issue is an outage of both the Moscow and Shawnee 230/115 kV transformers. An operational and strategic long term plan is under development to best address the double transformer outage.

Spokane Area: Several performance issues exist with the present state of the transmission system in the Spokane area and worsen with additional load growth. The staged construction of new 230 kV facilities in particular the Garden Springs 230 kV and Ninth and Central 230 kV Substations to reinforce the area will be required. Dependency on Beacon Station presently leaves the system susceptible to performance issues for outages related to the station.

A list of corrective actions plans, developed to mitigate performance issues observed during the assessment, is provided in the following table. The plans are categorized as complete, planned (included in five year budget), needs further analysis (has been discussed but actionable plans are under development), conceptual (has been discussed and justification is pending) and new proposal (has not been presented in previous assessments).



	Year Issue Starts	Construction Start	Construction End	Priority	Cost Estimate
Big Bend	2033	2017	2018	77.25	\$82,125,000
1-Completed					
Chelan - Stratford 115 kV Transmission Line River Crossing				0.01	
Stratford 115 kV Station Rebuild				0.01	
2-Planned					
Addy - Devils Gap 115 kV Transmission Line Reconductor	Present	2017	2018	4.16	\$2,025,000
Benton - Othello SS 115 kV Transmission Line Rebuild	Present	2015	2016	77.25	\$7,100,000
3-Needs Further Analysis					
Addy - Kettle Falls Protection Scheme	Present			45.00	\$1,000,000
Chelan - Stratford 115 kV Transmission Line Rebuild	Present			2.48	\$13,000,000
Lind - Warden 115 kV Transmission Line Rebuild	2033			0.14	\$9,000,000
Saddle Mountain Integration	Present			23.18	\$16,400,000
4-Conceptual					
Devils Gap - Stratford 115 kV Transmission Line Rebuild	2019			1.40	\$30,100,000
Devils Gap Station Reconfiguration	Present			16.00	\$3,000,000
Kettle Falls Capacitor Bank	2024			0.02	\$500,000
Coeur d'Alene	2034	2016	2018	90.30	\$46,300,000
1-Completed					
Lancaster Interconnection				0.01	
2-Planned					
Cabinet - Bronx - Sand Creek 115 kV Transmission Line Rebuild	Present	2015	2017	76.88	\$7,500,000
Coeur d'Alene - Pine Creek 115 kV Transmission Line Rebuild	Present	2016	2018	90.30	\$12,750,000
Pine Creek Transformer Replacement	2034			0.01	\$500,000
3-Needs Further Analysis					
St. Maries Cap Bank	Present			3.13	\$500,000
4-Conceptual					
Cabinet 230/115 kV Transformer Automatic LTC	2019			0.21	\$50,000
Rathdrum 115 kV Bus Reconfiguration	2034			1.29	\$5,000,000
Sandpoint Reinforcement	Present			16.31	\$20,000,000
Lewiston/Clarkston	2030	2017	2019	150.00	\$15,325,000
2-Planned					
Lolo Transformer Replacement	Present			0.13	\$1,000,000
North Lewiston Reactors	Present	2015	2016	150.00	\$4,900,000
4-Conceptual					
Hatwai - Lolo #2 230 KV Transmission Line	Present	2017	2019	7.97	\$8,025,000
South Lewiston Station Rebuild	2030	2015	2016	0.06	\$1,400,000
Palouse	Present			107.25	\$2,500,000
1-Completed					
Moscow 230 Station Rebuild				0.01	
4-Conceptual					
Shawnee #2 230/115 kV Transformer	Present			107.25	\$2,500,000
Spokane	2034	2017	2019	157.50	\$147,715,000
2-Planned					
Garden Springs 115 kV Station Integration	Present	2017	2019	12.50	\$8,200,000
Ninth & Central - Sunset 115 kV Transmission Line Rebuild	2023	2015	2016	0.05	\$925,000
Spokane Valley Transmission Reinforcement	Present	2015	2016	157.50	\$8,890,000
Westside Transformer Replacement	Present	2015	2016	1.38	\$2,500,000
3-Needs Further Analysis					
Bell - Beacon Protection Scheme	Present			128.25	\$0
Garden Springs 230 kV Station Integration	2032			0.14	\$15,000,000
Nine Mile - Westside Protection Upgrade	Present			26.00	\$200,000
4-Conceptual					
Beacon - Francis & Cedar 115 kV Transmission Line Reconductor	2032			0.01	\$1,500,000
Beacon 230 kV Capacitor	Present			25.00	\$1,500,000
Garden Springs - Ninth & Central 230 kV Transmission Line	2034			1.25	\$30,000,000
Garden Springs - Thornton 230 kV Transmission Line	Present			5.63	\$30,000,000
Ninth & Central 230 kV Integration	Present			56.25	\$15,000,000
Rathdrum - Westside 230 kV Transmission Line	2034			0.09	\$30,000,000
Silver Lake Switching Station	2032			0.01	\$4,000,000

