

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET UE-240006

DOCKET UG-240007

DIRECT TESTIMONY OF

WAYNE O. MANUEL

REPRESENTING AVISTA CORPORATION

Proforma Capital Additions for 07.2023 - 12.2023 and 2024 by Plant Category
 Manuel

WA GRC Plant Category	Project #	ET Business Case Type	Business Case	07.2023-12.2023 TTP (System)	2024 TTP (System)	Exh. WOM-2 Page #
Large or Distinct Projects	1	Enabling Technology	Digital Grid Network	\$ 4,634,379	\$ 2,064,528	3
	2	Enabling Technology	Land Mobile Radio & Real Time Communication Systems	\$ 3,634,435	\$ 4,597,501	13
Large or Distinct Projects Total				\$ 8,268,814	\$ 6,662,029	
Mandatory & Compliance	3	Security	CIP v5 Transition - Cyber Asset Electronic Access	\$ 288,495	\$ -	23
	4	Enabling Technology	High Voltage Protection (HVP) Refresh	\$ 1,000,819	\$ -	25
	5	Security	Identity and Access Governance	\$ 20,943	\$ 303,024	34
	6	Security	Security Compliance	\$ 246,756	\$ 99,683	44
Mandatory & Compliance Total				\$ 1,557,012	\$ 402,707	
Programs	7	Enabling Technology	Control and Safety Network Infrastructure	(3) \$ 1,026,865	\$ 1,516,187	54
	8	Enabling Technology	Enterprise & Control Network Infrastructure	(3) \$ 766,494	\$ -	64
	9	Enabling Technology	Enterprise Network Infrastructure	(3) \$ 2,649,590	\$ 2,221,684	73
	10	Enabling Technology	Environmental Control & Monitoring Systems	\$ 745,242	\$ 978,615	83
	11	Enabling Technology	Fiber Network Lease Service Replacement	\$ 3,244,873	\$ 7,316	93
	12	Enabling Technology	Network Backbone	(3) \$ 2,775,167	\$ 4,188,193	102
	13	Enabling Technology	NexGen Control System Networks	\$ -	\$ 5,798,065	112
	14	Enabling Technology	Technology Failed Assets	\$ 470,452	\$ 659,782	123
Programs Total				\$ 11,678,682	\$ 15,369,842	
Short-Lived Assets	15	Business & Op Applications	Atlas	\$ 840,260	\$ -	132
	16	Enabling Technology	Basic Workplace Technology Delivery	\$ 893,649	\$ 799,996	143
	17	Enabling Technology	Data Center Compute and Storage Systems	\$ 2,289,663	\$ 4,159,903	154
	18	Enabling Technology	Endpoint Compute and Productivity Systems	\$ 1,355,237	\$ 4,180,369	163
	19	Business & Op Applications	Energy Delivery Modernization & Operational Efficiency	\$ 5,493,410	\$ 4,656,442	173
	20	Business & Op Applications	Energy Market Modernization & Operational Efficiency	\$ 159,476	\$ 500,001	190
	21	Business & Op Applications	Energy Resources Modernization & Operational Efficiency	\$ 2,764,124	\$ 2,798,585	199
	22	Security	Enterprise Business Continuity	\$ 206,475	\$ 100,081	210
	23	Enabling Technology	Enterprise Communication Systems	\$ 1,488,270	\$ 1,786,541	218
	24	Security	Enterprise Security	\$ 3,535,958	\$ 1,771,645	229
	25	Enabling Technology	ET Modernization & Operational Efficiency - Technology	\$ 2,089,866	\$ 2,970,407	240
	26	Security	Facilities and Storage Location Security	\$ 469,670	\$ 380,134	251
	27	Business & Op Applications	Financial & Accounting Technology	\$ 2,519,073	\$ 4,260,001	262
	28	Security	Generation, Substation & Gas Location Security	\$ 1,310,147	\$ 3,830,156	273
	29	Business & Op Applications	Human Resources Technology	\$ 328,739	\$ 391,207	285
30	Enabling Technology	Dynamic Infrastructure Platform Enhancements	\$ -	\$ 485,512	298	
31	Business & Op Applications	Legal & Compliance Technology	\$ 159,066	\$ 465,000	310	
32	Business & Op Applications	Outage Management System & Advanced Distribution Management System (OMS & ADMS)	\$ 2,072,085	\$ 1,364,878	321	
33	Security	Telecommunication & Network Distribution Location Security	\$ 139,191	\$ 113,768	341	
Short-Lived Assets Total				\$ 28,114,360	\$ 35,014,626	
Grand Total				\$ 49,618,868	\$ 57,449,204	

[1] Includes system proforma capital for the period July 1, 2023 through December 31, 2023.

[2] Totals exclude Idaho and Oregon direct business cases from revenue requirement in this case.

[3] The Enterprise & Control Network Infrastructure business case has been divided in to three new Business Cases: Enterprise Network Infrastructure, Control and Safety Network Infrastructure, and Network Backbone Infrastructure.

Provisional Capital Additions for 2025-2026 by Plant Category
 Manuel

WA GRC Plant Category	Project #	ET Business Case Type	Business Case	2025 TTP (System)	2026 TTP (System)	Exh. WOM-2 Page #
Large or Distinct Projects	1	Enabling Technology	Digital Grid Network	\$ 2,606,425	\$ 4,284,116	3
	2	Enabling Technology	Land Mobile Radio & Real Time Communication Systems	\$ 1,999,046	\$ 1,944,767	13
Large or Distinct Projects Total				\$ 4,605,471	\$ 6,228,883	
Mandatory & Compliance	5	Security	Identity and Access Governance	\$ 649,022	\$ 194,984	34
	6	Security	Security Compliance	\$ 100,106	\$ 101,654	44
Mandatory & Compliance Total				\$ 749,128	\$ 296,638	
Programs	7	Enabling Technology	Control and Safety Network Infrastructure	[3] \$ 941,295	\$ 2,647,447	54
	9	Enabling Technology	Enterprise Network Infrastructure	[3] \$ 2,000,003	\$ 1,051,084	73
	10	Enabling Technology	Environmental Control & Monitoring Systems	[3] \$ 909,147	\$ 977,102	83
	11	Enabling Technology	Fiber Network Lease Service Replacement	\$ 1,461,811	\$ 878,940	93
	12	Enabling Technology	Network Backbone	[3] \$ 3,140,876	\$ 1,844,292	102
	13	Enabling Technology	NexGen Control System Networks	\$ 3,168,636	\$ 2,704,701	112
	14	Enabling Technology	Technology Failed Assets	\$ 660,002	\$ 660,004	123
Programs Total				\$ 12,281,770	\$ 10,763,570	
Short-Lived Assets	16	Enabling Technology	Basic Workplace Technology Delivery	\$ 799,998	\$ 800,002	143
	17	Enabling Technology	Data Center Compute and Storage Systems	\$ 2,299,701	\$ 3,853,902	154
	18	Enabling Technology	Endpoint Compute and Productivity Systems	\$ 6,154,490	\$ 3,034,582	163
	19	Business & Op Applications	Energy Delivery Modernization & Operational Efficiency	\$ 10,032,632	\$ 7,948,051	173
	20	Business & Op Applications	Energy Market Modernization & Operational Efficiency	\$ 598,920	\$ 500,000	190
	21	Business & Op Applications	Energy Resources Modernization & Operational Efficiency	\$ 2,429,392	\$ 3,357,757	199
	22	Security	Enterprise Business Continuity	\$ 100,000	\$ 100,075	210
	23	Enabling Technology	Enterprise Communication Systems	\$ 1,369,738	\$ 2,212,730	218
	24	Security	Enterprise Security	\$ 2,387,292	\$ 2,000,689	229
	25	Enabling Technology	ET Modernization & Operational Efficiency - Technology	\$ 2,609,026	\$ 2,804,725	240
	26	Security	Facilities and Storage Location Security	\$ 399,999	\$ 399,999	251
	27	Business & Op Applications	Financial & Accounting Technology	\$ 4,144,998	\$ 3,140,001	262
	28	Security	Generation, Substation & Gas Location Security	\$ 7,751,644	\$ 1,449,994	273
	29	Business & Op Applications	Human Resources Technology	\$ 490,344	\$ 613,801	285
	30	Enabling Technology	Dynamic Infrastructure Platform Enhancements	\$ 1,014,488	\$ 1,220,271	298
31	Business & Op Applications	Legal & Compliance Technology	\$ 420,000	\$ 405,500	310	
32	Business & Op Applications	Outage Management System & Advanced Distribution Management System (OMS & ADMS)	\$ 24,099,250	\$ 700,000	321	
33	Security	Telecommunication & Network Distribution location Security	\$ 112,898	\$ 112,592	341	
Short-Lived Assets Total				\$ 67,214,810	\$ 34,654,671	
Grand Total				\$ 84,851,179	\$ 51,943,762	

[1] Includes system proforma capital for the period July 1, 2023 through December 31, 2023.

[2] Totals exclude Idaho and Oregon direct business cases from revenue requirement in this case.

[3] The Enterprise & Control Network Infrastructure business case has been divided in to three new Business Cases: Enterprise Network Infrastructure, Control and Safety Network Infrastructure, and Network Backbone Infrastructure.

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EXECUTIVE SUMMARY

The Digital Grid Networks Program^[1] Business Case includes network communications technology that establishes a reliable, secure, and supportable mix of private and third-party solutions that compose the FAN (Field Area Network), including mesh devices using unlicensed wireless bands installed throughout the service territory and devices that leverage commercial LTE communications systems. With increased utility use cases such as Wildfire prevention, ADMS (Advanced Distribution Management System), and EV (Electric Vehicle) charging, having a multi-tiered field area network solution allows for better support of the utility demand across the entire geographic service territory. The current mix of private and third-party wide area wireless services relies too heavily on leased external services which can result in degraded security, performance, and overall reliability because 1) the assigned TTR (time to restoration) is outside of Avista's control, and 2) the commercial leased service providers are generally in the business of growing subscribers, not delivering reliable service that meets utility service level criteria in support of the essential services we deliver to our customers 24/7/365. Overreliance on these commercial systems presents a risk to the stability of critical core services, therefore Avista's control and safety field area communication networks are being moved to utility-grade leased or private services.

For this business case, funding is being requested for \$23,000,000 over five years to upgrade or replace approximately 1600 network communication systems within the field area network. For assets connected to third party wireless services, such as commercial LTE, tracking of carrier orientation, usage, and cost are also maintained for each individual asset. Analysis of current traffic profiles and future use-cases is reconciled to reliability metrics and supportability requirements to generate the desired mix of private and leased services to support the Field Area Networks. The increase in this funding request is due to the Advanced Meter Infrastructure (AMI) Connected Grid Router (CGR) refresh work along with AMI WA support and expansion projects previously not capture in the five-year plan. In the later years, the design and build of a private LTE network has been included. The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy and scale for future technology could result in unplanned failures and unplanned outages across the field area network communication system.

Avista customers across select jurisdictions will benefit from the projects in this program by having a robust network that has capacity and reliability to transport real time data on system status and performance. Proactive updates to assets or timely placement of assets to locations will reduce possible service interruptions or delays. This translates to the safe and reliable delivery of energy to customers across the Avista service territory.

Currently, there are no direct cost savings. Indirect offsets may be realized with fewer truck roles, staff efficiency, etc.

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^[1] “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.” Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

VERSION HISTORY

Version	Author	Description	Date
3.0	Shawna Kiesbuy	Update content and new template	4/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements	4/20/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$3,500,000	\$1,900,000
2025	\$3,500,000	\$2,600,000
2026	\$5,500,000	\$5,000,000
2027	\$3,500,000	\$3,700,000
2028	\$7,000,000	\$7,900,000

Project Life Span	5 Years+
Requesting Organization/Department	Enterprise Technology/Network Systems
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology/Network Systems
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

Digital Grid Networks

- 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?

This business case includes network communications technology that establishes a reliable, secure, and supportable mix of private and third-party solutions that compose the FAN (Field Area Network), including mesh devices using unlicensed wireless bands installed throughout the service territory and devices that leverage commercial LTE communications systems. With increased utility use cases such as Wildfire prevention, ADMS (Advanced Distribution Management System), and EV (Electric Vehicle) charging, having a multi-tiered field area network solution allows for better support of the utility demand across the entire geographic service territory.

The current mix of private and third-party wide area wireless services relies too heavily on leased external services which can result in degraded security, performance, and overall reliability because 1) the assigned TTR (time to restoration) is outside of Avista's control, and 2) the commercial leased service providers are generally in the business of growing subscribers, not delivering reliable service that meets utility service level criteria in support of the essential services we deliver to our customers 24/7/365. Overreliance on these commercial systems presents a risk to the stability of critical core services, therefore Avista's control and safety field area communication networks are being moved to utility-grade leased or private services.

1.2 Discuss the major drivers of the business case.

The main driver for this business case is Performance and Capacity. Since the field area network wireless transport systems support both back office and critical infrastructure, creating and managing the business case is crucial to building a field area network transport system that protects and provides the performance and capacity needed by all end users. Specifically, allowing for the monitoring and protection of utility assets in high wildfire prone areas, supporting the build out of an EV communications network across the service territory, supporting ADMS functions including the automation of outage restoration and optimizing the performance of the distribution grid and in delivery of AMI (Advanced Metering Infrastructure) data. With Performance and Capacity, the network communication assets are managed in alignment with technology lifecycles that are based on manufacturer product roadmaps and planned obsolesces to proactively reduce the risk of failing assets affecting critical operations systems, back-office processes, and infrastructure reliability.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

The network project work captured in this business case establishes a more reliable, secure, and supportable mix of private and third-party solutions for wireless transport systems. With Avista's vision of delivering better energy for life, this business case is key to enabling the

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gas and electric service delivery to our customers in a safe and reliable manner. The work is needed daily and is ongoing with a direct tie to our core operations.

The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy and scale for future technology could result in unplanned failures and unplanned outages across the field area network communication system. The result is tied to the following risks: an increase in employee, contractor and/or public safety risks due to the inability to see and remotely operate the electric and gas systems. This has the potential to increase labor and non-labor costs tied to unplanned system scope changes, where delays to procurement can be realized to replace the failed asset, as well as downtime to the critical systems supported. This would also lead to additional exposure of outdated or unsupported devices to external cyber vulnerabilities.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link.

[Avista Strategic Goals](#)

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 for all workers and at all locations across Avista.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹

Reference materials that support the needed changes in Network technology are maintained by Technology Domain Architects within each respective technology area.

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

DGN exists to develop, deploy, and maintain a portfolio of Field Area Network (FAN) backhaul technologies to serve wide-area, remote and/or isolated utility data communication

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

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use cases. Use cases include AMI, AMR, SCADA, and Wildfire. DGN solutions must be secure and reliable. The business case must strive toward private solutions where possible while curating a selective mix of carrier services such as LTE in an evolving technological market. DGN plans for future convergence of services over a single multi-technology FAN architecture in alignment with current utility industry trend toward distributed resource and machine-to-machine communications.

2.2 Describe and provide reference to **CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).**²

Each individual network infrastructure asset is tracked throughout its active presence using several systems. Collectively these systems track lifecycle, manufacturer warranty, maintenance, and support (contract) status, licensing, capacity, and replacement cost. For assets connected to third party wireless services, such as commercial LTE, tracking of carrier orientation, usage, and cost are also maintained for each individual asset. Analysis of current traffic profiles and future use-cases is reconciled to reliability metrics and supportability requirements to generate the desired mix of private and leased services to support the Field Area Networks. Capacity and performance planning is conducted based on industry trends, disruptors, and expected customer growth, the result of which is a robust, converged, field area network that will enable Avista to efficiently and effectively deliver timely information and services to customers.

Gross Total Assets	Expected Growth 2024-2028*	EoL** <2024	EoL 2024-2028	Total Scope of Request
1252	500	588	531	1619

*Growth may not be capitalized in listed BC

** *Approximate only and subject to change*

EoL= End of planned asset lifecycle, communication network assets within the Enterprise Network Infrastructure solution portfolio are selected for a planned lifecycle of 7 years, with some exceptions.

2.3 Summarize in the table and describe below the **DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.**

There are no direct savings related to this business case.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

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Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

2.4 Summarize in the table and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

*According to the Company Enterprise Risk Register, under the “Loss of Communication or Network Technologies” and the “Cyber Intrusion” risks the probability of this failure has an income statement score of 3, which equates to a \$10-\$20 million avoided cost over a period of 2-3 years.

The network infrastructure investments in this business case sustain our business by using network systems and assets to deliver data in support of critical system operations. This business case specifically addresses network infrastructure required for our distribution digital grid. The business case considers business impact vs. likelihood/probability when sequencing work and allocating resources and responds to vendor-manufactured product obsolescence risk as well as cyber security risks.

The use cases served by this business case include field area network transport infrastructure for distribution automation devices, automated meter reading, advanced metering infrastructure, and other field area network applications. The key performance indicator for network availability and reliability is 99.9%, 24x7. Our investment sequencing is based on three drivers, 1) Compliance, 2) Initiatives, 3) Reliability. The Compliance driver should be regulation, Initiatives are executive sponsored (current example is a cybersecurity vulnerability risk on out-of-support assets), and the Reliability driver is often the highest volume of work.

The sequencing of the Reliability projects is driven first by the network asset end-of-support date for cybersecurity patching, then the performance and capacity to meet the business requirement, and lastly product obsolescence date.

Investment percentage for the cybersecurity Initiative is 37% in 2022, Reliability projects are 63%. In 2023, the cybersecurity Initiative is 64% and Reliability projects are 36% of the investment.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

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2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Fund the business case at an amount which is less than the original request

Funding of this business case at an amount less than the full request will reduce expansion of the field area network transport systems to meet business needs in multiple areas of the business. This reduction in projects will also lessen the number of devices that are able to be refreshed which increases the risk of failure or cyber security vulnerability because assets will no longer be supported by their manufacturers.

Alternative 2:

Do not fund the business case

Removing all funding for this business case would result in a lack of wireless network access for our field locations. A lack of access and/or a lack of optimization and capacity management, minimizing network capacity reducing the ability to communicate with field assets and members of our workforce at field area locations across our geographic territory. Manual interventions and field visits would be required, increasing expense costs and degrading trust between teams regarding real time data that used to be available when device communications were present.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

The projects in this business case establish a more reliable, secure, and supportable mix of private and third-party solutions for wireless transport systems. The projects are dependent on length of construction season and other geographically similar but unrelated work being performed at impacted substations. Planning for these projects is done in partnership with other Avista departments to ensure an alignment of technical needs is accounted for in this business case, including the requirements, risks, and effects of the project work. Many times, this work will be aligned with a previously scheduled outage window to gain efficiency and reduce the amount of downtime experienced by operators at the sites. Specific business functions and processes affected are determined project by project. 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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The Digital Grid Network business case is managed as a program of projects planned yearly. All individual projects are managed through the Project Management Office (PMO), which follows the Project Management Institute (PMI) standards. Throughout the

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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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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 documents. For the Digital Grid Network business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS and the Business Case Owner.

The Digital Grid Network 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 PMO. The project queue will be reviewed periodically to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees function 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 for providing guidance and making decisions on key issues that affect the following topics:

- Scope

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- 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.

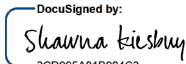
Project prioritization is evaluated by the management team monthly. Each program and project steering committee meet regularly and oversee scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or Capital Planning Group (CPG) for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via a Change Request document that is presented to the CPG monthly and evaluated by the CPG for approval.

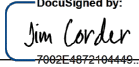
Changes in scope, schedule, or budget are also documented through a ‘Change Request’ at the project level and reviewed and approved through a formal workflow process. All ET projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a ‘Charter’ to begin the planning process. When planning is complete, a ‘Project Management Plan (PMP)’ is created and approved as the project 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.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Digital Grid Networks 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: May-11-2023 | 6:43 AM PDT
 Print Name: Shawna Kiesbuy
 Title: Sr. Manager, Network Engineering
 Role: Business Case Owner

Digital Grid Networks

Signature:  _____ Date: May-11-2023 | 9:48 AM PDT

Print Name: Jim Corder

Title: Director, Infrastructure Technology

Role: Business Case Sponsor

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Land Mobile Radio & Real Time Communication Systems

EXECUTIVE SUMMARY

The Land Mobile Radio & Real Time Communication Systems Program¹ Business Case sponsors the tools and systems used by gas and electric crews to communicate. This communication is with Dispatch and System operations as well as direct communication between crews. 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
1.0	Walter Roys	Initial draft of original business case	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
3.0	Walter Roys	Updated BCJN	8/2022
4.0	Walter Roys	Updated BCJN	4/2023
<i>BCRT</i>	<i>BCRT Team Member</i>	<i>Has been reviewed by BCRT and meets necessary requirements with suggested changes</i>	<i>4/28/2023</i>

¹ "A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.", Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Land Mobile Radio & Real Time Communication Systems

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$3,600,000	\$3,600,000
2025	\$3,600,000	\$3,600,000
2026	\$3,600,000	\$3,600,000
2027	\$3,600,000	\$3,600,000
2028	\$3,600,000	\$3,600,000

Project Life Span	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology System Engineering
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

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.

Land Mobile Radio & Real Time Communication Systems

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.

1.2 Discuss the major drivers of the business case.

The Land Mobile Radio & Real Time Communications Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps or changes in business requirements 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 if deferred or risks being mitigated by the request.

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 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. *See link.*

This investment aligns with our strategy of delivering safe and reliable energy. Critical crew communications are key to ensuring timely resolution of outages and safe operations. 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

Land Mobile Radio & Real Time Communication Systems

alignment provide necessary information to track how much of our investment in technology is lagging the vendor roadmap, and thereby introducing risk.

1.5 Supplemental Information – please **describe and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²**

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:

Gartner Industry Research and Reference Material. Retrieved from <https://www.gartner.com/en/information-technology>

Investments under this business case are to maintain performance and capacity standards in each respective land mobile radio technology. For example, when the product manufacturer terminates maintenance and support for specific devices or solutions, an asset therefore becomes incompatible with other advancing technologies. This introduces the risk of cyber-attack, and this business case will change or upgrade the asset.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

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.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Land Mobile Radio & Real Time Communication Systems

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
Alternative #1 - Address 100% obsolete products, unit growth, and radio coverage area expansion	\$18,000,000	01 2024	12 2028
Alternative #2 – Address 100% of obsolete products and unit growth without expanding coverage	\$16,500,000	01 2024	12 2028

The funds request was based on a calculation of the performance and capacity 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, 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 Describe and provide reference to **CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).³**

The funding requested under the Land Mobile Radio & Real Time Communications Systems business case will be invested in, but not limited to technology, such as:

- Private 2-way Land Mobile Radio (LMR) System
- Radio Telephone Command and Control System (RTCCS)

Investment in these technologies can increase or decrease O&M expenses. These can include licensing increases from time to time or decreases in workload for O&M resources. However, not funding this business case may result in removing automated business functions, which will put

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Land Mobile Radio & Real Time Communication Systems

field workers at risk by not having radio communications across our service territory. There are no O&M reductions or direct 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 processes presents significant risk, and in this case cannot be achieved manually. For example, when land mobile radio devices break down it can result in the inability of an employee to communicate with the dispatch and system operations teams. This could potentially put crews and the public at risk. In addition, when endpoint devices break down it can result in the inability of an employee to access essential technology systems such as our meter data, customer billing and our mapping data. This can result in a productivity reduction across all areas of the business. Savings related to avoiding these downtime issues could range from \$100k - \$10M a year representing at least 1 full-time employee up to 100 full-time employees needed to implement manual processes.

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.

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.

2.3 Summarize in the table and describe below the DIRECT offsets⁴ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	N/A	N/A	N/A	N/A	N/A
O&M	N/A	N/A	N/A	N/A	N/A	N/A

⁴ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Land Mobile Radio & Real Time Communication Systems

2.4 Summarize in the table and describe below the INDIRECT offsets⁵ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	N/A	N/A	N/A	N/A	N/A
O&M	Operating Expenses	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Address 100% obsolete products, unit growth, and radio coverage area expansion (recommended)

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 throughout the Avista gas and electric service territory.

Alternative 2:

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.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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.

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

⁵ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Land Mobile Radio & Real Time Communication Systems

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.

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.

There are no related business cases associated with this business case

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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.

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 LMR and real time communication systems.

Land Mobile Radio & 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.

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

3. APPROVAL AND AUTHORIZATION

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.

DocuSigned by:
 Signature: Walter Roys Date: May-09-2023 | 3:56 PM PDT
28978793A9C64D0...
 Print Name: Walter Roys
 Title: Sr. Manager System Engineering
 Role: Business Case Owner

DocuSigned by:
 Signature: Jim Corder Date: May-10-2023 | 2:34 PM PDT
7002E4872104449...
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

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

CIP v5 Transition - Cyber Asset Electronic Access

1 GENERAL INFORMATION

Requested Spend Amount	\$ 1,700,000
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 CIP v5 Transition - Cyber Asset Electronic Access Business Case. This group meets monthly and is composed of directors and managers from the lines of business. In addition the Cyber Asset Electronic Access project funded by this Business Case will have a project level steering committee.

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, as a regulated utility, is required to meet North American Electric Reliability Corporation (“NERC”) Critical Infrastructure Protection (“CIP”) Reliability Standards (“Standards”). Specifically, Avista has been complying with CIP Version.3 Standards (“CIPv3”) and needs to transition to CIP Version.5 Standards (CIPv5).

This Business Case will support achieving compliance for Low Impact Bulk Electric System Cyber Systems by implementing electronic access controls.

CIP v5 Transition - Cyber Asset Electronic Access

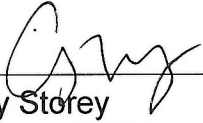
3 PROPOSAL AND RECOMMENDED SOLUTION


Option	Capital Cost	Start	Complete
Do not comply with the NERC CIP standards	\$0		
Comply with NERC CIP standards (Recommended)	1.7M	7/2017	02//2019

Avista, as a regulated utility, is required to meet NERC CIP standards. The two alternatives are to achieve compliance or do nothing and accept fines from regulators. Not being complaint and accepting fines it not considered a viable alternative. The recommended solution is to implement the controls necessary to achieve compliance. This business case will provided the funding to implement the controls to achieve compliance.

4 APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the NERC CIP Low Impact 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: 7/12/18
 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
 Role: Business Case Sponsor

5 VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Clay Storey	8/2/2017	Clay Storey	8/2/17	Initial Version
1.1	Clay Storey	7/12/18			Schedule & Budget

Template Version: 03/07/2017

High Voltage Protection

EXECUTIVE SUMMARY

Under Lumen (formerly known as Century Link), Avista is required to provide high voltage protection for leased communication circuits in high voltage areas newer than September 12, 1994. If Avista does not meet the tariff requirements, telecommunication companies can turn off communication circuits to substations until Avista electrically isolates the copper wire coming into a substation, thereby affecting phone, modem, SCADA (Substation Control and Data Acquisition), and other metering and monitoring systems at substations. This infrastructure is core to utility operations, thus demanding safe and reliable networks. This business case will meet the needs of this tariff and ensure investments are made to minimize risk regarding personal safety for all workers in and around these high voltage areas.

This business case is requesting \$200,000 in 2024 to finish the removal of copper wire and install fiber optic cable to the last three identified substations across Avista's service territory currently without an HVP solution. Once the last sites are complete with a high voltage protection package, the business case will be closed at the end of 2024. The cost of each solution has historically proven symmetrical across substations and we have been able to leverage that data to estimate costs based on the number of sites outstanding. The risk of not approving this business case and its funding request will result in an inability to support the safety of personnel near high voltage equipment where unprotected communication circuits exist. Additionally, termination of services by the telecommunications circuit provider could occur if their HVP requirements are not met. This would impact Avista's ability to control and monitor our substation and transmission facilities safely and reliably.

Avista customers benefit from this work by having a reliable network connection to the sites without interruption of services thus reducing the likelihood of an outage due to lack of communication.

There are no direct or indirect cost offsets due to this work.

VERSION HISTORY

Version	Author	Description	Date
5.0	Shawna Kiesbuy	Revision of BCJN to new template	4/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements	4/20/2023

High Voltage Protection

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$200,000	\$200,000
2025	\$0	\$0
2026	\$0	\$0
2027	\$0	\$0
2028	\$0	\$0

Project Life Span	1 year
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Mandatory & Compliance

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Under Lumen (formerly known as Century Link), Tariff FCC (Federal Communications Commission) Number 1, Section 13.7, Avista is required to provide high voltage protection for leased communication circuits in high voltage areas newer than September 12, 1994. If Avista does not meet the tariff requirements, telecommunication companies can turn off communication circuits to substations until Avista electrically isolates the copper wire coming into a substation, thereby affecting phone, modem, SCADA (Substation Control and Data Acquisition), and other metering and monitoring systems at substations. This infrastructure is core to utility operations, thus demanding safe and reliable networks. This business case will meet the needs of this tariff and ensure investments are made to minimize risk regarding personal safety for all workers in and around these high voltage areas. The cost of each solution has historically proven symmetrical across substations, and we have been able to leverage that data to estimate costs based on the number of sites outstanding.

High Voltage Protection

As of early 2023, this business case is focused on adding high voltage protection to the last 5 substations within Avista's territories to meet the Tariff requirements. All 5 projects will be completed by the end of 2024.

1.2 Discuss the major drivers of the business case.

The main driver for this business case is Mandatory and Compliance. The technology improvements invested under this business case will provide protection for communication circuits in high voltage areas in support of employee and public safety, system reliability, and business productivity throughout our service territory. Avista and its customers will experience the benefits through ongoing attention to safety and system reliability.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

Avista facilities providing service to electric power generating, switching, or distribution stations might require the use of special High Voltage Protection (HVP) apparatuses such as isolation or neutralization devices. These devices are to protect against the effects of Ground Potential Rise (GPR) and induction caused by faults in a customer's electric power system. The special protection precautions are intended to minimize electrical hazards to personnel and prevent electrical damage to telecommunications equipment and facilities. This work is ongoing until all sites have been neutralized for this hazard.

The risk of not approving this business case and its funding request will result in an inability to support the safety of personnel near high voltage equipment where unprotected communication circuits exist. Additionally, termination of services by the telecommunications circuit provider could occur if their HVP requirements are not met. This would impact Avista's ability to control and monitor our substation and transmission facilities safely and reliably.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. *See link.*

[Avista Strategic Goals](#)

The High Voltage Protection initiative aligns with Avista's commitment to invest in its infrastructure to achieve optimal lifecycle performance – safety, reliability, and at a fair price.

Our Customers – Our customers could see a negative impact to the reliable delivery of energy if services provided by the telecommunications circuit provider are terminated because their HVP requirements were not met. This

High Voltage Protection

action would result in our inability to receive delivery of telemetry data which gives us situational awareness and control of the systems and devices that serves energy to customers.

Our People – Our employees could see a negative impact in their ability to operate and control the system on a real-time basis, adding safety risks and inefficiencies to normal operating procedures.

Perform - We have built these real time data efficiencies into our daily operations and budgets. Sending crews to man locations without telemetry or control circuits would be cost prohibitive, inefficient, and extremely disruptive to existing operations. We would be moving in the wrong direction of progress.

Invent – We are on the back end of the product lifecycle curve with the copper technologies in substations. We must increase our cadence of deployments with current/newer network technologies to keep pace with markets, carriers, suppliers, vendors, and other energy companies with whom we have interconnections and service relationships. Otherwise, we risk misalignments, obsolescence, and an inability to move data, communicate and control.

High Voltage Protection

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹

<http://www.centurylink.com/techpub/77321/77321.pdf>

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

These projects will set a course of action for implementing a fiber optic cable at sites that do not have a currently compliant HVP solution. This cable which has no electrical conductivity will be attached to a converter to convert electrical signals into an Optical Fiber based signal, to connect substations to telephone company services in accordance with IEEE standards.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).²

Under Lumen (formerly known as CenturyLink), [Tariff FCC Number 1, Section 13.7](#), Avista is required to provide high voltage protection for leased communication circuits in high voltage areas newer than September 12, 1994. At this time, 5 locations do not have the current HVP standard package installed.

2.3 Summarize in the table and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

High Voltage Protection

No Direct - This business case has NO identifiable direct or indirect cost savings for customers. Under Lumen (formerly known as CenturyLink), Tariff FCC Number 1, Section 13.7, Avista is required to provide high voltage protection for leased communication circuits in high voltage areas newer than September 12, 1994. If Avista does not meet tariff requirements, telecommunication companies can turn off communication circuits to substations until Avista electrically isolates the copper wire coming into a substation, thereby affecting phone, modem, SCADA, and other metering & monitoring systems at substations. If we lose communications to substations, SCADA has zero visibility to the devices at this location and cannot perform system monitoring and performance analysis on the devices at the said location.

Additionally, any personnel working at a substation that does not have high voltage protection runs the risk of being in harm's way during a high voltage event that produces an electrical surge or an arc flash.

2.4 Summarize in the table and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

No Indirect - This business case has NO identifiable direct or indirect cost savings for customers. Under Lumen (formerly known as CenturyLink), Tariff FCC Number 1, Section 13.7, Avista is required to provide high voltage protection for leased communication circuits in high voltage areas newer than September 12, 1994. If Avista does not meet tariff requirements, telecommunication companies can turn off communication circuits to substations until Avista electrically isolates the copper wire coming into a substation, thereby affecting phone, modem, SCADA, and other metering & monitoring systems at substations. If we lose communications to substations, SCADA has zero visibility to the devices at this location and cannot perform system monitoring and performance analysis on the devices at the said location. Additionally, any personnel working at a substation that does not have high voltage protection runs the risk of being in harm's way during a high voltage event that produces an electrical surge or an arc flash.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

High Voltage Protection

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

The requested funding levels have been established based on the number of sites currently identified as needed or upgrades to existing High Voltage Protection (HVP) packages. At this time, 5 locations do not have the current HVP standard package installed. This business case intends to complete the last 5 sites by the end of 2024.

Alternative 1: Do not fund the business case

High Voltage Protection projects would not be funded. Personnel and equipment safety risks would remain at unprotected substation locations and telecommunication carriers would be able to deny service at the same unprotected locations. Additionally, any Avista personnel working at a substation that does not have high voltage protection runs the risk of being in harm's way during a high voltage event that produces an electrical surge or an arc flash.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

The investment and work involved in implementing the projects contained in this business case have been produced and proved successful in previous projects. As the design standards are such that repeatable success can be achieved, there is minimal risk of not meeting the desired protection objectives with appropriate funding allocations and a professionally trained and skilled workforce.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The High Voltage Protection business case is managed as a program of projects planned yearly. All individual projects are managed through the Project Management Office (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.

High Voltage Protection

2.5 2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

The High Voltage Protection 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 PMO. The project queue will be reviewed periodically to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees function 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 for providing guidance and making decisions on key issues that affect the following topics:

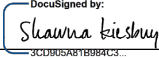
- Scope
- Schedule
- Budget
- Project Issues
- Project Risks


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.

High Voltage Protection

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the High Voltage Protection 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: May-11-2023 | 6:41 AM PDT
 Print Name: Shawna Kiesbuy
 Title: Sr. Manager, Network Engineering
 Role: Business Case Owner

Signature:  Date: May-11-2023 | 9:50 AM PDT
 Print Name: Jim Corder
 Title: Director, Infrastructure Technology
 Role: Business Case Sponsor

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

Identity and Access Governance (IAG) Program

EXECUTIVE SUMMARY

Avista's current Identity and Access Governance (IAG) program is highly manual, time consuming, cumbersome, and prone to human error. This has led to consistent failures of related controls around access to systems or facilities for individuals who have either changed roles in the Company or left the Company and should no longer have previous role access. The external audit scrutiny over the continued failures of these controls has also increased. The recommended solution will implement an IAG program that includes a technical solution while revising and improving processes for validating, auditing, and reporting system privileges for individuals across the company.

The initial cost of the solution included software licenses, integration with Avista's Sarbanes-Oxley (SOX) applications, and certification of individuals requiring access to them. Implementation was estimated at \$1.1M in the first two years, followed by continuous investment of \$195K per year, except in the case of license subscription renewals every third year when the investment will go up to \$350K. The IAG program will create role-based profiles, define system privileges, automate access management, and facilitate regular user access review and validation. Continuous investment is required to integrate all company systems and validate system access and privileges. The risks avoided by implementing this solution are allowing over-permissive accounts that can result in a data breach and penalties from noncompliance. The cost of a physical or cyber-attack can average \$1.76M or \$12.9M, respectively. Noncompliance penalties can average \$40-60K per finding per day. The avoided indirect costs associated with either a physical or cyber-attack, or avoided penalties is a significant benefit to Avista and our customers. Not approving funding for this program will continue the challenge of controlling identity and access to maintain compliance and the over-permissive risk.

Additionally, the growing threat landscape preys on over-permissive access. According to a recent IBM Security Report, the most common attack vector in 2022 was stolen or compromised credentials.¹ This solution will benefit Avista and its customers by adhering to the security principle of 'least privilege,' whereby individuals are limited only to information and resources necessary to perform their current and intended job functions. It also reduces the risk associated with individuals having broad access to systems or to facilities their roles no longer require. Security threats continue to become more sophisticated, such as ransomware attacks, which can force system outages, financial losses, ransomware payments, and reactive investments.

The alternative to further implementing an IAG program, is to only onboard some applications onto the new system and continue to perform the rest manually. This approach increases human error due to the continuous permission changes required by employees newly hired or transitioning to other job functions. As stewards of critical infrastructure and customer data, appropriate permission levels are a requirement to protect our people, assets, and information.

¹ [Cost of a Data Breach Full Report 2022 - IBM.pdf](#)

Identity and Access Governance (IAG) Program

VERSION HISTORY

Version	Author	Description	Date
1.0	Andy Leija	Initial draft of original business case	7/6/2021
2.0	Andru Miller	Updated 5-year funding request	8/09/2022
3.0	Andy Leija	Updated 5-year funding request	5/18/2023
BCRT	Jeff Smith	Has been reviewed by BCRT and meets necessary requirements	5/30/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$195,122	\$195,122
2025	\$658,284	\$658,284
2026	\$195,122	\$195,122
2027	\$350,000	\$350,000
2028	\$350,000	\$350,000

Project Life Span	5 years
Requesting Organization/Department	C09/Enterprise Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	Enterprise Security / Accounting
Phase	Execution
Category	Program
Driver	Mandatory & Compliance

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

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?

Avista's existing Identity and Access Governance (IAG) program is highly manual, time consuming, cumbersome, and prone to human error. This has led to consistent failures of related controls around access to systems or facilities for individuals who have either changed roles in the Company or left the Company and should no longer have previous role

Identity and Access Governance (IAG) Program

access. Generally, when an employee leaves the Company, their account is inactivated and thus all their systems and facilities access is removed. However, when an employee moves into a different job role within the Company, their previous access can remain for a period as the open position is being backfilled. This period is unknown, as no user access reviews are conducted for systems outside of those needing to meet compliance requirements. Additionally, cyber threats continue to grow and center on breaching compromised credentials to gain access to internal network with over-permissive accounts, the external audit scrutiny over the continued failures of these controls has also increased.

1.2 Discuss the major drivers of the business case.

Mandatory & Compliance is the main driver behind the IAG program in response to meeting Sarbanes-Oxley (SOX) compliance requirements. It ensures that Avista has the internal controls to limit access to individuals only to information and resources necessary to perform their current and intended job functions. After the initial phase of meeting SOX compliance, additional integrations will fall under the Customer Service Quality and Reliability investment driver. Avista and its customers benefit from continued investment in this solution that reduces the risk of broad system access, adhering to the security principle of 'least privilege' and segregation of duties. The investment will allow for review and validation of appropriate system permissions, which in turn will improve the reliability of delivering electricity and gas to our customers.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

Maturing Avista's IAG program requires further investment in an Identity and Access Management (IAM) solution to manage access and permissions to hundreds of applications and systems required to deliver gas and electric service safely and reliably. Phase one of the IAG program included the initial implementation of an IAM platform and the integrations to meet SOX compliance requirements. For the IAG program to mature, continued integrations of other applications and systems are necessary to reduce the risk that comes with an increase in cybersecurity breaches that are due to compromised credentials with over-permissions.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link. [Avista Strategic Goals](#)

Investment in the Company's IAG program aligns with Avista's customer-centric vision by reducing the Company's risk exposure, strengthening security, improving compliance and audit performance, and delivering fast and efficient access to all business users.

Identity and Access Governance (IAG) Program

Maintaining a culture of compliance and strong security posture allows our employees to focus on delivering value to our customers and the communities we serve.

1.5 Supplemental Information – please **describe** and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

As mentioned in other security business case justification narratives, cybersecurity threats are growing in numbers and complexity and utilities are especially vulnerable. For example, the U.S. Intelligence Community Annual Threat Assessment (2023) highlights that “China almost certainly is capable of launching cyber-attacks that could disrupt critical infrastructure services with the United States, including against oil, and gas pipelines...”³ The effects of cyberattacks on critical infrastructure, which consists of aging operational technology can have costly and physical consequences, such as shutdowns, outages, leakages, and explosions.⁴ The expansive and geographical nature of utilities’ attack surface increases its vulnerability, as well as its interdependence between physical and cyber infrastructure protections.⁵

There are various attack vectors that attackers leverage more than others. According to IBM Security Cost of a Data Breach Report 2022, “The most common data breach attack vector in 2022 was stolen or compromised credentials...[and had] the longest mean time to identify and contain...”⁶ Regardless of how an employee’s credentials are acquired by a threat actor, the risk exposure is greater when those employee’s credentials have broad permissions to various applications and systems across the organization. Therefore, managing identity and access for all our staff is as critical as providing them keys to only what they require to perform their job.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

Automating the existing identity and access provisioning business process is critical to meeting compliance requirements and securing the Company’s systems. The solution

² Please do not attach any requested items to the business case, be sure to have ready access to such information upon request.

³ [ATA-2023-Unclassified-Report.pdf\(odni.gov\)](#)

⁴ [Enhancing Operational Technology \(OT\) cybersecurity | McKinsey](#)

⁵ [The energy sector threat: How to address cybersecurity vulnerabilities | McKinsey](#)

⁶ [Cost of a Data Breach Full Report 2022 - IBM.pdf](#)

Identity and Access Governance (IAG) Program

requires a centralized tool for provisioning user accounts to Company systems, as well as revising and introducing new processes for identified efficiencies. This may include pre-approved role base profiles, automated workflows, email notifications/alerting, and regular privilege verifications by system owners. This will ensure that user identities and system access is always current to minimize risk.

The current highly manual identity and access provisioning business process consists of 2-3 staff, lacks a centralized system, is bogged down with approval delays, and cannot scale to meet compliance requirements or enhanced business practices requiring account provisioning and access changes on various fronts (e.g., rapid growth system light apps, cloud computing, etc.) Leveraging a single platform for all account and system provisioning will result in huge efficiencies and leverage system automation capabilities for auto-provisioning pre-approved roles. This means that the cost over time will continue to drop to a point where the program investment will only support license renewals and system enhancements and improvements.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).⁷

There are various data points that were considered in preparing this capital investment request. However, the primary driver for the request is to invest in a technology solution that reduces the Company's risk exposure, strengthens security, improves compliance and audit performance, and delivers fast and efficient access to business users who require it to perform their job function.

So, while the initial implementation addressed SOX compliance requirements, the major benefit to Avista and its customers is avoiding the risk of a data breach due to stolen or compromised credentials with over-permissive access. As mentioned in other security and business continuity business cases, the cost of a data breach and associated downtime can be costly and significantly impactful. Therefore, taking the average cost estimate for a data breach of \$12.9M and the average number of days (19) of downtime multiplied by the average cost of \$2,955 per minute, the total cost can reach nearly \$93.7M. This would be the risk avoidance cost associated with continuous investment in maturing an IAG program.

⁷ Please do not attach any requested items to the business case, be sure to have ready access to such information upon request.

Identity and Access Governance (IAG) Program

The solution allows for automation and user access verification that reduces the risk of over-permissive access. So, while the consequence of a data breach is high due to over permissive access, the ability to verify user access on a regular basis will decrease the impact of a data breach to only the systems to which the compromised account was allowed to access.

2.3 Summarize in the table and describe below the DIRECT offsets⁸ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Not Applicable	\$0	\$0	\$0	\$0	\$0
O&M	Not Applicable	\$0	\$0	\$0	\$0	\$0

There are no direct offsets associated with risk-based investment in an identity and access solution. It is a prudent decision to invest in a centralized solution that can automate approvals and audit access to bring confidence that staff have the right level of permissions to perform their job functions and nothing more. With the number of cybersecurity incidents growing, there is no better way to prevent an attack than with investment in a centralized solution that tracks the right level of access. So, while efficiencies will result from automating and centralizing the existing manual process, any labor savings are offset by new subscription fees associated with the new platform.

2.4 Summarize in the table and describe below the INDIRECT offsets⁹ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Security Solutions	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000
O&M	Data Breach Cost Estimates	\$936,000	\$936,000	\$936,000	\$936,000	\$936,000

Using a data breach cost estimates for a PII (Personal Identity Information) and/or a PCI (Payment Card Industry) data breach, the indirect offsets range from \$5.2M to \$20.7M per incident or on average \$12.9M. Additionally, the costs associated with incident response, customer notification, crisis management, regulatory fines and penalties, and class action lawsuits are mostly operational expense costs. There is an assumption that the vulnerabilities or gaps identified during the incident will require immediate investment in recovery solutions to mitigate the existing and/or future events.

⁸ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁹ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Identity and Access Governance (IAG) Program

The potential indirect offsets are 90% operation and maintenance and 10% capital using the lowest cost of a data breach with only PII data and no class action lawsuit. However, they can be significantly higher, such as \$18.63M in operation and maintenance and \$2.1M in capital, respectively, should the incident be on the high end. Also, not knowing when or how often a data breach would occur, the conservative estimate with the assumption that the incident only happened once, amortized over 5 years, the cost would be \$936k in operation and maintenance and \$104k in capital, respectively. The indirect benefit or reduction of risk is mostly in operation and maintenance costs associated with recovering from a data breach incident. The reason that this risk still stands is because while the solution is being implemented, there is very little visibility to the permission levels of each employee and therefore the risk exposure is not reduced or changed until after further implementation occurs.

2.5 Describe in detail the alternatives, including proposed cost for each alternative, which were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

The requested funding level allows for further maturity of the IAG program and specifically, the IAM platform. Enhancement projects will continue to integrate the rest of Avista's applications to automate pre-approved provisioning of staff accounts based on role-based access profiles. The alternatives presented below offer a steady implementation over the next 5, 7, or 10 years, with ongoing license subscription renewals every three years. This program automates an existing manual business process. The longer the implementation period, the longer the existing manual process will continue, which is highly manual, time consuming, cumbersome, and prone to human error.

Option	Capital Cost	Start	Complete
Alternative 1: Continue IAG Program Implementation beyond SOX systems over 5 years (Recommended)	\$1.75M	01 2024	12 2028
Alternative 2: Continue IAG Program Implementation beyond SOX systems over 7 years	\$2.76M	01 2024	12 2030
Alternative 3: Continue IAG Program Implementation beyond SOX systems over 10 years	\$4.4M	01 2024	12 2034

Alternative 1: This approach is recommended to reduce the period that staff will need to use two separate processes for provisioning account access to hundreds of applications and systems. The 5-year implementation period includes a license subscription renewal in 2025. However, the remaining allocation is mostly labor associated with integration of the rest of Avista's applications and systems to the IAM platform.

Alternative 2: This approach adds two years to the implementation of the IAM solution to all Avista's existing applications and systems. This option will extend the period whereby

Identity and Access Governance (IAG) Program

staff will need to use two separate processes for provisioning account access, which can lead to more human error. The 7-year period of implementation includes two license subscription renewals: one in 2025 and the next one in 2028. The remaining allocation is labor associated with integration of the rest of Avista's applications and systems to the IAM platform.

