



Avista Corp.

1411 East Mission P.O. Box 3727
Spokane, Washington 99220-0500
Telephone 509-489-0500
Toll Free 800-727-9170

November 19, 2021

Public Utility Commission of Oregon
Attn: Filing Center
201 High St SE, Suite 100
Salem, Oregon 97301

**RE: Docket No. UG-433 – Avista Corporation’s Request for General Rate Revision
Revised Exhibit 702 for Mr. Justin A. Baldwin-Bonney**

Filing Center:

Enclosed for filing with the Commission in Docket No. UG-433 is the Revised Exhibit No. 702 of Mr. Justin A. Baldwin-Bonney. Through the discovery process we discovered that we inadvertently provided capital investment business cases that are a prior version, rather than the most current version. The Revised Exhibit 702 provides the correct business cases.

Please note that this correction does not affect the revenue requirement in this case. The issue is strictly limited to the supporting documents provided.

Please direct any questions regarding this filing to Kaylene Schultz at (509) 495-2482 or Mr. Joe Miller at (509) 495-4546.

Sincerely,

/s/ David J. Meyer

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

Enclosure

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

DOCKET NO. UG-433

JUSTIN A. BALDWIN-BONNEY
Exhibit No. 702-Revised

Capital Investment Business Cases

Exhibit No. 702 - Capital Investment Business Case Index

Business Case Name	ER_# - ER Description	Page #
Natural Gas Distribution		
New Revenue - Growth	ER_1001 - Gas Revenue Blanket	2
New Revenue - Growth	ER_1050 - Gas Meters Minor Blanket	2
New Revenue - Growth	ER_1051 - Gas Regulators Minor Blanket	2
New Revenue - Growth	ER_1053 - Gas ERT Minor Blanket	2
New Revenue - Growth	ER_1056 - Gas Meter and Metering Equipment Purchases	2
Gas Reinforcement Program	ER_3000 - Gas Reinforce-Minor Blanket	9
Gas Deteriorated Steel Pipe Replacement Program	ER_3001 - Replace Deteriorating Gas System	13
Gas Regulator Station Replacement Program	ER_3002 - Regulator Reliable - Blanket	18
Gas Replacement Street and Highway Program	ER_3003 - Gas Replace-St&Hwy	22
Gas Cathodic Protection Program	ER_3004 - Cathodic Protection-Minor Blanket	25
Gas Non-Revenue Program	ER_3005 - Gas Distribution Non-Revenue Blanket	28
Gas Overbuilt Pipe Replacement Program	ER_3006 - Overbuilt Pipe Replacement Blanket	33
Gas Isolated Steel Replacement Program	ER_3007 - Isolated Steel Replacement	37
Gas Facility Replacement Program (GFRP) Aldyl A Pipe Replacement	ER_3008 - Aldyl -A Pipe Replacement	40
Gas ERT Replacement Program	ER_3054 - Gas ERT Replacement Program	54
Gas PMC Program	ER_3055 - Gas Meter Replacement Non Revenue	59
Gas Telemetry Program	ER_3117 - Gas Telemetry	62
Jackson Prairie Joint Project	ER_7201 - Jackson Prairie Storage	66
Gas Operator Qualification Compliance	ER_7208 - Gas Op Qual - Tooling, Vehicles and Material	71
Gas HP Pipeline Remediation Program	ER_3057 - Gas HP Pipeline Remediation Program	77
General Plant		
Fleet Services Capital Plan	ER_7000 - Transportation Equip	80
Structures and Improvements/Furniture	ER_7001 - Structures & Improv	92
Structures and Improvements/Furniture	ER_7003 - Office Furniture	92
Capital Tools & Stores	ER_7005 - Stores Equip	108
Capital Tools & Stores	ER_7006 - Tools Lab & Shop Equipment	108
Telematics 2025	ER_7008 - Telematics 2025	119
Enterprise Technology		
Technology Refresh to Sustain Business Process	ER_5005 - Information Technology Refresh Program	130
Enterprise Business Continuity	ER_5010 - Enterprise Business Continuity	140
Enterprise Security	ER_5014 - Security Systems	145
Enterprise Security	ER_5032 - Enterprise Security	145
Endpoint Compute and Productivity Systems	ER_5016 - Endpoint Compute and Productivity Systems	151
Energy Delivery Modernization & Operational Efficiency	ER_5041 - Energy Delivery Modernization & Operational Efficiency	162
Energy Delivery Operational Efficiency & Shared Services ¹	ER_5018 - Energy Delivery Op Efficiency & Shared Services	162
Energy Resources Modernization & Operational Efficiency	ER_5019 - Energy Resources Modernization & Op Efficiency	173
Control and Safety Network Infrastructure	ER_5020 - Enterprise & Control Network Infrastructure	183
Enterprise Communication Systems	ER_5022 - Enterprise Communication Systems	192
Environmental Control & Monitoring Systems	ER_5025 - Environmental Control & Monitoring Systems	202
ET Modernization & Operational Efficiency - Technology	ER_5026 - ET Modernization & Op Efficiency - Technology	212
Fiber Network Lease Service Replacement	ER_5027 - Fiber Network Lease Service Replacement	223
Financial & Accounting Technology	ER_5028 - Financial & Accounting Technology	232
Human Resources Technology	ER_5029 - Human Resources Technology	243
Land Mobile Radio & Real Time Communication Systems	ER_5030 - Land Mobile Radio & Real Time Comm Systems	256
Legal & Compliance Technology	ER_5031 - Legal & Compliance Technology	266
Facilities and Storage Location Security	ER_5033 - Facilities and Storage Locations Security	276
Technology Failed Assets	ER_5037 - Infrastructure Technology Failed Assets	281
Enterprise Data Science	ER_5038 - Enterprise Data Science	290
Basic Workplace Technology Delivery	ER_5039 - Basic Workplace Technology Delivery	298
Atlas	ER_5147 - Project Atlas	307
Customer Facing Technology Program	ER_5151 - Customer Facing Technology	316
Payment Card Industry Compliance (PCI)	ER_5152 - Payment Card Industry (PCI)	328
Data Center Compute and Storage Systems	ER_5155 - Data Center Compute and Storage Systems	331
Apprentice/Craft Training	ER_7200 - Appren Craft Train	341
Customer Experience Platform Program	ER_5158 - Customer Experience Platform Program	346
Customer Transactional Systems	ER_5040 - Customer Transactional Systems	355
Digital Grid Network	ER_5156 - Digital Grid Network Expansion	364
Generation, Substation & Gas Location Security	ER_5034 - Generation, Substation & Gas Location Security	374

¹ This business has been merged with Energy Delivery Modernization and Operational Efficiency. Please see Energy Delivery Modernization and Operational Efficiency business case justification narrative, starting on page 162.

Growth Business Case

EXECUTIVE SUMMARY

Avista defines these investments as “customer requests for new service connections, line extensions, transmission interconnections, or system reinforcements to serve a single large customer.” We have often in the past referred to new service connects as “growth,” as in growth in the number of customers, however, these investments are beyond the control of the Company, and as such they do not reflect a plan or strategy on the part of Avista. Responding quickly to these customer requests is a requirement of providing utility service. Typical projects include installing electric facilities in a new housing or commercial development, installing or replacing electric meters, or adding street or area lights per a request from an individual customer, a city, or county agency. As would be expected, fluctuation in the number of new customer connections is largely dependent on local economic conditions both in the housing and business sectors. New customers are served for electric in WA and ID and gas in WA, ID, and OR.

Both connects forecast and 12-month rolling Cost Per Service information are used to calculate costs directly related to providing service to customers. Electric and Gas devices are also included in this business case - Meters, Transformers, Gas Regulators, and ERTs (Encoder Receiver Transmitter). Many of the Meters, Transformers, and ERTs are used as replacements for Wood Pole Management, and Periodic Meter Changes, for example. The costs are allocated based on an estimate of how many devices of each type will be used for replacement, rather than new connects.

Growth Business Case Funds request:

ELEC & GAS	2022	2023	2024	2025	2026
Connects Forecast: Res & Comm	12,404	11,079	11,105	11,198	11,109
Extensions, Services	57,236,575	52,303,821	52,423,509	52,855,517	52,443,093
Lighting	2,119,067	2,182,639	2,248,118	2,315,561	2,385,028
Meters & Devices	5,449,239	5,318,044	5,131,301	5,197,450	5,233,388
Transformers & Network Protectors	8,510,394	7,544,517	7,569,018	7,632,452	7,563,661
Business Case Total	73,315,274	67,349,021	67,371,946	68,000,979	67,625,170

The 5 yr average annual spend for this business case has been around \$73M. Requests for service are variable in number and in cost, sometimes requiring significant investment for system reinforcements such as gas reg stations and electric distribution infrastructure. This funds request is based on ordinary expectation as supported by forecast and input from electric and gas operations engineers.

For 2022, there are updated impacts to Growth costs, see 2.1 for more detail.

VERSION HISTORY

Version	Author	Description	Date	Notes
<i>Draft</i>	<i>Julie Lee</i>	<i>Initial draft of business case</i>	<i>6/26/20</i>	
<i>Final</i>	<i>Julie Lee</i>	<i>Final version of business case</i>	<i>7/31/2020</i>	
<i>Draft</i>	<i>Julie Lee</i>	<i>Draft version of business case</i>	<i>7/9/2021</i>	<i>Exec summary, Sec 2.1, 2.2 updated</i>

Growth Business Case

GENERAL INFORMATION

Requested Spend Amount	\$344M
Requested Spend Time Period	5 years
Requesting Organization/Department	Energy Delivery
Business Case Owner Sponsor	David Howell Heather Rosentrater
Sponsor Organization/Department	Energy Delivery
Phase	Execution
Category	Mandatory
Driver	Customer Requested

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

The New Revenue – Growth Business Case is driven by tariff requirements that mandate obligation to serve new customer load when requested within our franchised area. Growth is also seen as a method to spread costs over a wider customer base, keeping rate pressure lower than would otherwise be experienced.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

Customer Requested: The New Revenue – Growth Business Case serves as support of several focus areas in Avista. We seek to serve the interests of our customers, in a safe and responsible manner, while strengthening the financial performance of the utility. Our growth contributes to strong communities, ongoing value to our customers, and the device portion of the business case keeps our system safe and reliable.

All new customers on Avista’s system are benefitted by this business case. In addition, all customers who have their metering or regulation changed, or who have transformers replaced, benefit from this business case.

Transmission Interconnects:

Growth Business Case

- Periodically, Avista receives requests from 3rd party generation customers seeking interconnection on our Transmission facilities. Two types of customers seek service on our system:
 - First, those who want to wheel on our Transmission system. For this type of customer, Avista receives Transmission revenue for wheeling service. These customers are classified as New Revenue, as the construction costs are offset by ongoing revenues much like new retail customers.
 - The second category of generators are those that sell their output directly to Avista under PURPA contracts. Their output is contained in Avista's gross margin calculation as power supply costs.
- For the first class of customer, a financial analysis shall be performed, as justification for the construction costs to be included as New Revenue – Growth, and the capital so constructed shall be treated as growth for ratemaking purposes.
- PURPA customers' facilities shall be constructed under our existing non-revenue programs.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Avista is required to serve appropriate new load, complying with our Certificate of Convenience and Necessity, and as part of our Obligation to Serve.

The New Revenue – Growth Business Case will provide funds for connecting new Electric and Gas customers in accordance with our filed tariffs in each state.

Our obligation to serve, mandates that we must extend service to new customers in our franchised service areas. We do not currently have an alternative to serving new customers. All projects are subject to our Line Extension Tariffs, filed with each State Utility Commission.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

We periodically review and update the line extension tariffs to ensure we are not creating excessive rate pressure in connecting new customers.

Growth Business Case

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Option	Capital Cost	Start	Complete
Serve new customer load, and purchase appropriate devices	\$67M-\$73M per year	01 2022	12 9999
No other alternatives allowed under current tariff	\$M	MM YYYY	MM YYYY

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

Avista uses a rolling 12-month Cost Per New Service spreadsheet to measure ER1000, Electric New Revenue, and ER1001, Gas New Revenue spending. Device blankets are subject to demand for both new revenue and non-revenue installation and replacement.

Enclosed is a spreadsheet showing projected spend through 2026 with a breakout by Expenditure Request for the New Revenue – Growth Business Case. Connects forecast and 12 -month rolling Cost Per Service information are used. Electric and Gas devices are also included, such as Meters, Transformers, Gas Regulators, and ERTs (Encoder Receiver Transmitter). Many of the Meters, Transformers, and ERTs are used as replacements for Transformer Change Out Program, Wood Pole Management, and Periodic Meter Changes. These costs are allocated based on an estimate of how many devices of each type will be used for replacement, rather than new connects. Those splits are shown on the spending summary.

Impacts: Updated forecasts for elec and gas connects for 2022 are 13% higher than forecasted previously. Schedule 51 changes for WA Elec will result in less customer contributions going forward. Transformer costs are 30% higher than costs included previously.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

As requests for services and lighting are received, design and the subsequent execution processes begin immediately. Similarly, as the gas and electric

Growth Business Case

meters, devices, and transformers needs are identified by program managers and engineers, the purchasing department will place orders.

ELEC & GAS	2022	2023	2024	2025	2026
Connects Forecast: Res & Comm	12,404	11,079	11,105	11,198	11,109
Extensions, Services	57,236,575	52,303,821	52,423,509	52,855,517	52,443,093
Lighting	2,119,067	2,182,639	2,248,118	2,315,561	2,385,028
Meters & Devices	5,449,239	5,318,044	5,131,301	5,197,450	5,233,388
Transformers & Network Protectors	8,510,394	7,544,517	7,569,018	7,632,452	7,563,661
Business Case Total	73,315,274	67,349,021	67,371,946	68,000,979	67,625,170

There are no offsets to O&M.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

In some instances, providing a service may require build-up of distribution infrastructure to support customer load.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

In some instances, there may be alternative ways to serve a customer. Customer project coordinators and engineers determine the solution that best serves the customer while considering subsequent customers and Avista’s infrastructure.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

Work timeline is primarily driven by the request of the customer. The transfer to plant occurs monthly.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This business case is about connecting customers to Avista’s facilities. The work directly reflects our focus area for customers as well as our mission statement. “We must hold our customer’s interests at the forefront of all our decisions” and “We improve our customer’s lives through innovative energy solutions.”

Growth Business Case

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Providing service to customers upon request is mandated. As needed CPC's and engineers review requests to determine solutions that best meet the needs of the customer and Avista. These extraordinary requests lend themselves to more visibility and oversight.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

New customers. For meters, devices and transformers - program managers.

2.8.2 Identify any related Business Cases

3.1 Steering Committee or Advisory Group Information

The Energy Delivery Director Team assumes the role of advisory group for the New Revenue – Growth Business Case, with quarterly reporting to the Board of Directors through the Financial Planning & Analysis department. The appropriate extension and service tariffs are designed and updated by the Avista Rates Department, in cooperation with Construction Services, and the Financial Planning & Analysis department. All Customer Project Coordinators are trained regularly, by Rates and Finance, on tariff application.

3.2 Provide and discuss the governance processes and people that will provide oversight

For the Electric and Gas New Revenue ERs: Operations managers and directors receive monthly Cost of Service reports providing 12-month rolling average costs for the construction areas. This allows for review of trending of costs for decision-making regarding processes and resources.

For the Metering and Devices ERs: Monthly Capital ER and project results reports are distributed. These provide updated variance information facilitating oversight by the Electric Meter Shop and Gas Engineering department.

Growth Business Case

3.3 How will decision-making, prioritization, and change requests be documented and monitored

This business case consists of many separate requests, primarily independent of each other. Requests for services and extensions are supported by work order documentation. Extensions over \$100k are assigned a specific project number to allow for more visible management awareness. Should the forecast for new connects or devices or the average cost of service significantly change from budget, the Capital Planning Group will be notified as to the new spending forecast.

The undersigned acknowledge they have reviewed the Growth Business Case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature: David Howell *David Howell* Date: 7/9/21

Print Name: David Howell

Title: _____

Role: Business Case Owner

Signature: Heather Rosentrater *Heather Rosentrater* Date: 10-10-21

Print Name: Heather Rosentrater

Title: _____

Role: Business Case Sponsor

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Gas Reinforcement Program, ER 3000

1 GENERAL INFORMATION

Requested Spend Amount	\$1,300,000
Requesting Organization/Department	B51 - Gas Engineering
Business Case Owner	Jeff Webb
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 - Gas Engineering
Category	Program
Driver	Performance & Capacity

1.1 Steering Committee or Advisory Group Information

The Gas Planning department annually runs an analysis (load study) on Avista’s gas distribution system to identify areas of the system with insufficient capacity to serve existing Firm customer loads on a design day (Avista is consistent with other utilities in the industry and defines design day as the projected system demand for a “coldest day on record” weather event). These deficient areas are given a priority level based on the severity of the risk associated with insufficient system capacity. The areas with the highest priority are selected for remediation and the project is assigned to Gas Engineering to evaluate options to provide sufficient capacity to meet Firm gas demands on a design day. Options are reviewed with Gas Planning, Gas Operations, and other interested parties. The pros and cons of each option are then reviewed with the Gas Engineering Manager and a preferred alternative is selected to proceed with a funding request. The business needs and potential solutions identified impact all gas customers in Avista’s service territory. Spending per jurisdiction changes each year as the intent is to complete the highest risk projects first, regardless of which State it is in.

2 BUSINESS PROBLEM

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 existing Firm gas customers by providing adequate capacity on design day conditions. Sufficient capacity is defined as pressures at or above 15 pounds per square inch (psig) in the distribution system on a design day analysis. Periodic reinforcement of the system is required to reliably serve Firm customers due to increased demand at existing service locations and new customers being added to the system. Execution of this program on an annual basis will ensure the continuation of reliable gas service that is of adequate pressure and capacity.

Typical projects completed under this Business Case may include (but are not limited to) upsizing existing gas mains, looping existing gas mains (bringing in a second source to an area), and installing new regulator stations (pressure reduction stations). When a reinforcement is done by looping a system, there is a secondary benefit of higher reliability to the area. Most of these projects will have a

Gas Reinforcement Program, ER 3000

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 Planning model, see Image 1 below for a list of high and medium priority projects. The prioritization is based on the computer model that analyzes actual meter usage data from each customer, extrapolates that data to predict a demand load 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 reinforcement projects by running “what if?” scenarios. 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.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing</i>	\$0		
<i>Option 2 – Preferred Solution, Complete with full funding</i>	\$1,000,000	January	December
<i>Option 3 – Alternative Solution, Complete with reduced funding level</i>	\$500,000	January	December

Option 1 – Do nothing

Without a Reinforcement Program, Avista does not have sufficient capacity to meet our obligation to serve existing Firm customer load on a design day scenario, and is not able to support future customer growth.

It is important to note that if service is lost during severe cold weather, gas service may not become available again until weather warms and customer demand decreases. Depending on the length of the outage, this can cause severe injury up to and including death to some customers.

Option 2 – Preferred Solution, Complete with full funding

If funding continues as requested, the list will continue to shrink because we’ll be able to complete more projects than are coming onto the list. As we work through the backlog of projects, it is anticipated that the funding for this ER will be reduced in approximately six years, but not completely go away as reinforcements will always be needed as new customers are added.

Option 3 – Alternative Solution, Complete with reduced funding level

If funding is reduced, then the timeline to complete the projects and the risks of outages extends proportionally. The more years we keep our system with insufficient capacity, the higher likelihood of have a cold weather event that could cause outages.

Gas Reinforcement Program, ER 3000

OBJECTID	SIZE	MATERIAL	NOTES	SHAPE.LEN	STATUS	LOCATION	CITY
23417	6"	Plastic	High	2561.08	Proposed	Reinforcement for Medford	Medford
21178	4"	Plastic	High	2476.81	New	Install new 4" and replace section of 2" with 4", Load study resu	Medford
21179	2"	Plastic	High	28.98	New	2" Tie-In	Medford
17977	6"	Plastic	High	4028.42	Replacemen	Load Study Result (currently ADL)	Medford
16377	4"	Plastic	High	1882.30	New	IP Connection to feed end of 55 psig system	Medford
20858	2"	Plastic	High	257.28	<Null>	2" Tie-In, E 6 psig system	Medford
20860	2"	Plastic	High	350.30	<Null>	2" Tie-In, w/ Medford	Medford
18301	4"	Plastic	High	3516.67	Replacemen	3500' of 2" to 4" Replacement	Spokane Valley
18300	8"	Steel	High	27535.87	New	HP 27, 700' 8" parallel to existing 4"	Cheney
17981	6"	Plastic	High	4218.98	Replacemen	ADL Replacement Bellinger Rd	Jacksonville
20866	6"	Plastic	High	4808.68	New	Additional Jacksonville feed	Jacksonville
16068	4"	Plastic	High	3072.72	Replacemen	Palouse 2" Main Replacement	Palouse
16057	6"	Plastic	High	9418.36	Replacemen	South Hill	Spokane
17337	4"	Plastic	High	271.27	Replacemen	Along E St, 280'	Riddle
11577	6"	Steel	High	19572.92	Proposed	HP Warden	Warden
19901	6"	Plastic	High	5265.93	<Null>	6" main upsize for new development	Spokane
6777	2"	Plastic	High	407.66	Proposed	Loomis and Railroad	St John
21177	4"	Plastic	Medium	2796.64	Replacemen	Replace 2" with 4", low pressure area reinforcement	Spokane Valley
20861	6"	Plastic	Medium	2426.55	<Null>	Replace 4" with 6"	Colfax
20862	4"	Plastic	Medium	150.82	<Null>	Replace 2" with 4"	Roseburg
20863	4"	Plastic	Medium	3356.39	<Null>	Replace and install 4"	Roseburg
20864	4"	Plastic	Medium	523.10	<Null>	Replace 2" with 4"	Roseburg
20865	2"	Plastic	Medium	207.30	<Null>	2" Tie-in	Spokane
20857	2"	Plastic	Medium	157.07	<Null>	2" Tie-In, w/ 6 psig system	Medford
20859	4"	Plastic	Medium	724.85	<Null>	Replace 2" with 4", w/ 6 psig system	Medford
20537	2"	Plastic	Medium	167.22	New	Tie-in to eliminate ADI	Spokane
20218	6"	Steel	Medium	1395.06	Replacemen	ADL replacement	Spokane
18620	4"	Plastic	Medium	459.75	Replacemen	ADL Replacement, 500' of 2" to 4"	Medford
18618	4"	Plastic	Medium	5756.67	Replacemen	ADL Replacement	Spokane
18617	4"	Plastic	Medium	1768.88	Replacemen	ADL Replacement, 1800' of 2" to 4"	Medford
18297	4"	Plastic	Medium	6655.04	Replacemen	6700' of 2" to 4" Replacement	Rogue River
18298	4"	Plastic	Medium	1414.99	Replacemen	1500' of 2" to 4" Replacement	Spokane
17984	2"	Plastic	Medium	222.96	New	2" Tie-In Ashland 8 psig System 250'	Ashland
17985	4"	Plastic	Medium	529.18	Replacemen	Ashland 8 psig system 530' along Meade St	Ashland
17986	4"	Plastic	Medium	492.56	Replacemen	Ashland 8 psig system 500' along Harrison St	Ashland
17982	4"	Plastic	Medium	1268.93	Replacemen	1300' 2" to 4" along Keasey St	Roseburg
17983	4"	Plastic	Medium	2470.64	Replacemen	ADL Replacement 2400' Kline St 2400'	Roseburg
16065	2"	Plastic	Medium	143.52	Proposed	14th and Eastern	Spokane
15737	2"	Plastic	Medium	610.08	Proposed	Intersection of Lenter and Lathen	Moscow
15738	6"	Steel	Medium	4152.18	Replacemen	6" Main Replacement	Moscow
15108	6"	Steel	Medium	20412.47	Replacemen	Klamath Main Replacement	Klamath Falls
14779	2"	Plastic	Medium	414.46	Proposed	Plum and Winchester Tie-In	Medford
14780	2"	Plastic	Medium	410.38	Proposed	Plum and Winchester Tie-Ins	Medford
4542	2"	Plastic	Medium	136.73	New	Alderwood Tie-in	Spokane

Image 1 – Prioritized list of reinforcements

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Reinforcement Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Gas Reinforcement Program, ER 3000

Signature:  Date: 2-17-20
 Print Name: Jeff Webb
 Title: Manager Gas Engineering
 Role: Business Case Owner

Signature:  Date: 2/17/20
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Cmt Review

5 VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Jeff Webb	03/17/2017			Initial version
1.1	Jeff Webb	04/06/2017			
2.0	Jeff Webb	2/17/2020			Revised for 2020 OR GRC Filing

Template Version: 03/07/2017

Gas Deteriorated Steel Pipe Replacement Program, ER 3001

1 GENERAL INFORMATION

Requested Spend Amount	\$1,400,000
Requesting Organization/Department	B51 – Gas Engineering
Business Case Owner	Jeff Webb / Seth Samsell
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	Gas Operations & Engineering
Category	Program
Driver	Asset Condition

1.1 Steering Committee or Advisory Group Information

Locations in Avista’s system with known deteriorated pipe segments are submitted to Gas Engineering by each of our local Gas Operations District’s. Segments are considered based upon multiple factors such as age of plant, material type and observable leak rates which are documented as part of Avista’s Distribution Integrity Management Program (DIMP).

As a natural gas distribution system operator, Avista is mandated by Part 192 of the Department of Transportation’s Code of Federal Regulations (CFR) to maintain and operate an active Distribution Integrity Management Program (DIMP). The CFR defines the laws that all operators must legally comply with in the operation of natural gas distribution systems. DIMP is intended to promote continuous improvement in pipeline safety and enhance the integrity of the natural gas systems we operate. This is accomplished through gathering of system data, analyzing risk, and investment in risk control measures, such as the Deteriorated Steel Pipe Replacement Program. The projects targeted under the Deteriorated Pipe umbrella do not typically have a direct compliance requirement associated with them. However, the Program benefits from the ability to utilize the results from our DIMP studies to help prioritize work.

DIMP analyzes risk (probability and consequence) associated with various threats to natural gas facilities including, but not limited to, material failures, joint failures, increased leak frequency, buried flanged/threaded connections, unconventional/obsolete pipe sizes and corrosion due to lack of protective coating (bare steel) on pipe and/or problems with protective coating on pipe. The DIMP analysis results in an overall risk score for operator defined segments of pipe. The Deteriorated Steel Pipe Replacement Program is intended to proactively mitigate areas of known risk through the replacement of these aged steel pipe facilities.

The Deteriorated Pipe Program Manager and each Gas Operations District Manager take the DIMP risk scoring into account when prioritizing projects to meet an approved level of annual program spend. The requested spend level has historically been determined based upon Avista’s experience in the management of aging pipe facilities across our service territories coupled with any changing costs of construction year to year. Each Gas Operations District is allotted a manageable portion of the approved budget to proactively target the highest risk projects in each District. There are circumstances where lower priority projects may be accelerated if it makes sense to coordinate the timing of pipe replacement projects with prior phasing or with other utility and road projects. The individual projects for Deteriorated Pipe are typically managed locally while the overall program budget is managed by the Program Manager in Gas Engineering. See Image 1 below for a list of current projects within this program.

Gas Deteriorated Steel Pipe Replacement Program, ER 3001

		Requested Budget:	\$ 1,400,000	\$ 1,400,000	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000		
ER 3001 Deteriorated Pipe Replacement Plan		Approved Budget:	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000		
		Estimated Costs:	\$ 1,005,000	\$ 980,000	\$ 980,000	\$ 1,050,000	\$ 920,000		
District	Site	Estimated Cost	2020	2021	2022	2023	2024	2018 DIMP Score/ft	Footage
Medford	DPR - S Oakdale Ave Odd sized, Medford OR	\$ 195,000						1669	1432
Medford	DPR - 16 Western Ave Pipe Replacement, Medford OR	\$ 120,000						1525	1863
Medford	DPR - W 8th St Replacement - PH 1	\$ 130,000				X		3219	2005
Medford	DPR - W 8th St Replacement - PH 2	\$ 270,000				X	X	3219	2005
Medford	DPR - Kenwood Ave. (incl Bare Steel)	\$ 120,000						2307	808
Medford	DPR - 4" line between Peach and Quince	\$ 70,000						1320	2962
Medford	DPR - B Street & Pioneer 6" Repl Phase A, Ashland OR	\$ 110,000			X			2823	621
Medford	DPR - B Street & Pioneer 6" Repl Phase B, Ashland OR	\$ 100,000			X			3667	565
Medford	DPR - B Street & Pioneer 6" Repl Phase C, Ashland OR	\$ 120,000			X			2826	601
Medford	DPR - B Street & Pioneer 6" Repl Phase D, Ashland OR	\$ 100,000		X				2273	573
Medford	DPR - B Street & Pioneer 6" Repl Phase E, Ashland OR	\$ 120,000		X				2339	707
Medford	DPR - B Street & Pioneer 6" Repl Phase F, Ashland OR	\$ 110,000		X				2996	551
Medford	DPR - B Street & Pioneer 6" Repl Phase G, Ashland OR	\$ 150,000	X					3824	899
Medford	DPR - McLaughlin 8" Replacement, Ph 7, Medford OR	\$ 90,000	X					3588	608
Medford	DPR - McLaughlin 8" Replacement, Ph 8, Medford OR	\$ 90,000	X					3798	535
Medford	DPR - Will Dodge Alley PH 1 (Pioneer to 1st), Ashland OR	\$ 100,000					X	3005	779
Medford	DPR - Will Dodge Alley PH 2 (1st to 2nd), Ashland OR	\$ 100,000					X	3204	601
Medford	DPR - Will Dodge Alley, Ph. 3 (2nd to 3rd), Ashland OR	\$ 100,000					X		500
Medford	DPR - West 3rd (Fir to Oakdale), Medford OR								
Medford	3.5" SE N Street, Grants Pass OR	\$ 300,000							2700
Roseburg	DPR - Flint Alley 4" Replacement Ph 3, Roseburg, OR	\$ 75,000	X						380
Roseburg	DPR - Valley View Mobile Home Park, Roseburg, OR	TBD	X	X				1898	3061
Roseburg	???								
Roseburg	???								
LaGrande	DPR - Catholic Area 4th & Jefferson, Ph 1, La Grande OR	\$ 350,000	X	X				1618	11938
LaGrande	DPR - Catholic Area 4th & Jefferson, Ph 2, La Grande OR	\$ 350,000		X	X				
LaGrande	DPR - Catholic Area 4th & Jefferson, Ph 3, La Grande OR	\$ 350,000			X	X			
LaGrande	DPR - Catholic Area 4th & Jefferson, Ph 4, La Grande OR	\$ 350,000				X	X		
LaGrande	DPR - Catholic Area 4th & Jefferson, Ph 5, La Grande OR	\$ 350,000					X		
LaGrande	DPR - Catholic Area 4th & Jefferson, Ph 6, La Grande OR	\$ 350,000							
LaGrande	DPR - Catholic Area 4th & Jefferson, Ph 7, La Grande OR	\$ 350,000							
LaGrande	DPR - Catholic Area 4th & Jefferson, Ph 8, La Grande OR	\$ 350,000							
LaGrande	DPR - Mt Fanny Addition, La Grande, OR								
Klamath Falls	DPR - Mills Addition, Ph6, K Falls OR	\$ 250,000	X					1765	21627
Klamath Falls	DPR - Mills Addition, Ph7, K Falls OR	\$ 300,000		X	X			1825	21235
Klamath Falls	DPR - Mills Addition, Ph8, K Falls OR	\$ 300,000			X	X		2047	13767
Klamath Falls	DPR - Mills Addition, Ph9, K Falls OR	\$ 300,000				X	X	1581	11415

Image 1 – List of current projects within this Program

Gas Deteriorated Steel Pipe Replacement Program, ER 3001

2 BUSINESS PROBLEM

Sections of existing steel piping within Avista's gas distribution system are aging, showing signs of deterioration, and are operating with an increased risk of failure primarily due to, but not limited to, corrosion of steel material. Sections of gas main with known corrosion related issues no longer operate reliably and/or safely and are a risk to the public in and around these facilities. A higher frequency of leaks on these existing facilities results in a higher risk of operation and risk to the public and customers served in the areas with these aging facilities. This risk and the operating and maintenance costs associated with maintaining these facilities continue to increase the longer the facilities continue to operate unmitigated.

An additional area of concern is related to segments of pipe with obsolete diameter that operate within the system. In addition to public risk, there are even greater operational risks and the associated challenges of working on pipe sizes that are not supported by today's manufacturers. Standard fittings do not fit some of this pipe, which limits the flexibility Operations Districts have to manage emergencies if shut down of the facilities is required and a valve is not located in a convenient location.

The Deteriorated Pipe Replacement Program is focused on proactively addressing the risks associated with operation of the segments described in the previous paragraphs. Replacement of these facilities not only improves the safety and reliability of our system, but also helps to mitigate risk to the public, our customers and reduces the operating and maintenance cost of maintaining higher risk facilities. This Program primarily targets projects in Avista's Oregon territories as this is where some of the highest known risks exist in our system. However, there will be an occasional need to utilize this program in Avista's other service territories as well.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing/Defer project</i>	\$0	N/A	
<i>Option 2 – Preferred Solution/ Strategically replace sections of high risk steel piping</i>	\$1,400,000	January	December
<i>Option 3 – Alternative Solution/ Reduced funding option: Strategically replace sections of high risk steel piping at a reduced rate</i>	\$500,000	January	December

The requested spend level has historically been determined based upon Avista's experience in the management of leak rates across our service territories coupled with any changing costs for construction year to year. Annual levels of spending may need to be adjusted in this program depending upon the needs of the system, however, as best as Avista is able to tell at this time, what is proposed is the correct amount to address the known risks resulting from asset management planning the Distribution Integrity Management Plan analysis.

Gas Deteriorated Steel Pipe Replacement Program, ER 3001

Option 1 – Do nothing/defer project

If no money is spent proactively replacing at risk pipe, then greater efforts would be required to reactively address each specific leak or corrosion issue as they occur. Leaks and failures can result in the migration of gas, entrapment within structures, and the potential for ignition. This presents increased risk and safety concerns for the public and Avista's customers located in the vicinity of high risk facilities with known leaks or leak potential as well as corrosion issues. Not addressing these facilities in a proactive manner also increases the risk of more catastrophic material failures of the pipe to occur over time. Not addressing known risks within our distribution system would have a negative impact on overall operations and maintenance costs and could potentially be in violation of Federal Code requirements related to maintaining an active Integrity Management Program, resulting in State or even Federal fines. It is very difficult to anticipate what the financial impact of this would be since it is completely dependent upon each unique situation. These risks cannot be mitigated without the replacement of these facilities and risk increases the longer these facilities continue to operate. This option is not recommended.

Option 2 – Preferred Solution/Strategically replace sections of high risk steel piping

It is recommended as part of a programmatic approach to proactively identify and replace sections of existing steel piping that are showing signs of aging and deterioration or that are operating with an increased risk of failure within the natural gas distribution system. Completing this type of work as part of a continuing annual program is anticipated to have less overall cost impact than if we were to address each specific leak or corrosion issue as it is encountered. A programmatic approach also allows time for better analysis, prioritization and planning to help determine which projects are higher priority or if larger diameter pipes are needed for additional capacity in these service areas to help improve system operation for all downstream customers. This program aligns with Avista's organizational focus on our responsibility to maintain a safe and reliable infrastructure for all of our customers and in each of our services territories. The intent of this program includes, but is not limited to, the following:

- An opportunity to target areas that will improve risk, public safety and system reliability for all of our customers as part of our Distribution Integrity Management Plan (DIMP)
- An opportunity to systematically prioritize and replace facilities on an annual basis reducing a portion of the risk annually and spreading the cost of replacement out over multiple years

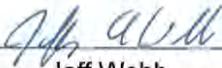
Option 3 – Alternative Solution/Reduced funding: Strategically replace sections of high risk steel piping at a reduced rate

Another option is to approach the risk associated with deteriorated pipe with a reduced funding approach. Reduced funding will result in replacement of fewer pipe segments that are showing signs of aging and deterioration or that are operating with an increased risk of failure within the natural gas distribution system. The reduced funding alternative would still allow us to benefit by addressing facilities with known risk of failure, but at a pace slower than we feel is appropriate at this time to address these known risks. The outcome, should this option be selected, would result in the continued operation of known high risk facilities which leads to increased public and operational risk as previously described in Option 1.

Gas Deteriorated Steel Pipe Replacement Program, ER 3001

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Deteriorated Pipe Steel Replacement Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2-17-20
 Print Name: Jeff Webb
 Title: Manager Gas Engineering
 Role: Business Case Owner

Signature:  Date: 2/17/20
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

5 VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Seth Samsell	03/14/2017			Initial draft version
1.1	Seth Samsell	03/28/2017	Jeff Webb	04/03/2017	Revised per initial review
2.0	Seth Samsell	02/12/2020	Jeff Webb	2/17/2020	Revised for 2020 OR GRC Filing

Template Version: 02/24/2017

Gas Regulator Station Replacement Program, ER 3002

1 GENERAL INFORMATION

Requested Spend Amount	\$1,000,000
Requesting Organization/Department	B51 Gas Engineering
Business Case Owner	Jeff Webb
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 - Gas Engineering
Category	Program
Driver	Asset Condition

1.1 Steering Committee or Advisory Group Information

Gas Engineering, Gas Operations, and the Gas Meter Shop work together to administer the Regulator Station Replacement Program. Gas Engineering is ultimately responsible for prioritizing the projects and reporting out financial updates to the Capital Budget Group.

A master list of Regulator Stations (pressure reduction stations) and industrial meter sets with reported deficiencies is maintained by Gas Engineering. Gas Operations and the Gas Meter Shop report concerns while performing regular maintenance and these deficiencies are collected on the master list. Annually, subject matter experts from Gas Operations and Engineering review the master list and risk rank the work for the following year. Stations with the highest risk (typically due to multiple different concerns) are prioritized over stations with only minor issues. Prioritizing this work annually with the subject matter experts provides a consistent approach. Through this process, the highest risk projects are selected to be funded.

2 BUSINESS PROBLEM

This annual program will replace or upgrade existing at risk Regulator Stations and industrial meter sets that are at the end of their service life to current Avista standards. Additionally, it will address enhancements that will improve system operating performance, enhance safety, replace inadequate or antiquated equipment that is no longer supported, and ensure the reliable operation of metering and regulating equipment.

Another category of work in this program is moving regulator stations located underground in a vault to a more traditional above ground configuration. Stations located in vaults are difficult to maintain because of the limited working room for tools and workers. Additionally, water in the vault can make maintenance more difficult. Regulator Stations in a vault are also a safety concern as they are confined spaces and can trap harmful levels of natural gas should a leak be present.

Gas Regulator Station Replacement Program, ER 3002

These regulator stations require annual maintenance per 49 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. Incomplete maintenance could cause Avista to be out of compliance and be exposed to fines from the various state utility commissions.

Our gas customers from all jurisdictions benefit from these types of projects by having a safer, more reliable, 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.

Stn #	Priority	2020 Cost	Comments	State	Budgeted for 2020	Deferred to 2021
722	1	\$ 6,000	Eastern St Hosp MSA	WA	\$ 6,000	
4406	1	\$ 10,000	Interstate Concrete MSA, Rathdrum	ID	\$ 10,000	
316	1	\$ 25,000	Colton DR, materials already ordered	WA	\$ 25,000	
201	1	\$ 30,000	Bonnors Ferry DR, materials ordered already	ID	\$ 30,000	
0801	1	\$ 50,000	Cove Ave, La Grande	OR	\$ 50,000	
0812	1	\$ 25,000	Hilgard, La Grande w/ Heater Maintenance	OR	\$ 25,000	
2713	1	\$ 280,000	Keno Gate Rebuild	OR	\$ 280,000	
562	1	\$ 50,000	Gold Creek Loop Rd	WA	\$ 50,000	
7701	1	\$ 25,000	Lakeland Village MSA	WA	\$ 25,000	
2404	2	\$ 57,000	Ave G, White City	OR	\$ -	\$ 57,000
213	2	\$ 80,000	McGuire GS	ID	\$ 80,000	
307	2	\$ 15,000	Moscow DR, reg change only	ID	\$ -	\$ 15,000
375	2	\$ 20,000	Spangle Odorizer	WA	\$ 20,000	
24c18	3	\$ 100,000	Eastman Kodak - Kirtland Road	OR	\$ -	\$ 100,000
206	3	\$ 60,000	Sandpoint DR	ID	\$ -	\$ 60,000
303	3	\$ 10,000	High pressure DR, change to FT station	WA	\$ -	\$ 10,000
36	3	\$ 95,000	Airport Road	WA	\$ -	\$ 95,000
221	4	\$ 50,000	CDA East GS & RS 2210	ID	\$ -	\$ 50,000
Various	4	\$ 10,000	Misc FT replacement, one is likely to happen	ID	\$ -	\$ 10,000
24P23	4	\$ 55,000	Payne Road Rebuild	OR	\$ -	\$ 55,000
31	4	\$ 30,000	Nine Mile & Royal	WA	\$ -	\$ 30,000
23	5	\$ 30,000	Trent & Woodlawn	WA	\$ -	\$ 30,000
260	5	\$ 30,000	Silverton Reg Station	ID	\$ -	\$ 30,000
315	5	\$ 30,000	Colton Gate Station	WA	\$ -	\$ 30,000
420	5	\$ 60,000	Lewiston DR	ID	\$ -	\$ 60,000
2412	5	\$ 125,000	Siskiyou & Willamette Rebuild/Relocate	OR	\$ -	\$ 125,000
4577	6	\$ 40,000	Trent & Harvard	WA	\$ -	\$ 40,000
115	7	\$ 35,000	Odorizer Station Rebuild	WA	\$ -	\$ 35,000

Image 1 – Prioritized list of rebuild projects

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 - Do nothing</i>	\$0		
<i>Option 2 – Preferred Solution, Replace at risk regulator stations at current funding level</i>	\$800,000	January	December
<i>Option 3 – Alternative Solution, Replace regulator stations at a reduced funding level option</i>	\$400,000	January	December

Option 1 - Do nothing

Gas Regulator Station Replacement Program, ER 3002

The do nothing option will force Avista to operate at risk regulator stations and industrial meter sets in an unsafe, unreliable, and sometimes non-code compliant manner.

Option 2 – Preferred Solution, Replace at risk regulator stations at current funding level

The current level of spending allows the high priority projects to be completed every year. The list of new requests continues to grow as stations meet the end of their service life. At this pace, the number of stations remediated will outpace the number added each year. The workforce available to do this type of work is responsible for both maintenance of these stations and the rebuild efforts. This level of spend complements their available time well without requiring additional headcount.

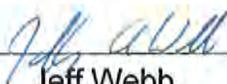
Since these stations are a vital link to providing customers with reliable gas, planned work is better than unplanned work. Unplanned work during times of high gas use (normally the winter) can be more difficult to perform and have negative impacts to customers if it fails to operate properly.

Option 3 – Alternative Solution, Reduced funding level option

If this program is funded at a reduced rate, there are two possible ways to accomplish this. One is to replace fewer regulator stations and industrial meter sets. As explained above, there is already a backlog of high risk stations to be replaced, so this option would take an even longer time to get through that backlog while new stations are continually added to the list every year. Secondly, an alternative to rebuilding the entire station would be to replace only the individual components that are antiquated or outdated. If this short sided course were chosen, the work would be less productive; and the opportunity to bring the entire station up to current standards would be lost. This option is not recommended.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Regulator Station Replacement Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2-17-20
Print Name: Jeff Webb
Title: Manager of Gas Engineering
Role: Business Case Owner

Gas Regulator Station Replacement Program, ER 3002

Signature:  Date: 2/17/20
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Cmt Review

5 VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Jeff Webb	03/17/2017			Initial version
1.1	Jeff Webb	04/07/2017			
2.0	Jeff Webb	2/17/2020			Revised for 2020 Oregon GRC filing

Template Version: 03/07/2017

Gas Replacement Street and Highway Program, ER 3003

1 GENERAL INFORMATION

Requested Spend Amount	\$3,000,000
Requesting Organization/Department	B51 – Gas Engineering
Business Case Owner	Jeff Webb
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 – Gas Engineering
Category	Program
Driver	Mandatory & Compliance

1.1 Steering Committee or Advisory Group Information

Gas Operations manages this category of work. The work is generated by the various municipalities that Avista has franchise agreements in. The overall program budget is managed by Gas Engineering.

2 BUSINESS PROBLEM

It is very difficult to forecast year-to-year what the cost in this category will be. Virtually all of Avista’s pipelines are located in public utility easements (PUEs) which are controlled by local jurisdictional franchise agreements. Avista is mandated under these agreements to relocate its facilities, when local jurisdictional projects necessitate. Often these come without significant lead time by the local jurisdictions. It is often the case that meetings are called in the Spring to notify franchisees (natural gas, electric, cable, phone etc.) that they will need to relocate their facilities. This does not enable ideal planning and often may cause Avista to spend unbudgeted funds and do so in a manner that is not of the utmost efficiency.

When conflicts are identified that may require relocating gas facilities, meetings with the appropriate entities take place in an attempt to design around the conflict. If relocation of gas facilities are required, then Avista must relocate the gas facility at our cost per the applicable franchise agreement. If the relocation project is of significant complexity, then Gas Engineering will take over the project to design and manage it through completion, otherwise the local districts will manage the project. The business needs and potential solutions identified impact all gas customers in Avista’s service territory.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing</i>	\$ TBD		
<i>Option 2 – Preferred Solution, Complete</i>	\$3,000,000	January	December

Gas Replacement Street and Highway Program, ER 3003

replacements as necessary			
---------------------------	--	--	--

Option 1 – Do nothing

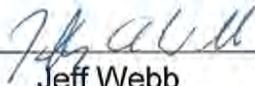
The nature of this work is considered "work in request of others". If the conflicts are not resolved through design changes or relocation of the gas facilities, Avista would be in conflict with franchise agreements and could be charged with delay of a project. This would not only be a financial burden on the company, but it would also greatly damage the working relationship between Avista and the municipality.

Option 2 – Preferred Solution, Complete the replacements as necessary

By completing the projects as requested, then Avista meets the obligations under its franchise agreements, remains in good standing with the municipalities, and avoids financial penalties.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Replacement Street and Highway Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2-17-20
Print Name: Jeff Webb
Title: Manager Gas Engineering
Role: Business Case Owner

Signature:  Date: 2/17/20
Print Name: Mike Faulkenberry
Title: Director of Natural Gas
Role: Business Case Sponsor

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: Steering/Advisory Cmt Review

Gas Replacement Street and Highway Program, ER 3003

5 VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Jeff Webb	03/17/2017			Initial version
1.1	Jeff Webb	04/07/2017			
2.0	Jeff Webb	2/17/2020			Revised for 2020 Oregon GRC filing

Template Version: 03/07/2017

Gas Cathodic Protection Program, ER 3004

1 GENERAL INFORMATION

Requested Spend Amount	\$715,000
Requesting Organization/Department	B51 - Gas Engineering
Business Case Owner	Jeff Webb / Tim Harding
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 - Gas Engineering
Category	Mandatory
Driver	Mandatory & Compliance

1.1 Steering Committee or Advisory Group Information

The Cathodic Protection (CP) group monitors system performance and recommends replacements and upgrades when corrosion control measures become ineffective. Gas Engineering evaluates the recommendations with the CP group and other interested parties. The pros and cons of each option are then reviewed with the Gas Engineering Manager and a preferred alternative is selected to proceed with a funding request. Gas Engineering is responsible for managing this program.

2 BUSINESS PROBLEM

CP system compliance is mandated by Federal Rules within the Department of Transportation code 49 CFR 192, Subpart I. Some of the CP systems have been in service at Avista for extended periods of time and they have exceeded their useful service life. This requires them to be replaced. It is often difficult to predict in advance when specific projects are required, because sudden component failures do occur. Anodes, a key component of the CP systems, are buried and not observable, deteriorate at differing rates, and become ineffective when they are used up. The estimated annual cost for this budget is based on past expenditures. Because of the unpredictable nature of these projects, it is not always know which service territory work will be performed in on any given year.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing</i>	\$0	N/A	
<i>Option 2 – Preferred Solution</i> , Replace end of life cathodic protection systems	\$800,000	January	December

Option 1 – Do nothing

CP systems have a finite lifespan and must be replaced when they are at the end of their service life. Failing to replace these facilities will result in inadequate external corrosion protection on Avista’s steel piping systems. This would result in

Gas Cathodic Protection Program, ER 3004

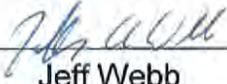
non-compliance with State and Federal Rules, as well as increased risk to both employee and public safety.

Option 2 – Preferred Solution, Replace end of life cathodic protection systems

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), installation of CP rectifiers, shorted casing remediation, replacement of gas mains to improve CP system performance.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Cathodic Protection Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2-17-20
Print Name: Jeff Webb
Title: Manager Gas Engineering
Role: Business Case Owner

Signature:  Date: 2/17/20
Print Name: Mike Faulkenberry
Title: Director of Natural Gas
Role: Business Case Sponsor

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: Steering/Advisory Cmt Review

Gas Cathodic Protection Program, ER 3004

5 VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Tim Harding	04/03/2017			Initial version
1.1	Jeff Webb	04/04/2017			
2.0	Tim Harding	2/12/2020	Jeff Webb		Revised for 2020 Oregon GRC filing

Template Version: 03/07/2017

Gas Non-Revenue Program, ER 3005

1 GENERAL INFORMATION

Requested Spend Amount	\$9,000,000
Requesting Organization/Department	B51 – Gas Engineering
Business Case Owner	Jeff Webb
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 – Gas Engineering
Category	Program
Driver	Failed Plant & Operations

1.1 Steering Committee or Advisory Group Information

This work is typically unplanned and is initiated by customers or Avista maintenance crews and is managed at the Local District level. Gas Engineering establishes the overall budget based largely on historical spend patterns and reports monthly updates to the Capital Planning Group based on feedback from the Local Districts. Gas Engineering is responsible for projects under this ER that require substantial design efforts such as farm tap retirements, highway or river crossings, and steel pipelines.

2 BUSINESS PROBLEM

The work in this annual program is mostly reactionary, unplanned work 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), leak repairs on mains or services, meter barricades (only in Washington State and only through the year 2020), and farm tap elimination. Each of these work types are further described below. Customer related benefits include reduced operations and maintenance (O&M) costs and improved safety and reliability from having facilities at the proper depth and from reduced leak rates of new plastic pipe versus older steel. With the exception of the meter barricade work, the business needs and potential solutions identified impact all gas customers in Avista’s service territory.

When shallow facilities are discovered, an appropriate response to the situation is determined by Local District Management. If the response to the situation is capital in nature, then the repair is funded from this program. If the scope of the project is large enough to warrant it, the project will be prioritized and risk ranked against other similar type projects. These types of projects allow Avista to remain in compliance and operate the gas facilities in a safe and reliable manner.

If requested by others (typically customers) to relocate facilities, Avista is bound by tariff language to do so at the customer’s expense. Under certain circumstances,

Gas Non-Revenue Program, ER 3005

Avista may choose these opportunities to perform additional work beyond the immediate request to improve or update the gas system. Local District Management and field personnel will evaluate the circumstances and make an appropriate decision based on a holistic view of the situation. Guidance to help evaluate the scenario is established in the Company Gas Standards Manual. An example might be to replace an entire existing steel service with modern plastic material instead of just replacing a small section of the steel service that is in conflict with a customer's home improvement project. This would eliminate the possibility of future deficiencies with the cathodic protection system on the steel pipes and reduce future maintenance related to that steel service. The charges for this additional work are put against this program.

When leaks are found on the gas system, it is sometime advantageous to replace a section of main or service as opposed to just repairing the leak. The Local District looks at the long term fix when possible, not just addressing the immediate concern, and considers what is the right thing to do in these situations. This type of betterment falls under this program.

The need for meter protection can come from a variety of sources: customer, meter reader, atmospheric corrosion inspectors, or from company personnel. Each report is vetted by the Local District to ensure the need is warranted and then the job is scheduled for installation. Installation of meter barricades or break-away fittings on existing meters sets is capital only in Washington State and only through the year 2020.

A single service farm tap (SSFT) installed on a supply main is a common way to provide gas service to a small number of customers. The alternative is to install distribution main from an adjacent distribution system to serve the customer which may be cost prohibitive at the time. Many of these farm taps are reaching the end of their service life or need to be replaced for maintenance reasons. In areas of high concentrations of farm taps that have maintenance concerns, it is sometimes advantageous to rebuild one of them as a traditional regulator station (pressure reduction station), install distribution main to the other services from the adjacent farm taps, and then retire the other farm taps. This reduces O&M by having fewer stations to maintain.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing</i>	\$0	N/A	
<i>Option 2 – Preferred Solution, Complete programmatic work as described</i>	\$6,000,000	01-2017	12-2017
<i>Option 3 – Alternative Solution, Reduced funding</i>	\$3,000,000	01-2017	12-2017

Gas Non-Revenue Program, ER 3005

Option 1 – Do nothing

Shallow facilities – Higher likelihood of being damaged and causing a gas leak.

Requested by others & leak repair – To miss the opportunity to better the system while already on-site doing work is shortsighted because we increase the chances of having to be back at the site to remedy other maintenance items at a later date. The decision to simply repair the leak or perform the customer requested work (quickest and easiest thing to do) eliminates the chance to improve the system as a whole, while increasing the chances of having to be back at the site later to fix another leak or maintenance concern. If leaks are not repaired, they must be monitored and re-evaluated on a periodic schedule to ensure they are not becoming a greater hazard to the public.

Meter protection – Not installing meter barricades or break-away fittings is against Federal Rules (CFR 192.353) and presents a significant safety risk to the public, especially if the facilities are damaged.

Farm tap elimination – If Avista is not allowed to optimize the gas distribution system by reducing the number of farm taps that are maintenance intensive, then eventually more staff will be required to perform this federally mandated work. Additionally, farm taps are normally located between the driving lane and the property line, are low profile, and are sometimes difficult for the public to see. This puts them at risk of vehicle damage.

Option 2 – Preferred Solution, Complete programmatic work as described

Shallow facilities – Lowering gas mains and services is not required by Federal Rules, but it is prudent. It reduces the chances of damage caused by excavation over and around the gas facilities. This is critical because damage from excavation is the highest risk to our gas facilities. Excavators are expecting gas pipes to be at the depths they are first installed at. When they are shallow because of grade changes that have been caused by others since installation, there is an increased risk of damage and threat to public safety.

Requested by others & leak repair – Betterment of the gas system when opportunities arise is the prudent way to operate a gas distribution system. Mobilizing crews and equipment to a site often covers the bulk of the costs for small projects, so making the most of the time once there is the sensible way to operate. Betterments as described in Section 2 are driven by Company Standards and best practices.

Meter protection – Avista is mandated by Federal Rules to protect above ground facilities from damage. Gas meters located where vehicles are normally parked or driven create a hazard if the meter is not properly protected.

Farm tap elimination – When there are many farm taps located in close proximity to each other and when those stations have reason to be rebuilt, then it makes sense to rebuild just one of them and install distribution main to the other sites to provide a new source of gas. This allows the adjacent farm taps to be retired,

Gas Non-Revenue Program, ER 3005

reducing O&M and improving public safety. Triggers for rebuilding a farm tap may include; replacement of inadequate or obsolete equipment that is no longer supported, poor location of station (safety concerns), inability to perform proper maintenance, and capacity constraints.

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 stations can be remedied under just one project. Additionally, the new main might be installed in front of structures without gas service, making it easier to serve them with gas in the future should they choose to change their energy source.

Option 3 – Alternative Solution, Reduced funding

Shallow facilities – Likelihood of being damaged and causing a gas leak if fewer facilities were lowered.

Requested by others & leak repair – *This betterment would happen at a reduced rate, causing workload pressure on the maintenance personnel.* To miss the opportunity to better the system while already on-site doing work is shortsighted because we increase the chances of having to be back at the site to remedy other maintenance items at a later date. The decision to simply repair the leak or perform the customer requested work (quickest and easiest thing to do) eliminates the chance to improve the system as a whole, while increasing the chances of having to be back at the site later to fix another leak or maintenance concern. If leaks are not repaired, they must be monitored and re-evaluated on a periodic schedule to ensure they are not becoming a greater hazard to the public.

Meter protection – Not installing meter protection is against Federal Rules and presents a significant safety risk to the public, especially if the facilities are damaged.

Farm tap elimination - *This optimization would happen at a reduced rate, causing workload pressure on the maintenance personnel.* If Avista is not allowed to optimize the gas distribution system by reducing the number of farm taps that are maintenance intensive, then eventually more staff may be required to perform this federally mandated work. Additionally, farm taps are normally located between the driving lane and the property line, are low profile, and are sometimes difficult for the public to see. This puts them at risk of vehicle damage.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Non-Revenue Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Gas Non-Revenue Program, ER 3005

Signature:  Date: 2-17-20
 Print Name: Jeff Webb
 Title: Manager of Gas Engineering
 Role: Business Case Owner

Signature:  Date: 2/17/20
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Cmt Review

5 VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Jeff Webb	03/16/2017			Initial version
1.1	Jeff Webb	04/05/2017			
2.0	Jeff Webb	2/17/2020			Revised for Oregon 2020 GRC filing

Template Version: 02/24/2017

Gas Overbuilt Pipe Replacement Program, ER 3006

1 GENERAL INFORMATION

Requested Spend Amount	\$400,000
Requesting Organization/Department	B51 – Gas Engineering
Business Case Owner	Jeff Webb / Seth Samsell
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	Gas Operations & Engineering
Category	Program
Driver	Mandatory & Compliance

1.1 Steering Committee or Advisory Group Information

All the known mobile home parks with overbuilt pipe in Avista's Oregon districts were catalogued at one time, analyzed and risk ranked as part of the utility's Distribution Integrity Management Program (DIMP). In addition to these known mobile home parks, with numerous overbuilt facilities, each local District (including those in Idaho and Washington states) periodically finds individual locations with newly overbuilt facilities. These projects and the risk associated with them are mitigated, over time, as part of the Overbuilt Pipe Replacement Program.

DIMP has the capability to analyze risk (probability and consequence) associated with various threats to natural gas facilities, including over-built pipe. The DIMP analysis related to overbuilt segments results in an overall risk score for each of the defined segments. The Overbuilt Pipe Program Manager and each of the Gas Operations District Managers utilize DIMP risk scoring to prioritize projects within an approved level of annual program spend. Ideally, overbuilds would all be addressed as they are encountered, however, there is no compliance requirement behind the timing in which overbuilds must be eliminated. Avista has historically managed overbuilt facilities as part of this program and the associated risks along with other risk priorities in the Company. This is the main reason behind the program's historically approved funding levels instead of addressing all known overbuilds as a large, individually funded project. As the number of known overbuilds in the company has decreased, the level of requested and approved funding has decreased as well. The requested spend level has historically been determined based upon mitigating a manageable level of overbuilt facilities across our service territories coupled with any changing costs of construction year to year.

The goal is to manage and prioritize risk associated with overbuilt pipe and complete projects with the highest risk first. Each Operations District is allotted a manageable portion of the approved budget based upon project need. The projects for each district are typically managed locally while the overall program budget is managed by the Program Manager in Gas Engineering. Image 1 below is a list of the current projects within this program.

ER 3006										
Mobile Home Park, Overbuilt Pipe Replacement Program	2/12/2020	Requested Budget:	\$400,000	\$400,000	\$400,000	\$250,000	\$ -			
		Approved Budget:	\$400,000	\$400,000	\$400,000	\$250,000	\$ -			
		Estimated Costs:	\$385,000	\$410,000	\$420,000	\$250,000	\$480,000			

District	Overbuilt Site	Completed?	Estimated Cost	2020	2021	2022	2023	2024	DIMP Score/ft
Medford	555 Freeman Rd, Central Point OR	No	\$ 450,000			X	X		1930
Medford	301 Freeman Rd, Central Point OR	No	\$ 285,000	X					4145
Medford	2252 Table Rock, Medford OR	No	\$ 325,000		X				3485
Medford	2335 Table Rock, Medford OR	No	\$ 135,000			X			2894
Medford	3555 S Pacific, Medford OR	No	\$ 480,000					X	1400
Medford	4425 W Main St, Medford OR	No	\$ 15,000	X					717
Klamath Falls	Klamath Falls General Overbuilds	No	\$ 35,000	X	X	X	X		
Roseburg	Roseburg General Overbuilds	No	\$ 20,000	X	X	X	X		
La Grande	La Grande General Overbuilds	No	\$ 30,000	X	X	X	X		

Image 1 – List of current projects within this Program

Gas Overbuilt Pipe Replacement Program, ER 3006

2 BUSINESS PROBLEM

As a natural gas distribution system operator, Avista is required to operate within the minimum safety standards outlined in Part 192 of the Department of Transportation’s Code of Federal Regulations (CFR). The CFR defines the laws that all operators must legally comply with in the operation of natural gas distribution systems. There are sections of existing gas piping within Avista’s gas distribution system that have experienced encroachment or have been overbuilt by customer constructed improvements (i.e. living structures, sheds, decks, etc.) and were not designed to be installed under these conditions. In these circumstances, it is difficult to operate and maintain these facilities without increased risk or a reduction in overall safety.

Overbuilt facilities restrict company access to the pipe resulting in accessibility issues. If facilities were not designed for overbuilt conditions it can result in the inability to perform certain maintenance activities required by CFR such as meter inspections or leakage survey. Leakage surveys are typically performed by walking directly above the gas facilities while operating leak detection equipment. This maintenance becomes impossible if access to the ground above the facility becomes hindered. Overbuilds not originally designed to be in an overbuilt condition are also a violation of the CFR for an overbuilt facility as they do not meet code requirements for installation within a sealed conduit that can be vented outside of the overlying structure.

Overbuilds present an increased risk to customers due to the threat that gas can get entrapped inside of a structure, which increases the potential for an unsafe atmosphere to develop as well as result in potential ignition which could be catastrophic to life and property. Multiple factors impact risk and the replacement of these facilities, but of primary concern is the increased risk hazard due to a leak. Overbuilds increase operations and maintenance costs as Avista is often required to return to overbuild locations multiple times to attempt and complete leak survey and other maintenance tasks that cannot be completed at the normal scheduled time due to the overbuild.

Addressing overbuilt pipe in mobile home parks is where the highest risk and greatest quantity of overbuilt facilities exist due to the dynamic nature of these facilities. However, overbuilds are not isolated to mobile home parks and the need potentially exists for this program to be utilized in all of Avista’s service territories.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing/defer project</i>	\$0	N/A	
<i>Option 2 – Preferred Solution/Complete programmatic replacement of overbuilt sections of pipe</i>	\$400,000	January	December
<i>Option 3 – Alternate Solution #1/Reduced Funding Option: Complete programmatic replacement of overbuilt sections of pipe at a reduced rate</i>	\$200,000	January	December
<i>Option 4 – Alternate Solution #2/Attempt to enforce Avista’s easement rights</i>	Unknown	Unknown	Unknown

Gas Overbuilt Pipe Replacement Program, ER 3006

Option 1 – Do nothing/Defer project

Under this alternative Avista would continue to operate overbuilt facilities without replacement. There is significant risk associated with not remediating these facilities at all and this would be a violation of the Code of Federal Regulations subjecting Avista to potential State and Federal fines associated with operating facilities that are out of compliance. The financial impact of this alternative is very difficult to estimate as penalties for non-compliance are on a case by case basis. Known risks cannot be mitigated without replacement of these facilities or remediation of the overbuild condition. This option is not recommended.

Option 2 – Preferred Solution/Complete programmatic replacement of overbuilt sections of pipe

It is recommended as part of a programmatic approach to identify and replace sections of existing pipes that can no longer be operated safely as they have experienced encroachment or have been overbuilt by customer constructed improvements. Since there is no required compliance timeline for mitigation of overbuilt facilities, completing this type of work as part of a program will allow for Avista to manage the risk overall and prioritize overbuilt facilities based upon those instances with the highest risk to customers as well as operationally. This methodology is also more proactive and is anticipated to have less overall cost impact than by addressing each specific issue as it is encountered or addressing all known overbuilds at one time as an individually funded project. This program aligns with Avista's organizational focus to operate safe and reliable infrastructure for all of our customers in each of our service territories.

The current funding level balances available manpower with other programs administered at the District Offices and allows crews to also work on other compliance and risk reduction type activities. Annual levels of spending may need to be adjusted in this program as the risks in DIMP are reassessed annually.

Option 3 – Alternative Solution #1/Reduced funding option: Complete programmatic replacement of overbuilt sections of pipe at a reduced rate

Another option is to approach the risk associated with overbuilds with reduced funding. Reduced funding will result in replacement of fewer sections of overbuilt piping. The reduced funding alternative would still allow us a benefit by addressing some of the overbuilt facilities with known risk, but at a pace slower than we feel appropriate to address these safety concerns and maintain compliance. The outcome, should this option be selected, would result in the continued operation of facilities known to be out of compliance and which are currently operating with higher risk to customers and operations personnel. Additionally, Avista is often required to return to an overbuild location multiple times in attempt and complete a leak survey or other maintenance tasks that cannot be completed due to the overbuild. This will continue to result in increased operations & maintenance related costs. This option would be a partial employment of both Options 1 and 2 and is not recommended.

Option 4 – Alternative Solution #2/Enforce Avista's easement rights.

A final option to this program is to attempt to enforce Avista's "rights" and try to force the owners, renters, or mobile home parks owners to be liable for these fixes, however the original piping in these locations typically has weak or no easement protection. The ability to prove that the existing customer was responsible for the overbuild can be difficult and sometimes impossible. Avista has experienced in the past that attempts to force customer to pay for these modifications are difficult and often legal fees approach the cost of the work. Legal actions often take an extensive time and resource commitment. Additionally the negative public relations associated with such a philosophy would be very difficult to overcome. This option is not recommended.

Gas Overbuilt Pipe Replacement Program, ER 3006

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Overbuilt Pipe Replacement Business Case and agree with the approach it presents and that it has been approved by the steering committee or other governance body identified in Section 1.1. The undersigned also acknowledge that significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:		Date:	2-17-20
Print Name:	Jeff Webb		
Title:	Manager Gas Engineering		
Role:	Business Case Owner		
Signature:		Date:	2/17/20
Print Name:	Mike Faulkenberry		
Title:	Director of Natural Gas		
Role:	Business Case Sponsor		

5 VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Seth Samsell	04/17/2017	Jeff Webb	04/17/2017	Initial version
2.0	Seth Samsell	02/12/2020	Jeff Webb		Revised for 2020 Oregon GRC Filing

Template Version: 02/24/2017

Gas Isolated Steel Replacement Program, ER 3007

1 GENERAL INFORMATION

Requested Spend Amount	\$1,400,000 – Annual Request
Requesting Organization/Department	B51 – Gas Engineering
Business Case Owner	Jeff Webb / Jenn Massey
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 – Gas Engineering
Category	Mandatory
Driver	Mandatory & Compliance

1.1 Steering Committee or Advisory Group Information

The Isolated Steel Program Manager works closely with the Operations Managers to identify the work. The work is then dispatched to Gas Operations to complete. The overall program budget is managed by the Program Manager and Gas Engineering.

2 BUSINESS PROBLEM

The Program objective is to identify and document isolated steel sections of pipeline in Avista’s system, including isolated risers, and to replace each riser or pipeline section within a specified timeframe after its identification.