System	Year Issue Starts	Construction Start	Construction End	Priority	Cost Estimate
	Present			600.00	\$220,000
3-Needs Further Analysis					
230 kV Capacitor Automatic Switching	Present			25.00	\$20,000
RAS Update	Present			600.00	\$200,000
Grand Total					\$294,185,000

Additional projects not categorized as corrective action plans are listed in the following table:

	Construction Start	Construction End	Cost Estimate
Big Bend	2019	2019	\$18,747,700
1-Completed			
Odessa Cap Bank			
2-Planned			
Devils Gap - Lind 115 kV Transmission Line Rebuild	2015	2016	\$7,997,700
Ford Station Rebuild	2018	2019	\$1,275,000
Gifford Station Rebuild	2015	2015	\$1,200,000
Harrington Station Rebuild	2015	2016	\$3,000,000
Little Falls Station Rebuild	2015	2017	\$4,275,000
Valley Station Rebuild	2019	2019	\$1,000,000
3-Needs Further Analysis			
49 Degrees Station			
Bruce Siding Station			
Lee and Reynolds Transformation			
Coeur d'Alene	2019	2019	\$44,625,000
1-Completed			
Blue Creek Station Rebuild			
Julia Street			
Noxon Construction Station			
2-Planned			
Beck Road Station	2015	2014	
Benewah - Pine Creek 230 kV Transmission Line Rebuild	2018	2019	\$15,000,000
Big Creek Station Rebuild	2016	2017	\$1,300,000
Burke - Pine Creek #3 & #4 115 kV Transmission Line Rebuild	2015	2015	\$3,500,000
Cabinet - Noxon 230 kV Transmission Line Rebuild	2017	2018	\$1,500,000
Noxon Rapids 230 kV Switchyard Rebuild	2015	2019	\$21,075,000
Priest River Station			
Sandpoint, Sagle, and Oden Grid Modernization			
St. Maries SCADA Upgrade/Add Feeder	2018	2018	\$750,000
3-Needs Further Analysis			
Bronx Station	2019	2019	\$1,500,000
Cabinet Gorge Switching Station			
Carlin Bay Station			
Noxon - Pine Creek #2 230 kV Transmission Line			
Lewiston/Clarkston	2018	2019	\$5,625,000
1-Completed			
10th & Stewart Station Rebuild			
Lewiston Mill Road Station			
North Lewiston Distribution Station Relocation			
2-Planned			
Clearwater Station Upgrade	2015	2016	\$1,000,000
Grangeville Station Rebuild	2018	2019	\$2,025,000
Kamiah Wood Station Rebuild	2017	2018	\$1,300,000
Kooskia Transformer Replacement			
Pound Land Station Rebuild	2017	2018	\$1,300,000
3-Needs Further Analysis			
Wheatland Station			\$0
Palouse	2018	2019	\$29,053,800