Alternative 3: This final approach doubles the implementation period from the recommended alternative. It is the least favorable option, as it extends implementation the longest and results in staff needing to use two separate processes for provisioning account access, which can lead to more human error. This option includes four license subscription renewals (2025, 2028, 2031, 2034) over the 10-year implementation period. The remaining allocation is labor associated with integration of the rest of Avista's applications and systems to the IAM platform.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Simple measures that can be used to determine the investment successfully delivered on the desired objectives will include: 1) a semi-annual review and certification of Avista's SOX applications and appropriate user permission levels; 2) annual validation and reporting in preparation for external audit requirements; and 3) semi-annual review and certification of additional applications onboarded onto system.

2.7 Please provide the timeline of when this work is scheduled to commence and complete, if known.

Avista's IAG program began in 2022 and implemented the IAM platform, integrating SOX applications, to meet compliance requirements. Following the initial implementation, all other Company systems will begin their journey onto the new platform. The solution became used and useful in 2023 when the platform went live. However, each new system that is integrated onto the platform will become used and useful at the time each is 'go-live' certified. This means that full implementation will have multiple transfers to plant dates as more systems come online over the course of the program maturity.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

Identity and Access Governance (IAG) Program

There are two levels of governance to the Identity and Access Governance business case and the investments within it. They consist of a business case governance team and project specific steering committees for in-flight projects.

Business Case Governance Team: The Enterprise Security Governance Team provides monthly oversight of this program business case and makes recommendations based on forecasted inactive planned investments, the pace of in-flight investments, and any new unplanned activity that surfaces from an emerging security threat. The team also tracks business case risks and issues that can affect the portfolio of planned investments.

Monthly governance meetings consist of a full review of each in-flight investment, reasons for any delays or deviation to proposed completion and transfers to plant schedules and recommends necessary steps to bring the investments back into schedule or defer inactive work, when possible, to offset delays. However, should a security risk be increased by deferring a planned or unplanned investment into future years, the Enterprise Security Governance Team will recommend a Capital Planning Group (CPG) In-Year Change Request to surface the impending need. The Change Requests are presented at a monthly Technology Planning Group meeting to inform the Director members who are also members of the CPG where the request will be considered and weighed against other pending requests.

The Enterprise Security Governance Team consists of Avista’s Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, Security Delivery Manager, and the Project Management Office Manager. The sessions are facilitated by the Security Program Manager who manages the standing agenda.

Project Steering Committees: Additionally, each security investment is governed by a project steering committee that consists of the Enterprise Security Director, Cybersecurity Manager, and Security Delivery Manager, as well as ancillary management team members required for the successful implementation of the security solution. Steering committee meetings are facilitated by a Project Manager and held monthly to review scope, schedule, budget, and risks and issues surfaced from each in-flight project.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Identity and Access Governance 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: Jun-12-2023 | 10:57 AM PDT

Print Name: Andy Leija

Identity and Access Governance (IAG) Program

Title: _____
Security Delivery Manager

Role: _____
Business Case Owner

Signature: _____
DocuSigned by:
Clay Storey

Date: Jun-12-2023 | 11:29 AM PDT

Print Name: _____
Clay Storey

Title: _____
Director of Security

Role: _____
Business Case Sponsor

Signature: _____

Date: _____

Print Name: _____

Title: _____

Role: _____
Steering/Advisory Committee Review

Security Compliance

EXECUTIVE SUMMARY

Avista, as a regulated utility, is required to meet many different security compliance requirements. These security requirements evolve to address emerging threats across the utility industry. Physical and cyber security threats have increased over the past few years from Domestic Violence Extremists (DVEs) and nation states, such as China, respectively. Therefore, various federal agencies have called for utilities to invest in stronger security requirements in both physical and cyber protections.

Depending on the issued security compliance requirements, Avista will consider in and out of scope requirements and propose risk-based alternatives that meet the requirement and address the security risk. Investment costs can vary based on the scope of the compliance requirement. The costs have ranged from \$100-\$500K. Investments under this business case will fund new physical and cyber security improvements to achieve and maintain North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP), Western Electricity Coordinating Council (WECC), Transportation Security Administration (TSA), Payment Card Industry (PCI), Federal Energy Regulatory Commission (FERC), Sarbanes-Oxley (SOX), and other emerging security compliance-driven requirements.

Being compliant with industry standards and government agency directives benefits customers by reducing the risk of electric and gas service interruptions associated with physical or cyber-attacks, as well as any assessed penalties associated with noncompliance. The cost of a physical or cyber-attack, can average \$1.76M or \$12.9M, respectively, while noncompliance penalties can average \$40-60K per finding per day. The avoided indirect costs associated with either a physical or cyber-attack, or avoided penalties is a significant benefit to Avista and our customers.

While not being able to estimate the exact cost associated with a forthcoming or unissued compliance standard or directive, it is prudent and necessary to keep a business case available to capture costs associated with meeting new security compliance requirements as they become available. Once a new requirement is implemented, subsequent improvements to maintain compliance will fall under other security business cases. Not being compliant and accepting fines is not considered a viable alternative, as it puts Avista's cyber and physical security posture at risk and increases costs due to penalties. The recommended solution is to implement or enhance the systems or controls necessary to achieve compliance.

VERSION HISTORY

Version	Author	Description	Date
Draft	Andru Miller	Initial draft of original business case	6/29/2020
Updated	Andru Miller	Reduction of funds request in 2021	8/28/2020
Updated	Andru Miller	Changed focus from NERC to all industry compliance standards	6/30/2021
1	Andru Miller	Updated 5-year funding request	8/09/2022
2	Andy Leija	Updated 5-year funding request	5/12/2023

Security Compliance

<i>BCRT</i>	<i>Jeff Smith</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	<i>5/30/2023</i>
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GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$100,000	\$100,000
2025	\$100,000	\$100,000
2026	\$100,000	\$100,000
2027	\$100,000	\$100,000
2028	\$100,000	\$100,000

Project Life Span	5 years
Requesting Organization/Department	C09 / Enterprise Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	Enterprise Technology
Phase	Planning
Category	Program
Driver	Mandatory & Compliance

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

Security Compliance

- 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?

In the battle against cyber and physical threats, government agencies and industry regulators issue security requirements to gas and electric utilities to increase protections. These new requirements typically follow best practice improvements, or an incident that calls for stronger measures. In the case of industry regulators, such as NERC CIP, there is a formal process to either revise or introduce a new requirement, giving utilities time to assess the impact of the new guidance, including the cost and operational overhead associated with meeting it. However, in a more recent example, following the Colonial Pipeline incident, TSA issued security directives to pipeline owners and operators for immediate implementation as a matter of national security.¹ Therefore, compliance requirements can be issues proactively or reactively by regulatory agencies. For proactive requirements, Avista's NERC CIP Compliance team stays engaged with industry partners to prepare and plan for forthcoming requirements and their anticipated costs to implement. Reactive requirements are not as easily foreseen.

Regardless of what drives the new security compliance requirements, Avista is expected to comply. However, because there is little coordination among the various organizations that oversee the security of critical electric and gas infrastructure, security compliance requirements can at times have overlapping components. Therefore, Avista assesses all newly issued security compliance requirements before adopting them as a matter of prudence. Assessments include a review of the scope of the requirement, the potential cost associated with the available solutions, a peer check with industry partners on how they are approaching the new requirement, and by participating in Question-and-Answer sessions with those issuing the new requirements to get a better understanding and intent. So, while meeting these new standards is required, Avista must audit what existing compliance requirements are already in place before adopting new ones.

New security compliance requirements typically call for stronger protection postures to deny, deter, detect, or delay a physical or cyber threat, as well for resiliency measures to recover from an incident. The protection and resiliency measures can include investment in new security systems, redesigning or enhancement of existing systems, or process changes. After formal adoption, the new requirements are audited by the issuing agency for compliance or validated by a third-party organization, such as in the case of PCI and SOX. Through the audit process, Avista learns the expectations of the compliance issuing authority and will revise our approach to maintain compliance.

¹ [Pipeline Cybersecurity: Protecting Critical Infrastructure | Transportation Security Administration \(tsa.gov\)](#)

Security Compliance

1.2 Discuss the major drivers of the business case.

Mandatory & Compliance is the primary driver for the Security Compliance business case to meet the new demands of the compliance issuing authority. However, once a new compliance requirement is implemented, subsequent improvements to maintain compliance would fall under other security business cases with a Performance & Capacity driver. Performance and capacity measurements are determined by Avista's ability to meet compliance requirements assessed regularly by Avista's compliance team and through regulator audits. The security of our electric and natural gas infrastructure is a significant priority at a national and regional level and is of critical importance to Avista customers across our service territory.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

Meeting newly issued compliance standards for physical and cyber security are an absolute necessity and will be for the near future in response to emerging threats. Avista must maintain the Security Compliance business case funded at a modest level to respond to immediate and emerging requirements. For example, a recent TSA issued security directive, consisting of sixteen pages, and over forty new security compliance requirements called for immediate (within 7 days) and long term (within 180 days) action. The call for immediate action required that an active funding source be available to rapidly respond.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. *See link. [Avista Strategic Goals](#)*

The Security Compliance business case provides funding for security-related projects to meet newly issued compliance requirements and aligns with Avista's strategic goal to "affordably operate and maintain, safe, clean, reliable generation and energy delivery infrastructure."

1.5 Supplemental Information – please **describe** and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

Physical and cyber security incidents continue to grow and impact critical infrastructure, such as electric and gas utilities. Evolving security measures are necessary to meet the

² Please do not attach any requested items to the business case, be sure to have ready access to such information upon request.

Security Compliance

threat. Therefore, compliance issuing authorities, such as federal agencies or industry regulators, implore utilities to comply or face hefty fines, as non-compliance can be a matter of national security.

The Enron-Anderson Consulting Scandal introduced the Sarbanes-Oxley (SOX) Act in 2002, imposing severe penalties for destroying, altering, or fabricating financial records.³ Annual SOX audits verify and validate Avista's internal controls, which include security requirements to manage system permissions. In 2010, the Stuxnet virus, which targeted Supervisory Control and Data Acquisition (SCADA) systems and Programmable Logic Controllers (PLCs) via an infected USB flash drive quickly resulted in updates to network security requirements under NERC CIP.⁴ To meet the new requirements, Avista invested in new security systems and redesigned existing systems. Following the 2013 attack on the Metcalf transmission substation in California, NERC CIP introduced physical security requirements. This new requirement resulted in enhanced physical security measures at specific Avista facilities, as called for by the new requirement. More recently, the May 2021 Colonial Pipeline ransomware attack, which resulted in a shutdown of the gas pipeline for over a week, immediately resulted in TSA issuing security directives for selective pipeline owners and operators.⁵ The directives

Additionally, in a recently released report, NERC calls for cyber-informed transmission planning in response to "the rapidly evolving threat landscape is characterized by increasingly sophisticated cyber-attacks..." Additionally, the report highlights the need for Security Integration, which is "to incorporate cyber and physical security aspects into conventional system planning, design, and operations engineering practices."⁶ While this is currently only published in a NERC white paper, it is an example of what may become future security compliance requirements.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The Security Compliance 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 are driven by new security compliance requirements as issued by various compliance authorities. All future replacement efforts after the initial

³ [Enron scandal - Downfall and legislation | Britannica](#)

⁴ [The Real Story of Stuxnet - IEEE Spectrum](#)

⁵ [Pipeline Cybersecurity: Protecting Critical Infrastructure | Transportation Security Administration \(tsa.gov\)](#)

⁶ [Cyber-Informed Transmission Planning Report, NERC, May 2023](#)

Security Compliance

implementation to meet compliance will be funded under other security business cases. Depending on the issuing organization and the security vulnerability they are choosing to mitigate, all new security compliance requirements will need to be fully assessed before developing a solution to implement. Following the assessment, solutions will be surfaced on how best to mitigate the vulnerability and be compliant. Therefore, no solution can be proposed until a new security requirement is issued and assessed.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).⁷

Meeting newly issued compliance requirements is imperative and a benefit to our customers, as it allows Avista to deliver electric and gas service safely, securely, and reliably. The security compliance requirements are issued to protect critical infrastructure and customer data. Therefore, electing noncompliance increases the risk of a cyber or physical incident taking place, in addition to the hefty penalties from issuing authorities. Either of these options would provide no value to Avista or its customers, as rectifications would still need to be implemented to mitigate the incident, satisfy the audit findings, or reduce the penalties. As an example, and further discussed below, a physical or cyber-attack can average \$1.76M or \$12.9M, respectively, while noncompliance penalties can average \$40-60K per finding per day. The modest annual investment to maintain a funding source focused on meeting new security compliance can avoid the risk of a physical or cyber-security incident, or noncompliance penalties.

2.3 Summarize in the table and describe below the DIRECT offsets⁸ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Not Applicable	\$0	\$0	\$0	\$0	\$0
O&M	Not Applicable	\$0	\$0	\$0	\$0	\$0

⁷ Please do not attach any requested items to the business case, be sure to have ready access to such information upon request.

⁸ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Security Compliance

There are no direct offsets associated with investment in meeting newly issued security compliance requirements. With the number of cybersecurity incidents growing in number and complexity and coordinated and egregious physical security incidents, there is no utility business that would not elect to meet newly issued compliance requirements. This is part of ongoing investment and the cost of doing business. The question is not whether to invest in compliance or not, but how much to invest to reduce the risk of evolving threats and fines associated with being noncompliant.

2.4 Summarize in the table and describe below the INDIRECT offsets⁹ (Capital and O&M) that result by undertaking this investment.

Cyber Security Incident:

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Security Solutions	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000
O&M	Data Breach Cost Estimates	\$936,000	\$936,000	\$936,000	\$936,000	\$936,000

Physical Security Incident:

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Equipment, Tools, Material replacement	\$594,000	\$594,000	\$594,000	\$594,000	\$594,000
O&M	Damage repairs	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000

Cyber + Physical Security Incident:

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Equipment, Tools, Material replacement	\$698,000	\$698,000	\$698,000	\$698,000	\$698,000
O&M	Damage repairs	\$942,000	\$942,000	\$942,000	\$942,000	\$942,000

With the assumption that if implementing newly issued security compliance requirements would reduce the likelihood of a cyber or physical security incident, the avoided indirect costs associated with a cyber (\$12.9M) and physical (\$1.76M) incident from happening would be approximately \$698k in capital and \$942k in operations and maintenance based when amortized over 5 years.¹⁰ This assumption does not include fines or penalties associated with noncompliance, which can average \$40-60K per finding per day.¹¹

⁹ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

¹⁰ Using the data breach cost estimates from the Enterprise Security Solutions business case of \$12.9M per incident and the average cost estimate for an attack on an electrical substation from the Generation, Substation and Gas Locations Security business case of \$1.76M.

¹¹ Average cost of noncompliance penalties is based on previously assigned fees for NERC CIP audit findings, although they were mitigated through proposed controls, improvements, and enhancements.

Security Compliance

2.5 Describe in detail the alternatives, including proposed cost for each alternative, which were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Option	Capital Cost	Start	Complete
Alternative 1: Address new security compliance requirements as they become available (Recommended)	\$500,000	01 2024	12 2028

Alternative 1: Since the projects within this business case are compliance driven, no alternative solutions are available. Being noncompliant is not an option.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Metrics to demonstrate the success of the investments under this program business case include meeting the new compliance requirement, averting fines, and keeping the installed system or equipment available and reliable to aid in deterring, detecting, and delaying a threat. Success is determined by compliance team verifications, as required by the new requirement, and by undergoing regulatory audits conducted by compliance issuing agencies.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The Security Compliance business case is a program that consists of security projects per year that run concurrently, and at times over multiple years when security compliance requirements or directives are issued. They follow all phases of the project lifecycle, facilitated by a project manager, and governed by a steering committee to determine scope, schedule, and budget forecasts, including transfers-to-plant.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

There are two levels of governance to the Security Compliance program business case and the investments within it. They consist of a business case governance team and project specific steering committees for in-flight projects.

Security Compliance

Business Case Governance Team: The Enterprise Security Governance Team provides monthly oversight of this program business case and makes recommendations based on forecasted inactive planned investments, the pace of in-flight investments, and any new unplanned activity that surfaces from an emerging security threat. The team also tracks business case risks and issues that can affect the portfolio of planned investments.

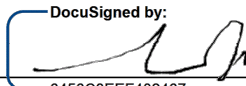
Monthly governance meetings consist of a full review of each in-flight investment, reasons for any delays or deviation to proposed completion and transfers to plant schedules and recommends necessary steps to bring the investments back into schedule or defer inactive work, when possible, to offset delays. However, should a security risk increase by deferring a planned or unplanned investment into future years, the Enterprise Security Governance Team will recommend a Capital Planning Group (CPG) In-Year Change Request to surface the impending need. The Change Requests are presented at a monthly Technology Planning Group meeting to inform the Director members who are also members of the CPG where the request will be considered and weighed against other pending requests.

The Enterprise Security Governance Team consists of Avista’s Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, Security Delivery Manager, and the Project Management Office Manager. The sessions are facilitated by the Security Program Manager who manages the standing agenda.

Project Steering Committees: Additionally, each security investment is governed by a project steering committee that consists of the Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, and Security Delivery Manager, as well as ancillary management team members required for the successful implementation of the security enhancement at the respective location. Steering committee meetings are facilitated by a Project Manager and held monthly to review scope, schedule, budget, and risks and issues surfaced from each in-flight project.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Security 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:  Date: Jun-12-2023 | 10:56 AM PDT

Print Name: Andy Leija

Title: Security Delivery Manager

Role: Business Case Owner

Security Compliance

DocuSigned by:
 Signature: Clay Storey Date: Jun-12-2023 | 11:29 AM PDT
 Print Name: B70F95F7961D4B6... Clay Storey
 Title: Security Director
 Role: Business Case Sponsor

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

Control and Safety Network Infrastructure

EXECUTIVE SUMMARY

The Control and Safety Network Infrastructure Program^[1] Business Case administers multiple projects specifically scoped for the provisioning and expansion of network communications assets for Avista's generation, transmission, and distribution assets which support the safe and reliable energy delivery to Avista customers. Assets included in this business case have a finite lifecycle. And, given the pace of change in technology, constant threats from bad actors, growth of the Avista network and need to have suitable performance and capacity, the project work done within this program will help maintain a robust and reliable network. The Control and Safety Network Infrastructure enables the ability to remotely monitor, control, and operate critical business and safety systems. If this business case did not exist or receive funding, the network communications assets that enable data transmission in control and safety environments could fail, become vulnerable to cyber-attacks from bad actors, or could become obsolete which would result in a lack of real time communication for field crews, a lack of visibility into generation, transmission, and distribution status, or even a lack of control of field assets for safety events. This business case also serves to design and deploy new communication network assets for control and safety environments as Avista's service area and business functions expand.

For this business case, funding is being requested for \$8,000,000 over five years to upgrade or replace 328 network communication systems and assets within the control and safety environments. Collectively these assets & systems are tracked by lifecycle management, manufacturer warranty, maintenance, and support (contract) status, licensing, capacity, and replacement costs. Manufacturer lifecycles drive a considerable portion of the required work within this request. Concurrently, a sizable portion of work is also driven by the ongoing modernization and digitization of energy delivery infrastructure. This funding request is a 33% reduction in funding from the previous five-year plan which is a result of the realignment of projects from this business case into the Digital Grid Network business case.

Avista customers across all jurisdictions will benefit from the projects in this program by having a robust network that has capacity and reliability to transport real-time data on system status and performance. Proactive updates to assets or timely placement of assets to locations will reduce possible service interruptions or delays. This translates to the safe and reliable delivery of energy to customers across the Avista service territory.

Currently, there are no direct cost savings. Indirect offsets may be realized with fewer truck roles, staff efficiency, etc.

^[1] "A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.," Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Control and Safety Network Infrastructure

VERSION HISTORY

Version	Author	Description	Date
3.0	Shawna Kiesbuy	Update content and new template	4/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements	4/19/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$1,500,000	\$1,100,000
2025	\$1,500,000	\$1,100,000
2026	\$2,500,000	\$3,100,000
2027	\$1,500,000	\$1,300,000
2028	\$1,000,000	\$1,300,000

Project Life Span	5 Years+
Requesting Organization/Department	Enterprise Technology/Network Systems
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology/Network Systems
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Assets included in this business case have a finite lifecycle. And, given the pace of change in technology, constant threats from bad actors, growth of the Avista network and need to

Control and Safety Network Infrastructure

have suitable performance and capacity, the project work done within this program will help maintain a robust and reliable network. This business case administers multiple projects specifically scoped for the provisioning, refresh and expansion of network communications systems and assets for Avista's generation, transmission, and distribution environments which deliver safe and reliable energy to Avista customers. The Control and Safety Network Infrastructure enables the ability to remotely monitor, control, and operate critical business and safety systems. These systems include those connecting users in an emergency or safety situation, controlling generation assets, maintaining, and expanding push-to-talk radio connectivity for field crews and other personnel, communication networks for protective relays, and supervisory control by providing data and control of transmission and distribution assets in the field. These network system examples, and many others, must be maintained based on a periodic upgrade schedule. If this business case did not exist or receive funding, the network communications assets could fail, become vulnerable to cyber-attacks from bad actors or the technology becomes obsolete which would result in a lack of communication and data for field crews, a lack of visibility into generation, transmission, and distribution status, or even a lack of control of field assets for safety events. This business case also serves to design and deploy new communication network assets for control and safety environments as Avista's service area and business functions expand.

1.2 Discuss the major drivers of the business case.

The main driver for this business case is Performance and Capacity. The network communications infrastructure enables command-and-control applications within Avista's critical business and safety systems. Creating and managing this program business case is crucial to supporting the safe and reliable delivery of gas and electric services to our customers. Specifically, the Controls and Safety Network Infrastructure facilitates the ability to control electric generation, transmission, and distribution assets in addition to carrying voice communications to field and line crews working on outage events. With Performance and Capacity as the business case driver, the network communication assets are managed in alignment with technology lifecycles based on manufacturer product roadmaps and planned obsolesces to proactively reduce the business impact that failing assets serving critical operations systems, processes, and infrastructure reliability would deliver.

The network infrastructure investments in this business case are necessary to sustain our business by using technology to deliver real time data for control and safety operations. This business case specifically addresses network infrastructure requirements for energy control systems and systems necessary for the safety of our workforce and public. The business case considers business impact vs. likelihood/probability when sequencing and prioritizing resource allocations and responds to vendor-manufactured product obsolescence risks as well as cyber security risks.

Control and Safety Network Infrastructure

The use cases supported in this business case include the network infrastructure requirements for Substation-to-Substation Communication, Substation SCADA (Supervisory Control and Data Acquisition), SCADA/EMS Control, Generation Control, and Land Mobile Radio. The key performance indicator for network availability and reliability is 99.9%, 24x7. Our investment sequencing is based on three drivers, 1) Compliance, 2) Initiatives, 3) Reliability. The Compliance driver should be regulation, Initiatives are executive sponsored (current example is a cybersecurity vulnerability risk on out-of-support assets), and the Reliability driver is often the highest volume of work.

The sequencing of the Reliability projects is driven first by the network asset end-of-support date for cybersecurity patching, then the performance and capacity to meet the business requirement, and lastly product obsolescence date.

Investment percentage for the cybersecurity Initiative was 14% in 2022 and Reliability projects were 86%. In 2023, the cybersecurity Initiative is 61% and Reliability projects are 39% of the investment.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

The network project work captured in this program business case enables the ability to control and operate core services at our generation, transmission, and distribution facilities. With Avista's vision of delivering better energy for life, this business case is key to enabling the gas and electric service delivery to our customers in a safe and reliable manner. The work is needed daily and is ongoing with a direct tie to our core operations.

The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy and scale for future technology could result in unplanned failures and outages to our communication network system. The result is tied to the following risks: an increase in employee, contractor and/or public safety risks due to the inability to see and remotely operate the electric and gas systems. This risk has the potential to increase labor and non-labor costs tied to unplanned system scope changes, where delays to procurement can be realized to replace the failed asset, as well as downtime to the critical systems supported. This would also lead to additional exposure of outdated or unsupported devices to external cyber vulnerabilities.

According to the Company Enterprise Risk Register, under the "Loss of Communication or Network Technologies" and the "Cyber Intrusion" risks, the financial impact of this risk being realized has an income statement score of 3, which equates to a \$10-\$20 million avoided cost over a period of 2-3 years.

Control and Safety Network Infrastructure

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link.

[Avista Strategic Goals](#)

The network enables the ability to control and operate core services. These services include connecting users in an emergency or safety situation, controlling generation assets, maintaining, and expanding push-to-talk radio connectivity for field crews and other personnel, and supervisory control by providing data and control of distribution assets in the field. These network system examples, and many others, move and present data that drive operational decisions and controls, tying back to all four strategic goals affecting our customers, people, performance, and invention.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹

The Software Engineering Institute at Carnegie Mellon University in 2018 updated a collection of 2011 studies which establish the base structure of the “Smart Grid Maturity Model”, and the sub architectures thereof. Several challenges are identified and discussed in the studies specifically around the interconnection and intersection of critical operational controls systems and modern communications technologies.

Avista network systems architects also engage in industry events hosted by, for example, the Utilities Technologies Council, which discusses these industry challenges.

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

Executing and completing planned projects within this business case should refresh assets or install new instances of technology to increase reliability, performance, and capacity. If the fail rate associated with the network systems in the business case remains low, then the project work is adding value by proactively reducing the business impact and associated risk of failing assets affecting critical operations systems, processes, and infrastructure

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Control and Safety Network Infrastructure

reliability. In addition, expanding network assets in advance of Avista adding services ensures uninterrupted business operations and reliable performance and capacity.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).²

Each individual network infrastructure asset is tracked throughout its active presence using several systems. Collectively these systems track lifecycle, manufacturer warranty, maintenance, and support (contract) status, licensing, capacity, and replacement cost. Manufacturer lifecycles drive a considerable portion of the required work within this request. Concurrently, a sizable portion of work is driven by the ongoing modernization and digitization of energy delivery infrastructure. Subject Matter Experts in Energy Delivery are regularly consulted with in technical cadences so that a real-world, collaborative approach is taken to evaluate each asset's risk of failure, as well as the impact of a given failure. Capacity and performance planning activities occur in the same forum, the result of which is a robust controls and safety communications network that will enable the reliable and safe delivery of energy.

Gross Total Assets	Expected Growth 2024-2028*	EoL** <2024	EoL 2024-28	Total Scope of Request
424	104	67	157	328

*Growth may not be capitalized in listed BC

**Accurate as of this writing and subject to change based on future manufacturer notifications

EoL= End of planned asset lifecycle

Communication Network Assets within the Controls and Safety Network Infrastructure solution portfolio are selected for a planned lifecycle of 10 years, with some exceptions.

2.3 Summarize in the table, and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.

There are no direct savings related to this business case.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Control and Safety Network Infrastructure

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

2.4 Summarize in the table, and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

There are no indirect savings related to this business case.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1: FUND THE BUSINESS CASE AT AN AMOUNT WHICH IS LESS THAN THE ORIGINAL REQUEST.

Funding of this business case at an amount less than the full request will reduce expansion of network communication systems to meet business needs in multiple control and safety areas of the business. This reduction in funding will also lessen the number of devices to be refreshed and systems to be upgraded which increases the risk of failure or cyber security vulnerability because assets will no longer be supported by their manufacturers.

Alternative 2: DO NOT FUND THE BUSINESS CASE

Removing all funding for this business case would be catastrophic for Avista since this business case provides network communications to generation, substation, transmission, and distribution sites to support safe and reliable energy delivery. The network enables the ability to control and operate core services. If the projects in this business case cease to exist, there will be no network communications at new substations, on transmission or distribution poles, and the network systems that age beyond their vendor lifecycles will fail. These failures translate to a lack of visibility and control into critical systems that deliver gas and electric services.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Control and Safety Network Infrastructure

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Executing and completing planned projects within this business case should refresh assets or install new assets and systems to enhance and increase performance and capacity needs. If the fail rate associated with the network systems in the business case remains low, then the project work is adding value by proactively reducing the risk of failing assets affecting critical operations systems, processes, and infrastructure reliability. In addition, expanding network assets in advance of Avista adding services ensures business operations are not delayed and the system reliability is properly addressed with increased capacity.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The Control and Safety Network Infrastructure business case is managed as a program of projects planned yearly. Throughout the year, the business case's multiple projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the individual projects in this business case. Therefore, investments become used and useful on a project-by-project basis and happen frequently throughout the year. Additionally, the assets deployed are typically short-lived assets. Therefore, the work in this program is largely cyclical. Lifecycle management analysis and business risk criteria are consistently analyzed and considered.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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 documents. For the Control and Safety Network Infrastructure business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS and the Business Case Owner.

The Control and Safety 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

Control and Safety Network Infrastructure

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 PMO. The project queue will be reviewed periodically to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees function 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 for providing guidance and making 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.

Project prioritization is evaluated by the management team monthly. Each program and project steering committee meet regularly and oversee 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 Capital Planning Group (CPG) for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via a Change Request document that is presented to the CPG monthly and evaluated by the CPG for approval.

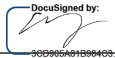
Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All ET projects in this business case are managed through the PMO, which follows the Project


Control and Safety Network Infrastructure

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 project 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.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Control and Safety Network Infrastructure 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: May-10-2023 | 6:21 AM PDT
 Print Name: Shawna Kiesbuy
 Title: Sr. Manager, Network Engineering
 Role: Business Case Owner

Signature:  Date: May-10-2023 | 4:09 PM PDT
 Print Name: Jim Corder
 Title: Director, Information Technology
 Role: Business Case Sponsor

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

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

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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

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- 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: _____

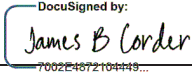
Shawna Kiesbuy

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 Network Infrastructure

EXECUTIVE SUMMARY

The Enterprise Network Infrastructure Program^[1] Business Case provides back office and customer-facing communication network access and infrastructure investments for all enterprise-wide business productivity applications and corporate systems. The network services in this technology area ensure secure and reliable access to the systems needed daily to support customer billing and call center activities, in addition to internal enterprise systems that support the delivery of electric and gas services. In the last few years, changes in technologies have shown us the criticality of business continuity as we transform how and where we get work done. Secure and reliable enterprise network access, along with management of network communications capacity, is maintained through this business case and directly affects business productivity. Without these investments, the employee and customer experience would be negatively affected.

For this business case, funding is being requested for \$10,000,000 over five years to upgrade or replace 664 network communication systems within the enterprise environment. Each individual network infrastructure asset is tracked throughout its active presence using several systems. Collectively these systems track lifecycle, manufacturer warranty, maintenance, and support (contract) status, licensing, capacity, and replacement cost. Manufacturer lifecycles drive a considerable portion of the required work within this request. Concurrently, a sizable portion of work is driven by the ongoing technological advancement of business solutions and the need for resilient and reliable access to the Internet. The 35% increase in this funding request is due to the addition of the F5 refresh work which was not in the previous five-year plan.

Avista customers across all jurisdictions will benefit from the projects in this program by having a robust network that has capacity and reliability to transport real-time data on system status and performance. Proactive updates to assets or timely placement of assets to locations will reduce possible service interruptions or delays. This translates to the safe and reliable delivery of energy to customers across the Avista service territory.

Currently, there are no direct cost savings. Indirect offsets may be realized with fewer truck roles, staff efficiency, etc.

^[1] “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.” Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

VERSION HISTORY

Version	Author	Description	Date
3.0	Shawna Kiesbuy	Update content and new template	4/2023

Enterprise Network Infrastructure

<i>BCRT</i>	<i>BCRT Team Member</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	<i>4/19/2023</i>

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$3,000,000	\$4,600,000
2025	\$2,500,000	\$2,500,000
2026	\$1,500,000	\$600,000
2027	\$1,500,000	\$2,200,000
2028	\$1,500,000	\$400,000

Project Life Span	<i>Program -NA</i>
Requesting Organization/Department	Enterprise Technology/Network Services
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology/Network Services
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Assets included in this business case have a finite lifecycle. And, given the pace of change in technology, constant threats from bad actors, growth of the Avista network and need to have suitable performance and capacity, the project work done within this program will help maintain a robust and reliable network. This business case provides back office and customer-facing communication network access and infrastructure investments for all enterprise-wide business productivity applications and corporate systems. These systems include investments required to access and move data across email, Teams, myavista.com, AFM (Avista Facilities Management), OMT (Outage Management Tool), CC&B (Customer Care & Billing), Maximo, and EIM (Energy Imbalance Market), to name a few, along with secure and reliable access to the Internet wherever our people might be working. The

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network services in this technology area ensure secure and reliable access to the systems needed daily to deliver electric and gas services to customers.

In the last few years, changes in technologies have highlighted the criticality of business continuity as we transform how and where we get work done. Secure and reliable enterprise network access, along with management of network communications capacity, is maintained through this business case and directly affects business productivity. Without these investments, the employee and customer experience would be negatively affected.

1.2 Discuss the major drivers of the business case.

The main driver for this business case is Performance and Capacity. Since the enterprise network communication assets are tied to employee and customer systems within Avista's infrastructure, creating and managing this business case is important to supporting the employee and customer experience. Specifically, allowing for timely network communications between core business productivity application systems and back-office functions, such as the data center(s), cloud services, the internet, and remote service offices, along with giving customers accurate and timely information about their utility services including outage management. With Performance and Capacity, the network communication assets are managed in alignment with technology lifecycles that are based on manufacturer product roadmaps and planned obsolesces to proactively reduce the risk of failing assets affecting enterprise systems, processes, and infrastructure reliability.

The network infrastructure investments in this business case are necessary to sustain our business by using technology to automate business processes. This business case specifically addresses network infrastructure requirements for the back office and customer channels. The business case considers business impact vs. likelihood/probability when sequencing and prioritizing resource allocations and responds to vendor-manufactured product obsolescence risks as well as cyber security risks.

This business case catalog of use cases includes the network infrastructure requirements for customer contact centers, customer mobile and web site contact, all office functions, field workforce functions, fleet systems, dispatch operations, EIM functions, and security systems. The key performance indicator for network availability and reliability is 99.9%, 24x7. The investment sequencing is based on three drivers, 1) Compliance, 2) Initiatives, 3) Reliability. The Compliance driver should be regulation, Initiatives are executive sponsored (current example is a cybersecurity vulnerability risk on out-of-support assets), and the Reliability driver is often the highest volume of work.

The sequencing of the Reliability projects is driven first by the network asset end-of-support date for cybersecurity patching, then the performance and capacity to meet the business requirement, and lastly product obsolescence date.

Investment percentage for the cybersecurity Initiative is 72% in 2022 and Reliability projects were 28%. In 2023, the cybersecurity Initiative is 86% and Reliability projects are 14% of the investment.

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1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

The project work captured in this business case enables network communications for all corporate systems. With Avista's vision of delivering better energy for life, this business case is key to supporting the gas and electric service delivery to our customers in a safe and reliable manner by allowing access to core customer and employee systems. The work is needed daily and is ongoing with a direct tie to customer satisfaction.

The risks of not approving this business case could result in unplanned failures, inability to expand services and cyber vulnerabilities. The result is tied to the following risks: an increase in employee and customer system outages, unplanned labor and non-labor costs tied to system scope changes not clearly defined, risk of delay to procure and replace the failed asset as well as downtime to the core enterprise systems and exposure of outdated or unsupported devices to external cyber vulnerabilities.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link.

[Avista Strategic Goals](#)

This business case provides network communications for all corporate systems. These systems include email, Microsoft Teams, myavista.com, AFM (Avista Facilities Management), OMT (Outage Management Tool), CC&B (Customer Care & Billing), Maximo, and EIM (Energy Imbalance Market), to name a few, along with secure access to the Internet wherever our people might be working. These network system examples, and many others, move and present data that drive operational decisions and support customer account management, tying back to all four strategic goals affecting our customers, people, performance, and invention with the customer being the most important.

Primary Focus Area for project:		
X	Our Customers	<ul style="list-style-type: none"> ▪ Mature our customer experience, both internal & external ▪ Support affordability, equity, and economic vitality ▪ Understand and address the evolving customer needs by offering products, services, & solutions
X	Our People	<ul style="list-style-type: none"> ▪ Evolve our employee experience with a focus on engagement, development, resiliency & well-being ▪ Improve safety & training systems to reduce injuries, expand learning & understand risks ▪ Strengthen equity, inclusion, & diversity within systems, practices, & behaviors
X	Perform	<ul style="list-style-type: none"> ▪ Affordably operate & maintain safe, clean, reliable generation & energy delivery infrastructure ▪ Achieve stated financial objectives
X	Invent	<ul style="list-style-type: none"> ▪ Foster & apply an innovation culture to benefit employees, customers, communities, & shareholders ▪ Create the utility of the future with our stakeholders, optimizing for cost, carbon, & reliability

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1.5 Supplemental Information – please **describe** and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹

Gartner is an industry leader in Enterprise Technology providing valuable insights, guidance, tools, and consulting opportunities that Avista's technical architects use regularly. OEMs (Original Equipment Manufacturer) also provide valuable information about industry trends and the evolution of technology. Avista uses these tools to accurately project growth and develop strategies for scaling new use cases.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The projects within this business case should refresh assets or install new instances of technology to enhance and increase performance and capacity needs. If the failure rate associated with the network systems in the business case remains low, then the project work is adding value by proactively reducing the risk of failing assets affecting critical operations systems, processes, and infrastructure reliability. In addition, expanding network assets in advance of Avista adding services ensures business operations are not delayed and the system impacted with increased capacity.

2.2 Describe and provide reference to **CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).**²

Each individual network infrastructure asset is tracked throughout its active presence using several systems. Collectively these systems track lifecycle, manufacturer warranty, maintenance, and support (contract) status, licensing, capacity, and replacement cost. Manufacturer lifecycles drive a considerable portion of the required work within this request. Concurrently, a sizable portion of work is driven by the ongoing technological advancement of business solutions and the need for resilient and reliable access to the Internet. Subject Matter Experts in Enterprise Technology are regularly consulted with in technical cadences so that a real-world, collaborative approach is taken to evaluate each asset's risk of failure, as well as the impact of a given failure. Capacity and performance planning activities occur in the same forum, the result of which is a robust enterprise communications network that

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Enterprise Network Infrastructure

will enable Avista to efficiently and effectively deliver timely information and services to customers.

Gross Total Assets	Expected Growth 2024-2028*	EoL** <2024	EoL 2024-28	Total Scope of Request
934	55	249	360	664

*Growth may not be capitalized in listed BC

***Accurate as of this writing and subject to change based on future manufacturer notifications*

EoL= End of planned asset lifecycle, communication network assets within the Enterprise Network Infrastructure solution portfolio are selected for a planned lifecycle of 7 years, with some exceptions.

2.3 Summarize in the table and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.

There are no direct savings related to this business case.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

2.4 Summarize in the table and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

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2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Fund the business case at an amount which is less than the original request

Funding of this business case at an amount less than the full request will reduce expansion of enterprise network communication systems to meet business needs in multiple offices, across generation and substation locations and for customers. This reduction in projects will also lessen the necessary number of devices to be refreshed which increases the risk of failure of critical customer systems or cyber security vulnerability because assets will no longer be supported by their manufacturers.

Alternative 2:

Do not fund the business case

Removing all funding for this business case would be challenging for Avista since this business case provides enterprise network communications to offices, generation and substation locations, and customer systems. If the projects in this business case cease to exist, there will be no enterprise network communications at new offices, substation or generation locations, or the enterprise network systems that age beyond their vendor lifecycles will fail. These failures translate to a lack of access and support to back-office and customer systems that support the delivery of gas and electric services.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Executing and completing planned projects within this business case should refresh assets or install new instances of technology to enhance and increase performance and capacity needs. If the fail rate associated with the enterprise network systems in the business case remains low, then the project work is adding value by proactively reducing the risk of failing assets affecting critical operations systems, employee and customer processes, and infrastructure reliability. In addition, expanding enterprise network assets in advance of Avista adding services ensures business operations are not delayed and the system impacted with increased capacity.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The project work captured in this business case enables network communications for all corporate systems. With Avista's vision of delivering better energy for life, this business case is key to supporting the gas and electric service delivery to our customers in a safe and reliable manner by allowing access to core customer and employee systems. The work is needed daily and is ongoing with a direct tie to customer satisfaction.

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The risks of not approving this business case could result in unplanned failures, inability to expand services and cyber vulnerabilities. The result is tied to the following risks: an increase in employee and customer system outages, unplanned labor and non-labor costs tied to system scope changes not clearly defined, risk of delay to procure and replace the failed asset as well as downtime to the core enterprise systems and exposure of outdated or unsupported devices to external cyber vulnerabilities.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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 documents. For the Enterprise Network Infrastructure business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS, Customer Solutions, and the Business Case Owner.

The Enterprise 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 PMO. The project queue will be reviewed periodically to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees function 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 for providing guidance and making decisions on key issues that affect the following topics:

Enterprise Network Infrastructure

- 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.

Project prioritization is evaluated by the management team monthly. Each program and project steering committee meet regularly and oversee 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 Capital Planning Group (CPG) for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via a Change Request document that is presented to the CPG monthly 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 ET 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 project 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.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Enterprise Network Infrastructure 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

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Date: May-11-2023 | 6:42 AM PDT

Print Name: _____

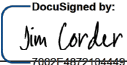
Shawna Kiesbuy

Title: _____

Sr. Manager, Network Engineering

Enterprise Network Infrastructure

Role: Business Case Owner

Signature: 

Date: May-11-2023 | 9:52 AM PDT

Print Name: Jim Corder

Title: Director, Infrastructure Technology

Role: Business Case Sponsor

Signature: _____

Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Environmental Control and Monitoring Systems

CPG short description – Plan and execute replacements of assets based on assets condition. Assets that provide environmental control and monitoring for other technology systems. Assets include DC rectifiers, batteries, UPS systems and emergency generators, etc.

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 to Substations and Generation Plants. 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. The likelihood of these assets failing is exponentially more likely when they are allowed to run pasted their life cycle. They contain components that wear out and are not replaceable without replacing the entire asset. This program will plan to normalize replacements by replacing an equal number of assets by asset type a year. This may increase the risk of failures but provides a normalized annual funding level requirement. Engineering, Technicians, and Management will annually review the portfolio of assets, and their current condition, against this program to ensure optimization of funding and risk of failures.

This program will need a minimum funding level of \$950k/year to maintain the business risk of these assets failing and impacting safety and control systems our Operations personal rely on to support our Customers.

Environmental Control and Monitoring Systems

VERSION HISTORY

Version	Author	Description	Date
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
3.0	Michael Busby	Update to new template	5/2022
4.0	Michael Busby/Mike Lang	Update to new template, CPG short description	4/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements	4/20/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$950,000	\$950,000
2025	\$950,000	\$950,000
2026	\$950,000	\$950,000
2027	\$950,000	\$950,000
2028	\$950,000	\$950,000

Project Life Span	<i>1 year, 5 years, 10 years, etc.</i>
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

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

Environmental Control and Monitoring Systems

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 are 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.

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 if deferred or risks being mitigated by the request.

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.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization. *See link.*

[Avista Strategic Goals](#)

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.

Environmental Control and Monitoring Systems

1.5 Supplemental Information

EMERGENCY GENERATORS (EGEN)

Emergency Generator assets are at facilities where critical technologies are located. We currently have 24 generators in portfolio. They have a 30-year life cycle. Average cost of replacement is estimated around \$150k per generator system. This estimate doesn't take into account any unique environmental constraints some site may have. We will plan to replace 1 per year, if the generator is having reliability issues or at significant risk of failure.

Age	Count
0-5 Yrs.	3
5-10 Yrs.	9
10-15 Yrs.	6
15-20 Yrs.	0
20-25 Yrs.	3
25-30 Yrs.	1
> 30 Yrs.	2
Total	24

We have 2 generators that are past their end of life and need to be refreshed. We have 1 generators that will reach their end of life over the next 5 years. As of 5/2022, over the next 5 years we are planning on replacing these 3 generators that will be past their end of life, as well as 1 generator that is having reliability and maintenance issues.

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 60 UPS systems in portfolio. They have a 5-year life cycle. Average cost of replacement is estimated around \$25k per UPS system. This estimate doesn't take into account any unique environmental constraints some site may have. We will plan to replace 12 per year, if the UPS is having reliability issues or at significant risk of failure.

Age	Count
0-1 Yrs.	0
1-2 Yrs.	8
2-3 Yrs.	7
3-4 Yrs.	11
4-5 Yrs.	6
> 5 Yrs.	28
Total	60

Environmental Control and Monitoring Systems

We have 28 UPS systems beyond their end of life. If we get funding to replace 12 a year for the next 5 years, we can significantly reduce the risk of UPS failures.

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 78 DC Rectifiers in portfolio. They have a 15-year life cycle. Average cost of replacement is estimated around \$70k per DC system. This estimate doesn't take into account any unique environmental constraints some site may have. We will plan to replace 5 per year, if the DC System is having reliability issues or at significant risk of failure.

Age	Count
0-3 Yrs.	7
3-6 Yrs.	10
6-9 Yrs.	9
9-12 Yrs.	28
12-15 Yrs.	1
> 15 Yrs.	23
Total	78

We have 23 DC Systems beyond their end of life. We will have 26 more DC Systems reach their end of life within the next 5 years. If we get funding to replace 5 systems a year for the next 15 years, we can significantly reduce the risk of DC System failures.

DC BATTERIES

DC Batteries store electrical energy used to provide power to technology equipment during loss of AC power event. We have 2 types of DC batteries in our portfolio. A "Standard Life" and a "Long Life" Valve Regulated Lead Acid (VRLA) battery. The Standard VRLA battery has a 10-year life cycle. The "Long Life" VRLA battery has a 15-year life cycle and will be replaced with the DC Plant replacement project. We currently have 11 "Long Life" DC Battery systems and 66 "Standard Life" DC Battery systems. The "Standard Life" DC Battery systems will be replaced if they fail performance testing during maintenance activities. Average cost of replacement for "Standard Life" battery systems is estimated to be around \$7.5k per DC system. We will plan to replace 6 "Standard Life" DC battery systems per year, if the system is having reliability issues or at significant risk of failure.

10 Year Lifespan	
Age	Count
0-2 Yrs.	29
2-4 Yrs.	14
4-6 Yrs.	9
6-8 Yrs.	8
8-10 Yrs.	1
> 10 Yrs.	5
Total	66

Environmental Control and Monitoring Systems

5 of the “Standard Life” DC Battery systems are beyond their end of life. We will replace the DC Batteries when we replace the DC Rectifier system. If we see DC Batteries not passing performance testing during maintenance activities, we will plan to replace the DC Battery system before replacing the whole rectifier system.

HVAC SYSTEMS

HVAC Systems monitor and control the environment's temperature and/or humidity. Avista's technology assets may experience physical damage if operated in temperatures and/or humidity outside of their specifications. We have 23 HVAC systems in our portfolio. They have a 20-year life cycle. The average cost of replacement is estimated around \$55k per HVAC system. This estimate doesn't take into account any unique environmental constraints some site may have. We will plan to replace 1 per year, if the HVAC System is having reliability issues or at significant risk of failure.

Age	Count
0-5 Yrs.	7
5-10 Yrs.	9
10-15 Yrs.	4
15-20 Yrs.	0
> 20 Yrs.	3
Total	23

We have 3 HVAC Systems beyond their end of life. If we get funding to replace 1 HVAC system a year, we can manage and maintain the risk of HVAC system failures.

Environmental Control and Monitoring Systems

2. PROPOSAL AND RECOMMENDED SOLUTION -

Option	Capital Cost	Start	Complete
Optimized Asset Replacement (Proposed Solution)	\$4,750,000	01 2024	01 2028
Asset Replacement when Obsolete	\$6,162,500	01 2024	01 2028
Asset Replacement upon Failure	\$4,621,875	01 2024	01 2028

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The proposed solution would maintain an even and manageable replacement program to maintain Avista's ability to monitor and control various environments where other technology systems are deployed. This solution will maintain the reliability of the technology systems used to automate our business.