The methodology for identifying sections of isolated steel is a programmatic survey, taking pipeline to soil potential measurements of the subject system. The overall program area is divided into subareas based on Avista’s established cathodic protection zones. A three-man team conducts the survey; first obtaining “native” measurements with the CP system de-polarized, and then “on/off” measurements with the system polarized and current interrupters installed. Data is obtained digitally by each survey technician using a Trimble handheld device. The data is tracked and processed using an ESRI ArcGIS platform. Based on survey results, replacement job orders are dispatched and the replacements executed.

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 through 2024.

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 plastic.

Gas Isolated Steel Replacement Program, ER 3007

Management of the cathodic protection (CP) zone will drive the decision between steel and plastic pipe. A Generalized Work Flow is provided in Image 1 below. Per the WUTC 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. Work as previously described is also being completed in ID and OR. Work completed under this program results in a safer gas distribution system.

The Program is currently overseen by a Program Manager. Monthly reporting is used to identify budget targets are met and overall completion in each state. Software has been created to identify time constraints based on severity of potential risk. Action codes are listed in below flowchart.

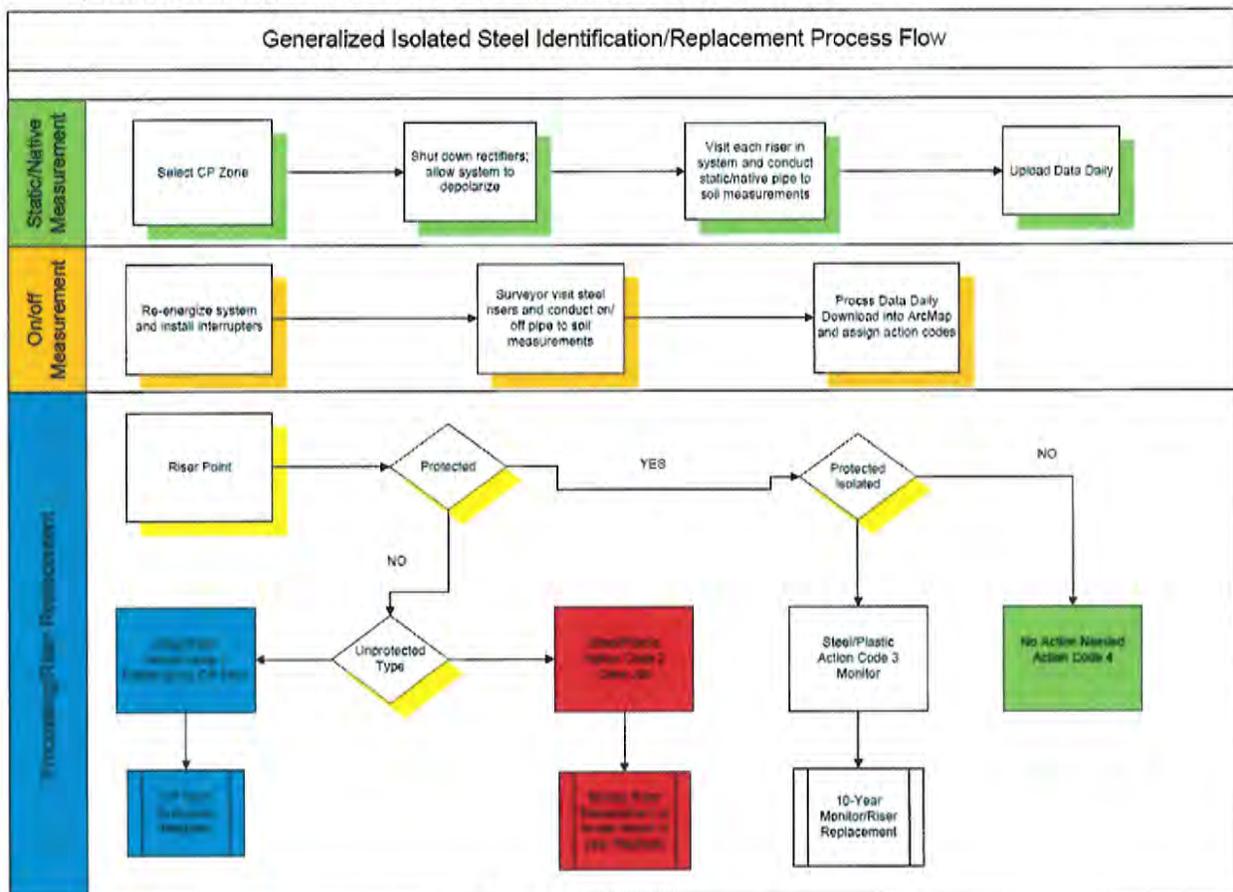


Image 1 – Generalized Work Flow

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing</i>	\$ TBD		
<i>Option 2 – Preferred Solution, Complete the program per the agreement</i>	\$2,050,000	2011	11-2021 WA 12-2024 ID and OR

Gas Isolated Steel Replacement Program, ER 3007

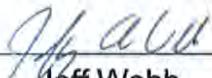
Option 1 – Do nothing

The alternative to completing this program would be to not finish the work within the timeframe mandated by the WUTC. This would be a direct violation of the stipulated agreement between Avista and the WUTC and likely result in financial penalties.

Option 2 – Preferred Solution, Complete the program per agreement as described above

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Isolated Steel Replacement Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2-17-20
 Print Name: Jeff Webb
 Title: Manager Gas Engineering
 Role: Business Case Owner

Signature:  Date: 2/17/20
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

5 VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Jeff Webb	03/16/2017			Initial version
1.1	Jeff Webb	04/07/2017			
2.0	Jennifer Massey	02/05/2020	Jeff Webb	2/17/20	Revised for 2020 Oregon GRC filing

Template Version: 02/24/2017

EXECUTIVE SUMMARY

In February 2012, Avista’s Asset Management Group released findings in the “*Avista’s Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utility’s Natural Gas System*” report. The report documents specific Aldyl-A pipe in Avista’s natural gas pipe system, describes the analysis of the types of failures observed, and the evaluation of its expected long-term integrity. The report proposed the undertaking of a twenty-year program to systematically replace select portions of Aldyl-A medium density pipe within its natural gas distribution system in the States of Washington, Oregon, and Idaho.

The Gas Facility Replacement Program (GFRP) was initiated in 2012 and is planned to continue for 20 years (until the end of 2031). It is the sole mission and charter for the GFRP to plan and execute the replacement of 737 miles of Aldyl-A main pipe and to rebuild 17,769 service tee transitions throughout Avista’s service territories. The Aldyl-A main pipe replacement work includes Aldyl-A pipe that is 1-1/4” diameter through 4” diameter and with an install date prior to January 1, 1987, or a manufactured date prior to January 1985.

Avista has a regulatory mandate to complete this program and has a goal of investing in its infrastructure to achieve optimum life-cycle performance. The historical spending trend from 2016 through 2021 has been \$20M-\$23M annually and is reflective of the program’s most recent cost experience updates. The requested budget amounts consider Avista’s regulatory mandate to complete this program with full contractor complement and to adjust for the mileage that was not completed in 2020 and be in alignment with Distribution Integrity Management Program’s (DIMP) prioritization recommendations. This also meets Avista’s goal of investing in its infrastructure to achieve optimum life-cycle performance. Inflation of approximately 4% has been planned for by escalating the annual costs.

This targeted Aldyl-A pipe will eventually reach a level of unreliability that is not acceptable due to the tendency for this material to suffer brittle-like cracking leak failures. 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. Not approving or deferring this body of work would further exacerbate the risks.

VERSION HISTORY

Version	Author	Description	Date	Notes
<i>Draft</i>	<i>Michael Whitby</i>	<i>Initial draft of original business case</i>	<i>2011</i>	
<i>1</i>	<i>Michael Whitby</i>	<i>Budget Change</i>	<i>2015</i>	<i>Additional \$1.8M approved</i>
<i>2</i>	<i>Michael Whitby</i>	<i>Budget Change</i>	<i>2016</i>	<i>Additional \$3M approved</i>
<i>3</i>	<i>Michael Whitby</i>	<i>Budget Change</i>	<i>2017</i>	<i>\$2M deferred to 2018</i>
<i>4</i>	<i>Michael Whitby</i>	<i>Budget Change</i>	<i>2018</i>	<i>\$1M deferred to 2019</i>
<i>5</i>	<i>Michael Whitby</i>	<i>Budget Change</i>	<i>2019</i>	<i>\$1.5M deferred to 2020</i>
<i>6</i>	<i>Karen Cash</i>	<i>Budget Change</i>	<i>2020</i>	<i>\$1,035,000 deferred to 2021</i>
<i>7</i>	<i>Karen Cash</i>	<i>Budget Change</i>	<i>2020</i>	<i>\$1,000,000 deferred to 2021</i>
<i>8</i>	<i>Karen Cash</i>	<i>Budget Change</i>	<i>2020</i>	<i>\$500,000 deferred to 2021</i>

GENERAL INFORMATION

Requested Spend Amount	\$25,000,000 - \$30,500,000 Annually
Requested Spend Time Period	10 years (2022 through 2031)
Requesting Organization/Department	Natural Gas / Gas Facility Replacement Program
Business Case Owner Sponsor	Karen Cash / Mike Faulkenberry
Sponsor Organization/Department	Energy Delivery / Natural Gas
Phase	Execution
Category	Program
Driver	Mandatory & Compliance

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

For Avista, aside from third party excavation damage, the highest risks within our natural gas distribution system is Aldyl-A Main Pipe (Manuf. 1964-1984), and the bending stress that occurs on Aldyl-A service pipe where it is connected to steel main pipe.

GFRP was initiated in 2012 and is planned to continue for 20 years (until the end of 2031). It is the sole mission and charter for the GFRP to plan and execute the replacement of 737 miles of Aldyl-A main pipe and to rebuild 17,769 service tee transitions. The Aldyl-A main pipe replacement work includes Aldyl-A pipe that is 1-1/4" diameter and great and with an install date prior to January 1, 1987, or a manufactured date prior to January 1985.

The GFRP's Service Tee Transition Rebuild (STTR) Program was structured to mitigate the risks associated with the "Bending Stress Services" category within a 5-year time frame. The STTR Program started in 2013 and was deemed substantially complete in December 2017.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

Avista has a regulatory mandate to complete this program and has a goal of investing in its infrastructure to achieve optimum life-cycle performance.

As of August 2011, the US Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) mandates gas distribution pipeline operators to implement Integrity Management Plans, or in Avista's case, a Distribution Integrity Management Plan (DIMP) in which pipeline operators are required to identify and mitigate the highest risks within their system. For Avista, aside from third party excavation damage, the highest risks within our natural gas distribution system is Aldyl-A Main Pipe (Manuf. 1964-1984), and the bending stress that occurs on Aldyl-A service pipe where it is connected to steel main pipe.

More specifically, and as related to the risks identified above, in February 2012 Avista's Asset Management Group released findings in the "Avista's Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utility's Natural Gas System" report. The report documents specific Aldyl-A pipe in

Avista's natural gas pipe system, describes the analysis of the types of failures observed, and the evaluation of its expected long-term integrity. The report proposed the undertaking of a 20-year program to systematically replace select portions of Aldyl-A medium density pipe within its natural gas distribution system in the states of Idaho, Oregon, and Washington.

Subsequently, the Gas Facility Replacement Program's (GFRP) was formed as the operational entity committed to structuring and implementing a systematic approach to mitigating the Aldyl-A pipe risks as identified in aforementioned report.

On December 31, 2012 the **Washington Utilities and Transportation Commission (WUTC)** issued its policy statement on Accelerated Replacement of Pipeline Facilities with Elevated Risks which requires gas utility companies to file a plan every two year for replacing pipe that represents an elevated risk of failure. The requirement to file a Pipe Replacement Plan (PRP) commenced on June 1, 2013. In response to this order, Avista's first 2-year PRP for 2014-2015 was submitted and approved in 2013 per Docket PG-131837, Order 01. Avista's second two-year PRP for 2016-2017 was submitted in 2015 and approved in 2016 per WUTC Docket PG-160292, Order 01. Avista submitted a PRP in June 2017, and 2019. In Avista's filings, the "*Avista's Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utility's Natural Gas System*" report serves as the pipe replacement "Master Plan", and two year pipe replacement goals which includes specific project locations, and the anticipated pipe replacement quantities.

On March 6, 2017 the **Oregon Public Utilities Commission** ("Commission") issued Order 17-084 (*Docket UM 1722, Investigation into Recovery of Safety Costs by Natural Gas Utilities*), which in part required each of the natural gas distribution companies serving customers in Oregon to file with the Commission by September 30th each year an annual "Safety Project Plan" (or Plan).¹ The purpose of the Plan is to increase transparency into the investments made by each utility that are based predominantly on the need to achieve important safety objectives. More specifically, the Plan is intended to achieve the following objectives:

- Explain capital and expenses needed to mitigate safety issues identified by risk analysis or new federal and state rules;
- Demonstrate the utility's safety commitment and priority to its customers;
- Provide a non-technical explanation of primary safety reports each utility is required to file with the Commission's pipeline safety staff; and
- Identify major regulatory changes that impact the utility's safety investments.

The **Idaho Public Utilities Commission (IPUC)** has not required gas utility companies to submit an action plan, Avista has submitted the "*Avista's Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utility's Natural Gas System*" report for review, and communicates annual pipe replacement goals which includes specific project locations, and the anticipated pipe replacement quantities.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

To ensure Avista fulfills the regulatory mandate to complete this program.

The need to conduct this program has been identified in "Avista's Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utility's Natural Gas System" report. Further, and more specifically, 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. Not approving or deferring this body of work would further exacerbate the risks as identified above.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The objective of this investment and structured replacement program is to reduce risk by replacing at risk pipe and by rebuilding Service Tee Transitions. Through rigorous Project Management efforts, the GFRP plans and tracks the performance of the projects, and utilizes Earned Value for cost analysis and for upstream reporting. Further, the GFRP tracks and reports Planned vs. Actual quantities by project, by year, by state jurisdiction, and also reports multi-year cumulative statistics.

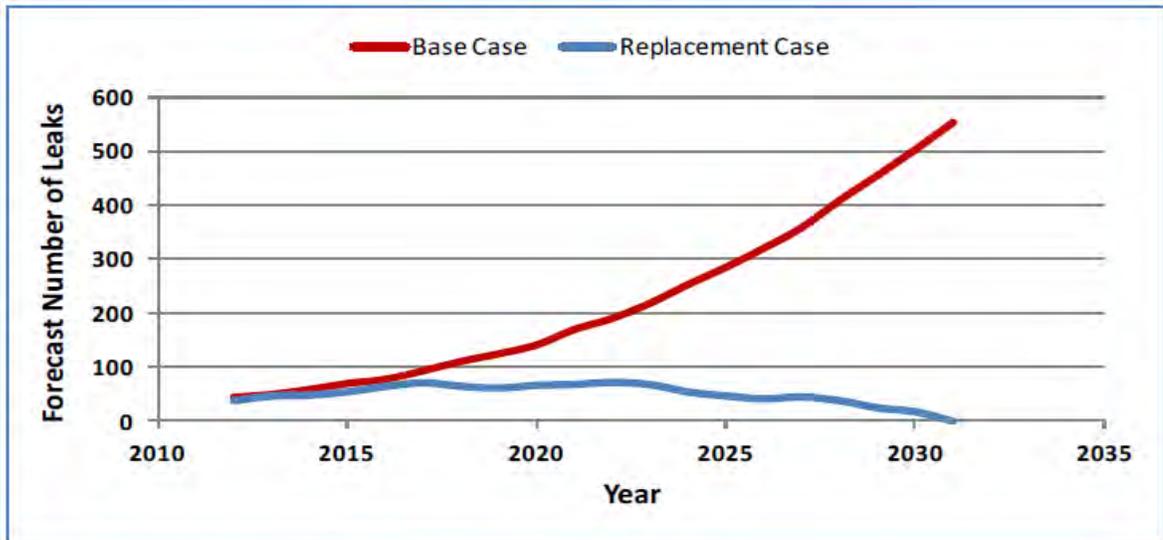
1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

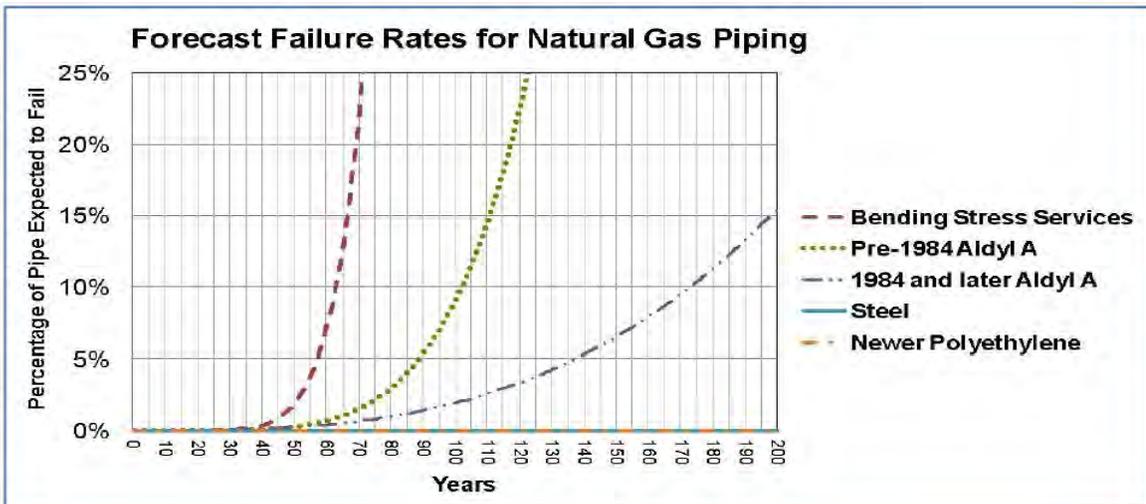
- a. On December 31, 2012, the Washington Utilities and Transportation Commission (WUTC) issued its policy statement on Accelerated Replacement of Pipeline Facilities with Elevated Risks which requires gas utility companies to file a plan every two years for replacing pipe that represents an elevated risk of failure. The requirement to file a Pipe Replacement Plan (PRP) commenced on June 1, 2013.
- b. February 23, 2012 – Avista Utilities Asset Management “Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utilities’ Natural Gas System”
- c. April 11, 2013 - Revised Avista Utilities Asset Management “Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utilities’ Natural Gas System”
- d. July 2013 – ARMS Reliability Report – Avista Study of Aldyl-A Mainline Pipe and Bending Stress Point Leaks
- e. Avista’s first 2-year PRP to the WUTC for 2014-2015 was submitted and approved in 2013 per Docket PG-131837, Order 01.
- f. Avista’s second 2-year PRP to the WUTC for 2016-2017 was submitted in 2015 and approved in 2016 per WUTC Docket PG-160292, Order 01.
- g. Order of the Public Utility Commission of Oregon in Docket UM 1722, Investigation into Recovery of Safety Costs by Natural Gas Utilities. March 6, 2017.
- h. Avista’s Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utility’s Natural Gas System report serves as the pipe replacement “Master Plan”, and two year pipe replacement goals which includes specific project locations, and the anticipated pipe replacement quantities.
- i. April 2018 – ARMS Reliability Report - Avista Study of Aldyl-A Mainline Pipe Leaks 2018 Update

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

The chart below identifies the expected number of material failures in Avista’s Priority Aldyl-A piping in two cases: Replacement Case – piping replaced over a 20-year time horizon, and Base Case – assumed that priority piping was not remediated under any program.



As shown in the graph below and outlined in “Forecasting Results” section of “Avista’s Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utility’s Natural Gas System” report, Avista’s forecast modeling tool “Availability Workbench Modeling” evaluates several classes of pipe which are represented as “curves” showing the percentage of the amount of pipe class that is projected to fail in each year of the forecasted time period.



2. PROPOSAL AND RECOMMENDED SOLUTION

“Avista’s Proposed Protocol for Managing Select Aldyl-A Pipe in Avista Utility’s Natural Gas System” report details the various time horizons modeled for the Aldyl-A Pipe Replacement program.

The Aldyl-A Pipe Replacement effort has been proposed and planned as a systematic twenty-year pipe replacement program. The program is expected to have a nominal impact to existing business resources, functions, and processes since the GFRP has been structured to function as a “stand alone” program consisting of dedicated “internal” resources. The primary functions established for these internal resources are to plan, design, oversee, manage, and administer the significant body of projected work as assigned to “external” contract construction resources.

Periodically, on an as-needed basis, the GFRP will call on other business units for support.

Since pipe replacement work is a capital expenditure, the impact to O&M cost has been minimal. Occasionally GFRP projects will encounter circumstances that necessitate O&M expenditures. When known, these O&M costs are estimated prior to construction. The GFRP tracks and monitors O&M costs monthly.

Option	Capital Cost	Start	Complete
Replace priority high-risk Aldyl-A pipe in a 20-year timeframe	≈ \$443M	January 2012	December 2031

The 2013 Avista Study of Aldyl-A Mainline Pipe Leaks was updated in 2018 based on the upon leaks and replacements through the end of 2017. The original study developed failure distributions that described the likelihood of leaks occurring on the Aldyl-A pipe installed by Avista for natural gas distribution and to evaluate multiple replacement scenarios. According to the table below the baseline scenario remains more cost effective when compared to the replacement strategies.

Scenario	Leaks from 2018 through 2088	IRR	Levelized Gr. Mar. Requirement*	Lev ROE*	NPV equity*
Baseline with effects - 2013	26,792	9.21%	\$16,417	\$0	\$0
20 Year Replacement with effects - 2013	255	6.04%	\$23,229	\$6,513	\$93,490
Baseline with effects - 2018	12,335	18.04%	\$10,785	\$0	\$0
20 Year Replacement with effects - 2018	246	3.87%	\$36,147	\$12,214	\$177,848

* In thousands

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

Reference key points from external documentation, list any addendums, attachments etc.

The 2013 Avista Study of Aldyl-A Mainline Pipe Leaks was updated in 2018 based on the upon leaks and replacements through the end of 2017. The study incorporated leak reduction and risk avoidance in the analysis.

After updating the model with leaks and replacements from 2013-2018 the expected number of leaks for the remaining period (2018-2088) reduced from 26,792 to 12,335 due to the large amount of the worst pipe already replaced. If the 20-year replacement program where all Aldyl-A pipe is removed continues there is a slight reduction in the expected number of leaks, 255 in the original study and 246 in the updated model.

Safety risks and criticality were also considered as part of the study update. It is understood that each failure event (leak) does not always result in an injury and this is incorporated as a percentage of events that result per Avista standard modeling guidelines. The severities used are

shown in table below. The projected number of catastrophic events drop from 258 to 5 events over the next 70 years by replacing the Aldyl-A pipe.

Effect	Severity	% of Failures Where Effect Occurs
Catastrophic event	50 Years	1.82%
Craft injury, WITH Lost Time/Light Duty	1 Year	0.11%
Craft injury, NO Lost Time	3 Months	0.29%

While Avista's 20-year structured replacement program has proven to reduce the highest risk in the early years of the program, the continuation of this structured replacement program is both necessary and prudent to mitigating the remaining risks within the system, and to achieving Avista's goal of operating and maintaining a safe and reliable natural gas distribution system.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

Over the duration of the 20-year program, the GFRP will conduct replacement and rebuild work in virtually every gas district across Idaho, Oregon, and Washington, with large concentrations of Aldyl-A pipe occurring in the metropolitan centers of Spokane, Washington, Medford, Oregon, and Coeur d'Alene, Idaho. Based on the scope of work and schedule, the GFRP will plan and manage more than 100 Major Capital Projects as follows:

Category	Type	Quantity	Duration	Project Count
Major	Main Pipe	737 miles	20 years	~ 105
Major	STTR	17,769 service tees	5 years (Completed)	~20

The 2013 study predicted a total of 26,792 leaks on Aldyl-A mainline pipe from 2018 through 2088 years without any form of a proactive replacement program. Based upon the proactive replacements that have occurred, the number of leaks predicted over the same period has reduced to 12,335 with 246 catastrophic events if the proactive replacement were to not continue. With the current replacement of all Aldyl-A pipe by 2035, the number of predicted leaks from 2018 to program completion reduces slightly, moving from 255 to 246 leaks of which 4 have the potential to be catastrophic events. Assumptions made during the study were as follows:

- Planned replacement of Aldyl-A Mainline pipe costs \$357 per three feet in Washington and Idaho and \$360 per three feet in Oregon.
- Unplanned replacement of Aldyl-A Mainline pipe costs \$5,071 per three-foot section.

- Consequences for a Catastrophic Event, Injury with lost time and injury without lost time are applied per Avista standard practice.

At Avista we forecast Capital Projects/Programs on five-year budget planning cycles which are updated and adjusted annually. In order to provide the most accurate budget forecasts possible it is necessary to draw from the program's most current cost data which is tracked and derived from recently completed projects. The historical spending trend from 2016 through 2021 has been \$20M-\$23M annually and is reflective of the program's most recent cost experience updates. The requested budget amounts consider Avista's regulatory mandate to complete this program with full contractor complement and to adjust for the mileage that was not completed in 2020* and be in alignment with Distribution Integrity Management Program's (DIMP) prioritization recommendations. This also meets Avista's goal of investing in its infrastructure to achieve optimum life-cycle performance. Inflation of approximately 4% has been planned for by escalating the annual costs.

*There were several impactful events that were outside Avista's control which led to the program deferring \$2,535,000 to 2021. Early part of 2020, the COVID-19 pandemic struck the nation and only essential work was able to continue. The NPL union employees went on strike starting on July 6, 2020 and the strike ended on August 26, 2020. Starting on September 8, 2020, in Jackson County Oregon, wildfires blazed in the Ashland – Alameda Drive area. There were wildfires throughout Oregon (see map below). The wildfires spread due to high winds and the smoke created poor air quality conditions. The outcome of these events in Oregon was the completion of only 2.6 miles of the planned 15.1 miles by NPL.

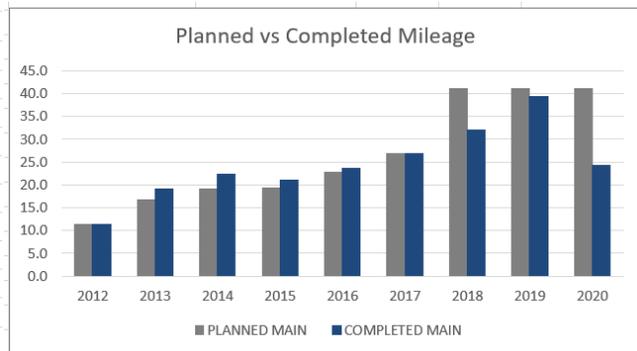
The following tables show the multi-year performance by state for main replacement from 2012 through 2020. Washington is at 97%, Oregon is 73%, and Idaho is 116% of completed main replacement. Overall the Program has completed 92% (difference of 18.8 miles) of the planned main replacement.

WASHINGTON			
YEAR	PLANNED MAIN	COMPLETED MAIN	%
2012	8.7	8.6	100%
2013	10.7	12.4	117%
2014	9.1	10.7	117%
2015	9.3	10.57	114%
2016	10.54	10.23	97%
2017	14.05	14.62	104%
2018	18.7	15.30	82%
2019	18.7	19.10	102%
2020	18.7	13.23	71%
TOTAL	118.4	114.9	97%

OREGON			
YEAR	PLANNED MAIN	COMPLETED MAIN	%
2012	2.7	2.7	103%
2013	6.0	6.7	111%
2014	6.5	8.0	123%
2015	6.6	5.9	89%
2016	6.8	7.9	117%
2017	6.9	7.1	103%
2018	14.6	9.23	63%
2019	14.6	7.42	51%
2020	14.6	2.62	18%
TOTAL	79.3	57.6	73%

IDAHO			
YEAR	PLANNED MAIN	COMPLETED MAIN	%
2012			
2013			
2014	3.42	3.65	107%
2015	3.50	4.63	132%
2016	5.40	5.40	100%
2017	5.80	5.20	90%
2018	7.7	7.5	98%
2019	7.7	12.7	165%
2020	7.7	8.5	110%
TOTAL	41.2	47.6	116%

GFRP Overall			
YEAR	PLANNED MAIN	COMPLETED MAIN	%
2012	11.3	11.4	101%
2013	16.7	19.1	114%
2014	19.0	22.3	117%
2015	19.4	21.1	109%
2016	22.7	23.5	104%
2017	26.8	27.0	101%
2018	41.0	32.1	78%
2019	41.0	39.3	96%
2020	41.0	24.3	59%
TOTAL	238.9	220.1	92.1%



In order to meet maintain optimal production with current personnel levels and account for approximately \$1.2M a year for Minor Main/STTRs/and outlying municipal projects, below is the proposed mileage by state from 2022 through 2026.

MULTI-YEAR PERFORMANCE BY STATE & YEAR 2022 - 2026				
	WASHINGTON	OREGON	IDAHO	GFRP Program
YEAR	PLANNED MAIN	PLANNED MAIN	PLANNED MAIN	PLANNED MAIN
2022	18.44	8.88	6.73	34.04
2023	18.90	8.65	8.24	35.79
2024	18.56	8.50	7.05	34.11
2025	20.03	8.50	7.33	35.86
2026	20.76	8.50	6.55	35.81
TOTAL	96.7	43.0	20.9	175.6

Based on the proposed mileage by state from 2022 through 2026, the estimated cost per mile by state and by year is shown below. Variations of the Cost/Mile are due to project location. For example, if a project requires significant Mobilization, Demobilization, crew travel expense, urban or rural locale, etc.

EST. COST/MILE BY STATE & YEAR 2022 - 2026			
	WASHINGTON	OREGON	IDAHO
YEAR	EST. COST	EST. COST	EST. COST
2022	\$ 771,571.27	\$ 829,661.19	\$ 735,825.63
2023	\$ 764,441.12	\$ 875,964.48	\$ 756,260.01
2024	\$ 746,115.63	\$ 781,718.87	\$ 806,454.59
2025	\$ 768,058.96	\$ 843,003.69	\$ 778,309.12
2026	\$ 776,313.96	\$ 869,830.05	\$ 833,579.10
AVERAGE	\$ 765,300.19	\$ 840,035.66	\$ 782,085.69

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Unplanned leak repairs are an O&M cost and are addressed by the local districts. Through this program, O&M expenses are mitigated. The 2013 study predicted a total of 26,792 leaks on Aldyl-A mainline pipe from 2018 through 2088 years without any form of a proactive replacement program. Based upon the proactive replacements that have occurred, the number of leaks predicted over the same period has reduced to 12,335 with 246 catastrophic events if the proactive replacement were to not continue.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

To establish context, Avista’s goal is operate a safe & reliable, and cost-effective gas distribution system. Specifically, as related to these goals, § XI of “Avista’s Proposed Protocol for Managing

Select Aldyl-A Pipe in Avista Utility's Natural Gas System" report details the various time horizons modeled for the Aldyl-A Pipe Replacement program.

To summarize, the primary alternatives modeled are as follows:

- **Do Nothing**

Pipe Replacement Strategies:

Since the "do nothing" option was not an acceptable or prudent approach, the Company evaluated different periods of time for removal of all Priority Aldyl-A pipe, up to a program horizon of 30 years. Avista assessed the prudence of different approaches based on the forecast of likely natural gas leaks due to failed pipe, as well as the rate impact to customers.

- **Less than 20 Year Pipe Replacement Program**
- **Conduct a 20 Year Pipe Replacement Program (Optimal)**
- **Conduct a 25+ Year Pipe Replacement Program**

Based on the time horizon scenarios modeled, it was determined that the optimum timeframe for removing priority Aldyl-A pipe was the 20 years.

RISKS ASSOCIATED WITH ALTERNATIVES CONSIDERED:

To summarize the primary alternatives and associated risks;

- **Do Nothing:**

It has been determined that this type of pipe is at risk and is approaching unacceptable levels of reliability without prompt attention. The "Do Nothing" option exposes Avista to increased operational risks, and worse, is a potential harm to our customers and the public through damage to life and property, and a high likelihood of legal action against the Company and likely regulatory fines. For this reason it was deemed "not prudent" and is not a serious consideration.

- **Less than 20 Year Pipe Replacement Program:**

Avista found that a timeline less than 20 years resulted in a greater cost impact to customers in the near term, and that it did little to reduce the forecast number of leaks expected each year. This approach did not effectively optimize the potential risks and rate impacts.

- **Conduct a 20 Year Pipe Replacement Program:**

The report proposes and suggests that a Systematic Replacement Program conducted over a 20 year timeline is the optimum timeframe to prudently manage this risk, based on the forecast number of leaks and risks, and the rate impact to our customers.

- **Conduct a 25+ Year Pipe Replacement Program:**

Lengthening the timeframe to 25 years resulted in more than a doubling of the number of leaks expected when compared to a 20-year horizon. Lengthening the timeline beyond 25 years was found to result in a substantial increase in the number of material failures expected.

As outlined above, Asset Management has identified 20 years as the optimum timeframe to prudently manage this risk. Avista's leadership has adopted this recommendation and has funded and staffed the program to achieve this objective. Furthermore, the three state Commissions that regulate Avista's natural gas operations have thoroughly examined this program in several rates proceedings, and in policy proceedings, and have deemed this approach to be prudent, cost effective, and in the interest of our customers.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer.

Start: January 2012

Expected End: December 2031

The annual list of projects in each of the three states (ID, OR, and WA) are established as unique “blanket projects” that transfer to plant (TTP) each month as they are “used & useful”.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The Gas Facilities replacement Program (GFRP) is responsible for Aldyl-A pipe replacement which aligns with Avista’s mission to operate and maintain a “Safe and Reliable Infrastructure”. Avista has a goal of investing in its infrastructure to achieve optimum life-cycle performance.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The objective of this investment and structured replacement program is to reduce risk by replacing at risk pipe and by rebuilding Service Tee Transitions. Through rigorous efforts, the GFRP plans and tracks the performance of each project and utilizes Earned Value for cost analysis and for upstream reporting. Furthermore, the GFRP tracks and report Planned vs. Actual quantities by project, year, state jurisdiction, and also reports multi-year cumulative statistics.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Avista’s customers and the general public expect Avista’s natural gas system to operate safely and reliably without incidents. Avista is dedicated to and focused on maintaining a safe and reliable system that shields the public from imprudent risks. The proposed pipe replacement programs have been initiated with the purpose of mitigating the known risks within the natural gas distribution system. Given this context, the Gas Facility Replacement Program’s portfolio of projects could therefore be considered as a customer-related benefit.

The GFRP’s Aldyl-A Pipe Replacement projects touch numerous internal and external stakeholders. A comprehensive list of stakeholders is in the “2019 GFRP Operating Plan & Projects” document.

2.8.2 Identify any related Business Cases

Business cases have been submitted annually and updated as necessary since 2012, the inception of the Gas Facility Replacement Program.

3. MONITOR AND CONTROL

3.1 Steering Committee or Advisory Group Information

The Gas Facility Replacement Program (GFRP) Advisory Group consists of the GFRP's Program Manager, Gas Operations Contract Construction Manager, Director of Natura Gas, and the Manager of Gas Design & Measurement. This group meets monthly to review program wide Earned Value results, that status of the delivery of the individual projects, budget allocations and variances, internal resource demands, customer care results and issues, contractor performance, and to communicate potential program risks and shortfalls.

In addition, Avista's Distribution Integrity Management Plan and Asset Management groups provide periodic input, and/or validation of the replacement plan and schedule.

3.2 Provide and discuss the governance processes and people that will provide oversight

Each year an annual portfolio of projects is derived from Avista's Distribution Integrity Management Program (DIMP) Aldyl-A prioritization list which currently identifies unique priority project areas (polygons) throughout the natural gas system in ID, OR, and WA. The portfolio of projects is sized to meet jurisdictional commitments. Then individual priority projects are planned, phased, scoped, designed, and detailed estimates are prepared. Once the individual project estimates are finalized, the overall program-wide capital budget is refined to reflect a more precise budget. The requested spend level has historically been determined based upon Avista's experience in the management of the Aldyl-A pipe facilities across Avista's service territories coupled with any changing costs of construction year to year.

There are circumstances where lower priority Aldyl-A projects may be accelerated if it makes sense to coordinate the timing of pipe replacement projects with prior phasing or with other utility and road projects. The individual projects for GFRP are typically managed by the Customer Project Coordinators (CPC's) while the overall program budget is managed by the GFRP Program Manager.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The Gas Facility Replacement Program (GFRP) Advisory Group consists of the GFRP's Program Manager, Gas Operations Contract Construction Manager, Director of Natura Gas, and the Manager of Gas Design & Measurement. This group meets monthly to review program wide Earned Value results, that status of the delivery of the individual projects, budget allocations and variances, internal resource demands, customer care results and issues, contractor performance, and to communicate potential program risks and shortfalls. The monthly documentation tracks the projects and is the primary device for documenting program decision making.

Gas ERT Replacement Program, ER 3054

1 GENERAL INFORMATION

Requested Spend Amount	\$200,000
Requesting Organization/Department	Gas Engineering
Business Case Owner	Jeff Webb / David Smith
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 - Gas Engineering
Category	Program
Driver	Asset Condition

1.1 Steering Committee or Advisory Group Information

Gas Engineering recognized that a significant negative impact to both Avista Gas Operations and to Avista’s gas customers is being caused when an Encoder Receiver Transmitter (ERT) module experiences a battery failure while in service on a gas meter. The Asset Management department was consulted by Gas Engineering for assistance developing a strategic program to replace ERT modules before their battery expires. The result of the study suggested the most efficient method for replacing these assets that resulted in the highest customer satisfaction and lowest cost. The asset management study is attached to this document for reference. Gas Engineering is responsible for managing this program.

2 BUSINESS PROBLEM

ERTs are electro-mechanical devices that allow gas meters to be read remotely. These ERTs are powered by lithium batteries, which discharge over time and must eventually be replaced.

There are approximately 106,000 ERTs in Oregon. Figure 1 below shows the approximate quantity of ERTs installed each year in Oregon. The large quantity of ERT installations will result in an unmanageable quantity of battery failures in the future if not replaced at an optimized frequency. When batteries fail, customer’s estimated usage is entered into the billing system manually. This manual process causes a high chance of customer dissatisfaction because of potential billing errors associated with bill estimation. Customers often express their dissatisfaction through commission complaints.

Since the batteries are gel sealed inside the ERT to protect against weather and the environment, it is more cost effective to replace the whole ERT, not just the battery. Avista used to replace batteries and reseal them, but determined it was not cost effective to do so. The average battery life for ERT modules is 15 years.

Gas ERT Replacement Program, ER 3054

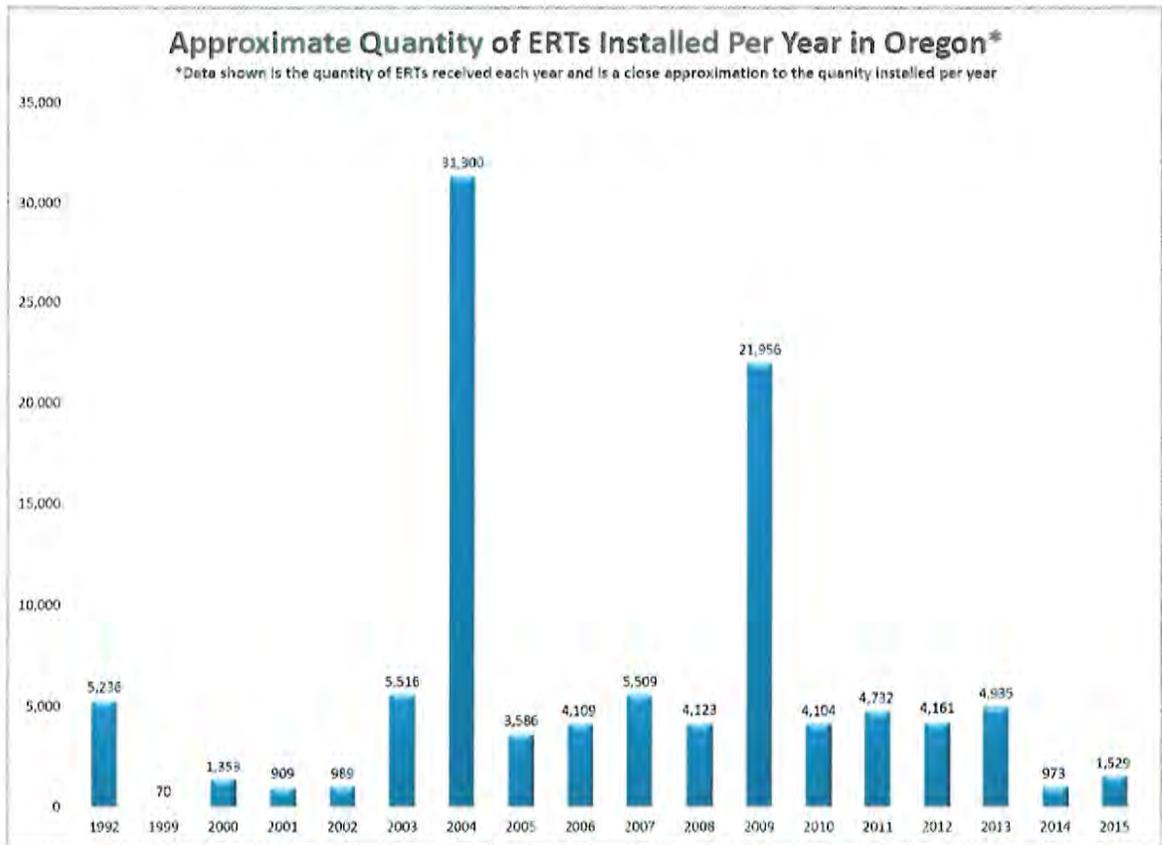


Figure 1 – Approximate Quantity of ERTs Installed per year in Oregon

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete	Risk Mitigation
<i>Option 1 – Do nothing, Operate the ERT modules until their battery fails.</i>	\$405,200	N/A		
<i>Option 2 – Preferred Solution, Replace the oldest 7,000 ERTs each year on a 15 year cycle</i>	\$200,000	01/2016	04/2031	
<i>Option 3 – Alternative Solution, Replace 7,000 ERTs based on geographic location each year on a 15 year cycle</i>	\$126,040 *	01/2016	04/2031	

*See "Cost Analysis Comments" below

Option 1 – Do nothing, Operate the ERT modules until their battery fails.

If the ERT is operated until the battery fails, the number of battery failures will increase to an unsustainable level. Figure 2 below shows the number of expected ERT battery failures in this "Run-to-Failure" model. At its peak, more than 20,000 ERTs are predicted to fail annually, each requiring a maintenance call to replace, causing an undue burden on Operations personnel and equipment. This large

Gas ERT Replacement Program, ER 3054

number of failed ERTs will also cause an unreasonable number of meters that would need to be read manually and their usage estimated. A cost analysis was performed and is discussed below under Option 3.

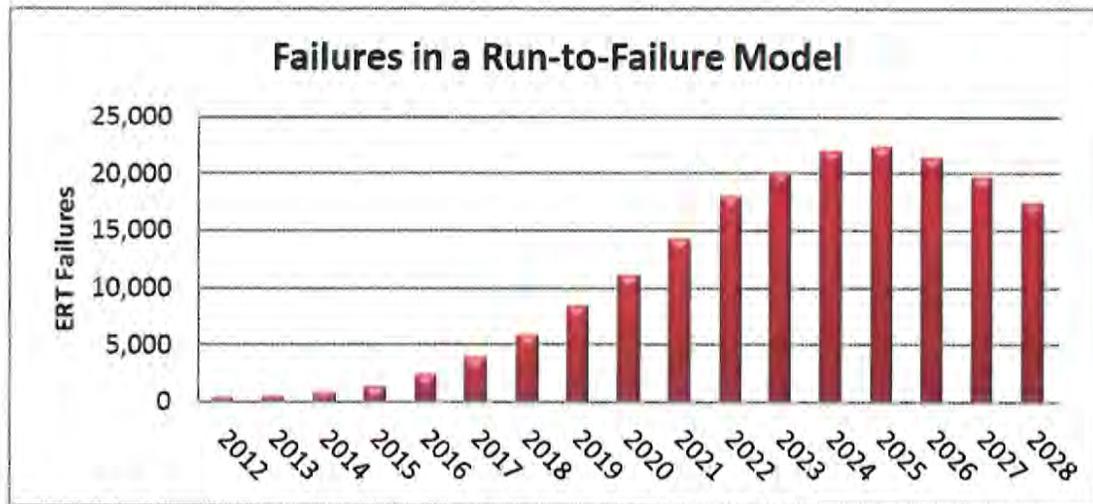


Figure 2 – Quantity of ERT Battery Failures per Year in Run-to Failure Model

Option 2 – Preferred Solution, Replace the oldest 7,000 ERTs each year on a 15 year cycle.

This option involves replacing the oldest ERTs each year, regardless of their geographic location. The benefit to this approach is that the oldest ERTs are targeted, resulting in less battery failures and, as a result, fewer estimated customer bills. The disadvantage to this approach is that the oldest ERTs may not be geographically close to one another, increasing travel time in-between ERT locations. A cost analysis was performed and is discussed below.

Option 3 – Alternative Solution, Replace 7,000 ERTs based on geographic location each year on a 15 year cycle.

This option involves replacing a geographic cluster of ERTs. The benefit to this approach is that the ERTs are located close to one another, which equates to less travel time in-between ERT locations. The disadvantage to this approach is that the oldest ERTs may not be replaced if they are outside of the geographic zone, so there would be a higher quantity of ERT failures. A cost analysis was performed and is discussed below.

Cost Analysis Comments:

A third party contractor provided a cost estimate for both replacement Options 2 and 3, and the cost to replace the oldest ERTs was not significantly more than replacing the geographically located ERT clusters, therefore it costs less over the life of the program (15 years) to replace the oldest ERTs (Option 2). Figure 3 shows the cost comparison between Options 1, 2 and 3. Option 2 results in a \$12,500,000 savings compared to Option 1 and a \$5,000,000 savings compared to

Gas ERT Replacement Program, ER 3054

Option 3. Option 2 provides a levelized replacement strategy and will minimize the financial impact of ERT failures as well as introduce new, levelized populations of ERTs into the system for future preventive maintenance. Customers will also be the least impacted by choosing option 2 because the oldest ERTs are replaced first, reducing the amount of battery failures and the resultant number of customer bill estimations.

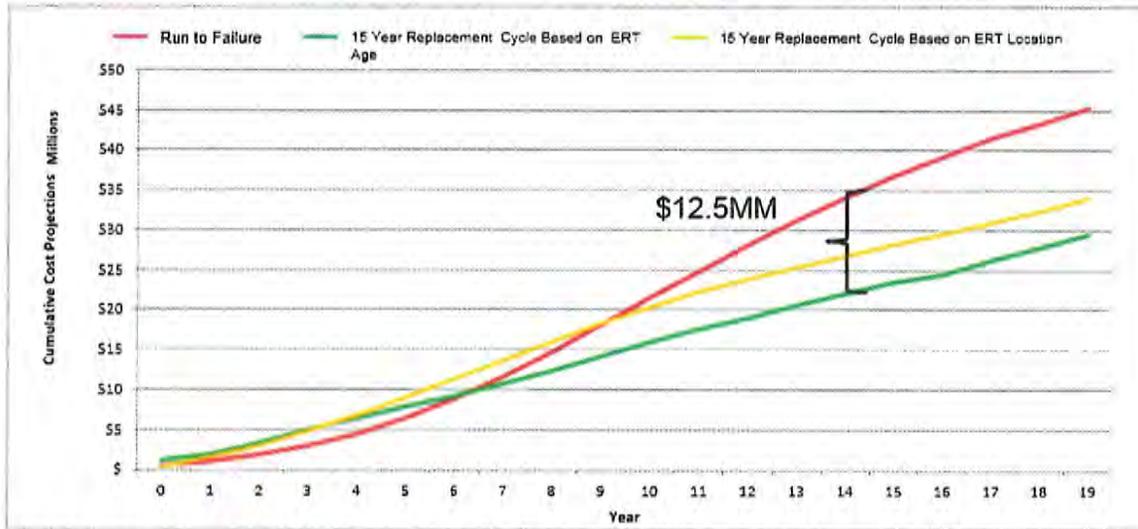


Figure 3 – Cost Comparison for Options: 1 (red), 2 (green), and 3 (yellow).

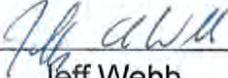
Due to the “pre-capitalization process”, the cost of the ERT will go against ER1053 (Gas ERT Minor Blanket). The labor and minor parts associated with the project go against this ER.

The Advanced Metering Infrastructure (AMI) project will replace ERT modules in Washington and Idaho, therefore the ERT Replacement Program will be focused on Oregon only at this time. This program will continue in Oregon until either the technology or the lifecycle of the ERT changes.

Gas ERT Replacement Program, ER 3054

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas ERT Replacement Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2-17-20
 Print Name: Jeff Webb
 Title: Manager Gas Engineering
 Role: Business Case Owner

Signature:  Date: 2/17/20
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Cmt Review

5 VERSION HISTORY

[Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Dave Smith	3/9/2017			Initial version
1.1	Dave Smith	3/24/17			Revised per initial review
1.2	Jeff Webb	3/31/17			
2.0	Dave Smith	2/7/20	Jeff Webb		Revised for 2020 Oregon GRC filing

Template Version: 02/24/2017

Gas PMC Program, ER 3055

1 GENERAL INFORMATION

Requested Spend Amount	\$1,400,000
Requesting Organization/Department	B51 - Gas Engineering
Business Case Owner	Jeff Webb / David Smith
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 - Gas Engineering
Category	Mandatory
Driver	Mandatory & Compliance

1.1 Steering Committee or Advisory Group Information

Gas Engineering, Gas Operations, Gas Meter Shop, and Technical Services work together to administer the Gas Planned Meter Change-out (PMC) program and ensure compliance with the various state rules and tariffs related to gas meter testing. Gas Engineering is ultimately responsible for the PMC plan and annual reports that are submitted to each of the state commissions. Gas Operations and the Gas Meter Shop remove the meters from the customer’s premise and install new ones. The Gas Meter Shop completes physical calibration tests on the meters, and the Technical Services group then analyzes the test results at the end of the year to determine the status of each family of gas meters.

2 BUSINESS PROBLEM

Avista is required by commission rules and tariffs in WA, ID, and OR to test meters for accuracy and ensure proper metering performance. Execution of this program on an annual basis ensures the continuation of reliable gas measurement and compliance with the applicable tariffs.

The following State Rules regulate Avista’s PMC Program:

Oregon:

- OAC 860-023-0015 “Testing Gas and Electric Meters”
- Tariff Rule #18

Idaho:

- IDAPA 31.31.01.151 through .157 “Standards for Service”

Washington:

- WAC Chapter 480-90-333 through -348 “Gas companies – Operations”
- Tariff Rule #170

Avista’s statistical sampling methodology is 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

Gas PMC Program, ER 3055

entire meter family will be replaced. Conversely, if the analytics determine a meter family is testing well (close to 100% accurate), the sample size (number of meters in that family required to be tested) can be reduced. These analytics help lower costs and also remove meters quickly that are not performing well.

This program includes only the labor and minor materials associated with the PMC Program. Major materials (meters, pressure regulators, and Encoder Receiver Transmitter (ERT)) will be charged to the appropriate Gas Growth Programs.

This program assures that our customers' natural gas use is measured accurately in all jurisdictions.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing</i>	\$0		
<i>Option 2 – Preferred Solution, Complete programmatic work as described</i>	\$1,200,000	January	December

Option 1 – Do nothing/defer project

If this program were not completed fully and accurately, Avista would be out of compliance with state tariffs and could be exposed to fines from the various state utility commissions. Also, the accuracy of measurement of our customers' natural gas usage could not be assured.

Option 2 – Preferred Solution, Complete the programmatic work at the current funding level

Completion of this program will keep Avista in compliance with State Rules and Tariffs and assure that our customers' natural gas use is measured accurately.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas PMC Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2-17-20
 Print Name: Jeff Webb
 Title: Manager Gas Engineering
 Role: Business Case Owner

Gas PMC Program, ER 3055

Signature:  Date: 2/17/20
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Committee Review

5 VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Jeff Webb	03/16/2017			Initial Version
1.1	Jeff Webb	04/07/2017			
2.0	David Smith	2/17/2020	Jeff Webb	2/17/20	Revised for 2020 Oregon GRC filing

Template Version: 02/24/2017

Gas Telemetry Program, ER 3117

1 GENERAL INFORMATION

Requested Spend Amount	\$200,000
Requesting Organization/Department	B51 – Gas Engineering
Business Case Owner	Jeff Webb / Dave Moeller
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 Gas Engineering
Category	Program
Driver	Performance & Capacity

1.1 Steering Committee or Advisory Group Information

The Gas Measurement Engineer works with the Gas Telemetry Technicians, Gas Planning, Gas Engineering, Metering Automation, Gas Operations, Gas Control Room, Supervisory Control and Data Acquisition (SCADA), and Gas Supply groups to determine possible projects or locations for new telemetry sites or upgrades of existing equipment. The Gas Engineering Manager reviews the recommendations from the Gas Measurement Engineer and approves the specific projects within this program. A five year plan is also created by the Gas Measurement Engineer and approved by the Gas Engineering Manager.

2 BUSINESS PROBLEM

Avista’s commitment to safety and reliability dictates that we monitor our gas system to ensure safe and reliable operation and accurate metering and accounting for gas purchased and sold. This includes compliance with Federal and State Gas Control Room Management Rules.

Gas Telemetry provides data that is used pro-actively for early detection of abnormal operating conditions before they become major problems which may affect safety or gas delivery. Additionally, telemetry is used to remotely monitor system pressures, volumes, and flows from areas of special interest such as gate stations which supply gas to Avista’s system, gas transportation customers, regulator stations which reduce and regulate pressure, selected large industrial customers, end of line pressures, and per CFR192.741 requirements, pipeline systems with more than one source of gas.

Alarm set points in the field instruments such as flow computers, electronic volume correctors, and electronic pressure monitors to alert the Gas Control Room of abnormal operating conditions such as low or high pressure, high flow, high or low gas temperatures indicating problems with gas heaters at gate stations, and transducer failures. Communication with the instruments is via cellular modems or telephone lines.

Gas Telemetry Program, ER 3117

An important example is the detection of degraded pressure regulator performance resulting in high or low pressures caused by dithiazine deposits in our regulators. In 2019 this occurred over 100 times at sites with telemetry. This is a mix of early detection by pro-active human analysis by evaluating pressure trends recorded in PI and pressure alarms received in SCADA. More pressure monitoring with telemetry is planned at additional stations relating to this issue. By proactively monitoring these sights, Avista can dispatch field personnel during normal business hours instead of waiting to respond to an alarm that may happen at any time of the day.

Additionally, data from these telemetry sites is used to validate the system modeling tool that Gas Planning creates every year. Since the data collected is electronic, it can be represented graphically to quickly analyze any anomalies. In addition to permanent equipment, around 50 temporary, portable pressure recorders with cellular modems are connected to piping in areas of interest where permanent equipment has not yet been installed, will not be needed, or is not practical.

The Gas Supply department benefits from these projects by having metering data from Gate Stations that is calculated and transmitted independently of the interstate pipeline's metering and billing info based on our instrument's measuring pressure and temperature and calculating gas volume based on pulses from the Pipelines meter. This aids in finding calculation or metering errors at the Gate Stations. Billing errors left unfound can create problems that lead to extra work and manual corrections between Avista and the interstate pipelines. This also provides data for cases when the Pipelines' do not have data on their side.

The customers and general public benefit from Avista having good "visibility" to the gas transmission and distribution system. This allows for a quicker response and better decision making from the Gas Control Room and Gas Operations when an abnormal or emergency situation occurs.

For example, we are quickly notified electronically of low pressure situations that if not addressed in a timely manner could result in significant loss of gas service to our customers. We are also notified of high pressures which could be hazardous or result in blowing gas such as when a pressure relief valve opens to limit the pressure in our piping.

If there were no telemetry, Avista would have to wait for customers to call in after they've lost gas service which at that point would have a significant impact to our customers and require substantial time and manpower to restore service. Costs could range from a few thousand dollars to a million dollars. In the case of high pressure and relief valve venting at one of our stations, we could be releasing gas

Gas Telemetry Program, ER 3117

to atmosphere for extended periods until a passerby notified us of the noise or a gas odor.

Avista strives to replace equipment that has reached the end of its reasonable service life with new equipment that makes use of current technology before reliability is significantly degraded or maintenance costs are excessive. We also review existing installations for opportunities to improve reliability, acquire more data, or more efficient ways of collecting the data.

Enhancing the gas telemetry system increases situational awareness and visibility of the gas system to help analyze operational concerns and monitor cold weather performance by the Gas Control Room Operators, Gas Operations, and Gas Engineering and Planning.

This program will continue the installations and upgrades of gas telemetry throughout Avista's gas service territory in Oregon, Washington, and Idaho. Over the last several years, costs have averaged approximately 45% spent in OR, 35% in WA, and 20% in ID.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 – Do nothing</i>	\$0	N/A	
<i>Option 2 – Preferred Solution, Replace/install telemetry at the current funding level</i>	\$200,000	January	December

Option 1 – Do nothing

To make no further additions or upgrades to Avista's gas telemetry system would result in less capability to see "real time" performance of the gas system, inability to see operational abnormalities in a timely fashion, subject our customers to increased chances of low or high pressure situations and their related safety risks, and the reliability of the existing system would decline due to equipment failures. More equipment would reach end of life and maintenance costs would increase.

Option 2 – Preferred Solution, Replace/install telemetry at the current funding level

At the current funding level, Avista adds approximately 10 new sites and upgrades approximately 15 sites per year. Costs per site typically range from \$5,000 for a simple upgrade to \$50,000 for adding telemetry to a gate station.

The cost of this option represents a minimal amount and may need to be increased in future years depending on equipment failures. Some years more work is required and costs may be shared with other departments such as in 2019

Gas Telemetry Program, ER 3117

when Verizon Wireless announced it was turning off 3G cellular service starting at the beginning of 2020 so we replaced approximately 170 3G cellular modems with 4G modems.

Based on current failure rates and funding, on the average this funding level has allowed upgrades as instrumentation fails and allows for modest enhancements to the system. This allows the high priority sites to be addressed as the need arises or equipment fails.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas Telemetry Program (ER3117) and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2-17-20
 Print Name: Jeff Webb
 Title: Manager Gas Engineering
 Role: Business Case Owner

Signature:  Date: 2/17/20
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Cmt Review

5 VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Jeff Webb	03/14/2017			Initial version
1.1	Jeff Webb	04/07/2017			
2.0	Dave Moeller	2/17/2020	Jeff Webb	2/17/2020	Revised for 2020 Oregon GRC filing

Template Version: 02/24/2017

EXECUTIVE SUMMARY

Avista co-owns a natural gas storage reservoir, Jackson Prairie Underground Natural Gas Storage Facility (JP). JP is essential to ensuring reliable, cost-effective natural gas service for consumers during the region’s annual wintertime peaks in natural gas demand. Avista’s 1/3 share of Jackson Prairie storage allows the utility to meet 100 percent of its customers’ peak winter demand with the facility’s stored reserves.

JP can hold about 44 billion cubic feet of natural gas, of which 25 billion cubic feet is working natural gas. This storage ensures that natural gas supplies are available during the year to meet customer demand in all three operating states; Washington, Idaho, and Oregon. In addition, this storage helps to stabilize customers’ energy costs and soften the impacts of price volatility in the wholesale natural gas market. Avista buys and stores significant amounts of natural gas during the lower-priced months, and then taps the reserves, typically in winter months, when customers’ natural gas requirements—and wholesale natural gas prices—are highest.

Avista has co-owned Jackson Prairie’s facilities and natural gas storage rights equally with Seattle-based Puget Sound Energy (PSE) and Houston, Texas-based Williams-Northwest Pipeline since 1962. Predecessor businesses of these three companies developed Jackson Prairie as a natural gas storage facility in the 1960s. PSE manages the Jackson Prairie operations.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Scott Kinney	Updated Business Case	07/12/2021	

GENERAL INFORMATION

Requested Spend Amount	\$11,990,000 (Avista’s 1/3 cost obligation)
Requested Spend Time Period	5 Years
Requesting Organization/Department	Natural Gas Energy Resources
Business Case Owner Sponsor	Scott Kinney Jason Thackston
Sponsor Organization/Department	Energy Resources
Phase	Execution
Category	Project
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

This request is for the ongoing funding for the capital costs associated with the JP operations.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) **and the benefits to the customer**

The drivers for funding JP are Performance and Capacity. JP provides solutions for the following gas supply needs:

- Stored gas supply that enables Avista to reliably serve customers during peak load demand.
- Risk mitigation for shielding customers from extreme daily gas price volatility during cold weather or other events affecting the natural gas commodity market.
- A mechanism for purchasing gas at lower prices during off-peak periods for use during high cost periods.

All commodity price benefits resulting from the utilization of JP are passed along to the customer through the annual PGA filings.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

JP is a functioning storage project that has critical ongoing capital funding requirements for ensuring continuous safe and reliable operation of the plant. Not funding JP at the requested levels increases a number of risks for plant operations including, but not limited to, non-compliance for underground storage safety mandates, deliverability during peak demand periods, reduced physical plant security, reduced efficiency of plant output, or increased likelihood of component failure resulting in unplanned outages.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The storage project is continually managed and monitored for optimal storage volume, injection and withdrawal performance, and other key operational metrics. An operations report is submitted to the JP Management Committee on a monthly basis. Additionally, the report provides a current and projected budget status.

1.5 Supplemental Information

- 1.5.1 Please reference and summarize any studies that support the problem
- 1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Option	Capital Cost	Start	Complete
Ongoing annual funding for JP capital budget	2,379,000	01 2022	12 2022
	2,370,000	01 2023	12 2023
	2,421,000	01 2024	12 2024
	2,410,000	01 2025	12 2025
	2,410,000	01 2026	12 2026
<i>5 Year Total</i>	<i>\$11,990,000</i>	<i>01 2022</i>	<i>12 2026</i>

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The budget is prepared by the plant operations team and is informed by a number of supporting documents, including:

- Engineering studies and ongoing operational monitoring data
- Risk gap analyses and risk mitigation plan
- Actual operational performance results
- Safety compliance and other regulatory mandates and requirements
- Contractual obligations
- Asset maintenance and replacement schedules

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

The capital dollars will be spent throughout the year according the capital budget scheduling plan prepared by the JP operations team. An updated budget status is submitted monthly to track the spending. No O&M reductions are estimated as a result of this investment.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

JP is 1/3 owned but not operated by Avista. No impacts to other Avista business functions or processes are anticipated by this business case.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

No cost effective alternatives exist for replacing JP. Because JP is a unique solution that provides benefits/solutions for an array of supply needs, it would likely require multiple business solutions to replace the resource functionality provided by JP, none of which could fully duplicate the benefits of JP nor be cost competitive with JP.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

The annual capital spending for JP includes multiple capital improvement investments, which become used and useful at the end of each budget year.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

JP is a critical integrated supply resource for our natural gas business. JP helps enable the delivery of natural gas energy safely, responsibly, and affordably to our customers.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The requested capital budget amount is prudent and has been reviewed and approved by the JP Management Committee (described below). The capital budget amount will provide for and ensure the continuous operational performance contractually mandated by the JP owners, and licensed by FERC.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Stakeholders who directly interface with the business case include the two other ownership partners; PSE and Williams-NWP. Additionally, the Pacific Northwest (PNW) natural gas market and pipeline operation are directly affected by JP. JP provides critical supply delivery functionality to the PNW pipeline grid, especially during peak demand times.

2.8.2 Identify any related Business Cases

This replaces the 2020 JP Business Case.

3.1 Steering Committee or Advisory Group Information

A JP Management Committee meets quarterly to review and approve the capital budget status for the current year as well as to review and approve any ongoing or future expenses. A business representative from each of the 3 ownership partners

Gas Operator Qualification Compliance

EXECUTIVE SUMMARY

As an operator of gas infrastructure, Avista Utilities is required by regulation to minimize the impact of safety and integrity of the pipeline facilities due to human error that may result from an individual’s lack of knowledge, skills, or abilities during the performance of certain activities, or covered tasks. Craft Training and Gas Operations are responsible for ensuring a qualified and competent workforce. This is partially accomplished by evaluating and qualifying internal and contract employees on Operator Qualification tasks specific to Avista’s natural gas infrastructure.

This business case will provide the tooling, vehicles, and equipment necessary to enable internal Avista Evaluators to evaluate Avista “non-peer” employees and contract personnel under the PHMSA regulations for Operator Qualification. Further, the tooling, vehicles and equipment may be used by Avista’s Evaluators to maintain proficiency in the tasks required by the program and to design, construct and implement new testing tools, techniques and technologies. Not providing these resources would result in the Evaluators being unable to perform their duties, possibly resulting in regulatory penalties and incidents that impact Avista’s customers and the public. This project will support Avista’s gas operations in Idaho, Washington and Oregon. The total cost of the recommended solution to support these activities is \$185,000 over a 5-year period or \$37,000 annually.

VERSION HISTORY

Version	Author	Description	Date	Notes
<i>Draft</i>	<i>Joe Brown</i>	<i>Executive Summary Only</i>	<i>7/6/2020</i>	<i>Business Case 2020 Refresher</i>
<i>1.0</i>	<i>Joe Brown</i>	<i>Final version for 2020 capital update</i>	<i>7/29/2020</i>	<i>Full amount approved</i>
<i>1.1</i>	<i>Joe Brown</i>	<i>Reviewed for Approval</i>	<i>7/13/2021</i>	<i>No Changes Required</i>

GENERAL INFORMATION

Requested Spend Amount	\$185,000
Requested Spend Time Period	<i>5 years</i>
Requesting Organization/Department	Craft Training and Operator Qualification [I02]
Business Case Owner Sponsor	Joe Brown Jeremy Gall
Sponsor Organization/Department	Human Resources
Phase	Execution
Category	Program
Driver	Mandatory & Compliance

Gas Operator Qualification Compliance

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Growth and high attrition rates in the Natural Gas industry has led to a workforce shortage of trained and competent personnel. Employing this workforce has resulted in several safety and quality control issues on Avista's natural gas infrastructure.

Currently, Avista Utilities evaluates internal personnel by utilizing loaned employees from Gas Operations to evaluate other peer employees. The utilization of peer craft employees to conduct evaluations is not recognized as a best practice in the natural gas industry.

Further, Avista's Gas Contractors train and evaluate themselves on Avista's covered tasks. These activities are conducted independent of Avista's oversight. Evaluation of contract employees by contract employees, with no utility oversight, is not recognized as a best practice in the natural gas industry.

Recent safety and quality incidents in the field and questionable evaluation practices has demonstrated the need for direct evaluation by internal, "non-peer", Avista evaluators for Operator Qualification. This unbiased evaluation practice will determine the knowledge, skill and ability of personnel and ensure the integrity of qualifications.

The following regulations outline the requirements of Operator Qualification that must be met by Avista as an Operator of a natural gas utility. These requirements apply to both internal and contract employees.