	Construction Start	Construction End	Cost Estimate
2-Planned			
Benewah - Moscow 230 kV Transmission Line Rebuild	2015	2017	\$24,178,800
Diamond Station Minor Rebuild			
Moscow City 115 SCADA/Minor Rebuild			
North Moscow Transformation	2018	2019	\$1,800,000
Potlatch Transformer Replacement			
Tekoa SCADA Upgrade/Minor Rebuild			
3-Needs Further Analysis			
Deary - Potlatch 115 kV Transmission Line			
Tamarack Station	2018	2019	\$3,075,000
Spokane	2017	2019	\$39,785,000
2-Planned			
Chester Station Rebuild	2017	2018	\$1,460,000
Deer Park Partial Rebuild	2015	2015	\$750,000
Downtown West Station	2016	2018	\$2,275,000
Greenacres/Otis Orchards Stations	2015	2015	\$1,375,000
Hallett & White - Silver Lake 115 kV Transmission Line Rebuild	2017	2018	\$2,025,000
Irvin Distribution	2016	2017	\$1,875,000
Metro Station Rebuild	2016	2019	\$13,150,000
Ninth & Central Station Upgrade	2015	2017	\$2,950,000
Northwest Station Rebuild	2016	2017	\$1,675,000
Ross Park Station Rebuild	2015	2017	\$6,000,000
Southeast Capacity Increase	2016	2016	\$450,000
Sunset Station Rebuild	2017	2019	\$3,775,000
3-Needs Further Analysis			
Beacon - Bell - Francis & Cedar - Waikiki Reconfiguration	2016	2017	\$2,025,000
Beacon Station Rebuild			
College and Walnut Consolidation/Rebuild			
Downtown East Station			
Hallett & White Capacitor Bank			
Hawthorne Station			
Hillyard Station			
Westside Station Rebuild			
System	2015	2017	\$9,794,000
2-Planned			
Line Ratings Mitigation	2015	2017	\$8,794,000
Spokane - Coeur d'Alene 115 kV Relay Upgrades	2015	2015	\$1,000,000
Grand Total			\$147,630,500

Executing the Corrective Action Plans will ensure the System is able to meet performance requirements as defined in the NERC Reliability Standards. A majority of the Corrective Action Plans are required to mitigate performance issues observed in the operating horizon (0-1 years).



II INTRODUCTION

Avista's 2015 Local Planning Report is the end product of both the Local Transmission Planning Process and the annual Planning Assessment. The Local Transmission Planning Process (Process) is outlined in Attachment K to Avista Corporation's (Avista) Open Access Transmission Tariff (OATT) FERC Electric Volume No. 8. The purpose of the Process is to identify Single System Projects needed to mitigate future reliability and load-service requirements for the Avista Transmission System. The Planning Assessment is outlined in the NERC Reliability Standard TPL-001-4. The purpose of the Planning Assessment is to determine where the System may have the inability to meet performance requirements as defined in the NERC Reliability Standards and to develop Corrective Action Plans addressing how the performance requirements will be met. The Planning Assessment of the Transmission System included performing steady state contingency analysis, analysis of potential voltage collapse, and transient technical studies. Development of the Local Planning Report supports compliance with applicable NERC Reliability Standards as well as satisfying necessary steps in the Local Transmission Planning Process.

The Local Planning Report, and associated collection of Corrective Action Plans and Single System Projects, provides a ten year Transmission System expansion plan by including all Transmission System Facility improvements.

1 REPORT ORGANIZATION

The Local Planning Report is organized by providing information about Avista's Transmission System in Section II.2 followed by a summary of the Local Planning Process in Section II.3. The Planning Assessment is covered in Section III beginning with an overview and project prioritization description. The remaining sections of the Local Planning Report are divided into the five geographical areas representing sections of Avista's Transmission System. The complete Planning Assessment includes all five area assessments. Sensitivity Analysis studies are presented in Section III.8.