2.2 Describe and provide reference to **CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).**¹

The assets managed in this business case are manufactured with components that wear out. As the assets age, they will start to degrade and fail. We strive to replace the asset before they start to fail and cause outages to the technology that runs automation for the business.

2.3 Summarize in the table and describe below the **DIRECT offsets² or savings (Capital and O&M) that result by undertaking this investment.**

There are no offsets to report at this time.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$	\$	\$	\$	\$
O&M		\$	\$	\$	\$	\$

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

² Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Environmental Control and Monitoring Systems

2.4 Summarize in the table and describe below the INDIRECT offsets³ (Capital and O&M) that result by undertaking this investment.

There are no offsets to report at this time.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$	\$	\$	\$	\$
O&M		\$	\$	\$	\$	\$

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

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.
- 50% of the project costs is Labor
- Labor would be 200% more expensive due to the urgency to replace a failed asset

These costs would be reflected in the IT Failed Assets Business case. The IT Failed Assets business case would not forecast these costs.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

The Environmental Control and Monitoring Systems business case can measure the failure rates of these assets. If the failure rates increase or decrease, we can re-evaluate the frequency at which we plan to replace them. This business case can also measure the number of assets that are replaced each year to see if goals are met.

³ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Environmental Control and Monitoring Systems

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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

Environmental Control and Monitoring Systems

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. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Environmental Control and Monitoring 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: DocuSigned by:
Michael Busby
94769559A04470... Date: May-11-2023 | 9:58 AM PDT

Print Name: Michael Busby

Title: Manager

Role: Business Case Owner

Signature: DocuSigned by:
Jim Corder
7969E4972104446... Date: May-12-2023 | 10:24 AM PDT

Print Name: Jim Corder

Title: Director

Role: Business Case Sponsor

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Fiber Network Leased Service Replacement

EXECUTIVE SUMMARY

The Fiber Network Leased Service Replacement Program^[1] Business Case is focused on transition Avista's control and safety network off of leased lines onto privately owned fiber optic cable. Avista utilizes leased fiber optic cable to transport primarily safety and control data between offices, substations, and generation facilities. The leased fiber incurs an operating expense with lease rates that were established during the sale of an Avista Communication's subsidiary. An Indefeasible Right to Use (IRU) was established to benefit Avista Utilities with rates well below market value. The IRU expires in 2027 with an option to renew for an additional five years, through 2032. Currently, Avista is planning to renew the IRU for the additional five years which will ultimately expire in 2032. For this business case, the project work identified 47 segments and a total of approximately 98 miles of leased fiber left to be replaced with Avista-owned private fiber. By owning the fiber, Avista will be able to better maintain it since they will be the only ones using the strands versus joint-use of the fiber through a leased-based contract. Since Avista is an Energy Utility, it is positioned well to build a fiber network and leverage assets already owned like poles, panel houses, and vaults so leasing a service should be the last resort. Owning fiber is also cheaper in the long run and will ultimately keep Avista rates lower for our customers.

For this business case, funding is being requested for \$7,000,000 over five years to complete the installation of Avista fiber. Transitioning Avista's safety and control network data from leased network services to private network infrastructure aligns with the long-term network strategy and will reduce risk to the company of having control and safety data on a leased network along with O&M (Operating & Maintenance) costs to the utility. When these services traverse a leased network, Avista is at risk of outages out of our control, scheduled vendor maintenance affecting Avista operations, and significant increases in monthly lease costs once the IRU expires.

Avista customers across select jurisdictions will benefit from the projects in this program by having a robust network that has capacity and reliability to transport real time data on system status and performance. Having privately owned fiber will reduce O&M cost and remove reliance on third parties to maintain and operate critical fiber segments Avista relies on for control and safety.

Currently, there are no direct or indirect cost savings.

^[1] "A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.," Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Fiber Network Leased Service Replacement

VERSION HISTORY

Version	Author	Description	Date
5.0	Shawna Kiesbuy	Annual Update and new Template	4/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements	4/19/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$1,000,000	\$700,000
2025	\$1,500,000	\$1,400,000
2026	\$1,500,000	\$900,000
2027	\$1,500,000	\$1,600,000
2028	\$1,500,000	\$100,000

Project Life Span	5 years+
Requesting Organization/Department	Enterprise Technology/Network Services
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology/Network Services
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Avista utilizes leased fiber optic cable to transport primarily safety and control data between offices, substations, and generation facilities. The leased fiber incurs an operating expense with lease rates that were established during the sale of an Avista Communication's subsidiary. An Indefeasible Right to Use (IRU) was established to benefit Avista Utilities with rates well below market value. The IRU expires in 2027 with an option to renew for an additional five years, through 2032.

Fiber Network Leased Service Replacement

This business case is a program to transition Avista's safety and control network data from leased network services to private network infrastructure and aligns with the long-term network strategy and will reduce risk to the company of having control and safety data on a leased network along with O&M (Operating & Maintenance) costs to the utility. When these services traverse a leased network, Avista is at risk of outages out of our control, scheduled vendor maintenance affecting Avista operations, and significant increases in monthly lease costs once the IRU expires.

For this business case, the project work started in 2018 and identified at least 51 segments and a total of approximately 115 miles of leased fiber to be replaced with Avista-owned private fiber. To date, approximately 17 miles of fiber has been replaced equating to 4 segments being transferred to Avista. The anticipated complexity associated with right 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 ahead of the 2027 deadline.

1.2 Discuss the major drivers of the business case.

The main driver for this business case is Performance and Capacity. Investment in private network transport and technology to service and support safety and control communication systems is an established industry standard. The technology improvements invested under this business case benefit all customers across our service territory by investing in privately-owned fiber optic cable segments thereby mitigating the potential of increased O&M costs for leased fiber in the future. By owning the fiber, Avista will be able to better maintain it since they will be the only ones using the strands versus joint-use of the fiber through a leased-based contract. Since Avista is an Energy Utility, it is positioned well to build a fiber network and leverage assets already owned like poles, panel houses, and vaults so leasing a service should be the last resort. Owning fiber is also cheaper in the long run and will ultimately keep Avista rates lower for our customers.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

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, any delays in executing this work would risk the ability to finalize work by 2027. A contract extension is available through 2032, but any extension beyond 2032 would increase leased costs of this aging infrastructure. Also as noted above, there is benefit to the company by having full control over fiber segments for these critical communication paths. Full control allows Avista to schedule maintenance and support activities in conjunction with other maintenance activities across the organization, such as in GPSS, and System Operations. With leased fiber assets, we are at the mercy of the provider's own schedule of maintenance & support activities which may come at inopportune times for Avista business process and the potential interruption of system operations

Fiber Network Leased Service Replacement

While the current agreements may allow for extension of the lease terms, there are increased O&M costs associated with any extensions. 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 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. *See link.*

[Avista Strategic Goals](#)

The FNLSR 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. 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 manages costs. 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 for all workers and at all locations across Avista.

1.5 Supplemental Information – please **describe and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹**

The leased fiber terms detail costs associated with the expiration date.

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Fiber Network Leased Service Replacement

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

These projects replace segments of leased fiber with Avista owned private fiber infrastructure per the business problem addressed in Section 1.1.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).²

The requested amount of \$8,500,000 reflects the total estimated cost of implementing Avista privately owned fiber optic cable for all applicable IRU miles through the year 2027. Yearly allocation and project prioritization are set based on the output of annual budget planning activities. These activities consider estimated completion dates of in-flight work, areas of elevated 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.

2.3 Summarize in the table and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

Direct Savings - This program is currently scheduled to be completed in 2027 with a proposed extension to 2032. By completing this program, we will avoid annual lease costs of \$60,000 (\$5,000/month) through the life of the IRU (indefeasible rights of use agreement), which can be renewed through 2032. If the work is not completed in 2027, we will continue to delay the work and spend the \$60,000 in annual IRU lease payments. At the end of 2032, we do have an option to renew the contract, with a large up-front cost estimated to be \$3M as of a Zayo renegotiation conversation in June of 2021. This \$3M is for the existing, aging leased fiber optic segments and does not include any new assets.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Fiber Network Leased Service Replacement

2.4 Summarize in the table and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

No indirect offsets for this business case

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Fund the business case at an amount which is less than the original request

Funding the FNLSR business case minimally each year 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 providing the private fiber to carry safety and control communications, 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 business case

Removing all funding for this business case would result in all projects being halted and no new projects starting to move from leased fiber to privately owned fiber. The impact would be an increase in O&M which equates to \$60,000 in annual IRU lease payments lease costs on those fiber segments.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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, any delays in executing

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Fiber Network Leased Service Replacement

this work would risk the ability to finalize work by 2027. A contract extension is available through 2032, but any extension beyond 2032 would increase leased costs of this aging infrastructure. Also as noted above, there is benefit to the company by having full control over fiber segments for these critical communication paths. Full control allows Avista to schedule maintenance and support activities in conjunction with other maintenance activities across the organization, such as in GPSS, and System Operations. With leased fiber assets, we are at the mercy of the provider's own schedule of maintenance & support activities which may come at inopportune times for Avista business process and the potential interruption of system operations

While the current agreements may allow for extension of the lease terms, there are increased O&M costs associated with any extensions. 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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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 documents. For the FNLSR business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS (Generation Production and Substation Support) and the Business Case Owner.

The FNLSR 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 PMO. The project queue will be reviewed periodically to plan and sequence work to the levels of funding allocation received.

Fiber Network Leased Service Replacement

Project Steering Committee

Project Steering Committees function 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 for providing guidance and making 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.

Project prioritization is evaluated by the management team monthly. Each program and project steering committee meet regularly and oversee 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 Capital Planning Group (CPG) for decision-making around resource or funding constraints.

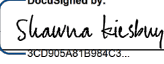
Any changes in funding or scope are documented at the Business Case level, via a Change Request document that is presented to the CPG monthly and evaluated by the CPG for approval.

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 ET 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 project 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.

Fiber Network Leased Service Replacement

3. APPROVAL AND AUTHORIZATION

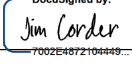
The undersigned acknowledge they have reviewed the Fiber Network Leased Service Replacement and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: May-11-2023 | 6:42 AM PDT
DocuSigned by: Shawna Kiesbuy JCD905A81B984C5...

Print Name: Shawna Kiesbuy

Title: Sr. Manager, Network Engineering

Role: Business Case Owner

Signature:  Date: May-11-2023 | 9:51 AM PDT
DocuSigned by: Jim Corder 7002E4872104489...

Print Name: Jim Corder

Title: Director, Information Technology

Role: Business Case Sponsor

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

Network Backbone Infrastructure

EXECUTIVE SUMMARY

The Network Backbone Infrastructure Program^[1] Business Case includes investment in communication network infrastructure for expansion requirements and periodic refresh of our mixed service transport backhaul solutions. This work is comparable to a Transmission service but instead of electricity, we are transporting communication network data. Systems in this technology area include those designed to aggregate and transport substantial amounts of data across miles of geography and locations, including substations, district offices, Mission headquarters, and mountaintop communication sites. Each year, systems have been identified for updating to take advantage of newer technologies by expanding the high-speed packet core to improve performance and reliability further and increase the network's capacity. The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy and scale for future technology could result in unplanned failures and outages to our communication network system.

For this business case, funding is being requested for \$14,500,000 over five years to upgrade or replace 47 network communication systems within the network backbone infrastructure. Collectively these systems track lifecycle, manufacturer warranty, maintenance, and support (contract) status, licensing, capacity, and replacement cost. Manufacturer lifecycles drive a considerable portion of the required work within this request. Concurrently, a sizable portion of work is driven by the ongoing modernization of energy delivery infrastructure and by the rapid technological advancements of business applications and systems. This funding request is an approximate 27% reduction from the previous five-year plan due to the SONET replacement work being moved into the new business case, NexGen Control Systems Networks.

Avista customers across all jurisdictions will benefit from the projects in this program by having a robust network that has capacity and reliability to transport real time data on system status and performance. Proactive updates to assets or timely placement of assets to locations will reduce possible service interruptions or delays. This translates to the safe and reliable delivery of energy to customers across the Avista service territory.

Currently, there are no direct cost savings. Indirect offsets may be realized with fewer truck roles, staff efficiency, etc.

^[1] “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.” Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition*. Page 3 (Copyright 2017).

VERSION HISTORY

Network Backbone Infrastructure

Version	Author	Description	Date
3.0	Shawna Kiesbuy	Update content and new template	4/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements	4/19/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$3,000,000	\$6,000,000
2025	\$4,000,000	\$4,400,000
2026	\$2,000,000	\$2,100,000
2027	\$2,500,000	\$2,800,000
2028	\$3,000,000	\$1,500,000

Project Life Span	5 Years+
Requesting Organization/Department	Enterprise Technology/Network Services
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology/Network Services
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Assets included in this business case have a finite lifecycle or there is need for adding assets to support Avista growth and transformation. Given the pace of change in technology, constant threats from bad actors, and need to have suitable performance and capacity, the project work done within this program will help maintain a robust and reliable network.

This business case includes investment in communication network infrastructure for expansion requirements and periodic refresh of our mixed service transport backhaul solutions. This work is comparable to a Transmission service but instead of electricity, we

Network Backbone Infrastructure

are transporting communication network data. Systems in this technology area include those designed to aggregate and transport substantial amounts of data across miles of geography and locations, including substations, district offices, Mission headquarters, and mountaintop communication sites.

Over time, and with new business productivity application system requirements, communication network loads and demand increase. For example, communication requirements at substations are changing, including access needs for enterprise services (email and phones), transmission and distribution SCADA (Supervisory Control and Data Acquisition), and safety services such as high-definition cameras and badge access.

1.2 Discuss the major drivers of the business case.

The main driver for this business case is Performance and Capacity. Each year, systems have been identified for updating to take advantage of newer technologies by expanding the high-speed packet core to improve performance and reliability further and increase the network's capacity. Specifically allowing for communications in the field, the network backbone infrastructure facilitates the ability to transport corporate traffic such as email and day-to-day business productivity traffic, as well as generation, substation, transmission, and distribution control data, plus carry safety communications to crews in outage events and across hard-to-reach locations. With Performance and Capacity, the network communication assets are managed in alignment with technology lifecycles that are based on manufacturer product roadmaps and planned obsolesces to proactively reduce the risk of failing assets affecting critical operations systems, processes, and infrastructure reliability.

The network infrastructure investments in this business case are necessary to operate our critical business assets by using technology to automate business processes and leverage communication networks for remote visibility and operations. This business case specifically addresses network infrastructure requirements for all company business requirements. The business case considers business impact vs. likelihood/probability when sequencing and prioritizing resource allocations and responds to vendor-manufactured product obsolescence risks as well as cyber security risks.

This business case provides intentional funding for a network backbone infrastructure for the geographical transmission of corporate and controls data. The key performance indicator for network availability and reliability is 99.99%, 24x7. The investment sequencing is based on three drivers, 1) Compliance, 2) Initiatives, 3) Reliability. The Compliance driver should be regulation, Initiatives are executive sponsored (current example is a cybersecurity vulnerability risk on out-of-support assets), and the Reliability driver is often the highest volume of work enabling the reliable delivery of gas and electric services to our customers.

Network Backbone Infrastructure

The sequencing of the Reliability projects is driven first by the network asset end-of-support date for cybersecurity patching, then the performance and capacity to meet the business requirement, and lastly product obsolescence date.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

The communications network projects captured in this business case deliver on expansion requirements and periodic refresh of our multi-service transport backbone solutions. With Avista's vision of delivering better energy for life, this business case is key to enabling the gas and electric service delivery to our customers in a safe and reliable manner. The work of transporting data across the network backbone is critical to core systems and operations.

The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy and scale for future technology could result in unplanned failures and outages to our communication network system. The result is tied to the following risks: an increase in employee, contractor and/or public safety risks due to the inability to see and remotely operate the electric and gas systems. This has the potential to increase labor and non-labor costs tied to unplanned system outages, where delays to procurement can be realized to replace the failed asset, as well as downtime to the critical systems supported. This could also lead to additional exposure of outdated or unsupported devices to external cyber vulnerabilities.

According to the Company Enterprise Risk Register, under the "Loss of Communication or Network Technologies" and the "Cyber Intrusion" risks the probability of this failure has an income statement score of 3, which equates to a \$10-\$20 million avoided cost over a period of 2-3 years.

Investment percentage for the cybersecurity Initiative is 50% in 2022, Reliability projects are 50%. In 2023, the cybersecurity Initiative is 60% and Reliability projects are 40% of the investment.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link.

[Avista Strategic Goals](#)

In this business case, the network enables the aggregate and transport of substantial amounts of data across miles of geography and locations, including substations, district offices, Mission headquarters, and mountaintop communication sites. These network system examples, and many others, move and present data over long-distances that drive operational decisions and controls, tying back to all four strategic goals affecting our customers, people, performance, and invention.

Network Backbone Infrastructure

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹

Reference materials that support the needed changes in Network technology are maintained by Technology Domain Architects within each respective technology area. These materials include Utility Cluster Studies, External Service Provider Memorandums, Electric Distribution and Transmission Management Technology Roadmaps, etc.

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

Executing and completing planned projects within this business case should refresh assets or install new instances of technology to enhance and increase performance and capacity needs. If the fail rate associated with the network systems in the business case remains low, then the project work is adding value by proactively reducing the risk of failing assets affecting critical operations systems, processes, and infrastructure reliability. In addition, expanding network assets in advance of Avista adding services ensures business operations are not delayed and the system impacted with increased capacity.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).²

Overall network backbone transport system reliability is reviewed bi-monthly with key stakeholders in cyber security and energy delivery with the goal of reducing single points of failure for critical infrastructure. A backlog of work is generated with this key stakeholder group and a risk matrix is leveraged to score and validate the order of projects so that we reduce the largest business risk first.

Each individual transport network infrastructure asset is tracked throughout its active presence using several systems. Collectively these systems track lifecycle, manufacturer warranty, maintenance, and support (contract) status, licensing, capacity, and replacement

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Network Backbone Infrastructure

cost. Manufacturer lifecycles drive a considerable portion of the required work within this request. Concurrently, a sizable portion of work is driven by the ongoing modernization of energy delivery infrastructure and by the rapid technological advancements of business applications and systems. Subject Matter Experts in Utility Transport Network Architecture are regularly consulted within technical cadences so that a real-world, collaborative approach is taken to evaluate the resiliency and redundancy requirements of the transport backbone network. Capacity and performance planning activities occur in the same forum, the result of which is a scalable, high-performing, and reliable transport communications network that will enable the reliable and safe delivery of energy.

Gross Total Assets	Expected Growth 2024-2028*	EoL** <2024	EoL 2024-28	Total Scope of Request
269	28	44	3	47

*Growth may not be capitalized in listed BC

**Accurate as of this writing and subject to change based on future manufacturer notifications*

EoL = End of planned asset lifecycle, communication network assets within the Transport Backbone Network Infrastructure solution portfolio are selected for a planned lifecycle of 10-15 years, with some exceptions.

2.3 Summarize in the table and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.

There are no direct savings related to this business case.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

2.4 Summarize in the table and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$	\$	\$	\$	\$

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Network Backbone Infrastructure

O&M		\$	\$	\$	\$	\$
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2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Fund the business case to an amount which is less than the original request

Funding of this business case at an amount less than the full request will reduce expansion of network communication systems to meet business needs across multiple areas of the business. This reduction in projects will also lessen the necessary number of devices to be refreshed which increases the risk of failure or cyber security vulnerability because assets will no longer be supported by their manufacturers.

Alternative 2:

Do not fund the business case

Removing all funding for this business case would be challenging for Avista since this business case provides our mixed service transport backhaul solutions. Systems in this technology area include those designed to aggregate and transport substantial amounts of data across miles of geography and locations, including substations, district offices, Mission headquarters, and mountaintop communication sites. If the projects in this business case cease to exist, there will be no network communications between substations, on transmission or distribution poles, or the network systems that age beyond their vendor lifecycles will fail. These failures translate to a lack of visibility and control into critical systems that deliver gas and electric services. Additionally, the company would be forced back to manual on site work and truck roles, instead of leveraging remote visibility and control.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Executing and completing planned projects within this business case should refresh or install new assets and/or functionality to enhance and increase performance and capacity needs. If the fail rate associated with the network systems in the business case remains low, then the project work is adding value by proactively reducing the risk of failing assets affecting critical operations systems, processes, and infrastructure reliability. In addition, expanding network assets in advance of Avista adding services ensures business operations and the delivery of safe, reliable, and affordable energy are not delayed or impacted from the increased capacity.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The Network Backbone Infrastructure business case is managed as a program of projects planned yearly. Throughout the year, the business case's multiple projects are Initiated,

Network Backbone Infrastructure

Planned, Executed, and then Completed with a Transfer to Plant for the individual projects in this business case. Therefore, investments become used and useful on a project-by-project basis and happen frequently throughout the year.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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 documents. For the Network Backbone Infrastructure business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS and the Business Case Owner.

The Network Backbone 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 PMO. The project queue will be reviewed periodically to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees function 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 for providing guidance and making decisions on key issues that affect the following topics:

- Scope

Network Backbone 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 PMO.

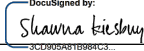
Project prioritization is evaluated by the management team monthly. Each program and project steering committee meet regularly and oversee scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or Capital Planning Group (CPG) for decision-making around resource or funding constraints.

Any changes in funding or scope are documented at the Business Case level, via a Change Request document that is presented to the CPG monthly 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 ET 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 project 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.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Network Backbone Infrastructure 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:	<small>DocuSigned by:</small>  <small>3C0905A81E884C3...</small>	Date: May-11-2023 6:41 AM PDT
Print Name:	Shawna Kiesbuy	
Title:	Sr. Manager, Network Engineering	
Role:	Business Case Owner	

Network Backbone Infrastructure

Signature:  _____ Date: May-11-2023 | 9:50 AM PDT
Print Name: Jim Corder
Title: Director, Infrastructure Technology
Role: Business Case Sponsor

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

NexGen Control System Networks

EXECUTIVE SUMMARY

This NexGen Control System Networks (NCSN) Program^[1] Business Case will administer projects specifically scoped to replace products and services on our control system communication networks that have been designed and provisioned over time division multiplexing (TDM) methodologies. TDM based products and services are end-of-life, end-of-support and are at the end-of-manufacturing. Through a series of Declaratory Rulings and Orders from 2014 thru 2018, the FCC allowed for a local exchange carrier (LEC) to discontinue TDM services and permitted LECs to leverage universal service funding support for investment in more modern and efficient software defined IP based networks. As vendors continue ramping down on the manufacturing and support of TDM based products and services, local exchange carriers (LECs) and other telecommunication service providers continue removing these services from their own product portfolios, recognizing that these services are no longer viable products to maintain. Local exchange carriers and vendors alike have both issued notices to Avista to sunset these products and services. If we do not address the existing services before they are disconnected or out of support, we risk losing communication network services that carry control and telemetry traffic; data that is critical to our ability to operate our gas and electric systems. The services to be scoped for removal as part of this business case are:

- Leased public interconnections with local exchange carriers via TDM services, i.e., DS0 and DS1 circuits Avista is leasing.
- Private TDM services for public interconnections, i.e., our SONET network and circuits provisioned specifically for SCADA communications via interconnection agreements with Bonneville Power Authority (BPA) and others across the bulk electric system.
- Private TDM services for private communication services, i.e., our SONET network and circuits provisioned specifically to transport Avista control and telemetry traffic for our own purposes.

Use Cases currently being served by TDM network services Include:

- Teleprotection communications, including RAS
- Intercompany telemetry with BPA, Grant County PUD, PacifiCorp, etc.
- SCADA Telemetry
- Analog voice traffic at some substations and communications sites
- Point-to-point enterprise backhaul at some remote offices

For this business case, funding is being requested for \$22,728,000 over 6 years to upgrade or replace 124 communication network circuits and node sites that carry traffic for the above listed use cases. This business case is collecting and documenting all existing replacement projects that have been forecasted under separate business cases, plus unforecasted replacement projects that are driven by vendor disconnect and end-of-life notifications and sequencing the work under a

NexGen Control System Networks

single business case for visibility, facilitation and heightened awareness. As an offset, some of the refresh and/or replacement activities are already planned or in progress in the 5-year capital forecast under separate cover of projects in other capital business cases. Examples are:

- Digital Grid Network – The project titled “NCSN SCADA Comms Refresh_01” has started accumulating actuals as of February 2023. This project is currently forecasted to spend \$582,612 in 2023 and \$17,388 in 2024 and will deliver design standards and implement updated communications network capabilities at two locations that are TBD and based on risk and impact.
- Control and Safety Network Infrastructure – DNX infrastructure hardware components have been discontinued by the vendor and will be refreshed as part of the SONET work now taking place in this new business case. These four projects equate to \$850,893 of forecasted project work in the current approved five-year plan.
- High Voltage Protection – That business case will be shut down after 2024 investments, recovering \$1,000,000 in approved spend across 2023 thru 2027. The leased network services and associated safety risks at substation sites requiring high voltage protection packages will be disconnected by the local exchange carrier as part of this move away from TDM based circuits.
- Network Backbone Infrastructure – SONET replacement work is currently forecasted to invest \$6,256,472 in capital network infrastructure from 2023 thru 2027 within the current approved five-year plan, with another \$3,157,035 forecasted in 2028. This would replace 72 SONET nodes across the network that currently leverage TDM methodologies, hardware and equipment.
- \$8,107,365 (harvested forecast dollars from CSNI, HVP & NBI)

VERSION HISTORY

Version	Author	Description	Date
1.0	Shawna Kiesbuy	Initial draft of original business case	3.9.2023

NexGen Control System Networks

BCRT	<i>BCRT Team Member</i>	<i>Has been reviewed by BCRT and meets necessary requirements with suggested changes</i>	<i>4/20/2023</i>
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^[1] “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.”, Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2023	\$2,976,000	\$600,000
2024	\$7,752,000	\$6,376,000
2025	\$3,000,000	\$4,500,000
2026	\$3,000,000	\$3,000,000
2027	\$3,000,000	\$3,000,000
2028	\$3,000,000	\$4,800,000

Project Life Span	<i>6 years</i>
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Initiation
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

NexGen Control System Networks

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?

TDM based products and services are end-of-life, end-of-support and are at the end-of-manufacturing. As vendors are ramping down on the manufacturing and support of TDM based products and services, local exchange carriers and other telecommunication service providers are also removing these services from their own product portfolios, recognizing that these services are no longer viable products to maintain. Local exchange carriers and vendors alike have both issued notices to Avista to sunset these products and services. If we do not address the existing services before they are disconnected or out of support, we risk losing communication network services that carry control and telemetry traffic, critical to our ability to operate our gas and electric systems.

1.2 Discuss the major drivers of the business case.

The telecommunications industry continues to move through its own series of disruptive transformations, much of which is centered around the move from circuit-based networks and TDM technologies to IP, or packet-based networks. As a significant portion of our communication network also leverage TDM technologies, if we do not act faster to implement this new architecture and the move to IP based networks for our control communications, we run a very real risk of not being able to view, manage or control our systems, which could negatively impact real time decisions needed to deliver safe and reliable services to our customers.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

This work is needed to ensure that our workers have reliable data to control our systems. SCADA telemetry data, generation control data, protection circuit communications and capabilities are at risk If this work is not approved/deferred. The loss of remote control and data acquisition also means that personnel could be required to drive out to specific sites to manage, operate and support controls, which removes the efficiencies and real time decisions the company has been used to operating with. By having these communication systems updated through this program, we can increase our productivity by receiving real time data that will allow us to control our systems in real time and increase the safety of our employees.

NexGen Control System Networks

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization. *See link.*

[Avista Strategic Goals](#)

If we do nothing and decide to either de-prioritize and/or not fund this work, all four of the Focus Areas will be impacted, which would directly and indirectly impact the alignment to our values, mission & vision statements:

Our Customers – Our customers could see a negative impact to the reliable delivery of energy when the delivery of telemetry data which gives us situational awareness and control of the systems and devices that serves their energy is not delivered in real time.

Our People – Our employees could see a negative impact in their ability to operate and control the system on a real-time basis, adding safety risks and inefficiencies to normal operating procedures.

Perform - We have built these real time data efficiencies into our daily operations and budgets. Sending crews to man locations without telemetry or control circuits would be cost prohibitive, inefficient and extremely disruptive to existing operations. We would be moving in the wrong direction of progress.

Invent – We are on the back end of the product lifecycle curve with TDM technologies. We must increase our cadence of deployments with current/newer network technologies to keep pace with markets, carriers, suppliers, vendors and other energy companies with whom we have interconnections and service relationships. Otherwise, we risk misalignments, obsolescence and an inability to move data, communicate and control.

NexGen Control System Networks

1.5 Supplemental Information – please **describe** and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹

The carriers we interconnect with to move control and telemetry data across our geographic region have recently issued written statements that they will begin disconnecting services in Q3 2024 and that they have already received regulatory approval to do so. Lumen is the first carrier in this region (and the last across the country) to issue a written disconnect statement and serves the largest number of circuits to be redesigned at 51 Avista circuits.

Additionally, GE has served us with a written email that also provides an end of service, end of manufacturing and end of support date for TDM based equipment that we use on network designs that carry traffic to and from interconnected entities, as well as our own control and telemetry traffic.

For the reasons above, and the risks to business operations, an exceptionally large portion of this programmatic business case is schedule driven.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

We will a) disconnect leased carrier services provisioned over TDM technologies and design solutions that integrate into our existing private utility MPLS network that is served via current and standard internet protocol solutions.

We will also disconnect our own SONET networks provisioned over TDM technologies and design solutions that integrate into our existing private utility MPLS network that is served via current and standard internet protocol solutions.

These two simple statements capture the large body of work to remove TDM technologies from our portfolio, thus removing the risk of misalignments, obsolescence and an inability to move data, communicate and control.

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

NexGen Control System Networks

- 2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).²**

The work in this business case supports and enables our ability to reliably operate our systems, providing remote visibility and telemetry data, as well as remote control capabilities.

According to Avista's form 10-K filed for the fiscal year ending December 31, 2022, the company's top Operational Risks highlight operational impacts related to wildfires, severe weather or natural disasters, incidents related to mechanical breakdowns, blackouts or disruptions of interconnected transmission systems, and even cyber-attacks which disrupt our technology systems. All these risks are monitored, and in some cases, even mitigated via the network communications technologies found in substations, on the distribution lines coming into and out of the substations and the transmission lines related to those same systems. This technology provides the remote visibility to realize a risk and take action when needed.

See the tables below in section 2.3 for MRC savings that will be realized once these leased services are disconnected.

- 2.3 Summarize in the table, and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.**

Offsets	Offset Description	2023	2024	2025	2026	2027
Capital	LightRiver Envision Plus Licensing	(\$54,081)	(\$54,081)	(\$54,081)	(\$54,081)	(\$54,081)
O&M	Carrier MRCs	(\$10,000)	(\$20,000)	(\$20,000)	(\$20,000)	(\$20,000)

- 2.4 Summarize in the table, and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.**

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

NexGen Control System Networks

Offsets	Offset Description	2023	2024	2025	2026	2027
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Do nothing and allow the circuits to be disconnected without capital investment to replace the network capabilities. The risks of not being able to see or control our electric system are too great to consider this alternative.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Success will be measured by the continued, uninterrupted ability to transmit and receive data that allows for remote supervisory control and data acquisition, so that we can make expeditious and real time system operations decisions.

No loss of communications because of carrier disconnects or lack of vendor support is the success metric to be met. Throughout this multi-year initiative, we will continue to work with the carriers and vendors to stay/delay the disconnect of circuits and maintain hardware support in order to deliver uninterrupted communications that enable the operation of our system and the delivery of safe and reliable energy to our customers.

NexGen Control System Networks

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The NCSN SCADA Comms Refresh_01 project has started charging actuals in February of 2023 and is scheduled to complete in January of 2024. That is the first design iteration project, intended to deliver design standards and implement those designs at two locations. Future projects will be forecasted to replace the TDM leased circuits at the remaining 51 sites, sequenced based on the risk of losing communications and the impact to the business if communications are lost. A timeline and/or burndown chart will be created and maintained to show progress towards the goal of removing all leased carrier TDM circuits. Similar metrics will be created in future projects as we begin to remove TDM based SONET services from our private network and replace with current MPLS based networks.

No loss of communications because of carrier disconnects or lack of vendor support is the success metric to be met. Throughout this initiative, we will continue to work with the carriers and vendors to delay the disconnect of circuits and maintain hardware support in order to deliver uninterrupted communications that enable the operations of our system and the delivery of safe and reliable energy to our customers.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

Steering Committee members are invaluable to the business case and individual projects, and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to outlined project deliverables, 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 documents. For this NexGen Control Systems Network business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS and the Business Case Owner.

The NexGen Control 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

NexGen Control System 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 ET PMO. The project queue will be reviewed periodically to plan and sequence work to the levels of funding allocation received against the risks being mitigated.

Project Steering Committee

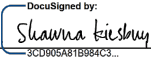
Project Steering Committees function as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible for providing guidance and making 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.

3. APPROVAL AND AUTHORIZATION

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

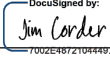
Signature:  _____ Date: May-15-2023 | 1:45 PM PDT

Print Name: Shawna Kiesbuy

Title: Sr. Manager, Network Engineering

Role: Business Case Owner

NexGen Control System Networks

Signature:  Date: May-16-2023 | 10:07 AM PDT
Print Name: Jim Corder
Title: Director, Infrastructure Technology
Role: Business Case Sponsor

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

Technology Failed Assets

EXECUTIVE SUMMARY

The Technology Failed Assets Program¹ Business Case sponsors the tools and systems used by the technology teams to support business applications. Technology assets enable automated and necessary business processes in a modern innovative world. 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. Such failures even have the potential to disrupt service to customers. The ability to replace failed assets in a timely manner will result in decreased downtime potential for customers.

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 functionality. They can include, but not be limited to laptops, mobile phones 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. Additional impacts to budget allocation in this business case are 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 and is requested at \$660,000 per year. 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 and a spare technology inventory 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
1.0	Mike Beil	Initial draft of original business case	07/2019
2.0	Mike Beil	BCJN 2.0 Revised	07/2020
3.0	Kaitlyn Richardson	BCJN 3.0 Revised	07/2022
4.0	Kaitlyn Richardson	BCJN 4.0 Revised	04/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements with suggested changes	4/25/2023

¹ “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.”, Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Technology Failed Assets

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$660,000	\$660,000
2025	\$660,000	\$660,000
2026	\$660,000	\$660,000
2027	\$660,000	\$660,000
2028	\$660,000	\$660,000

Project Life Span	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Kaitlyn Richardson Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Failed Plant & Operations

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Technology assets enable automated and necessary business processes in a modern innovative approach. 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. Such failures even have the potential to disrupt service to customers. The ability to replace failed assets in a timely manner will result in decreased downtime potential for customers.

1.2 Discuss the major drivers of the business case.

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 functionality and reduce the downtime caused by the failure. The reason that the

Technology Failed Assets

technology investment under the Technology Failed Asset 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. Each investment under this business case program allows Avista to deliver electric and gas services to our customers.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

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. This funding allows for the maintaining of a spares inventory. As that level decreases, having the budget to order replace deployed assets is needed in a quick manner.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization. See link.

[Avista Strategic Goals](#)

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. The investment aligns with the focus areas of "our people" and "perform". This program allows for the ability to quickly restore the functionality of a failed technology device that is causing downtime and interrupting our employee's ability to work. This program also aligns with our value of being "collaborative". By having the technology functionality working properly, our employees are able to collaborate together and come up with innovative solutions.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

Funding requests are made based on average failure rates across the categories listed below. As it's not possible to completely predict when an asset will fail, funding requirements could change and may result in an increase or decrease in annual funding amounts. The table below represents the annual amount proposed for 2023 based on 2022 failures.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Technology Failed Assets

Category	2022 Failure Count	Avg Cost	Fulfillment
AV Blanket	2	\$ 6,857	\$ 13,713
Comm Devices	3	\$ 19,085	\$ 57,255
FAN Blanket	6	\$ 14,663	\$ 87,975
Mobile Devices	135	\$ 1,062	\$ 143,388
Monitors	6	\$ 2,280	\$ 13,678
Network Devices	17	\$ 6,383	\$ 108,509
Personal Computer	10	\$ 7,463	\$ 74,631
Printers	7	\$ 8,274	\$ 57,920
Repeaters	15	\$ 5,929	\$ 88,939
Storage Devices	2	\$ 6,877	\$ 13,753
YTD Fulfillment:			\$ 659,761

Option	Capital Cost	Start	Complete
Funding based on previous year failure rates (Recommended)	\$3,300,000	01/2024	12/2028
Request funding when needed	\$0	01/2024	12/2028
Funding based on 5% failure rates of all technology assets	\$6,225,000	01/2024	12/2028

Technology Failed Assets

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

This program includes a range of solutions from computers to hand-held radios carried by field staff, to printers in remote offices, to networking equipment. Sometimes technology assets fail prior to being refreshed. Any failed asset can cause downtime for an employee or system resulting in significant disruption to daily operations across the service territory depending on where and to what asset the failure occurred. To support these types of unplanned failures, the Technology Failed Assets program was established and consists of technology assets meant for rapid deployment as failures occur and when repairs are not feasible. A technology inventory is maintained to quickly restore business functionality. This program provides benefits to customers by providing a technology inventory to quickly restore functionality and reduce the downtime caused by the failure. This business case is planning for laptop, mobile phone, printer, field area network, audio visual devices, and monitor replacements when the assets fail, just to name a few.

2.2 Describe and provide reference to **CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).**³

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.

An example of some assets that Avista needs to replace these technology assets for cost avoidance related to significant risk downtime related to failures:

- Printers
- Monitors
- Mobile phones
- Personal computers
- Field Area network devices
- Other devices

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Technology Failed Assets

2.3 Summarize in the table, and describe below the DIRECT offsets⁴ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	N/A	N/A	N/A	N/A	N/A
O&M	N/A	N/A	N/A	N/A	N/A	N/A

There are no direct offsets in this business case, though the ability to replace failed assets in a timely manner will prevent extended impacts to employee productivity. Therefore, not funding a failed asset replacement inventory would result in an increase to O&M costs.

2.4 Summarize in the table, and describe below the INDIRECT offsets⁵ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	N/A	N/A	N/A	N/A	N/A
O&M	Operating Expenses	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M

Investments in these technology asset replacements provide indirect savings to our customers by cost avoidance related to downtime issues and loss of productivity due to potentially implementing manual business processes. Without spare inventory on hand, this would increase the amount of time to resolve these breakdown issues, thereby reducing the efficiency of employees as well as our infrastructure systems. The amount of indirect savings would depend on the site and associated business process systems impacted by failure. Current trends indicate that the Company is running assets longer than recommended.

Indirect savings related to operating expenses could range from \$100k - \$10M a year representing at least 1 full-time employee up to 100 full-time employees needed to implement manual processes. This is also assuming we do not replace these assets when failed. This is a high-level estimate that the Company does not have a way to track.

⁴ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁵ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Technology Failed Assets

- 2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.**

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.

- 2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).**

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.

- 2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.**

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.

- 2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.**

The Technology Failed Assets Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Technology Failed Assets

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.

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.

Technology Failed Assets

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the *Technology Failed Assets 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: May-09-2023 | 12:37 PM PDT
DocuSigned by: CD813F49C5C9403...
 Print Name: Kaitlyn Richardson
 Title: Mgr. IT Engr Operations
 Role: Business Case Owner

Signature:  Date: May-10-2023 | 4:11 PM PDT
DocuSigned by: 7002E4872104449...
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

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

Atlas

EXECUTIVE SUMMARY

Atlas is a multi-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 an 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

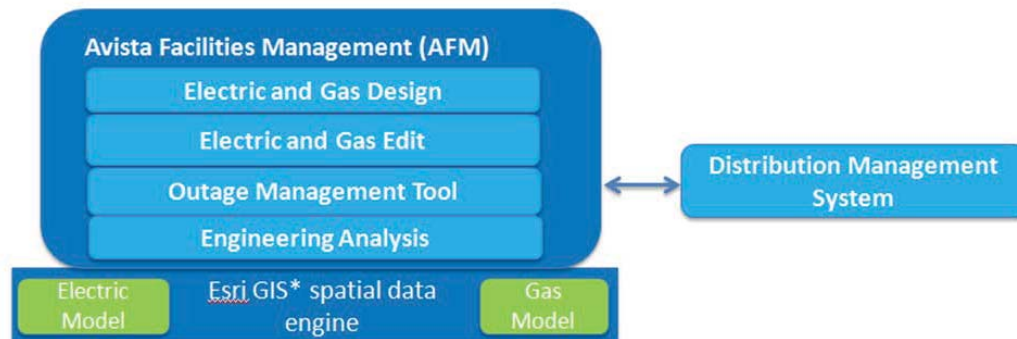
Justification for system replacement is based on comprehensive assessments of AFM technologies, processes and functions that were performed in 2015 and 2019 by third-party consultants as part of the project planning process. The details of the assessments are available in the following supporting documents:

- 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

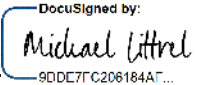
The Steering Committee for each project in the Atlas Program will be made up of stakeholders from across the functional business units and Enterprise Technology.

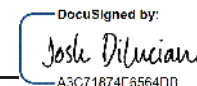
3.3 How will decision-making, prioritization, and change requests be documented and monitored

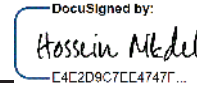
Status reports to the steering committees will be used as the official review and approval process for prioritization and change requests. Risks, issues and change requests will be documented in project logs and kept as artifacts of each project within Enterprise Technology's project management software 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: 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: A3C71874F6564DD...
 Print Name: Josh DiLuciano
 Title: Director of Electric Engineering
 Role: Business Case Sponsor

Signature:  Date: Jul-07-2021 | 5:46 PM PDT
DocuSigned by: E4E2D9C7EE4747F...
 Print Name: Hossein Nikdel
 Title: Director of Applications and Systems Planning
 Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

2022-2023 CAPITAL PROJECT

SAVINGS AND PRODUCTIVITY REPORTING FORM

1. **Business Case Name:** Atlas

2. **Business Case Owner:** Mike Littrel

3. **Director Responsible:** Josh DiLuciano/Hossein Nikdel

4. **Direct Savings** - Description of Estimated Direct Savings Resulting from this Business Case (please describe and quantify any hard cost savings Avista's customers will gain due to the work under this project. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other):

No direct savings identified for this business case.

Quantified direct savings:

2022	2023	Lifetime

5. **Indirect Savings** - Description of Estimated Indirect Savings and/or Productivity Gains Resulting from this Project (please describe and quantify any indirect cost savings or productivity gains Avista's customers will gain from this project). For example, deploying this capital investment reduces the future need to hire X number of employees. For a new substation or transmission line, are there efficiencies to be gained from less line losses. Or, if we don't do this project now, it may cost more in the future (cost avoidance).

Atlas is a multi-year program which is currently scheduled to run through 2026 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 are approaching 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, 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.

Modernizing Avista's GIS and deploying mobile GIS applications is anticipated to provide the following indirect labor savings. These high-level estimated savings are based on a review of current and previous GIS projects completed in the Atlas Business case with a uniform efficiency value applied based on the types of applications deployed. This method was used to forecast anticipated savings for future projects because specific projects for 2022 and 2023 have not yet been approved. The following are high-level estimates and the Company does not have a way to track if these benefits will be realized.

Basic Workplace Technology

EXECUTIVE SUMMARY

The Basic Workplace Technology (BWT) Program¹ Business Case sponsors the tools and systems used by the technology teams to support business application. The Basic Workplace Technology business case delivers essential technology hardware and software productivity tools that end users need to perform day-to-day job functions. Generally, this includes personal computers, laptops, tablets, print/copy/scan systems, digital displays, monitors, mobile phones, and basic software productivity tools.

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. Definitions further explaining these functions are identified below in section 1.2.

To ensure readiness for delivery, BWT maintains a reasonable inventory to meet business value timeframes. Inventory levels and demand for delivery determine the overall performance and capacity standards under the established budget allocations. Equipment purchases are realized through regular review of existing inventory, historical trends, reorder points, and planned requests. 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.

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 business case is structured in such a way to handle both planned and unplanned short-cycle business demand to deliver basic technology items to all job functions and office areas.

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.

Absent the Basic Workplace Technology deliverables, production is significantly impacted and becomes a blocking factor, as some 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 requirements in a customer call center without a personal computer and telephone. Thus, the ability to leverage productivity tools distributed through BWT directly impacts the Company's ability to deliver reliable and efficient service to customers.

¹ “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.”, Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Basic Workplace Technology

VERSION HISTORY

Version	Author	Description	Date
1.0	Walter Roys	Initial draft of original business case	07/2019
2.0	Walter Roys		07/2020
3.0	Dave Husted		07/2022
4.0	Dave Husted		04/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements	4/21/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$1,440,000	\$1,440,000
2025	\$1,440,000	\$1,440,000
2026	\$1,440,000	\$1,440,000
2027	\$1,440,000	\$1,440,000
2028	\$1,440,000	\$1,440,000

Project Life Span	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Dave Husted Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

BWT ensures that workers have the reliable, current, and necessary technology tools they need to fulfill job duties. Technology enables workers to perform and communicate with greater efficiency and effectiveness. Without these tools, workers' productivity would decrease significantly, which would have an impact on their ability to support customers.

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

Basic Workplace Technology

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.

1.2 Discuss the major drivers of the business case.

The Basic Workplace Technology Business case is to respond to technology requests that allow workers to meet performance expectations 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*: A request from leadership to deliver workspace technology for a new employee. The business case averages delivery on 150 Employee Onboard requests annually.
- *Contractor Onboard*: A request from leadership to deliver workplace technology for a new contractor. The business case averages delivery on 160 Contractor Onboard requests annually.
- *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. The business case averages delivery on 75 Job Function Change requests annually.
- *Off-Cycle Exchange*: A request from leadership to exchange in service workplace technology, in a timeframe that does not align with a technology refresh cycle. The business case averages delivery on 45 Off-Cycle Exchange requests annually.
- *General Additions*: General requests from leadership for additional workplace technology. The business case averages delivery on 260 General Additions requests annually.

Basic Workplace Technology

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

Assuring that each technology request is met within the expected timeframe for job additions or changes allows Avista's workforce to continue to provide gas and electric service to our customers across all our service territory. These timeframes for delivery are discovered by a combination of the type of request and an agreed upon completion date between the requestor and Coordinator team member. Priority of the request and team capacity are also considered as timeframes are determined.

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 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization. *See link.*

[Avista Strategic Goals](#)

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."

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 – please **describe and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²**

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.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Basic Workplace Technology

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

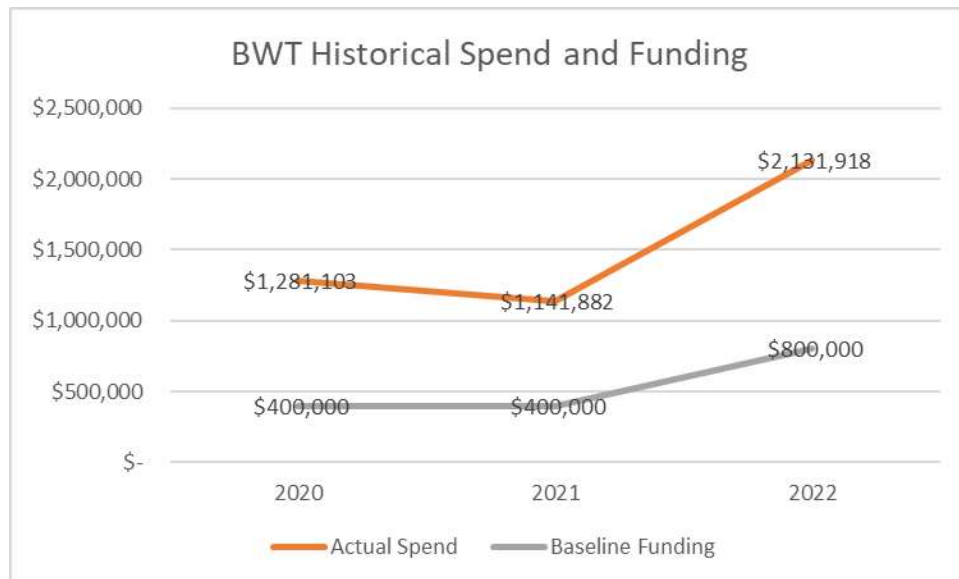
2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

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; 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 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 onboarding, 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.