1. Background. 49 C.F.R. §§ 192.803 through 192.809 prescribe the requirements associated with qualifications for gas pipeline company personnel to perform "covered tasks." 49 C.F.R. § 192.801 contains a definition of "covered task." In WAC [480-93-999](#), the commission adopts 49 C.F.R. §§ 192.801 through 192.809. However, in this section, the commission includes "new construction" in the definition of "covered task."
2. Accordingly, for the purpose of this chapter, the commission defines a covered task that will be subject to the requirements of 49 C.F.R. §§ 192.803 through 192.809 as an activity, identified by the gas pipeline company, that:
 - a. Is performed on a gas pipeline;
 - b. Is an operations, maintenance, or new construction task;
 - c. Is performed as a requirement of Part 192 C.F.R.; and
 - d. Affects the operation or integrity of the gas pipeline.
3. In all other respects, the requirements of 49 C.F.R. §§ 192.801 through 192.809 apply to this chapter.
4. The equipment and facilities used by a gas pipeline company for training and qualification of employees must be similar to the equipment and facilities on which the employee will perform the covered task.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The primary business driver for this business case is *Mandatory & Compliance* and the secondary drive is *Customer Service Quality*. Avista must have and execute an OQ Program in order to maintain compliance with laws, rules and regulations. Secondly, the safety and quality of Avista's gas delivery business is greatly impacted by the testing program carried out through the implementation of the OQ program.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Avista's OQ Program is in its implementation stage and must be funded. Deferring or canceling this funding altogether exposes the company to regulatory risk and possible fines.

Gas Operator Qualification Compliance

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The implementation of this new evaluation process for the OQ Program began on June 1, 2020. Monitoring, metrics and reporting will be developed based on this implementation stage. Currently, Avista has more than 350 active contractors that go through testing and evaluation. Lagging safety and quality metrics may be used in the future to assess the success of this change in program execution.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

No studies have been conducted to date. This business case supports an industry “best practice” where non-peer employees with evaluate personnel on OQ tasks.

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

NOT APPLICABLE

The proposed solution is to obtain the resources needed for OQ Program evaluation

This is the least cost alternative from a capital perspective when considering the risks associated with outsourcing the OQ evaluations to a third party, or fully funding all tools and equipment.

Option	Capital Cost	Start	Complete
<i>1. OQ Evaluator Tools and Material – Partial</i>	<i>\$185,000</i>	<i>01 2021</i>	<i>12 2025</i>
<i>2. OQ Evaluator Tools and Material – Full</i>	<i>\$460,000</i>	<i>01 2021</i>	<i>12 2025</i>
<i>3. Outsource OQ Evaluator Program</i>	<i>\$0</i>	<i>01 2021</i>	<i>NA</i>

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

For the recommended solution (Option 1) [OQ Evaluator Tools and Material – Partial], this amount is based on the estimate of tools and equipment that will need to be purchased and utilized annually in order to support the program. The tools and equipment in this solution will be shared among the Spokane and Oregon locations and there will not be significant duplicate. This will slightly increase O&M expense due to travel and sharing of equipment among evaluators.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

This is a compliance program and there are no O&M offsets associated with the project.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

The greatest impact of this business case is on Gas Operations and Avista’s Gas Customer. Gas Operations contracted resources will be tested through this program which may result in safer, higher quality work products. Avista’s Gas Customer may receive safer, better service in the areas where Avista utilizes contract personnel for gas work.

Gas Operator Qualification Compliance

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

For the recommended solution (Option 1) [OQ Evaluator Tools and Material – Partial], this amount is based on the estimate of tools and equipment that will need to be purchased and utilized annually in order to support the program. The tools and equipment in this solution will be shared among the Spokane and Oregon locations and there will not be significant duplicate. This will slightly increase O&M expense due to travel and sharing of equipment among evaluators.

For Option 2, it is estimated that Avista may need to spend \$92,000 annually in order to purchase each evaluator their own tools and equipment utilized for skill evaluations. This would include upgrading existing equipment and replacing all outdated equipment. This includes many of the tools and materials utilized by contractors, such as leak survey and locating, that are extremely capital intensive. We believe the prudent decision is to share this equipment among the evaluation areas and reduce the overall capital spend.

Finally, for Option 3, OQ skill evaluations could be outsourced to a 3rd Party contract resource. This outsourced testing model has been adopted by some peer companies. This option is estimated to cost more than \$600,000 in O&M alone, not to mention the risk this option would pose from an employee morale and labor relations perspective. Further, this option does not drive a culture of safety, compliance and quality that we hope to achieve by executing on Option 1.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. spend, and transfers to plant by year.

Equipment and tools will be purchased on an annual basis and will become 'used-and-useful' during the year as the evaluators implement the resources in the field.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This investment aligns with two of Avista's key Focus Areas of 'Our Customers.' and 'Perform.'

When it comes to Avista's customers, this program promotes transparency in the safety, quality and integrity of Avista's work product delivered to each customer. The safety and integrity of the gas system depends on a highly skilled workforce, and this program helps ensure these skills meet or exceed Avista's standards. Regarding performance, this program helps ensure customers are served with safe and reliable infrastructure.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Avista must comply with laws, rules and regulations as well as provide customers with safe, reliable gas resources. This program helps ensure the safety and quality of Avista's gas system. As stated previously, this program was implemented on June 1, 2020 and monitoring, metrics and reporting will be developed as part of the ongoing program as it is executed.

2.8 Supplemental Information

Gas Operator Qualification Compliance

2.8.1 Identify customers and stakeholders that interface with the business case

Key internal stakeholders include Craft Training, Gas Operations, and Compliance. Key external stakeholders include Avista's Customers and 3rd Party Contractors.

2.8.2 Identify any related Business Cases

NA

3.1 Steering Committee or Advisory Group Information

See the governance process below

3.2 Provide and discuss the governance processes and people that will provide oversight

As a practical matter, the OQ Evaluators [3] will plan their needs for tools, materials and equipment with the Manager or Craft Training & OQ. The team will prioritize their needs and manage the funds accordingly.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The Manager or Craft Training & OQ will be responsible for prioritization, change requests, documentation and monitoring of this project.

Gas Operator Qualification Compliance

The undersigned acknowledge they have reviewed the [Gas Operator Qualification Compliance Business Case](#) and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature: Joe Brown Date: 7/13/2021
Print Name: Joe Brown
Title: Mgr Craft Training & OQ
Role: Business Case Owner

Signature: Jeremy Gall Date: 7/19/2021
Print Name: Jeremy Gall
Title: Sr. Mgr Safety & Craft Training
Role: Business Case Sponsor

Signature: NA Date: _____
Print Name: _____
Title: _____
Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Gas HP Pipeline Remediation Program, ER 3057

1 GENERAL INFORMATION

Requested Spend Amount	\$3,000,000
Requesting Organization/Department	Gas Engineering
Business Case Owner	Jeff Webb, David Smith
Business Case Sponsor	Mike Faulkenberry
Sponsor Organization/Department	B51 - Gas Engineering
Category	Program
Driver	Mandatory & Compliance

1.1 Steering Committee or Advisory Group Information

The Gas Compliance department is responsible for ensuring Avista is compliant with Federal and State Regulations governing the distribution of natural gas. When a new regulation is brought into effect, the Gas Compliance department will determine if Avista is meeting the requirement or not. If the new requirement is not being met, the Gas Compliance department will notify the appropriate work group and work with them to determine the appropriate path forward to ensure compliance. Gas Engineering is responsible for managing this program.

2 BUSINESS PROBLEM

Current industry Pipeline Safety code requires pipeline operators to have pressure test documentation and material specifications for pipelines distributing natural gas. Avista has some deficiencies in these types of records, but industry regulators (state inspectors) historically have not placed much emphasis on this, specifically for facilities that operate at lower stress levels and therefore at a lesser risk to the public. Avista's history, very similar to that of other utilities, involves pipeline construction during times when the pipeline safety code was not in effect or taken to be that important. Also, Avista has acquired properties from other companies and therefore had no control over their testing practices and record keeping prior to the acquisition. The regulatory climate is now changing and more scrutiny is being placed on having these records.

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is actively working on a new rule that is expected to be published in December of 2017 called "Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines". When implemented, it will require pipeline operators to have "traceable, verifiable, and complete" Maximum Allowable Operating Pressure (MAOP) records for its transmission facilities. Our understanding of the Rule is that Avista will now need to begin aggressively addressing portions of our system in order to be in compliance. Until the Rule is published, it is not clear yet what the timeframe will be to create a plan and mitigate all deficiencies.

Gas HP Pipeline Remediation Program, ER 3057

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Option 1 - Do nothing / Defer project</i>	\$0		
<i>Option 2 – Preferred Solution, Continue to remediate segments of high pressure pipeline.</i>	\$3,000,000	2016	2022
<i>Option 3 – Alternative Solution, Reduced funding option: Replace segments of high pressure pipeline.</i>	\$1,500,000	2016	2022

Option 1 – Do nothing / Defer project.

If segments of transmission pipeline without traceable, verifiable, and complete MAOP records are not mitigated, Avista will be non-compliant with Federal Pipeline Safety Codes, especially when the Rule mentioned above becomes final. If the work in this program is not completed, Avista will be going against industry guidance and trends. Once the Federal Rules become final, penalties and fines may be imposed for not completing this work.

Option 2 – Preferred Solution, Continue to remediate segments of high pressure pipeline.

As stated above, the proposed Federal Rule will force action to address lack of sufficient MAOP records. Transmission pipelines without traceable, verifiable, and complete MAOP records will be replaced or mitigated within this program. Reasons for this work will include, but are not limited to; incomplete construction and pressure test documents, pipe quality deficiencies from the manufacturing process, and risk reduction in densely populated areas. As a result of completing this option, public and employee safety will be improved by replacing at risk pipe.

Officials and spokesmen from both PHMSA and the American Gas Association (AGA) have stated it is not prudent for operators to wait for the Federal Rule to become finalized before bettering their systems in this category of work. Avista has been in the process of remediating pipelines under this program since 2015. Incidentally, many of these facilities have been in service for over 30 years.

Depending on the final language of the Rule, the annual levels of spending may need to be adjusted in this program. However, as best as Avista is able to tell at this time, what is proposed is the correct pace to complete this Program. The current rate of work is reasonable with Avista’s Engineering and construction workforces.

Avista will address replacement or mitigation of its pipelines in the order of highest operating stress and highest levels of record deficiencies. This program will be prioritized in all three of its natural gas operating states and will analyze risks and

Gas HP Pipeline Remediation Program, ER 3057

priorities regardless of jurisdiction. The projects in 2017 will likely all be in Oregon. Replacement projects in 2018 and beyond have not yet been determined.

Option 3 – Alternative Solution, Reduced funding option: Replace segments of high pressure pipeline.

Reduced funding will result in replacing fewer pipeline segments with insufficient MAOP records. This will be at a pace slower than has been accomplished historically and slower than what we feel is the ideal rate as described above. The outcome, should this option be selected, may be pipeline segments being out of compliance with Federal Regulations and a greater amount of backlog to work through once the Rule is published.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Gas HP Pipeline Remediation Business Case and agree with the approach it presents and that it has been approved by the steering committee or other governance body identified in Section 1.1. The undersigned also acknowledge that significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 4-17-17
 Print Name: Jeff Webb
 Title: Manager Gas Engineering
 Role: Business Case Owner

Signature:  Date: 4/17/17
 Print Name: Mike Faulkenberry
 Title: Director of Natural Gas
 Role: Business Case Sponsor

5 VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Dave Smith	03/09/2017	Mike Faulkenberry	04/17/2017	Initial version

Template Version: 02/24/2017

Fleet Equipment Capital Refresh Program

EXECUTIVE SUMMARY

A 2018 Avista brand study found that 65% customers are most likely to see and identify Avista with our trucks. Our vehicles and associated gear are an essential part of our ability to address customer needs and perform work required to be an effective an efficient electric and gas utility. The Fleet Vehicle Refresh Capital Plan is the annual and ongoing plan to replace a portion of Avista's fleet in order to ensure the highest level of reliability and the lowest total cost of ownership. The annual cost of vehicles can be split into two types, direct operating and indirect costs. Direct costs include fuel and maintenance, while indirect costs include common ownership expense. Avista's replacement model is based on a proven fleet management concept that there are predictable increasing maintenance costs and decreasing ownership costs as a vehicle ages. The point at which those two lines intersect gives Avista a window of opportunity in which we will achieve the lowest total cost of ownership cost for a given unit. Replacing the unit at that time allows us to ensure a high level of reliability (96% availability currently) at the same time ensuring we have a steady and predictable level of work for the technicians in our garages. Maintaining a high reliability percentage is essential when we experience an EOP event. Over the last several years we have experience multiple large EOP events, we are extremely proud of how well our fleet has performed. The fleet experienced very few breakdowns even though our units were being used around the clock in some of the most serve conditions. This strategy also gives us the advantage of liquidating units while they still have reasonable amount of fair market value. These funds help supplement our planned spend, minimizing the need for additional funds request when market prices fluctuate.

To develop this model Avista has worked with Utilimarc, a utility focused data analytics company who benchmarks and does similar analysis for over 50 investor owned utility fleets in the US. The model inputs the initial price, actual maintenance & repair costs, depreciation expense and salvage value to establish each class of vehicle's replacement cycle. The recommended solution will replace 60-90 units per year with an average spend of \$6,600,000 per year for a total five year cost of \$33,300,000. The investment in Avista's fleet, over the past decade, means that we have a highly reliable fleet that meets the service level expectations that our internal customers have. Our equipment must be able to function in the most extreme situations. Our trucks can be in 120+ degree heat in the bottom of Hells Canyon or 0 degree snow storms in Sandpoint. Trucks that are running allow crews to work an outage and reenergize/repressurize the system. By spending a level amount of capital every year, we are able to maintain a constant average fleet age which produces a known quantity of work in our shop and it prevents us from having a bubble of trucks that create budget issues in later years. Those bubbles create workflow issues for technicians and the maintenance supervisors as well as the employees who purchase vehicles. The investment made has meant that we are a highly reliable and highly functional tool for our crews. We have maximized our value while minimizing our total cost. By failing to fund this program we create a growing cost of repair expense and a decreasing level of reliability/availability.

Service Code and Jurisdiction of Customer Impacted
 Common Direct, Electric Direct, Gas Direct
 Allocated North, Washington, Oregon, Idaho

VERSION HISTORY

Version	Author	Description	Date	Notes
ExeSum	Greg Loew	Initial executive summary submittal	7/10/20	
Rev 1	Greg Loew	Completed case	7/24/20	

Fleet Equipment Capital Refresh Program

Rev 2	Loew & Potter	2021 update	7/2/21	

GENERAL INFORMATION

Requested Spend Amount	\$33,400,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Fleet Services
Business Case Owner Sponsor	Greg Loew Alicia Gibbs
Sponsor Organization/Department	Energy Delivery
Phase	Execution
Category	Program
Driver	Asset Condition

Fleet Equipment Capital Refresh Program

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Trucks and equipment do not age well. Fleet vehicles experience a duty cycle that most vehicle owners would not imagine for their personal car or truck. Avista's fleet of vehicles operate in environments that are often at the extreme of whatever scale you are looking at, extreme heat, cold, or the dustiest of environments. These vehicles also experience employees constantly entering, and exiting, while the engines experience high idle time or high loads. These factors all contribute to the wear and tear our vehicles and can create substantial demand for repair workorders. This kind of duty cycle over the life of a truck will add up to an increasing amount of repair work and a lower reliability factor as a vehicle ages. By building a replacement program we optimize our vehicle life so that we extract the right amount of useful value from our vehicles before they experience a rapidly growing amount of repair expenses. The program we have built affords us the ability to plan our labor and maximize our internal mechanic resources while having a fleet of vehicles that are available for any job; planned or unplanned operational response.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The Fleet Equipment Capital Refresh Program is driven by Asset Condition. This program benefits both our internal and external customers.

External customers: Our customers benefit from our Fleet Replacement Program by having a small and predictable annual portion of their bill tied to the acquisition and operation of our fleet. Additionally, new vehicles have the cleanest burning engines and advanced safety features that protect the environment and drivers on the road. A highly reliable fleet ensures that our customers will not experience a delay in getting their energy restored because our crews cannot get there.

Internal customers: Our drivers have the safest most reliable trucks as a result of the investment in our fleet. Our fleet of trucks are ready for work over 96% of the time. In the field our trucks experience fewer breakdowns per 100 hours of operations and are in the 1st quartile when compared to peer utility fleets. Our fleet of vehicles includes advanced safety features, modern efficient engines and operational tools that make many tasks more efficient. We work very hard with input from our customers to make sure we are producing units that give them what they need to serve our external customers safely, efficiently, and reliably.

Fleet Equipment Capital Refresh Program

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The investment in vehicles for our Avista's fleet is not an option. Our crews do not get to their jobsites, near or far, in any way but in an Avista owned piece of equipment. Vehicles will break down and reach their end of life. It can be prolonged by making expensive and time-consuming repairs. The availability of the company's fleet and its field reliability will suffer if there is not an invest of capital. Additionally, the company will see a steady rising cost in maintenance both in labor and material dollars. The deferral of investment will also cause bubbles of increased capital needs in out years as the team tries to shore failed assets and work to bring the average fleet age in line with industry best practices. If we do not invest our dollars into the capital replacement plan, we will end up spending those dollars on costly repairs. Repair costs are much more, are unpredictable and make it much more difficult to forecast. In the worst case we would see at 12,000 hour gap between labor available and the labor required to complete necessary repairs experience by the replacement deferral in the coming decade. That difference would likely be met with vendor labor which carries a premium over internal labor. In 2032 that would add an additional \$660,000 per year to the clearing account which would be born through significant equipment cost burdens.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Our annual industry benchmarking and year of year analysis of numbers show that we are performing within the industry 50th percentile band. The number of work orders per year and maintenance cost per year have remained steady.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

Supplemental information is available from Utilimarc.com

Fleet Equipment Capital Refresh Program

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Class Code	Class Description	Purchase Price	Life Cycle	Priority Replacement for Avista
3.4	Sedan - Hybrid	35,000	7	
3.5	Sedan - Electric	38,000	8	
6.1	Pickup - Class 1	31,000	15	
6.2.1	Pickup - Class 2a	45,000	14	6
6.2.2	Pickup - Class 2b	40,000	14	
6.3	Pickup - Class 3	45,000	14	
6.4	Pickup - Class 4+	107,000	9	
10.1	SUV - Compact	28,000	14	
10.2	SUV - Midsize	33,000	16	
10.3	SUV - Fullsize	50,000	15	
11.2.1	Van - Class 2a	38,000	14	
11.2.2	Van - Class 2b	50,000	10	7
11.3	Van - Class 3	60,000	10	
11.4	Van - Class 4+	70,000	11	
13	Dump Truck - Unassigned	84,000	16	
13.4	Dump Truck - Class 4	60,000	16	
13.5	Dump Truck - Class 5	75,000	10	
13.7	Dump Truck - Class 7	165,000	15	8
13.8	Dump Truck - Class 8	250,000	15	
14.2	Service Truck - Class 2	53,000	9	
14.3	Service Truck - Class 3	86,820	11	3
14.4	Service Truck - Class 4	74,000	10	
14.5	Service Truck - Class 5	112,390	14	2
14.6	Service Truck Class 6+	175,346	15	8
15	Stake Truck	79,334	16	13
16.5	Bucket Truck - Class 5	197,876	9	1
16.6	Bucket Truck - Class 6	195,000	12	
16.7	Bucket Truck - Class 7	217,000	12	
16.8	Bucket Truck - Class 8	330,000	18	4
19.8	Digger Derrick - Class 8	420,000	18	5
20	Tanker	311,000	15	
21	Semi-Tractor	200,000	6	
22.1	Crane - On Road	316,000	20	
22.2	Crane - On Road, Articulating	320,000	17	
25	Track Unit - Unmounted	300,000	15	
27	Directional (Horizontal) Drill Unit	150,000	11	
28	Crane - Off Road	704,000	15	
30	Frontend Loader & Backhoe	99,000	13	11
31	Skid-steer - Unassigned	73,000	21	
31.1	Skid-steer - Light	62,000	11	
31.2	Skid-steer - Heavy	115,000	15	
33	Trencher - Unassigned	51,000	13	
33.2	Trencher - Light	37,000	19	
33.3	Trencher - Medium	85,000	10	
34.1	Loader - Light	145,000	15	
34.2	Loader - Medium	165,000	10	
34.3	Loader - Heavy	185,000	10	
35.1	Excavator - Mini	35,000	12	9
35.2	Excavator - Light	55,000	15	10
39	Tensioner/Puller	165,000	18	
41	Welder	13,389	15	
42	Air Compressor	20,000	24	
43.1	ATV	35,000	22	
43.2	Utility Cart	40,000	21	12
44	Backyard Mobile Equipment	196,000	15	
45	Generators	61,000	17	
48	Mobile Aerial Platform	75,000	19	
49	Forklift	75,000	20	
52	Off Road Tractor with Equipment	59,000	10	
99.2	Misc. - POE	102,000	31	
99.3	Misc. - Attachments	13,706	22	
100	Trailers	19,938	20	

The capital plan attached here includes updates from the 2020 benchmark analysis. Also included in the amount is 2021 orders that due to supply chain issues is pushed to 2022 for delivery and in-service. A majority 2022 plan has been executed due to 400-650 day lead times from multiple vendors. The 2022 plan will total \$6.6mm.

Fleet Equipment Capital Refresh Program

Option	Capital Cost	Start	Complete
Fully funded (no adds to complement funded)	\$33.3M	01.2022	12.2026
Partial funding	\$19.5M	01 2022	12 2026
Lease	\$0M	01 2022	12 2026

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

Avistas Vehicle Replacement Model (VRM) uses fleet data 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.

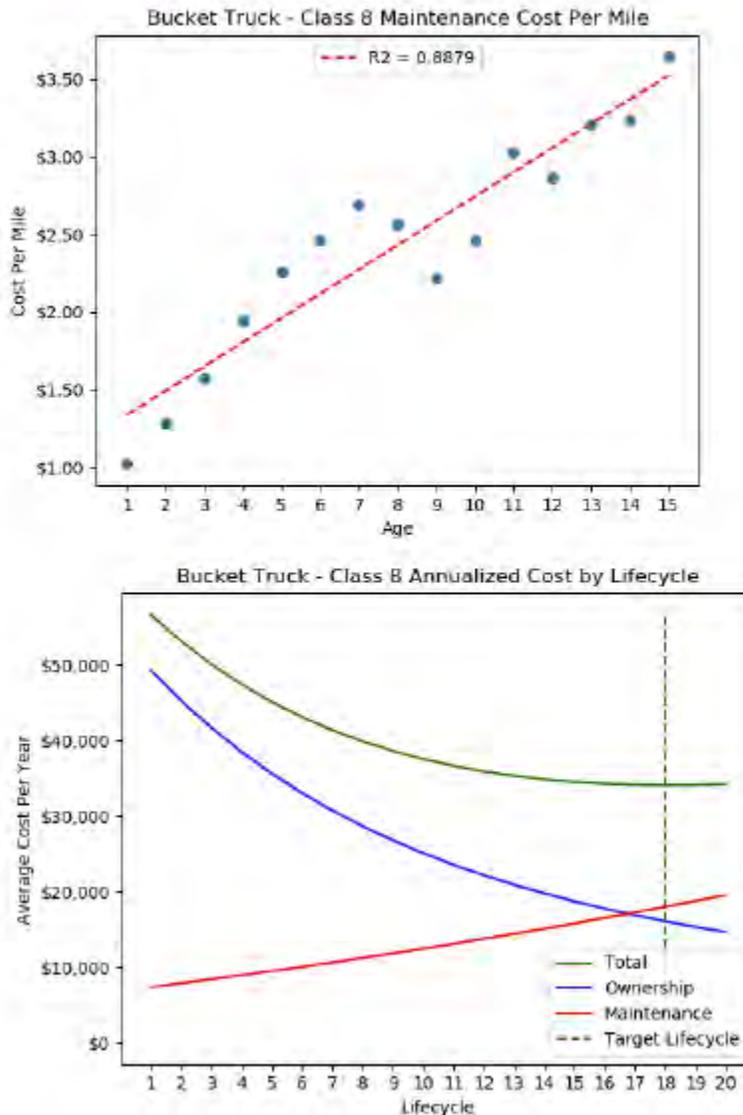
A vehicle is identified as a candidate for replacement when it reaches its replacement range for age or lifetime mileage. Replacing within these ranges ensures operating within 1% of the lowest total ownership cost of the vehicle over its lifetime. A standard regression model is used in this analysis.

Reference key points from external documentation, list any addendums, attachments etc.

Example

Fleet Equipment Capital Refresh Program

Bucket Truck - Class 8



2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

The capital in this case will be spent evenly over the 5 year period. The investment of capital in this case will provide a consistent replacement plan which enables a predictable parts and labor cost, vehicle downtime and technician requirements

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Avista's fleet of vehicles is used by nearly every department. By not investing in new assets we increase the potential for equipment failure and unforeseen downtime for our

Fleet Equipment Capital Refresh Program

crews and employees in the field. Our industry is amid many changes driven by internal as well as external factors. By not having a replacement plan we limit ourselves on being able to keep up with current standards, as well as new safety requirement. The impact would most be felt when a large EOP or mutual aid event occurs.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

The first alternative is to invest approximately 25% less in capital that what our optimum scenario is. By investing at this level, we would be able to continue to address the highest cost per mile vehicle classes (five of which account for 55% of the total annual operating spend) and those vehicles that are critical response units. We will still face increasing costs, downtime and constrained technician hours but the amount is mitigated by the focus on those high cost classes. Additionally, we risk the potential that additional funding is apportioned in one or two of the out years to get “caught up.” This creates bubbles of work for the team purchasing vehicles but also in the parts and maintenance costs.

The second scenario would be to fund the program at 50% of what the recommended spend is from our data analytics. This route would create even larger bubbles that will need to be addressed by future capital spending that could exceed the recommended spend by as much as 50%. One of our biggest challenges we will face in this scenario would be the effect it has on our shop workload. As previously stated we this scenario will have a 12,000 hour or a 33% increase in the amount of labor available to what is required to repair all demand driven repairs and maintenance. With a predictable number of units coming in we can better plan our teams schedule. This also allows us to maintain a level staffing needs year over year.

The third scenario is leasing option. Multiple utility fleets lease their vehicles. This on the surface has the potential to free up capital for other uses. The risk in this option is that you are trading a capital cost for an operating cost. The depreciation that had been realized on the P&L statement is now an O&M cost that must be absorbed. Those costs include a leasing company’s return on equity. This would require huge change management with help from the operations management team, as our vehicles are highly customized to ensure they can do their work in the most efficient and expedient manner.

Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer.

The Fleet Vehicle Refresh is a capital plan. Each vehicle or piece of equipment purchased get a jurisdiction code specific project number and a FERC specific task code. We begin purchasing the next years equipment during the summer of the prior year. Right now, we are taking delivery of equipment that had purchase orders cut last August. Our most expensive mounted hydraulic equipment has a 350 to 450 day lead time. We transfer each individual unit to plant when in becomes used and useful, which is approximately 30 days after receipt and invoicing.

Fleet Equipment Capital Refresh Program

2.5 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This program enables to Our People to serve Our Customers. When the power is out or gas is not flowing due to an unexpected incident our fleet of trucks gets the people and equipment to where it needs to be and then runs until the issue is resolved.

2.6 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The following figure represents the totals of maintenance costs and work orders generated per year. As can be seen on the first and last line we maintain a steady cost and work load year over year. We benchmark and review our results on an annual basis.

Utilimarc Lifecycle Replacement Projections

Value	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Annual Capital	\$5,556,379	\$5,794,138	\$6,765,327	\$8,550,317	\$8,038,595	\$9,425,595	\$9,470,600	\$10,096,500	\$9,378,313	\$8,847,861
Units Replaced	69	71	76	88	86	89	90	91	82	85
Annual Maintenance	\$8,057,038	\$8,330,557	\$8,531,107	\$8,624,560	\$8,757,253	\$8,818,198	\$8,916,771	\$8,928,386	\$9,015,413	\$9,200,408
Annual Ownership	\$5,333,819	\$5,350,745	\$5,506,508	\$5,908,989	\$6,174,116	\$6,614,670	\$6,989,863	\$7,406,765	\$7,650,302	\$7,792,466
Total	\$13,390,860	\$13,681,300	\$14,037,610	\$14,533,550	\$14,931,370	\$15,432,870	\$15,906,630	\$16,335,150	\$16,665,720	\$16,992,870
Out of Life	227	223	251	265	251	234	264	243	253	250
Avg Age	11.63	11.45	11.34	11.10	10.93	10.72	10.51	10.29	10.18	10.03
Labor Hours	41,456	42,023	42,191	41,817	41,628	41,095	40,740	39,993	39,591	39,611

Half Utilimarc Lifecycle Replacement Projections

Value	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Annual Capital	\$2,536,587	\$2,816,819	\$3,741,889	\$3,859,175	\$3,546,683	\$3,981,964	\$4,467,021	\$4,556,362	\$4,647,489	\$4,740,439
Units Replaced	31	36	40	41	39	40	42	42	42	42
Annual Maintenance	\$8,137,428	\$8,602,623	\$9,036,137	\$9,483,095	\$9,949,424	\$10,410,080	\$10,862,510	\$11,319,940	\$11,772,930	\$12,223,390
Annual Ownership	\$4,853,715	\$4,496,113	\$4,341,073	\$4,230,449	\$4,090,467	\$4,043,929	\$4,084,629	\$4,135,452	\$4,196,157	\$4,264,716
Total	\$12,991,140	\$13,098,740	\$13,377,210	\$13,713,540	\$14,039,890	\$14,454,010	\$14,947,140	\$15,455,390	\$15,969,090	\$16,488,110
Out of Life	265	296	360	421	454	486	564	592	642	686
Avg Age	12.43	12.73	13.07	13.42	13.81	14.18	14.50	14.82	15.12	15.41
Labor Hours	41,870	43,395	44,689	45,979	47,295	48,514	49,630	50,706	51,701	52,626

Avista Budget Replacement Projections

Value	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Annual Capital	\$5,180,552	\$6,147,232	\$6,143,363	\$6,189,603	\$6,176,617	\$6,206,909	\$6,212,876	\$6,052,722	\$6,171,291	\$6,203,925
Units Replaced	59	72	72	61	61	54	57	52	50	51
Annual Maintenance	\$7,907,314	\$8,209,488	\$8,555,177	\$8,804,992	\$9,117,942	\$9,451,825	\$9,770,447	\$10,154,520	\$10,537,160	\$10,947,320
Annual Ownership	\$5,252,313	\$5,318,170	\$5,381,230	\$5,425,657	\$5,480,650	\$5,529,131	\$5,572,587	\$5,588,461	\$5,622,189	\$5,651,153
Total	\$13,159,630	\$13,527,660	\$13,936,410	\$14,230,650	\$14,598,590	\$14,980,960	\$15,343,030	\$15,742,980	\$16,159,350	\$16,598,470
Out of Life	237	232	264	305	316	334	397	415	457	498
Avg Age	12.01	11.78	11.74	11.92	12.07	12.34	12.57	12.84	13.13	13.43
Labor Hours	40,686	41,412	42,310	42,692	43,342	44,048	44,640	45,485	46,274	47,132

2.7 Supplemental Information

2.7.1 Identify customers and stakeholders that interface with the business case

Internal Customers:

Fleet Equipment Capital Refresh Program

Distribution Electric Ops	Generation	Engineering
Gas Distribution Ops	Gas Metering	Communication
Sub-station Support	Electric and Gas Metering	IT
Project Management	CPC	Relay Shop
MS Shop	Cathodic	Veg Management

Stakeholder include:

Plant Accounting	Rates
Engineering	Operators

2.7.2 Identify any related Business Cases

None at this time

3.1 Steering Committee or Advisory Group Information

The fleet capital plan is driven by statistical analysis that is based on our financial and operating outcomes. The analysis is reviewed by the Fleet Manager, Fleet Specialist and our Fleet Analyst.

Fleet Equipment Capital Refresh Program

3.2 Provide and discuss the governance processes and people that will provide oversight

Each individual vehicle purchase is approved in two parts: 1) The Fleet Manager approves the CPR request and then the director is notified. 2) The requisition process is approved based on value from the Fleet Manager all the way to the CEO if the value is great enough.

Department and district managers are involved in the order process by confirming which vehicles to be replaced and helping to ensure any requests that specific operators or crews may have. Managers, operators/drivers sign off on a VLC form which is maintained for every class and build of vehicle.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

Annually, Fleet Spec Committees for our major operating groups come together to review the specifications of their specific core operating vehicles. This helps ensure that vehicles come from the manufacturer ready to work. We track our revisions/change orders on an ECO form and record the dollars in our tracking program by using a change order specific task code. Fleet's goal is to not exceed more than 1% of our total budget in change orders. In 2019 we were less than .8% of our total spend for change orders.

Fleet Equipment Capital Refresh Program

The undersigned acknowledge they have reviewed the Fleet Equipment Capital Refresh Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature: Gregorymloew Date: 7/2/21
Print Name: Gregory Loew
Title: Fleet Manager
Role: Business Case Owner

Signature: Alicia Gibbs Date: 7/2/2021
Print Name: Alicia Gibbs
Title: Director, Shared Services
Role: Business Case Sponsor

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

EXECUTIVE SUMMARY

This program is be responsible for the capital maintenance, site improvement, and furniture budgets at over 40 Avista offices, storage buildings, and service centers (over 900,000 total square feet) Companywide. This program is intended to systematically address: lifecycle asset replacements (examples: roofing, asphalt, electrical, plumbing), lifecycle furniture replacements and new furniture additions (to support growth) and business additions or site improvements.

Facilities apporitions approximately 50% to Asset Condition work that is identified using Paragon Asset Condition software (Terracon), 30% is set aside for Manager Requested projects, and 20% is kept aside for unexpected capital needs and furniture replacements. There is currently a \$7M Asset Condition backlog identified using Paragon Asset Condition software. A funding of \$3.5M will allow us to maintain a flat backlog over the next 5 years.

This program supports Avista's entire Service Territory and all service codes and jurisdictions. Performing adequate Asset Management allows the Company to preserve and fully utilize their properties while reducing expensive repairs in the long term. It also ensures a safe environment for people and equipment. Damaged or poorly maintained facilities can create very real safety risks and associated liability for employees, customers, and contractors.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Lindsay Miller	Initial Version	07/10/2018	Initial Version
2.0	Lindsay Miller	Executive Summary Only	07/07/2020	Revised Template

GENERAL INFORMATION

Requested Spend Amount	\$3,500,000
Requested Spend Time Period	Yearly
Requesting Organization/Department	Facilities
Business Case Owner Sponsor	Eric Bowles Dan Johnson
Sponsor Organization/Department	Shared Services
Phase	Planning
Category	Program
Driver	Asset Condition

1. BUSINESS PROBLEM

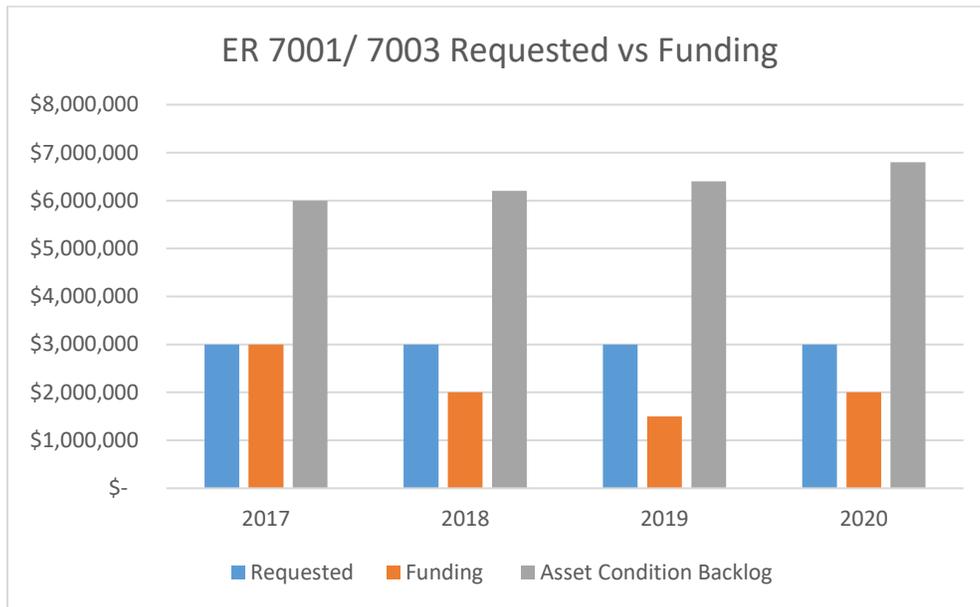
1.1 What is the current or potential problem that is being addressed?

Many of the service centers in Avista’s territory were built in the 1950s and 60s and are starting to show signs of severe aging. Almost half of Avista’s Assets were built before 1980. Most of our building systems are also past their recommended life based on recognized industry standards defined by Building Owners and Managers Association (BOMA), and International Facility Management Association (IFMA) and are requiring renovation or replacement. Many of the original campus layouts and buildings at our Service centers are no longer optimal today due to changes in our vehicle sizes, materials storage, and operations flow. These changes have required the need for project funding to address changing business and site requirements as well.

Location	Date Built	Address	City	State
Airport Hangar	2019	7500 W. Park Dr., Bldg 1060	Spokane	WA
Beacon (battery building and canopy)	2015	2180 N Havana St	Spokane Valley	WA
Clark Fork Bunkhouse	1959	806 Main St.	Clark Fork	ID
Clarkston Service Center	1975	1300 Fair Street	Clarkston	WA
Coeur d’Alene Service Center	1994	1735 N. 15 th Street	Coeur d’Alene	ID
Colfax Facility	1990	704 North Clay	Colfax	WA
Colville Service Center	2010	176 Degrief Road	Colville	WA
Davenport Pole Yard and Vehicle Storage	1996		Davenport	WA
Davenport Service Center	1966	327 Morgan Street	Davenport	WA
Deer Park Service Center	2018	Airport Drive	Deer Park	WA

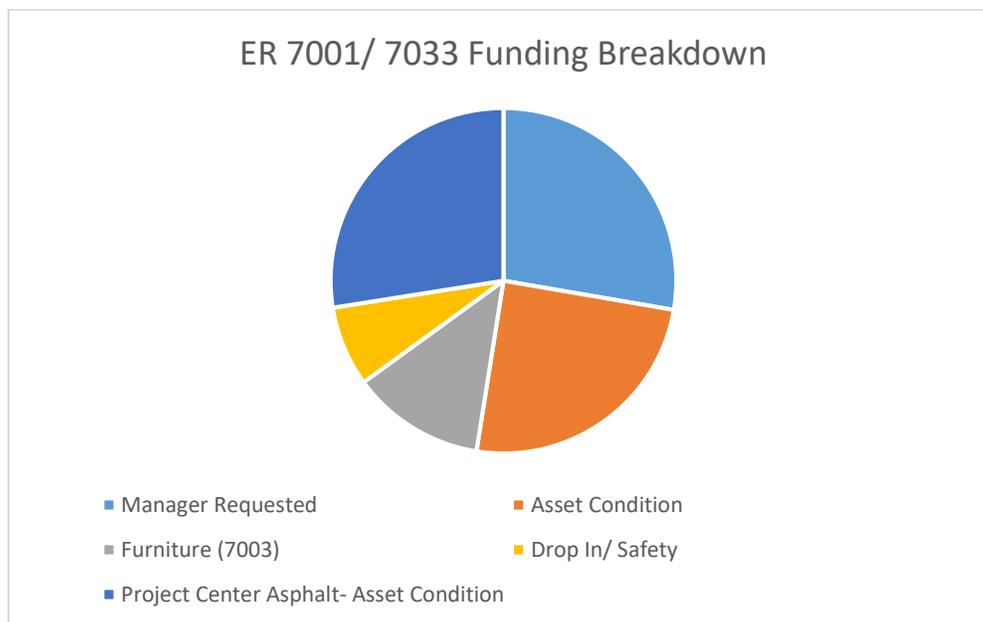
Dollar Road Fleet Shop	2015	2,406 N. Dollar Road	Spokane	WA
Dollar Road Service Center	2019	2406 N. Dollar Road	Spokane	WA
Dollar Road Truck Storage	2014	2406 N. Dollar Road	Spokane	Wa
Dollar Road Wash Bay	2018	2406 N. Dollar Road	Spokane	Wa
Downtown Network Center	2016	1717 W. 4th Ave	Spokane	WA
Downtown Project Center	2016	1717 W. 4th Ave	Spokane	WA
Elk City Facility	2017	Hwy 14	Elk City	ID
Goldendale	2015	912 E. Broadway	Goldendale	WA
Grangeville Facility	1933	201 E. Main Street	Grangeville	ID
Grangeville Pole Yard	2016		Grangeville	ID
Grants Pass Service Center	1960	618 SE J Street	Grants Pass	OR
Jack Stewart North Line Trailer	1985	8308 N. Regal	Spokane	WA
Jack Stewart Office Modular	2012	8307 N. Regal	Spokane	WA
Jack Stewart South Line Trailer	1993	8309 N. Regal	Spokane	WA
Jack Stewart Training Center	1999	8307 N. Regal	Spokane	WA
Kamiah Facility	1992	No Kidd Rd.	Kamiah	ID
Kellogg Covered Vehicle Storage	2012	121 Hill Street	Kellogg	ID
Kellogg Materials Storage	1980	122 Hill Street	Kellogg	ID
Kellogg Service Center	1960	120 Hill Street	Kellogg	ID
Kettle Falls Generating Plant Offices	1976	1151 Hwy 395 N	Kettle Falls	WA
Klamath Falls Service Center	2008	2825 Dakota Ct.	Klamath Falls	OR
Klamath Falls Storage Building	2012	2826 Dakota Ct.	Klamath Falls	OR
LaGrande Service Center	1994	10201 F Street	LaGrande	OR
Lewiston Call Center	1976	803 Main Street	Lewiston	ID
Main Campus Café/Auditorium	1959	1412 E. Mission Ave.	Spokane	WA
Main Campus Canopy 5	1959	1411 E. Mission Ave.	Spokane	WA
Main Campus Central Operating Facility	1959	1411 E. Mission Ave.	Spokane	WA
Main Campus Investment Recovery	2011	1411 E. Mission Ave.	Spokane	WA
Main Campus Mini Line Dock	1970	1411 E. Mission Ave.	Spokane	WA
Main Campus New Fleet Building	2017	1411 E. Mission Ave.	Spokane	WA
Main Campus Oil Storage Vault	1996	1412 E. Mission Ave.	Spokane	WA

Main Campus Parking Garage	2019	1411 E. Mission Ave.	Spokane	WA
Main Campus Ross Park Building	1903	1411 E. Mission Ave.	Spokane	WA
Main Campus Service Building	1959	1411 E. Mission Ave.	Spokane	WA
Main Campus Warehouse Building	1959	1411 E. Mission Ave.	Spokane	WA
Main Campus Waste and Asset Recovery	2014	1411 E. Mission Ave.	Spokane	WA
Medford Outdoor Storage Canopy	1994	581 Business Park Drive	Medford	OR
Medford Service Center	1994	580 Business Park Drive	Medford	OR
Noxon Bunkhouse	1959	33 Avista Power Road	Noxon	MT
Orofino Service Center	1970	1051 Michigan Ave	Orofino	ID
Othello Service Center	1974	36 South 4 th Avenue	Othello	WA
Pierce Facility	1985	104 Moscrip Dr.	Pierce	ID
Post Street Mobius / Annex Parking	1903	337 N. Post Street	Spokane	WA
Pullman Mechanic Shop	2012	5704 SR 270	Pullman	WA
Pullman Service Center	1959	5702 SR 270	Pullman	WA
Pullman Shed	1959	5704 SR 270	Pullman	WA
Pullman Storage Canopies	1959	5703 SR 270	Pullman	WA
Ritzville Facility	1955	401 E First	Ritzville	WA
Roseburg Service Center	2004	1404 Green Siding Road	Roseburg	OR
Sandpoint Covered Storage	1985	103 N. Lincoln	Sandpoint	ID
Sandpoint Service Center	1957	100 N. Lincoln	Sandpoint	ID
Sandpoint Storage Bays	1957	101 N. Lincoln	Sandpoint	ID
Sandpoint Truck Canopy	1985	102 N. Lincoln	Sandpoint	ID
Spokane Valley Call Center	1979	14523 E. Trent Ave.	Spokane Valley	WA
St Maries Offsite Garage and Pole Yard	2011		St. Maries	ID
St. Maries Service Center	1974	528 College Avenue	St. Maries	ID
Tekoa Facility	1971	West 101 Main Street	Tekoa	WA



Funding backlog

There is currently an identified backlog of \$6.8M in Asset Condition work needed across the system of assets Facilities manages. In 2017 Terricon identified \$6M in work on their initial assessment. This list is growing every year as our buildings age and new items are identified that need replacement. At the current funding level this backlog of capital work will continue to grow. The backlog is growing faster than our current funding model can accommodate.



Capital Lifecycle Asset Replacements ER 7001

This portion of the Structures and Improvements Program is based on the results of the Facilities Condition Assessment Survey. This survey will take into account the condition and lifecycle of each Facilities asset. Assets will be graded and those requiring replacement within the next 10 years will be estimated and scheduled for replacement at an appropriate year during the 10 year time frame of the survey. Buildings as a whole will be assigned a Facilities Condition Index (FCI) as part of the survey to help compare future capital needs and drive the decision of continued capital expenditures vs. possible replacement.

Examples (asphalt and structural issues):



Furniture Replacement or Additions ER 7003

This portion of the program is for furniture replacements based on industry standard lifecycles, condition, and availability of parts. The program is also meant to support new furniture additions required on approved building projects.

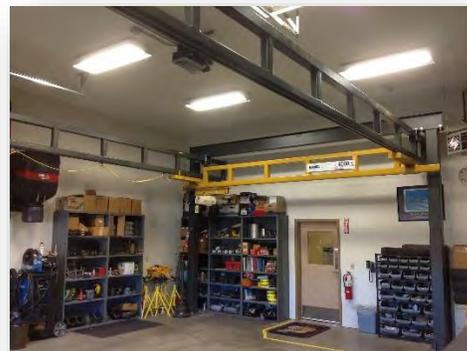
Examples:



Business Additions or Site Improvements ER 7001

This portion of the program is intended to support site improvement requests and productivity or business-related needs. Project requests are made by Operations site managers in June the year before. The list is then vetted for validity and business need by director-level management. Approved projects are then prioritized vs. capital asset replacement priorities, and assigned per available capital funding. Projects that are tied to compliance, safety, or productivity will be given funding preference.

Example (security fencing and gate, weld shop crane):



A robust operations and maintenance program will be required to help further extend the lifecycle of our Facilities assets and help to lessen capital replacement needs. Conversely, limited O&M maintenance programs will result in shorter than standard asset lifecycles, and ultimately increased Capital spending.

As the condition of our Facilities improve, capital asset replacements should lessen in future years of the program. This is again dependent on sufficient O&M maintenance budgets and workforce.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The major driver of this business case is Asset Condition. Facilities apportions approximately 50% to Asset Condition work that is identified using Paragon Asset Condition software (Terracon), 30% is set aside for Manager Requested projects, and 20% is kept aside for unexpected capital needs and furniture replacements.

Customers benefit from this project by Facilities providing a safe, usable buildings through which our Operations teams provide electricity and gas to our customers.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

As previously stated there is an identified backlog of Asset Condition work of \$6.8M. This list is growing every year as our buildings age and new items are identified that need replacement. Deferring this work will cause a large bowel wave of Capital investment in future years. Providing a level investment over the next 10 years will allow us to prevent equipment failures and the need for a large one time capital investment.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

At this time, the only measure that can be used is to design solutions that provides room for growth, expands technology requirements, and adheres to safety and security best practices. Some of these solutions would include items such as:

- 1) Materials/ Storage: Provide spaces that meet the needs of the Stores team and Operations
- 2) Environmental/ Compliance: Ensure that the building and site meets with Avistas environmental standards
- 3) Employee/ Customer Impacts: Room for employee or operations growth
- 4) Operational Efficiency: Ensure that operational needs of employees are being met
- 5) Asset Condition: Provide systems and materials that meet with Avista standards

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Asset Condition Study and Asset Condition Report for all of Avista's Assets is used to help determine the best options to resolve the various Asset Condition needs.

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

The Asset Condition Study and Asset Condition Report for all of Avista's Assets is used to help determine the best projects to fund in any given year. Projects are prioritized by the Paragon Asset Condition program using metrics such as risk, impact and ROI. This prioritized list is then used to create the Asset Condition project list for the coming year.

Recommended Solution – Fund Program at full amount

This will allow us to address capital asset replacements and business needs. Safety, compliance, and productivity requests are rated highest and given priority first. Many of these replacements can create safety risk if not addressed (sidewalks, structural repairs). Not systematically addressing maintenance needs could ultimately result in complete replacement of the buildings at some point.

Option	Capital Cost	Start	Complete
Fund Program at Full Amount	\$3.5M	01 2021	12 2021
Alternative #1- Partially Fund Program	Less than \$3.5M	01 2021	12 2021
Alternative #2- Do Nothing	\$0	-	-

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

There is currently an identified backlog of \$6.8M in Asset Condition work needed across the system of assets Facilities manages. In 2017 Terracon identified \$6M in work on their initial assessment. This list is growing every year as our buildings age and new items are identified that need replacement. At the current funding level this backlog of capital work will continue to grow. The backlog is growing faster than our current funding model can accommodate. It is the goal of this program to maintain a level backlog that projects are selected from using Terracon's risk assessment and the impact the item has on the Company's ability to perform its work, making the highest priority projects readily apparent.

Even funding this program at the \$3M level we will never be able to completely reduce the backlog. Providing more than the \$3M requested would require additional Project Management personnel and possibly FTE's. Facilities can accommodate this request within their current staffing model. It is the goal of this program to maintain a level backlog that projects are selected from using Terracon's risk and the impact the item has on the Company's ability to perform its work, making the highest priority projects readily apparent.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

Average funding splits based on project priorities

This program is be responsible for the capital maintenance, site improvement, and furniture budgets at over 40 Avista offices, storage buildings, and service centers (over 900,000 total square feet) Companywide. This program is intended to systematically address the following needs:

- Lifecycle asset replacements (examples: roofing, asphalt, electrical, plumbing)
- Lifecycle furniture replacements and new furniture additions (to support growth)
- Business additions or site improvements (examples: adding a welding bay, vehicle storage canopy, expanding an asphalt yard. Can sometimes include property purchases to support site expansions.)

This program would encompass capital projects in all construction disciplines (roofing, asphalt, electrical, plumbing, HVAC, landscaping, expansions, remodels, energy efficiency projects). Facilities apportions approximately 50% to Asset Condition work that is identified using Paragon Asset Condition software (Terracon), 30% is set aside for Manager Requested projects, and 20% is kept aside for unexpected capital needs and furniture replacements.

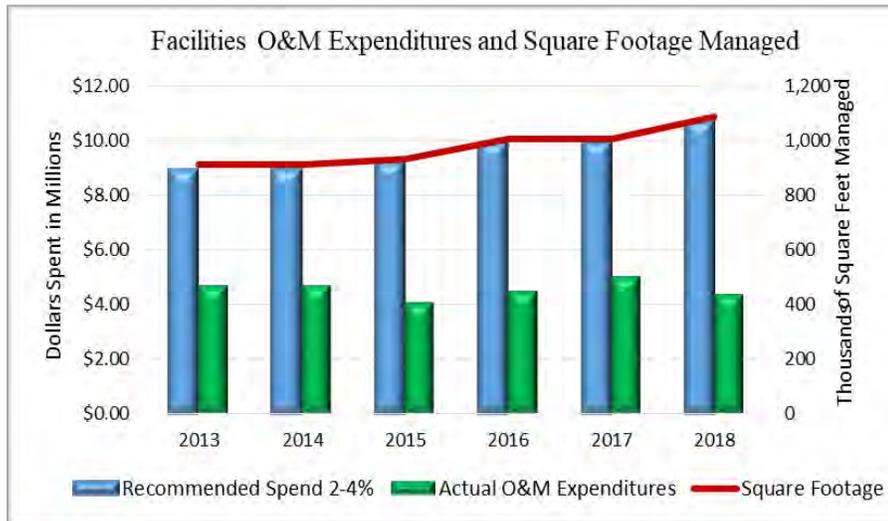
2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

This Business Case will impact the employees that work out of the offices and locations where projects are completed. Other teams that may be impacted are: ET, ET Security, Radio Relay, Environmental and Stores/ Warehouse.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative #1 – Partially Fund Program based on priority

This option would decrease the capital program and increase existing O&M budgets to prolong structures' lifecycles beyond rated life, and reduce capital needs. This option is not the preferred approach over the long-term. Capital investments can be limited with a corresponding increase in O&M dollars. As building systems continue to decline O&M burden will increase.



The estimated replacement value of Avista's assets when the Terricon survey was taken in 2017 was approximately \$242 million, with estimated maintenance and replacement requirements based on the Terracon report of \$8,800,640 *per year*, which equals 3.64% of the current replacement value of the assets. The graph above clearly demonstrates that the amount spent by Avista (the green bars) typically does not reach the minimum level of O&M expenditures (the blue bars) standard in the building industry for basic sustenance of facilities. This level of underfunding would need to be addressed if the choice is made to underfund this program.

Business site improvement requests are intended to address changing business needs. These projects are usually linked to an enhanced productivity outcome. Having the ability to incorporate structures and equipment that fall within the improvement and business needs category can help support improved processes and lead to enhanced safety and longer lifecycles. When the budget needs to be reduced, reductions are first made to requests in this category.

Replacement is intended to replace aging units to achieve more predictable capital requirements and avoid replacement peaks caused by large-scale failures. Cutting into these requests over an extended period could lead to reduced efficiency and have safety impacts.

Alternative #2 – Do nothing

This option is not recommended. Building improvements are capital events that materially extend the useful life of a building and/or increase the value of a building. Building improvements are capitalized and recorded as an addition of value to the

existing building. Sites will continue to decline due to normal wear and tear. The failure of certain systems, such as roofing or HVAC, can cause major damage to other areas of the building. Walkways and structural issues not being addressed could have safety impacts to employees, visitors and customers.

When failures occur the capital investment must be made, regardless of funding. This program provides an avenue to PLAN these capital investments.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

The majority of projects in the Facilities Structures and Improvements program begin work in the 2nd or 3rd quarter of each year, and will usually transfer to plant before the end of the year. Some of the larger projects, or projects with extensive design, can carry over to the following year.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The major reason to perform this project is to align with Avista's strategic vision of customer performance and reliability. Being able to provide service to our customers safely and efficiently is a cornerstone of Avista and the current Pullman Operations office does not allow employees to meet those goals.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Hopefully the business problems described earlier makes a strong case that this investment makes sense, as to avoid significant operational, reliability, and performance risks. As the project progresses, the scope and budget will be re-baselined as required. And hopefully the project can come in possibly under budget and ahead of schedule. Full oversight of the scope and budget will be provided to the Facilities Steering Committee (see Section 3.1 (A)) for their review and evaluation as described in Section 3.2 and 3.3.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The project within this business case will impact the Pullman Service Center Team. The team will be able to work out of the current service center during construction but we will be reaching out to the team during the design and construction phases.

2.8.2 Identify any related Business Cases

None

3.1 Steering Committee or Advisory Group Information

ER7001 Facilities Structures and Improvements is a 5-year program created to address the capital lifecycle asset replacements and business/site improvements at all of Avista's regional sites and offices. Asset lifecycle replacements are compiled by Facilities and are based on an asset condition report and industry recognized lifecycles. Site improvement projects are approved based on productivity and/or business need.

Asset Lifecycle Replacement Projects

In 2017 Avista hired Terracon Consultants to perform a condition assessment on 76 Avista-owned facilities and 35 real estate sites at 34 different locations, comprising approximately 981,000 square feet. These facilities were constructed between 1903 and 2016. Terracon estimated the value of this infrastructure at approximately \$242 million.

The Terracon study was highly detailed and in depth. They examined every characteristic of each facility from a variety of perspectives. External structures from asphalt in the parking lot to roof condition, fences, curbs, work, and storage areas were examined to ascertain and score condition and to identify issues and note concerns. Internal aspects such as walls, carpets, and furniture condition were evaluated.

They surveyed building systems including plumbing, heating and cooling, electrical, lighting, air quality, drainage, and security. They also looked at safety aspects from both the customer and employee perspective. Then each item in the facility was rated based upon its condition and assigned a budget category of O&M Preventative Maintenance, O&M Deficiency Repairs, Capital Replacement, and Capital Renewal/In-Kind Replacement. Terracon's list is sorted by relative risk and the impact the item has on the Company's ability to perform its work, making the highest priority projects readily apparent. Of the 363 "at risk" items Terracon identified, nearly 60% had a risk rating higher than 5 (on a 1 to 10 scale) and 20% were identified as having an actual impact on operations. This rating is what is used to identify the highest risk replacements needed and the project list is created using this information.

Site Improvement Projects

These types of requested facilities projects undergo a multi-level internal review process. It begins with the related manager who either identifies the capital need themselves or is notified of an issue that needs to be resolved by an employee. If the manager believes the project is in the best interests of his group and the Company, the proposal is submitted to that manager's director. If the director also sees the value of the request, it is submitted to a group known as the Facilities Capital Request Board.

This Board meets every fall to review the requested projects for the upcoming year. Managers from each major business area send a representative (the employee chosen usually changes every year). In addition, there is a requirement of at least one person from Operations, Environmental Affairs, Materials Management, and Facilities. This broad mixture of perspectives is designed to provide a neutral and "outside" perspective while having access to the expertise and experience of the directly related and impacted business entities.

By the time the Board receives the list of requests, it has already been vetted twice within its related department. The requests are prioritized based on the Capital Request form that was filled out and approved. At the Board level, each request is reviewed for required criteria such as risk, safety, environmental impact, and compliance. Thus this process is designed to ensure that multiple stakeholder participation provides a thorough and robust analysis of all facility needs and alternatives across the Company.

3.2 Provide and discuss the governance processes and people that will provide oversight

Facilities Capital Steering Committee

Once the project list is assembled, the finalized list of projects is approved by the Capital Facilities Steering Committee. This Committee of Directors is responsible for approving the submission of Business Cases to the Capital Planning Group and approval of projects and any changes within this program.

In the past this has most often been:

- Director of Shared Services
- Director of Environmental Affairs
- Director of Financial Planning and Analysis
- Director of Generation, Production, Substation Support
- Director of IT and Security
- Director of Natural Gas

The project shall use certain Project Management Professional (PMP) guidelines and procedures during the course of this project.

A Project Execution Plan, consisting of the documents below, will be drafted and approved by the SteerCo described in Section 3.1 (A).

- Project Charter, Change Management Plan, Communication Management Plan, Cost Management Plan, Procurement Management Plan, Project Team Management Plan, Risk Management Plan and Risk Register, Schedule Management Plan, Scope Management Plan, and Project Execution Approval Form.

Each month, the project manager will provide the following information either at the scheduled SteerCo meeting, or via email.

- Approved Yearly Budget, Accrued Yearly to Date, Year Estimate at Complete, Year Variance at Complete, Approved Lifetime Budget, Accrued Life to Date, Lifetime Project Estimate at Complete, and Lifetime Project Variance at Complete.

Each month, the SteerCo will make decisions on cost, scope, or budget items as required by the Project Execution Plan. The project manager reserves the right to present items not outlined in the Project Execution Plan if he/she determines its importance is relevant to SteerCo input.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The final decisions regarding these items, especially certain change requests as required by the Project Execution Plan, will be presented to, and voted upon by the SteerCo. The decisions will be documented in a monthly meeting minutes of the SteerCo for documentation and oversight.

It will be the Project Manager's role to monitor the scope, budget, and schedule and present the results to the SteerCo, regardless of they are within tolerances, or not.

The undersigned acknowledge they have reviewed the ER 7001/ 7003 Structures and Improvements and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature: Eric Bowles Date: 8/3/2020
Print Name: Eric Bowles

Title: _____
Corporate Facilities Manager
Role: _____
Business Case Owner

Signature: *Dan Johnson* Date: 8/3/2020
Print Name: Dan Johnson
Title: Director Shared Services
Role: Business Case Sponsor

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: Steering/Advisory Committee Review

Capital Equipment Program (ER7005/7006)

EXECUTIVE SUMMARY

The Capital Equipment Program (ER7005/7006) funds the essential tools required for Avista employees to perform work efficiently and safely. This equipment is necessary to construct, monitor, ensure system integrity, and properly repair and maintain the Avista systems (electric, gas, communications, fleet, facilities, and generation). This equipment needs to be fully functional and available for planned work as well as emergency outage repairs on our facilities and equipment. Capital tools are utilized in all service territories, and by all Crafts. Capital tools are required to execute and support work across all business units and it is recommended to continue to fund these tools at an annual level of \$2.4M for 2021 and then escalated for inflation and increase technology (\$100k) each year for the five year plan.

Capital tools benefit customers by reducing labor cost due to improved efficiency and improving quality of the work by advanced performance of the tools. Customer will also benefit from improved system reliability and reduced outage duration enabled by diagnostic tools. It is critical that capital tools are consistently and adequately funded year over year to maintain performance and ensure tool availability. The risk of not funding capital tools is reduced work performance, increased safety risk, reduced work quality, and increased outage time for customers.

VERSION HISTORY

Version	Author	Description	Date	Notes
<i>Draft</i>	<i>Daisy Drafter</i>	<i>Initial draft of original business case</i>	<i>4/15/2020</i>	
<i>1.0</i>	<i>Prudent Penny</i>	<i>Updated Approval Status</i>	<i>6/1/2020</i>	<i>Full amount approved</i>
<i>1.1</i>	<i>Debbie Downer</i>	<i>Budget change</i>	<i>10/15/20</i>	<i>\$50,000 deferred to 2021</i>
<i>2.0</i>	<i>Cody Krogh</i>	<i>Updated plan to new outline</i>	<i>7/13/2020</i>	

GENERAL INFORMATION

Requested Spend Amount	\$ <u>2,400,000</u>
Requested Spend Time Period	5 years
Requesting Organization/Department	<u>Supply Chain</u>
Business Case Owner Sponsor	<u>Cody Krogh</u> <u>Dan Johnson</u>
Sponsor Organization/Department	<u>H51 / Supply Chain</u>
Phase	Monitor/Control
Category	Program
Driver	Asset Condition

Capital Equipment Program (ER7005/7006)

1. BUSINESS PROBLEM

[This section must provide the overall business case information conveying the benefit to the customer, what the project will do and current problem statement]

1.1 What is the current or potential problem that is being addressed?

Each year, the Capital Equipment Program has more requests for tools and equipment than can be funded. The funding deficit prevents the purchase of all submitted requests. In addition, there is a trend of decreased funding for the capital tools. Over this same time period, the tool complement has been expanding by replacing manual tools with battery assist devices to increase safety and productivity. These additional tools will require more funding, over time, to support replacement costs, as well as ensure all areas of the company can take advantage of this technology.

1.2 Discuss the major drivers of the business case (Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations) and the benefits to the customer

The Capital Equipment Program (ER7005/7006) funds the essential tools required for Avista employees to perform work efficiently and safely. This equipment is necessary to construct, monitor, ensure system integrity, and properly repair and maintain the Avista systems (electric, gas, communications, fleet, facilities, and generation). Much of the capital equipment used in the utility industry is very specialized and may not be readily available due to long lead times. This equipment needs to be fully functional and available for planned work as well as emergency outage repairs on our facilities and equipment. Equipment failures contribute to injuries, slowdowns in work performance, and increased customer restoration time.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

This work is needed to ensure that our workers have safe and reliable tools to complete their tasks, and also to ensure that if there are any tools that are broken, they can be replaced in a timely matter to keep projects/tasks on schedule. If this work is not approved/deferred the risks include breakage of equipment that is critical to daily operations/projects leading to longer lead times for repairs or project completion. Also, our employees need safe tools to ensure there are no injuries on the job. By having these updated through this program, we can increase our productivity by having tools that will allow us to complete our work efficiently on time and increase the safety of our employees.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The Capital Equipment Committee (CEC) ensures that the investment successfully addresses all capital equipment requests to ensure each is warranted. The CEC also ensures that each request is prioritized based upon importance of need and equal allocation of funds for capital equipment requests.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

[List the location of any supplemental information; do not attach]

Capital Equipment Program (ER7005/7006)

Attachment 1: Email from Tony Klutz describing the benefits of the Capital Equipment Program

Attachment 2: Scoring Criteria & Weighting

Attachment 3: Capital Equipment Committee Board Charter

Attachment 4: Capital Committee Notes

NOTE: All files are stored in the “N-Drive” under “Capital Budget”, then “Business Case Folder” and then “2020 Business Case”

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Safety project for ergonomic related battery assist tools was widely implemented in 2016 with the addition of 44 battery assist tools. This was followed by 2017 with 75 tools, 2019 with 58 tools. This equipment has a 5 year warranty, so future failures for 5 year old equipment will not be covered by warranty. Replacements for these out of warranty tools will need to be budgeted for within the ER7006 budget each year, as per all additional “new” capital equipment.

[Describe the proposed solution to the business problem identified above and why this is the best and/or least cost alternative (e.g., cost benefit analysis, attach as supporting documentation)]

Option	Capital Cost	Start	Complete
<i>[Recommended Solution] Option 1 (Recommended)</i>	\$2.4 M	01/2018	NA
<i>Partially Fund (based on priority)</i>	<i>Varies</i>	01/2018	NA
<i>Rent 4% of total equipment and purchase the rest</i>	\$2.3 M	01/2018	12/2020

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

Examples include:

- *Samples of savings, benefits or risk avoidance estimates*
- *Description of how benefits to customers are being measured*
- *Comparison of cost (\$) to benefit (value)*
- *Evidence of spend amount to anticipated return*

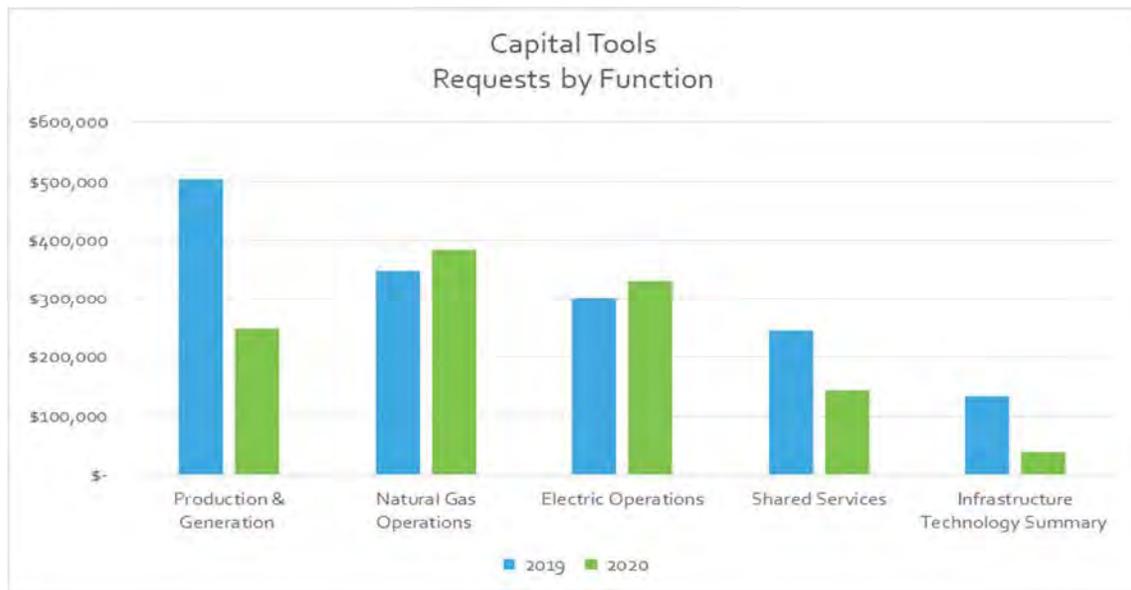
Reference key points from external documentation, list any addendums, attachments etc.

Each year, the Capital Tool Program has more requests for tools and equipment than can be funded as shown below in Figure 1. The requests are prioritized and tool selection is completed as described in Section 2.2. The funding deficit prevents the purchase of all submitted requests. In addition, there is a trend of decreased funding for the capital tools. Over this same time period, the tool complement has been expanding by replacing manual tools with battery assist devices to increase safety and productivity. These additional tools will require more funding, over time, to support replacement costs.

Capital Equipment Program (ER7005/7006)

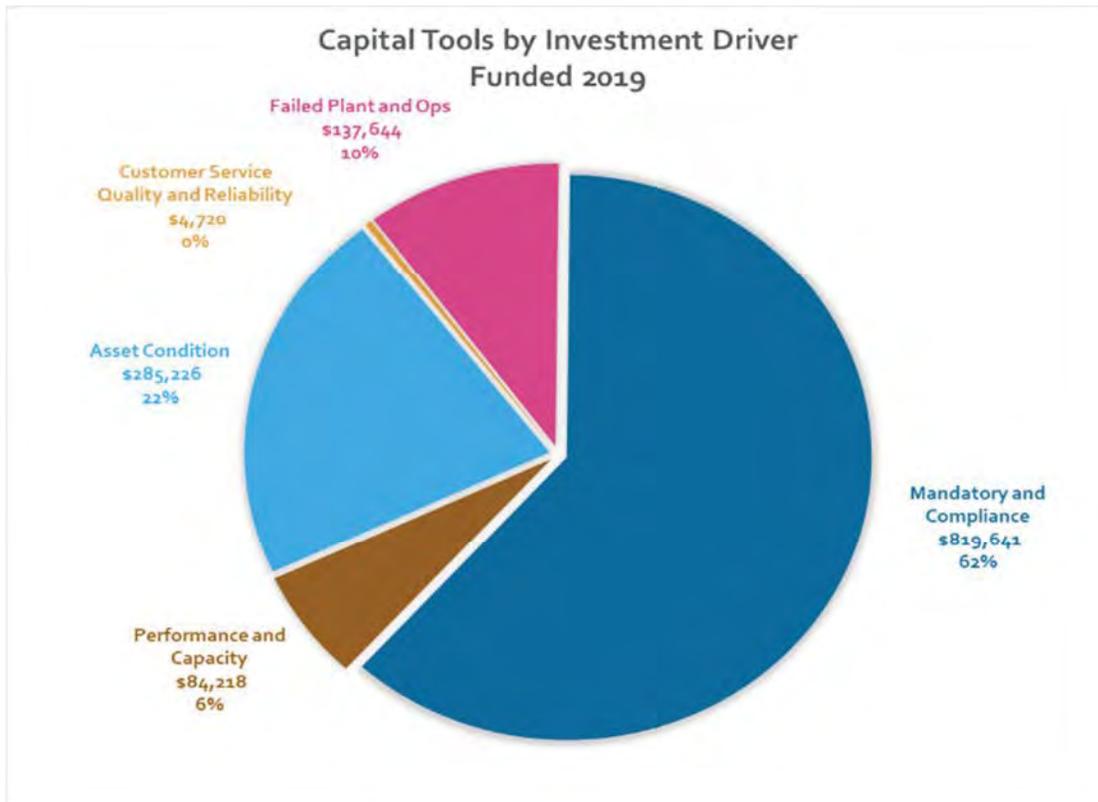


The distribution of Capital Equipment funds by the Business Unit is shown below in Figure 2 (see below). The allocation is based on overall tool ranking and priority rather than a set allotment by department. As a result, there is variation year over year (as noted in the graph) ensuring that the most critical tools are funded.



Capital Equipment Program (ER7005/7006)

The 2019 capital tool breakdown by investment driver is represented below in Figure 3. The highest percent of spend (62%) was for tools related to Safety and Compliance. This category is also the highest ranking investment driver. Spend in this area is related to changing industry compliance standards and tools identified to improve safety or ergonomics (improved body posture, reduced exertion of force, and reduction in frequency).



2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

How will the outcome of this investment result in potential additional O&M costs, employee or staffing reductions to O&M (offsets), etc.?

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

An updated process was created in 2019 and is being fully implemented in 2020. The process begins by requesting Business Unit Managers to upload their tool needs into a SharePoint site. As part of the tool submittal the Manager must complete several ranking criteria used to support the business need for the tool. These criteria are Priority, Current State, Investment Driver, Strategic Alignment, Stakeholder, and Demand Type. The Managers' requests are then routed to the respective Business Unit Directors for approval. For a detailed breakdown of the criteria see reference document "Scoring Criteria & Weighting" in section 1.5.1.

Capital Equipment Program (ER7005/7006)

The final list from each Business Unit is then reviewed by the CEC to ensure funding is distributed fairly and impartially across the company. The equipment request list is ranked per the scoring criteria ensuring all equipment is funded in order of ranking. This is required to prioritize spending as the total equipment requests exceed the allocated budget. Decision records and meeting notes are maintained on the SharePoint site once the CEC finalizes the list and purchasing is ready for execution.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

[For example, how will the outcome of this business case impact other parts of the business?]

One of the business functions that will be impacted are those areas using outdated equipment/tools. We need to replace existing tools that have failed or reached the end of their life, or have been deemed unsafe do to current safety or regulatory issues. Avista employees must be able to rely on this equipment while performing hazardous duties, and must be confident that the equipment will perform safely and efficiently. Failed equipment not in compliance with current safety standards can lead to hazardous conditions for the operators, potentially causing injury or death.

Another important priority for tool and equipment purchases is enhanced productivity. Capital equipment is used to perform new construction work or repair work for unplanned failures. Often this work can take less time or be completed quickly with better results by using improved tools.

These processes need to be implemented to not only improve the safety, but also the productivity of employees. These benefits do impact other parts of the business as work will be completed efficiently and safely, reducing delays and injuries. There are also benefits to our external customers in regard to restoration time and reliability.



Capital Equipment Program (ER7005/7006)



2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Option 1 – Fund Program at Current Level (Recommended)

It is recommended that this Program be funded, annually, at its current level with a 5% annual increase to ensure Avista has the proper capital equipment necessary to safely and efficiently perform all required work. This 5% increase is to cover inflation of current pricing, support replacement equipment as complement has increase in time, and support increases in technology leading to higher equipment costs. Due to the specialized nature of utility equipment, it is most efficient for Avista to equip employees with the necessary tools and equipment to safely perform timely emergency repairs, while using the same tools and equipment to perform ongoing scheduled work and maintenance. Furthermore, this specialized equipment is often only available directly from the manufacturer, and is not typically available as a rental.

By funding this Program, Avista ensures that employees have the proper equipment to safely and efficiently perform their work, while providing safe, reliable service to customers.

Option 2 – Partially Fund Program based on priority

This option is not the preferred approach over the long-term; however, it is exercised when necessary. Each year, when the requests for tools and equipment are submitted, cuts to the Capital Equipment Program are made by the business units to bring the projected cost of the list of equipment and tools into line with the budgeted amount. Further modification of the funding level for the Program is performed in concert with other business budget needs.

When the program budget needs to be reduced, reductions are first made to requests in the category of enhanced productivity, then replacement. Replacement is intended to replace aging units to achieve more predictable capital requirements and avoid replacement peaks caused by large-scale failures. Cutting into these requests over an extended period leads to reduced efficiency and have safety impacts. This has caused

Capital Equipment Program (ER7005/7006)

excessive rollovers each year, which build up extensively when they are not able to be purchased within the current budget cycle. This leads to a buildup in capital equipment requests that cannot be adequately funded.

Having the ability to test and incorporate equipment that falls within the enhanced productivity category can help support improved processes and lead to enhanced safety and longer equipment lifecycles.

Option 3 – Rent Equipment

Renting a percentage of the capital equipment was considered as a possible alternative. Of the 430 items purchased from 2012 to 2014, 233 can be rented, although 216 out of the 233 items are needed, on hand, at all times for emergency locates and repairs. This leaves 17 possible items, or 4% of the total equipment, which qualifies as potential rental equipment (see Figure 3).

If equipment is rented, there is no guarantee of availability. Rental companies rent equipment on a first-come, first-served basis, making equipment scheduling for specific time sensitive jobs very difficult. Safety and compliance regulations are also affected when correct equipment is not available for rent.

Equipment failure is often a concern with rental equipment, as it is uncertain what condition rental equipment is in, or how it has previously been maintained. This can lead to safety issues for equipment operators when failures occur, as well as lost production time.

Depending on the timeline of the rental equipment, it would not be cost effective to rent long-term as the rental costs would exceed the base price of new equipment. An average rental price for a basic cable locator is \$450/month, which equates to \$5,400/year. The 2017 purchase price of this item is \$3,700.

Training on rental equipment would also be required, if different than standardized Avista equipment. For example, Avista gas employees are only trained/qualified on specific equipment that has been standardized by Avista, which may or may not be what can be rented for specific jobs. This can contribute to added time necessary to qualify employees on the operation of the equipment, and safe operating procedures.

Due to the Department of Transportation (DOT) compliance, Avista is also required to maintain maintenance and calibration records for all gas equipment, along with operations guides for all on-site equipment. Avista would be out of compliance using various rental equipment as rental companies are not required to provide this documentation for their equipment to their customers.

Capital Equipment Program (ER7005/7006)

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer, spend, and transfers to plant by year.

[Describe if it is a program or project and details about how often in a year, it becomes used-and-useful. (i.e. if transfer to plant occurs monthly, quarterly or upon project completion).]

An updated process was created in 2019 and is being fully implemented in 2020. The program is projected for five (5) years to account for equipment/tool life cycle and replacements. The planning and execution of the program is managed by the Supply Chain Department. Tools are received and delivered to internal customers and immediately become used and useful, this program has been ongoing for decades. The average tool lead-time is 12-14 weeks.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

[If this is a program or compilation of discrete projects, explain the importance of the body of work.]

Capital equipment benefits customers by reducing labor cost due to improved efficiency and improving quality of the work by advanced performance of the tools. Customer will also benefit from improved system reliability and reduced outage duration enabled by diagnostic tools. It is critical that capital equipment is consistently funded year over year to maintain performance and ensure equipment/tool availability. The risk of not funding capital equipment is reduced work performance, increased safety risk, and reduced work quality.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The funding is managed through a well-defined process with oversight from the CEC the final list from each Business Unit is then reviewed by the CEC to ensure funding is distributed fairly and impartially across the company. This is required to prioritize spending because the total tool requests exceed the allocated budget. Decision records and meeting notes are maintained on the SharePoint site. The Capital Equipment Steering Committee submits the revised list to the CPG for final approval and execution.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Internal customers would be employees such as line workers and other employees who will be using the capital tools to perform their jobs. They are also the stakeholders as some equipment will need to be replaced in order for the employees to effectively and safely complete their jobs. Our external customers also benefit from this program as they will reap the benefits of our workers increased reliability and decreased down time. With more reliability and less down time we are able to fix/repair any issues the customers may have much faster and keep our external customers satisfied with our quick service and reduced down time.

2.8.2 Identify any related Business Cases

[Including any business cases that may have been replaced by this business case]

All business cases need the proper tools in order to best utilize the labor for the completion of work benefiting our employees and customers. Examples of Business

Capital Equipment Program (ER7005/7006)

cases that utilize these tools are: Wood Pole Management, Grid Modernization and Wild Fire Resiliency.

3.1 Steering Committee or Advisory Group Information

[Please identify and describe the steering committee or advisory group for initial and ongoing vetting, as a part of your departmental prioritization process.]

The final requested tool list from each Business Unit is then reviewed by the Capital Equipment Committee (CEC) to ensure funding is distributed fairly and impartially across the company. The tool list is ranked from the scoring criteria to make certain the tools are funded in order of ranking. Ranking is required because the total tool requests exceed the allocated budget.

3.2 Provide and discuss the governance processes and people that will provide oversight

The governance process is documented in the Capital Equipment Committee Board Charter (See attachments in section 15.1). In summary it is guided by the following scoring criteria: Priority, Current State, Investment Driver, Strategic Alignment, Stakeholder, Demand Type and Age of request. Each of these scoring criteria are weighted to help place the requests in order of high to low importance.

Those who provide oversight will be those who make up the Capital Equipment Committee Board (these members are nominated annually by Directors). These members will help to ensure that the funding for capital equipment is distributed fairly and impartially based of the needs of Avista.

The following are those members that make up the board composition:

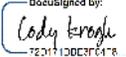
Tool Keeper (Gas):	Voting Member
Tool Keeper (Elec):	Voting Member
Safety & Health Coordinator:	Voting Member
Electric Operations Manager:	Voting Member
Gas Operations Manager:	Voting Member
Generation & Production Manager:	Voting Member
Capital Planning Group Member:	Voting Member
Supply Chain Manager:	(Non) Voting Member
Capital Equipment Sourcing Professional:	(Non) Voting Member

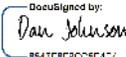
3.3 How will decision-making, prioritization, and change requests be documented and monitored

The Capital Equipment Committee works to ensure that the funding for capital equipment is fairly distributed, all decision-making, prioritization and change request records along with meeting notes will and are maintained on the SharePoint site as "Capital Committee Notes". All participants in the process (Directors, managers, requesters) have access to the approvals and addition for their area via the SharePoint site. The members of the CPG are also the Directors approving the requests for their areas prior to the Cap Equipment Committee's approval session.

Capital Equipment Program (ER7005/7006)

The undersigned acknowledge they have reviewed the Capital Equipment Program and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Jul-29-2020 | 11:19 AM PDT
 Print Name: Cody Krogh
 Title: Supply Chain Manager
 Role: Business Case Owner

Signature:  _____ Date: Jul-29-2020 | 12:56 PM PDT
 Print Name: Dan Johnson
 Title: Director, Shared Services
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Telematics 2025

EXECUTIVE SUMMARY

Fleet operations across the US and within the utility industry are implementing telematics solutions to solve complex business problems. The Advisory Group has identified five ways that vehicles on the road impact Avista. The first represents the first generation of telematics and is focused on utility owned trucks. The next four have the potential to positively or negatively impact our business but they are vehicles not owned by the Avista. It could be the contractor working for Avista in a contractor owned truck, a contractor in their personal vehicle, Avista’s employee’s doing business on behalf of the utility in their personal vehicle and crews responding to mutual aid in our service territory. Telematics has been implemented on the Avista’s fleet since 2012. The first generation of telematics was implemented to streamline and track the inspections of trucks and mounted equipment. The digitization of inspections has been very successful and has improved the tracking of federally required inspections and the administration of those records as required by the same authorities.

In February 2022 our current provider has notified us that the 3G network that nearly 500 devices connect to will sunset. This network shut down forces us to invest capital in an upgrade. Additionally, customer requirements and our strategy to put the customer at the center of every decision necessitate the need for us to leverage vehicle location data on a modern and timely platform. Finally, best in class utilities are using telematics to provide both coaching to drivers and collecting leading indicators on decisions a fleet of drivers are making. The Advisory Group’s recommendation is to replace Zonar telematics with a modern cloud platform system from Verizon Connect or Utilimarc-Geotab. Both platforms address latency issues and integrate more info sources than ever before. The final estimated cost for this is upgrade \$2,387,500 spread over three years. An upgraded system will integrate location data with the CX platform to give our customers accurate response info, safer roads for all and lower overall costs by streamlining our operations with data. We must begin this investment in 2021 with the February 2022 shutdown of the AT&T 3G network coming. In doing nothing we will lose our ability to complete a critical compliance function by being unable to complete our daily vehicle inspections. Additionally, we fail to meet our customers where they expect us to be in today’s digitally connected economy.

VERSION HISTORY

Version	Author	Description	Date	Notes
ExeSum	Greg Loew	Exe summary only	7/7/20	
Rev1	Greg Loew	Completed case	7/24/20	

Telematics 2025

GENERAL INFORMATION

Requested Spend Amount	\$2,387,500
Requested Spend Time Period	3 years
Requesting Organization/Department	Fleet Services
Business Case Owner Sponsor	Greg Loew Dan Johnson
Sponsor Organization/Department	Energy Delivery
Phase	Planning
Category	Project
Driver	Asset Condition

Telematics 2025

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Advances in technology, customer requirements and safety are driving the need to invest capital in our connected vehicle systems. Implementing the next generation of telematics in vehicles on the road operating on behalf of Avista have the opportunity to delight our customers, reduce our liability exposure and improve operational safety.

Technological Changes: Telematics works by connecting the vehicle to the cellular data network. Currently, most telematics connectivity use third generation networks (3G) provided by the major carriers. In February 2022 this network will no longer be supported and many carriers are already preventing new 3G devices on their networks. To ensure current functionality we will need to equip our vehicles to connect to the fourth and fifth generation networks (LTE and 5G respectively). We also know that connected worker solutions are proliferating across our workforce. This has driven numerous data connections inside and outside of the vehicle. Telematics technology has advanced to allow the consolidation of connections. Leading telematics providers have embraced a platform perspective. They have acknowledged that original equipment manufacturers are controlling some of the data flow from the vehicle or like Caterpillar it is just build in to the equipment computer. This migration to a platform is beneficial for Avista as we advance solutions for the fully digitized worker of the coming decade.

Customer Requirements: Our customers are being influenced by Amazon and Google and other leading customer experience companies. They expect timely and relevant communications from everyone they do business with. The utility is not exempt from these expectations. Next generation telematics is an enabling technology for a fully integrated and digital field work process. The connected vehicle and worker, integrated with the mobile work management system and customer experience platform will provide greater visibility about where our field personnel are and when they will arrive. The information will be available to employees and to customers, improving our ability to provide firm estimates of when we will be there to complete the work. The platform will also improve emergency response times through improved routing and real time location services. Finally, providing more crew location information to our dispatchers will allowing us to dispatch the crew closet to the work saving valuable time and resources.

Safety: The impact of telematics on the overall safety to a fleet of vehicles is under estimated. Telematics allows the capture of data around all facets of the drive cycle. More importantly, telematics is to several leading indicator safety metrics. Next generation telematics integrations will allow us to see items as specific as seat belt usage, the engagement of reverse or how close we backed up to an object. Telematics also has the ability to coach drivers in real time and or provide them a summary of their performance on a pre-determined interval. Finally the next generation systems will provide metrics on the co-location of supervisors to the crews which has been proven to be a major predictor in crew safety performance

Additionally, as the Advisory Group has engaged internal stakeholders we have created a required functionality list. Based on current published Zonar capabilities the following issues with Zonar were identified:

Telematics 2025

Issue	Impact on Capability
Dynamic Reporting	Provides inconsistent data points
Server based system	5-8 minute lag in actual unit status
Only support Android operating system	Avista has standardized on iOS
No vehicle as a hotspot capability	Multiple connections and expense
Driver coaching	Requires dedicated tablet
Workflow management	No integrations or partnerships
Behavior metrics	No metrics outside of speed to posted
Auxiliary system data capture	No 3 rd party device integration
Point designed solution	No platform capabilities at this time
No manufacture API integration	Requires us to always use an ancillary device

Telematics 2025 will initially provide a platform for compliance. We can and will continue to measure inspections completions and other safety related functions. We will use this platform to capture, track and communicate this information to users and leaders. A feedback loop to the driver on their driving performance will be a key feature of this initiative. Over time the advanced telemetry data from this system will help us shrink the gap between actual behaviors and expected behaviors.

The Driver Safety team that was stood up in 2017 identified a dozen key actions to improve our vehicle incident rate. These recommendations were based on the analysis of multiple best in class companies and the programs/practices they had in place to achieve such results. Every program we looked at had some sort of driver performance feedback mechanism.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) **and the benefits to the customer**

Asset Condition

Telematics 2025 is also an enabling platform for Customer Experience advancements and Business Intelligence. We could measure improvements in customer satisfaction, reduced maintenance costs, and lower overall cost per customer being driven by fleet related activities.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The 3G network that Zonar currently operates on will cease operations in February of 2022. Our DOT/FMCSA compliance with CFR49 and the inspections required before and after operation are digitally managed. Not doing anything will force our commercial vehicle operators to complete inspections by pen and paper and creates a document

Telematics 2025

management challenge because we must keep them for 12 months before disposing of them. Failure to do so opens the company to additional liability.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Cost Savings: Estimated savings to the organization will be driven both directly and indirectly through multiple factors. Savings are ranked from initial platform deployment to additive next generation work management solutions to be deployed by future

- ✓ Compliance and regulatory costs—Avoided cost from effort and resources to once again track vehicle inspections with paper and the increased risk due to the inspection records not being correctly maintained per US Department of Transportation regulations 49CFR
- ✓ Automated recording of miles—Current work flow requires over 50% of Avista vehicles to submit mileage in paper form. Up to 25% of mileage is not turned in and as such vehicle use cost are not being fairly distributed to all users.
- ✓ Assuming data plan aggregation can occur while still supporting the critical business functions of the workers in the field, anticipated savings from reduced network connections in the vehicles are estimated as follows:

Vehicle Quantity	Data Plan Cost
80	\$40.52/month
Total Cost Savings Per Year	\$38,900

- ✓ Improved utilization—Currently, we average 11% less in miles and hours than the industry. 30% of fleet vehicle get less than 50% of the class average miles per year. By improving utilization we can spread our fixed cost across more miles and work to lower the fleets total fixed costs by reducing complement.
- ✓ Improved maintenance using advanced business intelligence tools and data—Revised maintenance programs could save up to \$170,000 per year in total maintenance costs. This would be achieved by moving vehicles to a usage based maintenance model in which the collection of mileage data by the system alerts us to do a PM only when it approaches a use threshold.
- ✓ Less vehicles because of improved capabilities to share assets among some groups of workers—Reduced total fleet acquisition costs, higher utilization, reduced fixed and variable expenses.
- ✓ Improved routing and fuel savings—New operations driven tools could reduce total fuel consumption by expediting vehicles from job to job.
- ✓ Customer Service savings driven by reduced calls to the call center—The three year average for complaint calls related to vehicles and the potential whereabouts of people doing work on behalf of Avista totals 55 call hours per year using customer complaint records and an average call duration of 6.5 minutes.

Telematics 2025

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

See the Driver Safety Team report out February 2018 by Greg Loew and Tony Klutz

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

The current network for Zonar will cease operation in 2022. As noted in section 1.1 several functions were noted as missing for future anticipated business processes.

Option	Capital Cost	Start	Complete
Implement Telematics 2025	\$2,385,500M	01 2021	06 2023
Partial implementation of Telematics 2025	\$1,850,000M	01 2021	12 2021
Upgrade Zonar to 4G devices	\$157,500	03 2021	10 2021

Telematics 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

Telematics Capabilities				
Problem Statement	Identify a telematics solution that provides safety and compliance data on vehicles doing work on behalf of Avista and enables or supports solutions connected to the digital worker of the future.			
Required Functionality	Details	Alternatives	Priorit y	Focus Area
Electronic Inspections	The completion and documentation of DOT required inspections plus pre-flight inspections	Paper		Compliance
Regulatory Mileage Reporting	Multiple federal and state agencies require exact mileage to be reported per state	N/A		Compliance
Diagnostic Alerting and Reporting	The ability for the truck to push diagnostic trouble codes to Fleet	N/A		Fleet
AssetWorks Integration	Pushing mileage to database to act as system of record eliminating the need for the vehicle ledger	N/A		Fleet
iOS Compatible	Must work on iOS devices	N/A		IT
Driver Behavior Scoring and Coaching	Feed back mechanism to help drivers know how they are driving	In cab or daily summary		Safety
4G and 5G capable	3G network is at end of life	N/A		IT
Customer facing info	Customer know who the worker is that will be serving them and visibility into when they will be t	N/A		Customer Service
Utilization	Reporting and mechanisms for understanding under utilized equipment	N/A		Fleet
Idle Reduction	Knowing what it productive idle and non-productive idle	N/A		Fleet
ECM data/Vehicle Performance	Real-time performance data to build dynamic maintenance response	Maintain current system of time base		Fleet
Integration for Distribution Dispatch	Showing vehicle assets to distribution dispatchers to improve dispatch capabilities	N/A		IT
Work Flow Management	Match personnel and resources to work requiring completion (work management) (maybe a tie to	N/A		Operations
Driver Identification	Knowing who is driving every single truck every time it moves	Assumptions based on inspection		Safety
Behavior Metrics	Data analysis info to understand trends and habits	N/A		Safety
Accident Reconstruction	Capability to record some amount of data that can be analyzed after minor crashes	Uses air bag computer after major crashes		Safety
Integration of multiple telemetry data systems	Trailers and other AVA assets can use different location systems.	Put everything one syste		Fleet
Auxiliary System Data Capture	Capability to capture data from other systems installed on the truck (back up sensors, seatbelt usa	N/A		Safety
GPS location for non motorized units	Find the lost trailer	N/A		Fleet
Vehicle Hotspot	Vehicle based data connection point	Current system with rugged laptops		IT
Smart Phone App	App that could be installed on contractors phone to know where they are at in our system (think gas survey)	N/A		IT
Productivity	Expedited routing	N/A		Operations
Co-Location	Where are supervisors (GFs, managers) in relations to crews	N/A		Safety
Mobile Device Use Reporting	Utilizing mobile device app integrated with telematics to know if the phone is used while vehicle is in motion	App deployed with MDM solution		Safety
Satellite Connectivity	For use in remote wilderness areas	N/A		Safety
Vehicle Pooling	Dynamic assignment of available vehicle to worker requiring vehicle	One vehicle for each worker		Fleet
Driver Cameras	Forward and rear facing in cab cameras	Forward facing camera only		Safety

Reference key points from external documentation, list any addendums, attachments etc.

Telematics 2025

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

Telematics 2025 will be implemented over a three year period beginning in 2021 in order to meet 3G obsolescence. In year one our commercial fleet will be functional and on the new systems. In years two and three we will bring our light duty vehicles fully on to the platform plus trailers and complete integrations to systems like Assetworks, Intellex and Oracle.

On an ongoing basis the operational costs for telematics flow to the Fleet Clearing Account. From there a portion of the costs go to capital and some to O&M depending on the class of vehicle. Vehicle rates for light duty trucks and trailers will see a small impact from this technology.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Telematics 2025 will continue to be used by Fleet and Distribution Ops. The CX project will use the data stream from this system as described in section 1.1. Vehicle electrification efforts have the potential to tap into the platform.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Upgrade existing system. Preserve current functionality with technology that does not meet current or future business needs across the enterprise.

Partial install on only the on-road portion of our fleet (excludes trailers)

Partial install of new system on commercial motor vehicles only. Preserves current functionality does not integrate or capture almost a third of all Avista owned vehicles. Many safety and operational benefits would not be met.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer.

\$1.1M	Q1-2021 Project planning	Q2-2021 Product ordering	Q3-2021 Vehicle installs TTPs as districts or orgs completed	Q4-2021 Project planning and remaining TTP
\$675K	Q1-2022 Planning and SOW	Q2-2022 Integrations, installs and TTP	Q3-2022 Remaining 2 nd year project TTP	Q4-2022
\$612.5K	Q1-2023 Planning and SOW	Q2-2023 Integrations, installs and final TTP	Q3-2023	Q4-2022

Telematics 2025

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

Enhancing the telematics in the fleet vehicles directly aligns with the four focus areas; customers, people, perform and invent.

Customers are better served by providing a platform that enables notifications and awareness of crew arrival times. Avista **Employees** are better served through interactive coaching and feedback on their driving behavior. **Performance** is better served through the enhanced integrations that are enabled and the information that can be shared across multiple systems. **Invention** is served by recognizing that the expectations of customer service has changed, and that technology is required, not only in our back office but in the front-line vehicles that serve as the initial touchpoint for many customer interactions

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The majority of Telematics 2025 scope is the replacement of a system that will no longer operate after February 2025. As outlined in section 1.1 our next generation telematics will enable additional functions and help streamline analog processes. Project management and business case owner will continue to review the scope of the project for material changes.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Stakeholder Name	Department
Andrea Pike	Customer Service
Reuben Arts	Distribution Dispatch
Amy Parsons	Finance
Mike Faulkenberry	Gas Ops
Alexis Alexander	GPSS
Mike Littrel	Enterprise Technology
Jon Thompson	Enterprise Technology

2.8.2 Identify any related Business Cases

None at this time

Telematics 2025

3.1 Steering Committee or Advisory Group Information

Mike Littrel	Erica Ellis	Kim Boynton
Matt Redding	Eric Rosentrater	Jason Johnson
Steve Aubuchon	Russ Feist	Jim Corder

3.2 Provide and discuss the governance processes and people that will provide oversight

This project reports in with the executive advisory committee comprised of:

Heather Rosentrater	Jason Thackston	Jim Kensok
Bryan Cox		

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The project manager and the business case owner will be responsible for monitoring and recording priority changes and material change requests. Full values and scope to be determined at a later date.

Telematics 2025

The undersigned acknowledge they have reviewed the Telematics 2025 and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature: *Gregorymloew* Date: 7/24/20
Print Name: Gregory Loew
Title: Fleet Manager
Role: Business Case Owner

Signature: *Dan Johnson* Date: 7/28/2020
Print Name: Dan Johnson
Title: Director, Shared Services
Role: Business Case Sponsor

Signature: _____ Date: _____
Print Name: _____
Title: Shared with committee on 7/24/20 via email
Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Technology Refresh to Sustain Business Process

1 GENERAL INFORMATION

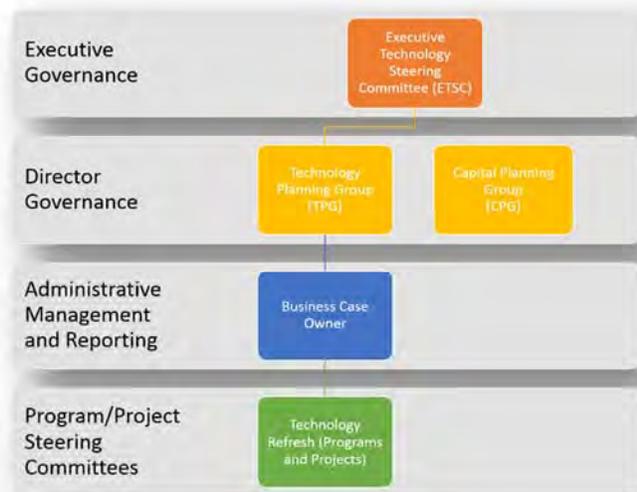
Requested Spend Amount	\$17,917,613
Requesting Organization/Department	IS/IT
Business Case Owner	Andy Leija
Business Case Sponsor	Jim Corder/Hossein Nikdel
Sponsor Organization/Department	IS/IT
Category	Program
Driver	Asset Condition

1.1 Steering Committee or Advisory Group Information

The Enterprise Technology Department serves as a shared service business unit that supports technology infrastructure and information systems for the enterprise. The **Technology Refresh to Sustain Business Processes** Business Case has three levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects (i.e. software delivery, electrical engineering, accounting, energy delivery, technology, etc.)

The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two constraints are established, the Business Case owner will work with steering committee(s) to set project priority and sequence over a five year planning period.



Each program and project steering committee meet regularly to review the backlog of demand to that align with Avista’s strategies. They oversee scope, schedule and

Technology Refresh to Sustain Business Process

budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

During an annual planning cycle (July – September), the Business Case owner surfaces the project demand for the upcoming five years to the TPG and ETSC. After review for resource capacity, strategic alignment, and risk, the investment plan is submitted to the CPG for funding consideration across all other Business Cases. The CPG then provides a revised funding allocation to each Business Case. The revised allocation then requires the TPG to review and revise the investment plan to fit within the new funding allocation. This establishes the annual investment plan under this Business Case. Steering committees prioritize technology asset risk within the two constraints (resource capacity and funding) for each year. Technology asset refresh funding is generally assigned priority in this sequence: Safety, Energy Control, Customer Facing, and Back Office.

2 BUSINESS PROBLEM

The Technology Refresh to Sustain Business Processes program is in place to provide for replacement of existing technology in alignment with the manufacturer product roadmaps for application and technology lifecycles. Not only is the asset condition of technology subject to the traditional mortality rate or lifecycle, but it is compounded by planned obsolescence, also known as technology obsolescence¹. That is whereby the technology asset although within its functional lifespan is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology is available in the market. Reliance on obsolete technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process. Sustaining business process by replacing automation with workforce would increase labor expense.

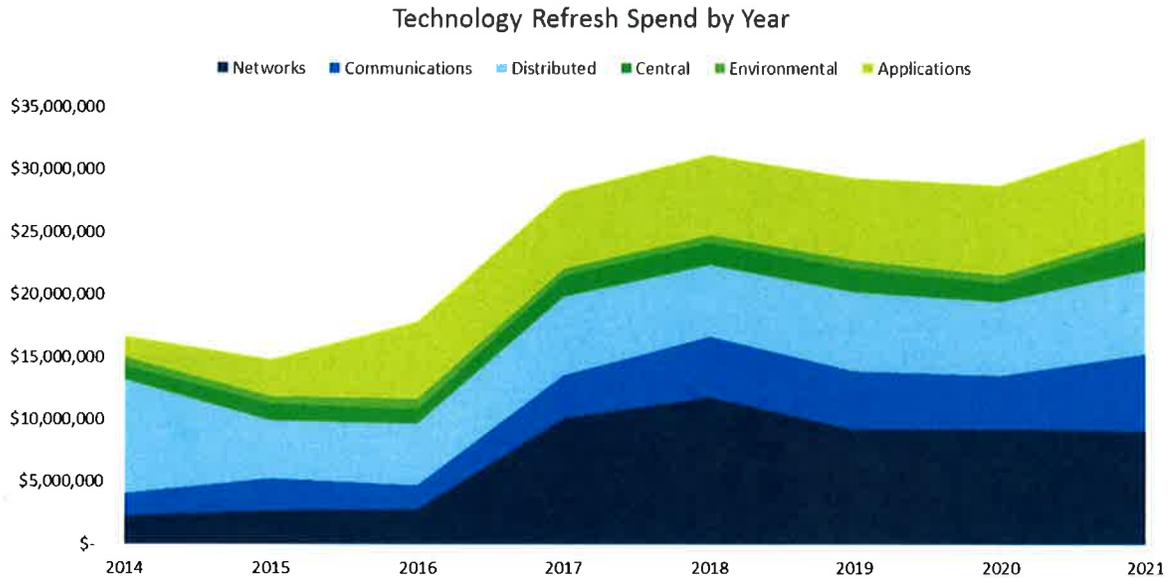
Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. These upgrades can in turn drive subsequent system replacements, creating a cascading event of change. Therefore, vendor roadmaps and technology asset lifecycles are data points that inform Avista on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure.

Below is a graph that illustrates the technology replacement demand across the six technology domains (Networks, Communications, Distributed, Central,

¹ Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcric.com/products/publications.htm>

Technology Refresh to Sustain Business Process

Environmental and Applications) under this Business Case. As you can see, the greatest increase is in Networks and Applications.



The Annual Investment Plan reviewed by the TPG and ETSC monitors the risks of deferred replacements or upgrades to maintain a stable and reliable application and computing platform that allows for the safe and reliable operation of our electric and natural gas infrastructures, as well as deliver on customer demands.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
Do nothing (No funding)	\$1.9 MM	01 2017	12 2017
Fund at current level	Approx. \$18 MM	01 2017	12 2017
Fund at lower level	< \$18 MM	01 2017	12 2017

The monetized value of “no funding” alternative is \$1.9 million per year

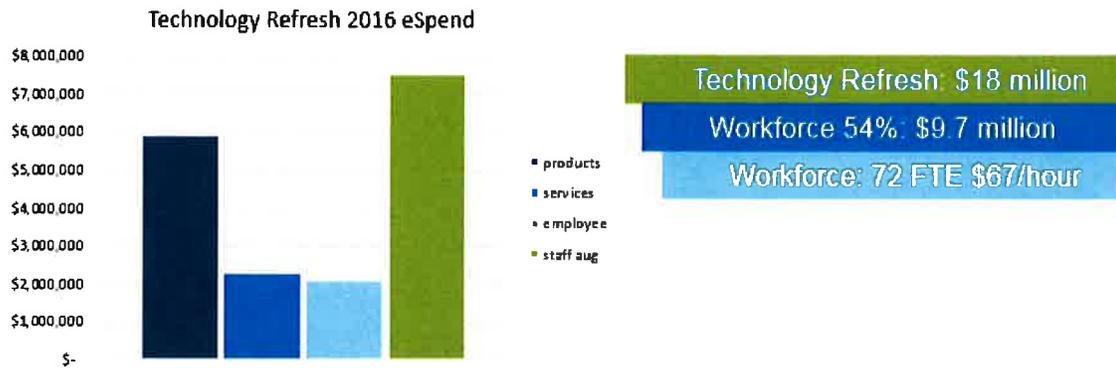
The basis for measuring the business impact of not funding the Technology Refresh to Sustain Automated Business Process Business Case program is realizing the loss of business process automation. As technology products reach manufacturer planned or real obsolescence, they then cease product maintenance and product support, the automation value is jeopardized and business risk is increased. This condition would drive action. The “no funding” alternative would lead to a mitigation plan of having to remove the automation.

Funding at current level analysis

According to Avista’s technology asset management system of record, which stores over 10,000 assets, 25% of the in-service assets are beyond manufacturer lifecycle. The Business Case owner analyzed project demand, resource capacity, and pace

Technology Refresh to Sustain Business Process

of change, and determined that the 2016 funding level is adequate to maintain a balance among the constraints (demand, capacity, funding). The results of the analysis were presented to the ETSC and TPG, with the recommendation and requested an annual analysis to validate the investment portfolio, while managing the risk of deferring technology upgrades and replacements.



Funding at a lower level

As described above, funding the Technology Refresh to Sustain Automated Business Process Business Case at a lower level would increase the number of technology assets that would need to be deferred, thereby increasing risk of technology obsolescence, losing maintenance and support, and reducing automation efficiencies. Annual investment planning efforts will inform ETSC and TPG of the risks associated with continuous deferrals.

The Business Case aligns directly with the Asset Condition driver and Avista's strategic initiatives of providing a Safe and Reliable Infrastructure and delivering more value to more customers and strengthen engagement. As a shared service, a majority of the IS/IT Business Case supports automated business functions, which many departments depend on to manage costs and maintain staff efficiencies. Concomitantly, many of the technology solutions (devices, systems, applications, etc.) provide direct support to all Avista customers, while the remaining provide indirect benefit through operational efficiencies, field mobility, and safer conditions.

Technology Refresh to Sustain Business Process

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the **Technology Refresh to Sustain Automated Business Process Business Case** and agree with the approach it presents and that it has been approved by the steering committee or other governance body identified in Section 1.1. The undersigned also acknowledge that significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 04/2017
 Print Name: Andy Leija
 Title: IT Delivery Manager
 Role: Business Case Owner

Signature:  Date: 04/2017
 Print Name: Hossein Nikdel
 Title: Application System Planning Director
 Role: Business Case Sponsor

Signature:  Date: 04/2017
 Print Name: Jim Corder
 Title: Infrastructure Technology and Security Director
 Role: Business Case Sponsor

5 VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Andy Leija	04/12/17	ET Directors	04/14/17	Initial version

Template Version: 03/07/2017

Technology Refresh to Sustain Business Process

1 GENERAL INFORMATION

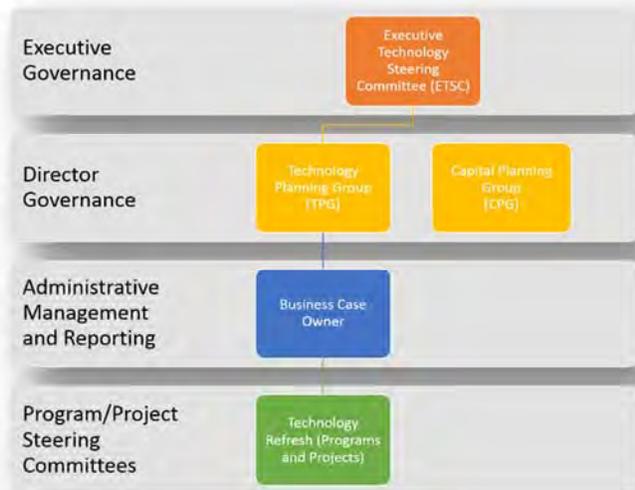
Requested Spend Amount	\$17,917,613
Requesting Organization/Department	IS/IT
Business Case Owner	Andy Leija
Business Case Sponsor	Jim Corder/Hossein Nikdel
Sponsor Organization/Department	IS/IT
Category	Program
Driver	Asset Condition

1.1 Steering Committee or Advisory Group Information

The Enterprise Technology Department serves as a shared service business unit that supports technology infrastructure and information systems for the enterprise. The **Technology Refresh to Sustain Business Processes** Business Case has three levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects (i.e. software delivery, electrical engineering, accounting, energy delivery, technology, etc.)

The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two constraints are established, the Business Case owner will work with steering committee(s) to set project priority and sequence over a five year planning period.



Each program and project steering committee meet regularly to review the backlog of demand to that align with Avista’s strategies. They oversee scope, schedule and

Technology Refresh to Sustain Business Process

budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

During an annual planning cycle (July – September), the Business Case owner surfaces the project demand for the upcoming five years to the TPG and ETSC. After review for resource capacity, strategic alignment, and risk, the investment plan is submitted to the CPG for funding consideration across all other Business Cases. The CPG then provides a revised funding allocation to each Business Case. The revised allocation then requires the TPG to review and revise the investment plan to fit within the new funding allocation. This establishes the annual investment plan under this Business Case. Steering committees prioritize technology asset risk within the two constraints (resource capacity and funding) for each year. Technology asset refresh funding is generally assigned priority in this sequence: Safety, Energy Control, Customer Facing, and Back Office.

2 BUSINESS PROBLEM

The Technology Refresh to Sustain Business Processes program is in place to provide for replacement of existing technology in alignment with the manufacturer product roadmaps for application and technology lifecycles. Not only is the asset condition of technology subject to the traditional mortality rate or lifecycle, but it is compounded by planned obsolescence, also known as technology obsolescence¹. That is whereby the technology asset although within its functional lifespan is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology is available in the market. Reliance on obsolete technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process. Sustaining business process by replacing automation with workforce would increase labor expense.

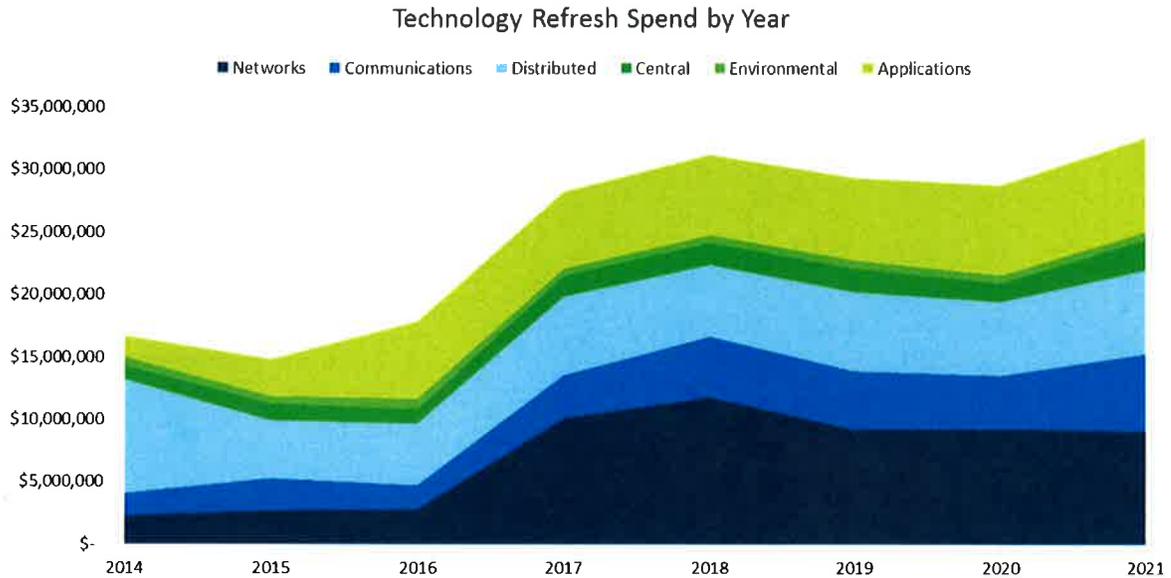
Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. These upgrades can in turn drive subsequent system replacements, creating a cascading event of change. Therefore, vendor roadmaps and technology asset lifecycles are data points that inform Avista on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure.

Below is a graph that illustrates the technology replacement demand across the six technology domains (Networks, Communications, Distributed, Central,

¹ Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcric.com/products/publications.htm>

Technology Refresh to Sustain Business Process

Environmental and Applications) under this Business Case. As you can see, the greatest increase is in Networks and Applications.



The Annual Investment Plan reviewed by the TPG and ETSC monitors the risks of deferred replacements or upgrades to maintain a stable and reliable application and computing platform that allows for the safe and reliable operation of our electric and natural gas infrastructures, as well as deliver on customer demands.

3 PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
Do nothing (No funding)	\$1.9 MM	01 2017	12 2017
Fund at current level	Approx. \$18 MM	01 2017	12 2017
Fund at lower level	< \$18 MM	01 2017	12 2017

The monetized value of “no funding” alternative is \$1.9 million per year

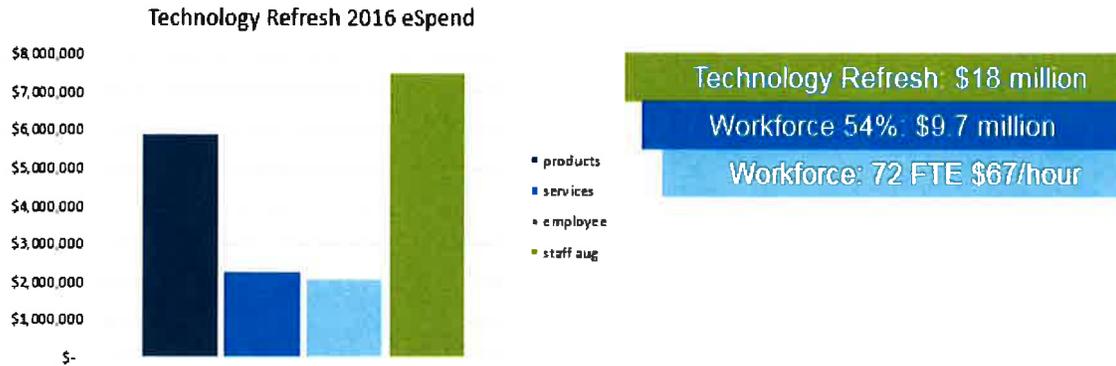
The basis for measuring the business impact of not funding the Technology Refresh to Sustain Automated Business Process Business Case program is realizing the loss of business process automation. As technology products reach manufacturer planned or real obsolescence, they then cease product maintenance and product support, the automation value is jeopardized and business risk is increased. This condition would drive action. The “no funding” alternative would lead to a mitigation plan of having to remove the automation.

Funding at current level analysis

According to Avista’s technology asset management system of record, which stores over 10,000 assets, 25% of the in-service assets are beyond manufacturer lifecycle. The Business Case owner analyzed project demand, resource capacity, and pace

Technology Refresh to Sustain Business Process

of change, and determined that the 2016 funding level is adequate to maintain a balance among the constraints (demand, capacity, funding). The results of the analysis were presented to the ETSC and TPG, with the recommendation and requested an annual analysis to validate the investment portfolio, while managing the risk of deferring technology upgrades and replacements.



Funding at a lower level

As described above, funding the Technology Refresh to Sustain Automated Business Process Business Case at a lower level would increase the number of technology assets that would need to be deferred, thereby increasing risk of technology obsolescence, losing maintenance and support, and reducing automation efficiencies. Annual investment planning efforts will inform ETSC and TPG of the risks associated with continuous deferrals.

The Business Case aligns directly with the Asset Condition driver and Avista's strategic initiatives of providing a Safe and Reliable Infrastructure and delivering more value to more customers and strengthen engagement. As a shared service, a majority of the IS/IT Business Case supports automated business functions, which many departments depend on to manage costs and maintain staff efficiencies. Concomitantly, many of the technology solutions (devices, systems, applications, etc.) provide direct support to all Avista customers, while the remaining provide indirect benefit through operational efficiencies, field mobility, and safer conditions.

Technology Refresh to Sustain Business Process

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the **Technology Refresh to Sustain Automated Business Process Business Case** and agree with the approach it presents and that it has been approved by the steering committee or other governance body identified in Section 1.1. The undersigned also acknowledge that significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 04/2017
 Print Name: Andy Leija
 Title: IT Delivery Manager
 Role: Business Case Owner

Signature:  Date: 04/2017
 Print Name: Hossein Nikdel
 Title: Application System Planning Director
 Role: Business Case Sponsor

Signature:  Date: 04/2017
 Print Name: Jim Corder
 Title: Infrastructure Technology and Security Director
 Role: Business Case Sponsor

5 VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Andy Leija	04/12/17	ET Directors	04/14/17	Initial version

Template Version: 03/07/2017

Enterprise Business Continuity

EXECUTIVE SUMMARY

Avista has developed and maintains an Enterprise Business Continuity Program to continually enhance and improve the Company's emergency response, business continuity, and disaster recovery capabilities to ensure the continuity of its critical business process and systems under crisis conditions. The program includes the key areas of technology recovery, alternate facilities, and overall business processes. The effort of developing and continuously improving the program ensures the readiness of systems, procedures, processes, and people required to support our customers and our communities in the event of a disaster.

The capital budget request of \$2,160,000 funds projects that benefit Avista customers by mitigating service interruptions due to a disaster by continually enhancing and improving emergency response, business continuity, and disaster recovery capabilities. Not approving this business case or its recommended funding can pose risks to the business processes and systems that support the delivery of safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of the original business case	6/30/2020	

GENERAL INFORMATION

Requested Spend Amount	\$2,160,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Clay Storey Clay Storey
Sponsor Organization/Department	Enterprise Security
Phase	Choose an item.
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Severe storms, natural disasters, and significant security events are unpredictable and, while they may have a low probability, they can have a high consequence. These types of low frequency, high consequence events can

Enterprise Business Continuity

have an impact on the resources Avista depends on for its operations. Many of Avista’s critical business processes are now more than ever dependent on data, communication networks, and computer systems. Prolonged failure of any of these resources could have a significant impact on Avista’s ability to sustain gas and electric operations for its customers.

1.2 Discuss the major drivers of the business case and the benefits to the customer

Performance & Capacity is the primary driver for the Enterprise Business Continuity business case as the projects it funds generally enhance or address performance or technology capacity constraints.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The ability to maintain uninterrupted services and/or recover quickly in the event of a disaster is critical to serving our customers. Technology investments are needed annually to continue to enhance the resiliency of systems that support critical business processes. Not approving or deferring investments in this business case could limit Avista’s disaster recovery abilities.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Avista conducts an annual disaster recovery exercise to evaluate the effectiveness of its program. This exercise, along with utility industry forums, counsels, and organizations provide Avista with a strong baseline from which to measure its recovery capabilities and channel the appropriate level of investment to address any identified issues or risks.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

N/A

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

The requested funding level will address the highest risks that can’t wait until the next technology refresh cycle. It is recommended that this level of funding continue rather than potentially deferring the work 3-5 years since this program is meant to address high-risk deficiencies in a shorter cycle than a typical refresh cycle.

Option	Capital Cost	Start	Complete
Address business continuity gaps outside of technology refresh or expansion projects	\$2,160,000	01 2021	12 2025

Enterprise Business Continuity

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The historical spending trend has been \$405,000 annually. The requested funding level is derived from actual estimates for projects to maintain and enhance Avista's ability to respond and continue operations in the event of major disasters. Based on the consistent spend of \$405,000 annually over the past five years to provide business continuity in the event of a disaster, and project estimates to continue to deliver disaster recovery solutions, there is a high level of confidence the requested annual budget will fully be utilized.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

This business case supports simultaneous projects over multiple years to enhance our disaster recovery and business continuity capabilities. Each project within the business case evaluates the potential impact to O&M.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Business continuity and disaster recovery solutions for business functions can have an impact on how the function will be performed during a disaster. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to the business functions.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Not funding the program was considered. If the program was not funded, the risk of not having adequate recovery capabilities would have to be tied to the technology refresh cycles which is typically 3-5 years.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

Since this business case is comprised of projects running concurrently over multiple years, each project designates its completion and transfer-to-plant timeline.

Enterprise Business Continuity

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives, and mission statement of the organization.

This business case best aligns with Avista's focus area of Perform as having reliable systems is essential to serving our customers.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project.

The prudence of the program's projects will be evaluated by its governing body and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Each project within the business case will consider stakeholders during the chartering process.

2.8.2 Identify any related Business Cases

- None

3.1 Steering Committee or Advisory Group Information

Each project will have steering committees to monitor scope, schedule, and budget.

3.2 Provide and discuss the governance processes and people that will provide oversight

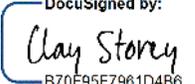
Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.

Enterprise Business Continuity

The undersigned acknowledge they have reviewed the Enterprise Business Continuity business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Aug-07-2020 | 9:35 PM PDT

Print Name: Clay Storey

Title: Director of Security, IT & Security Management

Role: Business Case Owner

Signature:  Date: Aug-07-2020 | 9:35 PM PDT

Print Name: Clay Storey

Title: Director of Security, IT & Security Management

Role: Business Case Sponsor

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Enterprise Security

EXECUTIVE SUMMARY

Cyber security measures along with physical security is an expectation of all companies today by its customers. Especially companies considered critical infrastructure that are required to meet specific compliance standards. Protecting vital electric and gas services from cyber-attacks greatly benefits Avista’s customers. In addition to protecting gas and electric services, cyber and physical security tools mitigate risks like theft and vandalism on Avista properties and identity theft and payment transactions from online attacks.

The capital budget request of \$12,900,000 for Enterprise Security funds the technology, tools, and systems that benefit all Avista customers as the funded projects maintain and enhance Avista’s security posture to minimize the risks associated with cyber intrusions. Not approving this business case or its recommended funding can pose risks to the systems that Avista depends on to conduct business and delivery safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of original business case	6/30/2020	

GENERAL INFORMATION

Requested Spend Amount	\$12,900,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Clay Storey Clay Storey
Sponsor Organization/Department	
Phase	Choose an item.
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Enterprise Security

The security of our electric and natural gas infrastructure is a significant priority at a national and state level and is of critical importance to Avista. Threats from cyberspace, including viruses, phishing, and spyware, continue to test our industry’s capabilities. And while these malicious intentions are often unknown, it is clear the methods are becoming more advanced and the attacks more persistent. In addition to these threats, the vulnerabilities of hardware and software systems continue to increase, especially with industrial control systems such as those supporting the delivery of energy. For these reasons, Avista must continue to advance its cybersecurity program and invest in security controls to prevent, detect, and respond to these increasingly frequent and sophisticated attacks.

1.2 Discuss the major drivers of the business case and the benefits to the customer

Performance & Capacity is the primary driver for the business case as the projects it funds address security risks with the use of technology that keeps our systems secure and reliable.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Addressing security risks has been and will continue to be an ongoing issue. If the funding is not approved or is deferred, this increases the likelihood of a security event that could impact Avista’s operations.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Avista utilizes third party assessments to evaluate the effectiveness of its security posture. These assessments, along with utility industry forums, counsels, and organizations provide Avista with a strong baseline from which to measure its security capabilities and channel the appropriate level of investment to mitigate identified risks.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

N/A

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Security assets such as firewalls, intrusion prevention, anti-virus, and endpoint protection systems must be regularly updated or replaced as they reach their end of life so they don’t become unreliable and become a security risk due to not being able to be patched.

The Enterprise Security business case provides funding for cyber and physical security-related projects and supports Avista’s safe and reliable infrastructure strategy. The projects funded by this business case protect Avista’s people,

Enterprise Security

assets, and information. Without proper security protection the risk to Avista's people, assets, and information increases.

Option	Capital Cost	Start	Complete
Address 80% of obsolete technology and emerging risks (Recommended)	\$12,900,000	01 2021	12 2025
Address 40% of obsolete technology and emerging risks	\$5,400,000	01 2021	12 2025
Address 100% of obsolete technology and emerging risks	\$22,500,000	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The capital dollar request was derived from the historical annual spend implementing security measures to reasonably mitigate risks based on input from the programs governing body. It also takes into account estimates of in-flight projects and a 1% per year increase for inflation for future projects.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

This business case supports simultaneous projects over multiple years. This business case expects to continue to deliver security systems that contribute to threat reduction. Each project within the business case evaluates the potential impact on O&M costs and staffing.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

The first alternative strategy would be to fund the business case at roughly half the recommended budget amount (40%). This alternative significantly

Enterprise Security

increases the risk of using outdated security systems to provide safe and reliable service to Avista's customers.

The second alternative would fully fund the business case and allow Avista the ability to implement new security systems as they become available and replace existing systems well before the end of their serviceability.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

Since this business case is comprised of projects running concurrently over multiple years, each one designates its own completion date and transfer-to-plant.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The projects funded by this business case protect Avista's people, assets and information. Without proper security protection the risk to Avista's people, assets and information increases.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Security measures to protect critical infrastructure is not only prudent, but required. Reasonable and appropriate security measures are an expectation from Avista's customers. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The Enterprise Security business case significantly impacts all of Avista's staff and its customers. Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

This Enterprise Security business case replaced the following business cases:

- Enterprise Security Systems Refresh
- Enterprise Security Systems Expansion

Enterprise Security

3.1 Steering Committee or Advisory Group Information

The Enterprise Security Committee will provide monthly recommendations and guidance based on security operations center updates, business case financial updates, and industry recommendations.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Enterprise Security Committee acts as the custodian and governance body of security resources and investments which includes the Enterprise Security Business Case. This group meets monthly and is composed of directors and managers from most of the lines of business. In addition, each project funded by the Enterprise Security Business Case has project-level steering committees.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

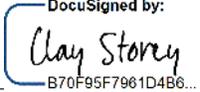
Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project, and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the Enterprise Security business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:		Date:	Aug-07-2020 9:31 PM PDT
Print Name:	Clay Storey		
Title:	Director of Security, IT & Security Management		
Role:	Business Case Owner		

Enterprise Security

Signature:  Date: Aug-07-2020 | 9:31 PM PDT

Print Name: Clay Storey

Title: Director of Security, IT & Security Management

Role: Business Case Sponsor

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Endpoint Compute and Productivity Systems

EXECUTIVE SUMMARY

Business processes require automated technology solutions to meet the overwhelming need for data and information to make decisions. All industries, including the utility industry, are reliant on the ability to produce, transmit, analyze, and store information to meet various business requirements. Avista's office, call center, and field staff require on-demand information to meet customer expectations when providing gas and electric service to customers across our service territory. The information can be critical to prevent, reduce, affect, or optimize an outcome that benefits our customers. Technology investments under the Endpoint Compute and Productivity Systems business case enable our staff with information to optimize our business and be responsive to our customers.

Traditionally, much of this technology was primarily driven by asset condition aligned with asset management strategies. Technology lifecycles based on manufacturer product roadmaps were critical to optimize the overall lifecycle value of the product. However, more recently, we have witnessed an increase in vendor-driven planned obsolescence, whereby the technology asset although within its functional lifespan is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology that is available in the market. This has resulted in a reclassification of the primary driver to performance and capacity, whereby the Company balances the need to meet performance standards and system reliability for the various technologies under this program with annual budget allocations, and their respective technology lifecycles. This is a true balancing act that requires historical trend analyses, technology road-mapping, and cost-control measures.

Technology solutions under this program include, but are not limited to, technology required day-to-day to automate and enable business processes, such as Personal Computer (PC) hardware and their operating systems, various handheld devices, printers, configuration and management systems, productivity tools (e.g. Office 365), etc. The costs associated with each solution can vary by the scale of the solution deployed, as well as vendor licensing models. Therefore, each technology under this program undergoes regular review of the levels of utilization and performance to determine if it is meeting the expected performance standards and capacity requirements to maintain system reliability under the established budget constraints. These reviews can result in calling for additional investment under this program from time to time for technology either falling behind technology lifecycles or predetermined performance standards, which can pose risk to computing system reliability that may only be resolved with the reinstatement of manual processes replacing automation with workforce, thereby increase labor costs, human error, and overall processing delays.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	6/2017	
1.1	Walter Roys	Update Investment Driver	7/2019	
2.0	Walter Roys	Revision of BCJN to new template	7/2020	

Endpoint Compute and Productivity Systems

GENERAL INFORMATION

Requested Spend Amount	\$22,400,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Endpoint compute and productivity technology is not only subject to the traditional mortality rate or lifecycle, but it is compounded by planned obsolescence, also known as technology obsolescence.¹ That is, whereby, the technology asset although within its functional lifespan is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology (with greater performance and capacity) that is available in the market.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The Endpoint Compute and Productivity Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps with an objective to maintain infrastructure performance and align infrastructure assets with business demand for capacity. Therefore, the major driver for this business case is Performance & Capacity.

All Avista customers benefit from maintaining endpoint compute and productivity systems, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

¹ Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Endpoint Compute and Productivity Systems

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Avista's office, call center, and field staff require on-demand information to meet customer expectations when providing gas and electric service to customers across our service territory. The information can be critical to prevent, reduce, affect, or optimize an outcome that benefits our customers. Additionally, the endpoint compute and productivity technology is necessary to enable the capabilities that align with our strategic goals of putting our customers at the center.

Reliance on obsolete technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process. Sustaining automated business process by replacing automation with workforce would increase labor expense, and delay response times to meet customer needs.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk. Additionally, assets that fail due to not being replaced within their technology lifecycle are replaced by the Technology Failed Asset business case, which tracks technology asset failures, and is also used as a data point to inform the technology lifecycles under this business case.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Enterprise Technology team references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Endpoint Compute and Productivity Systems

Directions on Roadmaps, Independent IT Planning Information and Advisory Service focused exclusively on Microsoft enterprise software and services. Retrieved from <https://www.directionsonmicrosoft.com/>

Gartner Industry Research and Reference Material. Retrieved from <https://www.gartner.com/en/information-technology>

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Not applicable, as the investment under this program business case is to maintain performance and capacity standards in each respective endpoint compute and productivity technology.

This program will manage technology replacement according to manufacturer product roadmaps with an objective to maintain infrastructure performance and align infrastructure assets with business demand for capacity.

Although this is not the optimal solution, the recommended funding level will address 75% of obsolete products and capacity constraints, which will introduce risk associated with technology systems' reliability, interoperability, and capacity. The investment required to address obsolete technology products will be deferred to subsequent years, thereby creating a bow-wave of backed up technology obsolescence that at some point will need to be addressed. This is no different than pushing out buying winter tires for your car into the next winter. However, doing this every winter may eventually catch up with you. The likelihood of technology impact to automated business processes will increase. To minimize the impact of this risk, the Program Steering Committee will manage project sequence according to the investment priority documented in Section 3.2.

Option	Capital Cost	Start	Complete
Recommended Solution – Address 75% obsolete products and capacity constraints	\$22.4 M	01 2021	12 2025
Alternative #1 - Address 100% of obsolete products and capacity constraints (recommended)	\$32.1 M	01 2021	12 2025
Alternative #2 - Address 50% obsolete products and capacity constraints	\$16.1 M	01 2021	12 2025

Endpoint Compute and Productivity Systems

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The funds request was based on a calculation of the asset lifecycle associated with each technology asset, the scope of the technology footprint across our service territory, and historical project costs for technologies previously refreshed under this business case. Through regular reviews, the program balances the need to meet system performance and reliability standards for the various technologies under this program within annual budget allocations, and their respective technology lifecycles. These reviews can result in calling for additional investment under this program from time to time for technology either falling behind technology lifecycles or predetermined performance and reliability standards.

A product obsolescence working group, consisting of Technology Domain Architects, maintains technology roadmaps to inform Program Steering Committee members of project demand. Project demand is assessed against funding constraints each year and prioritized based on risk of technology impact to the business. Various data points inform the team's decisions and recommendations, which include, but are not limited to vendor-driven obsolescence, compute capacity and storage, historical project costs for similar type projects, etc.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (*ref. WUTC Docket No. U-190531 Policy Statement*), therefore it is critical that these impacts are thought through in order to support rate recovery.]

The funding requested under the Endpoint Compute and Productivity Business Case will be invested in technology, such as:

- Personal Computer (PC) systems
- Vehicle PC mounting systems
- Tablets
- Print, Scan, & Fax systems
- Global Positioning Systems (GPS)
- Digital scale systems
- Uninterruptable Power Supplies (UPS)
- Other endpoint computer systems
- PC Operating Systems (OS)
- Virtual PC Systems
- Virtualized application systems
- End user PC productivity tools
- Remote PC management systems
- Configuration management systems

Endpoint Compute and Productivity Systems

- Mobile computing systems
- Battery management systems

Investment in these technologies can result in added O&M expenses from increase in licenses from time to time. However, not funding this business case may result in removing automated business functions, which will either cause delay in meeting business and customer demands or completely change whether we can even respond to business and customer demands. There are no O&M reductions or offsets resulting from these investments, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

Reliance on obsolete technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process. Sustaining automated business process by replacing automation with workforce would increase labor expense.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. These upgrades can in turn drive subsequent system replacements, creating a cascading event of change. Therefore, vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

All Avista business functions are affected by this business case, as it enables all day-to-day work activities and automated business processes. From service center to call center to field work, every worker requires endpoint technology to perform their business function and deliver gas and electric service to our customers.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Address 100% of obsolete products and capacity constraints

This is the optimal solution. This option fully addresses and minimizes the likelihood of technology impact to automated business process.

Endpoint Compute and Productivity Systems

Address 75% of obsolete products and capacity constraints

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. To minimize the impact of this risk, the Program Steering Committee will manage project sequence according to the investment priority documented in Section 3.2.

Address 50% of obsolete products and capacity constraints

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. Interoperability constraints may force unplanned funding requests. Multi-year, complex projects are at risk of completion prior to product obsolescence. This option impacts the workforce.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

This business case is a program that transfers to plant the total cost of each project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

Each investment under this business case program allows Avista to deliver electric and gas services to our customers.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The reason that the technology investment under this program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in an office, customer

Endpoint Compute and Productivity Systems

service center or in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process would either stop or be removed, thereby crippling our workforce's ability to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce interface with the technology investments under this business case. Selected leaders in organizational business units, known as technology stakeholders, work closely with the technology teams to help with business roadmaps, use case definition, gather non-functional requirements, test design and deployment approaches to inform technology investments.

2.8.2 Identify any related Business Cases

The technology investment under this business case allows for the deployment and use of outputs from other business cases, such as application access and delivery on personal computers and servers, connecting to a virtual private network or cloud service, managing data storage and compute, security updates and patching, etc.

3.1 Steering Committee or Advisory Group Information

The Endpoint Compute & Productivity Systems Business Case has two levels of governance: The Program Steering Committee and the Project Steering Committee.