Historically, the business case has exceeded its initial capital funding level, referenced in the table below. The spending trend for 2023 predicts a forecast near \$1,900,000. A greater initial funding level will ensure that the business case can continue fulfilling requests throughout the year without the administrative cost and delays occurred when making additional funding requests.



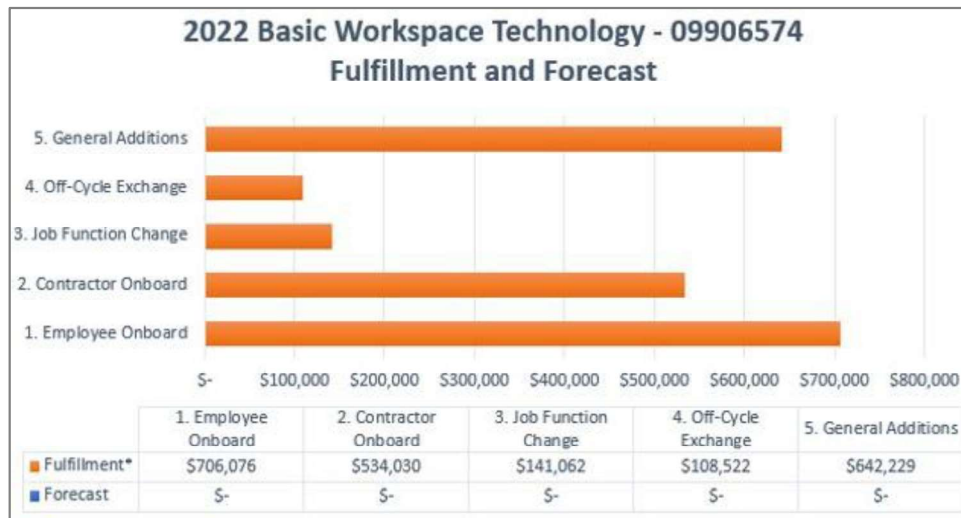
Option	Capital Cost	Start	Complete
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Basic Workplace Technology

Recommended Solution	\$7,200,000	01/2024	12/2028
[Alternative #1] – 80% Funding Level	\$5,760,000	01/2024	12/2028
[Alternative #2] – 70% Funding Level	\$5,040,000	01/2024	12/2028

- 2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).³**

Due to the nature of unpredictability of job role additions or changes, a historical trend analyses provided the estimate required to fulfill these orders based on year-to-date requests fulfilled and those forecasted.



- 2.3 Summarize in the table, and describe below the DIRECT offsets⁴ or savings (Capital and O&M) that result by undertaking this investment.**

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	N/A	N/A	N/A	N/A	N/A
O&M	N/A	N/A	N/A	N/A	N/A	N/A

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

⁴ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Basic Workplace Technology

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 services to our customers.

2.4 Summarize in the table, and describe below the INDIRECT offsets⁵ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	N/A	N/A	N/A	N/A	N/A
O&M	Operating Expenses	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M

The basic technology tools that workers leverage daily are key to their performance and success. There was a time, of course, when the conveniences of technology productivity tools were not mainstream. As technology has been introduced and refined over the years, the value and benefit are certainly realized but perhaps taken for granted. In the current work environment, expectations and performance of workers are measured with the underlying assumption that they have technology at their side. Absent these tools, workers would flounder.

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.

New inventory levels are maintained to ensure that recipients are provided with technology equipment in a timely fashion. When an employee leaves their role a technology review and assessment is performed. Used technology that has not exceeded its useful lifespan is retained as spare inventory. Spare levels are maintained and used primarily for like-replacement in break/fix scenarios. If spare inventory levels exceed our thresholds, they will be issued to new employees rather than purchasing new equipment. Used equipment that no longer has useful value is taken out of circulation and decommissioned.

Issuing equipment beyond its useful lifespan introduces the risk of productivity reduction by using inferior devices that are more prone to breakdown. The stability and reliability gained from the issuance of new equipment is realized as both indirect savings and productivity gain.

Roughly 1,500 people leverage BWT in their day-to-day job duties. Without proper technological equipment, productivity would be severely impacted, and staffing levels would need to significantly increase. The Company does not have a method to quantify such a broad indirect saving.

⁵ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Basic Workplace Technology

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 services to our customers.

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.

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

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.

ALTERNATIVE 1:

- 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 2:

- Alternative #2 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. If these additional funds are not fulfilled, the business case will not be able to deliver necessary technology items to workers, thereby rendering them unable to work effectively and efficiently.

ALTERNATIVE 3:

- Alternative #3 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. If these additional funds are not fulfilled, the business case will not be able to deliver necessary technology items to workers, thereby rendering them unable to work effectively and efficiently.

Basic Workplace Technology

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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.

Each investment under this business case program allows Avista to deliver electric and gas services to our customers.

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.

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.

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.

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

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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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.

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

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.

3. APPROVAL AND AUTHORIZATION

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.

Basic Workplace Technology

DocuSigned by:
 Signature: *Dave Husted* Date: May-09-2023 | 12:53 PM PDT
798843B6996642A...
 Print Name: Dave Husted
 Title: Technology Services Manager
 Role: Business Case Owner

DocuSigned by:
 Signature: *Jim Corder* Date: May-10-2023 | 2:36 PM PDT
7002E4872104449...
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

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

Data Center Compute and Storage

EXECUTIVE SUMMARY

The Data Center Compute and Storage Program¹ Business Case sponsors the tools and systems used by the technology teams to support business application hosting, data storage, and disaster recovery. Business processes require technology solutions to meet the ever-increasing need for data and information to automate business processes and support decision making by utility employees. 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 and is 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 and storage 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 and reliability. Solution costs can also vary depending on the magnitude of the technology footprint or vendor licensing model(s). As an enabling technology, data center processing and storage investment benefits all Avista customers. 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 needed 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, system unavailability and risk of cyber-attack.

VERSION HISTORY

Version	Author	Description	Date
1.0	Walter Roys	Initial BCJN Draft	6/2017
2.0	Walter Roys	Revision of BCJN to new template	7/2020
3.0	Walter Roys	Revision of BCJN	8/2022
4.0	Walter Roys	Revision of BCJN to new template	4/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements with suggested changes	5/1/2023

¹ “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.”, Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Data Center Compute and Storage

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$5,159,903	\$5,159,903
2025	\$2,383,702	\$2,383,702
2026	\$3,937,904	\$3,937,904
2027	\$3,296,702	\$3,296,702
2028	\$2,772,801	\$2,772,801

Project Life Span	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

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

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.² 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, to maintain security compliance, interoperability, and compatibility with other technologies. Additionally, the Data Center Compute and Storage business case is essential to enabling the capabilities that align with our strategic goals of putting our customers' interests at the forefront of our decisions.

² Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Data Center Compute and Storage

1.2 Discuss the major drivers of the business case.

The Data Center Compute and Storage Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps or changes in business requirements 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.

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 safe and reliable 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 if deferred or risks being mitigated by the request.

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 processes. Sustaining automated business processes by replacing automation with workforce would increase labor expense, and delay response times to meet customer needs.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization.

Investments under this business case are to maintain performance and capacity standards in each respective data center compute and storage technology. For example, when the product manufacturer terminates maintenance and support for specific devices or solutions, an asset therefore becomes incompatible with other advancing technologies. This introduces the risk of cyber attack and this business case will change or upgrade the asset.

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.

Data Center Compute and Storage

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.³

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>

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>

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The data center compute and storage technology systems provide the infrastructure foundation for basically all automated business processes.

The recommended solution is to 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.

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

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Data Center Compute and Storage

Investment in these technologies can increase or decrease O&M expenses. These can include licensing increases from time to time, or decreases in workload for O&M resources. 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 direct 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.

Option	Capital Cost	Start	Complete
Recommended: Address 100% obsolete products and capacity constraints (recommended)	\$17,551,012	01 2024	12 2028
Alternative #1: Address 75% obsolete products and capacity constraints	\$13,163,259	01 2024	12 2028
Alternative #2 Address 40% obsolete products and capacity constraints	\$7,020,405	01 2024	12 2028

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).⁴

The funds request was based on a calculation of the performance and capacity 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. These reviews can result in calling for additional investment under this program from time to time

⁴ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Data Center Compute and Storage

for technology either falling behind technology lifecycles or predetermined performance and reliability standards.

The Business Case Governance group, consisting of Technology Domain Architects and ET Management and Project Management Office, maintains technology roadmaps to inform the Business Case of investment demand. Investment 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.

2.3 Summarize in the table, and describe below the DIRECT offsets⁵ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$2,674,000	N/A	\$1,424,000	N/A	N/A
O&M		\$152K	\$152K	\$350K	\$350K	\$350K

The Capital offset of \$2,674,000 is for Corporate Storage end of life refresh 2024.

The Capital offset of \$1,424,000 is for Corporate Storage end of life refresh 2026.

The O&M offset is for Corporate Storage extended support required by not refreshing the end of life storage.

2.4 Summarize in the table, and describe below the INDIRECT offsets⁶ (Capital and O&M) that result by undertaking this investment.

In addition, when data center devices break down it can result in the inability of employees to access essential technology systems such as our meter data, customer billing and our mapping data. This can result in a productivity reduction across all areas of the business. Savings related to avoiding these down time issues could range from \$100k -\$10M a year representing at least 1 full time employee up to 100 full time employees needed to implement manual processes.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		N/A	N/A	N/A	N/A	N/A
O&M		\$50k	\$50k	\$50k	\$50k	\$50k

⁵ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁶ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Data Center Compute and Storage

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

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.

Alternative 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.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

Data Center Compute and Storage

The **Data Center Compute & Storage 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 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.

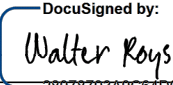
The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings,


Data Center Compute and Storage

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.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Data Center Compute and Storage 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: Walter Roys Date: May-09-2023 | 2:13 PM PDT
 Print Name: Walter Roys
 Title: Manager System Engineering
 Role: Business Case Owner

Signature:  DocuSigned by: Jim Corder Date: May-10-2023 | 2:32 PM PDT
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

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

Endpoint Compute and Productivity Systems

EXECUTIVE SUMMARY

The Endpoint Compute and Productivity Program¹ Business Case sponsors the tools and systems used by the technology teams to support business application automation. 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.

The primary driver of this 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. 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 for all endpoints, 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 cyber-attack risk, and 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.

¹ “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.”, Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Endpoint Compute and Productivity Systems

VERSION HISTORY

Version	Author	Description	Date
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
3.0	Walter Roys	Revision of BCJN	8/2022
4.0	Walter Roys	Revision of BCJN to new template	4/2023
<i>BCRT</i>	<i>BCRT Team Member</i>	<i>Has been reviewed by BCRT and meets necessary requirements with suggested changes</i>	<i>5/1/2023</i>

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$4,673,907	\$4,673,907
2025	\$7,153,029	\$7,153,029
2026	\$4,034,573	\$4,034,573
2027	\$3,769,736	\$3,769,736
2028	\$8,277,442	\$8,277,442

Project Life Span	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

Endpoint Compute and Productivity Systems

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?

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.² 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.

The Endpoint Compute and Productivity Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps or changes in business requirements 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.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

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.

² Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Endpoint Compute and Productivity Systems

1.4 Discuss how the proposed investment, whether project or program, aligns with the 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.

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 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 – please **describe and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.³**

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>

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>

Investments under this business case are to maintain performance and capacity standards in each respective endpoint compute and productivity technology. For example, when the product

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Endpoint Compute and Productivity Systems

manufacturer terminates maintenance and support for specific devices or solutions, an asset therefore becomes incompatible with other advancing technologies. This introduces the risk of cyber-attack and this business case will change or upgrade the asset.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

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.

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.

The funding requested under the Endpoint Compute and Productivity Business Case will be invested in, but not limited to, 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
- Mobile computing systems
- Battery management systems

Investment in these technologies can increase or decrease O&M expenses. These can include licensing increases from time to time or decreases in workload for O&M resources. 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 direct 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.

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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.

Option	Capital Cost	Start	Complete
Recommended Solution - Address 100% of obsolete products and capacity constraints (recommended)	\$28M	01 2024	12 2028
Alternative #1 – Address 75% obsolete products and capacity constraints	\$21M	01 2024	12 2028
Alternative #2 - Address 50% obsolete products and capacity constraints	\$14M	01 2024	12 2028

2.2 Describe and provide reference to **CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).⁴**

The funds request was based on a calculation of the performance and capacity 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. 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.

The Business Case Governance group, consisting of Technology Domain Architects and ET Management and Project Management Office, maintains technology roadmaps to inform the Business Case of investment demand. Investment 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

⁴ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Endpoint Compute and Productivity Systems

limited to vendor-driven obsolescence, compute capacity and storage, historical project costs for similar type projects, etc.

2.3 Summarize in the table, and describe below the DIRECT offsets⁵ or savings (Capital and O&M) that result by undertaking this investment.

There are no direct offsets of this Business Case.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A
O&M		\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A

2.4 Summarize in the table, and describe below the INDIRECT offsets⁶ (Capital and O&M) that result by undertaking this investment.

When endpoint devices break down it can result in the inability of an employee to access essential technology systems such as our meter data, customer billing and our mapping data. This can result in a productivity reduction across all areas of the business. Savings related to avoiding these down time issues could range from \$100k -\$10M a year representing at least 1 full time employee up to 100 full time employees needed to implement manual processes.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A
O&M		\$ N/A	\$ N/A	\$ N/A	\$ N/A	\$ N/A

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Address 100% of obsolete products and capacity constraints

This option assumes the assets would be replaced upon end of life and would 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

⁵ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁶ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

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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.

Alternative 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.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

The Endpoint Compute & Productivity 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

Endpoint Compute and Productivity Systems

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 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.

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

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the *Endpoint Compute and 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.

DocuSigned by:
 Signature: Walter Roys Date: May-10-2023 | 8:42 AM PDT
28978793A9C64D0...
 Print Name: Walter Roys
 Title: Sr Manager System Engineering
 Role: Business Case Owner

DocuSigned by:
 Signature: Jim Corder Date: May-10-2023 | 5:21 PM PDT
7002E4872104449...
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

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

Energy Delivery Modernization and Operational Efficiency

EXECUTIVE SUMMARY

Energy Delivery Modernization and Operational Efficiency (EDMOE) program^[1] as a business case supports both existing and new technologies leveraged by the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Distribution System 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 \$45.7M 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: Metering solutions including Openway Riva our predominant Automated Metering solution, GIS our Geospatial Information System, Maximo our Enterprise Work and Asset Management System, DIMP our Distribution Integrity Management Plan tool, 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 2024-2028 will be focused on the systems and capabilities detailed below.

^[1] “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.,” Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

VERSION HISTORY

Version	Author	Description	Date
1.0	Michael Mudge	Initial version	07/21/2018
2.0	Michael Mudge	Updated Template	06/29/2020

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3.0	Michael Mudge	Updated Information	06/30/2021
4.0	Michael Mudge	Updated Information for 2023-2027 timeline	7/7/2022
5.0	Michael Mudge	Updated Information for 2024-2028 timeline and merged the remaining Atlas items into the business case	3/31/2023
<i>BCRT</i>	<i>BCRT Team Member</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$5,406,384	\$5,400,000
2025	\$11,032,556	\$11,000,000
2026	\$8,410,372	\$7,900,000
2027	\$6,101,186	\$5,600,000
2028	\$14,020,339	\$15,000,000

Project Life Span	On-Going Program
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

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

The Energy Delivery and Shared Services (Fleet, Flight, Facilities, Supply Chain) business area utilizes a suite of technologies and applications to execute ongoing business processes better and more efficiently. 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

Energy Delivery Modernization and Operational Efficiency

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 Atlas and Mobility in the Field projects which are modernizing the Esri based Geographic Information System (GIS) infrastructure and digitizing work processes. Other times these changes may require new systems altogether with new or different capabilities. Regardless, these changes require technology resources (people) that are versed both in the changing business processes and the systems being leveraged to make the changes.

Additionally, this suite of technologies, whether the applications themselves or the technologies supporting them (databases, operating systems, etc.) 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.

Finally, this business case additionally supports the capital purchases of licensing necessary for the commercial software purchased to support the energy delivery business areas.

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, Distribution System 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.

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:

Energy Delivery Modernization and Operational Efficiency

- Geospatial platform environment - ArcGIS solution(s) – Esri
 - Enhancements to existing applications
 - Transition to the Utility Network
- 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) – Hitachi/Service Suite
- Distribution Integrity Management Plan (DIMP) – JANA DIMP
- Fleet Asset & Work Order Management – FASuite solution(s) – Asset Works
- Crew Planning & Scheduling - Crew Manager solution(s) - Arcos
- System Operations Outage Management– CROW – Equinox
- ADMS – Advanced Distribution Management System - GE
- Metering solution(s)
 - 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.

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, Distribution System 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.

In addition to modernizing and enhancing traditional desktop applications, additional mobile applications and digital field work processes will provide field staff with applications for near real-time editing and data collection. For example, a 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.

Although performance and capacity are the key driver, this business case where necessary also supports the other major drivers listed.

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1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

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 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization. *See link.*

[Avista Strategic Goals](#)

Avista has 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 and workflows to do their job. The strategy this work most aligns with is Perform.

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, and in 2025 we will be additionally supporting an Advanced Distribution 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.

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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 Atlas project is strategically replacing 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 engineering and analysis applications and well as the electric and gas outage management applications. The AFM applications and data model have been used for nearly two decades and are approaching technology obsolescence. 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 networks 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.

1.5 Supplemental Information – please **describe and **summarize** the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹**

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 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

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

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Delivery and Shared Services (ED) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher costs because of the deferment of upgrades and enhancements, etc.

Investment prudence is reviewed by the ED governance 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 Project 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 Project Steering Committee oversees scope, schedule and budget within their respective programs and projects and informs 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. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

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, Distribution System Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering.

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- 2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).²**

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, 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.

- 2.3 Summarize in the table and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.**

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	\$	\$	\$	\$	\$
O&M	Maximo Support	\$100K	\$	\$	\$	\$

EDMOE Direct Savings - The Maximo Upgrade project is being performed in part to avoid Extended Support costs. The Extended Support costs are approximately \$100K/year.

- 2.4 Summarize in the table and describe below the INDIRECT offsets (Capital and O&M) that result by undertaking this investment.**

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	\$	\$	\$	\$	\$

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Energy Delivery Modernization and Operational Efficiency

O&M	New DIMP Application	\$200k	\$200k	\$200k	\$200k	\$200k
O&M	GIS Enhancements	\$212.5K	\$212.5K	\$212.5K	\$212.5K	\$212.5K
O&M	Maximo Enhancements	\$425K	\$425K	\$425K	\$425K	\$425K
O&M	AMI Enhancements	\$143K	\$143K	\$143K	\$143K	\$143K
O&M	Metering Head End Upgrades	\$23K	\$23K	\$23K	\$23K	\$23K
O&M	AMI System Reliability	\$1.0M	\$1.0M	\$1.0M	\$1.0M	\$1.0M
O&M	Mobility in the Field	\$239K	\$239K	\$239K	\$239K	\$239K
O&M	Atlas Project	\$425K	\$425K	\$425K	\$425K	\$425K

EDMOE Indirect Savings - 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, Distribution system 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. 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 to license and implement a new Distribution Integrity Management Plan-(DIMP) 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 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 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.

The new DIMP solution provides the following benefits:

- Additional transparency/clarity to Avista's gas integrity investment decision making process.
- Adds probabilistic modeling into the gas system and addresses whether the right amount of capital is being employed in the business unit and helps identify the higher risk, more immediate maintenance targets.
- Promotes capital efficiency in terms of obtaining the most stakeholder value for each dollar spent by the company.

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- Creates language commonality, that can be used across business units, incorporating a risk-based approach, to better understand and determine investment priorities.
- Improves line of sight between business units and strategic objectives.

Currently, the implementation of DIMP is expected to result in a \$200K annual reduction in risk profile beginning in 2023.

Enhancements to Avista's GIS applications is anticipated to provide the following indirect labor savings (This is separate and unique from those benefits achieved under the Atlas Program):

GIS Enhancements Annual Indirect Offset Potential

Estimated Number of Users 200
Estimated Efficiency per User 5 minutes per day
Estimated Usage Days per year 200
Standard Hourly Labor Rate \$85.00
Estimated Percent of Users in WA 75%
Estimated Annual Indirect Labor Offset \$212,500

Maximo Enhancements Annual Indirect Offset Potential

Estimated Number of Users 400
Estimated Efficiency per User 5 minutes per day
Estimated Usage Days per year 200
Standard Hourly Labor Rate \$85.00
Estimated Percent of Users in WA 75%
Estimated Annual Indirect Labor Offset \$425,000

AMI Enhancements Annual Indirect Offset Potential

Estimated Number of Users 60
Estimated Efficiency per User 15 minutes per day
Estimated Usage Days per year 150
Standard Hourly Labor Rate \$85.00
Estimated Percent of Users in WA 75%
Estimated Annual Indirect Labor Offset \$143,437

AMI, FCS and MV90 Upgrades. These are meter head end solutions meaning they collect the reads from all the meters and distribute them to the billing solution. From time to time these solutions require updates to keep them in-line with vendor roadmaps and to keep them secure and stable (operational) on newer technologies

Energy Delivery Modernization and Operational Efficiency

(Database, Operating Systems, Hardware). Instability of these systems can take days to resolve and require resources from multiple disciplines including business analysts, technical analysts, DBA's, and Central Systems engineers.

Meter Head End Upgrades Annual Indirect Offset Potential

Estimated Number of Users 5
 Estimated Efficiency per User 480 minutes per day
 Estimated Usage Days per year 93 faults per system
 Standard Hourly Labor Rate \$85.00
 Estimated Percent of Users in WA 75%
 Estimated Annual Indirect Labor Offset \$22,950

Further, if these solutions were to become unavailable for longer periods, billing tasks would require extensive manual intervention and put at risk the timely billing of customers and result at minimum in substantial estimated billing. The AMI Riva solution supports over 400,000 customers and process over \$2M billed daily. The MV90 solution, for our commercial customers, supports 208 customers with over \$2.3M billed daily. The FCS solution currently supports approx. 158,000 customers and processes \$490K daily.

Total Annual Indirect Labor Offset: \$1,003,887

Modernizing Avista's GIS platform under the Atlas project and deploying mobile GIS applications under the Mobility in the Field project is anticipated to provide the following indirect labor savings. The estimated savings are based on a review a of current and previous GIS projects completed in the Atlas Business case with a uniform efficiency value applied based on the types of applications deployed.

Mobility - GIS Mobile Applications Annual Indirect Offset Potential

Estimated Number of Users	75
Estimated Efficiency per User	15 minutes per day
Estimated Usage Days per year	200
Standard Hourly Labor Rate	\$85.00
Estimated Percent of Users in WA	75%
Estimated Annual Indirect Labor Offset	\$239,063

Atlas - GIS Modernization Annual Indirect Offset Potential

Estimated Number of Users	200
Estimated Efficiency per User	10 minutes per day

Energy Delivery Modernization and Operational Efficiency

Estimated Usage Days per year	200
Standard Hourly Labor Rate	\$85.00
Estimated Percent of Users in WA	75%
Estimated Annual Indirect Labor Offset	\$425,000

Energy Delivery Modernization and Operational Efficiency

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1: Avista could choose to stop upgrading the solutions and run them to the end of life of the current version. This would reduce the funding needs to \$13.6M dollars. The risk of this approach is that the vendors typically require upgrades a minimum of every three years to keep them current with their roadmaps. Running beyond three years would mean running on an unsupported solution. This is true for application support from the vendors and is often in line with the underlying technologies (operating systems, databases, switches, security appliances, etc....). Running on unsupported versions means Avista will not be able to receive patching from the application vendors. Following this approach would create both operational risk as well as cybersecurity risk for each of the unsupported technologies. As Avista relies on these technologies to support Energy Delivery operations, (both gas and electric), these operations would be at high risk of moving to manual operations

Alternative 2: Avista could choose to no longer support additional operational efficiency work on the applications that support Energy Delivery operations. These modern Commercial off the shelf (COTS) applications are highly configurable to support the operational challenges of delivering energy to our customers. Avista employs and/or contracts with developers to configure these solutions to meet these challenges. An alternative to this approach would be to no longer make these changes, locking in the solutions to a status quo. One risk with this approach is, Avista no longer has the ability to leverage the high initial investment made in these solutions to find new efficiencies. Attempts to leverage the solutions to 'do more with less' will not be possible. Another risk is requests to modify the solutions to meet regulatory or compliance needs will also go unanswered and will need to be solutioned outside the applications. A third risk is that it is these same employees and/or contractors that perform the upgrades and thus would not be available for that work. This risk is why the cost of this alternative is \$15-\$20M instead of only \$9M as alternative resources, (likely professional service contractors unfamiliar with our implemented solutions), would need to be leveraged to perform timely upgrades for the solutions.

Alternative 3: N/A

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Energy Delivery Modernization and Operational Efficiency

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, 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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

Projects/Programs/Licenses	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>
ESRI ELA (Licenses)		Q1/2025			Q1/2028
Schneider ELA (Licenses)		Q1/2025			Q1/2028
GE ADMS (Licenses)					Q1/2028
GIS Enhancements	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2025	Q1/2027- Q4/2027	Q1/2028- Q4/2028
Maximo Enhancements/Upgrade	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027	Q1/2028- Q4/2028
PI Enhancements/Upgrade	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027	Q1/2028- Q4/2028
AMI Enhancements/Upgrade	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027	Q1/2028- Q4/2028

Energy Delivery Modernization and Operational Efficiency

ADMS Enhancements/ Upgrade			Q1/2026- Q4/2026	Q1/2027- Q4/2027	Q1/2028- Q4/2028
MV90 Upgrade		Q1/2025- Q4/2025			
TWACS Upgrade			Q3/2026	Q2/2027	
Service Suite Upgrade			Q1/2026- Q4/2026		
Misc. Upgrades	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027	Q1/2028- Q4/2028
Atlas	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027	Q1/2028- Q4/2028
Mobility in the Field	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027	Q1/2028- Q4/2028

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

The EDMOE Business Case has three levels of governance: The Executive Technology Steering Committee (ETSC), an Energy Delivery Director Governance group 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 Energy Delivery Director Governance group reviews roadmaps and funding levels. The EDMOE Program Team reports progress monthly to the steering committees and other stakeholder groups.

3. APPROVAL AND AUTHORIZATION

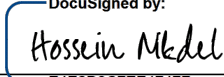
The undersigned acknowledge they have reviewed the **EDMOE** Business Case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature: DocuSigned by:
Mike Mudge Date: May-16-2023 | 4:32 PM PDT
 Print Name: Michael Mudge

Energy Delivery Modernization and Operational Efficiency

Title: _____
Manager of Application Delivery

Role: _____
Business Case Owner

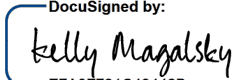
Signature:  _____
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Date: May-16-2023 | 1:46 PM PDT

Print Name: _____
Hossein Nikdel

Title: _____
Director of Applications and
Systems Planning

Role: _____
Business Case Sponsor

Signature:  _____
DocuSigned by:
E7A0F731C49442B...

Date: May-17-2023 | 9:37 AM PDT

Print Name: _____
Kelly Magalsky

Title: _____
Director of Shared Services

Role: _____
Steering/Advisory Committee Review

Energy Market Modernization and Operational Efficiency

EXECUTIVE SUMMARY

Please provide a one-page summary of the business case and high-level summary of the projects or programs included. Please describe the need for the project (a synopsis of the problem, the current state, and recommended solution), alternatives considered, the cost of the recommended solution, applicable metrics, customer benefits, Avista benefits or offsets derived from the investment, and risks, to customer and Avista, if the business case is not funded.

Avista participates in two energy markets operated by the California Independent System Operator (CAISO) – the Market Redesign Technology Upgrade (MRTU) and the Western Energy Imbalance Market (WEIM). Avista began transacting with the CAISO in June 2017 through participation in MRTU, which allows entities outside the CAISO balancing authority area to submit hourly energy bids at specific transmission intertie locations. This day-ahead market gave Avista access to economically priced solar energy, provides an opportunity to optimize internal resource flexibility by importing generation into CAISO, and provides access to additional generation during resource reliability scarcity events.

Avista joined the WEIM on March 2, 2022. The WEIM is a real-time, intra-hour energy market that facilitates regional resource dispatch on a five-minute basis to dispatch the lowest cost resources across the entire market footprint, while balancing in-hour load and resource obligations. This market allows participants to lower energy costs by either dispatching less expensive resources to meet load obligations, or by increasing revenue through the bidding of excess energy into the market. With more than 80% of the western interconnection load transacting in the WEIM, the liquidity of the hourly bi-lateral market has been significantly impacted, as market rules require participants to determine resource schedules well in advance of the operating hour. As renewable generation portfolios are increasingly mandated, market participation can ease the financial pressure of integrating renewable resources, while maintaining reliability.

For Avista to maintain operations within the CAISO markets, it must remain compliant in making required operational improvements and market design changes. Failure to comply with the upgrades in the given timeframe will disrupt Avista's ability to gain access to cost-efficient power in the market, lead to missed benefit opportunities, and may impact Avista's ability to reliably operate the electric grid. CAISO releases annual market technology updates and the estimated costs for these upgrades and enhancements is \$500k annually. They are typically applied simultaneously across multiple systems, with primary impacts to and approvals from Power Supply, System Operations, Generation Production & Substation Support (GPSS) and the WEIM Settlements team. Market compliance obligations and business approvals will determine when an upgrade is applied during a calendar year.

VERSION HISTORY

Version	Author	Description	Date
1.0	Kelly Dengel	Business Case Template	6/2021
2.0	Kelly Dengel	BC Narrative Update	5/2022

Energy Market Modernization and Operational Efficiency

3.0	Kelly Dengel	BC Narrative Update	9/2022
4.0	Kelly Dengel	BC Narrative Update/Revised form	5/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements Steve Carrozzo	5/9/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$500,000	\$500,000
2025	\$600,000	\$600,000
2026	\$500,000	\$500,000
2027	\$600,000	\$600,000
2028	\$600,000	\$600,000

Project Life Span	5 Years?
Requesting Organization/Department	Energy Delivery
Business Case Owner Sponsor	James Dykes Mike Magruder
Sponsor Organization/Department	Transmission System Operations
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

For Avista to maintain operations within the CAISO markets, it must remain compliant with software operational improvements and market design changes. Failure to comply with the upgrades in the given timeframe will disrupt Avista's ability to gain access to cost-efficient power in the market, lead to missed benefit opportunities, and may impact Avista's ability to reliably operate the electric grid. This Business Case (BC) is required to support the required updates to the software platforms and integrations implemented to transact in the CAISO markets. The upgrades are essential to remain reliable, compatible with CAISO market software releases and address security vulnerabilities to ensure ongoing value is achieved by joining CAISO markets. Failure to comply with the upgrades

Energy Market Modernization and Operational Efficiency

in the given timeframe will disrupt Avista's participation in the market, hinder operational efficiency, and may lead to missed economic opportunities or system reliability issues.

1.2 Discuss the major drivers of the business case.

The primary investment driver for this BC is Performance and Capacity. A secondary investment driver is Asset Condition. The software applications in this BC enables Avista to effectively perform the required market functions that impact Avista's ability to operate in the market, optimize generation resources (including additional renewable generation), gain access to cost-efficient power, and reliably operate the electric grid. Benefits of upgrading and enhancing these systems for market participation include:

- Continued market participation and the realization of market benefits.
- Continued optimization of Avista's generation resource portfolio.
- Continuing as a low-cost energy provider through market participation.
- Economically managing renewable resource variability and balancing obligations.
- Enhanced grid reliability through sharing information on electricity delivery conditions between balancing authorities across the EIM region.
- Economically efficient congestion management as compared to non-market curtailments and bilateral redispatch capabilities.
- Access to 15-minute interval generation commitment and 5-minutal interval generation redispatch across the EIM footprint.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

These applications are essential to meeting operational efficiency, grid management and market participation. Updates/upgrades to these applications and associated integrations address operational changes within the CAISO markets – MTRU and EIM software applications and Avista's business process. For each market release, the CAISO provides backward compatibility for two previous market release versions, thus giving Avista flexibility in determining when an update is applied. The software vendors also release upgrades independent of CAISO market releases that Avista will need to incorporate into the delivery cycle. Performing at least one annual CAISO-initiated software updates as planned supports Avista's ability to continue to operate and have access to cost-efficient energy within the market. While there is flexibility in determining when a minor upgrade can be applied, operational efficiencies may be lost by omitting recommended upgrades.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization. *See link.*

[Avista Strategic Goals](#)

Avista prides itself on improving our customers' lives through innovative energy solutions and the WEIM is a portion of that goal. In 2019, Washington State passed clean energy legislation that will drive additional renewable resources to be built in Avista's Balancing Area Authority (BAA) to meet specific emission reduction requirements between 2030

Energy Market Modernization and Operational Efficiency

and 2045. In April of 2019, Avista announced its own clean energy goals that will transition the generation resource mix to 100 percent clean by 2045. In order to meet these goals, factoring renewable generation growth integrated into Avista's BAA, a mechanism is required to provide flexibility to optimize these resources with Avista's existing generation portfolio. Participating in the CAISO markets, both MTRU and EIM, is the most efficient and cost-effective way to meet this requirement and the necessary flexible ramping capability.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹

Prior to signing the CAISO WEIM Implementation agreement in April 2019, Avista hired Energy Environmental Economics (E3) to conduct an [EIM benefit assessment](#) in the fall of 2017. E3 conducted similar benefit assessments for several other utilities to help understand the potential value of EIM participation. The E3 assessment estimated that Avista could see a range of annual benefits from \$2 to \$12 million from EIM participation. Using Avista's best estimates for these critical study assumptions, Avista originally anticipated EIM annual benefits of \$5.8 million, with potential for benefits to move closer to the upper end of the study range depending upon observed market price volatility. As of Q1 2023, the total lifetime net benefit actuals from participating in the WEIM are \$27.1 million.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The proposed recommended solution is to make the required operational improvements to the software. This will enable Avista to continue to operate in the CAISO markets and thereby continue to receive benefits and generate value for customers. Failure to comply with the upgrades in the given timeframe will disrupt Avista's ability to gain access to cost-efficient power in the market, lead to missed benefit opportunities which may increase customer costs, and may impact Avista's ability to reliably operate the electric grid. CAISO releases annual market technology updates in partnership with software vendors. The estimated costs for these upgrades and enhancements are \$0.5 million annually.

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Energy Market Modernization and Operational Efficiency

- 2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).²**

In 2017, the MTRU project to conduct market settlements was \$0.3 million in capital, and O&M software licensing costs were estimated at \$0.03 million annually. In 2022, the EIM implementation was \$27.4 million (capital and incremental expense), with annual O&M expense associated with incremental EIM employees and software maintenance/licensing costs estimated at \$3.1 million and an annual capital estimate of \$0.5 million to support software enhancements and upgrades (this BC). The total Avista lifetime net benefit actuals received from operating in the CAISO market as of Q1 2023 are \$46.2 million, with MTRU at \$19.1 million and EIM at \$27.1 million. These benefits flow through the state recovery mechanisms. With more than 80% of the Western Interconnect transacting in the CAISO market, Avista needs continued market participation to access economically priced power, to ease renewable resource integration costs, and to economically managed transmission congestion. These benefits help manage customer costs and allow Avista to continue as a low-cost energy provider.

- 2.3 Summarize in the table and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.**

The value generated from operating in the CAISO market, with software updates/enhancements supported by this BC, does not provide any direct capital or expense offsets.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	\$0	\$0	\$0	\$0	\$0
O&M	N/A	\$0	\$0	\$0	\$0	\$0

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Energy Market Modernization and Operational Efficiency

2.4 Summarize in the table and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

The value generated from operating in the CAISO market, with software updates/enhancements supported by this BC, does provide indirect expense offsets. There are no direct capital offsets. The financial benefits of operating in CAISO markets flow through the state recovery mechanisms – the Energy Recovery Mechanism (ERM) in Washington and the Power Cost Adjustment (PCA) in Idaho. The total Avista lifetime net benefit actuals received from operating in the CAISO market as of Q1 2023 are \$46.2 million, with MTRU at \$19.1 million and EIM at \$27.1 million.

The annual O&M offsets in the table below represent a combined estimate for MRTU and EIM net benefits. The final rules for the Washington Climate Commitment Act could impact future market net benefits.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	\$0	\$0	\$0	\$0	\$0
O&M	Net Market Financial Benefits	\$26M	\$26M	\$26M	\$26M	\$26M

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Energy Market Modernization and Operational Efficiency

2.5 Describe in detail the alternatives, including proposed cost for each alternative, which were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Failure to pursue the required market updates is the primary alternative to keeping these systems market compliant. This could keep Avista from operating in the market until the upgrade has been applied, thus keeping Avista from economically priced power and increasing potential grid risk. As more than 80% of the Western Interconnection load is transacting in the CAISO markets, the bi-lateral market has been reduced. Avista needs to participate in the market to maintain reliability and access economically priced energy to continue as a low-cost energy provider. The market also allows Avista to reduce costs associated with integrating renewable resources, while maintaining the flexibility and optimization of its hydro generation. As more renewable resources are mandated by state legislation, there will be a point where Avista's hydro flexibility cannot sufficiently or economically supply the required load following for renewable resources and must transact in an organized market to provide cost-effective energy. Additionally, Avista cannot internally develop the software needed to transact in the market and does not have access to the expertise and logic the CAISO employs in the market design.

Alternative 2:

Alternative 3:

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

For the WEIM, [the CAISO publishes a quarterly benefit report](#), which represents a calculation of each entities' market benefits. This report is used in part to reflect Avista's WEIM benefits and support justification of on-going upgrades. In October 2022, Avista developed an [internal benefit report](#), which includes considerations for Avista-specific operational factors that may not be adequately represented in CAISO's benefit calculation. This internal benefit calculation logic will be submitted to the commissions for review and used in future rate filings to estimate EIM benefits as part of determining overall power supply expense. These two benefit calculations will help Avista determine the financial return on the implementation and on-going EIM net benefits. The financial benefits listed in this BC are based on the internal Avista benefit logic.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

Energy Market Modernization and Operational Efficiency

Upgrades and enhancements for both MRTU and EIM software will happen throughout the year, with a primary upgrade in the fall of each year. For each market release, the CAISO provides backward compatibility for two previous market release versions, thus giving Avista flexibility in determining when an update is applied. The software vendors also release upgrades independent of CAISO market releases that Avista will need to incorporate into the delivery cycle. Performing at least one annual CAISO-initiated software updates as planned supports Avista's ability to continue to operate and have access to cost-efficient energy within the market. While there is flexibility in determining when a minor upgrade can be applied, operational efficiencies may be lost by omitting recommended upgrades.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

The Energy Markets Modernization & Operational Efficiency Steering Committee members include BC Sponsors and Owners, and directors within Power Supply, System Operations, GPSS, Finance & Accounting and Enterprise Technology.

Delivery within the BC requires a partnership between various business unit teams and Enterprise Technology (ET) and will be governed by the Technology Planning Group (TPG), the Integrated Oversight Committee (IOC), and Program/Project Steering Committees.

Project prioritization is evaluated by the ET management team on a weekly basis through the IOC, while program and project steering committees meet regularly and oversee scope, schedule and budget within their respective programs and projects and inform the BC owner of any changes. Any changes in funding or scope are documented at the BC level, via Change Request document that is presented to the monthly CPG meeting and evaluated for approval. All projects in this BC are managed through the PMO, which follows the Project Management Institute (PMI) standards.

The undersigned acknowledge they have reviewed the EIM Modernization & Operational Efficiency 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.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the *Energy Markets Modernization and Operational Efficiency 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.

Energy Market Modernization and Operational Efficiency

Signature: _____ Date: _____
Print Name: _____
Title: _____
Role: Business Case Owner

Signature: Michael A Magruder Date: 5/10/2023
Print Name: Michael A. Magruder
Title: Director, System Operations & Planning
Role: Business Case Sponsor

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

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

EXECUTIVE SUMMARY

The Energy Resources Modernization and Operational Efficiency Technology Program¹ Business Case sponsors the technology related applications that support the Energy Resources business areas operational and strategic initiatives. The Energy Resources business area includes applications associated primarily with Power Supply, Gas Supply, Generation Production Substation Support (GPSS), and Environmental. Avista's Energy Resources technology systems are a necessity, as they provide essential functions, such as energy risk management, trading, forecasting, and compliance, to our customers throughout all service territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

In order 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 the Energy Resources applications. The requested allocation is based primarily on compatibility, reliability, security, adaptability, and safety. Additional criteria considered the ability to maintain operational efficiencies and strategic alignment. This business case is necessary to fund the portfolio of components that maintain the applications and licenses necessary to meet internal and external business processes and objectives, and our strategic focus areas. The technology systems and processes within this business case strengthen our ability to perform, which impacts our capacity to continuously improve the generation and delivery of safe, reliable, clean, affordable electric and natural gas services to our customers.

In order to maintain these business processes and systems supported by this business case, the recommended funding amount is \$19,272,500 over the next five years (roughly \$3.4M to \$4.4M per year). This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements necessary to ensure that business processes are more efficient, and result in cost savings. This funding level also considers the development staff required to maintain these core technology solutions.

If this business case is not funded at the recommended level, it will risk the reduction of skilled resources that have institutional business process and technical knowledge, as well as our employees, customers, and compliance through the deferment of upgrades and enhancements, resulting in unsupported applications, security liability, and significantly higher costs.

This Business Case plan was created by the Business Case Owner, Domain Architect, Product Owner, Business Technology Analyst, and the ET Project Management Office, and approved by the Energy Resources Governance Team (includes Business Sponsor, Director and Managers within Energy Resources).

VERSION HISTORY

Version	Author	Description	Date
1.0	L.Raymond	Initial draft of original business case	4.5.23
BCRT	Heidi Evans	Has been reviewed by BCRT and meets necessary requirements	5.3.23

¹ [1] "A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.", Project Management Institute Global Standard, The Standard for Program Management, Fourth Edition. Page 3 (Copyright 2017).

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$3,805,000	\$3,805,000
2025	\$3,445,000	\$3,445,000
2026	\$4,357,500	\$4,357,500
2027	\$3,470,000	\$3,470,000
2028	\$4,195,000	\$4,195,000

Project Life Span	5+ years (Program)
Requesting Organization/Department	Energy Resources
Business Case Owner Sponsor	Brian Hoerner Kevin Holland
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.

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.

The primary investment driver for the Energy Resources Business Program is Performance and Capacity. 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

Energy Resources Modernization & Operational Efficiency (ERMOE) 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 if deferred or risks being mitigated by the request.

The projects and initiatives listed above position Avista to adapt and respond to the increasing complex and technical industry behaviors and trends. They also 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 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization.

Avista Focus Areas:		
<input type="checkbox"/>	Our Customers	<ul style="list-style-type: none"> ▪ Mature our customer experience, both internal & external ▪ Support affordability, equity, and economic vitality ▪ Understand and address the evolving customer needs by offering products, services, & solutions
<input type="checkbox"/>	Our People	<ul style="list-style-type: none"> ▪ Evolve our employee experience with a focus on engagement, development, resiliency & well-being ▪ Improve safety & training systems to reduce injuries, expand learning & understand risks ▪ Strengthen equity, inclusion, & diversity within systems, practices, & behaviors
<input checked="" type="checkbox"/>	Perform	<ul style="list-style-type: none"> ▪ Affordably operate & maintain safe, clean, reliable generation & energy delivery infrastructure ▪ Achieve stated financial objectives
<input checked="" type="checkbox"/>	Invent	<ul style="list-style-type: none"> ▪ Foster & apply an innovation culture to benefit employees, customers, communities, & shareholders ▪ Create the utility of the future with our stakeholders, optimizing for cost, carbon, & reliability

The Energy Resources business team utilizes technology as a critical component to achieve these strategic objectives. Most of the projects in the technology roadmap align with the 'Perform' Focus Area. The ERMOE technology drives performance through efficiency, productivity and automating manual or ineffective processes. The continuous maintenance and optimization of the technology ensures that it continues to not only functional, but it is also agile and can scale at the pace of industry and technological change.

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

There is also technology and associated investments in this Business Case that are more innovative and align with our 'Invent' Focus Area, particularly with the Avista Decision Support System (ADSS) system. This technology provides the ability to make better energy trading and planning decisions quickly and more accurately. The opportunity to properly maintain and improve this investment fosters the innovation culture to benefit Avista's employees, customers, communities, & shareholders

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

[Compliance Plan - Environmental Affairs](#): Avista is subject to multiple Federal, State and Local environmental regulatory programs. The Environmental Compliance Group is tasked with managing and maintaining compliance with the applicable requirements from these programs. National standards have been established to control the handling, emission, discharge, and disposal of harmful substances. Waste sources must comply with these national standards whether the programs are implemented directly by EPA or delegated to the States. In many cases, the national standards are applied to sources through permit programs which control the release of pollutants into the environment. Some examples include:

- Air Quality: Clean Air Act (CAA) –Rathdrum
- Water Quality: Clean Water Act (CWA) - Kettle Falls
- Waste Management: Resource Conservation and Recovery Act (RCRA) – LIMS / Stackvision
- Property Clean-up: Comprehensive Environmental Response, Compensation and Liability (CERCLA) – LIMS / Intelex
- Public Disclosure: Emergency Planning and Community Right-to-Know Act (EPCRA) - LIMS / Intelex / Stackvision

[Stackvision Tier 1 - Air Quality Permit](#): Operating Permits are required for Rathdrum per the "Rules for the Control of Air Pollution in Idaho" issued by the Idaho Department of Environmental Quality (DEQ). This Tier I operating permit establishes facility-wide requirements in accordance with the Idaho State Implementation Plan. Some examples of parameters that are required at applicable generation locations are:

- Dust (airborne particulate matter)
- Odors (gases, liquids, or solids in such quantities as to cause air pollution)
- Visible Emissions (any air pollutant emission for more than three minutes, greater than 20% opacity)
- Excess Emissions (action to correct, reduce and minimize excess emissions events)

2. PROPOSAL AND RECOMMENDED SOLUTION

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

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

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

based primarily on compatibility, reliability, security, adaptability, and safety. Additional criteria consider 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 2022. Only enhancements and updates in 2022 and beyond are included here.)
 - **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.
- **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:
 - **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.
- **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
- **Hazardous Waste Management** - Management of Avista’s waste production, storage, transport and disposal to ensure compliance with global regulations and minimizes safety and environmental hazards.
 - **Intelex** - Automated tracking and reporting system for the various stages of waste management and disposal. It manages different waste types, varying disposal rules and confusing transport restrictions.

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

- **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 (Ignition) enhancements to optimize the generation and substation monitoring, and the utilization and optimization of the Oracle Primavera Cloud Project and Portfolio Management Unifier 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.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).³

Due to budget constraints within ET Applications and the Energy Resources Business Case over the past couple of years, the majority of focus has been to ensure we are as current as we need to be to maintain support, compatibility, reliability, and security. In 2024, 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).

There are some direct savings through the Avista Decision Support System (ADSS), although direct savings are difficult to explicitly define for applications like ADSS. Academic and industry estimates are between a 2% and 10% gain derived from more efficient (productive) utilization of existing generation assets. Estimates such as this one, and anecdotal internal analyses using ADSS technology in other ways (e.g., portfolio maintenance planning, accurate price bidding in Energy Imbalance Market (EIM), more informed decisions when acquiring new resources), indicate the likely potential to save more annually than has or will be spent over the life of the technology. Therefore, we cannot reasonably quantify exact direct savings, however most of the benefits associated with ADSS are already incorporated into the power supply baseline expense determination by including resource optimization revenue, EIM benefits and California optimization revenue in the baseline calculation per the agreed upon stakeholder methodology. The strategy for and ability to achieve benefits associated with resource optimization, California day ahead trading, and EIM resource bidding is contingent upon ADSS optimization

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Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

solutions. Since these offsets are already included as offsets in power supply expense, they are not additive, but the potential savings are provided below as potential indirect savings.

There are several categories of indirect savings that could arise from the Avista Decision Support System (ADSS), such as the following:

- *Commodity Energy Savings* - The value of the commodity energy supplying Avista's retail load for the 12 months ending September 2021, at Mid-C wholesale market prices, was over \$400 million. The savings then, using the 2% to 10% metric shared above, ranges between \$8 and \$40 million per year by being more efficient.
- *Maintenance Planning and Scheduling* - Avista for decades has worked to bring more analytics to maintenance planning for its generation portfolio. Although additional ADSS enhancements are necessary before the full-fledged analytical ADSS Maintenance Planner module can be deployed, early beta tests have shown savings between \$0.5-\$4.0 million per year, depending on the complexity and number of maintenance projects being completed in a given year. The original business case justification for the Maintenance Planner module (expected to be completed in 2022-2023) was based on annual estimated savings of \$1.5 million.
- *EIM Bidding* - Bidding into the Western EIM program entails an entirely new level of interaction in wholesale markets. Avista decided to enter the EIM because our other trading partners were doing increasingly more of their intra-day business in the EIM, starving the NW hourly market of liquidity we have relied upon for decades to meet our load obligations reliably. Greatly less and falling NW real-time liquidity also compromises our ability to maximize the value of our portfolio. Besides having to work with EIM 5-minute market windows where in the past the market time step was hourly, the Company never needed to create detailed price curves for all of its assets for every bidding period. Although no specific estimates have been developed for ADSS' contribution in the EIM effort to date, its base schedule creation and Bidding module provide more accuracy and less staff effort than a manual process. The mid-point range of overall EIM savings included in our 2020 Washington General Rate Case (GRC) was nearly \$6 million annually and was included in the power supply expense baseline calculation.
- *Planning Studies* - ADSS has a unique ability to support resource planning in that it can re-optimize system operations when system conditions change. This enables robust scenario analysis. For example, ADSS allows Avista to model an historical year of operations but change inflows to our reservoirs, add new units or create entirely new power plants to see their detailed impacts on system costs and reliability. We can perform variable energy resource integration cost studies, and model how our system value changes when we have changing data or an opportunity/obligation to upgrade a facility. Further, with its detailed representations, the value of ancillary services can be valued differently among resources and the entirety of the portfolio.

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.

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

2.3 Summarize in the table and describe below the **DIRECT** offsets⁴ or savings (Capital and O&M) that result by undertaking this investment.

There are no direct offsets for this business case.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	NA	\$0	\$0	\$0	\$0	\$0
O&M	NA	\$0	\$0	\$0	\$0	\$0

2.4 Summarize in the table and describe below the **INDIRECT** offsets⁵ (Capital and O&M) that result by undertaking this investment.

- Quantified indirect savings (total estimate) is \$8.5 - \$400 million, assuming a 10-year software life

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M	Commodity energy savings	\$8-40M	\$8-40M	\$8-40M	\$8-40M	\$8-40M
O&M	Maintenance planning and scheduling	\$.5-4M	\$.5-4M	\$.5-4M	\$.5-4M	\$.5-4M

2.5 DESCRIBE IN DETAIL THE ALTERNATIVES, INCLUDING PROPOSED COST FOR EACH ALTERNATIVE, THAT WERE CONSIDERED, AND WHY THOSE ALTERNATIVES DID NOT PROVIDE THE SAME BENEFIT AS THE CHOSEN SOLUTION. INCLUDE THOSE ADDITIONAL RISKS TO AVISTA THAT MAY OCCUR IF AN ALTERNATIVE IS SELECTED.

Option	Capital Cost
Alternative 1 – Fund at a reduced level (reducing OPC expansion)	\$19,072,500
Alternative 2 – Reduce GPSS Maximo funding.	\$18,622,500
Alternative 3 – Remove GPSS Maximo funding.	\$17,972,500

Alternative 1: Reduce Oracle Primavera Cloud (OPC) Expansion Phase 4 (2024) by 100k and expansion by 25k/yr.

Reducing funding for OPC would hinder the performance and capacity needed to sustain automated business processes and efficiencies gains. This tool is critical for managing Avista's complex construction projects that the Generation and Substation teams manage. Without the

⁴ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁵ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

expanded features of the unified toolset, the ability to get to the level of resource allocation, planning, and optimization needed to better forecast, improve cost management, and stakeholder value is at risk. Inconsistency and inefficiencies would continue to surface, as well as conflicting project and prioritization efforts.

Alternative 2 & 3: Reduce GPSS Maximo by ½, or Remove Funding)

Reduce or remove GPSS Maximo funding. The resources funded by this had previously been funded by expense and we could revert back to that model. The amount reduced in capital would move to expense, as the need for the optimization of the tools and business processes is still required.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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 & Operational Efficiency (ERMOE) Technology

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

The Energy Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Energy Resources, and the Business Case Owner. 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 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, subject to additional funding changes as directed by the CPG.

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.

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Energy Resources Modernization and Operational Efficiency 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:	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block; margin-bottom: 5px;">DocuSigned by:</div> 3AE7BA99E1F54CF...	Date:	May-05-2023 1:13 PM PDT
Print Name:	Brian Hoerner		
Title:	Manager, Application Delivery		
Role:	Business Case Owner		
Signature:	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block; margin-bottom: 5px;">DocuSigned by:</div> 50D41B164A3B414...	Date:	May-08-2023 6:46 AM PDT
Print Name:	Scott Kinney		
Title:	VP, Energy Resources		
Role:	Business Case Sponsor		
Signature:	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block; margin-bottom: 5px;">DocuSigned by:</div> E4E2D9C7EE4747F...	Date:	May-05-2023 10:38 AM PDT
Print Name:	Hossein Nikdel		
Title:	Director, Applications & System Planning		
Role:	Steering/Advisory Committee Review		
Signature:	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block; margin-bottom: 5px;">DocuSigned by:</div> EA27BABA767F467...	Date:	May-07-2023 7:51 AM PDT
Print Name:	Alexis Alexander		
Title:	Director, Generation, Production, & Substation Support		
Role:	Steering/Advisory Committee Review		
Signature:	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block; margin-bottom: 5px;">DocuSigned by:</div> 4D93B8B0E286447...	Date:	May-08-2023 8:46 AM PDT
Print Name:	Kevin Holland		
Title:	Director, Energy Supply		
Role:	Steering/Advisory Committee Review		

Enterprise Business Continuity (EBC)

EXECUTIVE SUMMARY

Recovery is a critical business capability for Avista, as we have witnessed after a major weather event when time is of the essence to recover from the storm. Avista's Enterprise Business Continuity program business case is similar, whereby readiness is critical before, during, and after an incident. Although many of Avista's technology systems have built-in redundancy or high availability requirements, there are some gaps that necessitate further investment. To identify these gaps, Avista conducts an annual disaster recovery exercise that evaluates the effectiveness of its program, which includes people, process, and systems. The results of these exercises, along with peer collaboration with utility industry partners, provides 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.

Investments may include secondary systems required to respond when primary systems are not available, additional compute and storage in offsite backup data centers to increase capacity, and network and security enhancements to increase security and network reliability. The cost associated with identified solutions can average between \$100-\$200k per year, depending on the identified solution. Alternatives considered vary by the recovery need and interoperability of systems in place.

The Colonial Pipeline ransomware event of 2021 highlighted the dependency between the company's corporate technology systems, such as accounting and billing systems, and operational technology system that control the flow of gas in their pipeline. These interdependencies between systems are creating a complex technology architecture, whereby one set of systems require the other set to fully operate. Additionally, regulators are focusing more on recovery requirements for critical infrastructure organizations.¹ Using a cost estimate for a PII (Personal Identity Information) and/or a PCI (Payment Card Industry) data breach, based on the number of records under our stewardship, the indirect offset ranges from \$5.2M to \$20.7M, or average \$12.9M, per incident. In this data breach example, the risk avoidance cost far outweighs the per annual investment under this business case to maintain resiliency and recovery capabilities. This is a tremendous benefit to Avista and our customers. If we do not invest in our enterprise business continuity program, it can lead to our inability to recover from an incident affecting technology systems required to deliver safe and reliable energy. So, while the date and time of an incident cannot be predicted, prudence lies in the company's ability to timely recover from an incident.

Our business continuity and disaster recovery capabilities must be ready to ensure critical business processes and systems continue to operate under crisis conditions. Avista customers benefit from investments in this program, as the solutions provide redundancy and availability of critical systems that allow the delivery of electricity and gas securely, safely, and reliably to our customers.

¹ [Colonial Pipeline May Face \\$1 Million Penalty for "Operational" Lapses in 2021 Ransomware Attack - CPO Magazine](#)

Enterprise Business Continuity (EBC)

VERSION HISTORY

Version	Author	Description	Date
<i>Draft</i>	<i>Andru Miller</i>	<i>Initial draft of original business case</i>	<i>6/30/2020</i>
<i>1.0</i>	<i>Andru Miller</i>	<i>Updated 5-year funding request</i>	<i>8/9/2022</i>
<i>2.0</i>	<i>Andy Leija</i>	<i>Updated 5-year funding request</i>	<i>5/15/2023</i>
<i>BCRT</i>	<i>Jeff Smith</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	<i>5/30/2023</i>

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$100,000	\$100,000
2025	\$100,000	\$100,000
2026	\$100,000	\$100,000
2027	\$100,000	\$100,000
2028	\$100,000	\$100,000

Project Life Span	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	Enterprise Security
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Severe storms, natural disasters, major technology failures, and significant security events are risks that Avista operates under. They are usually unpredictable and can have a high consequence. These high consequence events can impact the technology systems Avista relies on to operate the delivery of gas and electricity to our customers. For example, a data breach incident can average \$12.9M. Many of Avista's critical business processes are now more than ever dependent on data, communication networks, and computer systems.

Enterprise Business Continuity (EBC)

Prolonged failure or disruption of any of these systems could have a significant impact on Avista's ability to deliver gas and electric service to its customers.

1.2 Discuss the major drivers of the business case.

Performance & Capacity is the primary driver for the Enterprise Business Continuity business case as the investments enhance or address performance or technology capacity constraints. The availability of each application and network system is assessed annually during an annual disaster recovery exercise to determine their reliability and recovery capabilities. This in turn, determines the level of performance or capacity requirements needed for systems that underperform.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

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

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link. [Avista Strategic Goals](#)

This business case best aligns with Avista's focus area of Perform "...to serve our customers well and unlocking pathways to growth." Avista conducts an annual disaster recovery exercise to evaluate the effectiveness of its program, which includes people, process, and systems. The results of these exercises, along with peer collaboration with utility industry partners, provides 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 – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.

As mentioned in the security business case narratives, the number and level of complexity in cyber security attacks is significantly growing, as well as attacks by Domestic Violent

Enterprise Business Continuity (EBC)

Extremists (DVEs) on physical infrastructure.² A recently released report by the North American Electric Reliability Corporation (NERC) titled Cyber-Informed Transmission Planning, calls for the integration of cyber and physical protections into transmission planning to increase reliability and security.³ The report emphasizes both prevention and the ability to recover from an event as a goal for system resiliency. Avista's EBC program works with all business units to maintain their business impact assessments that document procedures for when systems are not available. Also, the technology department conducts an annual disaster recovery exercise to review areas of excellence and improvement. An after-action report is often produced from the annual exercises, which highlight gaps. These gaps can vary between people, processes, and systems. This business case focuses on the investment needed in systems to close those gaps. Examples of previously funded investments include additional data storage and compute to support growing backup demand. Also, a new security system was purchased to improve production system redundancy during the annual exercise.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

Investments under this business case support technology gaps identified during Avista's annual disaster recovery exercises. The solutions have included additional compute and storage for backup data center capacity, additional network devices to increase system failover reliability, and secondary security systems to support redundant protection schemes. There is no one solution that addresses this complex problem. Instead, the solutions will vary by the identified gaps. Further assessment and investment are required in operational technology areas where different operational requirements exist.

2.2 Describe and provide reference to **CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).**⁴

² [Electric grid is 'attractive target' for domestic violent extremists in US, intel brief says | CNN Politics](#)

³ [Cyber-Informed Transmission Planning Report. NERC. May 2023](#)

⁴ Please do not attach any requested items to the business case, be sure to have ready access to such information upon request.

Enterprise Business Continuity (EBC)

Much like investing in strong cybersecurity protection, investments in system redundancy, availability, and recovery are risk-based and just as critical to continue to operate during a crisis. Based on the consistent annual allocation over the past five years to strategically deliver disaster recovery solutions, there is a high level of confidence the requested amount will be fully utilized. According to a recently published article, the average ransomware attack results in 19 days of downtime.⁵ The average cost for downtime for companies of all sizes is \$4,500 per minute or \$1,410 per minute for small businesses.⁶ This is an average of \$2,955 per minute. Assuming the event was like the Colonial Pipeline incident, the downtime was 6 days or approximately \$25.5M. The risk avoided, is the downtime associated with a potential incident.

2.3 Summarize in the table and describe below the DIRECT offsets⁷ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Not Applicable	\$0	\$0	\$0	\$0	\$0
O&M	Not Applicable	\$0	\$0	\$0	\$0	\$0

There are no direct offsets associated with risk-based investment in disaster recovery solutions. While an incident cannot be fully prevented, the prudent decision to invest in recovery solutions brings confidence that when an incident occurs, Avista can recover from it. With the number of cybersecurity incidents growing in number and complexity, there is no utility business that would not invest in disaster recovery solutions as part of ongoing investment and accept it as the cost of doing business.

2.4 Summarize in the table and describe below the INDIRECT offsets⁸ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Security Solutions	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000
O&M	Data Breach Cost Estimates	\$936,000	\$936,000	\$936,000	\$936,000	\$936,000

Using a data breach cost estimates for a PII (Personal Identity Information) and/or a PCI (Payment Card Industry) data breach, the indirect offsets range from \$5.2M to \$20.7M per incident or on average \$12.9M. Additionally, the costs associated with incident response, customer notification, crisis management, regulatory fines and penalties, and class action lawsuits are mostly operational expense costs. There is an assumption that the

⁵ [After a Decline in 2020, Data Breaches Soar in 2021 | Nasdaq](#)

⁶ [20+ Business Data Loss Statistics & Recovery \[2022 New Data\] \(businessdit.com\)](#)

⁷ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁸ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Enterprise Business Continuity (EBC)

vulnerabilities or gaps identified during the incident will require immediate investment in recovery solutions to mitigate the existing and/or future events.

The potential indirect offsets are 90% operation and maintenance and 10% capital using the lowest cost of a data breach with only PII data and no class action lawsuit. However, they can be significantly higher, such as \$18.63M in operation and maintenance and \$2.1M in capital, respectively, should the incident be on the high end. Also, not knowing when or how often a data breach would occur, the conservative estimate with the assumption that the incident only happened once, amortized over 5 years, the cost would be \$936k in operation and maintenance and \$104k in capital, respectively. The indirect benefit or reduction of risk is mostly in operation and maintenance costs associated with recovering from a data breach incident.

2.5 Describe in detail the alternatives, including proposed cost for each alternative, which were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

The requested funding level will address the highest risks that are identified in the after-action reports first following each annual disaster recovery exercise or those that cannot 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 disaster recovery gaps identified in after-action reports outside of technology refresh or expansion projects	\$500,000	01 2024	12 2028

Alternatives under this business case vary by identified need and solution, based on after action reports from annual disaster recovery exercises. Historically, solutions have included additional hardware to increase performance and capacity of existing systems or network and security systems to develop alternative paths to provide network redundancy and failover capabilities. Only in the case of a significant need or an incident, will this business case require additional funding. Therefore, no alternatives are being presented. And doing nothing is not an option, as we continue to find gaps in each year's disaster recovery exercises to make our systems more resilient.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Success under this business case can be measured by the number of after-action report findings that can be completed annually based on current funding levels. Additionally, the

Enterprise Business Continuity (EBC)

annual disaster recovery exercise should have less and less findings each year assuming the investments are creating a strong, secure, and resilient environment.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The Enterprise Business Continuity business case is a program that consists of multiple projects per year that run concurrently, and at times over multiple years. They follow all phases of the project lifecycle, facilitated by a project manager, and governed by a steering committee to determine scope, schedule, and budget forecasts, including transfers-to-plant.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

There are two levels of governance to the Enterprise Business Continuity business case and the investments within it. They consist of a business case governance team and project specific steering committees for in-flight projects.

Business Case Governance Team: The Enterprise Security Governance Team provides monthly oversight of this program business case and makes recommendations based on forecasted inactive planned investments, the pace of in-flight investments, and any new unplanned activity that surfaces from an emerging security threat. The team also tracks business case risks and issues that can affect the portfolio of planned investments.

Monthly governance meetings consist of a full review of each in-flight investment, reasons for any delays or deviation to proposed completion and transfers to plant schedules and recommends necessary steps to bring the investments back into schedule or defer inactive work, when possible, to offset delays. However, should a security risk be increased by deferring a planned or unplanned investment into future years, the Enterprise Security Governance Team will recommend a Capital Planning Group (CPG) In-Year Change Request to surface the impending need. The Change Requests are presented at a monthly Technology Planning Group meeting to inform the Director members who are also members of the CPG where the request will be considered and weighed against other pending requests.

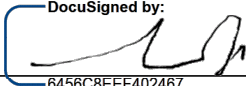
The Enterprise Security Governance Team consists of Avista's Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, Security Delivery Manager, and the Project Management Office Manager. The sessions are facilitated by the Security Program Manager who manages the standing agenda.

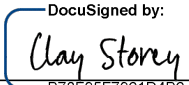
Enterprise Business Continuity (EBC)

Project Steering Committees: Additionally, each security investment is governed by a project steering committee that consists of the Enterprise Security Director, Cybersecurity Manager, and Security Delivery Manager, as well as ancillary management team members required for the successful implementation of the security solution. Steering committee meetings are facilitated by a Project Manager and held monthly to review scope, schedule, budget, and risks and issues surfaced from each in-flight project.

3. APPROVAL AND AUTHORIZATION

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: Jun-12-2023 | 10:59 AM PDT
 Print Name: Andy Leija
 Title: Security Delivery Manager
 Role: Business Case Owner

Signature:  Date: Jun-12-2023 | 11:27 AM PDT
 Print Name: Clay Storey
 Title: Director of Security
 Role: Business Case Sponsor

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

Enterprise Communication

EXECUTIVE SUMMARY

The Enterprise Communication Program¹ Business Case sponsors the tools and systems used by all areas of the company to support business operations and delivery of safe and reliable energy. Communication is at the very essence of human interaction, and thus a pillar of business processes. Communication enables business processes across systems that communicate and exchange data in near-real time, such as phone calls, chats, presence indicators, work location, contact information, meetings, video calls, organization structure, job titles, and emails all accessible regardless of 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 has the ability to work from any location.

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 and cyber-attacks or degradation that may delay communication channels and result overall processing delays.

¹ “A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.”, Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Enterprise Communication

VERSION HISTORY

Version	Author	Description	Date
1.0	Walter Roys	Initial draft of original business case	6/2017
1.1	Walter Roys	Update Investment Driver	7/2019
2.0	Walter Roys	Revision of BCJN to new template	7/2020
3.0	Walter Roys	Revision of BCJN	7/2022
4.0	Walter Roys	Revision of BCJN	4/2023
<i>BCRT</i>	<i>BCRT Team Member</i>	<i>Has been reviewed by BCRT and meets necessary requirements with suggested changes</i>	<i>5/1/2023</i>

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$2,418,667	\$2,418,667
2025	\$2,418,667	\$2,418,667
2026	\$2,418,667	\$2,418,667
2027	\$2,418,667	\$2,418,667
2028	\$2,418,667	\$2,418,667

Project Life Span	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

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

Enterprise Communication

- 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?

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 obsolescence². 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.

The Enterprise Communications Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps or changes in business requirements 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 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 if deferred or risks being mitigated by the request.

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.

Investments under this business case are to maintain performance and capacity standards in each respective enterprise communications technology. For example, when the product manufacturer terminates maintenance and support for specific devices or solutions, an asset therefore becomes incompatible with other advancing technologies. This introduces the risk of cyber-attack, and this business case will change or upgrade the asset.

² Barreca, Stephen L. (1998-2000). *Technology Lifecycles and Technology Obsolescence*. Retrieved from <http://bcri.com/products/publications.htm>

Enterprise Communication

1.4 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. Communications technology has been critical in keeping our workforce connected, while many of our staff have the ability to work remotely or are in the field.

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.

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 Discuss how the proposed investment, whether project or program, aligns with the 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.

Enterprise Communication

1.6 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.³

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>

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>

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

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 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.

Option	Capital Cost	Start	Complete
Recommended Solution - Address 100% technology that no longer meets performance and capacity requirements	\$12,093,334	01/2024	12/2028
Alternative #1 – Address ~75% of technology that no longer meets performance and capacity requirements	\$9,070,000	01/2024	12/2028
Alternative #2 - Address 50% of technology that no longer meets performance and capacity requirements	\$6,046,667	01/2024	12/2028

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Enterprise Communication

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).⁴

The funds request was based on a calculation of the performance and capacity 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. 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.

The Business Case Governance group, consisting of Technology Domain Architects and ET Management and Project Management Office, maintains technology roadmaps to inform the Business Case of investment demand. Investment 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.

2.3 Summarize in the table and describe below the DIRECT offsets⁵ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	N/A	N/A	N/A	N/A	N/A
O&M	N/A	N/A	N/A	N/A	N/A	N/A

The funding requested under the Enterprise Communication Systems Business Case will be invested in, but not limited to, the following technologies:

- Instant messaging systems
- Contact Center automatic call distribution system

⁴ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

⁵ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Enterprise Communication

- 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 increase or decrease O&M expenses. These can include licensing increases from time to time or decreases in workload for O&M resources. 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 direct 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.

In addition, when endpoint devices break down it can result in the inability of an employee to access essential technology systems such as our meter data, customer billing and our mapping data. This can result in a productivity reduction across all areas of the business. Savings related to avoiding these down time issues could range from \$100k - \$10M a year representing at least 1 full time employee up to 100 full time employees needed to implement manual processes.

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.

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

Enterprise Communication

more important in a work from home environment to keep employees and departments connected while minimizing risk to essential employees.

2.4 Summarize in the table and describe below the **INDIRECT offsets⁶ (Capital and O&M)** that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	N/A	N/A	N/A	N/A	N/A
O&M	Operating Expenses	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M	\$100k- \$10M

2.5 DESCRIBE IN DETAIL THE ALTERNATIVES, **INCLUDING PROPOSED COST FOR EACH ALTERNATIVE**, THAT WERE CONSIDERED, AND WHY THOSE ALTERNATIVES DID NOT PROVIDE THE SAME BENEFIT AS THE CHOSEN SOLUTION. INCLUDE THOSE **ADDITIONAL RISKS** TO AVISTA THAT MAY OCCUR IF AN ALTERNATIVE IS SELECTED.

Alternative 1:

Address 100% of obsolete products and capacity constraints (Recommended)

This option assumes the assets would 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.

Alternative 2:

Address approximately 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 2.8.

Alternative 3:

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

⁶ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Enterprise Communication

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.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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.

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.

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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

The **Enterprise Communication Systems** Business Case has two levels of governance: The Program Steering Committee and the Project Steering Committee.

Enterprise Communication

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.

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.

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 Communication

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the *Enterprise Communication 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:
Walter Roys Date: May-11-2023 | 9:55 AM PDT
28978793A9C64D0...
 Print Name: Walter Roys
 Title: Sr. Manager System Engineering
 Role: Business Case Owner

Signature: DocuSigned by:
Jim Corder Date: May-12-2023 | 10:25 AM PDT
7002E4872104449...
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

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

Enterprise Security

EXECUTIVE SUMMARY

Cybersecurity threats continue to grow in numbers and complexity. In response to this growing trend, federal agencies overseeing the reliability of electrical and gas infrastructure are increasing their call for utilities like Avista to step up their requirements around security best practices to mitigate the eminent risk. These risks can affect both Information Technology systems and Industrial Control Systems that can potentially impact the ability to provide energy in a secure, safe, and reliable manner to our customers.

Appropriate measures are expected by customers of businesses today to protect the confidentiality, integrity, and availability of the information under their stewardship. This is even more essential to utilities deemed critical infrastructure and required to meet strong reliability standards. Protecting vital electric and gas services from cyber threats requires continued risk-based investment in a myriad of security solutions that defend, detect, and protect Avista's networks and information. Success metrics for each security investment are unique as it is determined by the capability of the implemented security solution and the cost avoidance associated with responding to an incident. For example, Distributed Denial of Service (DDoS) attacks occur daily on Avista's network and vary in size from 15 to 1,300 or more per day. This would result in 11 to 24 hours of downtime each day our network is unavailable, affecting our customer facing website, which has been prevented by investing in a security protection solution.

The average cost of a data breach is also growing along with the number of incidents. The cost of a data breach incident at Avista is estimated to range from \$5.2M to \$20.7M depending on the number of records and type of data stolen, respectively. This estimate does not include the reputational damage or cascading consequences the incident may have on our customers, especially if it affects the delivery of electric or gas service for any period. For example, should the data breach incident cause Avista to bill customers more than once or incorrectly, this would not only put pressure on the customers who cannot pay more, but also create an operational nightmare in crediting or reimbursing customers as quickly as possible, all while trying to maintain current usage and billing information.

The 5-year capital budget request of \$14,300,000 for Enterprise Security funds a diverse set of security solutions that benefit all Avista customers to maintain and enhance Avista's security posture to minimize the risks associated with growing cyber threats. Not approving this business case or its recommended funding level can pose risks to the many systems that Avista depends on to conduct business and deliver safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date
<i>Draft</i>	<i>Andru Miller</i>	<i>Initial draft of original business case</i>	<i>7/01/2020</i>
<i>1</i>	<i>Andru Miller</i>	<i>Updated 5-year funding request</i>	<i>8/09/2022</i>
<i>2</i>	<i>Andy Leija</i>	<i>Updated 5-year funding request</i>	<i>4/27/2023</i>
<i>BCRT</i>	<i>Jeff Smith</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	<i>5/30/2023</i>

Enterprise Security

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$2,860,000	\$2,860,000
2025	\$2,860,000	\$2,860,000
2026	\$2,860,000	\$2,860,000
2027	\$2,860,000	\$2,860,000
2028	\$2,860,000	\$2,860,000

Project Life Span	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

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?

Threats from cyberspace, including viruses, phishing, and spyware, continue to test our industry's capabilities to identify, protect, detect, respond, and recover from them. And while these malicious intentions are often unknown, the methods are becoming more advanced and the attacks more persistent. Additionally, the vulnerabilities in hardware and software systems continue to increase at times faster than a vendor can provide a mitigation patch to be applied, especially with industrial control systems such as those supporting the delivery of energy. This can result in an increase or exposure to risk. To assure that our industry maintains its vigilance, federal agencies, such as the U.S. Federal Energy Regulatory Commission (FERC) through the North American Electric Reliability Corporation (NERC), and the Transportation Security Administration (TSA) are increasing their cybersecurity requirements for best practice across our industry¹. For these reasons,

¹ Federal Energy Reliability Commission – Cyber and Grid Security. [Cyber and Grid Security | Federal Energy Regulatory Commission \(ferc.gov\)](#) and recent updates to North American Electric Reliability Corporation (NERC) Reliability Standard CIP-003-9, Cyber Security Management Controls for supply chain risk management for low impact bulk electric system (BES) cyber systems. [E-1 RD23-3-000 | Federal Energy Regulatory Commission \(ferc.gov\)](#). Transportation Security Administration (TSA) for Pipeline Owner and Operators. [TSA revises and reissues cybersecurity requirements for pipeline owners and operators | Transportation Security Administration](#)

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Avista must continue to advance its cybersecurity program and invest in security controls to prevent, detect, and respond to these increasingly frequent and sophisticated threats. Avista's customers benefit from the protection of Avista's network, data, and information.

1.2 Discuss the major drivers of the business case.

Performance & Capacity is the primary driver for this business case as the projects it funds address security risks with the use of technology that keeps our systems secure and reliable. The security of our electric and natural gas infrastructure is a significant priority at a national and regional level and is of critical importance to Avista customers across our service territory.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

Addressing security risks has been and will continue to be an ongoing need. Also, as cybersecurity threats continue to grow in frequency and complexity, preventative and defensive measures are necessary and require an increase in investment. If the requested funding level is not approved or is deferred, it will prevent Avista from maintaining the security systems that protect from and detect cyberthreats. Alternatives may include moving multiyear capital license renewals, which often come with discounts, to annual renewals at higher operational expense costs, as well as increase the potential for a security event that could impact Avista's operations.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization.

Investments funded under this business case protect Avista's information and reduce the risk of a security event occurring. Additionally, Avista utilizes third party assessments to evaluate the effectiveness of its security posture. These assessments, along with utility industry forums, councils, and organizations provide Avista with a strong baseline from which to measure its security capabilities and determine the appropriate level of investment to mitigate identified risks.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.

Ongoing case studies, articles, reports, and government guidance illustrate continuous cyberthreats to our industry and growing trends in cybercrime. Some even quantify the

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average cost associated with each of these events.² Not only have complexity and frequency of attacks grown, but so too have the attack vectors as businesses post-pandemic increased remote work environments as a retention strategy to provide employees flexibility and reduce turnover and moved more business capabilities to cloud services to gain efficiencies and continuous improvements from technology vendors at scale. These evolutions result in continuous investment in security systems that protect data in the cloud and while an employee is working remotely. According to a recent Security Spending Guide, published by the International Data Corporation (IDC), “worldwide spending on security solutions and services is forecast to be \$219 billion in 2023, an increase of 12.1% compared to 2022.”³

Much like other technology solutions, security systems, such as firewalls, intrusion prevention, anti-virus, and endpoint protection must be regularly updated or replaced as they reach their end of life, as well as license or subscription renewals to continue to receive product support and security updates as they are released. These investments are tracked via lifecycle planning for the hardware, the operating system, the database, the software version, and the license term or count.

Security system vendors drive product lifecycles to continue improving their product. Avista Security Subject Matter Experts track vendor lifecycle roadmaps with each specific vendor on upcoming product versions or system models for compatibility and to plan system upgrades. Future models are not always backwards compatible to previous operating systems, as illustrated in the example below, where not each firewall can run the same operating system that this vendor is releasing.⁴

² The average cost of a data breach in 2022 was \$9.44 million in the United States, and is expected to grow in 2023, according to a 2022 IBM Report. [Cost of a data breach 2022 | IBM](#). Ransomware payments averaged \$1.85 million in 2022 with almost 236.7 million attacks in the first half of that year, alone, according to Astra Security. [100+ Ransomware Attack Statistics 2023: Trends & Cost \(getastra.com\)](#). According to Cybersecurity Ventures, the cost of cybercrime is predicted to hit \$8 trillion in 2023 and will grow to \$10.5 trillion by 2025. [eSentire | 2022 Official Cybercrime Report](#).

³ [New IDC Spending Guide Forecasts Worldwide Security Investments Will Grow 12.1% in 2023 to \\$219 Billion](#).

⁴ Example of vendor roadmap for hardware and operating system compatibility. [Palo Alto Networks Next-Generation Firewalls](#)

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Palo Alto Networks Next-Generation Firewalls


[← PREVIOUS](#)
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The following table shows the PAN-OS® releases supported for each of the Palo Alto Networks Next-Generation Firewall hardware, and VM-Series, and CN-Series models. You can also review PAN-OS support for [PA-7000 Series cards](#) and [PA-5450 firewall cards](#) as well as for [Palo Alto Networks appliances](#).

PALO ALTO NETWORKS FIREWALL MODEL	PAN-OS 8.1*	PAN-OS 9.1	PAN-OS 10.0**	PAN-OS 10.1	PAN-OS 10.2	PAN-OS 11.0
Hardware Firewalls						
PA-200 Firewall (EoS***)	√	–	–	–	–	–
PA-220 Firewall	–	√	√	√	√	–
PA-220R Firewall	–	√	√	√	√	–
PA-410 Firewall	–	–	–	√ 10.1.2 & later	√	√
PA-415 and PA-445 Firewalls	–	–	–	–	–	√
PA-440, PA-450, and PA-460 Firewalls	–	–	–	√	√	√
PA-500 Firewall (EoS***)	√	–	–	–	–	–
PA-800 Series Firewalls	–	√	√	√	√	√
PA-1400 Series Firewalls	–	–	–	–	–	√
PA-3000 Series Firewalls (EoS***)	–	√	–	–	–	–

Moreover, with over two dozen different security solutions required to protect Avista's network, each system has various hardware and software requirements that are tracked and managed for replacement and renewal. To add to the complexity, the security solutions are peppered across various networks that protect Avista's data in our back-office systems, as well as our industrial control systems that provide energy to our customers. Security systems cannot be run beyond their useful life, as the operating system and software may no longer be compatible with the hardware, and the vendor will cease offering software upgrades or patches. Maintaining the lifecycle for security systems is critical to reducing cybersecurity vulnerability risks.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The Enterprise Security Systems business case funds cybersecurity investments to reduce risks by protecting against cybersecurity threats. Investments in security systems vary but fall into protection, detection, identity, authentication, and access to on-premises and cloud resources. Securing Avista's data and information to provide energy safely and reliably to each of our customers is of utmost importance. As the utility industry continues to undergo

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digital transformation and reliance on technology, so will the security investments needed to go side by side. 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.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).

Avista conducts regular analyses on the security posture of our networks through third-party penetration tests, monitors, and addresses system vulnerabilities through a vulnerability management program, and subscribes to government agency information sharing platforms that inform of emerging threats. Moreover, our risk management team also collects data points to determine the risk and mitigating control associated with a potential data breach.

The risk management team uses a third-party cybersecurity insurance broker to benchmark Avista's limit of liability and self-insured retention (deductible) in comparison to utility and energy companies of our revenue size.⁵ Compared to other utilities, Avista's liability coverage falls within the median and self-insured retention. Although data breach insurance coverage continues to go up analogous to data breaches, the utility industry in general has not had a major cybersecurity incident to date, thus keeping the rates reasonable. Additionally, based on the records within our stewardship, the cost of a data breach or risk avoidance estimates for Personal Identifiable Information (PII), or Payment Card Industry (PCI) data can vary from as low as \$5.2M to as high as \$20.7M for the first incident.⁶ This calculation includes the costs associated with:

- Incident Investigation
- Customer Notification/Crisis Management
- Regulatory Fines and Penalties
- PCI Specific Fines if it includes PCI data
- Class Action Lawsuit

⁵ Annual cybersecurity data breach peer benchmarking performed by McGriff Insurance Company.

⁶ Calculation estimates for a data breach of PII, or PCI data is based on number of data records exposed, assuming it's the first breach, the data is stored in a centralized system, no fraud is expected, there is a class action lawsuit, and having data breach insurance coverage. [eRiskHub - NetDiligence® Mini Data Breach Cost Calculator](#)

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It does not include the cost associated with reputational damage from the event or the extent to which the event has other implications on Avista or its customers who may experience a ripple effect associated with the initial data breach. The annual recommended investment in security solutions is less than the cost of one data breach incident, let alone the cost associated with ransomware or subsequent incidents.

2.3 Summarize in the table and describe below the DIRECT offsets or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Not Applicable	\$0	\$0	\$0	\$0	\$0
O&M	Not Applicable	\$0	\$0	\$0	\$0	\$0

There are no direct offsets associated with risk-based investment in security solutions. It is much like investing in life insurance to offset the probability and impact in the event of death. While it cannot be fully prevented, the prudent decision to invest in life insurance brings confidence that when it does occur, the impact or consequence will be manageable. With the number of cybersecurity incidents growing in number and complexity, there is no utility business that would not invest in security solutions as part of ongoing investment and accept it as the cost of doing business. The question is not whether to invest or not, but how much to invest to reduce the risk of a cybersecurity incident occurring.

2.4 Summarize in the table and describe below the INDIRECT offsets (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Security Solutions	\$104,000	\$104,000	\$104,000	\$104,000	\$104,000
O&M	Data Breach Cost Estimates	\$936,000	\$936,000	\$936,000	\$936,000	\$936,000

Based on the data breach cost estimates above for a PII and/or a PCI data breach, the indirect offsets range from \$5.2M to \$20.7M per incident or on average \$12.9M. Additionally, the costs associated with incident response, customer notification, crisis management, regulatory fines and penalties, and class action lawsuits are mostly operational expense costs. There is an assumption that the vulnerabilities or gaps identified during the incident will require immediate investment in security solutions to mitigate the existing and/or future events. Therefore, the potential indirect offsets are 90% operation and maintenance and 10% capital using the lowest cost of a data breach with only PII data and no class action lawsuit. However, they can be significantly higher, such as \$18.63M in operation and maintenance and \$2.1M in capital, respectively, should the incident be on the high end. Also, not knowing when or how often a data breach would occur, the conservative estimate with

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the assumption that the incident only happened once, amortized over 5 years, the cost would be \$936k in operation and maintenance and \$104k in capital, respectively.

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternatives under this business case vary by security solution, vendor offerings, and internal capabilities. They may include several alternatives, such as: security as a managed service, security as a service subscription, or internal implementation or replacement of the security solution.

Alternative 1: Security as a managed service is whereby a third-party vendor performs security on Avista's behalf. The most common services provided by a managed service vendor includes managed security monitoring, vulnerability risk assessment, threat intelligence, security consultation, security program development, perimeter management, penetration testing, product resale, and compliance monitoring. Common reasons for hiring a third party are lack of internal resources, talent, or expertise; cost savings; moving to 24x7 security coverage; compliance; and speed of response to incidents.⁷ We have used security as a managed service for third-party penetration tests to identify weaknesses, as well as for Distributed Denial of Service (DDoS) protection for internet traffic, where we have seen significant protection from massive attacks on Avista's network that would have caused major disruptions on our customer facing website and internal back-office services. If not mitigated, these attacks can result in subsequent ransomware attacks.

Alternative 2: Security as a Service (SECaaS) is often a subscription-based model whereby we leverage a security solution vendor's expertise and scalability on a particular solution and capability. Some examples include continuous monitoring, data loss prevention, business continuity and disaster recovery, email security, antivirus management, spam filtering, identity and access management, intrusion protection, security assessment, network security, web security, and vulnerability scanning.⁸ This can include ongoing patching, virus definitions, and system upgrades that free up internal resources to work on higher priority work or work assignments specific to an electric and gas utility. There are a few cases where we have outsourced for this work, such as managed detection and response, which has reduced our operational overhead in antivirus management and provides up to date threat detection, resulting in high value for endpoint security 24x7.

⁷ [The 9 most common MSSP security services \(exigence.io\)](https://www.exigence.io/blog/the-9-most-common-mssp-security-services)

⁸ [What is Security as a Service \(SECaaS\)? | Forcepoint](https://www.forcepoint.com/blog/what-is-security-as-a-service-secaaS/)

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Alternative 3: Internal implementation or replacement of the security solution is often selected as the alternative of choice given that we are a highly regulated utility, that is required to meet many compliance requirements and thus require tailored implementations. Because much of Avista's data is stored in our data centers, it is critical that we invest in the verification of people who authenticate using their accounts and devices to access our networks, as well as in security protection and detection tools to deter and detect when unauthorized activity is detected.

Lastly, while there are opportunities to leverage the capabilities and economies of scale of a third-party vendor in alternative 1 and 2, the costs typically fall under recurring operational expenses. And the services may not always be tailored enough to meet Avista's specific needs or stringent compliance requirements. Therefore, we are very selective and intentional when we pursue security as a managed service or a service subscription.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Each security solution investment under this business case reduces security risk in a unique way and therefore measuring their success is also unique. For example, in the case of a protection solution, the system will act as a wall or shield to prevent access to Avista networks from unauthorized users or devices. A success measure that shows the solution's value is the number of prevented unauthorized attempts or attacks on Avista's networks, including the size and frequency, which could have resulted in a sustained network outage. This translates into downtime for systems, as well as an increase in operational resources to troubleshoot the issue and determine root cause.

Similarly, for a vulnerability scanning solution, the system will identify and catalog by risk the number of vulnerabilities found on several types of systems that require patching. This includes servers, personal computers, and applications. Success can be measured by the number of identified vulnerabilities per scan, their risk score, and the ability for technology teams to patch pre and post scanning cycles to reduce vulnerability risks.

Each security solution performs a different and unique security function, and its success is determined by how well the solution accomplishes it. This implies that to increase its success, the implemented solution is running in accordance with vendor specifications and has been fully optimized to extract the greatest value.

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2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The Enterprise Security Systems business case is a program that consists of multiple security projects per year that run concurrently, and at times over multiple years. They follow all phases of the project lifecycle, facilitated by a project manager, and governed by a steering committee to determine scope, schedule, and budget forecasts, including transfers-to-plant.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

There are two levels of governance to the Enterprise Security business case and the investments within it. They consist of a business case governance team and project specific steering committees for in-flight projects.

Business Case Governance Team: The Enterprise Security Governance Team provides monthly oversight of this program business case and makes recommendations based on forecasted inactive planned investments, the pace of in-flight investments, and any new unplanned activity that surfaces from an emerging security threat. The team also tracks business case risks and issues that can affect the portfolio of planned investments.

Monthly governance meetings consist of a full review of each in-flight investment, reasons for any delays or deviation to proposed completion and transfers to plant schedules and recommends necessary steps to bring the investments back into schedule or defer inactive work, when possible, to offset delays. However, should a security risk be increased by deferring a planned or unplanned investment into future years, the Enterprise Security Governance Team will recommend a Capital Planning Group (CPG) In-Year Change Request to surface the impending need. The Change Requests are presented at a monthly Technology Planning Group meeting to inform the Director members who are also members of the CPG where the request will be considered and weighed against other pending requests.

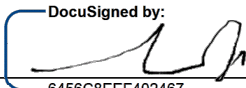
The Enterprise Security Governance Team consists of Avista's Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, Security Delivery Manager, and the Project Management Office Manager. The sessions are facilitated by the Security Program Manager who manages the standing agenda.

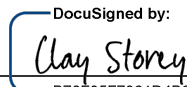
Project Steering Committees: Additionally, each security investment is governed by a project steering committee that consists of the Enterprise Security Director, Cybersecurity Manager, and Security Delivery Manager, as well as ancillary management team members required for the successful implementation of the security solution. Steering committee meetings are facilitated by a Project Manager and held monthly to review scope, schedule, budget, and risks and issues surfaced from each in-flight project.

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3. APPROVAL AND AUTHORIZATION

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: Jun-12-2023 | 10:58 AM PDT
 Print Name: 6456C8EEF402467...
 Andy Leija
 Title: Security Delivery Manager
 Role: Business Case Owner

Signature:  Date: Jun-12-2023 | 11:28 AM PDT
 Print Name: B70E95F7061D4B6...
 Clay Storey
 Title: Director of Security
 Role: Business Case Sponsor

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

Enterprise Technology (ET) Modernization & Operational Efficiency Technology DM-2

EXECUTIVE SUMMARY

The Enterprise Technology Modernization and Operational Efficiency (ETMOE) Program¹ Business Case sponsors the tools and systems used by the technology teams to support business application implementation, development, operations, support, automation, and data to deliver solutions to the rest of the organization. Avista's Enterprise 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 to maintain reliability, compatibility, and reduce security vulnerabilities.

In order to maintain these business processes and systems supported by this Program, the historical annual funding has been approximately \$1.6M/year. The proposed costs are approximately \$3.6M for 2024 and \$2.4M for 2025. This level is higher in these years primarily due to the inclusion of the larger IT Service Management Project. Overall, this funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the ET Modernization Governance Committee. This funding level also considers the development staff required to maintain these core technology solutions.

As the utility industry undergoes transformation into digitalization, the growth of business application technology continues to enable automation and manual business processes to strengthen our ability to perform, which impacts our capacity to achieve stated financial objectives and affordably operate and maintain safe, and reliable generation and energy delivery infrastructure. This growth in business application technology creates an intricate tapestry that requires 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 velocity to meet business goals and customers' expectations.

The cost of these solutions varies by scale of footprint and vendor licensing models. The technology under this program undergoes regular utilization and performance reviews to determine expected standards and capacity requirements to maintain system reliability under the established budget allocations and respective technology lifecycles. These reviews can result in periodic supplementary investment demands as a result of technology lagging behind its lifecycle or predetermined performance standards. The technology, tools, and systems under this program benefit all Avista customers, as they support company-wide business application systems that empower employees to perform at a more strategic level. An example of this includes Adobe Acrobat and Tableau applications which all employees have access to, to be able to work more efficiently.

Failure to approve the recommended funding would cause the deferment of upgrades and enhancements, resulting in unsupported applications, security liability, non-compliance, and significantly higher costs. It would also risk the reduction of skilled resources resulting in the loss of institutional business process and technology skillset in an exceptionally competitive market. Investments in these technology upgrades, enhancements and licenses provide indirect savings by quantifying the efficiencies based on assumptions on minutes of efficiency, percent of users, etc. The amount of estimated indirect savings will vary from year to year given this is a program with many different projects happening each year. The estimated annual savings are expected to range from \$382,000 to \$632,000 over the next 5 years.

¹ "A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.", Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition*. Page 3 (Copyright 2017)

Enterprise Technology (ET) Modernization & Operational Efficiency Technology DM-2

VERSION HISTORY

Version	Author	Description	Date
1.0	L. Raymond	Initial draft of original business case (post BCRT review)	04.06.2023
1.1	K.. Schuh	Updates	04.30.2023
BCRT	L. Miller	Has been reviewed by BCRT and meets necessary requirements	05.10.2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$3,618,000	\$2,818,000
2025	\$2,443,408	\$3,179,216
2026	\$2,602,843	\$2,667,035
2027	\$3,117,500	\$3,017,500
2028	\$2,193,780	\$2,293,780

Project Life Span	Program Business Case
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Karen Schuh Jim Kensok
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

Enterprise Technology (ET) Modernization & Operational Efficiency Technology

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?

The growth in business application technology, as part of the digital 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 velocity to meet business goals and 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.

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. This business case focuses on the tools and systems used by the technology teams to deliver solutions to the rest of the organization and is mainly comprised of product licenses, hardware, upgrades, and enhancements. The technology tools and systems under this program benefit all Avista customers, as they support business application systems throughout the Company that produce indirect savings and/or productivity gains.

Some examples of those components are as follows: The funding requested under the ETMOE Business Case will be invested in technology, such as:

- Content and Workflow Platforms – Enhancement and upgrades for platforms that allow for content storage and sharing, such as ECM (Enterprise Content Management) and the Intranet, as well as organizational workflows.
- Non-production Environment & Data Management – Enhancements and new system implementations required to support continuous integration, Quality Assurance (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 (Customer Care & Billing) 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.