3.2 Provide and discuss the governance processes and people that will provide oversight

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

Endpoint Compute and Productivity Systems

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically and will consist of projects needed to maintain the reliability and performance of all endpoint compute & productivity systems.

Technology product roadmaps identify investment demand that is generally not fully funded. Technology product investments are prioritized in this manner:

- 1) Safety Systems
- 2) Control Systems
- 3) Customer Facing Systems
- 4) Back Office Systems

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

Endpoint Compute and Productivity Systems

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Endpoint Compute and Productivity Systems

The undersigned acknowledge they have reviewed the **Endpoint Compute & Productivity Systems** Business Case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Jul-30-2020 | 11:48 AM PDT

Print Name: Walter Roys

Title: System Engineering Manager

Role: Business Case Owner

Signature:  Date: Aug-03-2020 | 3:16 PM PDT

Print Name: Jim Corder

Title: IT Director

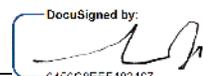
Role: Business Case Sponsor

Signature:  Date: Aug-03-2020 | 3:45 PM PDT

Print Name: Karen Schuh

Title: IT Program Manager

Role: Steering/Advisory Committee Review

Signature:  Date: Aug-03-2020 | 3:46 PM PDT

Print Name: Andy Leija

Title: ET PMO Manager

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Energy Delivery Modernization and Operational Efficiency

EXECUTIVE SUMMARY

Energy Delivery Modernization and Operational Efficiency (EDMOE) as a business case supports both existing and new technologies leveraged by the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering. These technologies are used to automate and augment business solutions bringing efficiencies and capabilities to support the delivery of energy to our customers. This support includes the following: 1) improving the performance and capacity of business resources by implementing new functionality in existing technologies. 2) improving the performance and capacity of business resources by implementing overall new technologies. 3) modernizing existing technologies in accordance with product lifecycles and technical roadmaps, typically through product or system upgrades. Due to an increase in vendor-driven planned obsolescence, if these systems are not refreshed on a regular cadence, the ability of Avista to meet customer, regulatory and compliance requirements will be at risk. Although these are the primary purposes of this business case, other benefits include cost savings, safety, regulatory compliance and innovative customer-focused products and services.

The total program budget over the next five years is estimated to be \$24.52M dollars. The funds in this business case will be utilized to fund the EDMOE Program as detailed in the supplemental information referenced in section 2.0 below. Though not exhaustive, the list of supported technologies includes the following major systems: GIS our geospatial information system, Maximo our enterprise work and asset management system, ECM our enterprise content management solution where this solution is used in support of energy delivery activities, PI our plant information system where this system is used to support our energy delivery activities, and Service Suite our mobile workforce management system. Beyond these major systems, there are other miscellaneous applications that are leveraged that also require periodic updates and enhancements. The years 2021-2025 will be focused on the systems and capabilities detailed below.

VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Michael Mudge	07/21/2018			Initial version
2.0	Michael Mudge	06/29/2020			Updated Template

Energy Delivery Modernization and Operational Efficiency

GENERAL INFORMATION

Requested Spend Amount	\$24,520,000
Requested Spend Time Period	01/2021-12/2025
Requesting Organization/Department	Energy Delivery
Business Case Owner Sponsor	Michael Mudge Hossein Nikdel
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

The Energy Delivery business area utilizes a suite of technologies and applications in order to better and more efficiently execute ongoing business processes. As these business processes change, or new opportunities for better or more efficient business processes emerge, these technologies need to change as well. These changes often can be met through leveraging the capabilities of existing systems with minor modifications or configuration changes. We call these types of changes enhancements and set up minor programs to support these activities. Examples of this type of activity includes the GIS and Maximo enhancement packages. Sometimes these changes are larger and require a project of their own, but still leverage existing in portfolio products. Examples include the Centralized Planning and Scheduling project which leverages our GIS system, or Facilities asset management which will leverage our Maximo system. Other times these changes may require new systems altogether with new or different capabilities. Regardless, these changes require technology resources versed both in the changing business processes and the systems being leveraged in order to make the changes.

Additionally, this suite of technologies, whether the applications themselves or the technologies supporting them often require upgrades to keep them current with vendor lifecycle roadmaps. The performance of these upgrades often leverages the same resources as identified above, technology experts who understand both the capabilities of the systems themselves as well as strong familiarity with the business processes they support.

Under this business case, we are referring to the technologies and applications leveraged by the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering. These technologies are used to

Energy Delivery Modernization and Operational Efficiency

automate and augment business solutions bringing efficiencies and capabilities to support the delivery of energy to our customers. This support includes the following: 1) improving the performance and capacity of business resources by implementing new functionality in existing technologies. 2) improving the performance and capacity of business resources by implementing overall new technologies. 3) modernizing existing technologies in accordance with product lifecycles and technical roadmaps, typically through product or system upgrades. Although these are the primary purposes of this business case, other benefits include cost savings, safety, regulatory compliance and innovative customer-focused products and services.

The current major applications included in the Energy Delivery Program portfolio include:

- Geospatial platform environment - ArcGIS solution(s) - Esri
- Enterprise Asset Management system – Maximo solution(s) - IBM
- Time Series Operational Data - Plant Intelligence (PI) solution(s) – OSIsoft
- Mobile Workforce Management – Mobile Dispatch solution(s) – ABB/Service Suite
- Fleet Asset & Work Order Management – FASuite solution(s) – Asset Works
- Crew Planning & Scheduling - Crew Manager solution(s) - Arcos
- System Operations Outage Management– CROW – Equinox
- Metering solution(s) – Itron
 - OpenWay Riva
 - MV90
 - Field Collection System (FCS)
 - Fixed Network
 - TWACS

Energy Delivery Modernization and Operational Efficiency

1.2 Discuss the major drivers of the business case *(Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations)* **and the benefits to the customer**

At the core of the EDMOE business case is the ongoing support and development of the technologies that enable the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering. These technologies enable the workers in these various teams to respond to customer requests faster; provide information to customers that is more accurate, timely and complete; and improves customer satisfaction when they interact with Avista. Other benefits for the company and our customers include cost savings, safety, regulatory compliance and innovative customer-focused products and services. This business case supports the ongoing changes necessary to improve the performance and capacity of these business areas. Although performance and capacity are the key driver, this business case where necessary also supports the other major drivers listed.

1.3 Identify why this work is needed now and what risks there are if not approved or if the work is deferred

The suite of technologies managed under this business case and the business processes they enable in many cases are core to Avista's ability to deliver energy safely and reliably to our customers. These technologies and the business processes they support change on a continual basis based on both internal and external drivers. These drivers include continuous improvements in business process, continuous improvements in safety, changing compliance requirements, changing regulatory requirements, vendor driven change, product obsolescence, changes in customer expectations, as well as changes in system reliability.

Additionally, as these changes are ongoing in nature, they require a minimum level of staff capability to support these necessary changes. If the work is deferred or delayed, the technologies will not be in alignment with changing business processes, the technologies will not support improvements in safety, regulatory, or compliance, and the technologies will not be aligned with vendor driven change. Further, if deferred or delayed (meaning the labor required to do the work is made unavailable) when the work is funded the staff required to implement these changes will not be readily available or will likely be more expensive to hire.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Each project within the EDMOE business case has a project charter which includes project costs, schedule, deliverables and benefits. Each project will have a steering committee assigned. Throughout the duration of each project the steering committee will be provided status reports on a monthly basis. These status reports will include updates on project scope, schedule and

Energy Delivery Modernization and Operational Efficiency

budget, as well as any risks and/or issues that the project team is currently working on.

Each program within the EDMOE business case has a steering committee that prioritizes a backlog of required enhancements and changes in support of changing business process, cost savings, new safety, regulatory or compliance work, and customer driven requirements. These often result from technology demand related to transformations in the utility industry and continual changes required to meet expanding customer needs, as well as the drive to achieve operational efficiencies. Recent trends in the area of mobility, scalability, and the move towards Commercial off the Shelf (COTS) solutions that enhance and/or improve conventional business practices and processes also influence these efforts.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The technologies and applications improved upon and delivered under this business case automate and enable key business processes used today to deliver safe and reliable energy to our customers. These technologies and applications require ongoing enhancements and sometimes replacement to keep them in line with changing business processes and with changing vendor roadmaps. Technical resources with specialized skills who are familiar with these supported business areas are required to make the ongoing changes. This business case supports the required changes, along with the technical resources, for technologies and applications that support the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering.

Option	Capital Cost	Start	Complete
Recommended Solution	\$24.52 Million	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

A thorough review of the list of technologies and applications currently providing automation to Energy Delivery business processes was performed. Based on this cataloging, two types of activities were identified, projects and programs. Projects are typically used to support one-time major efforts such as software or platform upgrades, technology replacement or technology implementation. Programs are typically used to enhance existing technologies,

Energy Delivery Modernization and Operational Efficiency

keeping the technology in line with existing and evolving business process or to facilitate implementation of additional digitization of business process using existing technologies. For projects, estimates were developed based on identified staffing requirements, software and hardware requirements (license and product costs), and professional service requirements. These were based on current scope and schedule estimates. For Programs providing ongoing enhancements or new functionality to support changing or developing business process the costs were estimated based on staffing, license, professional service, and product costs identified through historical trends.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

The costs incurred under this business case across the next five years will be spent on product licenses, hardware, professional services and labor in support of the technical systems in place across the Energy Delivery business area. Significant costs include the cost of ESRI term licenses, Labor and professional services costs to implement Maximo for Facilities Asset Management, Labor and Professional Services to implement a replacement for EngDraw, Labor costs to develop a new Gas Control Desk Logging solution, Labor to continue enhancements to our GIS system in support of business process, Labor to continue enhancements to our Maximo solution in support of business process, Labor to upgrade our Maximo solution in line with vendor product lifecycles, Labor to support enhancements to our Plant Information (PI) system in support of business process, Labor and hardware updates necessary to support enhancements and upgrades of our AMI head end platform in support of business process and vendor product lifecycles, Labor in support of upgrading MV90 and TWACS in line with vendor product lifecycles, Labor and professional services to support upgrading Mobil Dispatch in line with vendor lifecycles. Labor and professional services for smaller applications in line with vendor product lifecycles. The timelines for this work have been developed with the best information available today and represent ideal scenarios. It is subject to change based on priorities, availability of shared labor, and our ability to find appropriate professional services.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Each project and program within the EDMOE business case includes a business process and stakeholder analysis to determine the organization change management and training needs where necessary. This analysis is then used to deliver communication to the stakeholders throughout the project or program and where required is used to develop end user training.

Energy Delivery Modernization and Operational Efficiency

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Each Project under this business case is evaluated before inception to review alternatives, tangible risks, and mitigation strategies for each alternative prior to beginning. This evaluation is reviewed with stakeholders as part of the chartering process. For programs, each has its own steering committee to evaluate risks and prioritize the work prior to inception.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. spend, and transfers to plant by year.

The timelines shown in the table below for this work has been developed with the best information available today and represent ideal scenarios. It is subject to change based on priorities, availability of shared labor, our ability to find appropriate professional services and current estimates of scope.

<u>Projects/Programs/Licenses</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
ESRI ELA (Licenses)	12/2021			Q1/2024- Q4/2024	
Facilities Asset Management - Maximo	Q1/2021- Q4/2021				
ECM Eng Draw Replacement	Q1/2021- Q4/2021				
Gas Control	Q1/2021- Q4/2021				
GIS Enhancements	Q1/2021- Q4/2021	Q1/2022- Q4/2022	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025
Maximo Enhancements /Upgrade	Q1/2021- Q4/2021	Q1/2022- Q4/2022	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025
PI Enhancements	Q1/2021- Q4/2021	Q1/2022- Q4/2022	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025
AMI Enhancements /Upgrade	Q1/2021- Q4/2021	Q1/2022- Q4/2022	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025
MV90 Upgrade	Q1/2021- Q4/2021			Q1/2024- Q4/2024	
TWACS Upgrade	Q1/2021- Q4/2021			Q1/2024- Q4/2024	

Energy Delivery Modernization and Operational Efficiency

Service Suite Upgrade		Q1/2022- Q4/2022			
Misc. Upgrades	Q1/2021- Q4/2021	Q1/2022- Q4/2022	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

Avista has a as its mission to improve our customers lives through innovative energy solutions. Safely, Reliably, Affordably. Avista has as its Focus Areas: Our Customers, Our People, Perform, and Invent. This business case supports the Technologies in the Energy Delivery Business area. Half of all our customer contacts happen in the field as we work to service and deliver energy to meet our customer needs. Every interaction is an opportunity to better our customers lives through informed field workers who have the necessary information to do their job.

The systems that support these activities and are supported under this business case include Maximo our Work and Asset Management system, GIS our Geospatial Information System, and Mobile Dispatch/Service Suite our Mobile Work Management system. These systems are highly leveraged to enable the work our Field Workers perform for our customers and supports them doing so safely, reliably and affordably.

This business case also supports our Metering systems – MV90, TWACS, Fixed Network, and Itron RIVA. These systems are critical to obtaining our customers meter reads for proper billing. PI is our Engineering Analytics platform that collects sensor data from various distribution sensors including our Itron Riva Meters, this data is used to analyze the performance of our distribution system and to support making changes to improve efficiencies and identify anomalies requiring correction.

The Gas Control Desk is required to Log certain events pertaining to Avista’s gas infrastructure. This is currently done in a homegrown shared access database application. The requirements for capturing gas control information has outgrown the capabilities of the application and Avista risks possible non-compliance status and subsequent monetary failures if a system failure were to occur. Moving to a centralized and supported application will benefit Avista and its customers by providing a more reliable method of recording gas events in order to keep our employees and customers safe and meet compliance with DOT regulations. Similarly, EngDraw is a twenty-year-old custom-built document management system that needs replacing. It is end of life, is

Energy Delivery Modernization and Operational Efficiency

inefficient in searching for all necessary documents, and is not compatible with 3D files which are being used by Generation and soon by Substation. This leads to inefficiencies, safety risk, and data incompatibilities.

Today, Facilities Work and Asset Management is currently done manually using tools such as Microsoft Excel (spreadsheets) and Microsoft Exchange (email). This leads to inefficiencies, delays, and duplication in areas like communication, preventative maintenance, asset lifecycle information, and procurement planning. Without automation of some of these processes, the Facilities team will either need to increase staffing levels to keep up or risk continuing to fall behind on preventive maintenance and asset lifecycle planning. Benefits include (but not limited to) an anticipated productivity increase for all Facilities staff in planning, scheduling, and recording work. This includes all work types of project delivery, operate & maintain, and emergency break/fix. Asset information would be stored and updated from a central location. Another key benefit is mobile access to information in the field, which reduces paper and aids in productivity. All these anticipated benefits also support the proof of prudence required for Avista's capital investment in digital tools to support business process. Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project.

Avista's Energy Delivery and Shared Services technology systems are a necessity, as they provide essential functions to our employees and customers throughout all service territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the Energy Delivery and Shared Services (ED) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher costs as a result of the deferment of upgrades and enhancements, etc.

Investment prudence is reviewed by the Steering Committee to ensure alignment of initiatives through judiciously selected and implemented projects. The funding requested as part of this program generally fits these initiatives and are assigned to specific projects (with Steering Committee oversight) as they are identified. Also, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project steering committee meet regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

Energy Delivery Modernization and Operational Efficiency

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Customers will interface with the technology in this business case both through their interactions with Avista personnel who will be using the technologies and through map-based information that they will have access to through online methods such as the Avista website.

2.8.2 Identify any related Business Cases

None

3.1 Steering Committee or Advisory Group Information

The EDMOE Business Case has two levels of governance: The Executive Technology Steering Committee (ETSC), and Project Steering Committees. The committees review monthly project status reports, which identify project scope, schedule and budget, as well as any risks and/or issues that the project team is currently working on. The EDMOE Program Team reports progress monthly to the steering committees and other stakeholder groups.

3.2 Provide and discuss the governance processes and people that will provide oversight

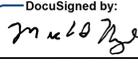
The Steering Committee for each project in the EDMOE business case will be made up of stakeholders from across the functional business units and Enterprise Technology.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

Monthly status reports to the steering committees will be used as the official review and approval process for prioritization and changes request. Risks, issues and changes requests will be documented in project logs and kept as artifacts of each project within Enterprise Technology’s project management software system.

The undersigned acknowledge they have reviewed the **EDMOE** Business Case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:

DocuSigned by:

44C0BE3C52404B4...

Date: Jul-31-2020 | 1:46 PM PDT

Energy Delivery Modernization and Operational Efficiency

Print Name: Michael Mudge

Title: Application Delivery Manager

Role: Business Case Owner

Signature:  E4E2D9C7EE4747F...

Date: Jul-31-2020 | 1:52 PM PDT

Print Name: Hossein Nikdel

Title: Director of Applications and Systems Planning

Role: Business Case Sponsor

Signature:  A3C71874E6564DB

Date: Jul-31-2020 | 1:53 PM PDT

Print Name: Josh DiLuciano

Title: Director of Electric Engineering

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Energy Resources Modernization and Operational Efficiency Technology

GENERAL INFORMATION

Requested Spend Amount	\$29,638,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Energy Resources
Business Case Owner Sponsor	Brian Hoerner Jason Thackston
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

This program is required to support the application-related technology initiatives for all areas within Energy Resources. These areas include Power Supply, Gas Supply, Generation Production Substation Support (GPSS), and Environmental & Real Estate.

Application refresh projects are necessary due to the continuous requirement to provide updates, upgrades and/or replacements on existing Energy Resources applications, as they are required to respond to changing business needs and/or technical obsolescence. Application refreshes/upgrades are essential in order to remain current, maintain compatibility, reliability, and address security vulnerabilities.

Application expansion projects result from demand related to transformations in the utility and continuous technology progression required to achieve operational efficiencies and strategic objectives. Recent trends in the areas of mobility, scalability, and employee experience, require technological expansion of conventional business practices and processes.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The primary investment driver for the Energy Resources Business Program is Performance and Capacity. A secondary investment driver, nearly as important as the first, is Asset Condition.

Many of the applications and respective projects in this Business Case provide direct support to Avista customers, while the remaining provide many indirect benefits.

Some benefits to upgrades and enhancements to these systems include:

- Promoting Risk Management
- Utilizing technology to make more informed decisions
- Monitoring of generation facilities

Energy Resources Modernization and Operational Efficiency Technology

- Sharing generation resources to provide a more efficient use of renewable energy at the lowest available cost
- Advancing the 'Innovation and Performance' focus
- Increasing productivity and efficiency
- Maintaining compliance with all FERC, NERC, and FCC rules

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The projects and initiatives listed above provide functional enhancements that address ongoing changes in the workplace, provide increased employee efficiency through the reduction of steps required to complete a task, and make better use of Avista resources. They shift costs from inefficient processes to more value-driven activities.

The primary alternative to these projects is to use existing systems as-is and to not put new systems in place. This perpetuates inefficiencies as employees are less efficient and effective.

Working through these projects as suggested, reduces Avista's overall risk exposure by ensuring Avista is using funds in the most cost-efficient manner and by maintaining a culture of performance and innovation, which has a positive impact on our employees and customers.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The Energy Resources business team utilizes technology as a critical component to meeting their strategic objectives. Some success measurements would include; risk avoidance, system reporting, and better forecasting results.

Constraints and risks are possible and would hinder the delivery of the outlined objectives. In these circumstances, the Business Case owner would work with Steering Committee(s) to set project priority and sequence, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project Steering Committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

NA

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement. NA

Energy Resources Modernization and Operational Efficiency Technology

The recommended solution to ensure that Energy Resources can meet these initiatives and respective timelines over the next five years, is to follow the recommended application refresh and expansion requirements for Energy Resources applications. The requested allocation is based primarily on compatibility, reliability, security, and safety. Additional criteria considers maintaining operational efficiencies and aligning with strategic objectives. Conventional business practices and processes must be scalable, provide mobility, and focus on the employee and customer experience.

The project roadmap for the next five years includes refreshing and/or expansion initiatives made possible by these core Energy Resources systems

- **Energy Risk Management and Energy Trading** – Managing Avista’s collection of energy assets, asset position, and relationships within the various energy markets. Supported applications include:
 - **Avista Decision Support System (ADSS)** – Forecasting and decision support for Energy Traders and Planners, developed and maintained by Avista. (NOTE: The ADSS development is funded via its own business case through 2021. Only enhancements and updates in 2021 and beyond are included here.)
 - **Settlement Solutions** – Commercial software solution to support Avista’s sales activity and submission of bids into the California Independent System Operator (CAISO) market. The application provides functionality in the areas of CAISO invoice payments, analysis, and reconciliation, as well as the ability to submit bids into the CAISO markets with a high degree of speed and flexibility.
 - **Nucleus** – An energy risk management and energy trading tool enhanced and maintained by Avista, captures all wholesale energy transactions, including significant metering data and forward pricing curves, provides data for tracking energy positions, credit monitoring, compliance reporting, financial reporting, accounting, and market drivers.
 - **Energy Risk Management Replacement (ERM)** - This estimate includes the replacement of the Nucleus application starting in 2023 and completing in 2025. This very rough estimate would increase the yearly spend by approximately \$5,000,000 in those years. There are both technical and business needs that support this replacement, such as the maintenance required to maintain a custom solution (including the supporting infrastructure), and the ability to scale and improve process and efficiencies. This will likely require its own Business Case given the scope and complexity. We want to ensure that there is visibility surrounding this body of work and that the roadmap continues to incorporate the desire to invest in this Energy Risk Management (ERM) system.
- **Gas Forecasting** – Understanding the supply, demand, and market influences on natural gas volume and prices. Supported applications include:
 - **Nostradamus** – An off-the-shelf industry solution used in gas forecasting.
- **Work Management / Project Management** – Asset management, preventative/unplanned work management, and construction project/portfolio management for Generation Production and Substation Support (GPSS). Supported applications include:

Energy Resources Modernization and Operational Efficiency Technology

- **Maximo for GPSS** – Work and Asset Management utilizing modules of Maximo, an off-the-shelf industry solution provided by IBM and used in various Avista business units.
- **Oracle Primavera (P6)** – Enterprise Project and Portfolio Management tool used for project portfolio management, scheduling, risk analysis, and collaboration., provided by Oracle. Implementation is forecasted for late 2020-early 2021.
- **Generation Plant and Substation Operations** – Control and monitoring of operations at all plants and substations from a single location. Supported applications include:
 - **Ignition** (replacing Wonderware) – An off-the-shelf industry solution under the Human Machine Interface (HMI) called Ignition that handles control and monitoring of most Avista generation and substation locations.
 - **Stackvision** - Software that is used for monitoring the stack emissions at the Rathdrum Combustion Turbine.
- **Fuel Inventory Management** – Management of Avista’s biomass fuel (in the form of logging and mill wood waste) at its Kettle Falls thermal plant. Supported applications include:
 - **WeighWiz** – Part of an off-the-shelf Log Inventory and Management System (LIMS) dedicated to timber and wood products procurement and management
- **Licensing / Cross-Functional / Other** – Not every project fits nicely into one of the initiatives above. Some are cross-functional, and some are simply good ideas that continue to improve upon Avista’s workplace (OATI / Gurobi).

Upcoming technology-related initiatives for the Energy Resources business area include the continuous improvements to work management processes via the Maximo Anywhere application, HMI enhancements to optimize the generation and substation monitoring, and the utilization and optimization of the Oracle Primavera Cloud Project and Portfolio Management tool, and Plexos (ABB Sendout System Replacement) implemented in 2021. This business case will support these initiatives along with required refresh projects.

These projects are within industry norms for like-sized Energy Resources departments within like-sized utilities and are accepted and widely adopted approaches used within the energy industry.

Capturing every detail of every project over the course of the next five years is not possible. This is part of why the Steering Committee exists – to help propel Avista forward in its initiatives through intelligently selected and implemented projects. The funding requested as part of this program generally fits these initiatives and will be assigned to specific projects (with Steering Committee oversight) as they are identified.

Option	Capital Cost	Start	Complete
--------	--------------	-------	----------

Energy Resources Modernization and Operational Efficiency Technology

Recommended Solution	\$29,638,000	01 2022	12 2026
➤ <i>Alternative #1 – Without Energy Risk Management Implementation</i>	\$14,638,000	01 2022	12 2026
➤ <i>Alternative #2 – Funding at a lower amount</i>	\$13,500,000	01 2022	12 2026

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

As part of the 5-year planning process, Enterprise Technology and the Energy Resources department leaders meet to review the technology demand that is derived from maintaining the current 'core' systems currently in place, as well as enhancements or new technology that enables the business to meet their strategic initiatives.

These estimates were developed based on the historical trends for enhancement work (Nucleus, Maximo & ADSS), and the product roadmaps for upgrades and licensing renewals, as well as high-level estimates for new product technologies. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s). The schedule was developed with the most recently available information and is subject to change pending risks, competing priorities, dependencies, etc.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

Due to budget constraints within ET Applications and the Energy Resources Business Case over the past couple of years, the majority of 2022 will be focused on ensuring we are as current as we need to be to maintain support, compatibility, reliability, and security. After 2022, the goal is to maintain that standard, while moving toward more strategic objectives and potentially replacing some outdated systems to create efficiencies and cost savings. Many of the enhancements planned will create significant value quantitatively and qualitatively, such as the 5 Year unlimited Gurobi licenses that reduce O&M in future years, as well as the need to purchase additional licenses (only the renewal).

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

The function of Energy Resources and associated technology is critical to Avista's ability to function. Although there is not a direct touchpoint within every area of the company, the ability for this business area and job functions to succeed, is dependent on the understanding and support of Avista's employees and contractors.

This Business Case intends to grow significantly with many of the major initiatives and new technologies that will be supported under Energy Resources. (ADSS, HMI).

Energy Resources Modernization and Operational Efficiency Technology

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

➤ **Alternative #1 - Without Energy Risk Management Replacement/Implementation**

This estimate does not include the Energy Risk Management Replacement (ERM) replacement / Implementation summarized in Section 2. It could potentially be moved to its own business case, delayed, or not implemented. There are both technical and business needs that support this replacement, such as the maintenance required to maintain a custom solution (including the supporting infrastructure), and the ability to scale and improve process and efficiencies.

➤ **Alternative #2 – Funding at a lower amount**

Funding at a lower amount would impose risks of systems to fall out of support based on technology vendor-driven lifecycles, as well as degrade appropriate levels of performance and capacity needed to sustain existing automated or technology-supported business processes or to keep automated solutions in line with changing business processes. Estimates include labor and non-labor forecasts based on historical trends and anticipated expenses, which support the skillset, product, and licensing entitlements required to keep the systems current. This alternative has a number of factors working against it. It would result in the need to run the projects at a slower pace or defer existing system enhancements. This alternative would cause a decline in the number of enhancements implemented and efficiencies gained each year. While the work would likely get pushed to future years, the ability to meet planned strategic objectives would be delayed even further. In short, while feasible, funding at a lower level reduces the timing of efficiency gains, adds risk that Avista would have to take extra measures to retain functions and could impact Avista's ability to run the business. It would increase the number of software application assets that would need to be deferred, thereby increasing risk of obsolescence, losing maintenance and support, and reducing automation efficiencies.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

This is a program with discrete projects and packages that typically run annually and Transfer to Plant within that same year. There are times that a project may start in Q3/Q4 of one year and Transfer to Plant the following year. Typically, application projects will Transfer to Plant about 60 days prior to the project completion date (due to the post implementation warranty period and to capture the trailing charges).

The goal is to break out large/complex projects into smaller projects (phases) to avoid scope creep, budget overages, and ensure the work can be properly prioritized. The first phase of every project would be scoped at the Minimum Viable Product (MVP), and subsequent phases would be scoped accordingly, based on the next highest priority after MVP. This also allows for more accurate Transfer to Plant forecasts.

Energy Resources Modernization and Operational Efficiency Technology

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program with discrete projects and packages that align with Avista's vision, mission and strategic objectives:

- To provide Better Energy for Life, you need Power and Gas Supply and Generation. The Energy Resources team is dedicated to the safe and reliable systems that are necessary to meet Avista's vision.
- To improve our customers' lives through innovative energy solutions, we also need to have technology systems and processes that ensure we are making good decisions, and consistently improving our ability to provide power utilizing innovative technology that enables safety, reliability, and is cost effective.
- This program definitely enables people and performance but is also steadily making its impact with innovation. The Energy Resources area uses some technology that may be considered a differentiator in the marketplace (ADSS/Nucleus). The roadmap consists of other technology solutions that will allow for more innovation opportunity, once implemented.

2.7 Include why the requested amount above is considered a prudent investment, providing, or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated Energy Resources throughout the project

Avista's Energy Resources technology systems are a necessity, as they provide essential functions to Avista. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the Energy Resources and Enterprise Technology (ET) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher costs as a result of the deferment of upgrades and enhancements.

Investment prudence is reviewed by the Steering Committee to ensure alignment of initiatives through judiciously selected and implemented projects. The funding requested as part of this program generally fits these initiatives and are assigned to specific projects (with Steering Committee oversight) as they are identified. Also, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project steering committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

Energy Resources Modernization and Operational Efficiency Technology

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The Energy Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Energy Resources, Finance, and the Enterprise Technology (ET) Business Case Owner.

The ET Business Case Owner works in conjunction with the Product Owners, Project Management Office (PMO), assigned Program Manager, and subsequent Project Managers. The Business Technology Analyst (BTA) is also engaged at all levels and serves as a liaison between ET and Energy Resources.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments, but the Energy Resources team is regularly consulted, informed as this directly impacts Energy Resources stakeholders. This model is conducive to a strong partnership, which is key to managing all of the dynamic intricacies throughout the course of the budget year.

2.8.2 Identify any related Business Cases

This Business Case is a program that has been functioning for the last 5 years (prior to 2017, the majority of these projects were in the Technology Refresh and Technology Expansion Business Cases).

3.1 Steering Committee or Advisory Group Information

The Energy Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Energy Resources, and the Business Case Owner.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Energy Resources Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

The IOC evaluates and compares all of the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two constrains are established, the Business Case

Energy Resources Modernization and Operational Efficiency Technology

owner will work with steering committee(s) to set project priority and sequence over a five-year planning period, subject to additional funding changes as directed by the CPG.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

Project prioritization is evaluated by the management team on a weekly basis through the IOC. Each program and project steering committee meets regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

The undersigned acknowledge they have reviewed the *Energy Resources Technology Business Case Narrative* and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

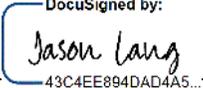
DocuSigned by:
 Signature: Brian Hoerner Date: Jun-30-2021 | 1:58 PM PDT
3AE7BA99E1F54CF...
 Print Name: Brian Hoerner
 Title: Application Delivery Manager
 Role: Business Case Owner

DocuSigned by:
 Signature: Jason Thackston Date: Jun-30-2021 | 2:34 PM PDT
EC91BFF9033645C...
 Print Name: Jason Thackston

Energy Resources Modernization and Operational Efficiency Technology

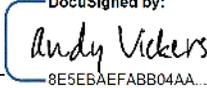
Title: Sr. VP Energy Resources & Env. Comp. Officer

Role: Business Case Sponsor

Signature:  Date: Jul-01-2021 | 7:26 AM PDT
Print Name: Jason Lang

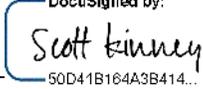
Title: Director, Finance Risk & Asst. Treasurer

Role: Business Case Governance

Signature:  Date: Jun-30-2021 | 1:56 PM PDT
Print Name: Andy Vickers

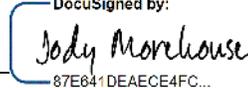
Title: Director, Generation, Production, and Substation Support

Role: Business Case Governance

Signature:  Date: Jul-01-2021 | 2:45 PM PDT
Print Name: Scott Kinney

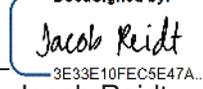
Title: Director, Power Supply

Role: Business Case Governance

Signature:  Date: Jun-30-2021 | 1:42 PM PDT
Print Name: Jody Morehouse

Title: Director, Gas Supply

Role: Business Case Governance

Signature:  Date: Jun-30-2021 | 5:52 PM PDT
Print Name: Jacob Reidt

Title: Manager, Project Delivery

Role: Business Case Governance

Enterprise and Control Network Infrastructure

EXECUTIVE SUMMARY

Technology that enables Avista’s safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to generation plants across our service territory. Managing our network technologies to optimize communications and operations of the enterprise and control systems in these locations is extremely important. Technology investments under the Enterprise and Control Network Infrastructure business case are needed to expand and maintain these network assets in support of system reliability and business productivity throughout our service territory, ensuring our ability to appropriately respond to the needs of our customers.

The technology solutions under the Enterprise and Control Network Infrastructure business case will vary by site location and the systems supported in each facility or environment. They will included, but are not limited to, emergency and safety systems, control systems, customer systems, and enterprise back office productivity systems. This infrastructure is core to utility operations, thus demanding reliable networks utilizing commercial carrier services and private network solutions. The cost of each solution will vary with the type of solution identified for the appropriate level of network access at each site. Avista and its customers will experience the benefits through ongoing system reliability.

The main driver behind this program is asset performance and capacity in alignment with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps and planned obsolesces. The technology solutions within this program undergo regular review to balance the asset management strategy within the predetermined budget allocations. The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increased safety risks in sending field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems supported. New investments will be required when existing assets do not provide adequate capacity, performance, and functionality.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Jim Ogle	Initial BCJN Draft	6/2017	
2.0	Shawna Kiesbuy	Revision of BCJN to new template	7/2020	

Enterprise and Control Network Infrastructure

GENERAL INFORMATION

Requested Spend Amount	\$35,365,826
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Technology that enables Avista’s safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to generation plants across our service territory. Managing our network technologies to optimize communications and operations of the enterprise and control systems in these locations is extremely important. Technology investments under the Enterprise and Control Network Infrastructure business case are needed to expand and maintain these network assets in support of system reliability and business productivity throughout our service territory, ensuring our ability to appropriately respond to the needs of our customers.

1.2 Discuss the major drivers of the business case (Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations) and the benefits to the customer

The main driver behind this program is asset performance and capacity in alignment with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps and planned obsolescence. The technology solutions within this program undergo regular review to balance the asset management strategy within the predetermined budget allocations.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to

Enterprise and Control Network Infrastructure

procure and replace the failed asset, increased safety risks in sending field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems supported. New investments will be required when existing assets do not provide adequate capacity, performance, and functionality.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Executing planned projects will refresh assets prior to the asset's obsolescence and in this way, the business case should be able to support the asset lifecycles and reduce the risk of failing assets affecting critical business systems, processes and infrastructure reliability.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

Reference materials that support the needed changes in Network technology are maintained by Technology Domain Architects within each respective technology area.

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

This business case is aligned with Performance & Capacity; not Asset Management.

Option	Capital Cost	Start	Complete
Asset replacement for optimized performance and capacity	\$35,365,826	01 2021	12 2025
Do not fund the program	\$0	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The main driver behind this program is performance and capacity aligned with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps, which can compound planned obsolescence. The asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages. Tracking of the assets' installation and lifecycle durations are maintained to plan the program projects over the course of future years driving the annual budget request to maintain the refresh roadmap.

Enterprise and Control Network Infrastructure

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

This business case includes network solutions for both expansion requirements and systematic refresh of existing devices that provide access to our enterprise and control networks. Life cycle schedules allow for a known number of assets, by type, to be refreshed based on impact and likelihood of realized risk to the environment. Historical costs and timelines provide indicators in support of the requested allocations above.

Through roadmapping activities and known pressures on existing network capacity, expansion work has been identified for each year. Again, using historical data along with current product cost estimates, the team developed a cost plan for work by year. Combined with the refresh work cost estimates, the overall business case request amount is determined.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (*ref. WUTC Docket No. U-190531 Policy Statement*), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

The projects in this program are standalone projects within the Enterprise and Control Network Infrastructure business case but are dependent on length of construction season and other geographically similar but unrelated work being performed at impacted substations. Through those projects, business functions and processes might be impacted but the technology upgrades being made at the varied locations throughout Avista's service territory should strive to increase performance and capacity for employees in their daily work life.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative 1: FUND PROGRAM BASED ON OPTIMIZED PERFORMANCE AND ASSET MANAGEMENT

Funding the Enterprise and Control Network Infrastructure business case minimally each year based on a reduced capital plan and request incremental increases as projects are completed. This would result in ad-hoc funding requests to the Capital Planning Group for work approved outside of the 5-year capital planning process.

Enterprise and Control Network Infrastructure

Alternative 2: DO NOT FUND THE PROGRAM

Enterprise and Control Network Infrastructure projects would not be funded. Enterprise network access, optimization and/or unfunded capacity management could result in minimized network capacity reducing the ability to perform ordinary and necessary daily business operations. Control network access, optimization and/or unfunded capacity management could result in minimized control network capacity reducing the ability to manage and control our generation and control system assets.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer, spend, and transfers to plant by year.

The Enterprise and Control Network Infrastructure business case is managed as a program of projects planned yearly. All individual projects are managed through the PMO, which follows the Project Management Institute (PMI) standards. Throughout the year, the business case's projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the scope requests which over the course of a calendar year equates to the funded budget allocation.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program with discrete projects that align with Avista's vision, mission and strategic objectives:

- The Enterprise and Control Network Infrastructure business case investments align with Avista's commitment to invest in its infrastructure to achieve optimal lifecycle performance – safety, reliability, and at a fair price. Network communications that monitor and control Avista enterprise networks and control networks are critical in support of the bulk electric system. The implementation of these network technologies will continue to enable and support these critical communications in a manner that is much safer to all workers and at all locations across Avista.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Enterprise and Control Network Infrastructure

Throughout the course of a year, all project requests are vetted before the Steering Committee to validate the request against the business case purpose and making sure the request can be delivered within the approved funding allocation.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the Enterprise and Control Network Infrastructure business case, the discrete projects interface with various internal Avista groups such as ET engineering, Substation engineering, GPSS and Generation Plants, the Telecommunications Shop, along with our internal business partners at various office and remote facilities.

Steering Committee members include Business Case Sponsors, Directors and Managers within the Enterprise Technology group along with the Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), the assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.1 Identify any related Business Cases

There are no related business cases.

Enterprise and Control Network Infrastructure

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to project deliverables outlined in this document, which also typically have an impact on the scope, schedule, or budget of a project. Steering Committee members will also provide approval on Change Requests, Go-Live, and the Approval to Close document. For the High Voltage Protection business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS and the Business Case Owner.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Enterprise and Control Network Infrastructure Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically in order to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope

Enterprise and Control Network Infrastructure

- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

Project prioritization is evaluated by the management team on a monthly basis. Each program and project steering committee meet regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

The undersigned acknowledge they have reviewed the Facilities Driven Technology Improvements business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:

DocuSigned by:
Shawna Kiesbuy

Date: Jul-31-2020 | 8:58 AM PDT

Print Name:

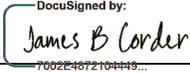
Shawna Kiesbuy

Title:

Sr. Manager, Network Engineering

Enterprise and Control Network Infrastructure

Role: Business Case Owner

Signature: 

Date: Aug-03-2020 | 5:52 PM PDT

Print Name: Jim Corder

Title: IT Director

Role: Business Case Sponsor

Signature: _____

Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Enterprise Communications

EXECUTIVE SUMMARY

Communication is at the very essence of human interaction, and thus a pillar of business processes. The most basic form of communication among human beings is face-to-face, which allows for both verbal and non-verbal signals to be exchanged, resulting in the most riches of interaction. However, today's world requires that communication be conducted beyond face-to-face to reach people regardless of time and location. Moreover, it enables business processes beyond people, but across systems that communicate with one another to exchange data in near-real time, such as a phone call, or to make information available on demand like an email waiting in your inbox accessible from any mobile device or location.

The primary driver for the Enterprise Communication Systems business case is performance and capacity, whereby the Company balances the need to meet performance standards and system reliability for the various technologies under this program with annual budget allocations, and their respective technology lifecycles.

Being no different than most businesses, Avista requires continuous communication among our staff and customers throughout our service territory. However, to do it effectively, we require communication technology for greater agility, flexibility, and scalability to enable many business processes, such as 24 x 7 x 365 communication with our gas and electric customers by telephone, fax, or email. Additionally, email, instant messaging, text and collaboration platforms support a digital workforce that during the COVID-19 pandemic proved very effective in supporting remote work during 'stay at home' orders issued by state governments throughout our service territory.

The costs associated with each solution can vary by the scale of the solution deployed, as well as vendor licensing models. Therefore, each technology under this program undergoes regular review of the levels of utilization and performance to determine if it is meeting the expected performance standards and capacity requirements to maintain system reliability under the established budget allocations. These reviews can result in calling for additional investment under this program from time to time for technology either falling behind technology lifecycles or predetermined performance standards, which can pose risk to communication system reliability or degradation that may delay communication channels and result overall processing delays.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	6/2017	1.0
1.1	Walter Roys	Update Investment Driver	7/2019	1.1
2.0	Walter Roys	Revision of BCJN to new template	7/2020	2.0

Enterprise Communications

GENERAL INFORMATION

Requested Spend Amount	\$13,084,123
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Communication technology enables business processes beyond people exchanging information, but across systems that communicate with one another to exchange data in near-real time.

Communications technology is not only subject to the traditional mortality rate or lifecycle, but it is compounded by planned obsolescence, also known as technology obsolescence¹. Technology obsolescence is defined as when the technology asset, although within its functional lifespan, is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology (with greater performance or capacity) that is available in the market.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The Enterprise Communications Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps with an objective to maintain infrastructure performance and align infrastructure assets with business demand for capacity. Therefore, the major driver for this business case is Performance & Capacity.

¹ Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Enterprise Communications

All Avista customers benefit from maintaining communication systems, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

All Avista business functions are affected by this business case, as it enables all day-to-day work activities and automated business processes around communications. From service center to call center to field work, every worker requires communications systems technology to perform their business function and deliver gas and electric service to our customers. Every customer service call is enabled by this technology. Communications technology has been critical in keeping our workforce connected, while many of our staff are required to work remotely to minimize risk to those in roles of critical operations.

Reliance on obsolete communications technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process, which can result in delay response times to meet business demands and customer needs. Additionally, in some cases there is no manual solution that can replace automated communication systems that provide near-real time communication solutions.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Enterprise Technology team references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Enterprise Communications

Directions on Roadmaps, Independent IT Planning Information and Advisory Service focused exclusively on Microsoft enterprise software and services. Retrieved from <https://www.directionsonmicrosoft.com/> Gartner Industry Research and Reference Material. Retrieved from <https://www.gartner.com/en/information-technology>

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Not applicable, as the investment under this program business case is to maintain performance and capacity standards in each respective enterprise communications technology.

This program will manage technology replacement according to manufacturer product roadmaps with an objective to maintain infrastructure performance and align infrastructure assets with business demand for capacity.

The recommended solution is to address approximately 75% of obsolete products and capacity constraints (Recommended). This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. To minimize the impact of this risk, the Program Steering Committee will manage project sequence according to the investment priority documented in section 3.2.

Option	Capital Cost	Start	Complete
Recommended Solution – Address ~75% of obsolete products and capacity constraints	\$13,084,123	01/2021	12/2025
Alternative #1 - Address 100% obsolete products and capacity constraints	\$17,195,000	01/2021	12/2025
Alternative #2 - Address 50% of obsolete products and capacity constraints	\$8,597,000	01/2021	12/2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The funds request was based on a calculation of the asset lifecycle associated with each technology asset, the scope of the technology footprint across our service territory, and historical project costs for technologies previously refreshed under this business case. Through regular reviews, the program balances the need to meet system performance and reliability standards for the various technologies under this program within annual budget allocations, and their respective technology lifecycles. These reviews can result in calling for additional investment under this program from time to time for technology either

Enterprise Communications

falling behind technology lifecycles or predetermined performance and reliability standards.

A product obsolescence working group, consisting of Technology Domain Architects, maintains technology roadmaps to inform Program Steering Committee members of project demand. Project demand is assessed against funding constraints each year and prioritized based on risk of technology impact to the business. Various data points inform the team's decisions and recommendations, which include, but are not limited to vendor-driven obsolescence, compute capacity and storage, historical project costs for similar type projects, etc.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

The funding requested under the Enterprise Communication Systems Business Case will be invested in the following technologies:

- Instant messaging systems
- Contact Center automatic call distribution system
- Contact Center scheduling and QA systems
- Customer interactive voice response (IVR) system
- Voice recording systems
- Electronic mail and calendar system
- Voicemail system
- Telephone systems
- Teleconferencing systems
- Video conferencing systems
- Conference room technology
- Media Walls
- Enhanced 911 emergency services
- Electronic fax systems
- Paging systems
- Application systems to manage enterprise communication technology

Investment in these technologies can result in added O&M expenses from licensing increases from time to time. However, not funding this business case may result in removing automated business functions, which will either cause delay in meeting business and customer demands or completely change whether we can even respond to business and customer demands. There are no O&M reductions or offsets resulting from these investments, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

Enterprise Communications

Reliance on obsolete technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process. Sustaining automated business process by replacing automation with workforce would increase labor expense.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. These upgrades can in turn drive subsequent system replacements, creating a cascading event of change. Therefore, vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

All Avista business functions are affected by this business case, as it enables all day-to-day work and communications activities and automated business processes. From service center to call center to field work, every worker requires enterprise communication technology to perform their business function and deliver gas and electric service to our customers. This technology is even more important in a work from home environment to keep employees and departments connected while minimizing risk to essential employees.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Retire assets and remove automation

This option assumes the assets would not be replaced upon end of life and be removed from service due to product incompatibility, business risk or safety risk.

The basis for measuring the business impact of not funding this business case is realizing the loss of business process automation. As products reach the manufacturer-defined planned obsolescence, business process automation is jeopardized, and business risk is increased as manufacturers cease product maintenance and support. This condition would drive action. The alternative could lead to a mitigation plan of having to re-instate manual business process or eliminate the business process.

Address 100% of obsolete products and capacity constraints

This is the optimal solution. This option fully addresses and minimizes the likelihood of technology impact to automated business process.

Enterprise Communications

Address 50% of obsolete products and capacity constraints

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. Interoperability constraints may force unplanned funding requests. Multi-year, complex projects are at risk of completion prior to product obsolescence. This option impacts the workforce.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer, spend, and transfers to plant by year.

This business case is a program that transfers to plant the total cost of each project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

Each investment under this business case program allows Avista to deliver electric and gas services to our customers.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The reason that the technology investment under this program business case is prudent is because communication is at the very essence of human interaction, and thus a pillar of business processes. As such, the Avista workforce requires this technology every to deliver gas and electric service to our customers either in an office, customer service center or in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process would either stop or be removed, thereby crippling our workforce's ability to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

Enterprise Communications

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce interface with the technology investments under this business case. Selected leaders in organizational business units, known as technology stakeholders, work closely with the technology teams to help with business roadmaps, use case definition, gather non-functional requirements, test design, and deployment approaches to inform technology investments.

2.8.2 Identify any related Business Cases

The technology investment under this business case requires deployment and use of outputs from other business cases, specifically delivery on personal computers and servers, connecting to a virtual private network or cloud service, security updates and patching, etc.

3.1 Steering Committee or Advisory Group Information

The **Enterprise Communication Systems** Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

3.2 Provide and discuss the governance processes and people that will provide oversight

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically and will consist of projects needed to maintain the reliability and performance of all enterprise communication systems.

Enterprise Communications

Technology product roadmaps identify investment demand that is generally not fully funded. Technology product investments are prioritized in this manner:

- 1) Safety Systems
- 2) Control Systems
- 3) Customer Facing Systems
- 4) Back Office Systems

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

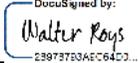
The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

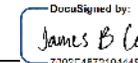
3.3 How will decision-making, prioritization, and change requests be documented and monitored

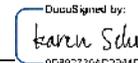
The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

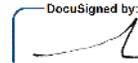
Enterprise Communications

The undersigned acknowledge they have reviewed the Enterprise Communications Systems and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Jul-30-2020 | 11:51 AM PDT
 Print Name: Walter Roys
 Title: System Engineering Manager
 Role: Business Case Owner

Signature:  _____ Date: Aug-03-2020 | 5:43 PM PDT
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

Signature:  _____ Date: Aug-03-2020 | 6:36 PM PDT
 Print Name: Karen Schuh
 Title: IT Program Manager
 Role: Steering/Advisory Committee Review

Signature:  _____ Date: Aug-04-2020 | 7:27 AM PDT
 Print Name: Andy Leija
 Title: ET PMO Manager
 Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Environmental Control & Monitoring Systems

EXECUTIVE SUMMARY

Technology that enables Avista’s safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to call centers across our service area. Managing the facility and power environments to optimally run the systems housed in these locations is extremely important, as environmental condition changes can adversely affect them. The parameters monitored and controlled include but are not limited to temperature, humidity, fire protection, and backup power supply systems. If these parameters should fall outside of the device specification levels, it can cause damage to the technology equipment impacting business automation processes.

The technology solutions under the Environmental Control & Monitoring Systems business case will vary by site location and systems supported in each facility or environment. They may include uninterrupted power sources to allow systems to continue operating while waiting for an auxiliary power source to come online, such as an emergency generator. In fact, on a mountain top, heated and cooled enclosures are critical to assuring technology housed in that facility is maintained at the proper temperature despite changes in outside weather. The cost of each solution will vary with the type of solution identified for each site. However, location can also affect cost based on the remoteness and extreme conditions affecting that particular location. Avista and its customers can experience the benefits through ongoing system reliability.

The main driver behind this program is asset condition aligned with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps, which can compound planned obsolescence. The asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages. The technology solutions under this program undergo regular review to balance the asset management strategy within the predetermined budget allocations. The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increase safety risk to send field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems that it supports.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Michael Busby	Original business case request	7/2017	
1.1	Michael Beil	Updated investment driver	7/2019	
2.0	Michael Busby	Narrative added to new template	7/2020	

Environmental Control & Monitoring Systems

GENERAL INFORMATION

Requested Spend Amount	\$5,000,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Michael Busby Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Asset Condition

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Technology that enables Avista’s safety, control, customer-facing, and back office systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to call centers across our service area. Managing the facility and power environments to optimally run the systems housed in these locations is extremely important, as environmental condition changes can adversely affect them. The parameters monitored and controlled include but are not limited to temperature, humidity, fire protection, and backup power supply systems. If these parameters should fall outside of the device specification levels, it can cause damage to the technology equipment impacting business automation processes.

1.2 Discuss the major drivers of the business case (Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations) and the benefits to the customer

The main driver behind this program is asset condition aligned with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps, which can compound planned obsolescence. The asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The technology solutions under this program undergo regular review to balance the asset management strategy within the predetermined budget allocations. The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increase safety risk to send field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems that it supports.

Environmental Control & Monitoring Systems

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The main driver behind this program is asset condition aligned with asset management strategies driven by technology lifecycles. Executing planned projects will refresh assets prior to the asset’s obsolescence and in this way, the business case should be able to support the asset lifecycles and reduce the risk of failing assets affecting critical business systems and processes.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

See below for supporting details.

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

EMERGENCY GENERATORS (EGEN)

Emergency Generator assets are located at facilities where critical technologies are located. We currently have 16 generators in portfolio. They have a 20-year life cycle.

Age	Count
0-5 Yrs.	2
5-10 Yrs.	7
10-15 Yrs.	1
15-20 Yrs.	1
20-25 Yrs.	0
> 25 Yrs.	5
Total	16

We have 5 generators that are past their end of life and need to be refreshed. We have 2 generators that will reach their end of life over the next 5 years.

UNINTERRUPTIBLE POWER SYSTEMS (UPS)

Uninterruptible power systems used to provide AC or DC power voltages to equipment during the loss of utility power events and/or during emergency generator startup. We currently have 59 UPS systems in portfolio. They have a 5-year life cycle.

Age	Count
0-1 Yrs.	5
1-2 Yrs.	9
2-3 Yrs.	5
3-4 Yrs.	16

Environmental Control & Monitoring Systems

4-5 Yrs.	4
> 5 Yrs.	20
Total	59

We have 20 UPS systems beyond their end of life. 4 of these will be addressed in 2020.

DC RECTIFIERS

DC Rectifier systems are used to convert AC power to DC power. Some of Avista's technology assets have DC power supply requirements. We have 69 DC Rectifiers in portfolio. They have a 10-year life cycle.

Age	Count
0-3 Yrs.	6
3-6 Yrs.	6
6-9 Yrs.	25
9-12 Yrs.	7
12-15 Yrs.	0
> 15 Yrs.	25
Total	69

We have 25 Rectifiers beyond their end of life. We will have 7 more Rectifiers reach their end of life within the next 5 years.

DC BATTERIES

DC Batteries store electrical energy used to provide power to technology equipment during loss of AC power event. We have 2 type of DC batteries in portfolio. A standard and a "Long Life" Valve Regulated Lead Acid (VRLA) battery. The Standard VRLA battery has a 5-year life cycle. The "Long Life" VRLA battery has a 15-year life cycle. We currently have 55 Standard VRLA battery banks and 11 "Long Life" Battery banks in portfolio.

5 Year Lifespan		15 Year Lifespan	
Age	Count	Age	Count
0-1 Yrs.	2	0-3 Yrs.	0
1-2 Yrs.	11	3-6 Yrs.	0
2-3 Yrs.	4	6-9 Yrs.	1
3-4 Yrs.	1	9-12 Yrs.	1
4-5 Yrs.	1	12-15 Yrs.	5
> 5 Yrs.	36	> 15 Yrs.	4
Total	55	Total	11

Environmental Control & Monitoring Systems

36 of the Standard VRLA battery banks are beyond their end of life, 14 of which are planned to be replaced in 2020. 4 “Long Life” VRLA battery banks are beyond their end of life. 6 “Long Life” VRLA Battery banks will reach end of life over the next 5 years.

HVAC SYSTEMS

HVAC Systems monitor and control the environments temperature and/or humidity. Avista’s technology assets may experience physical damage if operated in temperatures and/or humidifies outside of their specifications. We do not currently have a good inventory of our old HVAC systems. The old HVAC systems are simple in wall Air conditioning units. As they are failing, we are replacing them with a more industrial grade systems with heat pump capabilities. There are 9 new HVAC systems in portfolio. The new HVAC systems have a 20-year life cycle. None of them will reach end of life within the next 5 years.

Option	Capital Cost	Start	Complete
Optimized Asset Replacement	\$5,000,000	01 2021	12 2025
Asset Replacement when Obsolete	\$7,965,000	01 2021	12 2025
Asset Replacement upon Failure	\$6,207,500	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The main driver behind this program is asset condition aligned with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps, which can compound planned obsolescence. The asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages. Tracking of the assets’ installation and lifecycle durations are maintained to plan the program projects over the course of future years driving the annual budget request to maintain the refresh roadmap.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

The requested capital cost amount per year has been calculated to deliver projects which align with the asset lifecycles that are based on manufacturer product roadmaps. This asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages. The technology solutions under this program undergo regular review to balance the asset management strategy within the predetermined budget allocations. The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increase safety risk to send field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems that it supports.

Environmental Control & Monitoring Systems

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Technology that enables Avista’s safety, control, customer-facing, and back office systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to call centers across our service area. Managing the facility and power environments to optimally run the systems housed in these locations is extremely important, as environmental condition changes can adversely affect them. The parameters monitored and controlled include but are not limited to temperature, humidity, fire protection, and backup power supply systems. If these parameters should fall outside of the device specification levels, it can cause damage to the technology equipment impacting business automation processes. Maintaining the environmental assets through this business case allows for the refresh of the asset proactively in order to not affect the critical business functions and processes housed at these locations.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative 1: Asset Replacement When Obsolete

This alternative maintains all Environmental Control and Monitoring systems in alignment with product lifecycles. This is not the recommended option because it would result in high variability in funding and staffing levels throughout the 5-year plan.

Alternative 2: Asset Replacement upon Failure

This alternative replaces equipment only upon failure. This option introduces high risk to the company because failed assets will create significant loss of automated business processes. Mitigating this loss will result in increased asset management costs to maintain spare inventory. These costs are not accounted for in the estimate. This option assumes 50% of all obsolete assets will fail or become incompatible.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

The Environmental Control and Monitoring Systems business case is managed as a program of projects planned yearly which align with asset lifecycles that are based on manufacturer product roadmaps. All individual projects are managed through the PMO, which follows the Project Management Institute (PMI) standards. Throughout the year, the business case’s projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the installed assets which over the course of a calendar year equates to the funded budget. Within this business case, there is one blanket project for battery refreshes which Transfers to Plant on a monthly basis.

Environmental Control & Monitoring Systems

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program with discrete projects that align with Avista's vision, mission and strategic objectives:

- To provide Better Energy for Life, you need systems that function at an optimal level to deliver electricity and gas in a safe and reliable manner. The team supporting the environmental control and monitoring systems is highly skilled and responsive to the needs of these systems so critical business services continue to be delivered without interruption.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Based on the individual asset data listed above, the requested funding amount will allow for a group of discrete projects each year which will strive to maintain a refresh cycle ahead of the assets' obsolescence reducing the risk of unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increase safety risk to send field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems that it supports.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Within the Environmental Control and Monitoring Systems business case, the projects interface with various internal Avista groups such as ET engineering, the Telecommunications Shop, real estate, contracting, and accounts payable to name a few. While in the field, the teams also interface with landowners, local governments, environmental groups, and others related to mountaintop sites, office locations, and shared substations.

Steering Committee members include Business Case Sponsors, Directors and Managers within the Enterprise Technology group long with the Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), and assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.2 Identify any related Business Cases

There are no related business cases currently.

Environmental Control & Monitoring Systems

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to project deliverables outlined in this document, which also typically have an impact on the scope, schedule, or budget of a project. Steering Committee members will also provide approval on Change Requests, Go-Live, and the Approval to Close document. For the Environmental Control and Monitoring business case, the Steering Committee will consist of the Directors and Managers within ET and the Business Case Owner.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Environmental Control and Monitoring systems Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically and will consist of projects needed to maintain the reliability and performance of all Environmental Control and Monitoring systems.

Product roadmaps identify investment demand that is generally not fully funded. Product investments are prioritized in this manner:

- 1) Safety Systems
- 2) Control Systems
- 3) Customer Facing Systems
- 4) Back Office Systems

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

Environmental Control & Monitoring Systems

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

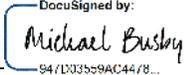
Project prioritization is evaluated by the management team on a weekly basis. Each program and project steering committee meet regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

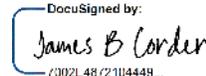
Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

Environmental Control & Monitoring Systems

The undersigned acknowledge they have reviewed the Environmental Control & Monitoring Systems business case narrative and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Jul-30-2020 | 1:40 PM PDT
 Print Name: Michael Busby _____
 Title: Mgr., IT Operations _____
 Role: Business Case Owner _____

Signature:  _____ Date: Aug-03-2020 | 3:17 PM PDT
 Print Name: Jim Corder _____
 Title: IT Director _____
 Role: Business Case Sponsor _____

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Committee Review _____

Template Version: 05/28/2020

ET Modernization and Operational Efficiency

EXECUTIVE SUMMARY

As the utility industry undergoes transformation into digitalization, the growth of business application technology continues to enable automation and manual business processes to provide safe and reliable gas and electric service to our customers. This growth in business application technology creates an intricate tapestry that require ancillary tools and systems to deliver and support Company-wide solutions. Essentially, business application technology requires shared platforms and management tools to increase the quality, stability, and delivery velocity to meet business goals and meet expectations from our customers.

The Enterprise Technology (“ET”) Modernization and Operational Efficiency Business Case is primarily driven by performance and capacity to support business application implementation, development, operations, support, delivery automation, and data delivery. Put another way, this program focuses on the tools and systems used by the technology teams to deliver solutions to the rest of the organization.

The cost of these solutions varies by scale of footprint and vendor licensing models. Therefore, technology under this program undergoes regular review of the levels of utilization and performance to determine if it is meeting the expected performance standards and capacity requirements to maintain business application system reliability under the established budget allocations, and their respective technology lifecycles. These reviews can result in calling for additional investment under this program from time to time for technology either falling behind technology lifecycles or predetermined performance standards. The technology tools and systems under this program benefit all Avista customers, as they support business application systems throughout the Company. Not approving this business case or its recommended funding can pose risks to the reliability of the tools and systems the technology team uses to support the rest of the organization.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Jason Pegg	Initial BC Narrative 1.0	7/2017	1.0
2.0	Andy Leija	Revised BC Narrative 2.0	7/2020	2.0

ET Modernization and Operational Efficiency

GENERAL INFORMATION

Requested Spend Amount	\$10,252,000
Requested Spend Time Period	5 Years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Andy Leija Hossein Nikdel, Pat Dever, Clay Storey, Jim Corder, Jim Kensok
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

The growth in business application technology, as part of the transformation of the utility industry, requires ancillary tools and systems to deliver and support Company-wide technology solutions. Essentially, business application technology requires shared platforms and management tools to increase the quality, stability, and delivery velocity to meet business goals and meet expectations from our customers. These platforms and tools fit into two categories, those shared across the entire Avista Organization and those specific to the needs of the Enterprise Technology (ET) department as tools to support business applications.

1.2 Discuss the major drivers of the business case (Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations) and the benefits to the customer

The Enterprise Technology Modernization and Operational Efficiency (ETMOE) Business Case is primarily driven by performance and capacity to support business application implementation, development, operations, support, delivery automation, and data delivery. Put another way, this program focuses on the tools and systems used by the technology teams to deliver solutions to the rest of the organization. The technology tools and systems under this program benefit all Avista customers, as they support business application systems throughout the Company.

ET Modernization and Operational Efficiency

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

These technology platforms and tools provide functional enhancements that address ongoing changes in the workplace, provide increased employee efficiency through the reduction of steps required to complete a task, and make better use of Avista resources. They shift efforts from inefficient processes to more value-driven activities by leveraging the technology to meet both planned and unplanned business needs.

Not approving the technology investments under this business case results in technology platforms and tools falling behind their technology vendor required upgrades, which in turn hinders any support needed for business applications or information storage and workflow management used daily for investment planning and delivery, managed file transfers, pre-production testing, and technology lifecycle management. For example, this is very similar to not furnishing a mechanic with either the tools or equipment necessary and required to fix a car when it breaks down or does not perform as expected. The technology teams would be hindered in their ability to assist or repair business applications and their respective information storage and workflows when they become unresponsive or inoperable, especially for reoccurring issues where root cause analysis is necessary to prevent future events or incidents.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements for existing technology under the ETMOE program, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk to supporting business application systems and their corresponding and respective automated business processes.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

ET Modernization and Operational Efficiency Monthly Stakeholder and Steering Committee teams references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

ET Modernization and Operational Efficiency

- Roadmaps for specific platforms and tools, such as Opentext (for Enterprise Content Management) and Biztalk (for Enterprise Service Bus) are examples of vendor roadmaps regularly referenced.
- Gartner Industry Research and Reference Material. Retrieved from <https://www.gartner.com/en/information-technology>

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Not applicable, as the investment under this program business case is to maintain performance and capacity standards in each respective technology that falls within it.

Option	Capital Cost	Start	Complete
Recommended Solution – Fund at level to sustain existing technology tools and enterprise-wide systems, including required license renewals	\$10.252 M	01 2021	12 2025
Alternative #1 – Reduced funding by deferring license renewal funding requests into the in-year CPG review process	\$8.7 M	01 2021	12 2025
Alternative #2 – Reduced funding by removing IT Service Management investment to upgrade outdated Tracker/Resource Library custom-coded system	\$8.252 M	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

These estimates were derived from calculated employee and contract labor costs for the primary teams working in this business case area, as well as historical trends, product roadmaps and high-level industry estimates for technology products. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s).

Upstream investment in enhancements and upgrades to these platforms can result in savings by not incurring downstream costs when applications break, or simply stated, avoid costs associated with system inoperability that can hinder worker productivity. Non-production systems (such as Azure DevOps) allows the organization to test enhancements, upgrades and new implementations prior to deployment in production. This results in reduced errors in production systems, which could also affect employees and customers negatively, from untested changes or upgrades.

ET Modernization and Operational Efficiency

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

The funding requested under the ETMOE Business Case will be invested in technology, such as:

- **IT Incident and Asset Management** – Replacements for existing, custom-coded, and outdated IT incident and asset management tools (Tracker and Resource Library) to support Avista’s technology service workflows, incident, and asset management.
- **Content and Workflow Platforms** – Enhancement and upgrades for platforms that allow for content storage and sharing, such as ECM and SharePoint, as well as organizational workflows.
- **Non-production Environment & Data Management** – Enhancements and new system implementations required to support continuous integration, QA and other automations, data management, and new development environments (which improves developer efficiency and overall systems security).
- **ET Portfolio Management** – Ongoing enhancements to portfolio and project management systems to support the evolving needs of technology investment planning and delivery, while capturing contemporaneous project artifacts that document governance.
- **Application Lifecycle Management Tools** – Ongoing enhancements to the systems and platforms that support application development, delivery, and integration for consistent deployment and delivery of changes and upgrades on a multitude of business application systems that enable business processes across the organization.
- **Shared Systems and Tooling** – Ongoing enhancements to and expansion of automation and tracking tools (such as AppDynamics) that provide Operations and Software Development teams with insight into application usage, issues, network connectivity, and more. Also includes integration of systems across Avista utilizing Microsoft Biztalk to assist in process and information sharing for platforms supported by other business cases such as CC&B and Maximo.
- **Managed File Transfer** – Ongoing enhancements to and expansion of Avista’s managed file transfer system (GlobalScape), which allows for the secure transfer of data from one location to another, both internally and externally. This can include transactions with sensitive and highly sensitive information.

ET Modernization and Operational Efficiency

Reliance on obsolete technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process. In some cases, reinstating manual processes is not even an option, as technology has completely introduced system requirements in information storage, access, and transactions among systems greater and faster than any human being is able to store, access, or transact. Sustaining automated business process by replacing automation with workforce would increase labor expense in the few areas where removing business process automation is possible.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. These upgrades can in turn drive subsequent system replacements. Therefore, vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure.

Impacts to O&M can occur and be both positive and negative as a result of multi-year, pre-pay license agreements that are capitalized under this business case. However, these changes can vary from year to year depending on the system or tool up for license renewal and the licensing model being offered by the technology vendor. This makes forecasting product license renewal costs quite challenging.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

These technology platforms are used by all areas of the organization, or they furnish tools for the technology team to support other business application systems. The business function or processes that may be impacted include, but are not limited to:

- Meeting gas Maximum Allowable Operating Pressure (MAOP) compliance document storage requirements and labor relations bargaining unit documentation and decisions;
- Workflow management used daily for Accounts Payable invoice processing and approvals;
- Investment planning and delivery for technology investments across the organizations, including project management and artifact storage and approval workflows;
- Near real time transaction of data from enterprise systems, such as our customer care billing and asset management system;

ET Modernization and Operational Efficiency

- Managed file transfers for internal and external movement of information among systems and third parties;
- Pre-production environment testing and quality assurance tools to minimize or avoid errors in production systems from upgrades or changes to application business systems;
- Root cause analyses tool to identify cause for faster operational remediation;
- Information storage for technology lifecycle management, and
- Workflow processes for technology incident management and change approval.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative #1 – Reduced funding by deferring license renewal funding requests into the in-year CPG review process

One alternative is to defer funding to support license renewals to in-year requests from the Capital Planning Group (CPG). For example, multi-year, pre-pay renewal for a root cause identification and analysis tool, such as App Dynamics could be deferred until the renewal year with a funding request to the CPG. The risk of deferring this funding request is that if the funds are not available during the required period, the license renewal can lapse, thereby leaving the system out of software license compliance and in some cases losing access to functionality from the technology vendor.

Alternative #2 – Reduced funding by removing IT Service Management investment to upgrade outdated Tracker/Resource Library custom-coded system

This alternative would remove the IT Service Management project from the roadmap and replace it with a smaller amount of funding (\$100,000 per year) to attempt enhancements to our existing tools, Tracker and Resource Library. This Alternative runs the risk of keeping Avista on tools that are written in outdated, custom code. There is also no guarantee that these existing systems can be enhanced to the degree necessary to meet the required capabilities of technology asset management and incident management.

So, while feasible, these funding alternatives reduce efficiencies, increase complexity in system interoperability, and add risk to system reliability, which can put our workforce at peril of not being able to perform their job functions.

ET Modernization and Operational Efficiency

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. spend, and transfers to plant by year.

This business case is a program that transfers to plant the total cost of each sub-project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The technology investments under this business case program align with Avista’s vision to deliver ‘better energy for life’ to our customers and in the area of ‘Perform’, which calls for “our focus on performance today to serving our customers well and unlocking pathways to growth.”

Each investment under this business case program allows Avista to maintain system reliability to deliver electric and gas services to our customers.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The platforms and tools under the ETMOE Business Case provide essential functions to Avista’s workforce and customers throughout all service territories. These vital systems require systematic upgrades and enhancements to maintain reliability, interoperability, and reduce security vulnerabilities.

The reason that the technology investment under this program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in an office, customer service center or in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process would either stop or be removed, thereby crippling our workforce’s ability to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

ET Modernization and Operational Efficiency

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce interface with the technology investments under this business case, depending on the application systems being used to perform any given business function. In some cases, the technology investments are primarily interfacing with the technology operations teams whose job is to support business application systems.

The stakeholders that interface directly with the business case include, the ETMOE Business Case Sponsors and Owner who work in conjunction with the assigned Program Manager, and subsequent Project Managers. The Business Technology Analyst (BTA) team is also engaged at all levels.

2.8.2 Identify any related Business Cases

The ET Modernization and Operational Efficiency Business Case works closely with all other Enterprise Technology business cases to determine which platforms and tools provide functionality to all areas of the business, as opposed to department specific platforms and tools that respond to specific business unit needs.

3.1 Steering Committee or Advisory Group Information

The **ETMOE** Business Case consists of Program Steering Committees and the Project Steering Committee for respective project investments.

The ET Modernization and Operational Efficiency Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

The IOC evaluates and compares all the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC.

The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise. The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two constraints are established, the Business Case owner will work with steering committee(s) to set project priority

ET Modernization and Operational Efficiency

and sequence over a five-year planning period, subject to additional funding changes as directed by the CPG.

3.2 How will decision-making, prioritization, and change requests be documented and monitored

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

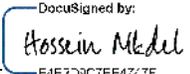
The undersigned acknowledge they have reviewed the *Enterprise Technology Modernization and Operational Efficiency* and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Jul-30-2020 | 7:03 PM PDT
DocuSigned by: 8458C8EEF402487...

Print Name: Andy Leija

Title: IT Manager

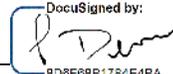
Role: Business Case Owner

Signature:  Date: Jul-31-2020 | 7:44 AM PDT
DocuSigned by: E4E2D9C7EE477F...

Print Name: Hossein Nikdel

Title: Director, App and Sys Planning

Role: Business Case Sponsor

Signature:  Date: Aug-01-2020 | 8:03 AM PDT
DocuSigned by: 8D8F68B1784E4BA...

Print Name: Pat Dever

Title: Director, Data Science

Role: Business Case Sponsor

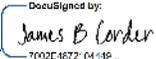
Signature:  Date: Jul-31-2020 | 2:54 PM PDT
DocuSigned by: D70F96796D4D5...

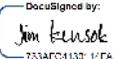
Print Name: Clay Storey

Title: Director, Enterprise Security

Role: Business Case Sponsor

ET Modernization and Operational Efficiency

Signature:  _____ Date: Aug-03-2020 | 3:20 PM PDT
 Print Name: Jim Corder
 Title: Director, Infrastructure Technology
 Role: Business Case Sponsor

Signature:  _____ Date: Aug-03-2020 | 3:26 PM PDT
 Print Name: Jim Kensok
 Title: Chief Info. & Security Officer
 Role: Business Case Sponsor

Fiber Network Leased Service Replacement

EXECUTIVE SUMMARY

Technology that enables Avista’s safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. Avista utilizes leased fiber optic cables to transport primarily Emergency and Control network data. Avista’s current contracts for leased fiber network services expire in 2027. Transitioning Avista’s Emergency and Control network data from leased network services to private network infrastructure will align with the long-term network strategy to maintain control of these critical data sources and reduce expense costs to the company.

The technology solutions under the Fiber Network Leased Service Replacement business case will vary by site location. There are 54 known outstanding segments to be replaced and they are represented in the estimated build costs per segment, which collectively provides the overall funding need. Failure to accomplish this work by the end of the existing lease date would add significant costs to the leased circuits still in service at the end of the contract. Avista and its customers can experience the benefits through ongoing system reliability and appropriate oversight and management of our networks serving our Emergency and Control network data. The main driver behind this project is performance and capacity, driven by the total cost of ownership of the networks required for Emergency and Control data and assets.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Michael Busby	Original business case request	7/2017	
1.1	Michael Beil	Updated investment driver	7/2019	
2.0	Shawna Kiesbuy	Narrative added to new template	7/2020	

Fiber Network Leased Service Replacement

GENERAL INFORMATION

Requested Spend Amount	\$15,200,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Avista utilizes leased fiber optic cable to transport primarily Safety and Control (S&C) data. The leased fiber is an operating expense. The lease rates were established during the sale of Avista Communication’s subsidiary. An Indefensible Right to Use (IRU) was established to benefit Avista Utilities with rates well below market. The IRU expires in 2027 with an option to renew for 5 years.

Transitioning Avista’s S&C network data from leased network services to private network infrastructure aligns with the long-term network strategy and will reduce risk along with Operate & Maintain (O&M) costs to the company.

The project work started in 2018 and identified at least 54 segments and a total of approximately 200 miles of leased fiber to be replaced with Avista owned private fiber. The anticipated complexity associated with rights of ways, permitting, construction and coordination with other parties such as city/county planning departments, contractors and internal Avista departments, or to partner with complementary projects, will influence the pace of work to complete the transition to private fiber is important to successfully meet the 2027 deadline.

1.2 Discuss the major drivers of the business case (Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations) and the benefits to the customer

Investment in private network transport and technology to service S&C communication systems is an established industry standard. The private network investment is designed to best fit the communication requirements of industrial control and safety systems. The reliability and predictability of a private network is a business value. Public carrier leased services are best fit for customer and back office communications. The investment in private network is tied to the Performance & Capacity investment driver.

Fiber Network Leased Service Replacement

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The work to move from leased fiber to private fiber is timebound by the expiration of lease agreements all of which are due to end by 2027. As noted above, there are many factors that can consume periods of time per segment to complete the work and therefore any delays in executing on this work would risk the ability to finalize work and therefore terminate contracts for leased segments per current agreements. There is also benefit to the company by having full control over fiber segments for these critical E&C communication paths.

While the current agreements may allow for extension of the lease terms, there are increased O&M costs to do so. Avista is proactively working to prevent any additional O&M costs by implementing privately owned fiber prior to having to execute on any lease extensions.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Timely implementation and transfer to plant such that all segments are completed prior to an IRU or segment lease expiration will determine success. The completion and transfer to plant will occur over time as each segment/project is completed.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The leased fiber terms detail costs associated with the expiration date.

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

This business case is aligned with Performance & Capacity.

Option	Capital Cost	Start	Complete
Recommended Solution - Replace each identified segment of leased fiber optic cable with Avista owned/private fiber to meet the fiber lease agreement deadline.	\$15,200,000	01 2021	12 2025
Alternative #1 – Fund at 80%, and risk not meeting the fiber lease agreement deadline in 2027, resulting in higher unplanned O&M annual costs	\$12,160,000	01 2021	12 2025
Do not fund the program	\$0	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The requested amount of \$15,200,000 reflects the total estimated cost of implementing Avista privately owned fiber optic cable for all applicable IRU segments through the year 2025. Yearly allocation and project prioritization are

Fiber Network Leased Service Replacement

set based on the output of annual budget planning activities. These activities take into account estimated completion dates of in-flight work, areas of high risk, and length of the construction season. Adjustments are requested and approved by the Steering Committee throughout each calendar year to accommodate any changes to the plan.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

The technology improvements invested under this business case benefit all customers across our service territory by investing in the privately-owned fiber optic cable segments thereby mitigating the potential of increased O&M costs for leased fiber in the future and having full control of the fiber. With management oversight from the Program Steering Committee, projects initiated through the Fiber Network Leased Service Replacement (FNLSR) business case, will be reviewed and sequenced in this business case on a per project basis spending the funded capital up to the approved allocation.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

The projects in this FNLSR business case are standalone projects but are dependent on length of construction season, right of way approvals, permitting and other similar but potentially unrelated work being performed at or near each identified segment. Through those projects, business functions and processes might be impacted but the technology upgrades being made at the varied locations throughout Avista's service territory should strive to increase performance and capacity for employees in their daily work life while providing a safe and reliable infrastructure for Avista to deliver energy to customers.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative 1: Fund at 80%, and risk not meeting the fiber lease agreement deadline in 2027, resulting in higher unplanned O&M annual costs

Funding the FNLSR business case minimally each year based on a reduced capital plan and request incremental increases as projects are completed. This would result in ad-hoc funding requests to the Capital Planning Group (CPG) for work approved outside of the 5-year capital planning process. Risks related to the FNLSR work, such as proactively working to reduce O&M costs and

Fiber Network Leased Service Replacement

providing the private fiber to carry S&C communication, would be mitigated at a much slower pace than if the program were funded as requested, and may result in higher unplanned O&M annual costs if the 2027 deadline is missed.

Alternative 2: Do not fund the program

FNLSR projects would not be funded and therefore the planned move from leased fiber to privately owned fiber that provides the benefits noted above would not be achieved.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer, spend, and transfers to plant by year.

The FNLSR business case is managed as a program of projects planned yearly. All individual projects are managed through the PMO, which follows the Project Management Institute (PMI) standards. Throughout the year, the business case's projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the scope requests which over the course of a calendar year equates to the funded budget allocation.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program with discrete projects that align with Avista's vision, mission and strategic objectives:

- The FNLSR business case aligns with Avista's commitment to invest in its infrastructure to achieve optimal lifecycle performance – safety, reliability, and at a fair price. Data communications that monitor and control Avista systems are critical in the support of energy delivery. The move from leased to privately owned fiber will continue to enable and support critical communications in a manner that increases reliability and manage costs.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Throughout the course of a year, all project requests are vetted before the Steering Committee to validate the request against the business case purpose and making sure the request can be delivered within the approved funding allocation.

Fiber Network Leased Service Replacement

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the FNLSR business case, the discrete projects interface with various internal Avista groups such as Enterprise Technology engineering, Transmission and Distribution, Real Estate, the Telecommunications Shop, along with other internal business partners at various office and substation facilities.

Steering Committee members include Business Case Sponsors, Directors and Managers within the Enterprise Technology group along with the Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), the assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.1 Identify any related Business Cases

There are no related business cases. FNLSR is a standalone business case.

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to project deliverables outlined in this document, which also typically have an impact on the scope, schedule, or budget of a project. Steering Committee members will also provide approval on Change Requests, Go-Live, and the Approval to Close document. For the FNLSR business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS and the Business Case Owner.

3.2 Provide and discuss the governance processes and people that will provide oversight

The FNLSR Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Program Steering Committee

Fiber Network Leased Service Replacement

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically in order to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

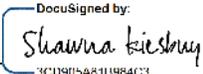
Project prioritization is evaluated by the management team on a monthly basis. Each program and project steering committee meet regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

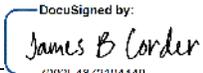
Fiber Network Leased Service Replacement

Any changes in funding or scope are documented at the Business Case level, via a Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise Technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

The undersigned acknowledge they have reviewed the Fiber Network Leased Service Replacement business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Jul-31-2020 | 9:00 AM PDT
 Print Name: Shawna Kiesbuy
 Title: Sr. Manager, Network Engineering
 Role: Business Case Owner

Signature:  _____ Date: Jul-31-2020 | 5:17 PM PDT
 Print Name: Jim Corder
 Title: Director, Information Technology
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Committee Review

Fiber Network Leased Service Replacement

Finance and Accounting Technology Business Case

EXECUTIVE SUMMARY

The Finance and Accounting Technology business case supports financial applications critical to Avista Corporation’s financial health and compliance with regulatory requirements, enabling Avista to provide Better Energy for Life to our customers. These applications serve all of Avista’s customers and operations throughout all service territories. To maintain the business processes, applications, and systems supported by this business case, the recommended funding amount is \$16.1M for the next five years or \$2.3M to \$3.8M per year. This funding level will provide the appropriate technology and development labor to complete periodic upgrades to maintain the reliability of the financial systems. This funding level will also maintain the development staff required to enhance the technology solutions to keep pace with business process drift or change.

This is a program business case and is intended to run year over year to maintain the business applications and align with changes in the utility and its business processes. Failure to fund this business case at the recommended level will hinder Finance and Accounting’s ability to keep pace with the transformation of utility operations and innovation strategies and will continue to compromise our ability to maintain the systems in a secure and compliant manner. Additionally, a lower funding amount will result in a reduction of technical staff with institutional business process and technology knowledge that will increase the risk to the company’s financial health, including ability to meet required financial reporting requirements, access to financial markets, and ability to mitigate audit risk surrounding control failure.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Leianne Raymond	Updated for 2022-2026	6/30/21	Drafted
1.1	Stacey Wenz	Review/Edits	7/7/21	Added Timeline
1.2	Graham Smith	Review/Edits	7/7/21	Added alternative 1 summary

GENERAL INFORMATION

Finance and Accounting Technology Business Case

Requested Spend Amount	\$16,165,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Finance, Accounting, Financial Planning & Analysis
Business Case Owner Sponsor	Graham Smith Ryan Krasselt
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

The Finance and Accounting business area utilizes a collection of business applications to complete the reoccurring business processes. These business processes change on a frequent basis which is driven by a number of factors. The frequency of the change is dictated by the lifecycles of the applications governed in this business case and these changes require resources and technology solutions. This business case provides the resources to keep the systems and automation processes in line with the changes in business process, as well as ensuring the systems are current in their lifecycle to maintain supportability, compatibility, security, and reliability.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) **and the benefits to the customer**

The primary driver of this business case is performance and capacity, with asset condition being secondary. As mentioned above, maintaining systems to align with current state business process, is what allows this business area to operate in an efficient manner. The lifecycle management of the applications under this business case are also critical to maintain supportability and performance of the applications. These lifecycles are largely dictated by the technology solutions that we use. All of this work is being done to enable efficiencies, reduce risk and enable Avista to best serve our internal and external customers. Without properly managed business processes or lifecycles of these applications, our customers would potentially see difficulty in our ability to report company financials, which could jeopardize our ability to access capital markets and impair customers' ability to trust our integrity, and the reliability of services that we provide.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The projects and initiatives within this Business Case support orderly management of the business processes and technology utilized by this business area. If not funded, we risk the functionality and supportability of the applications, and increase our exposure to security risks.

Finance and Accounting Technology Business Case

By not performing incremental upgrades and improvements to the business applications, the risk of failure of either those business processes or the applications that support those business processes increases. Additionally, by not funding the requested amount, it will impact the technology staff that is used to support these applications. This technology staff provides valuable insights and is highly knowledgeable as to the internal workings of Avista and corresponding applications. The loss of those team members could result in significant setbacks. It takes between six to nine months to gain the business process knowledge and understanding to be able to efficiently support these systems. Technology progresses on a constant basis and work is required to be able to keep pace with those advancements.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

A measurement that can be used to track this business case over a longer period of time is evaluation of the 'vendor provided' support timeline in comparison to the version that is being utilized in Avista's portfolio of applications.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement. NA

Option	Capital Cost	Start	Complete
Recommended Solution	\$16,615,000	01 2022	12 2026
➤ <i>Alternative #1 – Funding at a higher level to accommodate transformation and automation (section 2.4)</i>	\$20,000,000	01 2022	12 2026
➤ <i>Alternative #2 - Funding at a lower level / Waterline (section 2.4)</i>	\$7,600,000	01 2022	12 2026

2.1 Describe what metrics, data, analysis, or information was considered when preparing this capital request.

As part of the 5-year planning process, Enterprise Technology and the Finance and Accounting department leaders meet to review the technology demand that is derived from maintaining the current 'core' systems currently in place, as well as enhancements or new technology that enables the business to meet their strategic initiatives.

These estimates were developed based on the historical trends for enhancement work (EBS/PP), the product roadmaps for upgrades and licensing renewals, as well as high-level estimates for new product technologies. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s). The schedule was developed with the most recently available

Finance and Accounting Technology Business Case

information and is subject to change pending risks, competing priorities, dependencies, etc.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

This business case is in place to reduce the risk to the back-office business operations, specifically related to finance and accounting area. There are no direct reductions to O&M investments by this capital investment, however not investing in this program on a year over year basis will result in increased expense to address application defects as a result of a non-supported platform. Additionally, not keeping the systems in line with current business processes will also result in inefficiency in work process, which creates increasing O&M pressure.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

The business process supported by this business case impacts all of the financial transactions for the company. Failure to support these systems may cause numerous near term and downstream impacts. A few examples would be, the creation of a new accounting project, a new customer construction request, to the payment of an invoice. These are critical functions of the company and require technology to be executed efficiently and successfully.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

➤ Alternative #1 - Funding at a higher level to accommodate transformation and automation

Funding at this level would enable Avista to remove technology system risk by accelerating system upgrades and bringing most of the financial systems to the current version rather than waiting until the systems are end of life or end of support from the vendors. This funding level would allow for automation of manual regression testing of the systems which would enable faster time to value for the transformation efforts across the company that have financial system changes. Furthermore, providing additional resources in this area would foster innovation and transformation for all customer journeys that have a financial component.

➤ Alternative #2 - Funding at a Lower Level (or the Waterline).

The Waterline is bottom-up estimate for technology that is required to enable and sustain automated business processes of existing Enterprise Applications to essentially 'run the company'. These investments allow the company to continue to extract value from the initial technology investment that supports essential functions and delivers efficiency at the appropriate level of quality and performance. Without this investment, systems can fall out of support based on technology vendor-driven lifecycles, as well as degrade appropriate levels of performance and capacity needed

Finance and Accounting Technology Business Case

to sustain existing automated or technology-supported business processes or to keep automated solutions in line with changing business processes. Estimates include labor and non-labor forecasts based on historical trends and anticipated expenses, which support the skillset, product, and licensing entitlements required to keep the systems current. Waterlines can be fluid for various reasons and therefore are calibrated annually. This alternative has a number of factors working against it.

If this Business Case was funded at the waterline, it would result in the need to run the projects at a slower pace or defer existing system enhancements. This alternative would cause a decline in the number of enhancements implemented and efficiencies gained each year. While the work would likely get pushed to future years, the ability to meet planned strategic objectives would be delayed even further. Both of these actions would increase the risks for the company concerning its financial viability.

In short, while feasible, funding at a lower level reduces the timing of efficiency gains, adds risk that Avista would have to increase the number of software application assets that would need to be deferred, thereby increasing risk of obsolescence, losing maintenance and support, and reducing automation efficiencies. This funding level also increases the risk of a system failure have a tangible impact on company's financial reporting.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

Below is roadmap of the applications and business initiatives that this business case supports. Due to lower than requested funding of this business case a number of these applications are already past due for an upgrade to maintain supportability.

Typical projects in the business case are generally 12 months less and transfer to plant within 60 days following implementation to accommodate trailing charges.

Finance and Accounting Technology Business Case

2022	2023	2024	2025	2026
Extract DB replacement	PowerPlan upgrade (FA and Tax)	EBS upgrade	EBS upgrade (continued)	PowerPlan Core Accounting (SaaS)
Depreciation forecasting phase 2	Extract DB replacement (continued)	Systematic calculation of tax (non-FIT)	Expense report solution review	APx evaluation / replacement
Reconciliation and close automation (replace RED & JET; systematic account reconciliation)	Reconciliation and close automation (replace RED & JET; systematic account reconciliation)	Systematic cash forecasting	Automated testing	
Revenue forecast model	Evaluate approach to consolidation	Debt Database replacement		
Oracle Business Network ph 1	Oracle Business Network ph 2	PowerPlan Tax Fixed Assets (SaaS)		
CPI (tax AFUDC) in PowerPlan	Clarity integration for ET labor	Automated testing		
Supply Chain mobile device enablement (part 1)	Robotic process automation	UI Planner upgrade/replace		
PowerPlan upload as-built from Excel	Automate FERC reporting			
PowerPlan upgrade (FA and Tax)	Automated testing			
	Supply Chain mobile device enablement (part 2)			
	Quickbooks upgrade (SaaS?)			

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives, and mission statement of the organization.

This is a program with discrete project and packages that align with Avista’s vision, mission, and strategic objectives:

- To provide Better Energy for Life, you need people. The Finance and Accounting teams are dedicated to the people of Avista and its customers. The technology in this business area is utilized as an investment, so that it can be updated as the market demands and sustained to meet ongoing business operations.
- To improve our customers’ lives through innovative energy solutions, we also need skill resources and specialized technology solutions to meet the many complicated financial and compliance requirements. The specialized technology solutions require continuous maintenance in order to meeting the ever-changing requirements and to perform at acceptable levels.
- The program embodies Avista’s Focus Areas, particularly placing emphasis on the ‘perform’ aspect. The specialized technology solutions supported under this business case are force multiplier for the financial and accounting employees who without the technology would not be able to meet the needs of Avista.

Finance and Accounting Technology Business Case

2.7 Include why the requested amount above is considered a prudent investment, providing, or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

This is program level business case and its investments are evaluated through program level governance. On a routine basis the technology team members meet with the business stakeholders and evaluate prior performance as well as input what should be done next.

Investment prudence is also reviewed by the Steering Committee to ensure alignment of initiatives through judiciously selected and implemented projects. The funding requested as part of this program generally fits these initiatives and are assigned to specific projects (with Steering Committee oversight) as they are identified. Also, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project steering committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Our customer and shareholders interface with this business case by having a financially viable company.

2.8.2 Identify any related Business Cases

Because of the company's highly integrated business processes all of the Technology Business cases have relation to each other. The business cases are divided to provide a clear understanding of the resources required to maintain and enhance a highly integration company.

3.1 Steering Committee or Advisory Group Information

This business case is governed by a steering committee made up of the principle managers of the finance and accounting areas and facilitated by the application delivery manager and business product manager.

The roles include but are not limited to:

Director of Accounting, Director of Financial Planning and Analysis, Manager Projects and Fixed Assets Accounting, Manager of Financial Systems, Manager Resource Accounting, Manager of Asset Management, and Manager Treasury.

Finance and Accounting Technology Business Case

3.2 Provide and discuss the governance processes and people that will provide oversight

The Finance and Accounting Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

The IOC evaluates and compares all of the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two constrains are established, the Business Case owner will work with steering committee(s) to set project priority and sequence over a five-year planning period, subject to additional funding changes as directed by the CPG.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

Project prioritization is evaluated by the management team on a weekly basis by the IOC. Each program and project steering committee meets regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

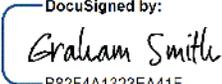
Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

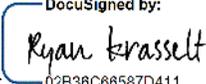
Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule, and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

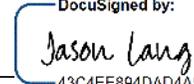
The undersigned acknowledge they have reviewed the Finance and Accounting Technology Business Case and agree with the approach it presents. Significant changes to

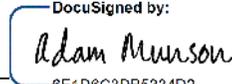
Finance and Accounting Technology Business Case

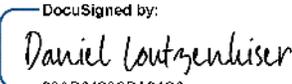
this will be coordinated with and approved by the undersigned or their designated representatives.

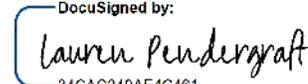
Signature:  Date: Jul-08-2021 | 2:21 PM PDT
DocuSigned by: B82F4A1323EA41F...
 Print Name: Graham Smith
 Title: Application Delivery Manager
 Role: Business Case Owner

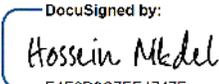
Signature:  Date: Jul-08-2021 | 10:34 AM PDT
DocuSigned by: 02B38C88587D411...
 Print Name: Ryan Krasselt
 Title: VP and Controller
 Role: Business Case Sponsor

Signature:  Date: Jul-08-2021 | 3:08 PM PDT
DocuSigned by: 43C4EE894DAD4A5...
 Print Name: Jason Lang
 Title: Director Fin. Risk, & Asst. Treasurer
 Role: Business Case Governance

Signature:  Date: Jul-09-2021 | 7:31 AM PDT
DocuSigned by: 8E1D8C3DB5334D2...
 Print Name: Adam Munson
 Title: Director of Accounting
 Role: Business Case Governance

Signature:  Date: Jul-08-2021 | 8:57 AM PDT
DocuSigned by: 88AD8120CBA84C8...
 Print Name: Daniel Loutzenhiser
 Title: Director of Tax – Asst. Treasurer
 Role: Business Case Governance

Signature:  Date: Jul-08-2021 | 11:33 AM PDT
DocuSigned by: 34CAC240AE4C461...
 Print Name: Lauren Pendergraft
 Title: Director of Financial Planning & Analysis
 Role: Business Case Governance

Signature:  Date: Jul-08-2021 | 8:52 AM PDT
DocuSigned by: E4E2D9C7EE4747F...

Finance and Accounting Technology Business Case

Print Name: _____ Hossein Nikdel _____
Title: _____ Director of Application Development _____
Role: _____ Business Case Governance _____

Template Version: 05/28/2020

Finance and Accounting Technology Business Case

1.0 BUSINESS CASE REQUEST – 5 YEAR PLANNING 2021

Year	Requested Amount	CPG Approved Amount <i>(Admin use only)</i>
<i>2022</i>	\$3,850,000	
<i>2023</i>	\$3,715,000	
<i>2024</i>	\$3,515,000	
<i>2025</i>	\$2,300,000	
<i>2026</i>	\$2,785,000	

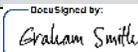
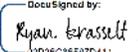
1.1 DISCUSS HOW THE ABOVE REQUESTED AMOUNT WAS CALCULATED INCLUDING ANY CONSIDERATION OF HISTORICAL SPENDING, ESTIMATES, CONFIDENCE LEVELS AND ESCALATION RATES.

The Finance and Accounting Technology business case supports financial applications critical to Avista’s financial health and regulatory requirements compliance, enabling Avista to provide Better Energy for Life for our customers. These applications serve all Avista’s customers and operations throughout all service territories. To maintain the business processes, applications, and systems supported by this business case, it is recommended to be funded as requested. These estimates were derived from calculated employee and contract labor costs for the core teams in this business area, as well as historical trends, product roadmaps and high-level industry estimates for new product technologies. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s).

Failure to fund this business case at the recommended level, will hinder Finance and Accounting’s ability to keep pace with the transformation of utility operations and innovation strategies, and will continue to compromise our ability to maintain secure, compliant systems. Even though we have completed the Oracle E-Business Suite upgrade, there are still multiple applications that are beyond end-of-life dates and if not funded, increases risks to the company. Technical staff would be reduced, resulting in the loss of institutional business process, technology skillset, and increases the risk to the company’s financial health, including audit risk surrounding control failure. The delineated requests were developed with the latest available information and is subject to change pending risks, competing priorities, dependencies, etc. Detailed documentation is listed in section 1.5 of the Finance and Accounting Technology Business Case Justification Narrative.

2.0 INITIAL BUSINESS CASE APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the funds request and agree with the approach presented, and that it has been approved by the relevant governance group. Signatures are required before funding can be considered.

Name	Role	Signature	Date
Graham Smith	BC Owner		Jul-08-2021 2:21 PM PDT
Ryan Krasselt	BC Sponsor		Jul-08-2021 10:34 AM PDT
	FP&A		

Human Resources Technology

EXECUTIVE SUMMARY

The Human Resources Technology (HRT) Business Case sponsors the technology related applications that support the Human Resources (HR) business areas strategic initiatives. The HR business area includes Benefits, Occupational Health, Avista First Care Clinic, HRIS/Payroll, Employee Relations, Leadership and Organizational Development, Corporate Training and Development, HR Shared Services, Recruiting, Equity-Inclusion-Diversity, HR Analytics and Compliance, Craft & Technical Training, Apprenticeships and Safety.

Avista’s Human Resources technology systems are a necessity, as they provide essential functions to all our employees and customers throughout all service territories, such as hiring, payroll, benefits, safety, personnel development, and labor compliance. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities. This business case is intended to run as an annual program that maintains and augments these applications necessary to meet internal and external business processes and objectives.

In order to maintain these business processes and systems supported by this business case, the recommended funding level is roughly estimated to be \$850,000 to \$900,000 per year. This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the HR and Enterprise Technology (ET) governance committee. This funding level considers the development staff required to maintain the technology solutions. If this business case is not funded at the recommended level, it will result in a reduction of skilled resources, which greatly impacts the institutional business process and technical knowledge, as well as our employees, customers, and compliance efforts. Additionally, a lower funding amount will increase the risk to the company through the deferment of upgrades and enhancements, resulting in unsupported applications, security liability, and significantly higher costs.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Leianne Raymond	2022-2026 Business Case Revision	6/23/21	
1.1	Diane Quincy	2022-2026 Business Case Revision edits	6/29/21	

Human Resources Technology

GENERAL INFORMATION

Requested Spend Amount	\$4,270,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Human Resources
Business Case Owner Sponsor	Brian Hoerner Bryan Cox
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

This program is required to support the application-related technology initiatives for all areas within Human Resources (HR). Those areas include, Payroll & Timekeeping, Benefits & Compensation, Leadership & Organizational Development, Labor & Employee Relations, Occupational Health, and Safety & Craft Training

Application refresh projects are necessary due to the ongoing requirements to provide updates, upgrades and/or replacements on existing HR applications, as they are required to respond to changing business needs and/or technical obsolescence. Application refreshes/upgrades are essential in order to remain current, maintain compatibility, reliability, and address security vulnerabilities.

Application expansion projects result from demand related to transformations in the utility and continuous technology progression required to achieve operational efficiencies and strategic objectives. Recent trends in the areas of mobility, scalability, and employee experience, require technological expansion of conventional business practices and processes.

1.2 Discuss the major drivers of the business case and the benefits to the customer

The primary investment driver for the Human Resources Business Program is Performance and Capacity. A secondary investment driver, nearly as important as the first, is Mandatory and Compliance.

Many of the applications and respective projects in this Business Case provide direct support to Avista customers, while the remaining provide many indirect benefits.

Human Resources Technology

Some benefits to upgrades and enhancements to these systems include:

- Advancing the 'Customer Experience' focus
- Improving the 'Employee Experience' and engagement
- Attracting and retaining diverse resources
- Fostering 'Equity, Inclusion and Diversity' and a culture of belonging
- Promoting safety and health
- Increasing employee productivity
- Encouraging and facilitating learning and skill development
- Refining talent management
- Fostering collaboration and communication
- Maintaining compliance with relevant local, state, and federal regulations

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The projects and initiatives listed above provide functional enhancements that address ongoing changes in the workplace, provide increased employee efficiency through the reduction of steps required to complete a task, and make better use of Avista resources. They shift costs from inefficient processes to more value-driven activities.

The primary alternative to these projects is to use existing systems as-is and to not put new systems in place. This puts Avista at risk through attrition and perpetuates inefficiencies as employees search to find the information they need.

Another alternative to taking on these projects as suggested would be to take them on at a slower pace. While feasible, it reduces the timing of efficiency gains, continues to risk attrition through employee dissatisfaction, and is harder to attract new talent as current talent retires.

Working through these projects as suggested, reduces Avista's overall risk exposure by ensuring our employees are fully compliant with all FERC, NERC, and FCC rules (via training and talent management), by ensuring Avista is using funds in the most cost-efficient manner (via improved employee tools that increase overall efficiency and keep employees focused), limiting costly employee turnover, and by keeping employees educated in the latest safety and health trends and requirements.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The HR business team utilizes technology as a critical component to meeting their strategic objectives. Some tools used to measure success would include; surveys, reporting (compliance, training, payroll), collaboration tools (Yammer, Avenue, Teams) and other various forms of employee input.

Constraints and risks are possible to hinder the delivery of the outlined objectives. In these circumstances, the Business Case owner will work with Steering Committee(s) to set project priority and sequencing, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project Steering

Human Resources Technology

Committee meets regularly to review the demand to ensure that it aligns with Avista’s strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

These articles outline the overall priorities of HR functions, and also reinforces the need to gain momentum in the Digital Employee Experience space. The articles also provide information that is relative to the issues, gaps, and obstacles Avista faces with HR centric technology.

Gartner:



Human Resources Technology

The evolution of HR Technology Needs: HR Technology 2021 Guide Josh Bersin



Hackett Group:

<p>1 ENABLE A HIGH-PERFORMING ORGANIZATIONAL CULTURE Improving the culture of the entire organization is the top issue for HR in 2020. With so many enterprise digital transformations underway, recognition of the need for culture change is paramount among business leaders and it has risen on the HR agenda.</p> <hr/> <p>2 ADAPT TALENT MANAGEMENT CAPABILITIES TO SUPPORT CHANGE Addressing the shifting talent needs throughout the enterprise remains a persistent challenge for HR and a priority on its 2020 agenda.</p> <hr/> <p>3 INCREASE EMPLOYEE ENGAGEMENT Employee engagement is increasingly recognized as a key driver of performance and strongly correlated to the attraction and retention of high-caliber talent. HR needs to take the lead in developing strategies to measure and increase engagement.</p> <hr/> <p>4 LEVERAGE TECHNOLOGY TO IMPROVE HR EFFICIENCY AND EFFECTIVENESS With a continuing mandate to do more with less, HR organizations are emphasizing the use of technology to improve productivity and increase the value of their services.</p> <hr/> <p>5 SUPPORT GROWTH STRATEGIES AND INITIATIVES As more organizations anticipate challenges to achieving their 2020 growth objectives, HR is emphasizing support of growth initiatives through human capital strategies.</p>	<p>6 ENABLE BUSINESS STRATEGY EXECUTION The ability of staff to effectively execute the business strategy is often a decisive success factor. HR recognizes its role in preparing future leaders, developing and deploying a workforce with the needed skills, and creating the organizational context to sustain success.</p> <hr/> <p>7 RETAIN STAFF IN KEY POSITIONS WITH CRITICAL SKILLS Staff in critical roles with scarce skills are increasingly difficult to attract and replace. HR organizations recognize the need to meet greater business expectations for staff retention strategies and support.</p> <hr/> <p>8 IMPROVE TALENT MANAGEMENT CAPABILITIES Advanced talent management capabilities not only lead to better talent outcomes but can drive business performance as well. HR recognizes the importance of increasing not just its own talent management capabilities but those of people managers across the enterprise.</p> <hr/> <p>9 ACT AS A STRATEGIC ADVISOR TO THE BUSINESS With so many people-related issues affecting business success, HR organizations recognize the need to act as strategic advisors to top management. But many must upgrade their people and capabilities to successfully play this role.</p> <hr/> <p>10 ADDRESS CRITICAL TALENT/SKILLS SHORTAGES Amid record numbers of open positions, HR organizations recognize the impact of this problem on the enterprise and their role in resolving it.</p>
--	--

Source: Key Issues Study, The Hackett Group, 2020

© 2020 The Hackett Group, Inc. All Rights Reserved. The Hackett Group | Key Issues | 3

Human Resources Technology



2020-Q2-state-of-digital workplace-rep

1.3.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement. NA

The recommended solution to ensure that HR can meet these initiatives and their timelines over the next five years, is to follow the recommended application refresh and expansion requirements for HR applications. The requested allocation is based primarily on compatibility, reliability, security, and safety. Additional criteria considers maintaining operational efficiencies and aligning with strategic objectives. Conventional business practices and processes must be scalable, provide mobility, and focus on the employee and customer experience.

The project roadmap for the next 5 years includes refreshing and/or expansion of the core HR systems that support these initiatives:

- **Analytics / Compliance** – Compliance is an important part of Avista’s regulated business. This includes compliance with finance laws, safety laws, and more. Ensuring compliance requires a great deal of data discovery and analysis. Additionally, growing Operator Qualification Compliance for gas workers and contractors creates increased requirements for learning systems. This is one of the drivers behind reviewing Avista’s current LMS (Learning Management System), a potential shift to other systems, and emerging needs for additional applications.
- **Employee Engagement and Belonging**– Study after study shows that an engaged workforce is a healthier workforce. Engaged employees have higher job satisfaction, lower attrition rates, and higher productivity. Some of that engagement comes in the form of Avista’s LMS work mentioned above; some comes in the form of surveys and other forms of employee input. HR personnel are considering products and product suites that target employee sentiment and suggest new areas of employee engagement. Employee engagement also comes from having the people systems and tools that support ease of productivity, collaboration, communication, belonging, equity and fairness. Providing a modern and effective Digital Employee Experience is also important factor in attracting and retaining employee talent key to supporting our customers
- **HR Information Systems (HRIS)** – HR Information Systems (HRIS) are those that process and manage employee records and transactions. Examples include systems responsible for timekeeping (UltiPro), change of status (Resource Hub), performance management, employee perceptions, benefits enrollment, and more.

Human Resources Technology

- **HR Management (HRM)** – HR Management (HRM) systems support the day-to-day management of employees from across the employee life-cycle from recruiting to onboarding to exit interviews.
- **Learning and Ongoing Training** – Providing up-to-date training keeps the Avista workforce safe (through ongoing safety training), productive and customer-focused (by learning the latest approaches and techniques), and compliant (through ongoing FERC/NERC/Other training by Avista contractors and employees). Avista does this by accelerating the development of new leaders through guided talent management, building a skilled workforce, and providing central talent to Avista leaders through learning platforms (Avista Learning Network and other learning systems such as Articulate 360 learning design tools and Mandarin Learning Center software).
- **Safety and Health** – Safety and Health are key elements of Avista’s culture. Promoting a culture of safety and health falls to Avista’s HR team. (Enterprise Health and Safety System- Intelix, PrognoCIS EMR)
- **Cross-Functional / Other** – Not every project fits nicely into one of the initiatives above. Some are cross-functional, and some are simply good ideas that continue to improve upon Avista’s workplace

These projects are within industry norms for like-sized HR departments within like-sized utilities. None of the proposed projects are on the leading edge of technological innovation; they are accepted and widely adopted approaches used within the energy industry.

Capturing every detail of every project over the course of the next five years is not possible. This is part of why the Steering Committee exists – to help propel Avista forward in its initiatives through intelligently selected and implemented projects, while maintaining the ability to be agile. The funding requested as part of this program generally fits these initiatives and will be assigned to specific projects (with Steering Committee oversight) as they are identified.

Option	Capital Cost	Start	Complete
Recommended Solution	\$4,720,000	01 2022	12 2026
➤ <i>Alternative #1 – accelerate the Digital Employee Experience initiative. (see section 2.4)</i>	\$5,500,000	01 2022	12 2026
➤ <i>Alternative #2 - Waterline (see section 2.4)</i>	\$3,500,000	01 2022	12 2026

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

As part of the ongoing planning and roadmap process, Enterprise Technology and the HR department leaders meet to review the technology demand that is derived from

Human Resources Technology

maintaining the current 'core' systems currently in place, as well as enhancements or new technology that enables the business to meet their strategic initiatives.

These estimates were developed based on the historical trends for enhancement work (Resource Hub, UltiPro, Learning Management System, etc.), the product roadmaps for upgrades and licensing renewals, as well as high-level estimates for new product technologies. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s). The schedule was developed with the most recently available information and is subject to change pending risks, competing priorities, dependencies, etc.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

Much of 2022 will be focused on ensuring we are as current as we need to be to maintain support, compatibility, reliability, and security, as well as some feature optimization in UltiPro for File Management and digitization of employee records, and other system enhancements. After 2022, the goal is to maintain while accelerating the Digital Employee Experience, and potentially replacing some outdated systems to create efficiencies and cost savings. Many of the modules available in UltiPro (UltiPro Expansion) can replace manual processes, or significantly shorten the amount of time spent in those processes. The Avista Learning Network (ALN) is on the roadmap for potential replacement, due to the need to expand these capabilities as the industry and technology changes quickly and exponentially.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Human Resources impacts every area of the business. From pre-employment (recruiting), to post employment (retirement), and the many years in between, HR plays a critical role in every employee's tenure at Avista, which must include the technology to manage effectively.

Any deficiency in the technology is a direct and visible impact to Avista employees and contractors. Any shortfalls that employees experience, can have multiple downstream impacts, such as increased costs (inefficiencies / attrition, etc.), and an objectionable customer experience.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

- Alternative #1 - Funding at a Higher Level to accelerate the Digital Employee Experience initiative.

The employee digital experience is becoming more and more relevant to business growth and employee development. Employees want technology that improves productivity, helps with business process, and ultimately improves Avista's ability to keep pace with the digital transformation revolution. Investing

Human Resources Technology

more in the Digital Employee Experience would require more resources and time to plan and execute, but the output over time is significant.

➤ **Alternative #2 - Funding at a Lower Level (or the Waterline)**

The Waterline is bottom-up estimate for technology that is required to enable and sustain automated business processes of existing Enterprise Applications to essentially ‘run the company’. These investments allow the company to continue to extract value from the initial technology investment that supports essential functions and delivers efficiency at the appropriate level of quality and performance. Without this investment, systems can fall out of support based on technology vendor-driven lifecycles, as well as degrade appropriate levels of performance and capacity needed to sustain existing automated or technology-supported business processes or to keep automated solutions in line with changing business processes. Estimates include labor and non-labor forecasts based on historical trends and anticipated expenses, which support the skillset, product, and licensing entitlements required to keep the systems current. Waterlines can be fluid for various reasons and therefore are calibrated annually. This alternative has a number of factors working against it.

If this Business Case was funded at the waterline, it would result in the need to run the projects at a slower pace or defer existing system enhancements. This alternative would cause a decline in the number of enhancements implemented and efficiencies gained each year. While the work would likely get pushed to future years, the ability to meet planned strategic objectives would be delayed even further.

In short, while feasible, funding at a lower level reduces the timing of efficiency gains, adds risk that Avista would have to take extra measures to retain key employees (and thus knowledge), and could impact the community’s perception of Avista as an employer of choice. It would increase the number of software application assets that would need to be deferred, thereby increasing risk of obsolescence, losing maintenance and support, and reducing automation efficiencies.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. spend, and transfers to plant by year.

This is a program with discrete projects and packages that typically run annually and Transfer to Plant within that same year. There are times that a project may start in Q3/Q4 of one year and Transfer to Plant the following year.

Typically, application projects will Transfer to Plant about 60 days prior to the project completion date (due to the post implementation warranty period and to capture the trailing charges).

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program with discrete projects and packages that align with Avista’s vision, mission and strategic objectives:

- To provide Better Energy for Life, employees are essential. The Human Resources team is dedicated to the people of Avista and its customers. The technology in this

Human Resources Technology

business area is utilized as an investment, so that it can be updated as the market demands, and sustainable to meet ongoing business operations.

- To improve our customers' lives through innovative energy solutions, we also need very skilled people with diverse experiences, that are trustworthy, innovative and collaborative. HR utilizes technology systems to locate, onboard, train, develop, compensate, and keep these valuable employees safe and healthy.
- This program embodies Avista's Focus Areas, particularly placing emphasis in 'Our People'. The tools that HR provides to invest in people is key to providing a stellar employee experience. Some of the systems used to achieve this are UltiPro, which provides an employee dashboard, that serves as the timekeeping system, but also is a one-stop location for performance management, career development, payroll and benefits. This is an application that is helpful and efficient for employees to utilize, which creates a downstream impact to our shareholders and customers.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Avista's Human Resources technology systems are a necessity, as they provide essential functions to all of our employees and customers throughout all service territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the HR and Enterprise Technology (ET) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher costs as a result of the deferment of upgrades and enhancements, etc.

Investment prudence is reviewed by the Steering Committee to ensure alignment of initiatives through judiciously selected and implemented projects. The funding requested as part of this program generally fits these initiatives and are assigned to specific projects (with Steering Committee oversight) as they are identified. Also, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project steering committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

Human Resources Technology

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The Human Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Human Resources, and the Enterprise Technology (ET) Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), and assigned Program Manager, and subsequent Project Managers. The Business Technology Analyst (BTA) is also engaged at all levels, and serves as a liaison between ET and HR.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments, but the HR team is regularly consulted, informed as this directly impacts HR stakeholders. This model is conducive to a strong partnership, which is key to managing all of the dynamic intricacies throughout the course of the budget year.

2.8.2 Identify any related Business Cases

This Business Case is a program that has been functioning for the last 4 years (prior to 2017, these projects were in the Technology Refresh and Technology Expansion Business Cases). There are some applications that HR is responsible for that are used 'Enterprise wide' and receive technology requests outside of the HR department. Those requests typically fall under the Enterprise Technology Modernization and Operational Efficiency (ETMOE) Business Case.

3.1 Steering Committee or Advisory Group Information

The Human Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Human Resources, and the Business Case Owner.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Human Resources Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

The IOC evaluates and compares all of the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

Human Resources Technology

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two constrains are established, the Business Case owner will work with steering committee(s) to set project priority and sequence over a five-year planning period, subject to additional funding changes as directed by the CPG.

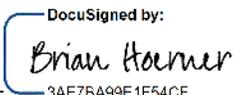
3.3 How will decision-making, prioritization, and change requests be documented and monitored

Project prioritization is evaluated by the management team on a weekly basis by the IOC. Each program and project steering committee meets regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

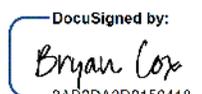
The undersigned acknowledge they have reviewed the *Human Resources Technology Business Case Narrative* and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Jun-30-2021 | 1:29 PM PDT
3AE7BA99E1F54CF...

Print Name: Brian Hoerner

Title: Manager, Application Delivery

Role: Business Case Owner

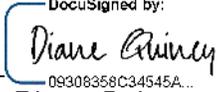
Signature:  Date: Jul-06-2021 | 5:23 AM PDT
3AB2DA2D8150418...

Human Resources Technology

Print Name: Bryan Cox

Title: VP Safety & Human Resources

Role: Business Case Sponsor

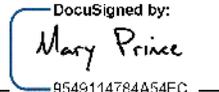
Signature: 

Date: Jul-01-2021 | 5:53 PM PDT

Print Name: Diane Quincy

Title: Director, Leadership & Org. Development

Role: Business Case Governance

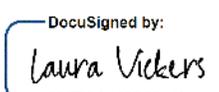
Signature: 

Date: Jul-01-2021 | 11:45 AM PDT

Print Name: Mary Prince

Title: Director, Benefits HRIS & Payroll

Role: Business Case Governance

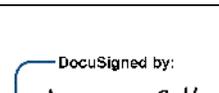
Signature: 

Date: Jul-03-2021 | 6:51 AM PDT

Print Name: Laura Vickers

Title: Director, Culture, Diversity & People

Role: Business Case Governance

Signature: 

Date: Jul-01-2021 | 9:35 PM PDT

Print Name: Jeremy Gall

Title: Director, Safety & Craft Training

Role: Business Case Governance

Signature: 

Date: Jul-01-2021 | 6:10 PM PDT

Print Name: Hossein Nikdel

Title: Director, Application Delivery

Role: Business Case Governance

Land Mobile Radio & Real Time Communication Systems

EXECUTIVE SUMMARY

Avista's service territory consists of urban and rural environments with topologically difficult to reach areas. The remoteness of some locations, along with the temperature variances through the annual seasons can present additional challenges to field staff required to work under those conditions. Additionally, commercial cellular or telecommunication services are not offered in some of these locations, as they are not cost effective for commercial vendors to deploy. Finally, during unplanned emergency events, commercial telecommunication services are overloaded with the public reaching friends and family members affected by the event, thereby exacerbating the need for a separate land mobile radio and real-time communication system, much like those used by emergency service personnel.

As a Company that maintains critical infrastructure for gas and electric systems, we are required to do it safely and reliably to provide essential services to our customers. This requires that our staff communicate with one another in real time across our service territory to establish situational awareness and reduce the risk of a safety incident. The Land Mobile Radio & Real Time Communications System business case consists of mobile radio and communication technology solutions that enable our staff to communicate with each other in the field and office in real time.

The investments under this program provide the communication technology that enables real time 24 x 7 x 365 communication with our gas and electric field staff in ever changing conditions. The costs associated with each solution can vary by the solution deployed. However, due to the remoteness and topology of our service territory, some of the technology investments in field radio sites on mountain tops can be costly but provide a valuable service to our customers in unplanned weather events, and most importantly bring safety to our field staff. Not investing in increasing radio coverage across our service territory can result in 'dead zones' with no radio coverage that may increase the safety risks of our field staff who rely on radio communication to perform their jobs.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	6/2017	
1.1	Walter Roys	Updated Investment Driver	7/2019	
2.0	Walter Roys	Revision of BCJN to new template	7/2020	
2.1	Walter Roys	Error in calculation of Alt. #2	8/2020	Revised calculation

Land Mobile Radio & Real Time Communication Systems

GENERAL INFORMATION

Requested Spend Amount	\$24,509,809
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Avista's service territory is approximately 30,000 square miles across four northwestern states with nearly 7,800 miles of natural gas distribution mains, 19,000 miles of electric distribution lines, and 2,750 miles of electric transmission lines. Although many of these miles of gas and electric infrastructure run through urban and suburban areas to heat and power homes and businesses, some infrastructure travels across remote and hard to reach locations, such as steep canyons and mountain tops. As a pacific northwest region with four seasons, some of these remote locations can be even more difficult to reach in harsh weather conditions yet must be maintained safely and reliably. To add to it, commercial cellular or telecommunication services are not offered in these remote locations, thereby leaving communication service gaps. In other words, if there were commercial offerings, during an unplanned emergency event, the services could be overloaded with customers trying to reach friends or family members affected by the event and resulting in communication latency or unavailability.

The lack of radio communication coverage in these remote locations presents risk to our field workers who are required to respond to events throughout the year and must communicate with one another in real time across our service territory to establish situational awareness and reduce the risk of a safety incident.

Land Mobile Radio & Real Time Communication Systems

1.2 Discuss the major drivers of the business case (Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations) and the benefits to the customer

The Land Mobile Radio & Real Time Communications Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps with an objective to maintain infrastructure performance and align infrastructure assets with business demand for capacity.

All Avista customers benefit from maintaining communication systems, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers. Additionally, assets that fail due to not being replaced within their technology lifecycle are replaced by the Technology Failed Asset business case, which tracks technology asset failures, and is also used as a data point to inform the technology lifecycles under this business case.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Mobile radio coverage is an essential safety requirement for field staff working throughout our service territory to maintain a safe and reliable gas and electric infrastructure, and even more so in remote and hard to reach locations. Every day that goes by of lacking radio coverage can result in a safety incident, whereby field staff requiring emergency assistance could not communicate with either dispatch, a nearby co-worker, or emergency services. In some of these hard to reach locations, small logging roads can be buried in deep snow a few miles in from a paved road, thereby extensively prolonging any response should an emergency incident occur. Deferring the investments under this program puts field staff's lives at risk by lacking radio coverage in high risk areas.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk.

Land Mobile Radio & Real Time Communication Systems

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Enterprise Technology team references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcric.com/products/publications.htm>

Gartner Industry Research and Reference Material. Retrieved from <https://www.gartner.com/en/information-technology>

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Not applicable, as the investment under this program business case is to maintain performance and capacity standards in each respective endpoint compute and productivity technology.

The Land Mobile Radio & Real Time Communications Systems business case will represent projects that are driven by performance and capacity for the following technology systems:

- Private 2-way Land Mobile Radio (LMR) System for field operations; and
- Radio Telephone Command and Control System (RTCCS) used by Dispatch and System Operations to perform critical radio and telephone communication to field personnel.

The Land Mobile Radio (LMR) system facilitates critical communication between field personnel, dispatch, system operations, and other end users. This radio system is used for normal day to day operation work, coordinating responses to outage events, switching and tagging procedures, communication with external agencies including Public Safety entities, and several other uses. It is a business-critical system used to maintain day to day operations and respond to emergency situations.

This program is in place to provide reliable LMR functionality at all times throughout Avista's service territory. The system contributes to the health and safety of employees, contractors, and the public.

Option	Capital Cost	Start	Complete
Recommended Solution – Address 100% obsolete products, unit growth, and expand radio coverage area at a reduced pace	\$24,509,809	01 2021	12 2025
Alternative #1 - Address 100% obsolete products,	\$40,037,939	01 2021	12 2025

Land Mobile Radio & Real Time Communication Systems

unit growth, and radio coverage area			
Alternative #2 – Address 100% of obsolete products and unit growth without expanding coverage	\$18,000,000	01 2021	12 2025
Alternative #3 – Expand radio coverage area only	\$12,500,000	01 2021	12 2025
Alternative #4 – Retire assets and remove automation	\$1,900,000	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The funds request was based on a calculation of the asset lifecycle associated with each technology asset, the scope and scale of the technology, and the project costs for technologies previously refreshed under this business case. Additionally, funds requested include coverage expansion costs for additional radio sites based on coverage analyses, and historical site acquisition costs. Through regular reviews, the program balances the need to provide radio coverage across our service territory and maintain performance and reliability standards for the various technologies under this program within annual budget allocations, and their respective technology lifecycles, which can result in calling for additional investment under this program from time to time for technology either falling behind technology lifecycles or predetermined performance, coverage, and reliability standards.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

The funding requested under the Land Mobile Radio & Real Time Communications Systems business case will be invested in technology, such as:

- Private 2-way Land Mobile Radio (LMR) System
- Radio Telephone Command and Control System (RTCCS)

Investment in these technologies can result in added O&M expenses from increase in licenses from time to time. However, not funding this business case may result in removing automated business functions, which will put field workers at risk by not having radio communications across our service territory. There are no O&M reductions or offsets resulting from these investments, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

Land Mobile Radio & Real Time Communication Systems

Reliance on obsolete technology for automated business process presents significant risk, and in this case cannot be achieved manually.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. These upgrades can in turn drive subsequent system replacements, creating a cascading event of change. Therefore, vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

All Avista field operations, dispatch, and system operations are affected by the technology invested under this business case program, as it is a critical tool that is heavily relied on for communication across our service territory.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Retire assets and remove automation

This option assumes the assets would not be replaced upon failure and be removed from service due to product incompatibility or business or safety risk.

The basis for measuring the business impact of not funding this business case is realizing the loss of business process automation. As products reach the manufacturer-defined planned obsolescence, business process automation is jeopardized, and business risk is increased as manufacturers cease product maintenance and support. This condition would drive action. The alternative would lead to a mitigation plan of having to re-instate manual business process or eliminate the business process.

This option bears the cost of asset retirement for failed assets. Failed assets are estimated to be 50% of obsolete products. The retirement cost is estimated at 10% of the cost to replace the asset.

Address 100% obsolete products, unit growth, and radio coverage area (recommended)

Land Mobile Radio & Real Time Communication Systems

This is the optimal solution. This option fully addresses and minimizes the likelihood of technology failure and impact to automated business process. It also expands the radio coverage area, adding value for employees, contractors, and the public by enabling safe and reliable radio communications in certain areas of poor coverage.

Address 100% of obsolete products and unit growth

Addressing 100% of obsolete products and unit growth will minimize likelihood of technology failure and impact to automated business process. However, this option does not address expanding the radio coverage area. This introduces risk to employees, contractors, and the public in areas where radio communications are unavailable.

Expand radio coverage area

This option addresses expansion of the radio coverage area, adding value for employees, contractors, and the public by enabling safe and reliable radio communications in certain areas of poor coverage. However, this option does not address obsolete products within the program and introduces risk associated with technology systems reliability and interoperability. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology failure and impact to business is increased.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

This business case is a program that transfers to plant the total cost of each project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

Each investment under this business case program allows Avista to deliver electric and gas services to our customers.

Land Mobile Radio & Real Time Communication Systems

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The reason that the technology investment under this program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in dispatch and system operations, and in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process, such as radio communication could not be replicated manually, thereby crippling our workforce's ability to deliver gas and electric service to our customers in a safe and reliable way. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all operations and field staff interface with the Land Mobile Radio (LMR) system, which facilitates critical communication between field personnel, dispatch, system operations, and other end users.

2.8.2 Identify any related Business Cases

There are not related business cases associated with this business case program.

3.1 Steering Committee or Advisory Group Information

The **Land Mobile Radio (LMR) & Real Time Communication Systems** Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

3.2 Provide and discuss the governance processes and people that will provide oversight

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

Land Mobile Radio & Real Time Communication Systems

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically and will consist of projects needed to maintain the reliability and performance of all LMR and real time communication systems.

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Land Mobile Radio & Real Time Communication Systems

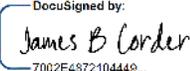
The undersigned acknowledge they have reviewed the **Land Mobile Radio & Real Time Communication Systems Business Case** and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Aug-25-2020 | 7:58 AM PDT

Print Name: Walter Roys

Title: System Engineering Manager

Role: Business Case Owner

Signature:  _____ Date: Aug-25-2020 | 12:22 PM PDT

Print Name: Jim Corder

Title: IT Director

Role: Business Case Sponsor

Template Version: 05/28/20

Legal and Compliance Technology Business Case

EXECUTIVE SUMMARY

The Legal and Compliance Technology Business Case supports the legal and compliance business processes that are essential to the safe and efficient delivery of services to our customers. The various business entities within Avista rely on the legal and compliance systems to ensure business operations are done in the most efficient and cost-effective manner. The legal and compliance technology systems vary from the simple to complex and require continuous management of the enhancements needed to meet the internal and external business requirements.

The legal and compliance systems serve all Avista’s customers and operations throughout our service territories. To maintain the business processes, application, and systems, supported by this business case the recommend funding amount will be \$2,080,000 over the next five years or roughly \$400,000 to \$425,000 per year. This funding level will provide the appropriate technology and development labor to complete periodic upgrades in order to maintain patched and supported systems. The funding level will also maintain the development staff required to enhance the technology solutions to keep pace with business process drift or change.

This is a program business case and is intended to run year over year to maintain the business applications and changes in the business processes. If this business case if not funded at the recommended level, it will result in a reduction in technical staff, which will impact the institutional business process and technology knowledge. It will also increase the risk to compliance efforts. Additionally, a lower funding amount will increase the risk to the company through the delay of upgrades resulting in either unsupported applications being used or significantly higher costs for upgrades

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Leianne Raymond	2022- 2026 Business case	6/29/21	Draft

GENERAL INFORMATION

Legal and Compliance Technology Business Case

Requested Spend Amount	\$2,080,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Legal and Compliance
Business Case Owner Sponsor	Graham Smith Greg Hesler
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

This program is required to support the application-related technology initiatives for all areas within Legal and Compliance. These areas include Claims, Legal (Labor Relations, Data Privacy), and Compliance [Ethics, Environmental, Federal Energy Regulatory Commission (FERC), North American Electric Reliability Commission (NERC), and Environmental, Social & Governance (ESG)].

Application refresh projects are necessary due to the continuous need to provide updates and upgrades to existing Legal and Compliance applications, as they are required to respond to changing business needs and/or technical obsolescence. Application refreshes/upgrades are essential in order to remain current, maintain compatibility, reliability, and address security vulnerabilities.

Application expansion projects result from demand related to transformations in the utility and continuous technology progression required to achieve operational efficiencies and strategic objectives. Recent trends in the areas of mobility, scalability, and employee experience, require technological expansion of conventional business practices and processes.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The primary driver for this business case is “Performance and Capacity” with “Mandatory and Compliance” as secondary. Avista customers benefit by having efficient systems in place to manage legal and compliance matters effectively and avoid penalties or legal complications related to non-compliance.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

This funding supports a program to manage the on-going changes to legal and compliance business processes. Not funding this work increases the potential for costs and associated fines related to non-compliance with federal, state, or other regulations.

Legal and Compliance Technology Business Case

Additionally, deferring the work increases financial pressure on future years as the work remains. The longer it is deferred the more expense the costs become.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The legal and compliance business teams utilizes technology as a critical component to meeting their strategic objectives. Some success measurements would include; risk avoidance, system reporting, and better forecasting results.

Constraints are possible and risks hinder the delivery of the outlined objectives. In these circumstances, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project Steering Committee meets regularly to review the demand to ensure that it aligns with Avista’s strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

NA

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

NA

Option	Capital Cost	Start	Complete
<i>Recommended Solution</i>	\$2,080,000	01 2022	12 2026
➤ <i>Alternative #1 – Waterline (see section 2.4)</i>	\$1,750,000	01 2022	12 2026
➤ <i>Alternative #2 - Not Funding (see section 2.4)</i>	\$0	01 2022	12 2026

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The information in this business cases is based on historical trend of spend in this area and product roadmaps for upgrades and licensing renewals, as well as high-level estimates for new product technologies. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s). The schedule was developed with the most recently available information and is subject to change pending risks, competing priorities, dependencies,

Legal and Compliance Technology Business Case

etc. The governance group for this business case meets on a quarterly basis and reviews historical spending and provide guidance on future work items.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

This program is set up to maintain and enhance the technology that supports the Legal and Compliance business processes. By keeping the technology current with industry standards and aligned with business processes this program reduces the risks that may incur additional O&M expense.

Much of 2021 was focused on ensuring we are as current as we need to be to maintain support, compatibility, reliability, and security. The goal is to maintain that standard, while moving toward more strategic objectives, such as Contract Workflow Management and Tribal Service Agreements.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Both the legal and compliance areas are operating in dynamic and everchanging world. This program gives these business areas the resources to react to the changes. For example, a change in the state laws in one of the states that we serve, requires additional quarterly reporting requirements. This information can be entered into the reporting system and then provide the necessary tracking information and corresponding reminders for that specific compliance requirement.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

➤ Alternative #1 - Funding at a Lower Level (or the Waterline)

The Waterline is bottom-up estimate for technology that is required to enable and sustain automated business processes of existing Enterprise Applications to essentially 'run the company'. These investments allow the company to continue to extract value from the initial technology investment that supports essential functions and delivers efficiency at the appropriate level of quality and performance. Without this investment, systems can fall out of support based on technology vendor-driven lifecycles, as well as degrade appropriate levels of performance and capacity needed to sustain existing automated or technology-supported business processes or to keep automated solutions in line with changing business processes. Estimates include labor and non-labor forecasts based on historical trends and anticipated expenses, which support the skillset, product, and licensing entitlements required to keep the systems current. Waterlines can be fluid for various reasons and therefore are calibrated annually. This alternative has a number of factors working against it.

If this Business Case was funded at the waterline, it would result in the need to run the projects at a slower pace or defer existing system enhancements. This alternative would cause a decline in the number of enhancements implemented and efficiencies gained each year. While the work would likely get pushed to future years, the ability to

Legal and Compliance Technology Business Case

meet planned strategic objectives would be delayed even further. This action will increase the reporting and compliance risk. The scale of increased risk is dependent upon many factors such as, regulatory environment, license renewals and other factors outside of our direct control.

In short, while feasible, funding at a lower level reduces the timing of efficiency gains, adds risk that Avista would have to increase the number of software application assets that would need to be deferred, thereby increasing risk of obsolescence, losing maintenance and support, and reducing automation efficiencies.

➤ **Alternative #2 - Not Funding (Retire assets and remove automation)**

This option assumes the assets would not be replaced upon failure and be removed from service due to product incompatibility or business or safety risk.

The basis for measuring the business impact of not funding this business case is realizing the loss of business process automation. As products reach the manufacturer-defined planned obsolescence, business process automation is jeopardized, and business risk is increased as manufacturers cease product maintenance and support. This condition would drive action. The alternative would lead to a mitigation plan of having to re-instate manual business process or eliminate the business process.

This option bears the cost of asset retirement for failed assets. Failed assets are estimated to be 50% of obsolete products. The retirement cost is estimated at 10% of the cost to replace the asset.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. spend, and transfers to plant by year.

This is a program with discrete projects and packages that typically run annually and Transfer to Plant within that same year. There are times that a project may start in Q3/Q4 of one year and Transfer to Plant the following year. Typically, application projects will Transfer to Plant about 60 days prior to the project completion date (due to the post implementation warranty period and to capture the trailing charges).

The goal is to break out large/complex projects into smaller projects (phases) to avoid scope creep, budget overages, and ensure the work can be properly prioritized. The first phase of every project would be scoped at the Minimum Viable Product (MVP), and subsequent phases would be scoped accordingly, based on the next highest priority after MVP. This also allows for more accurate Transfer to Plant forecasts.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program with discrete projects and packages that align with Avista's vision, mission and strategic objectives:

To improve our customers' lives through innovative energy solutions, we also need to have technology systems and processes that ensure we are making good decisions and consistently improving our ability to provide power utilizing innovative technology that enables safety, reliability, and is cost effective.

Legal and Compliance Technology Business Case

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Avista's Legal and Compliance technology systems are a necessity, as they provide essential functions to all of our employees and customers throughout all service territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the LCT and Enterprise Technology (ET) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher costs as a result of the deferment of upgrades and enhancements, etc.

Investment prudence is reviewed by the Steering Committee to ensure alignment of initiatives through judiciously selected and implemented projects. The funding requested as part of this program generally fits these initiatives and are assigned to specific projects (with Steering Committee oversight) as they are identified. Also, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project steering committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The Legal and Compliance Technology Steering Committee members include Business Case Sponsors, Directors and Managers within Legal and Compliance, and the Enterprise Technology (ET) Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), and assigned Program Manager, and subsequent Project Managers. The Business Technology Analyst (BTA) is also engaged at all levels and serves as a liaison between ET and LCT.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments, but the LCT team is regularly consulted, and informed as this directly impacts LCT stakeholders. This model is conducive to a strong partnership, which is key to managing all of the dynamic intricacies throughout the course of the budget year.

Legal and Compliance Technology Business Case

2.8.2 Identify any related Business Cases

This Business Case is a program that has been functioning for the last 5 years (prior to 2017, these projects were in the Technology Refresh and Technology Expansion Business Cases). There are some applications that LCT responsible are used in other areas that are compliance related. Typically, project accounting is consulted to validate the appropriate Business Case, should the need arise.

3.1 Steering Committee or Advisory Group Information

This business case is governed by a steering committee made up of the principal managers of the legal and compliance domains, and typically facilitated by the Application Delivery Manager.

The roles include but are not limited to:

Director of Environmental Affairs, VP General Counsel Chief Compliance Officer, Manager Reliability Compliance, Manager or FERC Compliance, and Ethics and Compliance Manager.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Legal and Compliance Technology Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

The IOC evaluates and compares all of the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two constrains are established, the Business Case owner will work with steering committee(s) to set project priority and sequence over a five-year planning period, subject to additional funding changes as directed by the CPG.