Enterprise Technology (ET) Modernization & Operational Efficiency Technology

Reliance on obsolete technology for automated business processes presents significant risk that may only be solved with the reinstatement of manual processes. 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 processes by replacing automation with workforce would increase labor expenses 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.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

If the investments under this business case are not approved, it would result in technology platforms and tools falling behind their required upgrades. This would hinder support for business applications used daily for investment planning and delivery, managed file transfers, pre-production testing, and technology lifecycle management. 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.

Upgrading to the recommended or latest software versions is important to maintain the overall health of our technology. There are many reasons that upgrades are necessary, from enhanced security, to increases in employee productivity (and lower costs). Upgrading business software is an economical decision compared to the cost of maintaining outdated software that suffer breakdowns and places a massive burden on Operations (and the budget).

Upgrades exist to avoid common risks, such as:

- Security - Outdated or unpatched software increases the risk of vulnerabilities or security exploits.
- Incompatibilities - Outdated software can disrupt workflow or fail to work with other (duly updated) software.
- Degradation - Software can experience a slow deterioration of quality over time or diminished responsiveness that could eventually become faulty or unusable, if not upgraded.
- Deficiencies - No matter how well the software is tested, many times it is deployed with defects that need to be remediated.
- Obsolescence - Software updates do not always solely address security issues or deficiencies. Sometimes they are there to add necessary functionality or optimize existing features, such as new regulatory requirements or industry guidelines. There is a heightened risk of losing vendor support from choosing not to install software updates and the latest improvements.

Software enhancements are just as critical, as demands change so rapidly, we must look for ways to extend functionality of our software investment rather than go through full replacement cycles. The Software Development Life Cycle (SDLC) describes the process of planning, analysis, design, build, test and implementation, but it does not stop there. It has further steps into maintenance, enhancement, and progression. Software enhancements help to improve system efficiency, anomalies, and better cross-platform compatibility. There are also unavoidable governance and compliance changes that may drive the need for software optimization, thus why continuous delivery and continuous integration are common practices within the SDLC.

Enterprise Technology (ET) Modernization & Operational Efficiency Technology DM-2

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization.

Avista Focus Areas		
<input type="checkbox"/>	Our Customers	<ul style="list-style-type: none"> • Mature our customer experience, both internal & external • Support affordability, equity, and economic vitality • Understand and address the evolving customer needs by offering products, services, & solutions
<input checked="" type="checkbox"/>	Our People	<ul style="list-style-type: none"> • Evolve our employee experience with a focus on engagement, development, resiliency & well-being • Improve safety & training systems to reduce injuries, expand learning & understand risks • Strengthen equity, inclusion, & diversity within systems, practices, & behaviors
<input checked="" type="checkbox"/>	Perform	<ul style="list-style-type: none"> • Affordably operate & maintain safe, clean, reliable generation & energy delivery infrastructure • Achieve stated financial objectives
<input type="checkbox"/>	Invent	<ul style="list-style-type: none"> • Foster & apply an innovation culture to benefit employees, customers, communities, & shareholders • Create the utility of the future with our stakeholders, optimizing for cost, carbon, & reliability

This is a program with discrete projects and packages that align with Avista’s vision, mission and strategic objectives. Specific Focus Areas include:

Our People: Technology plays a critical role in how employees feel about their day to day experience. Employees that are more productive and efficient by using technology, allows them to focus on more strategic objectives that help to propel the company forward. These types of activities naturally promote more resilient, engaged employees that are more performance and results driven.

Perform: The technology in this business case 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 technology to meet business needs. The efficiency and reduction of steps creates a cost savings from automating manual processes and utilizing tools that can be utilized across the enterprise. The majority of our ET applications are also used by other business areas or support the department specific tools. The ability to consolidate applications to meet multiple business needs avoids the incremental costs of licensing, contracting, training, delivery, support, etc. These back office applications are necessary to achieve our stated financial objectives and impact our ability to affordably operate and maintain generation and energy delivery infrastructure.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

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.

Enterprise Technology (ET) Modernization & Operational Efficiency Technology

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:

- Vendor roadmaps for specific platforms and tools, such as Opentext (for Enterprise Content Management) Biztalk (for Enterprise Service Bus, ServiceNow (for IT Service Management) are examples of vendor roadmaps regularly referenced.
- ET utilizes Gartner for Information Technology insights, analysis, research and reference materials. Gartner is an industry leader in IT research, benchmarking, and consulting practices and provides Avista the ability to understand market trends, best practices and make more informed technology decisions. For example, Gartner's 'Magic Quadrant', provides a graphical positioning of technology providers in the market, with the ability to home in on critical capabilities based on requirements and specific use cases. This capability alone significantly reduces the time and effort of researching, evaluating, and reference checking.

Some examples of recent Gartner references include:

- Clarity PPM – Evaluating Project, Portfolio Management systems to determine the benefit of upgrading vs. replacement.
- ServiceNow / IT Service Management – Evaluation of IT Service Management tools, vendors, System Implementors, and licensing models.

Link: [Gartner for Information Technology \(IT\) Leaders](#).

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

As the utility industry undergoes transformation into digitalization, the growth of business application technology continues to enable automation and manual business processes to strengthen our ability to perform. Business application technology requires shared platforms and management tools to increase the quality, stability, and velocity to meet business goals and customers' expectations. In order to maintain the business processes and systems supported by this business case, the recommended funding is necessary to deliver the technology and development to maintain application lifecycle support, security risks, compliance requirements, and cost savings. The cost of these solutions varies by scale of footprint and vendor licensing models. These reviews can result in periodic supplementary investment demands as a result of technology lagging behind its lifecycle or predetermined performance standards.

The proposed solution would upgrade, replace, or enhance the technology that is used by all areas of the organization, or tools used by the technology team to support other business application systems. The business functions or processes that may be impacted to solve the business problem(s) include, but are not limited to:

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Enterprise Technology (ET) Modernization & Operational Efficiency Technology

- 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.
- Managed file transfers for internal and external movement of information among systems and third parties.
- Business Intelligence analysis and data visualization and dashboard reporting.
- Root cause analysis is a tool to identify the cause for faster operational remediation.
- Information storage for technology lifecycle management, and
- Workflow processes for technology incident management and change approval.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).

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 for license renewal and the licensing model being offered by the technology vendor. This makes forecasting product license renewal costs quite challenging. The following are examples of indirect benefits based on projects that will transfer to plant in 2023:

- Data and Analytic Platform (DAAP) - The annual indirect labor offset is estimated at \$127,000. The Data and Analytic Platform is a data management architecture for data processing and analytics that combines the strengths of traditional repository warehouses with data virtualization and distributed processing. The DAAP improves agility, increases multiuse and reduces risks by creating a common data platform from which data can be governed, accessed, leveraged, and used. The need to provide continuous improvements and enhancements to this enterprise application is required to meet business requirements that serve our customers. The primary areas for capturing measurable business value from a Data and Analytics Platform include improved infrastructure asset performance, efficiencies (i.e., cost optimization) enterprise wide, providing customers with additional information that helps inform them when making energy choices, and pursuing potential revenue growth opportunities.

- MuleSoft API (Application Programming Interface) Licenses – The annual indirect labor offset is estimated at \$132,000. MuleSoft is our Application Programming Interface (API) service provider. An API is a type of software interface that allows communication between computers in a more simplified fashion. It only exposes objects or actions the developer needs. An API would provide the ability for a developer to use a function that copies a file from one location to another without requiring the developer to understand the file system operations occurring behind the scenes. It provides a much more efficient process for creating an interface without having to fully migrate into the ecosystem. Offsets or efficiencies gained would have been realized upon the initial installation of the software.

- App Dynamics – The Company calculated the potential indirect offsets of the upgrade to App Dynamics and represents an avoided cost should the system be abandoned and go back to manual processes of approximately \$750,000. AppDynamics is a technology solution that provides system monitoring, root cause analysis automation and provides end-to-end business transaction-centric management of complex and distributed applications. When AppDynamics was originally implemented, it was deemed to allow the Operations team to maintain the current level of service to the enterprise, and improve it, due to the ability to quickly isolate and resolve

Enterprise Technology (ET) Modernization & Operational Efficiency Technology

production performance issues. In addition to tangible operations benefits, the implementation of this software allows for an internal rate of return (IRR) range of 23.22% to 143.17%, as well as significant Operation & Maintenance (O&M) savings. These savings were realized upon the initial implementation of App Dynamics and would not be realized again for this upgrade.

In summary, investments in these technology upgrades, enhancements and licenses provide indirect savings by quantifying the efficiencies based on assumptions on minutes of efficiency, percent of users, etc. noted in the above projects. The above projects do not include all the projects included in this business case; these were provided as a sample of indirect savings that represent the entire business case. Therefore, these are high-level estimates, and the Company does not have a way to track if these estimates will be realized.

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) allow 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.

2.3 Summarize in the table and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.

There are no identified direct offset for this business case.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$	\$	\$	\$	\$
O&M		\$	\$	\$	\$	\$

2.4 Summarize in the table and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

The following table represents examples of projects that will have indirect offsets. These types of offsets occur in this business case annually. There are no capital offsets for this program.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$	\$	\$	\$	\$
O&M	IT Asset Management System	\$250,000	\$500,000	\$500,000	\$500,000	\$500,000
O&M	MuleSoft API Licenses	\$132,000	\$132,000	\$132,000	\$132,000	\$132,000
	Total O&M	\$382,000	\$632,000	\$632,000	\$632,000	\$632,000

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Enterprise Technology (ET) Modernization & Operational Efficiency Technology

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Option	Capital Cost
Recommended Solution – Maintain application lifecycle support, security risks, compliance requirements, and cost savings at the requested funding level	\$13,975,531
Alternative 1 – Fund at a reduced level by removing the ITSM project.	\$12,850,531
Alternative 2 – Not funding the Program (or Lifecycle Management)	\$6,501,280

Alternative 1: This alternative solution would require the ITSM project to be delayed or eliminated from the funding. Removing the ITSM project would continue to aggravate the security and compliance risks associated with this legacy tool. Avista's current system has a high vulnerability due to the inability to patch core code and Microsoft pre-requisites (e.g., Visual Basic). A modern work management system (ITSM) is essential to maintain compliance. The ITSM system will reduce the time and cost of custom development, configuration and maintenance, as well as improve reliability, quality, and security issues related to incompatibilities. If this work is deferred, we will continue to exacerbate the risks associated with custom and antiquated technology and delay the efficiency gains expected of this investment. We have deferred this project for many years already, and it has become evident that we must address the business problems at this time.

Alternative 2: Failure to approve the recommended funding would cause the deferment of upgrades and enhancements, resulting in unsupported applications, security liability, non-compliance, and significantly higher costs. It would also risk the reduction of skilled resources resulting in the loss of institutional business process and technology skillset in an exceptionally competitive market. Investments in these technology upgrades, enhancements and licenses provide indirect savings by quantifying the efficiencies based on assumptions on minutes of efficiency, percent of users, etc.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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.

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 to more value-driven activities by leveraging technology to meet both planned and unplanned business needs.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

This Business Case is a program with approximately 25-30 discrete projects and packages for applications that typically run annually and Transfer to Plant at different times within that same year.

Enterprise Technology (ET) Modernization & Operational Efficiency Technology DM-2

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). Quarterly forecasts capture changes in transfers to plant based on project status. 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. Examples of application projects included in this business case can be found in section 2.2 where offsets are discussed. Please see section 2.8 for the prudency review that takes place during the Business Case Program Steering Committee meetings.

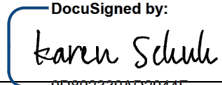
2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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) of Managers, and Program/Project Steering Committees that includes stakeholders to the individual projects. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects. 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 of Directors, establishes funding allocations for each Business Case across the enterprise. The IOC evaluates and compares all the application portfolio project priorities, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The ETSC, TPG and IOC all have charters detailing their mission and governance structure, etc.

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.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the *ET Modernization & Operational Efficiency Technology Business Case Justification* 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:  Date: May-10-2023 | 1:50 PM PDT
 Print Name: Karen Schuh
 Title: Manager, ET PMO
 Role: Business Case Owner

Enterprise Technology (ET) Modernization & Operational Efficiency Technology

OM-2

DocuSigned by:
 Signature: Jim Kensok Date: May-10-2023 | 1:53 PM PDT
733AFC4130114FA...
 Print Name: Jim Kensok
 Title: VP, Chief Information & Security Officer
 Role: Business Case Sponsor

DocuSigned by:
 Signature: Hossein Nikdel Date: May-10-2023 | 1:58 PM PDT
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 Print Name: Hossein Nikdel
 Title: Director, Applications & System Planning
 Role: Steering/Advisory Committee Review

DocuSigned by:
 Signature: Jim Corder Date: May-10-2023 | 4:29 PM PDT
7002E4872104449...
 Print Name: Jim Corder
 Title: Director, IT & Security
 Role: Steering/Advisory Committee Review

DocuSigned by:
 Signature: Clay Storey Date: May-10-2023 | 3:32 PM PDT
B70F95F7961D4B6...
 Print Name: Clay Storey
 Title: Director, Enterprise Security
 Role: Steering/Advisory Committee Review

Facilities and Storage Location Security

EXECUTIVE SUMMARY

The reliability of Avista’s electric and gas infrastructure is maintained and operated by people. Our highly skilled staff require equipment and material readily available to respond to customer needs, conduct preventative routine maintenance, and recover from storm caused outages. To cover Avista’s service territory of gas and electric customers across three states, we operate out of over two dozen office and storage locations where people plan and prepare daily to safely make sure electricity and gas service is delivered to our customers. The equipment, tools, and material required to do this is also critical. Therefore, Avista maintains a fleet of vehicles, tools, and equipment in working order, as well as spare material to reduce any unnecessary downtime in case of an unplanned event. For example, it can take up to 18 months to replace a bucket truck, and during the replacement period, Avista would need a rental to keep the crews working.

To protect people and assets at these various locations, Avista must invest in layered physical security enhancements that denies, deters, detects, or delays an intruder or attack. The current security measures are either inadequate or have run their useful life. The physical security hardening measures proposed include replacing and centralizing an outdated access management system to deny access to unauthorized people; replacing doors, gates, and fencing to deter and delay threats; and replacing or upgrading cameras, alarms, and motion detection systems to capture video surveillance evidence to aid in law enforcement investigations. The cost estimate associated with this program investment is \$2M over 5 years. While this may not be adequate to address all the identified risks, it is enough to begin addressing the highest priority risks first. For example, all of the previous year allocations have gone into replacing the outdated access management system at multiple Avista facilities. There are 4-5 facilities left that are planned for replacement in 2024. Only after that will the program begin replacing other security technology.

Investments in physical security hardening at Avista’s office and storage locations will reduce ongoing risk of theft, vandalism, or sabotage, as well as improve the safety and security of staff at these facilities. There is no dollar amount estimated to replace the loss of life or inflicted trauma to any of our staff from a physical injury due to an assault at one of our facilities. So, while these events do not happen often, the consequences can be high depending on the damage or theft, which can range from stolen material or tools to damaging or theft of specialized replacement parts, approximately \$5K to \$50K, respectively. The cost is greater for irreparable damage to or theft of a fleet vehicle, including the operational costs associated with renting equipment or fleet vehicles during the replacement period. These investments have direct benefit to Avista and our customers, as they secure and protect our people and assets required to operate and timely recover from an outage event. Not approving the recommended funding amount can pose risks to the people and assets Avista depends on to conduct business and deliver safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date
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Facilities and Storage Location Security

Draft	Andru Miller	Initial draft of original business case	7/01/2020
1	Andru Miller	Updated 5-year funding request	8/09/2022
2	Andy Leija	Updated 5-year narrative & funding request	5/10/2023
<i>BCRT</i>	<i>Jeff Smith</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	<i>5/30/2023</i>

Facilities and Storage Location Security

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$400,000	\$400,000
2025	\$400,000	\$400,000
2026	\$400,000	\$400,000
2027	\$400,000	\$400,000
2028	\$400,000	\$400,000

Project Life Span	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Avista office facilities and storage locations house staff and store equipment, tools, and materials. These locations are critical to support our day-to-day operations to deliver gas and electricity safely and reliably to our customers. The office facilities and storage locations are in strategic areas across our service territory to be available for prompt response to customer requests, preventative maintenance, or storm recovery. The office facilities and storage locations require investment in physical security enhancements to deter, detect, and delay physical security threats to protect our people and assets.

People use these facilities to operate and maintain our infrastructure. They consist of small one-person construction offices with crews that come and go in rural towns, to call centers, to our company headquarters in Spokane, WA. Each of these office locations is critical to our operation. In some cases, the same campus facility may host multiple functions that serve both gas and electric customers, such as call center services, construction office services, and as equipment and materials storage location.

Facilities and Storage Location Security

Additionally, these locations store millions of dollars in equipment, tools, and materials required to operate and maintain our infrastructure. In some cases, the equipment, tools, and materials stored are unique to the gas and electric services we provide and specific to certain locations. So, while the probability is low of an event occurring, the consequence may be high. For example, should any of these assets be damaged or stolen, replacing them can take weeks, to months, to years, depending on the uniqueness of the equipment and whether it is made to order or specifications versus an easier to find commodity. Estimated costs can vary between \$5K to \$50K, respectively, and depending on the theft or damage. However, and while it does not often occur, the cost of irreparable damage or theft of a fleet vehicle is much higher.

A physical security incident at any of these locations may harm people, damage tools and equipment, or even restrict our ability to respond to our customers, if the required tools, equipment, or material are not readily available. Also, a physical breach can give intruders access to Avista's network, which can then lead to a cybersecurity event. Not investing in the security of Avista's facilities and storage locations would pose a significant risk in our ability to maintain and operate our electric and gas infrastructure. For example, a few years ago one of Avista's storage locations was broken into that had a forklift vandalized causing damage to various equipment. The only way Avista was made aware of the intrusion during the weekend was from the neighbors. While the neighborhood watch plays a role, it does not promote confidence to our customers that Avista can maintain the security and reliability of the infrastructure under our stewardship. Physical security enhancements, such as gates, fencing, and access controls will aim to deter and delay a threat while cameras, alarms, and motion detection systems will capture evidence to aid law enforcement investigations.

1.2 Discuss the major drivers of the business case.

Performance & Capacity is the primary driver for the Facilities and Storage Location Security program business case as the projects it funds address security risks by protecting our people, equipment, tools, and material that are critical to support our day-to-day operations. Replacing an outdated access management system to deny access to unauthorized people at five additional facilities will centralize access management for all of Avista's facilities. Camera replacements and enhancements will be the next phase at these facilities to provide visibility at each of these locations.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

Addressing security risks in our office or storage facilities has been and will continue to be an ongoing issue. We have had theft and vandalism incidents that have resulted in equipment damage and tools and material theft. Also, in some of these smaller facilities, once the crews are out for the day, there is a lone worker that is available to respond to

Facilities and Storage Location Security

operational needs that arise throughout the day, such as responding to walk-in customers, coordinating out of town contractor crews, or receiving deliveries. The office facilities must provide adequate safety and security to the lone workers, especially in the winter season when sunlight is limited during the workday. Additionally, Avista suffers from theft and vandalism at various facilities and storage locations. In recent years, homeless have vandalized our downtown location several times resulting in clean up fees of drug use paraphernalia and prompting calls to the law enforcement to stop an altercation essentially a glass window away from our employees. Deferring or not approving this investment increases the likelihood of a security event that could impact our people, equipment, tools, or materials that are critical to support operations.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link. [Avista Strategic Goals](#)

The Facilities and Storage Location Security program business case provides funding for security-related projects and aligns with Avista’s strategic goal to “affordably operate and maintain, safe, clean, reliable generation and energy delivery infrastructure.” A focus under this strategic goal is to mature Avista’s physical security program and emergency response.¹

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.

According to the Department of Homeland Security in 2022, Domestic Violence Extremists (DVEs) adhering to a range of ideologies will likely continue to plot and encourage physical attacks against electrical infrastructure. By extension, office facilities and storage locations are also at risk, if delaying a response by damaging equipment, tools, or material is part of a coordinated attack. Additionally, should an attack include any gas infrastructure, the equipment, tools, and material must be readily available to aide the immediate response as it presents a safety risk to the public. Therefore, the Cybersecurity & Infrastructure Security Agency (CISA) and the Department of Energy (DoE) call for utilities to step up their physical security posture and take mitigating steps that include physical protective security measures to reduce or minimize the impact of an attack. The physical security enhancement should include a risk based, layered approach that dissuades a potential attacker through visible security measures.²

¹ [Strategy Scorecard. Board of Directors Meeting. February 2023.](#)

² [Sector Spotlight: Electricity Substation Physical Security \(cisa.gov\)](#)

Facilities and Storage Location Security

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The Facilities and Storage Location Security business case provides funding for cyber and physical security enhancement projects, such as gates, fencing, and access control systems that are aimed to deter and delay a threat while cameras, alarms, and motion detection systems will capture evidence to aid law enforcement investigations. With over two dozen office and storage facilities across Oregon, Idaho, and Washington, the recommended solutions will vary by location based on the criticality of the location, the known threats or history of vandalism activity to determine the level of risk-based layered physical security response. At a minimum, all Avista facilities will have upgraded to a centralized access control system at all perimeter doors and gates to manage authorized access. Brass keys are not a solution for this, as they can be easily lost, stolen, or misused. Second, some facilities require a video/intercom system with remote switch or pin pad to authorize gate access for ad-hoc or recurring services, such as delivery of mail, parts, tools, material, garbage pickup, occurring throughout the workday and off hours. Proper video surveillance at specific facilities is necessary to keep eye on materials, tools, and equipment that has in years past gone missing from unmanned locations.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).³

The funding request is based on previous year funding levels, except for an acceleration of replacing an end-of-life access management systems at five remaining office facilities. Addressing these remaining locations will reduce a cybersecurity risk and daily operational challenges in the first year, while layering physical security measures to subsequent locations of highest risk. The estimates are based on historical values from previous access management system conversion projects to date, as well as the cost of video surveillance replacements in several locations. Continuous investment reduces the risk of unauthorized access to our facilities and storage locations. The risk avoidance estimate can vary between \$5K to \$50K in theft or damage to tools, material, equipment or fleet vehicles. There is no cost estimated to replace the loss of life or inflicted trauma to any of our staff from a physical injury due to an assault at one of our facilities.

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Facilities and Storage Location Security

2.3 Summarize in the table and describe below the DIRECT offsets⁴ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	\$0	\$0	\$0	\$0	\$0
O&M	N/A	\$0	\$0	\$0	\$0	\$0

There are no direct offsets associated with investments in physical security enhancements in facilities and storage locations. Doing nothing is not an option, as Avista staff safety and the security of equipment, tools, and material is critical to operations.

2.4 Summarize in the table and describe below the INDIRECT offsets⁵ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Equipment, Tools, Material replacement	\$594,000	\$594,000	\$594,000	\$594,000	\$594,000
O&M	Damage repairs	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000

Indirect offsets include the cost avoidance from lost, stolen, or damage equipment, tools, and material. Typical stolen material includes copper wire and tools right out of parked fleet vehicles. In a recent event, the intruder started a forklift and drove it through a storage yard fence, damaging the forklift and some material along the way. In a separate event, intruders assumed that digging up cable would result in a windfall of copper. They instead what they dug up and damaged was fiberoptic cable that provided communication signals from our facility to our central office systems. The repair work to damaged assets and replacement of equipment, tools, and material not only cost time and money, but it also makes the asset unavailable for use when needed. Based on these examples, the estimated cost of each event can range from \$5K to \$50K, depending on the theft or damage. Using these estimates, the average cost of an incident is \$27.5K each occurrence. With over two dozen office and storage yard locations, assuming one incident per location, the cost per year is approximately \$660K in stolen or damaged equipment, tools, or material. Assuming the asset is either stolen or deemed irreparable, the cost is capital to replace. However, the cost of repairing cut fences, dug up ditches, and vandalized equipment is operation and maintenance expense. Therefore, the assumption is 85% capital for replacements and 15% in O&M repairs.

⁴ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁵ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Facilities and Storage Location Security

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

The program business case contains both cyber and physical security projects that protect our people, assets, and information from growing risks. The layered risk-based physical security enhancements consider the most cost-effective solutions and alternatives to address the risk at each location. The alternatives presented are listed in order of addressing identified risk.

Option	Capital Cost	Start	Complete
Alternative 1: Address centralized access management replacement in 2024 only at office locations, then proceed to other measures as funding is available (Recommended)	\$2,000,000	01 2024	12 2028
Alternative 2: Address layered risk-based security enhancements at office facilities and storage locations in 7 years, as appropriate	\$2,000,000	01 2024	06 2031
Alternative 3: Address layered risk-based security enhancements at office facilities and storage locations in 10 years, as appropriate	\$2,200,000	01 2021	12 2033

Alternative 1: The recommended option includes accelerating the completion of a slow-going effort to replace Avista’s centralized access management system in office locations by the end of 2024. This replacement is necessary to remove a legacy system that is at risk of cybersecurity threats and causes daily operational challenges. The subsequent years will continue physical security enhancements at both office and storage locations, as well as camera and video surveillance system replacements based on lifecycle to deter, detect, and delay physical security threats, as funding is available.

Alternative 2: This approach will also complete the replacement of Avista’s centralized access management system in office locations by the end of 2024. However, \$400K of the funds are needed in 2024, followed by the remaining \$1.6M over the subsequent 6 years. Continued investments in layered physical security enhancements at office and storage locations will continue in subsequent years with the goal of completing them over the same period.

Alternative 3: This option will also complete the replacement of Avista’s centralized access management system in office locations by the end of 2024. However, \$400K of the funds are needed in 2024, followed by the remaining \$1.8M over the subsequent 9 years. Continued investments in layered physical security enhancements at office and storage

Facilities and Storage Location Security

locations will continue in subsequent years with the goal of completing them over the same period.

Doing nothing is not an option or presented as an alternative, as called out by Avista's senior leadership in the 2023 Strategic Goals, as well as identified as one of the highest risks in Avista's recent Securities and Exchange Commission, 10-Q filing⁶.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Physical security enhancements at office and storage locations are necessary to maintain the identified high-risk locations safe, secure, and reliable. Metrics to demonstrate the success of the investments under this program business case include averted physical threats, reduction in problem location incidents, and keeping this equipment available and reliable to aid in deterring, detecting, and delaying an intrusion. Avista tracks physical security incidents and will monitor for a reduction in incidents, especially at historically high risk and problem locations that have implemented physical security enhancements.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The Facilities and Storage Location Security business case is a program that consists of multiple security projects per year that run concurrently, and at times over multiple years. They follow all phases of the project lifecycle, facilitated by a project manager, and governed by a steering committee to determine scope, schedule, and budget forecasts, including transfers-to-plant.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

There are two levels of governance to the Generation, Substation, and Gas Location program business case and the investments within it. They consist of a business case governance team and project specific steering committees for in-flight projects.

Business Case Governance Team: The Enterprise Security Governance Team provides monthly oversight of this program business case and makes recommendations based on forecasted inactive planned investments, the pace of in-flight investments, and any new

⁶ [SEC Filing | Avista Corporation](#)

Facilities and Storage Location Security

unplanned activity that surfaces from an emerging security threat. The team also tracks business case risks and issues that can affect the portfolio of planned investments.

Monthly governance meetings consist of a full review of each in-flight investment, reasons for any delays or deviation to proposed completion and transfers to plant schedules and recommends necessary steps to bring the investments back into schedule or defer inactive work, when possible, to offset delays. However, should a security risk be increased by deferring a planned or unplanned investment into future years, the Enterprise Security Governance Team will recommend a Capital Planning Group (CPG) In-Year Change Request to surface the impending need. The Change Requests are presented at a monthly Technology Planning Group meeting to inform the Director members who are also members of the CPG where the request will be considered and weighed against other pending requests.

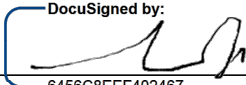
The Enterprise Security Governance Team consists of Avista's Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, Security Delivery Manager, and the Project Management Office Manager. The sessions are facilitated by the Security Program Manager who manages the standing agenda.

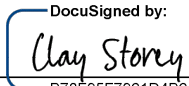
Project Steering Committees: Additionally, each security investment is governed by a project steering committee that consists of the Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, and Security Delivery Manager, as well as ancillary management team members required for the successful implementation of the security enhancement at the respective location. Steering committee meetings are facilitated by a Project Manager and held monthly to review scope, schedule, budget, and risks and issues surfaced from each in-flight project.

Facilities and Storage Location Security

3. APPROVAL AND AUTHORIZATION

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: Jun-12-2023 | 10:58 AM PDT
 Print Name: 6456C8EEF402467...
 Andy Leija
 Title: Security Delivery Manager
 Role: Business Case Owner

Signature:  Date: Jun-12-2023 | 11:28 AM PDT
 Print Name: B70F95F7961D4B6...
 Clay Storey
 Title: Security Director
 Role: Business Case Sponsor

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

Financial & Accounting Technology (FAT)

EXECUTIVE SUMMARY

The Finance and Accounting Technology Program¹ Business Case sponsors the financial applications that are critical to Avista's financial health, regulatory compliance, and supports the business areas operational and strategic initiatives. The Finance and Accounting business areas include Financial Planning & Analysis, Corporate Accounting, Utility Accounting, Revenue-Financial Systems, Accounts Payable, Remittance, Resource Accounting, EIM Settlements, Risk Management, Treasury, Tax Services and Data Science. Avista's Finance and Accounting technology systems are a necessity as they provide critical financial, economic, regulatory and budgetary business functions that support 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 business case is necessary to fund the portfolio of components that maintain the applications and licenses necessary to meet internal and external business processes and objectives. In addition, it will enable the automation of manual business processes in order to strengthen our ability to perform, which impacts our capacity to achieve stated financial objectives and affordably operate and maintain safe, and reliable generation and energy delivery infrastructure.

In order to maintain these business processes and systems supported by this business case, the recommended funding amount is \$21,425,000 over the next five years (roughly \$2.9M to \$5.4M per year). This funding level will provide the appropriate technology and development resources to meet the periodic upgrades and enhancements prioritized by the Finance and Accounting Governance committee. This funding level also considers the development staff required to maintain these core technology solutions. The cost of these solutions varies by scale of footprint and resource models. The technology under this program undergoes regular utilization and performance reviews to determine expected standards and capacity requirements to maintain system reliability under the established budget allocations and respective technology lifecycles. These reviews can result in periodic supplementary investment demands as a result of technology lagging behind its lifecycle or predetermined performance standards. The technology, tools, and systems under this program benefit Avista customers, as they support company-wide business application systems that empower employees to perform at a more strategic level.

Failure to approve the recommended funding would cause the deferment of upgrades and enhancements, resulting in unsupported applications, which in turn results in increased security liability, non-compliance, and significantly higher operational and future capital costs. It would also risk the reduction of skilled resources resulting in the loss of institutional business process and technology skillset in an exceptionally competitive market.

This Business Case plan was created by the Business Case Owner, Domain Architect, Product Owner, Business Technology Analyst, and the ET Project Management Office and approved by the Finance and accounting Governance Team (includes Business Sponsor, Director and Managers within Finance and accounting).

VERSION HISTORY

Version	Author	Description	Date
1.0	L.Raymond	Initial draft of original business case	04.04.23
BCRT	Heidi Evans	Has been reviewed by BCRT and meets necessary requirements	05.01.23

¹ [1] "A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.", Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017).

Financial & Accounting Technology (FAT)

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$5,060,000	\$4,810,000
2025	\$5,395,000	\$4,645,000
2026	\$5,095,000	\$4,015,000
2027	\$2,960,000	\$4,040,000
2028	\$2,915,000	\$1,915,000

Project Life Span	5+ years (Program)
Requesting Organization/Department	Finance and Accounting
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?

This program is required to support the application-related technology initiatives for all areas within Finance and Accounting. These areas include Financial Planning & Analysis (Oracle Enterprise Budget and Planning and UI Planner), Corporate Accounting (Oracle E-Business Suite), Utility Accounting (PowerPlan Fixed Assets), Revenue-Financial Systems (Oracle E-Business Suite), Accounts Payable (Oracle E-Business Suite and APx), Remittance (Paycourier and OPEX), Resource Accounting, EIM Settlements, Risk Management (Nucleus), Treasury, and Tax Services (PowerPlan Tax Fixed Assets). Additionally, the Enterprise Data Science program is part of the Financial Planning and Analysis group. The technology applications for this program address the demand for an analytics platform and are included in this business case.

Application refresh projects are necessary due to software lifecycle requirements to provide updates, upgrades and/or replacements on existing Finance and Accounting applications, as they are needed to respond to changing business requirements and/or technical obsolescence. Application refreshes/upgrades are essential in order to remain current, maintain system compatibility, reliability, supportability and address security vulnerabilities.

Recent industry trends in mobility, scalability, and employee experience, require regular technological expansion of conventional business practices and processes. Application expansion projects result from changes in demand that require extending the functionality of our software investment rather than full replacement cycles.

1.2 Discuss the major drivers of the business case.

The primary investment driver for the Finance and Accounting Business Program is Performance and Capacity. A secondary investment driver, nearly as important as the first, is Asset Condition.

Financial & Accounting Technology (FAT)

Many of the applications and respective component projects in this Business Case provide indirect support to Avista customers. The lifecycle management of these applications are critical to maintain performance and productivity requirements and are largely dictated by the technology solutions that are used. All of this work is necessary to enable efficiencies, reduce risk and allow Avista to best serve our internal and external customers. Without properly managed business application lifecycles, 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 if deferred or risks being mitigated by the request.

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 upgrade systems that are in place. This perpetuates inefficiencies as employees are not able to take advantage of advancements in the solution and lack relevant tools to make effective business decisions.

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 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization.

Primary Focus Area for project (select one):		
<input type="checkbox"/>	Our Customers	<ul style="list-style-type: none"> ▪ Mature our customer experience, both internal & external ▪ Support affordability, equity, and economic vitality ▪ Understand and address the evolving customer needs by offering products, services, & solutions
<input type="checkbox"/>	Our People	<ul style="list-style-type: none"> ▪ Evolve our employee experience with a focus on engagement, development, resiliency & well-being ▪ Improve safety & training systems to reduce injuries, expand learning & understand risks ▪ Strengthen equity, inclusion, & diversity within systems, practices, & behaviors
<input checked="" type="checkbox"/>	Perform	<ul style="list-style-type: none"> ▪ Affordably operate & maintain safe, clean, reliable generation & energy delivery infrastructure ▪ Achieve stated financial objectives
<input type="checkbox"/>	Invent	<ul style="list-style-type: none"> ▪ Foster & apply an innovation culture to benefit employees, customers, communities, & shareholders ▪ Create the utility of the future with our stakeholders, optimizing for cost, carbon, & reliability

This is a program with discrete projects and packages that strategically aligns with 'Perform' Focus Area. The technology and business processes directly impact our ability to achieve our financial objectives as they are not only providing internal efficiencies, but also serve as the source of record for our financial results. In addition, these internal business technologies enable best practices and impact Avista's ability to affordably operate and maintain safe, clean, reliable generation and energy delivery infrastructure.

Financial & Accounting Technology (FAT)

Specific Focus Areas include:

Our People: Technology plays a critical role in how employees feel about their day to day experience. Employees that are more productive and efficient by using technology, allows them to focus on more strategic objectives that help to propel the company forward. These types of activities naturally promote more resilient, engaged employees that are more performance and results driven.

Perform: The technology in this business case 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 technology to meet business needs.

Financial & Accounting Technology (FAT)

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

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.

Gartner is used for Information Technology insights, analysis, research and reference materials. Gartner is an industry leader in IT research, benchmarking, and consulting practices and provides Avista the ability to understand market trends, best practices and make more informed technology decisions. For example, Gartner's 'Magic Quadrant', provides a graphical positioning of technology providers in the market, with the ability to home in on critical capabilities based on requirements and specific use cases. This capability alone significantly reduces the time and effort of researching, evaluating, and reference checking. [Gartner for Information Technology \(IT\) Leaders](#)

2. PROPOSAL AND RECOMMENDED SOLUTION

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The recommended solution to ensure that Finance and Accounting can meet these initiatives and respective timelines over the next five years, is to follow the recommended application refresh and expansion requirements for their business applications. The requested allocation is based primarily on compatibility, reliability, security, and safety. Additional criteria consider 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 Finance and Accounting systems:

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

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2024	2025	2026	2027	2028
EBS/PP Expansion	EBS/PP Expansion	EBS/PP Expansion	EBS/PP Expansion	EBS/PP Expansion
Data Science Use Cases	Data Science Use Cases	Data Science Use Cases	Data Science Use Cases	Data Science Use Cases
EPBCS Expansion	JET/FSS Replacement	EPBCS Upgrade	EPBCS Expansion	EPBCS Expansion
Oracle EBS Upgrade	Oracle EBS Upgrade (TTP)	RED Replacement	ERP to SaaS	ERP to SaaS (2029 TTP)
UI Planner Upgrade (SaaS)	Energy Risk Management (currently Nucleus Integration)	Power Plan Core Accounting to SaaS	Power Plan Core Accounting to SaaS (TTP)	Business Process Automation
Remittance Processing Refresh	Extract Database Phase 1	Extract Database Phase 2	Business Process Automation	
Debt Database Replacement	APx Upgrade/Replacement	APx Upgrade/Replacement (TTP)		
	Revenue/Margin Model Replacement			

These upcoming technology-related initiatives for the Finance and Accounting business area include the continuous improvements to Oracle EBS and PowerPlan, including upgrading to a Software as a Service (SaaS) model within the 5-year roadmap. There is also the demand to upgrade the budgeting system (EPBCS) and replace the current Debt and Extract Databases, as the existing processes are manual and inefficient. There are also plans for automation that will enable technology to manage processes that can be automated and save labor costs.

These projects are within industry norms for like-sized Finance and Accounting departments within like-sized utilities and are accepted and widely adopted approaches used within the energy industry. 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.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).

As part of the 5-year planning process, Enterprise Technology and the Finance and Accounting departments key stakeholders 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 technology roadmap.

Upgrading to the recommended or latest versions of software is important to maintain the overall health of our business. There are many reasons that upgrades are necessary, from enhanced security, to increases in employee productivity (and lower costs). Upgrading business software is an economical decision compared to the cost of maintaining outdated software that suffer breakdowns and increases the cost to maintain. Upgrades exist to avoid common risk such as:

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- Security - Outdated or unpatched software increases the risk of a vulnerabilities or known exploits.
- Incompatibilities - Outdated software can disrupt workflow or fail to work with other enterprise software systems.
- Degradation - The business process implemented when the solution was installed is subject to change and requires enhancements to the systems to maintain the value.
- Obsolescence - Software updates don't always solely address security issues or deficiencies. Sometimes they are there to add necessary functionality or optimize existing features, such as new regulatory requirements or industry guidelines.
- Supportability - There is a heightened risk of losing vendor support from choosing not to install software updates and the latest patches.

Software enhancements are critical, as demands change so rapidly, we must look for ways to extend functionality of our software investment rather than go through full replacement process. The Software Development Life Cycle (SDLC) describes the process of planning, analysis, design, build, test and implementation, but it does not stop there. It has further steps into maintenance, enhancement, and progression. Software enhancements help to improve system efficiency, anomalies, and better cross-platform compatibility. There are also unavoidable governance and compliance changes that may drive the need for software optimization, thus why maintenance is a phase within the SDLC.

The requested funding was developed from estimates based on the historical trends for enhancement work and the recommended product lifecycle 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 experts, technology domain architects, and delivery management teams. The schedule was developed with the most recently available information and is subject to change via the governance processes mentioned above.

2.3 Summarize in the table and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$	\$	\$	\$	\$
O&M		\$	\$	\$	\$	\$

2.4 Summarize in the table and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M	Various projects (See section 2.1)	\$230,000	\$173,000	\$115,000	\$58,000	\$29,000

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

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2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Option	Capital Cost
Alternative 1 – Fund at a lower level (2023 allocation)	\$12,945,345
Alternative 2 – Not moving to SaaS (UI Planner, Power Plan, EBS)	\$16,570,000

Alternative 1: Funding at a lower amount

Funding at this 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.

Alternative 2: Not moving to SaaS (Power Plan and EBS)

Remaining 'on premise' with our core financial applications is not a viable and sustainable option long term. Software as a Service (SaaS) solutions provide the capabilities and benefits that allow us to better manage costs, enhance scalability, and focus on higher value activities. The costs associated with managing our hardware and infrastructure investments becomes a non-issue with SaaS or cloud solutions, particularly with growth, where there is the ability to quickly and easily add new users, modules, and features without any additional hardware investments. There are also savings associated to energy costs and other operational expenses related to maintaining on-premises hardware and infrastructure.

Another major advantage of moving to SaaS is the ease of upgrades and maintenance of the systems. Our current on premise upgrades are very time-consuming and disruptive, requiring extensive testing and downtime. Transitioning to SaaS would simplify this process as it is managed by the vendor (which includes patches and new features) with minimal disruption to the business. This not only saves time, but also helps reduce the risk of errors and system downtime. With SaaS solutions, we are able to more quickly realize benefits and reduce risks, such as implementation failure or cost overruns. By outsourcing to a SaaS provider, the team can spend less time managing and maintaining the software and infrastructure and more time redirected towards strategic initiatives, such as innovation, digital transformation, and improving core business processes.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Finance and Accounting's technology is critical to Avista's ability to function. The business process supported by this business case impacts all of the financial transactions for the company. A few

Financial & Accounting Technology (FAT)

examples include the creation of a new accounting project, a new customer construction request, or the payment of an invoice.

The ability for this business area and job functions to succeed, is dependent on the understanding and support of Avista's employees and contractors. Failure to support these systems may cause numerous near term and downstream impacts.

- Timely reporting of monthly/quarterly/annual financial statements
- 80% of the Technology solutions utilized are on a vendor supported version
- 5% reduction in the quantity of services incidence opened against the financial systems

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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 bi-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.

Project prioritization is evaluated by the management team on a bi-weekly basis through the IOC. Each program and project steering committee meets regularly, as set by each project but generally monthly, and oversees scope, schedule and budget within their respective projects and programs and informs 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.

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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 Finance and Accounting Technology projects in this business case are managed through the Project Management Office (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.

Financial & Accounting Technology (FAT)

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Financial and Accounting 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:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">DocuSigned by:</div> </div>	Date:	May-05-2023 9:03 AM PDT
Print Name:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">9EDC5D1773BD4CE...</div> Graham Smith </div>		
Title:	Sr. Manager, Application Delivery		
Role:	Business Case Owner		
Signature:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">DocuSigned by:</div> </div>	Date:	May-05-2023 10:01 AM PDT
Print Name:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">02B36C66587D411...</div> Ryan Krasselt </div>		
Title:	VP & Controller		
Role:	Business Case Sponsor		
Signature:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">DocuSigned by:</div> </div>	Date:	May-05-2023 9:07 AM PDT
Print Name:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">B53B852DC77A46F...</div> John Wilcox </div>		
Title:	Director, Accounting		
Role:	Steering/Advisory Committee Review		
Signature:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">DocuSigned by:</div> </div>	Date:	May-05-2023 10:36 AM PDT
Print Name:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">E4E2D9C7EE4747F...</div> Hossein Nikdel </div>		
Title:	Director, Applications & System Planning		
Role:	Steering/Advisory Committee Review		
Signature:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">DocuSigned by:</div> </div>	Date:	May-08-2023 7:34 AM PDT
Print Name:	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px; font-size: 8px;">4113CFD36C94443...</div> Ian McLelland </div>		
Title:	Manager, Resource Accounting		
Role:	Steering/Advisory Committee Review		

Generation, Substation & Gas Location Security

EXECUTIVE SUMMARY

Generation, substation, and gas facilities are difficult to protect from physical threats, as they are typically in remote, rural, and unmanned locations. This is a known risk to utilities across the country. However, the risk has been growing over the past few years with an increase in attacks to electric and gas infrastructure driven by domestic violent extremism and cyberattacks, as reported by federal agencies.¹ Reported incidents at substations range from general observation of suspicious activity to a direct and significant impact to the electric grid. In 2021, an oil pipeline incident targeted by cybercriminals impacted pipeline operations and resulted in significant challenges on dependent businesses on the east coast. Current security measures at critical electric and gas locations across the country are not enough.

Security of Avista's generation, substation, and gas locations remains a concern. These locations contain equipment that is critical to the delivery of gas and electricity safely and reliably to our customers across our service territory. A security incident at any of these locations could deny, degrade, or disrupt the delivery of energy. Therefore, Avista's senior leadership has called for an immediate and suitable response to this growing risk. To respond accordingly, the proposed investment is \$13.3M over 5 years, with \$10.8M in the first two years.

Avista has assessed the criticality of its electric and gas infrastructure and tiered them by risk to apply physical security enhancements under this program business case. The risk-based layered security enhancements consist of ballistic shielding, fencing, gates, doors, cameras, sensors, and access management systems. They vary by location and intend to deter, detect, or delay a potential attack and provide law enforcement with immediate measures to assess, interrupt and/or apprehend an intruder. The recommended solutions include physical security enhancements at all Tier 1, 2, and problem substation locations and selected generation facilities over the next five years, addressing the most critical sites in the first two years. Doing only a fraction of them or extending the schedule to the most critical locations does not reduce the identified risk in the period called for by Avista's senior leadership.

As typical of physical or cyber security incidents, costs are estimated based on previous incidents at other utilities or similar sized companies. For example, estimates of firearms attacks on electrical infrastructure since March 2022, range from as little as \$12K to over \$3.5M per incident at each location and can result in long lead times to replace damaged equipment.² Based on the number of incidents growing, it is wise to assume that Avista is not shielded from this risk without taking appropriate security measures. Take-aways from previous incidents are the known vulnerability of each asset, the cost and time to repair or replace the damage, and the hindsight of known physical security enhancements that could have reduced the risk. Not funding the recommended amount to address this eminent risk may increase the likelihood of not being prepared for when a physical security incident happens at a critical Avista generation, substation, or gas location.

¹ [Sector Spotlight: Electricity Substation Physical Security \(cisa.gov\)](https://www.cisa.gov/sector-spotlight-electricity-substation-physical-security)

² (U//FOUO). U.S. Department of Homeland Security, Office of Intelligence and Analysis, April 2023.

Generation, Substation & Gas Location Security

VERSION HISTORY

Version	Author	Description	Date
Draft	Andru Miller	Initial draft of original business case	7/02/2020
1	Andru Miller	Updated 5-year funding request	8/09/2022
2	Andy Leija	Updated 5-year funding request	5/5/2023
<i>BCRT</i>	<i>Jeff Smith</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	<i>5/30/2023</i>

Generation, Substation & Gas Location Security

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$6,460,000	\$6,000,000
2025	\$4,290,000	\$4,000,000
2026	\$1,450,000	\$1,200,000
2027	\$635,000	\$600,000
2028	\$500,000	\$500,000

Project Life Span	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

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. ^[06]

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

Security remains a concern at Avista's generation, substation, and gas locations. These locations contain equipment that is critical to the delivery of gas and electricity safely and reliably to our customers. Many of these locations are remote, unmanned, and vulnerable, which makes them difficult to protect. A cyber or physical security incident at any of these locations could deny, degrade, or disrupt the delivery of energy. Although the probability of an incident occurring at these locations is low, it has been steadily growing in possibility and proximity. The impact or consequence at any of these locations would be high, directly affecting our customers.

Criminal activity, such as vandalism, theft, and individual sabotage are no longer the only threat. There is a rise in domestic violent extremist (DVE) agendas that plot and encourage physical attacks against electrical and gas infrastructure. Federal officials report of an increase in DVE activity based on a rise in online discussions about plans for attacking and disrupting electrical and gas infrastructure, suspicious behavior that includes taking

Generation, Substation & Gas Location Security

photographs or video from unmanned flying devices, disruption of perimeter fencing and video surveillance systems, and firearms attacks at specific electrical infrastructure.³

Recent firearms attacks on electrical utility infrastructure throughout the country, and specifically in Western Oregon and Washington have heightened the urgency to increase Avista's physical security measures specifically at electrical substation facilities.⁴ Furthermore, a recently released movie (Apr 7, 2023) titled, *How to Blow Up a Pipeline* sensationalizes and socializes DVE ideology to a wider audience that can easily trigger copycat behavior and inspire more criminal activity thereby increasing further threat to both electrical and gas infrastructure.