Legal and Compliance Technology Business Case

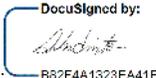
3.3 How will decision-making, prioritization, and change requests be documented and monitored

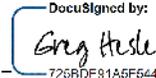
Project prioritization is evaluated by the management team on a weekly basis by the IOC. Each program and project steering committee meets regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

The undersigned acknowledge they have reviewed the *Legal and Compliance Technology Business Case* and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Jul-06-2021 | 11:20 AM PDT
 Print Name: Graham Smith
 Title: Application Delivery Manager
 Role: Business Case Owner

Signature:  Date: Jun-30-2021 | 3:20 PM PDT
 Print Name: Greg Hesler
 Title: VP General Counsel & Chief Compliance Officer
 Role: Business Case Sponsor

Signature:  Date: Jul-02-2021 | 7:32 AM PDT

Legal and Compliance Technology Business Case

Title: Counsel II
Role: Business Case Governance

Signature:  _____ Date: Jul-01-2021 | 7:29 AM PDT
Print Name: Lisa Hairston
Title: Manager, FERC Compliance
Role: Business Case Governance

Signature:  _____ Date: Jun-30-2021 | 4:01 PM PDT
Print Name: Hossein Nikdel
Title: Director, Application Development
Role: Business Case Governance

Facilities and Storage Location Security

EXECUTIVE SUMMARY

Security is an expectation of companies today by its customers. Especially companies considered critical infrastructure. Protecting facility & storage locations benefits Avista’s customers by protecting our people, equipment, and material that are critical to support our day to day operations. The capital budget request of \$3,100,000 funds the security protections that benefit Avista customers as the enhancements maintain and enhance Avista’s security posture to minimize the risks associated with attacks at facility & storage locations within the Avista service territory. Not approving this business case or its recommended funding can pose risks to the people and assets Avista depends on to conduct business and delivery safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of original business case	7/01/2020	

GENERAL INFORMATION

Requested Spend Amount	\$3,100,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Clay Storey Clay Storey
Sponsor Organization/Department	
Phase	Choose an item.
Category	Choose an item.
Driver	Choose an item.

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Security remains a concern at our facility & storage locations. These locations contain people, equipment, and material that are critical to support our day to day operations and, in turn, the delivery of safe and reliable gas and electricity. A security incident at any of these locations may harm people, damage equipment, or even restrict our ability to respond to our customers. Also, attacks

Facilities and Storage Location Security

can give intruders access to critical cyber equipment, which can lead to a cybersecurity event.

1.2 Discuss the major drivers of the business case and the benefits to the customer

Performance & Capacity is the primary driver for the business case as the projects it funds address security risks by protecting our people, equipment, and material that are critical to support our day to day operations.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Addressing security risks has been and will continue to be an ongoing issue. If the funding is not approved or is deferred, this increases the likelihood of a security event that could impact people, equipment, and materials that are critical to support our day to day operations.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Avista utilizes utility industry forums, counsels, organizations and knowledge from past security incidents to provided Avista with a strong baseline from which to measure its security capabilities and channel the appropriate level of investment to mitigate the identified risks.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

N/A

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Option	Capital Cost	Start	Complete
Address security at facilities and storage locations as funding allows (Recommended)	\$3,100,000	01 2021	12 2025
Address security at facilities and storage locations in 7.5 years	\$4,000,000	01 2021	06 2028
Address security at facilities and storage locations in 10 years	\$6,000,000	01 2021	12 2031

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The capital dollar request was derived from the historical annual spend implementing security measures across the Avista service territory to reasonably mitigate risks based on input from the programs governing body. It

Facilities and Storage Location Security

also takes into account estimates of in-flight projects and a 1% per year increase for inflation of future projects.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

This business case supports simultaneous projects over multiple years. Each project within the business case evaluates the potential impact to O&M costs and staffing.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

The alternative strategy would be to fund the business case based on a set schedule of 7.5 or 10 years rather than as funding allows. These options would require more funding and resources but would be more likely to address security needs in a timely manner rather than as needed.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. Spend, and transfers to plant by year.

Since this business case is comprised of projects running concurrently over multiple years, each one designates its completion date and transfer-to-plant.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The projects funded by this business case protect Avista's people, equipment, and material. Without proper security protection, the risk to Avista's people, equipment, and material increase and could impact operations of the company and mission to provide safe and reliable infrastructure.

Facilities and Storage Location Security

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Security measures to protect critical infrastructure is not only prudent but required in some cases because of compliance. Reasonable and appropriate security measures are also an expectation of Avista's customers. The investments reduce the likelihood of a security event that could impact the people, equipment, and materials that are critical to support our day to day operations. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

- None

3.1 Steering Committee or Advisory Group Information

The Enterprise Security Committee will provide monthly recommendations and guidance based on security operations center updates, business case financial updates, and industry recommendations.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Enterprise Security Committee acts as the custodian and governance body of security resources and investments which includes the Facilities and Storage Location Security business case. This group meets monthly and is composed of directors and managers from most of the lines of business. In addition, each project funded by the Facilities and Storage Location Security business case has project-level steering committees.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

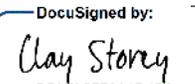
Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work

Facilities and Storage Location Security

identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the Facilities and Storage Location Security business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:		Date:	Aug-07-2020 9:34 PM PDT
Print Name:	Clay Storey		
Title:	Director of Security, IT & Security Management		
Role:	Business Case Owner		
Signature:		Date:	Aug-07-2020 9:34 PM PDT
Print Name:	Clay Storey		
Title:	Director of Security, IT & Security Management		
Role:	Business Case Sponsor		
Signature:		Date:	
Print Name:			
Title:			
Role:	Steering/Advisory Committee Review		

Technology Failed Assets

EXECUTIVE SUMMARY

Technology assets enable automated business processes. These technology assets range from computers to hand-held radios carried by our field staff to printers in remote offices to networking equipment. Sometimes these technology assets fail prior to being refreshed as part of a lifecycle management program. These failures can be caused by manufacture defects, human error, natural disasters, malicious actors, or age/runtime of equipment. In those cases, the failed asset can cause downtime for an employee or system resulting in significant disruption to daily operations across our service territory depending on where and to what asset the failure occurred.

To support these types of unplanned failures, the Technology Failed Assets business case was established and consists of in-portfolio technology assets for rapid replacement of assets as they fail and when repairs are not feasible. A technology inventory is maintained to quickly restore business automation. They can include, but not be limited to laptops, mobile phone and tablets, printers, field area network (FAN) equipment, monitors, audio-visual equipment, routers, switches, servers, and fiber cable. The cost of each technology solution will vary depending on the type of asset, scope of failure, required lead time, and location. However, funding for this business case has been calculated based on predictable technology asset failure rates over the last three years. For unpredictable failed assets, additional funding requests will be made to replace the failed asset.

Since technology asset failures will happen across Avista’s territory, having budget allocation available to quickly replace a failed asset is critical to the daily operations of the Company. If the Technology Failed Assets business case funding is not approved, replacement of failed assets will result in individual requests for funding each time an asset fails potentially extending the downtime of a system until the funding is approved and the asset is replaced.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Mike Beil	BCJN 1.0 Created	7/2019	
2.0	Mike Beil	BCJN 2.0 Revised	7/2020	

Technology Failed Assets

GENERAL INFORMATION

Requested Spend Amount	\$3,028,400
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Mike Beil Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Failed Plant & Operations

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Technology assets enable automated business processes. These technology assets range from computers and mobile devices to radio systems and pole-mounted network devices. Sometimes these technology assets fail prior to being refreshed as part of a lifecycle management program. These failures can be caused by manufacture defects, human error, natural disasters, malicious actors, or age/runtime of equipment. In those cases, the failed asset can cause downtime and loss of performance for an employee or system resulting in significant disruption to daily operations across our service territory depending on where and to what asset the failure occurred.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The main driver for this program is Failed Plant & Operations which is also related to asset management strategies being driven by technology lifecycles and technology obsolescence. As outlined in section 1.1 of this Business Case Justification Narrative, at times technology may unexpectedly fail. This program provides a technology inventory to quickly restore business automation and reduce the downtime caused by the failure.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Since technology asset failures will happen across Avista's territory, having budget allocation available to quickly replace a failed asset is critical to the daily operations of the company. If the Technology Failed Assets business case funding is not approved, replacement of failed assets will result in individual requests for funding each time an asset fails potentially extending the downtime of a system until the funding is approved and the asset is replaced.

Technology Failed Assets

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Since the main driver behind this program is Failed Plant & Operations, the success of this program can be measured by the timely replacement of failed technology assets and restoration of automated business processes and overall productivity.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

See below for supporting details

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Asset Type	Avg. Failures/Yr.	Avg. Cost	Forecast
Printers	16	\$3,724	\$59,584
Monitors	40	\$295	\$11,800
Mobile Phones	50	\$904	\$45,200
Personal Computer	42	\$1,326	\$55,692
Field Area Network-Devices	40	\$10,407	\$416,280
AV Devices	3	\$3,586	\$10,758
Other Failed Technology	6	\$3,245	\$19,470
			\$618,784

Option	Capital Cost	Start	Complete
Funding based on previous 3-year failure rates (Recommended)	\$ 3,028,400	01 2021	12 2025
Request funding when needed	\$0	01 2021	12 2025
Funding based on 5% failure rates of all technology assets	\$6,225,000	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

To support these types of unplanned failures, the Technology Failed Assets business case was established and consists of in-portfolio technology assets for rapid replacement of assets as they fail and when repairs are not feasible. A technology inventory is maintained to quickly restore business automation. They can include, but

Technology Failed Assets

not be limited to laptops, mobile phone and tablets, printers, field area network (FAN) equipment, monitors, audio-visual equipment, routers, switches, servers, and fiber cable. The cost of each technology solution will vary depending on the type of asset, scope of failure, required lead time, and location. However, funding for this business case has been calculated based on predictable technology asset failure rates over the last three years. For unpredictable failed assets, additional funding requests will be made to replace the failed asset.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

The requested capital cost amount per year has been calculated to replace failed assets based on a three-year failure history. This level of funding is critical to maintain an inventory of in-portfolio assets to be available for rapid replacement during failures or unplanned outages (i.e. laptops, mobile phones, field area network equipment, etc.). The funding amounts within this program undergo regular review to balance the asset failure forecast within the predetermined budget allocations. Since technology asset failures will happen across Avista's territory, having budget allocation available to quickly replace a failed asset is critical to the daily operations of the Company.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (*ref. WUTC Docket No. U-190531 Policy Statement*), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Since technology asset failures will happen across Avista's territory, having budget allocation available to quickly replace a failed asset is critical to the daily operations of the Company. Each time an asset fails, Avista employees and customers can be affected by the downtime related to the automated process not performing. Rapid replacement of the asset is critical to maintain safety and performance.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative 1: Request Funding when Needed

Funding will only be requested once an asset fails beyond repair. The risk with this alternative is additional down time of our automation systems due to the time needed to request/approve funding to replace the failed asset.

Alternative 2: Funding based on 5% failure rates of all technology assets

Funding would be based on an assumed 5% failure rate of all technology assets. Each assets lifecycle is managed under a different business case. This option assumes a 5% funding level of the sum of all technology business cases which manage technology asset lifecycles.

Technology Failed Assets

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

The Technology Failed Assets business case is managed as a program of blanket projects which manage the replacement of failed assets tracking their used and usefulness on a monthly cadence. All individual projects set up for unplanned asset failures are managed through the PMO, which follows the Project Management Institute (PMI) standards. These projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the installed assets. Over the course of a calendar year, the blanket projects, along with the individual projects, equate to the funded budget.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program with discrete projects that align with Avista's vision, mission and strategic objectives:

- To provide Better Energy for Life, you need systems that perform at an optimal level to deliver electricity and gas in a safe and reliable manner. The team supporting asset failures are highly skilled and responsive to the needs of these systems so critical business services continue to be delivered without interruption. The Technology Failed Assets Business Case aligns with Avista's "Perform" Strategic Focus Area.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Based on the individual asset data listed above, the requested funding amount will allow for an inventory of in-portfolio technology assets for rapid replacement of assets as they fail and when repairs are not feasible. Since the projects within the business case are evaluated monthly for used and usefulness, the forecasted failures and subsequent planned costs are also adjusted monthly based on failure rates. If there are trends appearing in the failure rates resulting in a higher velocity of spend in one asset area versus another, forecasted costs will be adjusted to make sure dollars are available across all projects.

2.8 Supplemental Information

Technology Failed Assets

2.8.1 Identify customers and stakeholders that interface with the business case

Within the Technology Failed Assets business case, the projects interface with various internal Avista groups such as ET Engineering, the Telecommunications Shop, various operations teams, and procurement to name a few.

Steering Committee members include Business Case Sponsors, Directors and Managers within the Enterprise Technology group long with the Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), and assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.2 Identify any related Business Cases

There are no related business cases currently.

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. For the Technology Failed Assets business case, the Steering Committee will consist of the Directors and Managers within ET and the Business Case Owner.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Technology Failed Assets Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department.

Technology Failed Assets

Product roadmaps identify investment demand that is generally not fully funded. Product investments are prioritized in this manner:

- 1) Safety Systems
- 2) Control Systems
- 3) Customer Facing Systems
- 4) Back Office Systems

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

Project prioritization is evaluated by the management team on a monthly basis. Each program and project steering committee meet regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

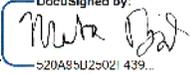
Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an

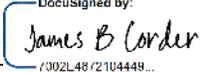
Technology Failed Assets

'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

Technology Failed Assets

The undersigned acknowledge they have reviewed the Technology Failed Assets and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Jul-30-2020 | 1:40 PM PDT
 Print Name: Mike Beil _____
 Title: Mgr., IT Operations Engineering _____
 Role: Business Case Owner _____

Signature:  _____ Date: Aug-03-2020 | 3:18 PM PDT
 Print Name: Jim Corder _____
 Title: IT Director _____
 Role: Business Case Sponsor _____

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Committee Review _____

Template Version: 05/28/2020

Enterprise Data Science

EXECUTIVE SUMMARY

Enterprise Data Science is a program of opportunity. Our vision is that by democratizing data and analytics, across the enterprise, we thereby empower our people to use their expertise, ingenuity, and innovation to better serve our customers, communities and people. The program acts as a Center of Excellence to help migrate the company further towards managing data as an enterprise asset. The Data Science team delivers value thru the development of use-cases as jointly scoped and prioritized with each of the requesting business units. Aside from the business insights derived thru use-cases developed by this team, this program also supports change management of new analytics tools and skills development within the enterprise to promote self-service. The budget for this program primarily consists of capital labor resources.

The Data Science program maintains an active dashboard, displayed below, of use-cases delivered since program inception in 2017. Each use-case is tagged with the following:

- alignment with organizational goals (i.e., perform, customer, people, invent)
- functional area served (i.e., facilities, contracts, veg mgmt, etc.)
- value metric - categorized as either compliance, cost reduction, customer, inform, productivity, or revenue growth

Investment drivers of program: <ol style="list-style-type: none"> 1. <i>performance & capacity</i> (PRIMARY) - drive efficiencies enterprise wide 2. <i>customer service quality</i> - provide customers with information that allows them to make choices that matter most to them 3. <i>asset condition</i> - provide data and analysis that analyze asset performance 4. <i>customer requested</i> - support new products and services that serve the customer 	
---	---

Enterprise Data Science Business Case – Key Info	
Capital Cost	5-year Program \$9,100,000 (2021-2025)
Jurisdiction	All jurisdictions (allocation)
Timeline	This is ongoing program (2021-2025); with expectations to continue 2025+
Alternatives	Risks (of alternatives)
Disband program <i>all employees repurposed</i>	Business Units exclusively perform data analytics, assuming the skills & capacity are available; analytic results could be non-uniform across org
Scale-back program <i>some employees repurposed</i>	Enterprise could fall behind peers with analytic skills development, thereby impacting investment drivers
Contract with 3 rd Party for Data Science Services	Costs are higher with 3 rd party; use-case flexibility would be reduced

VERSION HISTORY

v	Author	Description	Date	Notes
1.0	Pat Dever	Initial Business Case	Nov 2016	Start of program
1.1	Nolan Steiner	Change Request 2020-2024	July 2019	
2.0	Nolan Steiner	Business Case 2021-2025	July 2020	

Enterprise Data Science

GENERAL INFORMATION

Requested Spend Amount	\$9,100,000
Requested Spend Time Period	5 years (2021-2025)
Requesting Organization/Department	ET / Data Science (X-09)
Business Case Owner Sponsor	Nolan Steiner Pat Dever
Sponsor Organization/Department	ET / Data Science (X-09)
Phase	Execution
Category	Program
Driver (Primary)	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

This program is intended to unlock additional value contained in Avista’s enterprise data assets, using analytic tools that enhance our enterprise capabilities. Through the implementation of this program, users will be able to access enterprise information more easily, better understand what the data means including how it may be related to other disparate data sets, and how to use analytic tools that help support the development of meaningful insights. The program has extracted key insights that benefit the customer and other stakeholders, which may be challenging to implement on an enterprise level in the absence of this program.

1.2 Discuss the major drivers of the business case (Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations) and the benefits to the customer

The Data Science program develops use-cases jointly with various business units across the enterprise, with each business unit having their own investment driver. Based upon the use-cases delivered by this program to date, it has predominantly supported the ‘Performance & Capacity’ investment driver. It should be noted this program already has, or has plans in future, to develop use-cases that support all investment drivers.

As to the benefits this program has delivered to the customer, those can vary by use-case. Some examples of customer benefits from prior use-cases include:

- *reduced operating costs* (i.e., customers mostly likely to switch to paperless billing)
- *products that matter to customers* (i.e., targeting customers most likely to adopt new products such as community solar, roof-top solar, natural gas, etc.)
- *low-income analysis* (i.e., analysis supporting need to increase Oregon low-income funding for energy efficiency programs, LIRAP analysis that shows at risk customers that may qualify for energy program assistance).

Enterprise Data Science

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

This program was developed in 2016 in order to leverage new technologies to help drive more efficient and prudent decision making. For Avista and its customers to benefit from the data driven economy, data and analytics need to take on a more active and dynamic role in supporting customer activities, which this program has taken on within the enterprise.

Data is the raw material for any decision and many key initiatives at Avista. Data comes both from within and outside Avista, and modern technology enables us to harness and use it differently than in prior years. Data exists everywhere: at rest, in motion, on-premise and in the cloud. Data volume, variety and velocity is ever-increasing, which can be challenging to capture and retrieve without the right tools in place. With ongoing cost pressures within the enterprise, the Data Science program can sort thru large amounts of data to help identify cost-reduction, productivity or risk-reduction opportunities.

Stopping or delaying this program will likely put Avista at a competitive disadvantage to other companies that are similarly adopting data and analytic platforms and tools to serve their customers or other stakeholders. Likewise, with a robust ongoing Data Science program at Avista, this program helps positively differentiate our company with insights into higher customer satisfaction, customer retention, positive community relations, enhanced employee engagement, or other stakeholder benefits.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

The Data Science program tracks several key metrics associated with each completed use-case, with a summary dashboard published and available for reference. The program attempts to serve a balance of internal competing needs, rather than focus exclusively on one functional area or one organizational goal. As such, each use-case is described and tagged with the following:

- *Organizational goals*: how the use-case aligns with ‘perform, customer, people, or invent.’ The program has developed use cases aligned with each of the four organization goals of the enterprise.
- *Functional area served*: identification of which department or functional group has benefitted from the results (i.e., facilities, contracts, vegetation management, asset management, customer service, products and services, etc.)
- *Value metric*: a categorized description of value, bucketed into either ‘compliance, cost reduction, customer, inform, productivity, or revenue growth’

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

Capgemini Consulting authored a report in 2016 that provided a roadmap for developing a Data Science program at Avista (report: “Future State Executive Summary – Data Science Program”) Location: <https://avistacorp->

Enterprise Data Science

my.sharepoint.com/:p:/p/pat_dever/EYsdBrTwLi5Fm-07XOySQ6ABBQs1ReAhN1fjKDw36JPRQ?e=dfGvea

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

n/a

Option	Capital Cost	Start	Complete
[Recommended Solution] – Staffing up to proposed budget	\$9,100,000	01 2021	12 2025
Disband Program (repurpose/eliminate staff)	\$0	01 2021	n/a
Scale-back Program (reduce staff)	>\$0 and <\$9,100,000	01 2021	12 2025
Contract with 3 rd party for data science services	>\$9,100,000	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The historical spending trend of the Enterprise Data Science program has been at or near the annual requested amounts shown in this Business Case for the past several years. We expect the trend to be similar over the 5-year horizon from 2021-2025. The business case owner and sponsor have previously managed to then approved budgets and will continue to manage current and future spending to the approved budget resulting from the Funds Request corresponding with this Business Case.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

This Business Case is primarily comprised of capital labor resources, with minimal O&M allocation for the entire Data Science program. The proportion of capital labor resources is forecasted to continue for the duration of the 5-year capital plan horizon. As mentioned previously, this program develops use-cases on behalf of other business units, some of which may lead to cost reductions or productivity enhancements within the business units themselves. Those results and budget impacts are monitored within the respective business units.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

The results of each use-case are delivered to the business units for their further assessment and/or adoption into existing processes. Any process changes are managed

Enterprise Data Science

and valued at the business unit level. Data Science often delivers automated updates of use-case results for ongoing benefit to the requesting business unit.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Avista Data Science Team - Data is a valuable asset that can be used to gain new insights and uncover hidden opportunities. It is a renewable resource that can be used to gain insights across the enterprise. It is important to have a team of Data Analysts, Engineers and Scientists that fully understand our business and culture. By exposing our data assets to business analysts, we gain significant value toward business outcomes.

Outsource Data Science to 3rd Party – Knowing our business and culture are keys to the success of using data to help inform the business. Outsourcing the analyst work would miss opportunities and reduce the continuity of the program.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

This program delivers two packages per year, each package containing completed use-cases for the applicable period. The packages delivered are considered used-and-useful, and transferred to plant as part of the routine Project Management protocol for such transfers. The use-cases in each package serve each of the four organizational goals of our company, including ‘customer’. Documentation of use-cases and packages is completed according to protocol and retrievable as needed.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program that completes use-cases to serve business unit requests, as they are further defined and prioritized based upon available resources and then-relevant business needs. As stated previously, this program is intended to provide insights using data to enable more informed decision making – whether that decision making is at the strategic level, operational level, or exploratory level. Each use case is tagged with one of the organizational goals of the company (customer, people, perform, invent) to ensure alignment between the program and the corporate strategic vision.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The requested amount is a prudent investment to develop a regimented data and analytics program that delivers useful business insights for more informed decision making. The investment supports our people in learning new tools to advance competencies necessary to improve Avista’s competitive position for advanced analytics. These analytics and resulting insights will enable us to continually improve how we serve the customer, our people, and innovative solutions to new challenges as they arise.

Enterprise Data Science

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case



2.8.2 Identify any related Business Cases

The below listed business cases are related, but not dependent upon Enterprise Data Science. Data Science will be able to leverage value from these other business cases, and vice versa, from an analytics standpoint.

- Sales Force – CXP
- AMI – Washington
- Energy Imbalance Market
- Data and Analytic Platform - AWS

3.1 Steering Committee or Advisory Group Information

The Data Science Steering Committee meets, at minimum, once per month to review budget (spend vs budget), as well as a review of active use cases and upcoming resource needs to fill near-term use-cases under consideration. Notes of Steering Committee meetings are archived for reference, and action items or priorities are also advanced where necessary as a result of such meetings.

Enterprise Data Science

3.2 Provide and discuss the governance processes and people that will provide oversight

The Project Manager assigned to Data Science coordinates the monthly SteerCo meetings and, in concert with the Data Science management team, develops the slide deck for discussion at SteerCo. Participants of the monthly SteerCo meeting include:

- Pat Dever – Chief Data Strategist
- Nolan Steiner – Manager Data Science
- Hossein Nikdel – Director Application and Innovation
- Mike Mudge – Data Deliver Manager
- Jason Pegg – Enterprise Data Architect
- Tom Heavey – Enterprise Application Architect
- Jim Kensok – VP, CIO

Outside of the formal SteerCo meetings, the Chief Data Strategist consults regularly with his manager, the VP CIO, to discuss issues and obtain input as needed.

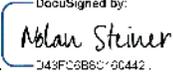
3.3 How will decision-making, prioritization, and change requests be documented and monitored

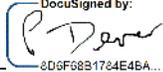
Day-to-day decision making within the program is handled by the Data Science team, with the Director consulted for direction when needed. Ad hoc meetings occur several times per day, to discuss activity and progress of ongoing use-cases. For planning purposes, the Data Science team meets every two weeks for sprint planning to manage priorities within the team and across other teams in which there are dependencies. Every other week has a standing formal team meeting to address any other relevant issues that need to be shared for further discussed with the entire team. Decisions related to budgets are typically escalated first to the Manager Data Science, then to the Chief Data Strategist. Periodically, we may seek direction from VP of ET/IT to provide guidance and alignment.

Change requests to budgets, if warranted, are documented by the Data Science team, PMO and FP&A.

The undersigned acknowledge they have reviewed the Enterprise Data Science business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Enterprise Data Science

Signature:  _____ Date: Jul-30-2020 | 10:12 AM PDT
 Print Name: Nolan Steiner _____
 Title: _____
 Role: Business Case Owner _____

Signature:  _____ Date: Aug-01-2020 | 8:02 AM PDT
 Print Name: Pat Dever _____
 Title: _____
 Role: Business Case Sponsor _____

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Committee Review _____

Template Version: 05/28/2020

Basic Workplace Technology

EXECUTIVE SUMMARY

The nature of basic workplace technology requests can vary, be either planned or unplanned and generally have short turnaround cycles. The short turnaround nature of the requests can cause chaos in the procurement processing of basic workplace technology, as the lag time from when a request is submitted to when it is fulfilled can exceed expected timeframes. Additionally, ad-hoc requests, impact business value by un-batching technology orders, as well as reduce employee productivity and experience by submitting individual orders to meet requests.

The Basic Workplace Technology business case responds to five essential functions that equip our staff to optimize our business and be responsive to our customers. The five essential functions include: Employee Onboard; Contractor Onboard; Job Function Change; Off Cycle Exchange; and General Additions. This requires a need to keep a small amount of inventory to meet business value timeframes.

The primary driver for this program is performance and capacity, whereby the Company balances the need to meet job function requirements and technology availability. To do so, it requires historical trend analyses, technology inventory management, and cost per unit control measures. The costs associated with each solution can vary by the type of solution and number deployed.

Therefore, regular review of inventory levels, historical trends, and planned requests help determine the overall performance and capacity standards under the established budget allocations. These reviews can result in calling for additional investment under this program from time to time for technology procurement trending behind planned requests. Not funding this program can result in delays in hiring, onboarding, job function changes, automation opportunities, etc.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	7/2019	
2.0	Walter Roys	Revision of BCJN to new template	7/2020	

Basic Workplace Technology

GENERAL INFORMATION

Requested Spend Amount	\$7,200,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Basic workplace technology required by Avista's workforce to perform office, call center, or field day-to-day job functions is a requirement, which either automates or enables business processes to provide gas and electric service to our customers. Regular job changes can occur in our workforce throughout our service territory as new employees or contractors are hired, leave, or retire, while others can change in job role or responsibilities. These changes at times result in technology requests that can vary, and generally have short turnaround cycles of (2) two weeks or less to fulfill them, at times planned and at other times unplanned. This could range from a new hiring of a cohort of customer service center staff needing a computer and monitors with call center applications, headsets, and communication equipment to a change in job function for an existing employee moving from the office out to the field and requiring a rugged computer or tablet with a different application portfolio, and hand radio.

The short turnaround nature of the requests can cause challenges in processing procurement requests, which can result in lag time from when a request is submitted to when it is fulfilled and put worker productivity at risk of not having the technology to perform their new job assignment. Additionally, the ad-hoc nature of requests, can impact business value by un-batching technology orders, as well as reduce employee productivity and experience by submitting individual orders to meet requests.

Basic Workplace Technology

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) **and the benefits to the customer**

The Basic Workplace Technology Business case is to respond to technology requests that allow workers to meet performance in their respective job functions within the capacity of in-portfolio technology at Avista. Therefore, the major driver for this business case is Performance & Capacity. The business requests generally fit within these major categories:

- Employee Onboard
- Contractor Onboard
- Job Function Change
- Off Cycle Exchange
- General Additions

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Assuring that each technology request is met within the expected timeframe for job additions or changes, allows for Avista's workforce to continue to provide gas and electric service to our customers across all our service territory. Job role additions, and changes are not new and will not stop, as the utility workforce continues to evolve with many retiring from older roles, and new roles created to meet the changing nature of our industry. The risk of not approving this program will result in delay of technology fulfillment to Avista's workers who are requiring new technology due to a new job or change in job function.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Tracking of each request is done to determine if each technology request is fulfilled within the (2) two-week timeframe, as the objective of this business case is to meet in-portfolio technology requests for employee and contractor onboarding, job function changes, off-cycle exchanges, and general additions.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

There are no specific studies to point to on the need for basic workplace technology, since it is now an expected norm. Generally, all job functions require some form of basic technology equipment to perform day-to-day job assignments. From a computer with the right set of applications to a mobile radio that keeps field workers safe in remote and hard to reach locations. This program was designed to deliver on each of those requests based on the criteria mentioned above.

Basic Workplace Technology

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Not applicable, as the investment under this program business case is to respond to technology requests that allow workers to meet performance in their respective job functions within the capacity of in-portfolio technology at Avista.

The basic workplace technology requests may generally include personal computers, tablets, print/copy/scan systems, television displays, monitors, telephones, etc., and the basic software productivity tools. They generally fall within these major categories, and are therefore tracked accordingly:

- **Employee Onboard:** A request from leadership to deliver workspace technology for a new employee.
- **Contractor Onboard:** A request from leadership to deliver workplace technology for a new contractor.
- **Job Function Change:** A request from leadership to add or change workplace technology to enable a job function change for an existing employee or contractor.
- **Off-Cycle Exchange:** A requests from leadership to exchange in service workplace technology, in a timeframe that does not align with a technology refresh cycle.
- **General Additions:** General requests from leadership for additional workplace technology.

The technology solutions fall within the capacity of in-portfolio technology at Avista, and therefore the recommended solution is a funding level commensurate with historical technology requests for employee and contractor onboardig, job function changes, off-cycle exchanges, and general additions. This business case does not include planned technology refresh investments based on technology obsolescence.

The recommended solution allows the business case program to proactively plan for procurement intervals to maintain small-batches of technology inventory in-house to meet the short-turnaround requests over the course of the year.

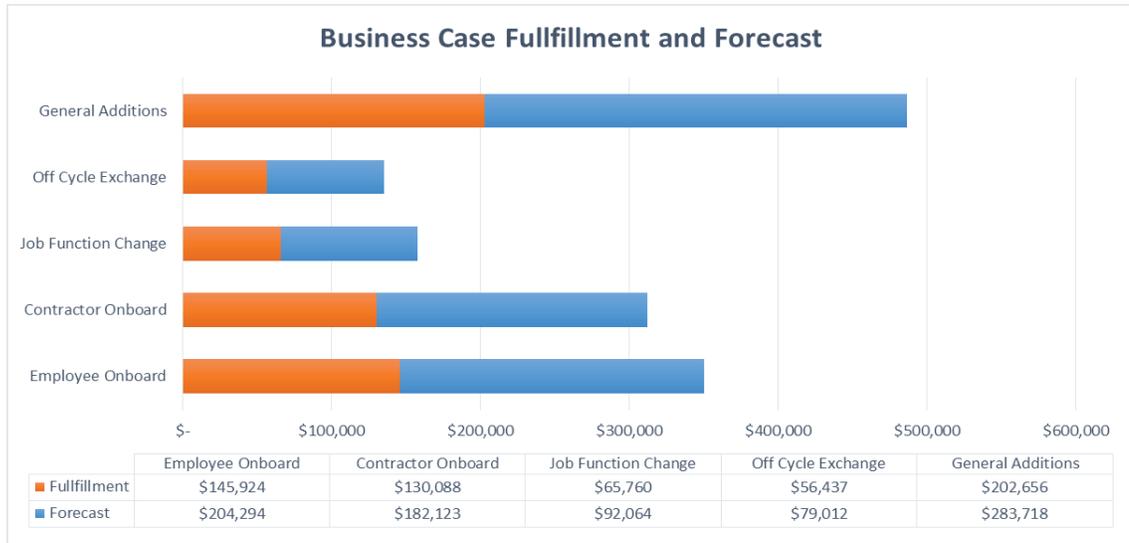
Option	Capital Cost	Start	Complete
Recommended Solution	\$7,200,000	01/2021	12/2025
[Alternative #1] – 80% Funding Level	\$5,760,000	01/2021	12/2025
[Alternative #2] – 70% Funding Level	\$5,040,000	01/2021	12/2025

Basic Workplace Technology

Do Nothing	\$0	01/2024	12/2025
------------	-----	---------	---------

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

Due to the nature of unpredictability of job role additions or changes, in 2019, a historical trend analyses provided the estimate required to fulfill these orders based on year to date requests fulfilled and those forecasted.



2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

The funding requested under the Basic Workplace Technology business case will be invested in technology to fulfill business requests in the areas of employee and contractor onboarding, job function changes, off-cycle exchanges, and general additions. Generally basic workplace technology includes personal computers, tablets, print/copy/scan systems, television displays, monitors, telephones, etc., and the basic software productivity tools.

Investment in these technologies can result in added O&M expenses from an increase in licenses from time to time. There are no O&M reductions or offsets resulting from these investments, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

Basic Workplace Technology

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

All Avista business functions requesting basic workplace technology due to a job addition or change, off-cycle exchange, or general addition is affected by this business case, as it enables everyday work activities and automated business processes.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Several options were considered and proposed. However, the 'Do Nothing' alternative was removed as an option, as it is not realistic. Below are the alternatives discussed in detail:

- **A 'Do Nothing' option** would not fund the basic technology items and become a blocking factor of productivity; job functions are extremely difficult to perform without digital productivity tools. For example, a new worker would not be able to adequately meet job function performance requirements in a customer call center without a personal computer and telephone.
- **Alternative #1 is to fund at 80%** of the recommended solution and seek alternative ways to reduce deployment costs to deliver basic workplace technology and return during the year for additional funds to meet business demand, if not successful.
- **Alternative #2 is to fund at 70%** of the recommended solution and seek alternative ways to reduce deployment costs to deliver basic workplace technology and return during the year for additional funds to meet business demand, if not successful.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

This business case is a program of blanket technology projects that transfers to plant monthly. Quarterly forecasts capture changes in transfers to plant based on trends of fulfillment requests.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

Basic Workplace Technology

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

Each investment under this business case program allows Avista to deliver electric and gas services to our customers.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The reason that the technology investment under the Basic Workplace Technology program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in an office, customer service center, or in the field.

Basic workplace technology deployments that fall under this business case are often in short notice, and minimum inventory quantities are maintained to meet business value time frames. The business case is structured in such a way to handle both planned or unplanned short-cycle business demand to deliver basic technology items to all job functions and office areas.

Alternative funding levels are considered, yet not investing in it is not an option as basic workplace technology is a minimum requirement to perform day-to-day job functions to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting.

Additionally, the existing governance structure overseeing this business case program meets regularly to oversee and make decisions on the ongoing needs, benefits, costs, and risks associated with basic workplace technology fulfillment requests.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce interface with basic workplace technology business case, either as a leader requesting technology changes or a worker responding to job role and responsibility changes.

Basic Workplace Technology

2.8.2 Identify any related Business Cases

The technology deployed under this business case is in the existing technology portfolio, which is driven by engineering teams who are responsible for managing technology obsolescence and asset lifecycles.

3.1 Steering Committee or Advisory Group Information

The Basic Workplace Technology Delivery governance team will act as the governance committee that oversees investment under this business case. The governance team consists of the Business Case Owner, Business Case Sponsor, and may include other key leadership stakeholders.

3.2 Provide and discuss the governance processes and people that will provide oversight

The governance team is accountable for the financial performance of this business case. The governance team will have regular monthly meetings to review the progress of the program and make decisions on the following topics:

- Prioritization of Business Drivers
- Funding Constraints
- Long-term Planning
- Scope of Workplace Technology
- Monitoring Workplace Technology Productivity

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Basic Workplace Technology

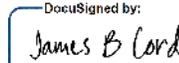
The undersigned acknowledge they have reviewed the **Basic Workplace Technology Business Case** and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Jul-30-2020 | 11:46 AM PDT

Print Name: Walter Roys

Title: System Engineering Manager

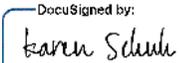
Role: Business Case Owner

Signature:  _____ Date: Aug-03-2020 | 5:44 PM PDT

Print Name: Jim Corder

Title: IT Director

Role: Business Case Sponsor

Signature:  _____ Date: Aug-03-2020 | 6:37 PM PDT

Print Name: Karen Schuh

Title: IT Program Manager

Role: Steering/Advisory Committee Review

Signature:  _____ Date: Aug-04-2020 | 7:28 AM PDT

Print Name: Andy Leija

Title: ET PMO Manager

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Atlas

EXECUTIVE SUMMARY

Atlas is a multi-year year program to strategically replace the suite of custom Geographic Information System (GIS) applications known as Avista Facility Management (AFM). AFM is the system of record for spatial electric facilities in Washington and Idaho and gas facility data in Washington, Idaho and Oregon and provides the connectivity model to support GIS engineering and analysis applications. The AFM applications and data model have been used for nearly two decades and have reached technology obsolescence. The existing data model used by AFM is being replaced by a new industry standard model called the Utility Network. The AFM is a cornerstone to Avista’s ability to provide responsive service across its territory. If AFM is not replaced with a modern GIS platform, which can utilize the Utility Network model, the ability of Avista to meet customer, regulatory, compliance requirements will be at risk. Replacing AFM will enable Avista to take advantage of commercial GIS applications that provide improved mobile and desktop functionality, increased collaboration capabilities and increased reliability.

Improvement of customer experience is at the core of Atlas Program. The proposed next generation applications will enable Avista workers, office and field, to respond to customer requests faster; provide information to customers that is more accurate, timely and complete; and improve customer experience when they interact with Avista. Avista benefits of replacing the AFM applications 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.

The total program budget for the 12 year plan is estimated to be \$30.0M dollars. The funds in this business case will be utilized to fund the phases of the Atlas Program as detailed in the supplemental information referenced in section 1.5 below. The years 2020-2026 will be primarily focused on the project timeline and deliverables detailed in the Utility Network Advantage Program Report, while also supporting Mobility in the Field initiative which configures and deploys mobile GIS mapping and data applications.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Mike Littrel	Initial draft of business case	04/2017	
2.0	<i>Mike Littrel</i>	<i>Updated business case format</i>	<i>07/2020</i>	
3.0	<i>Mike Littrel</i>	<i>Updated program details and timelines</i>	<i>07/2021</i>	

Atlas

GENERAL INFORMATION

Requested Spend Amount	\$30,000,000
Requested Spend Time Period	06/2015 – 12/2026
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Mike Littrel Josh DiLuciano
Sponsor Organization/Department	Energy Delivery Technology Projects
Phase	Execution
Category	Program
Driver	Asset Condition

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Avista’s AFM system has been used for nearly two decades and is approaching technology obsolescence. The technology does not have the ability to utilize the Utility Network data model and will not meet future business needs. The software has already undergone two major conversions to extend the life to this point. The first was a programming language conversion from Microsoft Visual Basic to Microsoft .NET because Visual Basic was no longer a supported language. The second was a geometric precision change to support the requirements of the integration with Maximo. Both of these changes achieved their goals; however, the code is now more fragile which increases the complexity of supporting AFM. Additionally, the existing system is custom built and requires continual maintenance and support by internal staff whose skillset is becoming scarce, as the fundamental code and architecture is complex. In parallel, most of the staff who were part of the original custom build of the AFM system, have long since moved on. Certain AFM applications, such as electric and gas edit and Outage Management Tool, do not have the full complement of desired functionality and are unreliable at times due to the outdated architecture. When a new configuration request is surfaced, the change cannot always be implemented, as the custom code and architecture will not allow it. The existing data model used by the AFM applications is being replaced by an industry standard model called the Utility Network. It is important to begin the transition to the next generation GIS technology while there is still staffing to support the AFM system, and the current data model is still supported, because delaying will increase the risk of customer impact caused by increasing system issues.

Atlas

1.2 Discuss the major drivers of the business case *(Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations)* **and the benefits to the customer**

Improvement of electric and gas customer experience is at the core of the Atlas Program. These new tools will enable Avista workers, office and field, to respond to customer requests faster; provide information to customers that is more accurate, timely and complete; and improve customer satisfaction when they interact with Avista.

In addition to replacing traditional desktop GIS applications, additional mobile tools will extend the value of Avista's investment in the GIS system by providing field staff with applications for near real-time editing and data collection. For example, the Mobile Design Tool will enable functionality for a designer to perform designs at a job site, providing an improved customer experience, and will be fully compatible with the desktop design tool. In addition, the Mobile tools will provide field personnel with powerful functionality to meet customer responsiveness expectations; Global Positioning System (GPS) guided turn by turn directions to work locations; electronic receipt sent to the customer's communication preference (email, text, etc.) at completion of work orders; access to GIS data in the field; capture of as-built configuration, compliance data and materials electronically by taking advantage of a variety of data sources, including digital image data, keyed data, bar code scanned data, and GPS location data.

New commercial solutions and industry standard data model also provide Avista with the ability to more fully integrate with gas and electric planning and analysis tools. This will lead to a better understanding of where weakness in the infrastructure may exist and proactively reinforce those areas improving reliability for the customers.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The AFM system has been used for nearly two decades and is approaching technology obsolescence. Continuing to utilize AFM would continue to create Operating and Maintenance cost pressure while also creating risks and lost opportunities. Additionally, any investment in the current system is a sunk cost, as the system is limited in the functionality it can provide to our staff as they serve both gas and electric customers. The current system is highly customized and cannot leverage industry standard GIS platforms to share data sets that provide field and office workers with more information about our assets and those of other agencies, such as local, county and state governments. The existing data model used by the AFM applications is being replaced with and industry standard model. The GIS platform is a cornerstone to Avista's ability to provide responsive service across its territory, if it is not replaced with a modern GIS platform that can utilize the Utility Network data model, the ability of Avista to meet current and future customer, regulatory, and compliance requirements will be at risk.

Atlas

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Each project within the Atlas program will have a project charter which includes project costs, schedule, deliverables and benefits. Each project will have a steering committee assigned. Throughout the duration of each project the steering committee will be provided status reports on a monthly basis. These status reports will include updates on project scope, schedule and budget, as well as any risks and/or issues that the project team is currently working on.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

Justification for system replacement is based on comprehensive assessments of AFM technologies, processes and functions that were performed in 2015 and 2019 by third-party consultants as part of the project planning process. The details of the assessments are available in the following supporting documents:

- Current State Report
- Future State Report
- Gap Analysis Report
- Industry Analysis Report
- Requirements Report
- Alternative Analysis Report
- Utility Network Advantage Program Report
- Atlas Roadmap

The Esri ArcGIS product and the Utility Network data model will continue to be the foundational spatial data engine for next generation application delivered through Atlas. Esri is the industry standard for GIS, so continuing to use that platform provides the highest level of access to commercial applications and standard integration to other enterprise applications. The replacement will take place through a series of targeted and incremental projects to maximize value and minimize risk.

Atlas

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.



*GIS- Geographic Information System

Esri GIS serves as the foundational data structure on which AFM applications are built or rely on. AFM is the system of record for spatial electric and gas facility data and provides the connectivity model to support the AFM applications. The following is a brief description of AFM tools.

- Electric and Gas Edit are tools inherent in the system used for data edits prior to committing final data changes and additions.
- Outage Management Tool is an in-house developed application that supports outage analysis and management.
- Engineering Analysis is a commercial tool used for engineering analysis modeling.
- Distribution Management System is a commercial application used to monitor and control the distribution grid. It relies on the GIS data from AFM to determine the current operating state.

The AFM applications and data model have been used for nearly two decades and is approaching technology obsolescence. Continuing to utilize AFM would continue to create Operating and Maintenance cost pressure while also creating risks and lost opportunities. Additionally, any investment in the current system is a sunk cost, as the system is limited in the functionality it can provide to our staff as they serve both gas and electric customers.

Option	Capital Cost	Start	Complete
Recommended Solution - Replace the custom AFM applications with Commercial Off The Shelf Applications	\$30.0M	06/2015	12/2026
Alternative - Continue to utilize the custom AFM applications	\$10.0M	06/2015	12/2026

Atlas

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

Detailed documentation from industry experts as listed in section 1.5 above. Additionally, project costs from recent comparable projects at Avista were used to determine the amount of the capital funds request and duration of the business case.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

The funds in this business case will be utilized to fund the phases of the Atlas Program as detailed in the supplemental information referenced in section 1.5 above. The years 2020-2026 will be primarily focused on the project timeline and deliverables detailed in the Utility Network Advantage Program Report, while also supporting Mobility in the Field initiative which configures and deploys mobile GIS mapping and data applications.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Each project within the Atlas Program will include a business process and stakeholder analysis to determine the organization change management and training needs. This analysis will then be used to deliver communication to the stakeholders throughout the project and develop end user training.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

The current suite of AFM solutions has a recent history of performance challenges which may only be mitigated with considerable investment or replacement. Continuing to invest in a custom system with no vendor support is not a sustainable long-term solution. There are network management functionality limitations and performance related issues with the current data model that are addressed in Esri's new Utility Network data model and platform.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

The work was started in 2015 and is scheduled to complete in December 2026. The Atlas Program has been and will continue to be divided into discrete projects than when possible have a duration of one calendar year or less. This will allow the capital expenditure for a given year to be transferred to plant in that year.

Atlas

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

Having a modern GIS will enable Avista to meet the changing needs in energy delivery such as Distributed Generation and Smart Grids with Grid Edge Intelligence. It will also enable the ability to model complex network and equipment such as electric substations and gas regulator stations to provide a more accurate view of the assets in the field. The increased accuracy and currency of the data along with modern mobile applications will provide field personnel with powerful functionality to meet customer responsiveness expectations. Finally, the advanced modelling will enable improved analysis and reporting capabilities.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project.

The AFM applications and data model have been used for nearly two decades are approaching technology obsolescence. Continuing to utilize AFM would continue to create Operating and Maintenance cost pressure while also creating risks and lost opportunities. Additionally, any investment in the current system is a sunk cost, as the system is limited in the functionality it can provide to our staff as they serve both gas and electric customers. Replacing AFM will enable Avista to take advantage of commercial GIS applications and an industry standard data model that will provide improved mobile and desktop functionality, increased collaboration capabilities and increased reliability far beyond the what can be achieved with AFM.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Customers will interface with the technology in this business case both through their interactions with Avista personnel who will be using the technology and through map-based information that they will have access to through online methods such as the Avista website.

2.8.2 Identify any related Business Cases

The work in the business case closely is related to the work in the Outage Management System and Advanced Distribution Management System business case.

Atlas

3.1 Steering Committee or Advisory Group Information

The Atlas Business Case has two levels of governance: The Executive Technology Steering Committee (ETSC), and Project Steering Committees. The committees review monthly project status reports, which identify project scope, schedule and budget, as well as any risks and/or issues that the project team is currently working on. The Atlas Program Team reports progress monthly to the steering committees and other stakeholder groups.

3.2 Provide and discuss the governance processes and people that will provide oversight

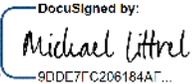
The Steering Committee for each project in the Atlas Program will be made up of stakeholders from across the functional business units and Enterprise Technology.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

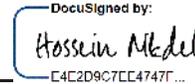
Status reports to the steering committees will be used as the official review and approval process for prioritization and change requests. Risks, issues and change requests will be documented in project logs and kept as artifacts of each project within Enterprise Technology's project management software system.

Atlas

The undersigned acknowledge they have reviewed the **Atlas** Business Case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Jul-07-2021 | 3:17 PM PDT
DocuSigned by: Michael Littrel
9DDC7FC206184A...
 Print Name: Mike Littrel
 Title: Manager of Energy Delivery Technology Projects
 Role: Business Case Owner

Signature:  Date: Jul-08-2021 | 7:18 AM PDT
DocuSigned by: Josh DiLuciano
A3C71874F9564DD...
 Print Name: Josh DiLuciano
 Title: Director of Electric Engineering
 Role: Business Case Sponsor

Signature:  Date: Jul-07-2021 | 5:46 PM PDT
DocuSigned by: Hossein Nikdel
E4E2D9C7EE4747F...
 Print Name: Hossein Nikdel
 Title: Director of Applications and Systems Planning
 Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Customer Facing Technology

EXECUTIVE SUMMARY

The Customer Facing Technology business case focuses on delivering value to all customers (ID, WA, and OR) through our various digital channels including but not limited to MyAvista.com, text/SMS, voice, and our mobile app. Customer expectations have changed in that companies are expected to deliver fast, easy, personalized, and intuitive self-service. Customers want a consistent experience from their first interaction to the resolution of their issue and they are comparing Avista to all the brands with which they interact. In addition to existing customers desiring to work with Avista in digital ways, new customers reach adulthood every year and the expectations for self-service and digital engagement will continue to increase as these new generations become our customers. Funding the Customer Facing Technology business case ensures that Avista can continue focusing on delivering value to our customers and making it easier for them to interact with us.

Features in this business case include new ways for our customers to interact, including: simplifying the payment process, making it easier for customers to view their bill and their usage information, improving navigation so customers can easily find what they are looking for, adding new functionality to make mobile viewing better, enhancing the outage map to include additional outage information, new functionality for business customers to help them manage their energy use, and tools for customers who have their own electric generation systems. In addition to these features for customers, this business case also includes the foundational and technical work to run the digital channels. The underlying technology must be kept up to date in order to stay up and running for our customers. Upgrades and service packs are required to keep the channels performing and secure. More functionality is included in this business case and is referenced in Section 2.2.

Avista’s digital channels are experiencing increasing usage year over year. If the digital channels become stagnant and are not enhanced to accommodate adjusted consumer behavior, customer satisfaction will decline, resulting in increased calls to the call center and increases in costs to serve our entire customer base.

The requested spend amount over 5 years is **\$26,000,000**

	2022	2023	2024	2025	2026
CFTP	\$5,000,000	\$5,000,000	\$5,000,000	\$5,500,000	\$5,500,000

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Stephanie Myers	Initially approved	4/20/2020	
2.0	Stephanie Myers	Updated Executive Summary	6/26/2020	
2.1	Stephanie Myers	Additional content added	7/20/2020	
2.2	Stephanie Myers	Finalization of document	7/28/2020	

Customer Facing Technology

GENERAL INFORMATION

Requested Spend Amount	\$26,000,000
Requested Spend Time Period	5 Years
Requesting Organization/Department	Customer Solutions Enterprise Technology
Business Case Owner Sponsor	Stephanie Myers Kelly Magalsky Hossein Nikdel
Sponsor Organization/Department	Customer Solutions
Phase	Execution
Category	Program
Driver	Customer Service Quality & Reliability

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Avista’s digital channels are the primary ways our customers choose to interact with our Company. These channels provide ways our customers can self-serve and complete their transaction or request. Self-service is a common trend across all industries and continues to be a choice most people are choosing to make when it comes to online shopping or any service experience. In fact, 40% of all consumers now prefer self-service over human contact and 70% expect a company’s website to include self-service options (Kulbyte, 2021). In addition, Avista’s digital channels are experiencing increasing usage year over year, see figure 1 below.

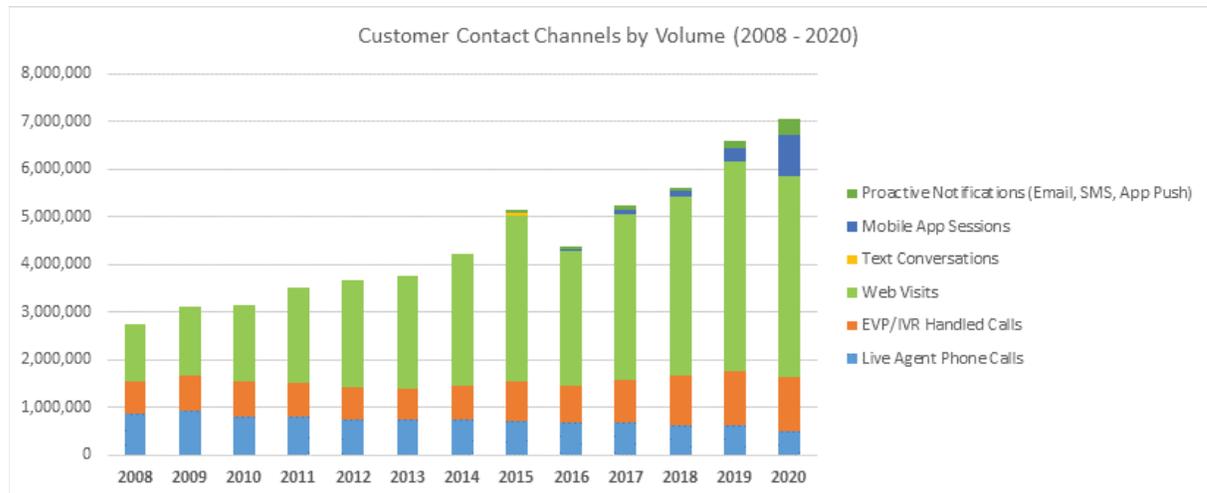


Figure 1: Customer contacts volume by channel

Customer expectations continue to rise. Gone are the days when a drive up drop box for payments is acceptable. Additionally, customers continue to expect more value for their energy dollars and have increasing interest in a variety of offerings

Customer Facing Technology

that can simplify their interactions with Avista and give them more information about, and control over, their energy use. This, combined with the expansive growth of technology, creates an expectation that information is easy to find, payments are easy to make, communications are proactive, timely, personalized and available through a variety of channels, and tools that provide these opportunities are part of the overall energy package. Figure 2 below in Section 1.5 demonstrates how customers use of digital channels has increased over the past 10 years, and likewise use of live contact center representative phone calls has correspondingly decreased.

The primary digital channel, MyAvista.com, underwent a significant technical uplift and user experience redesign in 2017. This platform needs ongoing upgrades and enhancements to ensure the technology does not go out of support with the software vendor and continues to deliver the value that customers expect.

We continue to find ways to automate manual processes and ensure a human is not in the middle of the ideal self-service interaction that our customers expect. In order to meet this demand and ensure our channels are up to date, this requires consistent enhancement and investment in the underlying technology and in upcoming trends.

1.2 Discuss the major drivers of the business case *(Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations)* **and the benefits to the customer**

Improvement of the digital customer experience is at the core of the Customer Facing Technology Program. These new tools will enable our customers to self-serve through a digital channel that they choose.

One of the major drivers of the business case is keeping up with customer expectations in an ever-changing digital space. The investments in this business case will provide tools to customers that they are familiar using with other companies. This will keep customer satisfaction high, provide value for their energy dollars, and provide an exceptional customer experience.

Customers continue to desire a mobile friendly digital experience. This business case will continue to use the 'mobile first' mentality when designing self-service tools for our customers. Refer to figure 1 above in section 1.1 to see the increasing mobile app sessions in the last five years.

In 2019, the mobile app was enhanced to include the ability to view and pay your bill, and billing/payment automated alerts. We made this investment due to the increase in mobile usage (see figure 4 below).

Customer Facing Technology

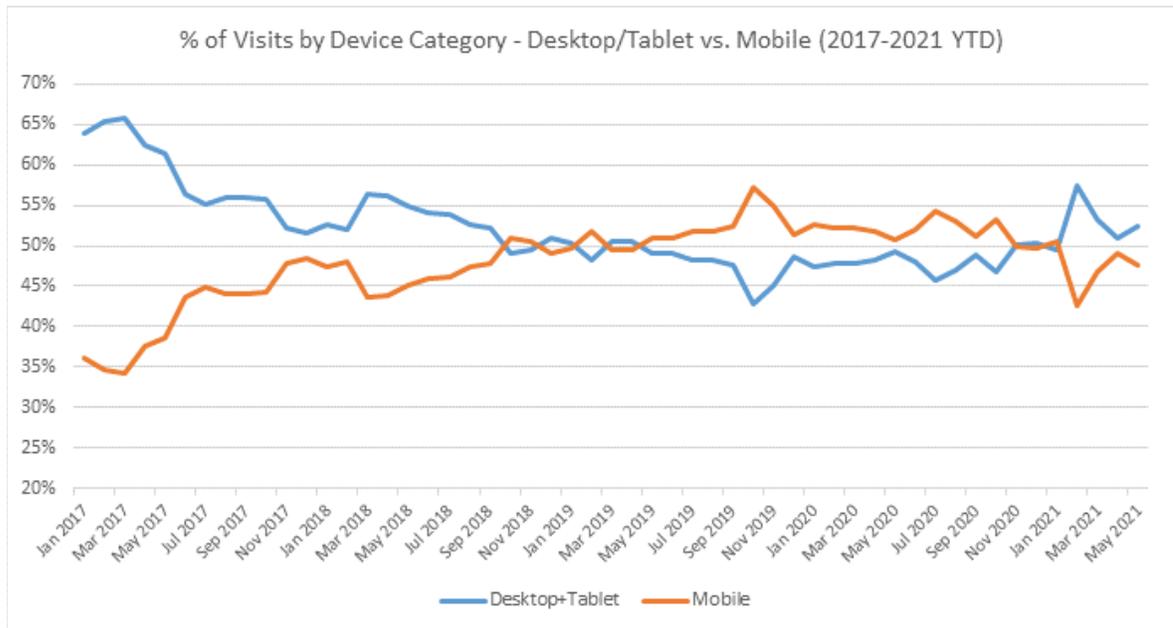


Figure 4: Mobile Device Usage

Avista’s web and mobile app channel is experiencing increasing usage year over year. If these digital channels become stagnant and are not enhanced to accommodate adjusted consumer expectations and behavior, customer satisfaction will decline, resulting in increased calls to the call center and increases in costs to serve our entire customer base. This approach also limits the amount of enhancements and upgrades to our existing technologies; if these are not upgraded, we put all systems at risk of not functioning which would impact the experience and level of service our customers would receive.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

This work is needed now and for the next five years because technology systems are constantly needing software updates, version upgrades, backend changes. In parallel, new tools and options continue to materialize that we can offer to our customers. Customers expect superior performance of our technology systems and the availability of tools and option similar to what they see on other industries digital channels. They are constantly comparing their utility experience to experiences they have with other businesses and “utilities”, such as Amazon, Apple, Safelite, Comcast, etc. Avista must keep up with customer expectations and provide added value for their energy dollars that is tied to digital experiences for utility services and do so in the most cost-effective way possible.

If this business case is not approved, we risk a major decline in customer satisfaction by not meeting customer expectations and also risk increased calls into the call center which is a more costly way to complete transactions. See figure 2

Customer Facing Technology

below, in 2020 , we had 6,222,745 self-service interactions. If that stays the same for 2022, and we invest \$5,000,000 this equates to \$0.80 per interaction. Each call into the call center costs roughly \$10.22. If the digital channels did not exist and as a result each self-service interaction needed to be a phone call, this would equate to roughly \$63.5M (\$10.22 x 6,222,745). If work to maintain, upgrade, and add new tools and options to our digital channels is deferred, we lose functionality that has increased efficiencies for our customers and reduced manual work for our employees year over year.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Customer satisfaction will be used to determine if this investment is successfully delivering on its objectives. We receive a quarterly scorecard from Verint that measures customer satisfaction for the website. According to the most recent metrics for Q1 2021, Avista scored 78.4 points (combined Desktop and Mobile Web) as compared to the ForeSee Website Index average of 68.5 points.

At this time, we are not able to measure satisfaction for the mobile app or text channels.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

Customer Contacts	2010	2018	2019	2020
Self- Service Contacts Handled by Channel	74%	88%	90%	92%
Web Visits	1,587,786	3,770,243	4,406,233	4,209,265
Mobile App Sessions	--	104,786	282,974	859,348
Text Conversations	--	4,691	8,665	12,342
IVR Handled Calls	753,613	1,029,601	1,144,645	1,141,790
Live Customer Contacts Handled by Channel	26%	12%	10%	8%
Phone Calls (CSR)	790,406	626,910	615,229	491,774
Emails (CSR)	40,639	23,877	31,274	37,936
Total Contacts	3,172,444	5,560,108	6,489,020	6,752,455

Figure 2: Overall Customer Contacts

Option	Capital Cost	Start	Complete
Recommended Solution	\$26,000,000	01 2022	12 2026
Alternative #1 – Slower pace of change	\$23,500,000	01 2022	12 2026

Customer Facing Technology

--	--

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

As mentioned above in Section 1.5, the digital channels are our most used channels. The adoption of these channels continues to increase and provide value to our customers by offering a convenient way for them to interact with us. Each interaction our customers have through a digital channel is one less call to the call center. Since 2010, Customer service representatives have answered 38% less phone calls. However, average call handle time is up 33%; and the grade of service (% of calls answered within 60 seconds) is up 2.3 %. Not only are our customers receiving more value for their energy dollars through our digital channels but our customer service representatives are able to provide more time and attention to those customers that do call in. This demonstrates that investment in our digital channels provides a two-fold value to customers.

As shown above in figure 2, our customers are making less calls to Avista, as the more routine-type requests can be managed through our digital channels. As a result, the calls we do receive are more complex, taking longer to work through and requiring more care. This means that the digital channels are critical to keeping our costs down. For every interaction a customer makes through a digital channel (web, app, text), that equates to an avoided phone call. In Figure 3 below, we estimate that in 2020 alone our digital channels have avoided over \$24 million in costs.

In summary, we expect this trend to continue, with a \$5M investment per year for 2022 through 2024 and \$5.5M per year investment for 2025 and 2026, we expect to avoid \$21 - \$26M in costs **per year**. A 5-year investment of \$26M, results in roughly \$120M in avoided costs over the same 5-year period. In 2020 we avoided over \$24M in costs and this business case will be spending \$26M to simply maintain the same annual level of avoided costs that we experienced in 2020. As the digital channels grow (see chart in section 1.1), the amount of avoided costs also grow. Thus, a \$26M investment as requested in our recommended solution would provide approximately 3.6 times the savings over the next five years ($\$120M - \$26M = \$94M / \$26M = 3.6$).

With our flexible work force in the call centers, we can flex the staffing to meet call volume. If calls increase, then we hire more staff to maintain the level of service. On the contrary, if calls decrease, then we staff at fewer hours for the week and sustain this level of staffing if the lower call volume is maintained.

Est. Avoided Costs - Self Service	2009	2018	2019	2020
Web	\$ 3,767,197	\$ 12,884,176	\$ 14,876,599	\$ 15,245,404
Mobile App/Text	\$ -	\$ 928,145	\$ 2,255,684	\$ 2,332,633
IVR	\$ 2,726,771	\$ 5,307,925	\$ 6,591,312	\$ 6,715,248
Total Annual	\$ 6,493,968	\$ 19,120,246	\$ 23,723,595	\$ 24,293,285

Figure 3: Estimated Avoided Costs

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). Include any known or estimated reductions to O&M as a result of this investment.

Customer Facing Technology

There are no direct O&M reductions due to this capital business case, this business case supports the \$120m in avoided costs over the 5-year period, as discussed in section 2.1.

The requested spend amount for over 5 years is \$26,000,000.

	2022	2023	2024	2025	2026
CFTP	\$5,000,000	\$5,000,000	\$5,000,000	\$5,500,000	\$5,500,000

Recommended Solution:

The recommended solution includes costs to cover various enhancements and new features in our digital channels over the next five years. These features could include (but are not limited to) the following:

Self-Service Functionality

- AMI smart meter enabled personalized energy usage insights using customer facing tools on the web and mobile application.
- Storm Center/Outage Map upgrade for an improved user interface, more useful information and tools, enhanced alert features, admin event history module, and map legend enhancements.
- A new bill design and possible transition to a new vendor due to an increased amount of downtime for our customers through Avista’s digital channels.
- Enhancement to payments methods (PayPal, Venmo, Apple Pay, Google Pay, Alexa, Google Home, etc.).
- Features to streamline processes for landlords - landlords have a high amount of move in/move out transactions they perform on behalf of their tenants. These tools could include notifications of stopped services and the ability to upload the necessary paperwork or complete an online form rather than faxing in the paperwork. This work will decrease the number of calls coming into the Call Center and manual work the call center representatives currently are required to perform.
- Specific functionality for business customers to help them manage their energy use. This work may reduce the number of calls to our Call Center and account executives.
- New payment flow for multi-account customers to streamline process with less clicks and more information easily available and accessible from the MyAccount page.
- Enhanced reporting for energy assistance to allow partner agencies to provide a better experience for Avista’s customers seeking bill assistance.
- Tools for customers who have their own generation (solar, wind, etc.).
- Ability for customers to schedule appointments and view how various work is progressing through the pipeline (construction tracker, tree trimming status/work tracker, etc.) – This work may reduce the number of calls to our Call Center and/or Customer Project Coordinators.
- Ability to report streetlight outages via the web and mobile app. This may reduce calls to the Call Center and reduce manual processes.
- Energy management tools through various voice channels (Alexa, Google Home, etc.).

Technology Updates

Customer Facing Technology

- Web content management system maintenance, upgrades, and ongoing enhancements. Some of this work will allow content editors to make updates to our website and the ability to provide customer facing web updates in real-time and will remove workload from our development team. The web content management system is the underlying technology and is required in order to keep a website up and functioning.
- Digital channels technologies maintenance, upgrades and ongoing enhancements. This work covers digital channels technologies other than the web content management system, such as vendor related systems like Storm Center, outage map, agent web, InfoPortal, mobile app, IVR, etc.
- Customer systems resiliency work which includes redesigning existing technology processes and integrations and the replacement of web services to industry standards to improve upon our digital channels performance.
- Web maintenance and technical debt to ensure our website is up to date, secure, accurate data presentment, updated customer information, banners and alerts, security enhancements, server upgrades, license and certificate renewals, etc.
- Call Center application upgrades (personnel scheduling and work management system for customer service representatives).

Products & Services, Energy Efficiency

- Always on energy alerts to provide customers information on their always on energy load and the opportunity to conserve energy.
- Rebates features and enhancements – new conversion category, instant rebate check out in the “Marketplace”.
- Non-retail digital channel energy payments.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

This business case will provide self-service options for our customers through our digital channels. This could reduce the amount of manual work our employees are performing on behalf of our customers. Less follow-up could be required between CSR’s and other employees because customers would be self-serving and gathering this information on their own.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative #1 – Implement less tools, options, and updates/upgrades:

The alternative requested spend amount for over 5 years is \$23,500,000.

	2022	2023	2024	2025	2026
CFTP	4,500,000	4,500,000	4,500,000	\$5,000,000	\$5,000,000

Customer Facing Technology

In this alternative, Avista would implement some of the customer solution capabilities and improvements listed above, excluding those that require the help of outside professional services. This alternative will delay some of the benefits to our customers which may generate dissatisfaction and cause systems performance to degrade by preventing us from maximizing the benefits of these previously funded core systems, such as the myavista.com website, mobile app, and smart meter and load disaggregation capabilities.