In most cases, electrical and gas facilities have had little physical security investment over the years outside of original perimeter fencing and locked gates, as the probability of a security threat had been low. However, with the number of incidents growing over the past few years, their proximity to our service territory, and the public's knowledge of the inherent vulnerability of electric and gas infrastructure, initial physical security protections are not enough and require further investment.

1.2 Discuss the major drivers of the business case.

Performance & Capacity is the primary driver for this program business case as the projects it funds address security risks protecting Avista's generation, substation, and gas locations that are critical to deliver energy to our customers. The security of our electric and natural gas infrastructure is a significant priority at a national and regional level and is of critical importance to Avista customers across our service territory. Keeping the systems at these locations performing is critical to delivering electric and gas service to our customers.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

Addressing security risks at Avista's generation, substation and gas locations has been and will continue to be an ongoing issue. However, Avista takes a 'risk-based and layered approach' to physical security investments as called out by the North American Electric Reliability Corporation (NERC) in response to emerging physical security threats.⁵ The risk-based and layered approach consists of understanding the risk and criticality for each location, followed by installing physical security measures that deter, detect, and deny an intruder or attack. So, while Avista may operate and maintain twelve generation facilities, over 180 substations, and many miles of distribution gas pipeline serving our customers, the investments under this business case address only the most critical sites.

³ [Electric grid is 'attractive target' for domestic violent extremists in US, intel brief says | CNN Politics](#)

⁴ [2 Charged in Attacks on Substations in Washington State - The New York Times \(nytimes.com\)](#)

⁵ [NERC Announces Actions Addressing Physical Security](#)

Generation, Substation & Gas Location Security

The current approved amount is not sufficient to adequately and immediately address the identified critical sites to deter, detect, or delay an intruder or attack. This includes facilities that generate high electric load or are used regularly to meet peak demand for essential services. While the overall performance of each generation, substation, and gas location will stay intact, physical security hardening measures, such as gates, fencing, and ballistic shielding will aim to deter and delay a threat while cameras, alarms, and motion detection systems will capture video surveillance evidence to aid investigations.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link. [Avista Strategic Goals](#)

The Generation, Substation, and Gas Location Security program business case provides funding for security-related projects and aligns with Avista’s strategic goal to “affordably operate and maintain, safe, clean, reliable generation and energy delivery infrastructure.” The focus under this strategic goal is to mature Avista’s physical security program and emergency response. In response to the emerging threats, Avista’s senior leaders have requested that this risk be mitigated adequately and immediately.⁶

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.

In 2022, four electric substations in Western Washington operated by Tacoma Public Utilities (TPU) and Puget Sound Energy were vandalized causing an initial power loss to more than 14,000 customers in the affected communities. Perpetrator(s) cut the chain link fence and manipulated high side breakers, causing power outages. Combined, the damage cost to two of the TPU substations (Elk Plain and Graham) was estimated at over \$3 million – as damaged transformers require replacement and a lengthy lead time to replace.⁷

Much like the government response following the Colonial Pipeline incident, where by federal agencies issued urgent directives to mitigate the risk of subsequent attacks, the Cybersecurity and Infrastructure Security Agency (CISA) and the Department of Energy (DoE) have highlighted an increasing trend of physical attacks on electric substations and customer impact to escalate awareness.⁸ Avista is in alignment with what is described in the federal agency sector highlights, which calls for utilities to take a risk-based and layered approach to physical security enhancements that is tailored to each facility based on a threat and vulnerability assessment conducted at each facility and ranked by criticality.

⁶ [Our Goals 2023 - Perform \(sharepoint.com\)](#)

⁷ [2 Charged in Attacks on Substations in Washington State - The New York Times \(nytimes.com\)](#)

⁸ [Sector Spotlight: Electricity Substation Physical Security \(cisa.gov\)](#)

Generation, Substation & Gas Location Security

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

Any of Avista's infrastructure facilities are prone to a physical security threat. However, the proposed investments that address the risks under this program business case assessed each location and tiered them according to criticality from high to low.

Tier 1	Critical Asset – supports essential local, state, and national services.
Tier 2	Very Important Asset – outage impacts would be significant
Tier 3	Important Asset – outage impacts minimal to critical services and customers (Higher customer impacts than Tier 4)
Tier 4	Important Asset – outage impacts minimal to critical services and customers (Lower customer impacts)

Based on tier level rating for each substation, generation, and gas facility, appropriate layered security enhancements are recommended for each location. In a few cases, a company wide solution is required, such as replacing unsupported camera and access management systems that while working, are prone to cyberthreats and suffer from continued operational challenges. So, as physical security threats evolve, Avista's investments under this program business case will also protect Avista's people, assets, and information in generation, substation, and gas facilities.

The recommended solution accounts for physical security enhancements at generation and substation locations that fall within Tier 1, 2, and Problem Substation Locations, and a steady asset lifecycle camera and access system replacement in generation locations. All Tier 1 and problem substation locations would be addressed in the first two years; followed by Tier 2 locations addressed in four years and maintaining an asset lifecycle camera and access system replacement for short lifecycle assets.

Investments under this program business case are risk based and therefore a layered response is proposed for each location. Physical security enhancements consist of ballistic shielding, fencing, gates, doors, cameras, sensors, and access management systems. The proposed enhancements will vary by location but will implement new or replace inadequate security measures to mitigate the increasing risk.

Tier and Location Type	Layered Enhancement	2024	2025	2026	2027	2028
Tier 1 Substations	Ballistic Screening	x	x			
	Perimeter detection/ cameras	x	x			

Generation, Substation & Gas Location Security

	Perimeter T-Wall and Gate	x	x			
	Asset Lifecycle Camera Replacement					x
Tier 2 Substations	Ballistic Screening	x	x			
	Perimeter detection/ cameras	x	x	x	x	
	Asset Lifecycle Camera Replacement					x
Problem Substation Locations	Perimeter detection/ cameras		x			
	Asset Lifecycle Camera Replacement					x
Selected Generation Locations	Perimeter detection/ cameras	x	x	x	x	x

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits, or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).

Estimates of firearms attacks on electrical infrastructure since March 2022, range from as little as \$12K to over \$3.5M per incident at each location.⁹ The investment under this program business case is to respond to the growing threat in the next 2-4 years by addressing critical and vulnerable infrastructure locations. Ongoing investment thereafter is for physical security technology lifecycle replacements.

2.3 Summarize in the table and describe below the DIRECT offsets¹⁰ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	\$0	\$0	\$0	\$0	\$0
O&M	N/A	\$0	\$0	\$0	\$0	\$0

⁹ (U//FOUO). U.S. Department of Homeland Security, Office of Intelligence and Analysis, April 2023.

¹⁰ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

Generation, Substation & Gas Location Security

There are no direct offsets associated with investments in physical security enhancements in generation, substation, and gas locations. Doing nothing is not an option, especially as attack incidents are growing.

2.4 Summarize in the table and describe below the INDIRECT offsets¹¹ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Electric Infrastructure replacement	\$316,800	\$316,800	\$316,800	\$316,800	\$316,800
O&M	Electric Minor repairs	\$35,200	\$35,200	\$35,200	\$35,200	\$35,200

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Gas Infrastructure replacement	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
O&M	Gas Minor repairs and relights	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000

Indirect offsets are achieved through cost avoidance associated with a physical security incident at a generation, substation, and gas location. Existing physical security investments at generation, substation, and gas locations are minimal and while they may deter vandalism or minor theft, it will not deter a more strategic DVE attack. Moreover, it will not detect or provide forensics to investigate or prevent future attacks, as little to no physical surveillance technology is currently in place.

An indirect offset cannot be estimated without assuming the avoidance of a physical security incident at each type of generation, substation, and gas location. Using costs from attacks at other electrical substation locations across the country, the average incident cost is approximately \$1.76M and can result in long lead times to replace damaged equipment. Assuming one incident over 5 years, with a 90% capital and 10% expense costs, the indirect offset would be \$1.58M in capital and \$176K in operation and maintenance, respectively.

Reported pipeline incidents at gas locations do not distinguish the cause of the incident. On average, three incidents were reported in the last 5 years in gas distribution systems across Idaho, Oregon, and Washington. During the same 5-year period, the average cost for those

¹¹ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Generation, Substation & Gas Location Security

incidents was \$876k, as reported to the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration for all pipelines.¹²

Extrapolating estimated average costs for one event at a gas location over 5 years, assuming 20% capital cost associated with infrastructure replacement and 80% associated with minor repairs and relights, the cost would be \$175K in capital and \$700k in operation and maintenance, respectively.

No data is available to estimate the cost of a physical security incident at a generation location. However, depending on its location and damage, the cost could exceed that of a substation or gas location incident, including the cost associated with the period it is offline not generating power or revenue.

2.5 Describe in detail the alternatives, including proposed cost for each alternative, which were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

The program business case contains many cyber and physical security projects that protect our people, assets, and information from growing risks. The risk-based layered physical security enhancements consider the most cost-effective solutions and alternatives to address the risk at each location. The alternatives presented are listed in order of addressing identified risk.

Options	Capital Cost	Start	Complete
Alternative 1: Physical security enhancements at Tier 1, 2 and Problem Substation locations and selected Generation locations, including asset lifecycle camera replacement (Recommended)	\$13,335,000	01 2024	12 2028
Alternative 2: Physical security enhancements at Tier 1 and 2 Substations and selected Generation locations only, including asset lifecycle camera replacement	\$12,985,000	01 2024	12 2028
Alternative 3: Physical security enhancements at 'Tier 1' Substations and selected Generation locations only, including asset lifecycle camera replacement	\$10,200,000	01 2024	12 2028

Alternative 1: The recommended solution is where all Tier 1, 2 and problem substation locations and selected generation locations are addressed in the first four years to

¹² [Pipeline Incident 20 Year Trends | PHMSA \(dot.gov\)](#). [Oracle BI Interactive Dashboards - SC Incident Trend \(dot.gov\)](#)

Generation, Substation & Gas Location Security

respond to the eminent risk and asset lifecycle camera replacements. Estimates include ballistic screening, perimeter detection and camera systems, and perimeter walls with fortified gates at identified locations.

Alternative 2: The second alternative includes physical security enhancements at Tier 1 and 2 substations, selected generation locations, and asset lifecycle camera replacement only, leaving out problem substation locations. The handful of problem locations are in areas with higher crime reports and a history of incidents. Not addressing these sites will continue ad-hoc incidents that cause system outages, vandalism, theft, and can present a safety risk to intruders or emergency responders.

Alternative 3: The third alternative reduces the scope by leaving out Tier 2 substations and problem locations and focusing only on Tier 1 substation locations, selected generation locations, and asset lifecycle camera replacements only. Risk assessments have identified Tier 2 substations, selected generation locations, and problem sites as also at risk of physical security threats based on their criticality to generate and deliver energy to our customers. Not addressing the subsequent tier of substations and known problem locations limits Avista and law enforcement's ability to address the growing threat by not having video surveillance evidence to identify intruders and their tactics to mitigate future attacks.

Doing nothing is not an option or presented as an alternative, as called out by Avista's senior leadership in the 2023 Strategic Goals, as well as identified as one of the highest risks in Avista's recent Securities and Exchange Commission, 10-Q filing.¹³

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Physical security enhancements at generation, substation, and gas locations are necessary to maintain the identified high-risk locations safe, secure, and reliable. Metrics to demonstrate the success of the investments under this program business case include averted physical threats, reduction in problem location incidents, and keeping this equipment available and reliable to aid in deterring, detecting, and delaying an intrusion. Avista tracks physical security incidents and will monitor for a reduction in incidents, especially at historically high risk and problem locations that have implemented physical security enhancements.

2.7 Please provide the timeline of when this work is scheduled to commence and complete, if known.

The Generation, Substation, and Gas Location Security business case is a program that consists of multiple security projects per year that run concurrently, and at times over

¹³ [SEC Filing | Avista Corporation](#)

Generation, Substation & Gas Location Security

multiple years. They follow all phases of the project lifecycle, facilitated by a project manager, and governed by a steering committee to determine scope, schedule, and budget forecasts, including transfers-to-plant.

2.8 Please identify and describe the Steering Committee/governance team responsible for the initial and ongoing approval and oversight of the business case and how such oversight will occur.

There are two levels of governance to the Generation, Substation, and Gas Location program business case and the investments within it. They consist of a business case governance team and project specific steering committees for in-flight projects.

Business Case Governance Team: The Enterprise Security Governance Team provides monthly oversight of this program business case and makes recommendations based on forecasted inactive planned investments, the pace of in-flight investments, and any new unplanned activity that surfaces from an emerging security threat. The team also tracks business case risks and issues that can affect the portfolio of planned investments.

Monthly governance meetings consist of a full review of each in-flight investment, reasons for any delays or deviation to proposed completion and transfers to plant schedules and recommends necessary steps to bring the investments back into schedule or defer inactive work, when possible, to offset delays. However, should a security risk be increased by deferring a planned or unplanned investment into future years, the Enterprise Security Governance Team will recommend a Capital Planning Group (CPG) In-Year Change Request to surface the impending need. The Change Requests are presented at a monthly Technology Planning Group meeting to inform the Director members who are also members of the CPG where the request will be considered and weighed against other pending requests.

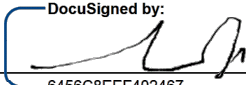
The Enterprise Security Governance Team consists of Avista's Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, Security Delivery Manager, and the Project Management Office Manager. The sessions are facilitated by the Security Program Manager who manages the standing agenda.

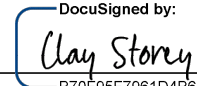
Project Steering Committees: Additionally, each security investment is governed by a project steering committee that consists of the Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, and Security Delivery Manager, as well as ancillary management team members required for the successful implementation of the security enhancement at the respective location. Steering committee meetings are facilitated by a Project Manager and held monthly to review scope, schedule, budget, and risks and issues surfaced from each in-flight project.

Generation, Substation & Gas Location Security

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Generation, Substation & 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: Jun-12-2023 | 10:57 AM PDT
 Print Name: Andy Leija
 Title: Security Delivery Manager
 Role: Business Case Owner

Signature:  Date: Jun-12-2023 | 11:29 AM PDT
 Print Name: Clay Storey
 Title: Security Director
 Role: Business Case Sponsor

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

Human Resources Technology (HRT)

EXECUTIVE SUMMARY

The Human Resources Technology (HRT) Program¹ Business Case sponsors the technology related applications that support the Human Resources (HR) business areas operational and strategic initiatives. The HR business area includes Benefits, Occupational Health, Avista First Care Clinic, HRIS/Payroll, Employee Relations, Leadership and Organizational Development, Corporate Training & Development, HR Shared Services, Recruiting, Equity-Inclusion-Diversity, HR Analytics & Compliance, Craft & Technical Training, Apprenticeships & Safety.

This business case is intended to fund the portfolio of components that maintain the technology and licenses necessary to meet HR's internal and external business processes and objectives. 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 to maintain reliability, compatibility, and reduce security vulnerabilities. In order to maintain these business processes and systems supported by this business case, the recommended funding is \$2,919,000 over the next five years (roughly 475k to 675k 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 also considers the development staff required to maintain these core technology solutions. The cost of these solutions varies by scale of footprint and resource models.

The technology under this program undergoes regular utilization and performance reviews to determine expected standards and capacity requirements to maintain system reliability under the established budget allocations and respective technology lifecycles. These reviews can result in periodic supplementary investment demands as a result of technology lagging behind its lifecycle or predetermined performance standards. The technology, tools, and systems under this program benefit Avista customers, as they support company-wide business application systems that empower employees to perform at a more strategic level.

Failure to approve the recommended funding would cause the deferment of upgrades and enhancements, resulting in unsupported applications, which in turn results in increased security liability, non-compliance, and significantly higher operational and future capital costs. It would also risk the reduction of skilled resources resulting in the loss of institutional business process and technology skillset in an exceptionally competitive market.

This Business Case plan was created by the Business Case Owner, Domain Architect, Product Owner, Business Technology Analyst, and the ET Project Management Office and approved by Human Resources Governance Team (includes Business Sponsor, Director, and Managers within HR).

VERSION HISTORY

Version	Author	Description	Date
1.0	L. Raymond	Initial draft of original business case	4/11/23
BCRT	Heidi Evans	Has been reviewed by BCRT and meets necessary requirements	5/1/23

¹ [1] "A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.", Project Management Institute Global Standard, The Standard for Program Management, Fourth Edition. Page 3 (Copyright 2017).

Human Resources Technology (HRT)

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$475,000	\$375,000
2025	\$545,000	\$545,000
2026	\$675,000	\$775,000
2027	\$610,000	\$610,000
2028	\$614,000	\$614,000

Project Life Span	5+ years (Program)
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 HR and enterprise technology business 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 (portable internet-enabled devices like smartphones, tablets, notebooks, GPS devices, etc.), scalability (ability to increase or decrease in performance in response to changes), and employee experience (nature of the relationship between the organization and employees), require technological expansion of conventional business practices and processes.

Human Resources Technology (HRT)

1.2 Discuss the major drivers of the business case.

The primary investment driver for the Human Resources Business Case is 'Performance and Capacity' as it is intended to achieve work process and business continuity objectives through a range of system reinforcement projects to meet performance standards.

A secondary investment driver is 'Mandatory & Compliance', as it contains investments driven by compliance with laws, rules, and contractual obligations that are external to the Company (e.g., State and Federal statutes, settlement agreements, FERC, NERC, FCC rules, and Commission Orders, etc.).

Many of the applications and respective projects in this Business Case indirectly support Avista customers through technology and business processes that include:

- Advancing the 'Customer Experience' (cumulative impact of various touchpoints over the course of customer's interaction with Avista) 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 / reducing risks
- Increasing employee productivity
- Encouraging and facilitating learning and skill development
- Refining talent management
- Fostering collaboration and communication
- Investing in our people supporting their development, resiliency, and well-being
- Maintaining compliance with relevant local, state, and federal regulations

Human Resources Technology

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request

Growing needs and expectations in the areas of mobility access, scalability and providing an effective and attractive employee digital experience require expansion of conventional business practices and processes. These needs are growing, given the accelerated migration to a hybrid/virtual/digital work environment.

The projects and initiatives in this business case provide functional enhancements that address ongoing changes in the workplace (e.g., hybrid/remote work, increased mobile app capabilities), 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.

Upgrading to the recommended or latest versions of software is important to maintain the overall health of our business. Upgrades reduce security, compatibility, and reliability risks and naturally provide improved productivity, user experience, and cost savings.

Software enhancements are just as critical, as demands change so rapidly, we must look for ways to extend functionality of our software investment rather than go through full replacement cycles. Software enhancements help to improve system efficiency, anomalies, and better cross-platform compatibility. There are also unavoidable governance and compliance changes that may drive the need for software optimization, thus why continuous delivery and continuous integration are common practice within business applications.

Working through these projects as suggested reduces Avista's overall risk exposure by confirming our employees are fully compliant with all FERC, NERC, and FCC rules (via training and talent management), 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.

Human Resources Technology

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization.

Primary Focus Area for project (select one):		
<input type="checkbox"/>	Our Customers	<ul style="list-style-type: none"> ▪ Mature our customer experience, both internal & external ▪ Support affordability, equity, and economic vitality ▪ Understand and address the evolving customer needs by offering products, services, & solutions
<input checked="" type="checkbox"/>	Our People	<ul style="list-style-type: none"> ▪ Evolve our employee experience with a focus on engagement, development, resiliency & well-being ▪ Improve safety & training systems to reduce injuries, expand learning & understand risks ▪ Strengthen equity, inclusion, & diversity within systems, practices, & behaviors
<input checked="" type="checkbox"/>	Perform	<ul style="list-style-type: none"> ▪ Affordably operate & maintain safe, clean, reliable generation & energy delivery infrastructure ▪ Achieve stated financial objectives
<input type="checkbox"/>	Invent	<ul style="list-style-type: none"> ▪ Foster & apply an innovation culture to benefit employees, customers, communities, & shareholders ▪ Create the utility of the future with our stakeholders, optimizing for cost, carbon, & reliability

This is a program with discrete projects and packages that strategically align with the 'Perform' and 'Our People' Focus Areas. Specific Focus Areas include:

Our People: Technology plays a critical role in how employees feel about their day-to-day experience. Employees that are more productive and efficient by using technology are to focus on more strategic objectives that help to propel the company forward. These types of activities naturally promote more resilient, engaged employees that are more performance and results driven. HR focuses on engagement through technology that helps to evolve employee development, resiliency, and well-being, as well as equity, inclusion, & diversity practices and behaviors. This Business Case also includes the technology that will continuously improve safety, reduce injuries, and better understand the associated risks.

Perform: The technology in this business case provides 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 technology to meet business needs, which aids in Avista's ability to meet necessary financial objectives. In addition, HR technology is utilized to continuously perform and improve through systems that focus on employee development, training, apprenticeships, recruiting, analytics, and compliance.

Human Resources Technology

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements for existing technology under the HR 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.

Gartner is used for Information Technology insights, analysis, research, and reference materials. Gartner is an industry leader in IT research, benchmarking, and consulting practices and provides Avista the ability to understand market trends, best practices and make more informed technology decisions. For example, Gartner's 'Magic Quadrant', provides a graphical positioning of technology providers in the market, with the ability to home in on critical capabilities based on requirements and specific use cases. This capability alone significantly reduces the time and effort of researching, evaluating, and reference checking. [Gartner for Information Technology \(IT\) Leaders](#).

2. PROPOSAL AND RECOMMENDED SOLUTION -

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The recommended solution to ensure that HR can meet these initiatives and their timelines over the next five years, is to follow the recommended software development lifecycle 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 Avista and HR's strategic Focus Areas. Conventional business practices and processes must be scalable (cost effectively handling increased workloads), provide mobility, and focus on the employee and customer experiences.

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** – Studies show that an engaged workforce is a healthier workforce. Engaged employees have higher job

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Human Resources Technology

satisfaction, lower attrition rates, and higher productivity. Some of that engagement comes in the form of Avista's ALN 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.
- **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- Intelex, 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

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.

These upcoming technology-related initiatives for the Human Resources business area include the continuous improvements to UltiPro/UKG, Hub, Intelex, and Articulate, including replacement of the ALN system within the 5-year roadmap. There is also the demand to replace the Library System as the existing system is outdated. There are also plans for automation that will enable technology to manage processes that can be mechanized and will save labor costs.

These projects are within industry norms for like-sized HR departments per our discussions with our peer like-sized utilities and are accepted and widely adopted approaches used within the utility industry.

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2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).³

There are direct savings or off-sets in this business case, primarily from reducing printing costs, copier maintenance and filing of paper documents. Some examples include:

- UKG - \$15,000 annually resulting from implementing a file and content management module in 2023. Reduced costs by eliminating printing of paper
- Sum Total (ALN) - \$1,300 annually resulting from implementing a mobile solution, so that workers do not have to print out their weekly report of qualifications; and so that worker skill evaluations can be moved from paper to electronic and completed in the field.

The majority of offsets are realized through indirect savings, such as increased efficiency, productivity, and accessibility, so that employees can re-direct their efforts toward more core and value-added work and reduce administrative burden. Other offsets are realized through maturing safety systems and avoiding risk of injury. Some examples include:

- UKG - \$67,000 annually resulting from implementing document management and people assist modules in 2023 that will centralize employee documents within the system, integrate document approval, signing functionality, create workflows, and assist HR resources. Employees, and retirees in request activities, including a request tracking system, status and action needed notifications. Will also provide enhanced security and more efficient retrieval of information for internal and external stakeholders, auditors, and regulators
- UKG - \$45,000 annually resulting from improving manual processes by implementing electronic data transfer interfaces with other key systems that rely on HRIS data such as HUB, pension calculation services (WTW), finance reporting (Transportation Subledger), union employee timekeeping (ARCOS), learning management system, HR analytics reporting, safety reporting & information system (Intelex), donations and contributions (Cybergrants), and more.
- Sum Total - \$125,000 annually resulting from implementing a mobile solution so that employees can access training and required certifications via any electronic device from any location. And so that we can improve the employee digital experience with improved ease of access. External learning systems industry and vendor benchmarks provide conservative estimates of a 3% productivity gain upon implementation of a mobile solution for employee learning and training. We used the three-year average time in system of 19 hours per year per user to calculate a 3% productivity gain to determine productivity gain estimate
- Sum Total - \$103,000 annually from implementing a mobile skill evaluation process, eliminating a manual paper process and duplicate data entry. The ability for Avista Skill Evaluators to evaluate our gas workers in the field and certify or de-certify a user in a skill via the Avista Learning Network (ALN) mobile app, will provide real-time updates to the workforce and eliminate redundant data entry. Estimate 5-minute savings per task along with annual task volume to determine productivity gain estimate.
- Intelex- \$60,000 annually. From avoiding hearing loss and soft tissue injuries by implementing an Industrial Hygiene module. This module will better enable us to target where hearing protection is needed, better identify and reduce potential injuries related to ergonomic factors and also enable us to better zero in on areas and trends where we can mitigate hazard risks.

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Human Resources Technology

There are numerous other smaller technology systems needed to operate HR in this complex environment that contribute to the goals of the HR Technology Business case.

2.3 Summarize in the table, and describe below the DIRECT offsets⁴ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M	Paper, printing and copier maintenance (File Management and Mobile ALN)	\$16,300	\$16,300	\$16,300	\$16,300	\$16,300

2.4 Summarize in the table, and describe below the INDIRECT offsets⁵ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M	Efficiency, productivity, accessibility for employees via UKG, ALN Mobile, & InteleX	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Option	Capital Cost
Alternative 1 – Fund only current technology (no replacement)	\$2,094,000
Alternative 2 – Remove Business Process Automation	\$2,469,000

⁴ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁵ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

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Alternative 1: Use existing systems as-is and do not put new systems in place. This would put Avista at a disadvantage through attrition and perpetuates inefficiencies as employees search to find the information they need.

Alternative 2 – Removing the Business Process Automation from the forecast is an option, but would hinder our ability to reduce administrative tasks and improve productivity, allowing resources to work on higher priority, more strategic initiatives, saving labor costs.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

The HR business team utilizes technology as a critical component to meet their operational and 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 and Program Manager will work with Steering Committee 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 Committee meets monthly 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. In addition, the Enterprise Technology Project Management Office (PMO) performs a Project Performance Report (PPR) which is the integrated measurement of the success of the technology to align with Avista's corporate strategy and Focus Areas. This report produces a score associated to cost, schedule, and scope management, as well as the value-add (via survey to the business stakeholders and Steering Committee).

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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).

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The project roadmap for the next five years includes refreshing and/or expansion initiatives of the core HR systems. The current roadmap includes but it not limited to:

2024	2025	2026	2027	2028
HR Hub Expansion	HR Hub Expansion	HR Hub Expansion	HR Hub Expansion	HR Hub Expansion
UKG Expansion	UKG Expansion	UKG Expansion	UKG Expansion	UKG Expansion
Intelex Expansion	Intelex Expansion	Intelex Expansion	Intelex Expansion	Intelex Expansion
Articulate 360 Upgrade	Articulate 360 Upgrade	Articulate 360 Upgrade	Articulate 360 Upgrade	Articulate 360 Upgrade
HR Employee Relationship Management (Start)	HR Employee Relationship Management (TTP)	Business Process Automation	Business Process Automation	Business Process Automation
	ALN Replacement (Start)	ALN Replacement (TTP)	Contractor Portal	Digital Employee Experience
	UKG - Change of Status	UKG Timekeeping Upgrade	Digital Employee Experience	<i>Articulate License Renewal</i>
	Library System Replacement			
	<i>Articulate License Renewal</i>			

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

The Human Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Human Resources, and the Business Case Owner.

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.

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.

Human Resources Technology

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 Project Management Office (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.

Human Resources Technology

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the *Human Resources 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.

DocuSigned by:
 Signature: Brian Hoerner Date: May-05-2023 | 1:03 PM PDT
 Print Name: Brian Hoerner
 Title: Manager, Application Delivery
 Role: Business Case Owner

DocuSigned by:
 Signature: Bryan Cox Date: May-08-2023 | 6:03 AM PDT
 Print Name: Bryan Cox
 Title: VP, Safety and Human Resources
 Role: Business Case Sponsor

DocuSigned by:
 Signature: Diane Quincy Date: May-08-2023 | 8:43 AM PDT
 Print Name: Diane Quincy
 Title: Director, Leadership and Org. Development
 Role: Steering/Advisory Committee Review

DocuSigned by:
 Signature: Hossein Nikdel Date: May-05-2023 | 10:37 AM PDT
 Print Name: Hossein Nikdel
 Title: Director, Applications and System Planning
 Role: Steering/Advisory Committee Review

EXECUTIVE SUMMARY

Avista has been rapidly expanding its technology portfolio to automate and enable business processes throughout various areas of the business. The technology department is required to support this technology found throughout our service territory, in office buildings, call centers, fleet vehicles, and mountain tops. To do so, the technology department requires tools and standardized tasks to support the various systems.. Similarly, the technology department will develop routine maintenance activities to keep systems healthy and proactively prevent system degradation. In technology terms, reduce the likelihood of an unplanned outage, which can impact employee productivity and potentially affect our customers.

The number of technology devices and their complexity has presented challenges that are not scalable with the technology department's manual tasks. This can in turn cause delay in response times to system reliability issues, as the backlog of system routine maintenance can outpace the technology team's ability to accomplish. An alternative is to add additional resources to the technology team to keep up with the pace of technology. However, this approach is not a scalable solution, as it requires continuous training of a growing team, increases the probability of human error with more and more people, and can lead to diminishing returns, as only so many people can log into a particular system, etc.

The Dynamic Infrastructure Platform (DIP) is a program to invest in and maintain the necessary products and skills to facilitate the discipline of infrastructure automation within the Infrastructure Technology organization¹. This investment will allow the technology department to manage and support the growing technology infrastructure footprint and their complexity without a rapid growth of our staff. This solution will benefit our customers across all jurisdictions as it will drive an increase in system performance and reliability. If this business case is not funded, the tools and automation programs created under the Dynamic Infrastructure Platform productivity business case will not be maintained. In addition, the existing technology footprint will continue to outpace the technology team's ability to maintain and respond to system issues or failures, as well as the opportunity to manage our infrastructure more efficiently and effectively.

¹ A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.”, Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition. Page 3* (Copyright 2017)

VERSION HISTORY

Version	Author	Description	Date
1.0	Mike Beil	Initial draft of DIP business case	8/2020
2.0	Kaitlyn Richardson	Initial draft of original business case	4/2023
BCRT	BCRT Team Member	Has been reviewed by BCRT and meets necessary requirements with suggested changes	4/28/2023

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$500,000	\$500,000
2025	\$1,000,000	\$1,000,000
2026	\$2,400,000	\$2,400,000
2027	\$2,950,000	\$2,950,000
2028	\$3,200,000	\$3,200,000

Project Life Span	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Kaitlyn Richardson Alexis Alexander
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

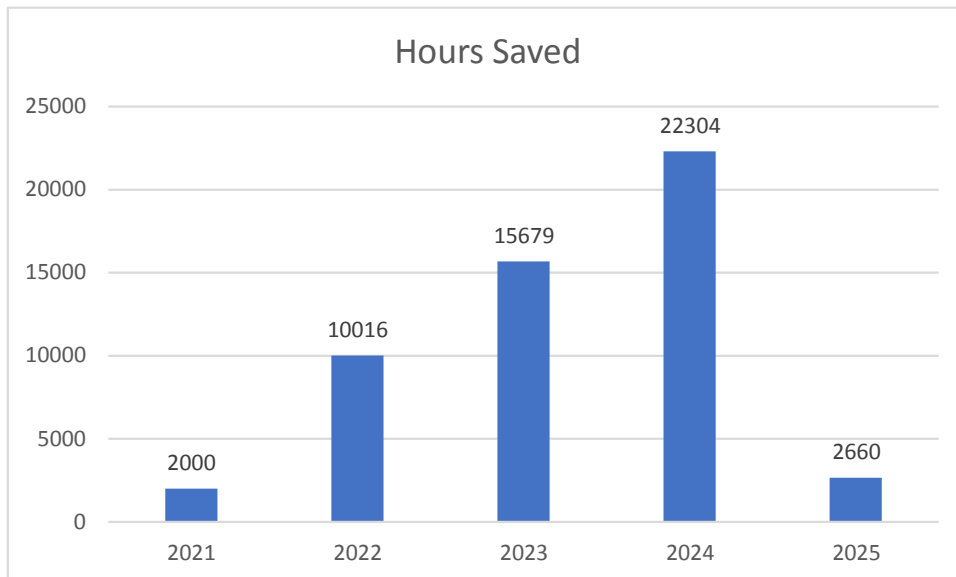
Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Considerable effort has been made to expand ET's technology portfolio to enable business automation within the company. As part of this process, we have seen a pattern of increase in both system complexity and exponential technology growth to meet business needs. The application of a technology management model consisting of primarily manual tasks is not scalable with the rapid growth of our technology systems. It results in an outpacing of the technology team's ability to maintain and respond to technology system issues and associated workloads (See second graph below). Infrastructure Automation is necessary to reduce the number of manual tasks. The productivity business case has and will continue to reduce the number of manual task hours performed by infrastructure operations and delivery teams through 2025 (see chart below).



1.2 Discuss the major drivers of the business case.

The Dynamic Infrastructure Platform Business Case is driven by our need to manage our growing and increasingly complex technology portfolio. The strategy of manually managing these devices is not sustainable and infrastructure automation is crucial to maintaining system performance and reliability. Therefore, the major driver for this business case is Performance & Capacity. This solution will benefit our customers across all jurisdictions as it will drive an increase in system performance and reliability.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

As our technology portfolio continues to grow, enabling business processes, the technology department's workload of managing this new technology has reached an unsustainable level. It is critical that we leverage infrastructure automation technology to build and maintain a dynamic infrastructure platform that allows the automation of manual tasks to reduce the workload of managing these systems, as well as reduce the risk of human error related outages. The Dynamic Infrastructure Platform also provides a more proactive approach to system capacity and performance issues. This Data Analytics capability will reduce the mean time to repair (MTTR) during system outages. If this business case is not funded, the existing technology footprint will continue to outpace the technology team's ability to maintain and respond to system issues or failures, as well as the opportunity to manage our infrastructure more efficiently and effectively (See outpacing performance in graph below).

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization. See link.

[Avista Strategic Goals](#)

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." The Dynamic Infrastructure Platform aligns with Avista's culture of Innovation and allows us to more efficiently manage our technology systems with a higher level of reliability.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

The technology department has consistently been able to capture and define infrastructure automation use cases based on historic work patterns in our work management system. Based on that data, a strategy was established by leveraging several sources of information, including industry white papers, conversations with other utilities, and advisory firms such as Gartner. Success can be measured by the implementation of automation use-cases and the reduction in the amount of manual tasks required to manage the environment. Additionally, we should expect to see less human caused outages, as well as shorter MTTR when troubleshooting system outages.

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

The business case will be split into a series of projects and work packages that will deliver on automation use cases at a regular semi annual interval. These work packages will enhance the Dynamic Infrastructure Platform's functionality by implementing defined automation use cases on the platform. In addition, this business case will fund the periodic upgrades to the Dynamic Infrastructure platform itself so that the technology remains current and in line with industry standards for performance and cyber security. 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 a greater increase in O&M as we will need to hire more staff to perform manual tasks to support the environment.

2.2 Describe and provide reference to **CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).**³

The Infrastructure Technology team continues to capture and define infrastructure automation use cases based on historic work patterns in our work management system. Based on that data, a strategy was established by leveraging several sources of information, including industry white papers, conversations with other utilities, and advisory firms such as Gartner.

The Dynamic Infrastructure Platform is split into the following areas of opportunity:

Labor Automation (Automate Manual Tasks)

The automation of tasks that are currently performed manually. This data is based on historic work tasks and the amount of labor spent on each task.

Incident Avoidance

Leverage Data Analytics to avoid incidents, and the corresponding effort of managing them. It provides alerts to conditions that indicate a problem is coming, dashboards that provide visual representations of system health, and automated root cause analyses.

Accelerate Investigation of System Incidents

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

Leverage Data Analytics to move away from pulling system logs and searching them manually. It involves storing the data in one location, and results in a single source of truth for machine data. Through simplified analysis and automated correlation, determining root cause is significantly faster and more consistent than current methods.

Streamline System Problem Management

Problem Management includes the activities required to diagnose the root cause of production incidents, and to determine a definitive resolution to those problems so they don't reoccur. Data Analytics helps with this process by providing complete and accurate information about the systems associated with an incident, which allows faster closure of problem records.

Optimize Compute Capacity

Data Analytics helps gain greater visibility by analyzing infrastructure data, application data, and usage trends. This leads to improved allocation of unused system resources and greater confidence of running the environment without overprovisioning.

The Dynamic Infrastructure Platform productivity business case was started in 2021 and was expected to meet a 20% IRR. This business case will also continue to track IRR overall to ensure that new use cases developed are of value to Avista and its customers.

2.3 Summarize in the table, and describe below the DIRECT offsets⁴ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$	\$	\$	\$
O&M		\$0	\$	\$	\$	\$

There is no expected direct offsets in this business case.

⁴ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

2.4 Summarize in the table, and describe below the INDIRECT offsets⁵ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$500,000	\$1,200,000	\$1,200,000	\$1,200,000
O&M		\$0	\$500,000	\$1,200,000	\$1,200,000	\$1,200,000

The Dynamic Infrastructure Platform productivity business case was started in 2021 and was expected to meet a 20% IRR. This business case will also continue to track IRR overall to ensure that new use cases developed are of value to Avista and its customers.

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternative 1:

Increase headcount to accommodate new work

The alternative is to not fund this initiative and continue to grow O&M costs through increasing labor required to support the platforms. We will also not be able to maintain the capacity management and reliability improvements that were achieved as part of the DIP Productivity business case. System outages related to either lack of operational data analytics, or human error during manual changes, has a severe impact on Avista's workforce and their ability to deliver gas and electric service to our customers either in an office, customer service center, or in the field.

Alternative 2:

Do nothing

This alternative adds significant risk to the company and as a result our customers because the technology team will not be able to keep up with the pace of the large technology portfolio that Avista relies on to deliver electricity and natural gas to our customers.

Alternative 3:

⁵ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Each use case defined by the infrastructure technology team will be scored using a prioritization method defined by the DIP business case. They will be evaluated against an estimated time to develop and approved by the governance committee to determine if work on the use case should proceed. Internal Rate of Return metrics will be tracked each year to ensure the business case continues to provide the expected value.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The business case will break the identified automation use cases into semi-annual work packages that will close and transfer to plant every 6 months. These monthly forecasts capture changes in transfers to plant based on project status.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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 endpoint compute & productivity 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.

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.

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the *Dynamic Infrastructure Platform 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:	Dec-07-2023 10:44 AM PST
Print Name:	Kaitlyn Richardson		
Title:			
Role:	Business Case Owner		
Signature:		Date:	Dec-08-2023 10:13 AM PST
Print Name:	Alexis Alexander		

Title: _____

Role: Business Case Sponsor

Signature: _____

Date: _____

Print Name: _____

Title: _____

Role: Steering/Advisory Committee Review

EXECUTIVE SUMMARY

The Legal and Compliance Technology Program¹ Business Case sponsors applications critical to Avista's legal, compliance, and regulatory's operational and strategic objectives. The Legal and Compliance business 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)].

This Business Case is necessary to fund the portfolio of components that maintain the technology and licenses required to meet the Legal and Compliance internal and external business processes and strategic objectives. Avista's Legal and Compliance technology systems are a necessity, as they provide essential business 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.

In order to maintain these business processes and the systems supported by this business case, the recommended funding amount is \$2,050,595 over the next five years (roughly \$400,000 to \$465,000 per year). This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the Legal and Compliance Governance team. This funding level also considers the development staff required to maintain these core technology solutions. The cost of these solutions varies by scale of footprint and resource models.

The technology under this program undergoes regular utilization and performance reviews to determine expected standards and capacity requirements to maintain system reliability under the established budget allocations and respective technology lifecycles. These reviews can result in periodic supplementary investment demands as a result of technology lagging behind its lifecycle or predetermined performance standards.

Failure to approve the recommended funding would cause the deferment of upgrades and enhancements, resulting in unsupported applications, which in turn results in increased security liability, non-compliance, and significantly higher operational and future capital costs. It would also risk the reduction of skilled resources resulting in the loss of institutional business process and technology skillset in an exceptionally competitive market.

This Business Case was created with input by the Business Case Owner, Domain Architect, Product Owner, Business Technology Analyst, ET Project Management Office and approved by the Legal and Compliance Governance Team (includes Business Sponsor, Director and Managers within the Legal and Compliance organization).

VERSION HISTORY

Version	Author	Description	Date
1.0	L.Raymond	Initial draft of original business case	4/13/23
1.1	L.Raymond	Added funding	4/27/23
BCRT	Heidi Evans	Has been reviewed by BCRT and meets necessary requirements	5/3/23

¹ [1] "A Program is defined as related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Managing projects, subsidiary programs, and program activities as a program enhances the delivery of benefits by ensuring that the strategies and work plans of program components are responsively adapted to component outcomes, or to changes in the direction or strategies of the sponsoring organization.", Project Management Institute Global Standard, *The Standard for Program Management, Fourth Edition*. Page 3 (Copyright 2017).

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$465,000	\$465,000
2025	\$420,595	\$295,000
2026	\$405,500	\$531,095
2027	\$400,000	\$400,000
2028	\$400,000	\$400,000

Project Life Span	5+ years (Program)
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 (portable internet-enabled devices like smartphones, tablets, notebooks, GPS devices, etc.), scalability (ability to increase or decrease in performance in response to changes), and employee experience (nature of the relationship between the organization and employees), require technological expansion of conventional business practices and processes.

1.2 Discuss the major drivers of the business case.

The primary investment driver for this business case is 'Performance and Capacity' as it is intended to achieve work processes and business continuity objectives through a range of system reinforcement projects to meet performance standards.

A secondary investment driver is 'Mandatory & Compliance', as it contains investments driven by compliance with laws, rules, and contractual obligations that are external to the Company (e.g., State and Federal statutes, settlement agreements, FERC, NERC, and FCC rules, and Commission Orders, etc.). 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 if deferred or risks being mitigated by the request.

This funding supports a program to manage the on-going changes to legal and compliance business processes. If this work is not funded, it increases the potential for operational costs and associated fines related to non-compliance with federal, state, or other regulations. The projects and initiatives 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 upgrade systems that are in place. This perpetuates inefficiencies as employees are less productive and lack relevant tools to make effective business decisions.

Working through these components as planned 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, which results in an improved downstream impact on our employee and customer experience.

Upgrading to the recommended or latest versions of software is important to maintain the overall health of our business. There are many reasons that upgrades are necessary, from enhanced security to increases in employee productivity (and lowers operational costs). Upgrading business software is an economical decision compared to the cost of maintaining outdated software that suffer breakdowns and places a burden on Operations (and the budget). Upgrades exist to avoid common risk such as:

- Security - Outdated or unpatched software increases the risk of vulnerabilities or security exploits.
- Incompatibilities - Outdated software can disrupt workflow or fail to work with other (duly updated) software.
- Degradation - Software can experience a slow deterioration of quality over time or diminished responsiveness that could eventually become faulty or unusable, if not upgraded.
- Deficiencies - No matter how well the software is tested, many times it is deployed with defects that need to be remediated.
- Obsolescence - Software updates don't always solely address security issues or deficiencies. Sometimes they are there to add necessary functionality or optimize existing features, such as new regulatory requirements or industry guidelines. There is heightened risk of losing vendor support from choosing not to install software updates and the latest improvements.

Software enhancements are just as critical, as demands change so rapidly, we must look for ways to extend functionality of our software investment rather than go through full replacement cycles. Software enhancements help to improve system efficiency, anomalies, and better cross-platform

compatibility. There are also unavoidable governance and compliance changes that may drive the need for software optimization, thus why continuous delivery and integration are common practice within the software lifecycle.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization.

Primary Focus Area for project (select one):		
<input type="checkbox"/>	Our Customers	<ul style="list-style-type: none"> ▪ Mature our customer experience, both internal & external ▪ Support affordability, equity, and economic vitality ▪ Understand and address the evolving customer needs by offering products, services, & solutions
<input type="checkbox"/>	Our People	<ul style="list-style-type: none"> ▪ Evolve our employee experience with a focus on engagement, development, resiliency & well-being ▪ Improve safety & training systems to reduce injuries, expand learning & understand risks ▪ Strengthen equity, inclusion, & diversity within systems, practices, & behaviors
<input checked="" type="checkbox"/>	Perform	<ul style="list-style-type: none"> ▪ Affordably operate & maintain safe, clean, reliable generation & energy delivery infrastructure ▪ Achieve stated financial objectives
<input type="checkbox"/>	Invent	<ul style="list-style-type: none"> ▪ Foster & apply an innovation culture to benefit employees, customers, communities, & shareholders ▪ Create the utility of the future with our stakeholders, optimizing for cost, carbon, & reliability

This is a program with discrete projects and packages that strategically align with the ‘Perform’ and ‘Our People’ Focus Areas. Specific Focus Areas include:

Perform: The technology in this business case provides 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 technology to meet business needs, which aids in Avista’s ability to meet necessary financial objectives. In addition, legal and compliance technology is utilized to continuously perform and improve through systems that focus on compliance management and risk avoidance, which also helps to reduce associated operational expenses.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.²

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements for existing technology under the Legal and Compliance 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.

Gartner is used for Information Technology insights, analysis, research and reference materials. Gartner is an industry leader in IT research, benchmarking, and consulting practices and provides Avista the ability to understand market trends, best practices and make more informed technology decisions. For example, Gartner's 'Magic Quadrant', provides a graphical positioning of technology providers in the market, with the ability to home in on critical capabilities based on requirements and specific use cases. This capability alone significantly reduces the time and effort of researching, evaluating, and reference checking. [Gartner for Information Technology \(IT\) Leaders](#).

2. PROPOSAL AND RECOMMENDED SOLUTION

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

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 2022/2023 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 the Contract Lifecycle Management implementation.

The recommended solution to ensure that Legal and Compliance can meet these initiatives and timelines over the next five years, is to follow the recommended software development lifecycle application refresh and expansion requirements for each application. The requested allocation is based primarily on compatibility, reliability, security, and safety. Additional criteria considers maintaining operational efficiencies and aligning with Avista and Legal and Compliance's strategic Focus Areas. Conventional business practices and processes must be scalable (cost effectively handling increased workloads), provide mobility, and focus on the employee and customer experiences. The project roadmap for the next five years includes refreshing and/or expansion initiatives of the core LCT systems.

Those systems include:

- Contract Lifecycle Management system – new system will manage the contracts process from creation to execution and renewal. This new solution will be instrumental in providing a more organized approach to contract management activities, broader contract lifecycle visibility, better negotiation opportunities, and enable proactive cost savings measures. In addition, this will become the system of record for Electric and Gas Service Agreements and other revenue-

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

based agreements that are currently being tracked in disparate systems. Software and vendor selection is in process and implementation is currently forecasted to complete before 2024.

- CATSWeb (Corrective Action Tracking System) - Avista’s compliance tracking and reporting system.
- Valuation - Avista’s legacy contract management system, that will be replaced by the Contract Lifecycle Management system
- Navex / Conflict of Interest – Software as a Service (SaaS) technology module used for systematic tracking and reporting of Conflicts of Interest Disclosures which are necessary to protect corporate reputation, avoid actual or apparent conflicts of interest, and to comply with legal requirements.