Impacted enhancements and features requiring professional services:

- AMI smart meter enabled personalized energy usage insights using customer facing tools on the web and mobile application.
- Storm Center/Outage Map upgrade for an improved user interface, information, and tools, enhanced alert features, admin event history module, and map legend enhancements.
- A new bill design and possible transition to a new vendor due to an increased amount of downtime for our customers through Avista's digital channels.
- Enhanced reporting for energy assistance to allow partner agencies to provide a better experience for Avista's customers seeking bill assistance.
- Energy management tools through various voice channels (Alexa, Google Home, etc.).
- Web content management system upgrade, maintenance and ongoing enhancements. Some of this work will allow content editors to make updates to our website and the ability to provide customer facing web updates in real-time and will remove workload from our development team. The web content management system is the underlying technology and is required in order to keep a website up and functioning.
- Call Center application upgrades (personnel scheduling and work management system for customer service representatives).

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

The work within this business case will be conducted through a program that will contain multiple projects. The work will transfer to plant most often on an integrated release cycle; new features will go live for customers 3-4 times per year (most likely: February, May, July and October).

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

Avista's strategic vision is to put the customer at the center of everything we do. The meaning behind this business case is to provide tools for our customers to interact with our company in a digital way and a way that the customers choose. This is 100% in line with our strategic vision.

Customer Facing Technology

A specific focus area is for our customers, “We must hold our customers’ interests at the forefront of all our decisions, operating our business by showing that we are transparent, genuinely care, and are easy to do business with.” We are offering a choice to our customers; therefore, we are easy to do business with. If a customer wants to avoid talking to a customer service representative and pay their bill online, sign up for alerts and notifications, or get information on the mobile app regarding their outage, they can do that without having a personal interaction. Some people want that personal interaction, and we provide a call center for them to do that.

Our mission is “We improve our customers’ lives through innovating energy solutions.” Some of the planned work in the coming years will provide detailed usage information to the customer (load disaggregation) enabling them to become more in control of their energy use. By providing these digital channels tools to our customers we are opening their eyes into how they are using energy, this will allow them to more effectively manage their energy and see where they may be able to save money or repair underperforming appliances. This feature is innovative and will provide immense value to our customers, both in terms of how they interact with us, but also through reductions in the cost to serve.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

If customers continue to use these digital channels to self-serve, it is considered a prudent investment as it will continue to defer more expensive interactions. Monthly and annual digital channel analytics reports will be reviewed on an annual basis to ensure the channels are still being used and that customer satisfaction is reasonable and in line with other utility digital channels.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Customers will interface with the technology in this business case both through their own self-service interactions on MyAvista.com, the mobile app, and text channels and with Avista personnel who will be using the technology to provide service to customers.

2.8.2 Identify any related Business Cases

The work in the business case is not related to work in other business cases.

2.8.3 References

Kulbyte, T. (2021, May 4). *THE VALUE OF CUSTOMER SELF-SERVICE IN THE DIGITAL AGE*. Retrieved from Super Office: <https://www.superoffice.com/blog/customer-self-service/>

Customer Facing Technology

3.1 Steering Committee or Advisory Group Information

This business case will be governed by the Customer Facing Technology (CFTP) & Customer Experience Platform (CXP) Governance group. This group prioritizes and governs the projects under the Customer Facing Technology Program throughout the entire project lifecycle. They then surface these to the IS/IT PMO for execution.

3.2 Provide and discuss the governance processes and people that will provide oversight

The CFTP Governance Group meets on a monthly basis.

Members include:

Kevin Christie – VP External Affairs and CCO

Jim Kensok – VP CIO & CSO

Latisha Hill – VP Community & Economic Vitality

Mike Broemeling – Director of Customer and Shared Services

Nikdel Hossein – Director Applications and System Planning

Jim Corder – Director IT and Security

Dana Anderson – Director Corporate Communications

David Howell – Director Operations, West Operations and Asset Management

Josh DiLuciano – Director Electric Engineering

Anna Scarlett – Director Energy Efficiency

Kelly Magalsky – Director Products, Services, and Customer Technology

Kelly Conley – Sr Manager Digital Communications and Corporate Communications

Stephanie Myers – Manager Customer Solutions and Products & Services

Graham Smith – Manager Applications Delivery and Application Support

Facilitators include:

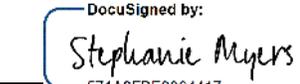
Kim Henscheid – Program Manager Customer Experience Platform

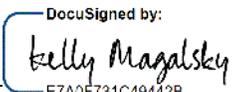
Ethan Jelinek – IT Sr Program Manager

Decision making and general prioritization decisions for the business case and programs will be documented and monitored through monthly meeting notes. Project specific decisions will be documented within the PMO's current process through project change orders.

Customer Facing Technology

The undersigned acknowledge they have reviewed the **Customer Facing Technology Program** Business Case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Jul-12-2021 | 10:00 AM PDT
571A8FBE3364417...
 Print Name: Stephanie Myers _____
 Title: Customer Solutions Manager _____
 Role: Business Case Owner _____

Signature:  _____ Date: Jul-13-2021 | 7:22 AM PDT
E7A0F731C49442B...
 Print Name: Kelly Magalsky _____
 Title: Director of Customer Technology and Products and Services _____
 Role: Business Case Sponsor _____

Signature:  _____ Date: Jul-13-2021 | 7:42 AM PDT
E4E2D9C7EE4747F...
 Print Name: Hossein Nikdel _____
 Title: Director of Applications and Systems Planning _____
 Role: Steering/Advisory Committee Review _____

Template Version: 05/28/2020

Payment Card Industry (PCI)

1 GENERAL INFORMATION

Requested Spend Amount	\$ 1,600,000
Requesting Organization/Department	Enterprise Security
Business Case Owner	Clay Storey
Business Case Sponsor	Jim Corder
Sponsor Organization/Department	Enterprise Security
Category	Mandatory
Driver	Mandatory & Compliance

1.1 Steering Committee or Advisory Group Information

The Enterprise Security Committee acts as the custodian and governance body of security resources and investments which includes the Payment Card Industry (PCI) Business Case. This group meets monthly and is composed of directors and managers from the lines of business. In addition the projects funded by this Business Case will have project level steering committees.

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project, and will be facilitated by an assigned Project Manager from within the PMO Department

2 BUSINESS PROBLEM

Avista accepts credit cards over the phone, in person and through our website. We do this because credit cards are becoming the most common form of payment and our customer expect us to take credit cards. In addition it aligns with our Customer Engagement & Value Strategy which states “our relationships, programs, products and services are relevant and add value or convenience for our customers”.

When a company takes credit cards they are subject to the Payment Card Industry

Payment Card Industry (PCI)

(PCI) standards. These standards specify controls that must be in place in order to meet the standards and be complaint. If a company does not achieve and maintain PCI compliance they are subject to fines and their ability to continue taking credit cards can be revoked.

3 PROPOSAL AND RECOMMENDED SOLUTION

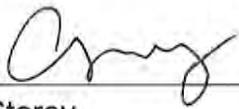
Option	Capital Cost	Start	Complete
Do not achieve and maintain compliance	\$0		
Stop taking credit cards	\$0		
Transfer all credit card transactions to a 3 rd party	\$1M		
Recommended - Achieve compliance	\$1.6M	7/2017	06/2019

Achieving PCI compliance is the recommend solution. Not being complaint is not considered a viable option due to the risk of fines and penalties. Other options that where discussed where to stop taking credit cards or transferring our customers to a third party when they wish to pay by credit card. These options do not align with our Customer Engagement & Value Strategy which states "our relationships, programs, products and services are relevant and add value or convenience for our customers".

The recommended proposal will deliver solutions that achieve compliance for Avista's website, the contact centers and lobbies where payments are accepted. It is anticipated in order to maintain compliance we will need to spend between \$200,000 - \$300,000 a year on software support and maintenance.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Payment Card Industry (PCI) and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: 2/14/18
 Print Name: Clay Storey
 Title: Sr. Security Manager
 Role: Business Case Owner

Signature:  Date: 12 July 18
 Print Name: Jim Corder
 Title: Director of IT and Security

Payment Card Industry (PCI)

Role: Business Case Sponsor

5 VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Clay Storey	8/02/2017			Initial Version
2.0	Clay Storey	7/11/18			Updated dates

Template Version: 03/07/2017

Data Center Compute and Storage Systems

EXECUTIVE SUMMARY

Business processes require automated technology solutions to meet the overwhelming need for data and information to make decisions. All industries are reliant on the ability to produce, transmit, analyze, and store information to meet various business requirements. This digitalization is resulting in an ever-growing need for data processing and storage for on-demand requests and decision-making. Avista is no different. The Company produces, transmits, analyzes, and stores meter data, telemetry data, asset data, customer billing data, geographic information systems data, etc. Data processing and storage requires high reliability no different than our electric and gas grids supplying customers with power and gas. The Data Center Compute and Storage Systems business case is a program of investments in server technology required to process and store massive amounts of data to automate and enable business processes that support our gas and electric customers across our service territory.

The technology solutions to meet performance standards and reliability requirements can vary from hardware and software upgrades in an on-premise data center, offsite storage, or service provider (cloud) facility, or in operating technology to optimize compute and storage capacity. Solution costs can also vary depending on the magnitude of the technology footprint or vendor licensing model(s). As enabling technology, data center processing and storage investment benefits all Avista customers, as it optimizes cost and productivity by not reverting to manual business processing, which would result in increased labor costs, human error, and overall processing delays. Because technology is evolving so quickly, this program undergoes regular review of the levels of investment and utilization to meet performance and capacity standards, and reliability requirements, while balancing against pre-established budget allocations. These reviews can result in calling for additional investment under this program for technology at risk of poor application system performance and system unavailability.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	6/2017	
2.0	Walter Roys	Revision of BCJN to new template	7/2020	

Data Center Compute and Storage Systems

GENERAL INFORMATION

Requested Spend Amount	\$9,856,000
Requested Spend Time Period	5 years.
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Technology is not only subject to the traditional mortality rate or lifecycle, but it is compounded by planned obsolescence, also known as technology obsolescence.¹ That is, whereby, the technology asset although within its functional lifespan is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology that is available in the market. Data center compute and storage technology is no different.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. Additionally, the endpoint compute and productivity technology is necessary to enable the capabilities that align with our strategic goals of putting our customers at the center.

1.2 Discuss the major drivers of the business case *(Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations)* and the benefits to the customer

The Data Center Compute and Storage Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps with an objective to maintain infrastructure performance and align infrastructure assets with business demand for capacity. Therefore, it falls under the Performance and Capacity investment driver.

¹ Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Data Center Compute and Storage Systems

All Avista customers benefit from maintaining data center compute and storage systems, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers. Additionally, assets that fail due to not being replaced within their technology lifecycle are replaced by the Technology Failed Asset business case, which tracks technology asset failures, and is also used as a data point to inform the technology lifecycles under this business case.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Avista's office, call center, and field staff require on-demand information to meet customer expectations when providing gas and electric service to customers across our service territory. The information can be critical to prevent, reduce, affect, or optimize an outcome that benefits our customers.

Reliance on obsolete technology that stores and computes many of our on-premise business applications to automate business processes presents significant risk that may only be solved with the reinstatement of manual process. Sustaining automated business process by replacing automation with workforce would increase labor expense, and delay response times to meet customer needs.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Enterprise Technology team references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Data Center Compute and Storage Systems

Directions on Roadmaps, Independent IT Planning Information and Advisory Service focused exclusively on Microsoft enterprise software and services. Retrieved from <https://www.directionsonmicrosoft.com/>

Gartner Industry Research and Reference Material. Retrieved from <https://www.gartner.com/en/information-technology>

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Not applicable, as the investment under this program business case is to maintain performance and capacity standards in each respective data center compute and storage technology.

The data center compute and storage technology systems provide the infrastructure foundation for basically all automated business process.

The recommended solution is to address 75% of obsolete products and capacity constraints (Recommended). This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. To minimize the impact of this risk, the Program Steering Committee will manage project sequence according to the investment priority documented in section 3.2.

Option	Capital Cost	Start	Complete
Alternative #1: Retire assets and remove automation	\$1,338,700	01/2020	12/2024
Alternative #2: Address 100% obsolete products and capacity constraints	\$17,649,867	01/2020	12/2024
Alternative #3: Address 75% obsolete products and capacity constraints (recommended)	\$13,237,400	01/2020	12/2024
Alternative #4: Address 56% obsolete products and capacity constraints (submitted)	\$9,856,000	01 2021	12 2025
Alternative #5: Address 40% obsolete products and capacity constraints	\$7,060,000	01/2020	12/2024

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The funds request was based on a calculation of the asset lifecycle associated with each technology asset, the scope of the technology footprint across our service territory, and historical project costs for technologies previously refreshed under this business case. Through regular reviews, the program balances the need to meet system performance and reliability standards for the various technologies under this program within annual budget allocations, and

Data Center Compute and Storage Systems

their respective technology lifecycles. These reviews can result in calling for additional investment under this program from time to time for technology either falling behind technology lifecycles or predetermined performance and reliability standards.

A product obsolescence working group, consisting of Technology Domain Architects, maintains technology roadmaps to inform Program Steering Committee members of project demand. Project demand is assessed against funding constraints each year and prioritized based on risk of technology impact to the business. Various data points inform the team's decisions and recommendations, which include, but are not limited to vendor-driven obsolescence, compute capacity and storage, historical project costs for similar type projects, etc.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

The funding requested under the Data Center Compute and Storage Business Case will be invested in technology, such as:

- Data center compute technology, which includes both on premise servers and cloud services
- Remote office compute and storage
- Application systems to manage compute and storage technology
- Server operating systems (OS)
- Data storage systems
- Data center racks and power distribution units (PDU)
- Backup and recovery systems

Investment in these technologies can result in added O&M expenses from increase in licenses from time to time. However, not funding this business case may result in removing automated business functions, which will either cause delay in meeting business and customer demands or completely change whether we can even respond to business and customer demands. There are no O&M reductions or offsets resulting from these investments, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

Reliance on obsolete technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process. Sustaining automated business process by replacing automation with workforce would increase labor expense.

Data Center Compute and Storage Systems

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. These upgrades can in turn drive subsequent system replacements, creating a cascading event of change. Therefore, vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

All Avista business functions are affected by this business case, as it enables all day-to-day work activities and automated business processes. From service center to call center to field work, every worker requires endpoint technology to perform their business function and deliver gas and electric service to our customers.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Retire assets and remove automation

This option assumes the assets would not be replaced upon end of life and be removed from service due to product incompatibility, business risk or safety risk.

The basis for measuring the business impact of not funding this business case is realizing the loss of business process automation. As products reach the manufacturer-defined planned obsolescence, business process automation is jeopardized, and business risk is increased as manufacturers cease product maintenance and support. This condition would drive action. The alternative could lead to a mitigation plan of having to re-instate manual business process or eliminate the business process.

This option bears the cost of asset retirement for failed assets. The retirement cost is estimated at 10% of the cost to replace the asset.

Address 100% of obsolete products and capacity constraints

This is the optimal solution. This option fully addresses and minimizes the likelihood of technology impact to automated business process.

Address 75% of obsolete products and capacity constraints (Recommended)

Data Center Compute and Storage Systems

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. To minimize the impact of this risk, the Program Steering Committee will manage project sequence according to the investment priority documented in section 3.2.

Address 40% of obsolete products and capacity constraints

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. Interoperability constraints may force unplanned funding requests. Multi-year, complex projects are at risk of completion prior to product obsolescence. This option impacts the workforce.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. spend, and transfers to plant by year.

This business case is a program that transfers to plant the total cost of each sub-project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

Each investment under this business case program allows Avista to deliver electric and gas services to our customers.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

The reason that the technology investment under this program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in an office, customer service center or in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process would

Data Center Compute and Storage Systems

either stop or be removed, thereby crippling our workforce's ability to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce interface with the technology investments under this business case, depending on the application systems being used to perform any given business function.

2.8.2 Identify any related Business Cases

The technology investment under this business case allows for upgrade and refresh of the compute and storage from investments in other business cases, such as all business application systems, security systems, operations tools, etc. Basically, almost every software application used by Avista to conduct business functions is either processed or stored in servers refreshed under this business case.

3.1 Steering Committee or Advisory Group Information

The **Data Center Compute & Storage Systems** Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

3.2 Provide and discuss the governance processes and people that will provide oversight

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

Data Center Compute and Storage Systems

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically and will consist of projects needed to maintain the reliability and performance of all Data Center Compute & Storage Systems.

Technology product roadmaps identify investment demand that is generally not fully funded. Technology product investments are prioritized in this manner:

- 1) Safety Systems
- 2) Control Systems
- 3) Customer Facing Systems
- 4) Back Office Systems

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

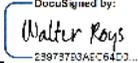
The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Data Center Compute and Storage Systems

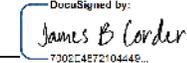
The undersigned acknowledge they have reviewed the **Data Center Compute and Storage Systems Business Case** and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Jul-30-2020 | 11:50 AM PDT

Print Name: Walter Roys

Title: System Engineering Manager

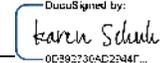
Role: Business Case Owner

Signature:  Date: Aug-03-2020 | 5:53 PM PDT

Print Name: Jim Corder

Title: IT Director

Role: Business Case Sponsor

Signature:  Date: Aug-03-2020 | 6:38 PM PDT

Print Name: Karen Schuh

Title: IT Program Manager

Role: Steering/Advisory Committee Review

Signature:  Date: Aug-04-2020 | 7:29 AM PDT

Print Name: Andy Leija

Title: ET PMO Manager

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Apprentice_Craft Training

EXECUTIVE SUMMARY

Avista manages 11 Federally regulated apprenticeships that require instructional aides and equipment deemed necessary to provide quality instruction. [Regulated by 29 CFR 29 & 30] The Joint Apprenticeship Training Committee (JATC) administers these apprenticeships. These funds are used to purchase tools, materials and equipment for training apprentices and journey workers in all crafts. These tools and materials provide for related instruction that is closely correlated with the practical experience and training received on the job. The trained and competent workforce produced through the various apprenticeship's benefits customers in all Avista service territories. These apprenticeship programs further benefit Avista's customers by providing a safe, proficient and skilled workforce.

Support of apprenticeship at Avista through this capital program aligns strategically to Avista's Mission and Focus Areas. In order to deliver innovative energy solutions safely, responsibly, and affordably, Avista must have a field workforce of highly proficient professionals. This professionalism is achieved through apprenticeship. Without this funding, Avista will not have the ability to train in-house. This leaves Avista's customers without critical craft positions needed for energy delivery. Further, there is a potential that regulating bodies may de-certify Avista's Apprentice program, leaving Avista without the ability to train in-house and require significant expense to meet labor demands and maintain required skillsets. This project will train apprentices in all Avista states and service territories, the rate jurisdiction is Common Direct – Allocated All. The total capital expense to support this ongoing project is \$375,000 over 5 years or \$75,000/year.

VERSION HISTORY

Version	Author	Description	Date	Notes
<i>Draft</i>	<i>Joe Brown</i>	<i>Executive Summary Only</i>	<i>7/1/2020</i>	<i>Business Case 2020 Refresh</i>
<i>1.0</i>	<i>Joe Brown</i>	<i>Updated for Approval</i>	<i>7/28/2020</i>	<i>Full amount approved</i>
<i>1.1</i>	<i>Joe Brown</i>	<i>Reviewed for Approval</i>	<i>7/13/2021</i>	<i>No Changes Required</i>

GENERAL INFORMATION

Requested Spend Amount	\$375,000
Requested Spend Time Period	<i>5 years</i>
Requesting Organization/Department	Craft Training [I02]
Business Case Owner Sponsor	Joe Brown Jeremy Gall
Sponsor Organization/Department	Human Resources
Phase	Execution
Category	Mandatory
Driver	Mandatory & Compliance

Apprentice_Craft Training

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

This capital program provides for tools, materials and equipment for training apprentices and journey workers across eleven skilled 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. A well trained and competent workforce ensures reliable delivery of energy to Avista's customers and maintains a safe environment for employees, customers and the general public in all Avista Utilities service territories. Being unable to provide these needed tools, materials and equipment leaves apprentices and journeyman without the resources needed for their related instruction.

As stated previously, support of apprenticeship at Avista through this capital program aligns strategically to Avista's Mission and Focus Areas. In order to deliver innovative energy solutions safely, responsibly, and affordably, Avista must have a field workforce of highly proficient professional. 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 mandated 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

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The primary driver of this business case is Mandatory & Compliance with the secondary drivers being Customer Service Quality & Reliability and Performance & Capacity. Avista must meet comply with the laws, rules and regulations associated with apprenticeship. Further, customer service and asset performance will benefit from a highly skilled workforce.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Avista will not have the ability to train in-house if this program is not funded. This leaves Avista's customers without critical craft positions needed for energy delivery. Further, there is a potential that regulating bodies may de-certify Avista's Apprentice program, leaving Avista without the ability to train in-house and require significant expense to meet labor demands and maintain required skillsets.

1.4 Supplemental Information

1.4.1 Please reference and summarize any studies that support the problem

The cost to outsource hands-on-training and field simulations would be approximately \$473,000 a year for facility rental alone. This is based on current training programs that have averaged over 530 hours per year at the training center. The overall annual costs including travel, lodging, meals and registration are estimated to more than triple this rental cost and be classified as operations and maintenance costs. It is estimated this total cost would be approximately \$2.4M in O&M expense over 5-years. Again, this would result in a negative impact to Avista's customers

Apprentice_Craft Training

1.4.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

NA

The recommended solution (Option 1) is to provide the resources needed for related instruction of craft personnel.

Option	Capital Cost	Start	Complete
<i>1. On-Going Capital Improvement Program</i>	<i>\$375,000</i>	<i>01 2021</i>	<i>12 2025</i>
<i>2. Outsource Training [No Facility]</i>	<i>\$2.4M (O&M)</i>	<i>01 2021</i>	<i>12 2025</i>

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The cost to outsource hands-on-training and field simulations would be approximately \$473,000 a year for facility rental alone. This is based on current training programs that have averaged over 530 hours per year at the training center. The overall annual costs including travel, lodging, meals and registration are estimated to more than triple this rental cost and be classified as O&M costs.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

Under this program, projects 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 "SmartCity"- commercial and residential building replicas, and distribution, transmission, smart grid, metering, gas and substation infrastructure.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

The greatest impact will be seen by Avista's Operations and Avista's Customers. Operations will have employees with the knowledge and skills to do their jobs professionally, and customers will be served by these competent professionals.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

The primarily alternative for this program is to outsource training. If this is done, at great expense, there will be significant impact on operating budgets, company culture, and possibly labor relations.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

The projects associated with this business case will be planned on an annual basis and be used and useful during the calendar year in which they are implemented.

Apprentice_Craft Training

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

Support of apprenticeship at Avista through this capital program aligns strategically to Avista's Mission and Focus Areas. In order to deliver innovative energy solutions safely, responsibly, and affordably, Avista must have a field workforce of highly proficient professionals. This professionalism is achieved through apprenticeship. This is an investment in Our People. Providing Avista's employees with the tools, equipment and materials they need to train in a safe, simulated environment is essential: This is an investment in the people of Avista and allows these apprentices to deliver value to customers and the communities they serve.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Apprentices are the future workforce of Avista. Ensuring that they have the facilities, equipment, tools and materials they need to become successful journeyman is an investment in the future. Taking care now to invest in the future workforce will benefit Avista's customers and operations.

This project will be evaluated annually in the Craft Training Department and ensure projects of the highest need area addressed.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The key stakeholders associated with this business case are primarily internal Avista employees and departments.

2.8.2 Identify any related Business Cases

NA

3.1 Steering Committee or Advisory Group Information

As part of the Craft Training annual planning process, the list of projects for apprenticeships will be established, vetted and managed within the department. The manager of Craft Training & OQ will be accountable for the business case and annual funding.

3.2 Provide and discuss the governance processes and people that will provide oversight

Oversight will be provided by the Manager of Craft Training & OQ, and through periodic meetings with the Sr. Manager of Safety & Craft Training.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

The manager of Craft Training & OQ will be accountable for making decisions on the business case in coordination with the Sr. Manager of Safety & Craft Training.

Apprentice_Craft Training

The undersigned acknowledge they have reviewed the [Apprentice Craft Training Business Case](#) and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature: Joe Brown Date: 7/13/2021

Print Name: Joe Brown

Title: Mgr Craft Training & OQ

Role: Business Case Owner

Signature: Jeremy Gall Date: 7/19/2021

Print Name: Jeremy Gall

Title: Sr. Mgr Safety & Craft Training

Role: Business Case Sponsor

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Customer Experience Platform Program

EXECUTIVE SUMMARY

The purpose of the Customer Experience Platform (CXP) Business Case is to implement the technology necessary to support the emphasis on Customer Experience at Avista. This program will enable the customer at the center strategy by creating transformative tools for our employees and enabling them to better support customers. The CX platform will be enhanced over time and will eventually be used by all employees that work directly with or support our customers (both electric and gas customers in all service territories). The CXP program will empower all departments to work as one in support of customers. It will enable us to deliver the personalized experiences customers love and build lasting, trusted relationships. CXP will create a single interface and provide a consistent and comprehensive view of each customer, their preferences, past interactions, communications, and history with Avista. This reduces confusion across departments, allows our employees to handle an entire situation and answer customer questions without having to transfer a call or tell the customer we will need to get back to them. This also allows our customers to no longer have to repeat information with various employees of Avista about a single situation because all interactions will be logged and made available to employees. This platform brings our employees and our customers together by providing a single lens into each individual customer and their interactions with us.

The CXP program will continue to create new features in an on-going agile fashion for various departments across our company and for our customers by improving the overall customer experience. These features may include (but are not limited to) the following: Quoting & Order Entry, Account Management, Contract management, Lead Management, Segmentation, Approvals & Workflows, Communication Campaign management tracking, Trouble Management, Credit & Collections, Start/Stop Service, High Bill Analysis, Payment Processing, Field service request & tracking, Rebate programs, New construction, and Ability for CSRs to see location of field personnel. Through the implementation of CXP, some systems will be replaced as their functionality is integrated into CXP. For example, centralizing communication platforms, moving functionality from Infor CRM to the CXP, and the customer service virtual flip chart.

Not investing in the customer experience platform would put overall customer satisfaction at risk. Lower customer satisfaction would result in higher costs in serving dissatisfied customers, increased customer complaints to Avista and to our commissions, and a lack of trust with our company. We are developing and enhancing this platform based on our strategy of putting the customer at the center and to improve overall customer interaction and experience; if we do not improve the customer experience by providing the proper tools to our employees to serve our customers, then we put meeting current customer expectations at risk. We currently enjoy high customer satisfaction scores, but if we do nothing, we are at risk of satisfaction decreasing.

In addition, total cost avoidance as a result of this business case is estimated to be approximately \$1M per year.

The requested spend amount over 5 years is **\$31,750,000**

	2022	2023	2024	2025	2026
CXP Program	\$6,750,000	\$6,500,000	\$6,500,000	\$6,000,000	\$6,000,000

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Stephanie Myers	Initially approved	6/15/2020	
2.0	Stephanie Myers	Updated Executive Summary	6/26/2020	
2.1	Stephanie Myers	Additional content in narrative	7/21/2020	
2.2	Stephanie Myers	Additional detail added for cost avoidance	7/28/2020	
3.0	Kim Henscheid	Updated requested spend amounts	7/9/2021	

Customer Experience Platform Program

GENERAL INFORMATION

Requested Spend Amount	\$31,750,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Customer Solutions Enterprise Technology
Business Case Owner Sponsor	Stephanie Myers Kelly Magalsky Hossein Nikdel
Sponsor Organization/Department	Customer Solutions
Phase	Execution
Category	Program
Driver	Customer Service Quality & Reliability

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

The purpose of the Customer Experience Platform (CXP) Business Case is to implement the technology supporting the renewed emphasis on Customer Experience at Avista. This program will enable the customer at the center strategy by creating transformative tools for our employees. The CX platform will be enhanced over time and will eventually be used by all employees that work directly with or support our customers (both electric and gas customers in all service territories). These employees include but are not limited to customer service representatives, field workers, account executives, construction workers, various management roles.

Our systems and how our employees transact with those systems are somewhat silo'ed in nature. A specific department uses systems that are completely separate and specialized to the job that department is performing. For example, customer service's primary role is to help the customer and answer questions to the best of their ability. They can help a customer with their bill, process a payment, create a payment arrangement, analyze their usage, and create an activity for a field person to perform. The customer service representative (CSR) does not have knowledge of where each field personnel are located, or how much availability our field personnel may have to meet with a customer. In essence, this will provide a more holistic or 360 degree view of the customer.

We do not currently have one single interface that can provide consistent and a single source of truth about our customers. Having this type of holistic interface reduces confusion across departments, allows our employees to handle an entire situation and answer customer questions without having to transfer a call or tell the customer we will need to get back to them. This also allows our customers to no longer have to repeat information with various employees of Avista about a single situation because all interactions will be logged and made available to employees. This platform brings our employees and our customers together by providing a single lens into all customer interactions.

There is the potential to have a rise in customer complaints and an increase in customer dissatisfaction if we are requiring them to repeat information or wait a long time to have a question answered or a problem resolved.

From a strategic perspective, we are putting technology in place that will allow our employees to create the experience that customers are increasingly expecting. Companies that focus on great customer experience have higher customer satisfaction and loyalty which will be increasingly important as the utility industry evolves and more customer choice options are available.

Customer Experience Platform Program

1.2 Discuss the major drivers of the business case (Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations) and the benefits to the customer

The major driver of this business case is Customer Service Quality & Reliability combined with a focus on our corporate customer at the center strategy. The CXP program will empower all our departments to work as one. It will enable us to deliver the personalized experiences customers love and build lasting, trusted relationships. With the Customer Experience Platform, customers will experience shorter lead times, less time between follow-up activities because our system will escalate cases when the customer has been waiting.

Customers will experience streamlined processes and the introduction of electronic signatures. They will have the ability to chat with us virtually without having to pick up the phone. The customer will be able to get communication through the channel they choose (email, phone, print, text, etc.). Our customers will get communication that is specific and personalized and therefore more relevant to them. If they need help paying their bill, our communication will be targeted and focused on features that will help that customer, like agency locations or new incentives. We will be able to log every interaction our employees have with our customers which could avoid our customers from having to call multiple different people. A single employee could help answer multiple customer questions because the information will be logged and made available to employees in order to streamline that customer experience. Our employees will also can bring up this information on a mobile device allowing our employees to help customers while in the field.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Avista's strategy is increasingly focused on putting our customer at the center of everything we do. Part of this strategy is preparing for a future where customers will have more choice for energy service and adjacent products and services. We want them to choose us because of the exemplary experiences they have had with our company. It takes many years to build the capabilities and associated improved customer satisfaction and if we defer this work, we risk being far behind the curve and not meeting expectations that our customers have around a desired experience.

This investment will also create internal efficiencies for our employees that interact directly with our customers and those who are behind the scenes accomplishing tasks and work on behalf of our customers. The transactions we will be providing in the customer experience platform will be streamlined and take less time to complete. The CXP will also require less training time for new employees and for new features.

If this work is not approved, all existing systems and business processes would remain in their existing state with no new functionality added. This alternative would put overall customer satisfaction at risk. Lower customer satisfaction would result in higher costs in serving dissatisfied customers, increased customer complaints to Avista and to our commissions, and a lack of trust of our company. We currently enjoy high customer satisfaction scores, but if we do nothing, we are at risk of this going down.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

We identified measurements to determine whether this investment would successfully deliver on the objectives. We worked with Salesforce.com, the software vendor that is the platform behind the

Customer Experience Platform Program

CXP. Salesforce has hundreds of thousands of customers across many different industries. They track efficiencies through the implementation of their software; and thus the avoided future costs due to their software. We will be using these data points to determine success:

- **Case Deflection:**
 - the CXP could deflect the number of calls placed into our call centers
 - Salesforce's research: 17% case deflection
 - Avista's conservative estimate: 10% case deflection
- **Case Resolution Time:**
 - the CXP can reduce the amount of time it takes to resolve a case
 - Salesforce's research: 24% improvement in resolution time
 - Avista's conservative estimate: 10% improvement
- **Employee Productivity:**
 - due to streamlined tasks in the system, the CXP could save employees time throughout their day, freeing them up to take more calls or complete more tasks in a single day
 - Salesforce's research for call center representatives: 12 hrs saved per week
 - Avista's conservative estimate for call center representatives: 3 hrs saved per week
 - Avista's conservative estimate for other employees: 1 hr saved per week
- **Faster Onboarding:**
 - due to the ease of use in the system, training a user to use the CXP will take less time and be more straightforward, thus allowing our employees to spend less time training
 - Salesforce's research: 26% reduction in the time to onboard/train
 - Avista's conservative estimate: 20% reduction in the time to onboard/train
- **Overall Customer Satisfaction:**
 - Customer satisfaction will go up as a result of this investment

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The detailed report that was created jointly by Salesforce and Avista that outlined avoided costs can be found on the CXP Project Web Site: <https://sp2016.corp.com/sites/sp/CXP/>.

Option	Capital Cost	Start	Complete
Recommended Solution	\$37M	01 2021	12 2026
Alternative #1 – Slower pace of change	\$27M	01 2021	12 2026

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

Benefits and avoided costs can be referenced in the document mentioned in Section 1.5. A summary of this cost avoidance can be seen below; a total of \$1,007,949 in cost avoidance is estimated on an annual basis as the result of the work in this business case.

Cost Avoidance Measurement	Estimated Cost Avoidance
Case Deflection	\$610,609
Case Resolution Time	\$116,133
CSR Productivity (Back Office only)	\$163,125

Customer Experience Platform Program

Faster Onboarding	\$118,082
Total Estimated Cost Avoidance	\$1,007,949

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). Include any known or estimated reductions to O&M as a result of this investment.

The business case will contain multiple projects within each year. Each project will be estimated, planned, and delivered each year. We plan to have at least two projects per year with multiple releases to end users. The planned cost per year is described in the executive summary on the first page of this document.

The avoided cost estimates mentioned in section 1.5 will be achieved through attrition in the call center and other areas of our business as features are expanded across our employee base.

The CXP program will continue to create new features in an on-going agile fashion for various departments across our company. These features include (but are not limited to) the following:

- Quoting & Order Entry: Ability to develop quotes, cost estimates and assemble orders related to an opportunity (construction work, etc.) based on products or services that a customer is interested in (estimate upfront and ongoing costs for a natural gas conversion based on expected usage, estimate the cost of connecting a new home to electric and gas)
- Account Management: Ability to add, change, delete various attributes on an account (contact information, billing preferences, and communication preferences). Account management is also responsible for allowing all activities and related information to be displayed on an account to assist communications teams in communicating the correct information to the correct type of customer groups.
- Contract management: Create, update, negotiate, renew, and execute service contracts with customers or potential new customers.
- Lead Management: Identification, qualification, tracking, and management of potential new customers or interest from existing customers in adding a product or service, such as: natural gas conversion, electrification, energy efficiency programs, etc.
- Segmentation: Ability to divide a customer base into groups of individuals that are similar in specific ways relevant to communication such as propensity to participate in an energy efficiency program or convert fuel use, or interest in electric vehicle charger, etc.
- Content management: process of organizing and consolidating pieces of content and tagging schemes in an efficient way and storing them in a repository.
- Approvals & Workflows: Ability to design, implement and automate business processes.
- Campaign management tracking: Planning, execution, tracking and analysis of a communication plan (campaign); Campaigns involve programs or initiatives that the utility needs to communicate to its customers (energy efficiency, e-billing, auto-pay, energy assistance, etc.).
- Trouble Management: Ability to report, dispatch, resolve, and communicate updates on outages or other emergencies (e.g. downed wires, gas odor, etc.) related to customer's electric or natural gas service.
- Credit & Collections: A set of processes and events to encourage payment of a customer's delinquent balance. It involves notifying customers of past due balances, providing alternatives to paying on time including payment arrangements, severance of their electric or gas service and subsequent re-activation.
- Start/Stop Service: Ability to open, close or move service for a residential or non-residential. Includes the ability to setup a new customer or adding additional services to an existing customer.

Customer Experience Platform Program

- High Bill Analysis: Ability to analyze usage and billed amounts along with other data such as weather, historical usage patterns, and information provided by the customer to aid in understanding why a bill may be higher than expected.
- Payment Processing: Ability to take, cancel, or reallocate, or modify a payment for a customer.
- Field service request & tracking: Ability to initiative and track all field activities happening at a customer’s service point. The work can be originated in either CC&B or Maximo.
- Rebate programs: Ability to receive, track, and manage rebate applications, pay customers and/or contractors for purchasing/installing a qualified product or participating in a qualified program (e.g. energy efficiency programs), and report on program participation and metrics.
- New construction: Ability to add, install, or move an electric or natural gas service. New construction is specific to providing service to a customer site for which service had not previously been provided. (e.g. customer wants natural gas at their residence).
- Ability for CSRs to see location of field personnel
- Ability for all employees to see every interaction our customers have with us
- Ability for all written customer communication to be seen by all employees
- Ability to route customer inquiries to various departments and to see the history of the routing, includes escalation as necessary
- Ability to send ad-hoc emails to customers through the platform
- Ability to post customer education to all social media platforms through one single interface
- Ability to track conversations and tasks completed by employees with all types of customers (residential, commercial, small/medium business) in all service territories
- Ability for an employee to be guided through an interaction with a customer
- Ability to chat with a customer through a single interface
- Ability for field personnel to pull up a customer account through an app on their mobile device
- Ability to track customer claims

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Capabilities mentioned in section 2.2 will impact business functions and processes in those specific areas. These business functions will go through a thorough planning and change management process to determine what impacts we will have to customers and employees.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative #1, implementing at a reduced capital cost, reduces the amount of features we are able to deploy to our employees, resulting in a longer amount of time until the avoided costs are experienced.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

This business case is a program and will be executed over the next 5 years in an agile fashion. Multiple projects will exist per year and functionality will be released to users in an on-going fashion. Transfers to plant will occur 3 times per year, April, July, and November.

	2022	2023	2024	2025	2026
CXP Program	\$6,750,000	\$6,500,000	\$6,500,000	\$6,000,000	\$6,000,000

Customer Experience Platform Program

Transfer to Plant Estimates	April: \$2m	April: \$2m	April: \$2m	April: \$2m	April: \$2m
	July: \$2m	July: \$2m	July: \$2m	July: \$2m	July: \$2m
	November: \$2.7m	November: \$2.5m	November: \$2.5m	November: \$2m	November: \$2m

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

Our corporate Mission Statement says simply: “We improve our customers’ lives through innovative energy solutions” and continues to say that “We put those we serve at the center of everything we do.” The foundation of the CXP work is rooted in that commitment and is our key technology initiative aimed at delivering upon that strategy. As the program matures it will continue to deliver value in many areas of the business and across multiple customer journeys that will result in enhanced customer experiences.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

CXP prudence should be evaluated based upon three criteria. First, cost avoidance as discussed in section 1.5 above. Second, cost avoidance of technology systems that will be reduced or eliminated as systems are combined into CXP. Third, improved customer satisfaction and engagement as we improve business processes and make interactions more proactive and personalized. Although the benefits in the third category are more intangible and difficult to measure and assign a financial value to, they are an inherent expectation from customers. Collectively, we are confident that those three benefits combined make CXP a prudent investment.

These cost avoidance values are estimates at this point, although conservative and based on Salesforce expertise and past implementations, and will be monitored and validated as the program progresses to monitor prudence and to identify potential program changes as we learn more. Actual value will be tracked and reported as more processes are rolled out and more users are benefiting from the system.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Customers will interface with Avista personnel who will be using the technology identified in this business case to serve customers.

2.8.2 Identify any related Business Cases

The work in this business case is not related to work in other business cases.

Customer Experience Platform Program

3.1 Steering Committee or Advisory Group Information

This business case will be governed by the Customer Facing Technology (CFTP) & Customer Experience Platform (CXP) Governance group. This group prioritizes and governs the projects under the Customer Experience Platform throughout the entire project lifecycle. They then surface these to the IS/IT PMO for execution.

3.2 Provide and discuss the governance processes and people that will provide oversight

The CFTP Governance Group meets on a monthly basis.

Members include:

Kevin Christie – VP External Affairs and CCO

Jim Kensok – VP CIO & CSO

Latisha Hill – VP Community & Economic Vitality

Mike Broemeling – Director of Customer and Shared Services

Nikdel Hossein – Director Applications and System Planning

Jim Corder – Director IT and Security

Dana Anderson – Director Corporate Communications

David Howell – Director Operations, West Operations and Asset Management

Josh DiLuciano – Director Electric Engineering

Anna Scarlett – Director Energy Efficiency

Kelly Magalsky – Director Products, Services, and Customer Technology

Kelly Conley – Sr Manager Digital Communications and Corporate Communications

Stephanie Myers – Manager Customer Solutions and Products & Services

Graham Smith – Manager Applications Delivery and Application Support

Facilitators include:

Kim Henscheid – Program Manager Customer Experience Platform

Ethan Jelinek – IT Sr Program Manager

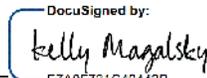
3.3 How will decision-making, prioritization, and change requests be documented and monitored

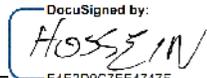
Decision making and general prioritization decisions for the business case and programs will be documented and monitored through monthly meeting notes. Project specific decisions will be documented within the PMO's current process through project change orders.

Customer Experience Platform Program

The undersigned acknowledge they have reviewed the Customer Experience Platform Program business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  _____ Date: Jul-12-2021 | 10:13 AM PDT
571ARFRF3364417
 Print Name: Stephanie Myers
 Title: Customer Solutions Manager
 Role: Business Case Owner

Signature:  _____ Date: Jul-13-2021 | 7:23 AM PDT
F7AD731C48442B
 Print Name: Kelly Magalsky
 Title: Director of Customer Technology, and Products and Services
 Role: Business Case Sponsor

Signature:  _____ Date: Jul-13-2021 | 7:42 AM PDT
F4F7D8C7FF4747F
 Print Name: Hossein Nikdel
 Title: Director of Applications and Systems Planning
 Role: Business Case Sponsor

Template Version: 05/28/2020

Customer Transactional Systems

EXECUTIVE SUMMARY

Customer transactional systems are used to support the day to day operational needs of all our customers, internal users, third party partners and our regulators. These systems include functionality such as: collection and storage of meter reads and meter data, customer billing, head end metering systems, energy and assistance agency program reporting, rate design and rate modeling tools, and customer energy efficiency records and opportunities. To keep these systems up to date and operational, we must perform regular upgrades and invest money in enhancements that will benefit our customers, internal users, third party partners and regulators. Technology and user expectations continue to evolve, and we need to be agile and use our technologies to meet those expectations.

We strive to meet the needs of our customers by offering new options and features and to also ensure that the users of these systems can perform their jobs in the most efficient and timely manner. It is important to be able to meet the request of our third-party partners and to ensure we are reporting back accurately to our regulators. These systems are foundational in our interactions with all our partners. We must keep these systems updated to support new requests such as: new billing and rate options, product and service offerings, scheduling appointments and tracking jobs, payment arrangements and payment options, and meter data information.

Not investing in this technology would greatly reduce the ability to keep our major systems current and fully operational. We would put significant risk on the ability to meet customer, third party partner and regulatory expectations.

The requested amount over 5 years is **\$19,000,000**.

	2022	2023	2024	2025	2026
CTS	\$3,750,000	\$3,500,000	\$3,750,000	\$4,000,000	\$4,000,000

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Mary Silkworth	Initially approved	7/15/2019	
2.0	Stephanie Myers	Update executive summary	6/26/2020	
2.1	Stephanie Myers	Additional detail	7/21/2020	
2.2	Stephanie Myers	Measurements added	7/30/2020	
3.0	Heather Bruns	Update for 5-year planning	7/9/2021	

Customer Transactional Systems

GENERAL INFORMATION

Requested Spend Amount	\$19,000,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Customer Solutions
Business Case Owner Sponsor	Stephanie Myers Kelly Magalsky Hossein Nikdel
Sponsor Organization/Department	Customer Solutions
Phase	Execution
Category	Program
Driver	Customer Service Quality & Reliability

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

At Avista, we have a variety of "Customer Transactional Systems" that are used to support the day to day operational needs of our customers, internal users, third party partners and our regulators.

These systems include functionality such as:

- Collection and storage of Meter Reads and Meter Data
- Customer Billing
- Head End Metering Systems
- Energy and Assistance Agency program reporting
- Rate Design and Rate Modeling tools
- Customer Energy Efficiency records and opportunities

To keep these systems up to date and operational, we must perform regular upgrades and invest money in enhancements that will benefit our customers, internal users, third party partners and regulators. Technology and user expectations continue to grow, and we need to be agile and use our technologies to meet those expectations.

We strive to meet the needs of our customers by offering new options and features and to also ensure that the users of these systems can perform their jobs in the most efficient and timely manner. It is important to be able to meet the requests of our third-party partners and to ensure we are reporting back accurately to our regulators. These systems are foundational in our interactions with all our partners.

Customer Transactional Systems

We must keep these systems updated to support new requests such as: new billing and rate options, product and services offerings, scheduling appointments and tracking jobs, payment arrangements and payment options and meter data information.

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) **and the benefits to the customer**

This business case is driven by the need to consistently bill our customers, keep track of customer accounts and provide a way for CSR's and other employees to keep customer accounts current. This business case also includes systems needed to track energy efficiency and data required to report to our regulators. Work requests from our customers are triggered to field personnel from our Customer Transactional Systems. Without these systems we put our quality and reliability of serving our customers at risk.

We must keep these systems updated to support new requests such as: new billing and rate options, product and service offerings, scheduling appointments and tracking jobs, payment arrangements and payment options, and meter data information.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Not investing in this technology would greatly reduce the ability to keep our major systems current and fully operational. These systems require regular updates from the software vendors and constant security updates to ensure our customer data is protected. If this business case is not approved, we would put significant risk on the ability to meet customer, third party partner and regulatory expectations.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Success measures are as follows:

- % of bills being estimated
- % of errors customers receive when opening their bill electronically
- % of AMI meters that are accurately being read
- # of energy efficiency jobs tracked in the new DSM system

Customer Transactional Systems

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

2021 was a year that challenged Avista in ways that we never imagined. In reflecting on the challenges that the Covid-19 pandemic had on our business, it was also an opportunity for our business to not only adapt, but shine and for our technology teams to rely on the agile skills they had honed over the years to make changes quickly and efficiently in an ever changing landscape.

In March of 2021, the Covid Debt Relief program was launched. Automatic Grants and Forgiveness Grants helped our most vulnerable customers in both Washington and Oregon with the hand up they most desperately needed.

In May of 2021, CTS helped implement automatic payment arrangements on our website that had not been offered before. A customer can log into their online account and choose to spread out their balance owing in manageable payments up to 18 months.

Option	Capital Cost	Start	Complete
Recommended Solution	\$19,000,000	01 2022	12 2026
Fund at a Lower Level	\$13,750,000	01 2022	12 2026

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The "Recommended Solution" would enable us to keep pace with customer demands and take advantage of current changes and enhancements to our technology systems. The enhanced features would allow us to continue to improve our customer experience and offer updated capabilities. Customers are currently asking for more flexibility and choices in their interactions with our Company. These features could include (but not limited to) the following:

- CCB/MDM system upgrades, maintenance and ongoing enhancements. To keep these systems up to date and operational, we must perform regular upgrades and invest money in enhancements that will benefit our customers, internal users, third party partners and regulators.
- Demand Side Management System that tracks all large energy efficiency projects being conducted on behalf of our customers.
- Various products and services for customers including a time of use rate for residential customers, a bundled service for transportation electrification customers, and the ability to pre-pay for service.
- CCB/MDM Performance work is ongoing to maintain optimum performance for CCB & MDM end users.
- Specific functionality for business customers to help them manage their energy use. This work may reduce the number of calls to our Call Center and account executives.

Customer Transactional Systems

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). **Include any known or estimated reductions to O&M as a result of this investment.**

5 YEAR FUNDING REQUEST DETAIL:

Project	2022 Budget Plan	2023 Budget Plan	2024 Budget Plan	2025 Budget Plan	2026 Budget Plan
CTS ALLOCATION (Proposed)	\$3,750,000	\$3,500,000	\$3,750,000	\$4,000,000	\$4,000,000
Customer Transactional Systems					
CC&B/MDM Upgrade/Refresh	x			x	x
DSM	x	x			
Products & Services					
Residential Time of Use		x			
Bundled Transportation Elec., renewable		x			
Pre-Pay for Service			x		
UI Planner Replacement				x	
CC&B/MDM Features - Enhancements					
Start /Transfer Service Automation	x	x	x	x	x
Performance & Load Testing	x	x	x	x	

There are no direct O&M reductions as a result of this business case.

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

CC&B/MDM Features: Many of the features and enhancements slated over the next 5 years will have many impacts to other parts of the business.

- CLB work will improve the customer experience and should result in less calls to the Call Center.
- Energy Usage Tools will leverage our newly implemented AMI meter data and help our customers better understand their energy usage and lessen calls to the Call Center.
- Renewable Natural Gas will fulfill a regulatory requirement and lessen calls to the Call Center for customers due to a self-service sign-up experience.
- Transportation Electrification Program directly benefits our revenue stream as it assists customers in transitioning to electric powered vehicles.
- Streamlining processes for landlords will lessen the calls to our Call Center during tax season because landlords will be able to self-serve online.
- Redesigning our bill will lessen the calls to the Call Center as it will be geared towards providing the information customers want based on usability studies and customer feedback.

CC&B/MDM Cumulative Updates/Upgrade: Direct impacts to Customer Service, Construction Services, Rates, DSM, Security, and Finance are among

Customer Transactional Systems

the many departments that utilize these systems along with specific roles such as CSRs, CPCs, account executives and regional business managers. This work will continue to keep our two most critical business applications updated to the most current versions and help to mitigate future support and security risks.

DSM System: This system will impact the employees that keep track of energy efficiency projects on behalf of our customers. Information in this system is tracked (for example: kWh and therms saved through a lighting upgrade in a supermarket) and reported to energy efficiency governing bodies.

Rate Tools: This work will directly impact our Rates Department and replace the existing “home grown” system they are using which is at end of life.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Funding at a lower Level

The "Funding at a Lower Level" option would delay benefits to our customers, users of the system and third-party partners. This option could increase operational costs as we may delay our major technology system upgrades. In addition, we would delay implementing enhancements that would benefit users of the systems and create operational efficiencies, features that would benefit customers and third parties (outside agencies and vendor partners) and delay the ability to respond or report on regulatory requests.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. spend, and transfers to plant by year.

The work within this business case will be conducted through a program that will contain multiple projects. The work will transfer to plant most often on both an integrated and independent release cycle; new features will go live for customers 7-10 times per year.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

At Avista, we have a variety of "Customer Transactional Systems" that are used to support the day to day operational needs of our customers, internal users, third party partners and our regulators.

For Avista to provide “Better energy for life...” it is important to keep these systems functioning at the optimal technical level in keeping with industry standards and customer expectations. Continually improving, enhancing, replacing, and building upon these systems keeps us in step with our value of being innovative and continuously improving and finding better ways to get

Customer Transactional Systems

things done. This concept is directly stated in our mission statement, “We improve our customers’ lives through innovative energy solutions” and is a demonstration of placing the customer at the center of everything we do.

In addition to focusing on our customers, our employees are foundational to everything that we do. Improving these systems also includes direct benefit to our employees and their performance. They are using these tools daily to deliver value to our customers and the communities we serve.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Avista needs a way to track customer accounts, bill our customers, and track energy efficiency projects and savings on behalf of our customers. It is considered a prudent investment as it will continue to provide an efficient and safe way to bill our customers and keep our customer information secure.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Customers will interface with the technology in this business case indirectly through their own self-service interactions on MyAvista.com, the mobile app, and text channels. Customers will also interact with Avista personnel who will be using the technology to provide service to customers.

2.8.2 Identify any related Business Cases

The work in the business case is related to the work in the Customer Facing Technology business case. Most of the tools identified in the Customer Facing Technology business case cannot function without work occurring within the Customer Transactional Systems business case.

3.1 Steering Committee or Advisory Group Information

This business case will be governed by the Customer Facing Technology (CFTP) & Customer Experience Platform (CXP) & Customer Transactional Systems (CTS) governance group. This group prioritizes and governs the projects under the Customer Transactional Systems throughout the entire project lifecycle. They then surface these to the IS/IT PMO for execution.

Customer Transactional Systems

3.2 Provide and discuss the governance processes and people that will provide oversight

The CFTP, CXP and CTS Governance Group meets on a monthly basis.

Members include:

- Kevin Christie – VP External Affairs and CCO
- Jim Kensok – VP CIO & CSO
- Latisha Hill – VP Community & Economic Vitality
- Mike Broemeling – Director of Customer and Shared Services
- Nikdel Hossein – Director Applications and System Planning
- Jim Corder – Director IT and Security
- Dana Anderson – Director Corporate Communications
- David Howell – Director Operations, West Operations and Asset Management
- Josh DiLuciano – Director Electric Engineering
- Anna Scarlett – Director Energy Efficiency
- Kelly Magalsky – Director Products, Services, and Customer Technology
- Kelly Conley – Sr Manager Digital Communications and Corporate Communications
- Stephanie Myers – Manager Customer Solutions and Products & Services
- Graham Smith – Manager Applications Delivery and Application Support

Facilitators include:

- Kim Henscheid – Program Manager Customer Experience Platform
- Ethan Jelinek – IT Sr Program Manager

3.3 How will decision-making, prioritization, and change requests be documented and monitored

Decision making and general prioritization decisions for the business case and programs will be documented and monitored through monthly meeting notes. Project specific decisions will be documented within the PMO’s current process through project change orders.

The undersigned acknowledge they have reviewed the Customer Transactional Systems Program Business Case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

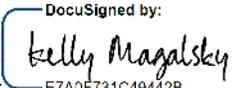
Signature:  Date: Jul-13-2021 | 7:57 AM PDT

Print Name: Stephanie Myers

Title: Customer Solutions Manager

Customer Transactional Systems

Role: Business Case Owner

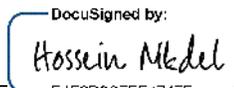
Signature: 

Date: Jul-13-2021 | 8:09 AM PDT

Print Name: Kelly Magalsky

Title: Director of Customer Technology and
Products and Services

Role: Business Case Sponsor

Signature: 

Date: Jul-13-2021 | 8:32 AM PDT

Print Name: Hossein Nikdel

Title: Director of Applications and Systems
Planning

Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Digital Grid Networks

EXECUTIVE SUMMARY

Technology that enables Avista’s safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to generation plants across our service territory. Managing our network technologies to optimize communications and operations in the field for our crews, inspectors, employees, contractors and customers is critical to our ability to provide safe and reliable service. Technology investments under the Digital Grid Network business case are needed to expand and maintain these network assets in support of system reliability and business productivity throughout our service territory, ensuring our ability to appropriately and timely respond to the needs of our customers.

The technology solutions under the Digital Grid Network business case will vary by site location and the systems supported in each facility or environment. They will include, but not limited to, emergency and safety systems, control systems, customer systems, and enterprise back office productivity systems. This infrastructure is core to utility operations, thus demanding reliable networks utilizing commercial carrier services and private network solutions. The cost of each technology will vary with the type of solution identified for the appropriate level of network capacity and data classifications to be transported. Avista and its customers will experience the benefits through ongoing system reliability.

The technology solutions to meet performance standards and reliability requirements can vary between use cases. Solution costs can also vary depending on the magnitude of the technology footprint or vendor licensing model(s). As enabling technology, our private transport investments benefits all Avista customers, as it optimizes cost and productivity by not reverting to manual business processing, which would result in increased labor costs, human error, and overall processing delays. Because technology is evolving so quickly, this program undergoes regular review of the levels of investment and utilization to meet performance and capacity standards, and reliability requirements, while balancing against pre-established budget allocations. These reviews can result in calling for additional investment under this program for technology at risk of poor network system performance and system unavailability.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Jim Ogle	Initial BCJN Draft	6/2017	
2.0	Shawna Kiesbuy	Revision of BCJN to new template	7/2020	

Digital Grid Networks

GENERAL INFORMATION

Requested Spend Amount	\$12,819,204
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Technology that enables Avista's safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to generation plants across our service territory. Managing our network technologies to optimize communications and operations in the field for our crews, inspectors, employees, contractors and customers is critical to our ability to provide safe and reliable service. Technology investments under the Digital Grid Network business case are needed to expand and maintain these network assets in support of system reliability and business productivity throughout our service territory, ensuring our ability to appropriately and timely respond to the needs of our customers.

The technology solutions under the Digital Grid Network business case will vary by site location and the systems supported in each facility or environment. They will include, but not limited to, emergency and safety systems, control systems, customer systems, and enterprise back office productivity systems. This infrastructure is core to utility operations, thus demanding reliable networks utilizing commercial carrier services and private network solutions. The cost of each technology will vary with the type of solution identified for the appropriate level of network capacity and data classifications to be transported. Avista and its customers will experience the benefits through ongoing system reliability.

Digital Grid Networks

1.2 Discuss the major drivers of the business case (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) **and the benefits to the customer**

The main driver behind this program is asset performance and capacity in alignment with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps and planned obsolescence. The technology solutions within this program undergo regular review to balance performance and capacity against the asset management strategy within the predetermined budget allocations.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

The risks of not approving this business case at the level to which it can maintain the balance of optimal performance against meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increased safety risks in sending field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems supported. New investments will be required when existing assets do not provide adequate capacity, performance, and functionality.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Executing planned projects will provide optimum performance and capacity as we refresh assets prior to the asset's obsolescence. In this way, the business case should be able to support the asset lifecycles and reduce the risk of failing assets affecting critical business systems, processes and infrastructure reliability.

Digital Grid Networks

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

Reference materials that support the needed changes in Network technology are maintained by Technology Domain Architects within each respective technology area.

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

This business case is aligned with Performance & Capacity.

Option	Capital Cost	Start	Complete
Asset replacement for optimized performance and capacity	\$12,819,204	01 2021	12 2025
Do not fund the program	\$0	01 2021	12 2025

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The main driver behind this program is performance and capacity aligned with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps, which can compound planned obsolescence. The asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages. Tracking of the assets' installation and lifecycle durations are maintained to plan the program projects over the course of future years driving the annual budget request to maintain the refresh roadmap.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

This business case includes network solutions for both expansion requirements and systematic refresh of existing devices that provide access to our digital grid field and wide area networks. Life cycle schedules allow for a known number of assets, by type, to be refreshed based on impact and likelihood of realized risk to the environment. Historical costs and timelines provide indicators in support of the requested allocations above.

Through roadmapping activities and known pressures on existing network capacity, expansion work has been identified for each year. Again, using historical data along with current product cost estimates, the team developed a

Digital Grid Networks

cost plan for work by year. Combined with the refresh work cost estimates, the overall business case request amount is determined.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

The projects in this program are standalone projects within the Digital Grid Network business case but are dependent on length of construction season and other geographically similar but unrelated work being performed at impacted substations. Through those projects, business functions and processes might be impacted but the technology upgrades being made at the varied locations throughout Avista's service territory should strive to increase performance and capacity for employees in their daily work life.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

Alternative 1: FUND PROGRAM BASED ON OPTIMIZED PERFORMANCE AND ASSET MANAGEMENT

Funding the Digital Grid Network business case minimally each year based on a reduced capital plan and request incremental increases as projects are completed. This would result in ad-hoc funding requests to the Capital Planning Group for work approved outside of the 5-year capital planning process.

Alternative 2: DO NOT FUND THE PROGRAM

Digital Grid Network projects would not be funded. Enterprise network access from our field locations, optimization and/or unfunded capacity management could result in minimized network capacity reducing the ability to communicate with field assets and members of our workforce at field area locations across our geographic territory.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer. spend, and transfers to plant by year.

The Digital Grid Network business case is managed as a program of projects planned yearly. All individual projects are managed through the PMO, which follows the Project Management Institute (PMI) standards. Throughout the year,

Digital Grid Networks

the business case's projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the scope requests which over the course of a calendar year equates to the funded budget allocation.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives and mission statement of the organization.

This is a program with discrete projects that align with Avista's vision, mission and strategic objectives:

- The Digital Grid Network business case investments align with Avista's commitment to invest in its infrastructure to achieve optimal lifecycle performance – safety, reliability, and at a fair price. Network technologies that allow for communication with field area assets and workforce in the field are critical in support of the bulk electric system. The implementation of these network technologies will continue to enable and support these critical communications in a manner that is much safer to all workers and at all locations across Avista.

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Throughout the course of a year, all project requests are vetted before the Steering Committee to validate the request against the business case purpose and making sure the request can be delivered within the approved funding allocation.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the Digital Grid Network business case, the discrete projects interface with various internal Avista groups such as ET engineering, Substation

Digital Grid Networks

engineering, GPSS and Generation Plants, the Telecommunications Shop, along with our internal business partners at various office and remote facilities.

Steering Committee members include Business Case Sponsors, Directors and Managers within the Enterprise Technology group along with the Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), the assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.1 Identify any related Business Cases

There are no related business cases.

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to project deliverables outlined in this document, which also typically have an impact on the scope, schedule, or budget of a project. Steering Committee members will also provide approval on Change Requests, Go-Live, and the Approval to Close document. For the High Voltage Protection business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS and the Business Case Owner.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Enterprise and Control Network Infrastructure Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this

Digital Grid Networks

program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically in order to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope
- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

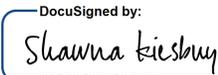
Project prioritization is evaluated by the management team on a monthly basis. Each program and project steering committee meet regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

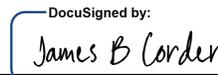
Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

Digital Grid Networks

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

The undersigned acknowledge they have reviewed the Facilities Driven Technology Improvements business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Aug-04-2020 | 10:44 AM PDT
3CD905A81B984C3...
 Print Name: Shawna Kiesbuy
 Title: Sr. Manager, Network Engineering
 Role: Business Case Owner

Signature:  Date: Aug-07-2020 | 1:01 PM PDT
7002E4872104449...
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Committee Review

Digital Grid Networks

Generation, Substation & Gas Location Security

EXECUTIVE SUMMARY

Security is an expectation of companies today by its customers. Especially companies considered critical infrastructure. Protecting vital electric and gas services from attacks benefits Avista's customers by having safety and reliable energy. The capital budget request of \$3,100,000 funds the security protections that benefit Avista customers as the enhancements maintain and enhance Avista's security posture to minimize the risks associated with physical attacks at Avista generation, substation & gas locations. Not approving this business case or its recommended funding can pose risks to the assets Avista depends on to conduct business and delivery safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of original business case	7/02/2020	

GENERAL INFORMATION

Requested Spend Amount	\$3,100,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Clay Storey Clay Storey
Sponsor Organization/Department	
Phase	Choose an item.
Category	Choose an item.
Driver	Choose an item.

1. BUSINESS PROBLEM

1.1 What is the current or potential problem that is being addressed?

Security remains a concern at our generation, substation & gas locations. These locations contain equipment that is critical to the delivery of safe and reliable gas and electricity. Many of these locations are remote, unmanned, and vulnerable, which makes them difficult to protect. A security incident at any of these locations could deny, degrade, or disrupt the delivery of energy. Also, attacks can give intruders access to critical cyber equipment, which can lead to a cybersecurity event.

Generation, Substation & Gas Location Security

1.2 Discuss the major drivers of the business case and the benefits to the customer

Performance & Capacity is the primary driver for the business case as the projects it funds address security risks by protecting Avista's generation, substation & gas locations that are critical to support our customers.

1.3 Identify why this work is needed now and what risks there are if not approved or is deferred

Addressing security risks has been and will continue to be an ongoing issue. If the funding is not approved or is deferred, this increases the likelihood of a security event that could impact Avista's generation, substation & gas locations that are critical to support our customers.

1.4 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Avista utilizes utility industry forums, counsels, organizations, and knowledge from past security incidents to provide Avista with a baseline from which to measure its security capabilities and channel the appropriate level of investment to mitigate the identified risks.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

N/A

1.5.2 For asset replacement, include graphical or narrative representation of metrics associated with the current condition of the asset that is proposed for replacement.

Option	Capital Cost	Start	Complete
Address security at facilities and storage locations as funding allows (Recommended)	\$3,100,000	01 2021	12 2025
Address security at facilities and storage locations in 7.5 years	\$5,000,000	01 2021	06 2028
Address security at facilities and storage locations in 10 years	\$7,000,000	01 2021	12 2031

2.1 Describe what metrics, data, analysis or information was considered when preparing this capital request.

The capital dollar request was derived from the historical annual spend implementing security measures across the Avista service territory to reasonably mitigate risks based on input from the programs governing body. It also takes into account estimates of in-flight projects and a 1% per year increase for inflation of future projects.

Generation, Substation & Gas Location Security

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). (i.e. what are the expected functions, processes or deliverables that will result from the capital spend?). Include any known or estimated reductions to O&M as a result of this investment.

This business case supports simultaneous projects over multiple years. This business case expects to continue to deliver security that contributes to threat reduction and deterrence of Avista's assets. Each project within the business case evaluates the potential impact to O&M costs and staffing.

[Offsets to projects will be more strongly scrutinized in general rate cases going forward (ref. WUTC Docket No. U-190531 Policy Statement), therefore it is critical that these impacts are thought through in order to support rate recovery.]

2.3 Outline any business functions and processes that may be impacted (and how) by the business case for it to be successfully implemented.

Security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

2.4 Discuss the alternatives that were considered and any tangible risks and mitigation strategies for each alternative.

The alternative strategy would be to fund the business case based on a set schedule of 7.5 or 10 years rather than as funding allows. These options would require more funding and resources but would be more likely to address security needs in a timely manner rather than as needed.

2.5 Include a timeline of when this work will be started and completed. Describe when the investments become used and useful to the customer spend, and transfers to plant by year.

Since this business case is comprised of projects running concurrently over multiple years, each one designates its completion date and transfer-to-plant.

2.6 Discuss how the proposed investment aligns with strategic vision, goals, objectives, and mission statement of the organization.

The Generation, Substation, and Gas Location Security business case provides funding for security-related projects and supports Avista's safe and reliable infrastructure.

Generation, Substation & Gas Location Security

2.7 Include why the requested amount above is considered a prudent investment, providing or attaching any supporting documentation. In addition, please explain how the investment prudence will be reviewed and re-evaluated throughout the project

Security measures to protect critical infrastructure is not only prudent but required in some cases because of compliance. Reasonable and appropriate security measures are also an expectation of Avista's customers. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

- None

3.1 Steering Committee or Advisory Group Information

The Enterprise Security Committee will provide monthly recommendations and guidance based on security operations center updates, business case financial updates, and industry recommendations.

3.2 Provide and discuss the governance processes and people that will provide oversight

The Enterprise Security Committee acts as the custodian and governance body of security resources and investments which includes the Generation, Substation, and Gas Location Security business case. This group meets monthly and is composed of directors and managers from most of the lines of business. In addition, each project funded by the Generation, Substation, and Gas Location Security business case has project-level steering committees.

3.3 How will decision-making, prioritization, and change requests be documented and monitored

Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key

Generation, Substation & Gas Location Security

issues that affect the following topics: scope, schedule, budget, project issues, project risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the Generation, Substation, and Gas Location Security business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Aug-07-2020 | 9:33 PM PDT
 Print Name: Clay Storey
 Title: Director of Security, IT & Security Management
 Role: Business Case Owner

Signature:  Date: Aug-07-2020 | 9:33 PM PDT
 Print Name: Clay Storey
 Title: Director of Security, IT & Security Management
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: _____
 Title: _____
 Role: Steering/Advisory Committee Review