The current roadmap includes but it not limited to:

2024	2025	2026	2027	2028
CATSWeb Expansion	CATSWeb Expansion	CATSWeb Expansion	CATSWeb Expansion	CATSWeb Expansion
Contract Lifecycle Management (Phase 2)	Contract Lifecycle Management Expansion	Contract Lifecycle Management Expansion	Contract Lifecycle Management Expansion	Contract Lifecycle Management Expansion
CATSWeb Upgrade		CATSWeb Upgrade		CATSWeb Upgrade

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).³

In order to ensure that Avista maximizes the benefits for the investments made in our enterprise applications, we implement regularly released enhancements that provide incremental improvements and optimization to these systems. The work under this business case enables improvements in these processes thus creating indirect labor efficiencies of at an estimate of \$135,000 a year. This saving comes from having systems to aid the compliance activities and without this system we would see an increase in our direct costs associated with our compliance work.

These estimates were developed based on the historical trends for enhancement work and the software management lifecycle standards 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.

³ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

2.3 Summarize in the table, and describe below the DIRECT offsets⁴ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0	\$0

2.4 Summarize in the table, and describe below the INDIRECT offsets⁵ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital		\$0	\$0	\$0	\$0	\$0
O&M	Time savings and avoidance of additional labor	\$135,000	\$135,000	\$135,000	\$135,000	\$135,000

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Option	Capital Cost
Recommended Solution – Maintain application lifecycle support, security risks, compliance requirements, and cost savings at the requested funding level	\$2,050,595
Alternative 1 – Fund at a lower level	\$1,890,595

Alternative 1: Funding at a lower level

The Waterline is bottom-up estimate for technology that is required to enable and sustain automated business processes of existing enterprise applications that essentially maintain business operations. 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

⁴ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁵ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

delayed even further. This action will also increase the risk of timely reporting which could result in compliance challenges. 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 that are introduced with new or updated features, and 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.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

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 (see section 2.8) 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 monthly 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.

Avista's Legal and Compliance technology systems are a necessity, as they provide essential business process and productivity capabilities 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 Legal and Compliance Technology (LCT) and Enterprise Technology (ET) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher operational costs as a result of the deferment of upgrades and enhancements, etc.

Investment prudence is reviewed by the Steering Committee (see section 2.8) 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.

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

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.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

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 Claims, Manager FERC Compliance, and Ethics and Compliance Manager.

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 monthly (at a minimum) 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 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, subject to additional funding changes as directed by the CPG

Project prioritization is evaluated by the management team on a weekly basis by the IOC. Each program and project steering committee meets monthly (at a minimum) 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 Project Management Office (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. 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.

3. APPROVAL AND AUTHORIZATION

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.

DocuSigned by:
 Signature: Graham Smith Date: May-05-2023 | 8:42 AM PDT
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Graham Smith
 Title: Sr. Manager, Application Delivery
 Role: Business Case Owner

DocuSigned by:
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Greg Hesler
 Title: VP, General Counsel & Chief Compliance Officer
 Role: Business Case Sponsor

DocuSigned by:
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Kathy Nitteberg
 Title: Manager, Ethics & Compliance
 Role: Steering/Advisory Committee Review

DocuSigned by:
 Signature: Hossein Nikdel Date: May-05-2023 | 10:34 AM PDT
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Hossein Nikdel
 Title: Director, Applications & System Planning
 Role: Steering/Advisory Committee Review

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

EXECUTIVE SUMMARY

Avista's Outage Management Tool (OMT) is an in-house developed custom application that supports electric outage analysis, management, and restoration. OMT is a mission critical system which provides the functionality to manage the electric distribution grid, the overall life cycle of electric outages and the restoration processes for the Washington and Idaho service territories. The OMT application and data model were developed by Avista at a time when commercial outage management software was not available, have been used for nearly two decades and are approaching technology obsolescence. The existing Geographic Information System (GIS) operating platform on which OMT is built is scheduled by the vendor for end of life in 2028 and is recommended for replacement in the Atlas business case. The OMT application is showing increasing signs of fatigue (such as system instability during storm scenarios) and the loss of OMT would mean significant risks, increased costs, and customer benefit impacts which are detailed in the narrative below. The loss of OMT is rated 6th on Avista's corporate risk register, which means replacing it with a modern application is a top priority.

OMT works in synchronization with Avista's Distribution Management System (DMS), in order to monitor and control Avista's electric distribution network efficiently and reliably. The DMS is a commercial application used to monitor and control the portion of the distribution grid that is equipped with "smart grid" technology that enables remote monitor and control. It relies on Geographic Information System (GIS) data to determine the current operating state of the distribution system, which is provided via an outdated, custom-built data model import tool and OMT integration. Frequent integration failures result in the two systems being out of synch with each other, requiring a significant amount of manual intervention to resolve each week. The DMS marginally meets the current business needs but will not meet future needs for additional distribution grid automation and Distributed Energy Resources requirements to meet customer choice and Clean Energy Transformation Act requirements.

Avista foresees a future utility architecture that bridges use cases across Customer, Grid, Operations, and Utility Enterprise domains. This future will require a technology platform that enables the integration of these domains. The industry standard for this platform is an Advanced Distribution Management System (ADMS). Replacing Avista's OMT and DMS with a single ADMS will achieve improved operational awareness and grid management capabilities, enable real-time automated outage restoration, enable real-time grid optimization and performance, improve field and office worker productivity, and provide the ability to reengineer work processes and methods to support the continuous improvement of Avista's Distribution System Operator program. An ADMS solution incorporates industry best practices for optimized workflow, software performance and reporting which will provide Avista with the ability to respond to more stringent and detailed regulatory compliance reporting requirements, such as those for Wildfire Resiliency and the Clean Energy Transformation Act. A modern ADMS also enables the ability to deliver more geographically specific Estimated Restoration Time (ERT) information to electric customers during outages. The improved ERT accuracy and restoration status for customers will improve customer confidence in the information

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

which will reduce the number of calls received by our customer service representatives, as well as call durations.

The estimated project cost is \$49M over a four-year planned project duration. Because of the importance of this project, and the fact that the primary reason ADMS projects fail or run over time and over budget is due to the inability to create and maintain an accurate distribution grid data model, initial development work on the data model was started in 2022. The bulk of the ADMS implementation effort is scheduled to start in Q2-2023, with a three month Phase 0 effort focused on validating the data model and identifying technically challenging use cases by running a series of tests utilizing the out-of-the-box software, using Avista's distribution grid data model and Avista's realtime distribution grid simulator. The Phase 0 effort will enable the project to efficiently proceed into the Phase 1 design and implementation effort in Q3-2023 with reduced risk to scope, schedule, and budget, improving the likelihood of completing the project as planned.

Since this is a multiyear project, the work needs to start in 2023 as scheduled in order to have the ADMS fully operational before the OMT operating platform is no longer supported and to meet increasing customer and regulatory expectations which cannot be achieved with the legacy OMT and DMS applications. Avista needs to proceed with the work now in order to be ready for the future, in a similar way to how planning is done for future power needs; i.e., we don't wait until we run out of power to build new generation. It would not be prudent to wait until after our current system completely fails to meet our needs to start an ADMS project.

A Request for Proposal (RFP) was released to the industry leading ADMS software vendors in Q3-2022. From that process, four vendors responded which were thoroughly evaluated and a recommendation to proceed with General Electric (GE) was made to executive leadership to proceed into contract negotiations with the successful bidder. The recommendation was approved, and contract negotiations were complete in Q1-2023.

VERSION HISTORY

Version	Author	Description	Date
1.0	Mike Littrel	Initial draft of business case	04/2017
2.0	Mike Littrel	Updated business case format	07/2020
3.0	Mike Littrel	Updated program details and budget	07/2021
4.0	Mike Littrel	Updated program details and budget	08/2022
5.0	Mike Littrel	Updated program details and budget	04/2023
BCRT	<i>BCRT Team Member</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$13.75M	\$1.8M
2025	\$9.6M	\$24M
2026	\$7.4M	\$6.8M
2027	\$4.5M	\$4M
2028	\$0	\$0

Project Life Span	4 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Mike Littrel Mike Magruder, Hossein Nikdel
Sponsor Organization/Department	Energy Delivery Technology Projects
Phase	Execution
Category	Project
Driver	Asset Condition

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

- 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?

Avista's current Outage Management Tool (OMT) has been used for nearly two decades and is approaching obsolescence. The technology is becoming more and more difficult to configure to meet the changing business needs and has exceeded its useful life. The software has already undergone two major conversions to extend the life to this point. Both changes achieved their goals; however, the code is now more fragile which has increased the complexity of supporting OMT.

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 and outdated. OMT does not have the full complement of functionality required to meet current and future needs of the Distribution System Operators as they respond to an increasingly complex and dynamic electric distribution grid. Outage incident processing performance can be very slow and unstable during high-volume outage conditions (storms), particularly in field division offices, impacting the ability to restore service quickly. When a new configuration request is surfaced, the change cannot always be implemented, as the custom code and architecture may not allow it. The existing operating platform used by OMT is currently scheduled for end of life in 2025.

The existing OMT workflow does not include a fully digital workflow for the field personnel who are responding to outage scenarios. This lack of a digital workflow creates gaps in situational awareness for both the field personnel and the Distribution Operators who are planning and coordinating the restoration effort. These gaps can lead to potential safety hazards and inefficiencies in the restoration process. It also creates gaps in the level of detail collected during the damage assessment and restoration activities. These details are becoming increasingly important to be able to report on for programs such as Wildfire Resiliency. Modern ADMS platforms include a fully digital workflow which enable both field and office personnel to have access to the same information and receive near real-time status updates during an outage event, improving safety and efficiency. A digital workflow also ensures that the damage and repair information is captured accurately and completely through the use a rule driven forms.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

Switching (the process to de-energize a section of the electric grid for construction, maintenance, or repair) is another area for significant improvement in both effectiveness and safety. Currently switching plans are developed in a Word document through conversations with the people involved (Area Engineer, Foreman, Distribution Operators, etc.) and the plan steps are executed manually on the day of the planned switching activity. An ADMS provides a fully digital and integrated process for switch plan development, study mode, and execution of the switching activity. This fully digital process ensures that the switching meets all electric grid and safety requirements by monitoring each step of the plan against the actions taken and alerting the personnel if a step is missed, a step is invalid, or an error is made during the switching process. The switch plans are also stored in an online library for quick reference in order to have a highly reproducible process for future switch plans.

The existing Distribution Management System (DMS) has several challenges which the ADMS will address. First, the DMS relies on GIS data to determine the current operating state of the distribution system which is provided via an outdated, custom-built OMT integration. Frequent integration failures result in the two systems being out of synch with each other, requiring a significant amount of manual intervention to resolve each week. The DMS marginally meets the current business needs but will not meet future needs for additional distribution grid automation and Distributed Energy Resources requirements to meet customer choice, and Clean Energy Transformation Act requirements.

1.2 Discuss the major drivers of the business case.

Avista can gain significant operations and business advantages by replacing the OMT and the DMS with an ADMS. A modern ADMS can address many of the issues currently faced by Distribution System Operators and Electric Operations field personnel. The benefits of an ADMS fully integrated with other enterprise systems along with optimized business processes include; improved outage analysis and restoration capabilities, improved safety, improved status information to customer facing systems, and improved system reliability and dependability. Avista responds to multiple major storm events per year. An ADMS with a fully digital workflow has the potential to reduce the labor costs of these major events by at least 10%. Based on actual storm costs for 2017-2021 that's an average savings of \$340,379 per year (see table below) split 75% capital and 25% O&M.

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Accounting Year	Summary Exp Category	Sum of Actuals	with ADMS	10% Savings
2017	Labor	\$3,357,066	\$3,021,360	\$335,707
	Non-Labor	\$4,460,419	\$4,460,419	\$0
2017 Total		\$7,817,485	\$7,481,778	\$335,707
2018	Labor	\$2,227,664	\$2,004,897	\$222,766
	Non-Labor	\$2,649,948	\$2,649,948	\$0
2018 Total		\$4,877,611	\$4,654,845	\$222,766
2019	Labor	\$2,366,126	\$2,129,514	\$236,613
	Non-Labor	\$5,341,119	\$5,341,119	\$0
2019 Total		\$7,707,245	\$7,470,633	\$236,613
2020	Labor	\$4,139,030	\$3,725,127	\$413,903
	Non-Labor	\$14,288,254	\$14,288,254	\$0
2020 Total		\$18,427,284	\$18,013,381	\$413,903
2021	Labor	\$4,929,088	\$4,436,179	\$492,909
	Non-Labor	\$14,398,068	\$14,398,068	\$0
2021 Total		\$19,327,156	\$18,834,248	\$492,909
Annual Average		\$11,631,356	\$11,290,977	\$340,379

A fully integrated ADMS provides capabilities that include: (1) a platform that integrates numerous utility systems to achieve improved operational awareness and grid management capabilities, (2) expanded real-time automated outage restoration, and (3) enables real-time optimization of electric distribution grid performance.

While improved customer experience is difficult to quantify, it is perhaps the most important business reason for justifying a new ADMS. During major outage event situations, the ability to communicate timely, accurate and consistent status of outages and estimated restoration time is of paramount importance to customers. Whether the customer hears directly from the utility, the media or a public agency, the information about the outage needs to be consistent. An ADMS is that vehicle to provide this timely, accurate and consistent information to customers.

Significant customer value from other corporate initiatives will be at risk if Avista lost the OMT and/or DMS capabilities and did not have an ADMS in place. This value is at risk if the ADMS project does not occur (or is delayed until OMT/DMS failure) because the Advanced Metering Infrastructure (AMI) meters simply provide near real-time data, they do not perform the analytics or initiate the optimization functions that produce the customer benefit. That work is currently accomplished by custom functionality within OMT and DMS, which would become native functionality within an ADMS. Some examples of these customer values from the August 2020 Avista Utilities Advanced Metering Infrastructure (AMI) Project Report include:

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<u>Benefit</u>	<u>Average Annual Customer Value</u>
Early Outage Notification	\$4,005,827
More Rapid Restoration	\$2,269,968
Avoided Single Lights Out	\$289,723
Reduced Major Storms Cost	\$327,566
Conservation Voltage Reduction	\$2,108,817

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

The OMT application and data model have been used for nearly two decades and are approaching technology obsolescence. Continuing to utilize OMT would continue to create Operating and Maintenance cost pressure while also creating risks of system failure during times of high demand (storms). Additionally, any investment in the current system is a sunk cost, as the system is limited in the additional functionality it can provide to our staff as they respond to electric customer outages on an increasingly complex distribution system and the underlying platform in schedule for end-of-life in 2025. The current system is highly customized making it increasingly difficult to integrate with newer enterprise applications. OMT is a cornerstone to Avista's ability to manage the overall cycle of the electric outage and restoration processes for the Washington and Idaho electric service territories. If it is not replaced prior to system failure, it would likely double the amount labor required to complete the restoration efforts, while also increasing public safety risks and lowering customer satisfaction. Based on a five-year average of actual storm labor costs for 2017-2021 that's an addition cost of \$3,403,795 per year (see table below) split 75% capital and 25% O&M. The costs and risks would continue to accumulate after the storm as daily operations would be impacted for the duration of an OMT system failure. The Avista Risk register has the impact range of an OMT system failure set at \$1.0M - \$10.0M.

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Accounting Year	Summary Exp Category	Sum of Actuals	OMT/DMS Failure	Annual Cost Increase
2017	Labor	\$3,357,066	\$6,714,132	\$3,357,066
	Non-Labor	\$4,460,419	\$4,460,419	\$0
2017 Total		\$7,817,485	\$11,174,551	\$3,357,066
2018	Labor	\$2,227,664	\$4,455,327	\$2,227,664
	Non-Labor	\$2,649,948	\$2,649,948	\$0
2018 Total		\$4,877,611	\$7,105,275	\$2,227,664
2019	Labor	\$2,366,126	\$4,732,253	\$2,366,126
	Non-Labor	\$5,341,119	\$5,341,119	\$0
2019 Total		\$7,707,245	\$10,073,372	\$2,366,126
2020	Labor	\$4,139,030	\$8,278,060	\$4,139,030
	Non-Labor	\$14,288,254	\$14,288,254	\$0
2020 Total		\$18,427,284	\$22,566,313	\$4,139,030
2021	Labor	\$4,929,088	\$9,858,176	\$4,929,088
	Non-Labor	\$14,398,068	\$14,398,068	\$0
2021 Total		\$19,327,156	\$24,256,245	\$4,929,088
Annual Average		\$11,631,356	\$15,035,151	\$3,403,795

Since this is a multiyear project, the work needs to start as scheduled in order to have the ADMS fully operational before the OMT operating platform is no longer supported, and to meet increasing customer and regulatory expectations, which cannot be achieved with the legacy OMT and DSM applications. Avista needs to proceed with the work now in order to be ready for the future, in a similar way to how planning is done for future power needs; i.e., we don't wait until we run out of power to build new generation. Implementing an ADMS is a long-term project, so we don't want to wait until after our current system completely fails to meet our needs to start an ADMS project. If OMT is not replaced with a modern ADMS, the ability of Avista to meet current and future customer, regulatory, and compliance requirements will be at risk.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives and mission statement of the organization. See link.

[Avista Strategic Goals](#)

Having a modern ADMS will improve field and office worker productivity, provide more accurate data, and provide the ability to reengineer work processes and methods to support the continuous improvement of Avista's outage management and restoration program. It will also provide Avista with the ability to respond to more stringent and detailed regulatory compliance reporting requirements, enable effective operation of an increasingly complex and dynamic electric distribution grid, and deliver more accurate Estimated Restoration Time (ERT) information to electric customers during outages. The improved ERT accuracy and restoration status for customers will improve customer confidence in the information which will reduce the number of calls

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received by our customer service representatives, as well as call durations. The additional Distributed Energy Resource Management (DERM) functionality will support the long-term goals of the CEIP and Connected Communities project. CEIP and Connected Communities goals are described in more detail in section 2.6. A DERM provides the ability to actively manage energy resources such as wind, solar, batteries, etc. based on specific grid requirements in order to achieve goals such as increased distribution grid reliability.

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.¹

Justification for system replacement is based on comprehensive assessments of technologies, processes and functions that were performed in 2015 by third-party consultants as part of an enterprise project planning process. The details of the assessments are available in the following supporting documents:

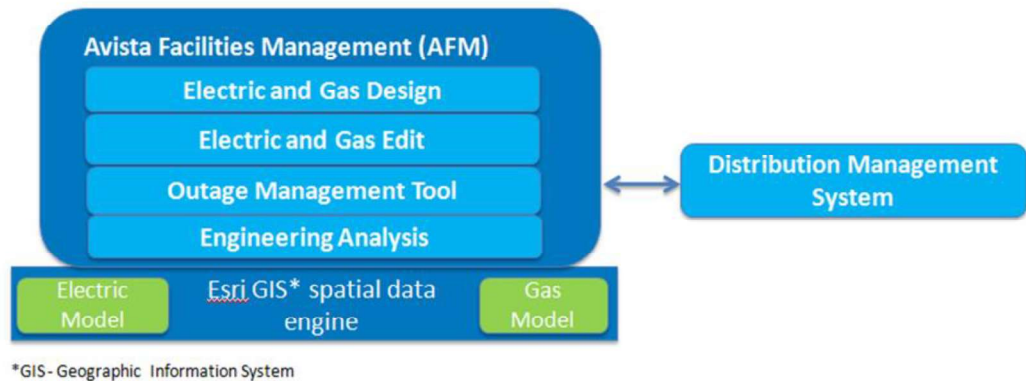
- Business Case
- Current State Report
- Future State Report
- Gap Analysis Report
- Industry Analysis Report
- Requirements Report
- Alternative Analysis Report

The Gap Analysis report includes a list of more than 30 gaps in the current state OMT/DMS applications that would be resolved/corrected with the implementation of an ADMS. The conclusion from the third-part consultant is:

Avista can gain significant operations and business advantages by replacing OMT with a commercial OMS(ADMS). A new OMS(ADMS) can address many of the issues currently faced by dispatch and field personnel. Properly integrated with other systems with optimized processes, benefits to be realized include improved outage analysis and restoration capabilities, improved status information to customer facing systems, and improved system reliability and dependability. A new OMS(ADMS) will improve Avista's ability to respond to storm condition outages and restoration processes.

¹ Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

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An Esri Geographic Information System (GIS) serves as the foundational data structure on which Avista Facility Management (AFM) applications, including OMT, 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 OMT. 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 portion of the distribution grid that is enabled with “smart grid” technology. It relies on the GIS data from OMT to determine the current operating state.

2. PROPOSAL AND RECOMMENDED SOLUTION - *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).*

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

Avista foresees a future utility architecture that bridges use cases across Customer, Grid, Operations, and Utility Enterprise domains. This future will require a technology platform that enables the integration of these domains. The industry standard for this platform is an Advanced Distribution Management System (ADMS). Replacing Avista’s OMT and DMS with a single ADMS will achieve improved operational awareness and grid management capabilities, enable real-time automated outage restoration, enable real-time grid optimization and performance, improve field and office worker productivity, and provide the ability to reengineer work processes and methods to support the continuous improvement of Avista’s Distribution System Operator program. An ADMS solution also provides Avista with the ability to respond to more stringent and detailed regulatory compliance reporting requirements, such as

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

those for Wildfire Resiliency and the Clean Energy Transformation Act. A modern ADMS also enables the ability to deliver more geographically specific Estimated Restoration Time (ERT) information to electric customers during outages. The improved ERT accuracy and restoration status for customers will improve customer confidence in the information which will reduce the number of calls received by our customer service representatives, as well as call durations.

The additional Distributed Energy Resource Management (DERM) functionality will support the long-term goals of the CEIP and Connected Communities project. CEIP and Connected Communities goals are described in more detail in section 2.6.

Option	Capital Cost	Start	Complete
Alternative 1 - Recommended Solution - Replace the custom OMT and DMS applications with an ADMS	\$45.5M	04/2023	12/2026
Alternative 2 – Rewrite Custom OMT and keep DMS	Not Available	01/2023	06/2026
Alternative 3 - Continue to utilize the custom OMT and DMS applications until OMT runs out of support in 2025	\$1.0M	06/2023	12/2025

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).²

Detailed documentation from industry experts as listed in section 1.5 above, along with project costs from recent comparable projects at other utilities were used to determine the amount of the capital funds request and duration of the business case.

Avista released a Request for Proposal (RFP) in Q3-2022 to qualified ADMS software vendors and implementors. The responses were evaluated and scored in order to determine the best ADMS solution. The RFP results were provided to the project governance group for review and approval to proceed. The decision was made to proceed into contract negotiations with the recommended solution from GE, which provided both a rich set of features and functionality and a very competitive price. An initial Phase 0 engagement is

² Please do not attach any requested items to the business case, rather be sure to have ready access to such information upon request.

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planned to refine the project's scope, schedule and budget which will reduce the risks of unforeseen issues impacting the project as work proceeds.

The funds in this business case will be utilized to fund the replacement of OMT and DMS with an ADMS. The project is estimated to have a four-year duration. Upon completion, the ADMS will fully replace both the existing Outage Management Tool and the Distribution Management System. The project is scheduled to start in Q2-2023, with a three month Phase 0 effort focused on validating the data model and identifying technically challenging use cases by running a series of tests utilizing the out-of-the-box GE software, using Avista's distribution grid data model and Avista's real-time distribution grid simulator. The Phase 0 effort will enable the project to efficiently proceed into the Phase 1 design and implementation effort in Q3-2023 with reduced risk to scope, schedule, and budget, improving the likelihood of completing the project as planned. The project will ramp up during 2023, then have a leveled spend for multiple years over the duration of the project.

The Regulatory Affairs Team has reviewed the project and determined that an internal rate of return calculation would not be needed for this project.

2.3 Summarize in the table, and describe below the DIRECT offsets³ or savings (Capital and O&M) that result by undertaking this investment.

The ADMS project is not forecasting any direct offsets because there will be no staffing or software reductions as a result of this project.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	\$	\$	\$	\$	\$
O&M	N/A	\$	\$	\$	\$	\$

2.4 Summarize in the table, and describe below the INDIRECT offsets⁴ (Capital and O&M) that result by undertaking this investment.

Modernizing Avista's outage management software and business processes is anticipated to provide the following indirect labor savings from improved work efficiencies for Field personnel and Distribution Operations personnel who respond to electric outages. The five-year estimated saving (starting in 2025) is estimated to be \$1.0M.

³ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁴ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

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These high-level estimated savings are based on a review of current and previous projects completed at Avista with a uniform efficiency value applied based on the types of applications deployed. The following are high-level estimates, and the Company does not currently have a way to track if these benefits will be realized.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Improved Storm Response	\$	\$255K	\$255K	\$255K	\$255K
O&M	Field personnel	\$	\$80k	\$80k	\$80k	\$80k
O&M	Distribution Operations Personnel	\$	\$120K	\$120K	\$120K	\$120K
O&M	Improved Storm Response		\$85K	\$85K	\$85K	\$85K

OMS/ADMS Indirect Savings Estimates

Field Personnel Annual Indirect Offset Potential

Estimated Number of Users	85
Estimated Efficiency per User	15 minutes per incident
Estimated Usage Incidents per year	60
Standard Hourly Labor Rate	\$85.00
Estimated Percent of Users in WA	75%
Estimated Annual Indirect Labor Offset	\$81,281

Distribution Operations Annual Indirect Offset Potential

Estimated Number of Users	10
Estimated Efficiency per User	10 minutes per day
Estimated Usage Days per year	365
Standard Hourly Labor Rate	\$85.00
Estimated Percent of Users in WA	75%
Estimated Annual Indirect Labor Offset	\$38,781

Estimated Annual Indirect Labor Offset \$120,063

Improved Storm Response

Avista can gain significant operations and business advantages by replacing the OMT and the DMS with an ADMS. A modern ADMS can address many of the issues currently faced by Distribution System Operators and Electric Operations field personnel. The benefits of an ADMS fully integrated with other enterprise systems along with optimized business processes include; improved outage analysis and restoration capabilities, improved safety, improved status

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information to customer facing systems, and improved system reliability and dependability. Avista responds to multiple major storm events per year. An ADMS with a fully digital workflow has the potential to reduce the labor costs of these major events by at least 10%. Based on actual storm costs for 2017-2021 that's an average savings of \$340,379 per year (see table below) split 75% capital and 25% O&M.

Estimated Annual O&M Indirect Labor Offset \$85,095

Estimated Annual Capital Indirect Labor Offset \$255,294

Accounting Year	Summary Exp Category	Sum of Actuals	with ADMS	10% Savings
2017	Labor	\$3,357,066	\$3,021,360	\$335,707
	Non-Labor	\$4,460,419	\$4,460,419	\$0
2017 Total		\$7,817,485	\$7,481,778	\$335,707
2018	Labor	\$2,227,664	\$2,004,897	\$222,766
	Non-Labor	\$2,649,948	\$2,649,948	\$0
2018 Total		\$4,877,611	\$4,654,845	\$222,766
2019	Labor	\$2,366,126	\$2,129,514	\$236,613
	Non-Labor	\$5,341,119	\$5,341,119	\$0
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2020	Labor	\$4,139,030	\$3,725,127	\$413,903
	Non-Labor	\$14,288,254	\$14,288,254	\$0
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2021	Labor	\$4,929,088	\$4,436,179	\$492,909
	Non-Labor	\$14,398,068	\$14,398,068	\$0
2021 Total		\$19,327,156	\$18,834,248	\$492,909
Annual Average		\$11,631,356	\$11,290,977	\$340,379

2.5 Describe in detail the alternatives, including proposed cost for each alternative, that were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Alternate 1 (Recommended) – Implement an ADMS - The current OMT 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 by a modern ADMS. The support by Esri for the current software solution will be ending in January 2025. Continuing to use OMT beyond that date would become increasingly costly and risky without an investment in an upgrade. Staying on the current platform version includes risks, such as:

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- As the version goes out of support from Esri, Avista will not be able to receive patching from Esri to respond to cyber security vulnerabilities.
- Performance challenges and instabilities of OMT during major storm events will continue to exist because a GIS platform is not architected to handle the large volume of data and data changes that occurs during a storm event.
- Keeping OMT in the GIS environment rather than moving it to a separate ADMS platform, would cause the system to continue to be susceptible to configuration changes made to support GIS Edit functionality which has an inadvertent negative impact on OMT, which occurred in 2022.
- Continued integration failures between OMT and the DMS resulting in the two systems being out of synch with each other, requiring a significant amount of manual intervention to resolve each week.
- The DMS marginally meets the current business needs but will not meet future needs for additional distribution grid automation and Distributed Energy Resources requirements to meet customer choice Clean Energy Transformation Act requirements. A future DMS replacement project would be required to address these shortcomings.
- Having a modern, dependable outage management system is critical for Avista to provide safe and reliable energy for the customers. The ADMS project Request for Proposal (RFP) results received in late 2022 for Alternative #2 (Implement an ADMS) validate that the first costs of implementing an ADMS are comparable to an attempted rewrite of OMT, without the risks and limitations Alternative #1 and all the short and long term benefits of having a modern ADMS.

Alternative 2 – Rewrite OMT - Avista could endeavor to rewrite the current OMT application to function on the new Esri operating platform and data model. An initial effort estimate on this alternative indicates that it would have a lower first cost than implementing an ADMS however this alternative has several areas of high risk that would likely overshadow the initial costs savings. Examples include:

- Avista has made a corporate decision that it is not a software development company and will instead purchase and configure industry standard applications to reduce the risks and costs of owning and maintaining custom applications.
- OMT is a mission critical system. At the time it was originally developed by Avista there were no commercially available outage management applications that met Avista's requirements. That is no longer the situation.
- No other utility has written a custom OMT application using the new Esri operating platform. This first of its kind development effort has many unknowns that Avista would discover along the way likely increasing timelines, costs, and risks. Avista would also carry the sole responsibility

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for resolving performance/accuracy/reliability issues that will inevitably crop up in production with a first-generation application.

- Keeping OMT in the GIS environment, rather than moving it to a separate ADMS platform, keeps the outage system closely coupled to the GIS data model. This will introduce new risks and complexities as Avista transitions to Esri's new data model in the next 3-5 years. Having a separate ADMS platform will isolate the ADMS from future Esri data model changes.
- Keeping OMT in the GIS environment rather than moving it to a separate ADMS platform, would cause the system to continue to be susceptible to configuration changes made to support GIS Edit functionality which has an inadvertent negative impact on OMT. A change made in 2022 to support Edit introduced a data problem which did not reveal itself for several months, but eventually lead to a failure in OMT during an outage event.
- A rewrite of the existing functionality would not provide the improved safety, performance, and data accuracy features that a fully digital workflow through and ADMS would provide. Because a GIS environment is not built for the high volume of data and high rate of data change that is required during outage scenarios. This leads to slow performance as the volume of data and increases. This performance issue would not be overcome with a rewriting of the OMT application, because the underlying architecture would still have the performance limitation.
- Rewriting OMT is estimated to take about the same number of years as implementing an ADMS but does nothing to address the current shortcomings of the existing DMS or its inability to fulfill future needs of Distributed Energy Resources requirements to meet customer choice and Clean Energy Transformation Act requirements. These shortcomings would need to be addressed in a future project, extending the timing for when Avista would be able to meet those requirements and significantly increasing the total cost of ownership.
- **Alternative 3** – Continue to use OMT - There's an option to continue to use the existing OMT in its current format with continued minor enhancements to keep it operational. It would not resolve any of the issues that have been identified throughout this narrative. In addition, delaying the start of a project to replace OMT and the DMS with a modern ADMS increases the risk that the existing systems will fail before an ADMS project can be completed. Avista needs to proceed with the work now in order to be ready for the future, in a similar way to how planning is done for future power needs; i.e., we don't wait until we run out of power to build new generation.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Avista tracks a large number of electric system reliability statistics (SAIDI, SAIFI, CAIDI, etc.) that can and will be used to benchmark and measure success of the project. The project team will work with key stakeholders to determine which reliability statistics would be directly or indirectly influenced by the increased capabilities and functionality of an ADMS and use those as one measure of the success for the project.

As mentioned in Section 1.2 there are a series of high customer value items enabled by the data provided to OMT/DMS from the AMI meters. Those metrics will be monitored to ensure the values are maintained and where possible improved with the integrated ADMS capabilities, such as automatic “ping” of AMI meters to validate power has been restored.

Wildfire Resiliency is a key focus area for Avista. The ADMS project team will coordinate closely with the Wildfire Resiliency team to determine key metrics they are tracking to ensure the planned fully digital damage assessment and restoration workflow accurately captures the necessary data.

Program details for the Clean Energy Implementation Plan (CEIP) and metrics are still being developed, however, it's clear that the plan will include the need for additional grid automation, new Distributed Energy Resources, and new non-wires alternatives for customers such as time of use rates and energy efficiency. Many of these potential alternatives of being explored in the Connected Communities project which is planned to start in 2023 and run for five years. Results of the project will be used to determine which alternatives will move out to the larger customer base. The ADMS project Team will be coordinating with the Connected Communities team as both projects are underway.

In order to achieve these goals a future utility architecture that bridges use cases across Customer, Grid, Operations, and Utility Enterprise domains is required. This future will require a technology platform that enables the integration of these domains. The industry standard for this platform is an Advanced Distribution Management System (ADMS). As details of the CEIP and others become more well defined in the coming years, the ADMS team will work collaboratively with these teams to determine specific metrics that will be achieved via the capabilities of the ADMS.

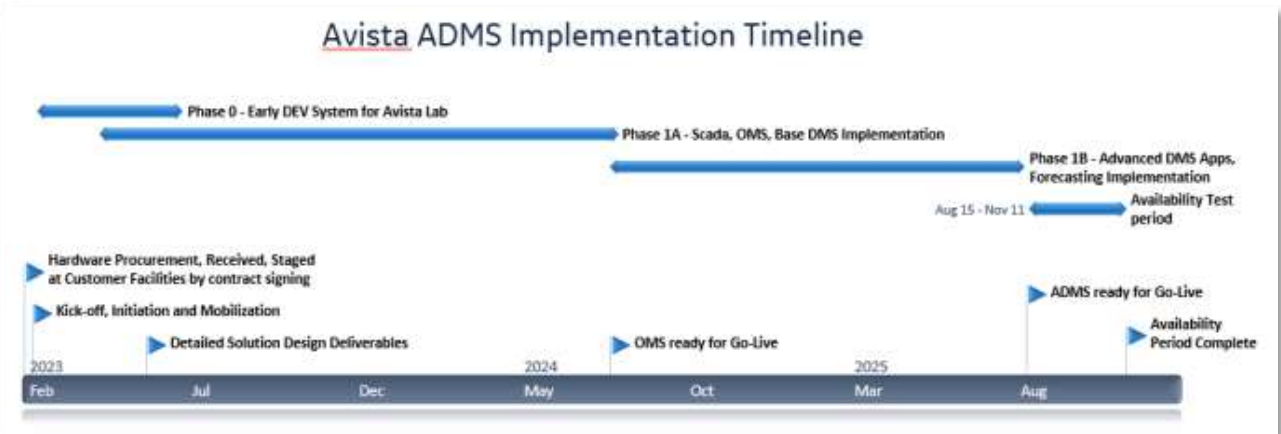
Outage Management System and Advanced Distribution Management System (OMS/ADMS)

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The ADMS project is scheduled to start in mid-2023 and estimated to have a four-year duration. Upon completion, the ADMS will fully replace both the existing Outage Management Tool and the Distribution Management System and provide additional Distributed Energy Resource Management (DERM) functionality in support of the CEIP and Connected Communities project. The investment is planned to be deployed in two phases. First phase is planned to be used and useful in 2025 and the second phase in late 2026. The project costs related to each phase would transfer to plant in those years.

Phase 0	Phase 1		Phase 2
<p>Test ADMS in Avista's Lab</p> <ul style="list-style-type: none"> • Test ability of the selected system with real-world use cases and devices • Confirm design approach and inform the detailed design work • Results used to refine scope schedule and budget for the main project <p>CIM Compliant model</p> <ul style="list-style-type: none"> • Prepare the CIM-compliant model to be available at the starting point of the ADMS project • <i>Network model for a specified substation/feeders will be transferred via GIS CIM exporter (built by Avista)</i> 	Phase 1A	Phase 1B	<p>OpenDSO Enhancements</p> <ul style="list-style-type: none"> • Incorporate learning from Connected Communities and other initiatives at the lab • Begin with Connected Communities Feeders • Strategically/expanded to other DMS enabled feeders • Implement DCRMS functionality
	<p>Go-live with the OMS only</p> <ul style="list-style-type: none"> • Legacy DMS still used for operations and New DMS only for monitoring <ul style="list-style-type: none"> • Requires a parallel path for DNP3 communication with RTUs • ICCP integration between legacy DMS and New DMS for parallel operation • Configure all RTUs to provide a parallel data stream to the ADMS Front End • Implement all ADMS integrations • Establish CIM (GIS) and understand how to deliver data to ADMS • Decommission legacy OMT 	<p>Go-live with New DMS</p> <ul style="list-style-type: none"> • New DMS to Go-live after period of stability of OMS • Switch over RTUs to New DMS • Decommission legacy DMS 	

Preliminary Project timeline from the RFP Response

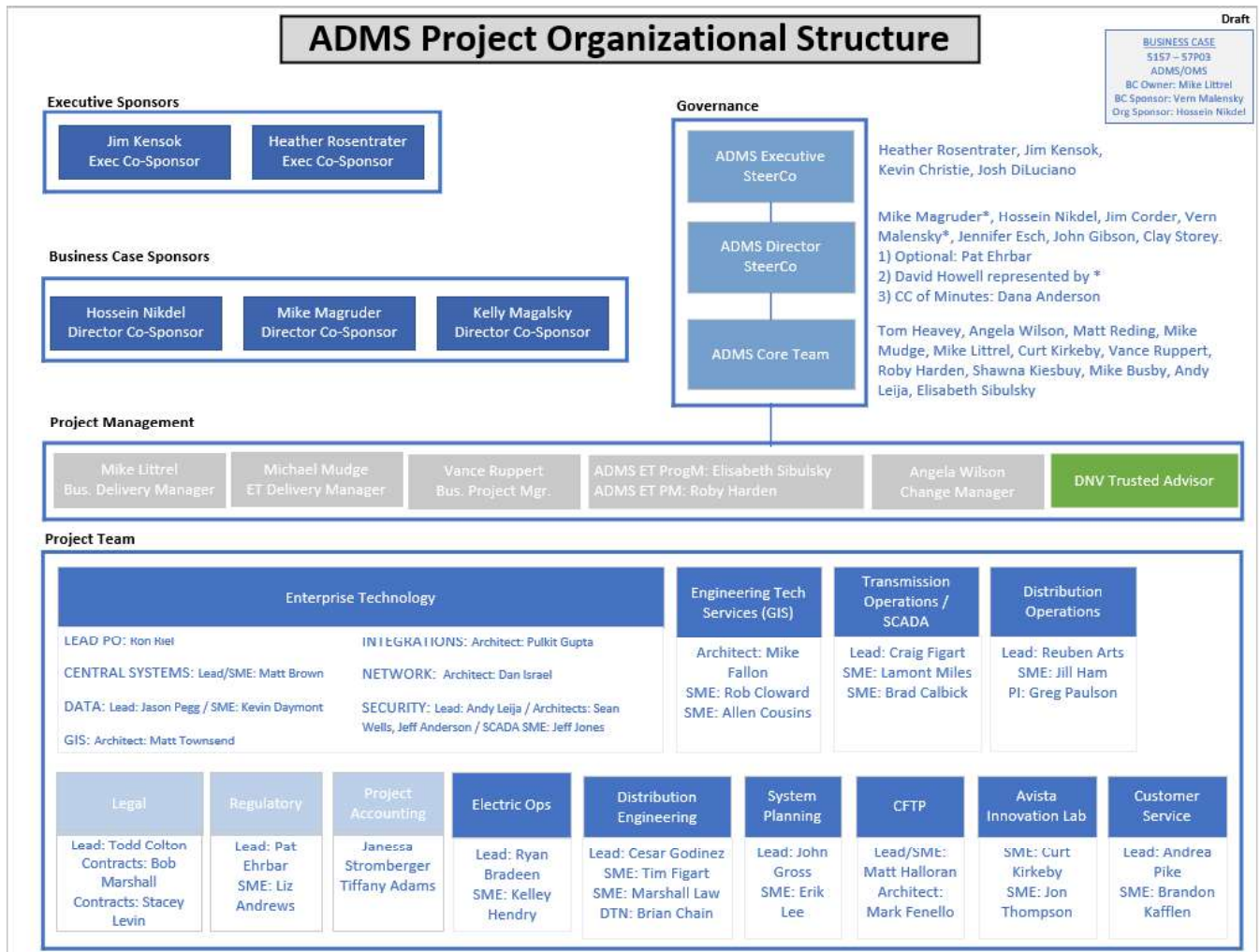


Outage Management System and Advanced Distribution Management System (OMS/ADMS)

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

This business case will have two levels of governance: The Executive Technology Steering Committee (ETSC), and Project Steering Committee that will be formed as part of the project initiation. The committees will review monthly project status reports, which identify project scope, schedule, and budget, as well as any risks and/or issues that the project team has identified.

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.



Outage Management System and Advanced Distribution Management System (OMS/ADMS)

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the **Outage Management System and Advanced Distribution Management System** 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:
Mike Littrel Date: May-10-2023 | 1:33 PM PDT
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Mike Magruder Date: May-10-2023 | 4:19 PM PDT
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Telecommunication & Network Distribution Security

EXECUTIVE SUMMARY

Telecommunication and network distribution locations consist of towers and shelters found in remote, rural, and difficult to reach mountain top locations. They serve as the backhaul to Avista's control, customer, and back-office network connectivity and communication systems. They are critical in providing telecommunication and network connectivity to and from Avista's data center, system operations, field offices, and field staff. Vandalism, theft, or sabotage at any of these locations would significantly disrupt Avista's ability to transmit telecommunication signals and move data utilized daily by staff in offices and in the field across our service territory to operate our gas and electric systems. Existing physical security measures are not adequate.

Federal agencies call for utilities to step up their physical security posture and take mitigating steps that include physical protective security measures to reduce or minimize the impact of a physical attack. These measures should be risk-based and layered to deter, detect, and delay an attack or intrusion. While these federal agency warnings are specific to the protection of electrical and gas infrastructure based on recent incidents across the country, the ancillary infrastructure, such as telecommunication and network distribution locations, is concurrently at risk. Physical security enhancements consist of fencing, gates, doors, cameras, sensors, and access management systems. The proposed solutions will implement new or replace inadequate security measures to mitigate the risk at these locations. These physical security enhancements directly benefit our customers, as they allow Avista office and field staff to transmit communication and data required to operate the safe and reliable delivery of electric and gas service.

Investments in physical security hardening at Avista's telecommunication and network distribution locations will reduce ongoing risk of theft, vandalism, or sabotage, as well as improve the safety of field technicians who respond to these facilities during extreme weather conditions. The requested amount of \$112.5K per year allows Avista to continue a steady investment in increased physical security hardening efforts across our service territory at one mountain top location per year. Indirect offsets included avoided replacement costs based on an incident occurring once every 20 years, which results in approximately \$110K in costs per year over the same 20-year period. This is a net neutral benefit in proactive investment versus a reactive response following an incident, which brings great value to Avista and its customers by reducing the risk of a system outage at these locations. Additional indirect offsets include avoiding or reducing the number of trips in response to system alarms over the winter season. Not approving this business case or its recommended funding amount can pose risks to the people and assets Avista depends on to conduct business and deliver safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date
Draft	Andru Miller	Initial draft of original business case	7/06/2020
1	Andru Miller	Updated 5-year funding request	8/09/2022
2	Andy Leija	Updated 5-year funding request	5/11/2023

Telecommunication & Network Distribution Security

<i>BCRT</i>	<i>Jeff Smith</i>	<i>Has been reviewed by BCRT and meets necessary requirements</i>	<i>5/30/2023</i>
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Telecommunication & Network Distribution Security

GENERAL INFORMATION

YEAR	PLANNED SPEND AMOUNT (\$)	PLANNED TRANSFER TO PLANT (\$)
2024	\$112,500	\$112,500
2025	\$112,500	\$112,500
2026	\$112,500	\$112,500
2027	\$112,500	\$112,500
2028	\$112,500	\$112,500

Project Life Span	5 years
Requesting Organization/Department	Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

Definitions for the Category and Driver can be found on the Business Case Review Team Team's site see link.

[Investment Drivers](#)

- 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?

Telecommunication and network distribution locations consist of towers and shelters found in remote, rural, and difficult to reach mountain top locations. They serve as the backhaul to Avista's control, customer, and back-office network connectivity and communication systems, such as land mobile radio signal coverage, which provide connectivity and coverage across our service territory. They are critical in providing telecommunication and network connectivity to and from Avista's data center, system operations, field offices, and field staff.

These mountain top locations are difficult to reach during the winter season thus providing them natural protection, however they are not inaccessible other times of the year by anyone motivated to reach them. Vandalism, theft, or sabotage at any of these locations would significantly disrupt Avista's ability to transmit telecommunication signals and move data utilized daily by staff in offices and in the field across our service territory to operate our gas and electric systems. For example, our field staff, who are required to respond to events throughout the year, depend on land mobile radios to establish situational awareness and reduce the risk of a safety incident. Additionally, these sites contain network

Telecommunication & Network Distribution Security

and telecommunication equipment that has direct access to Avista networks, thus an undetected intrusion could give intruders unauthorized access to systems that can lead to a cybersecurity event. Existing physical security measures at these telecommunication and network distribution locations are not adequate. And while the probability of an attack at one of these locations is low when compared to an urban infrastructure facility, the consequence is high and thus calls for attention and investment. Moreover, federal agencies are noticing an increase in the threat landscape for vulnerable infrastructure locations.

1.2 Discuss the major drivers of the business case.

Performance & Capacity is the primary driver for the Telecommunications and Network Distribution Location Security program business case as the projects it funds address security risks by protecting these locations. Keeping the systems at these locations performing is critical to support our day-to-day operations, which is the reason technicians immediately deploy when alarms show that systems are down and require intervention.

1.3 Identify why this work is needed now and what risks there are if not approved or if deferred or risks being mitigated by the request.

These remote unmanned locations, much like substations, have always had inherent risk. However, based on a heightened awareness around growing threats of targeting electric and gas utilities, mitigating this risk is important and thus one of Avista's strategic goals of maturing its physical security program and emergency response system.¹ Understanding that while each of these locations is critical, working as a mesh or system, no one location is more important than another. However, some of these locations are more easily accessible to the public than others, therefore investment in physical security enhancements primarily focus on those with higher exposure. Deferring or not approving the requested amount to address the identified security risks pushes the necessary hardening at each location further into the future.

1.4 Discuss how the proposed investment, whether project or program, aligns with the strategic vision, goals, objectives, and mission statement of the organization. See link. [Avista Strategic Goals](#)

The Telecommunications and Network Distribution Location Security program business case provides funding for security-related projects and aligns with Avista's strategic goal to "affordably operate and maintain, safe, clean, reliable generation and energy delivery infrastructure." A focus under this strategic goal is to mature Avista's physical security program and emergency response.²

¹ [Our Goals 2023 – Perform \(sharepoint.com\)](#)

² [Strategy Scorecard. Board of Directors Meeting. February 2023.](#)

Telecommunication & Network Distribution Security

1.5 Supplemental Information – please describe and summarize the key findings from any relevant studies, analyses, documentation, photographic evidence, or other materials that explain the problem this business case will resolve.

According to the Department of Homeland Security, Domestic Violence Extremist (DVE) threat, which adheres to a range of ideologies, continues to grow, plot, and encourage physical attacks against electrical infrastructure.³ The Cybersecurity & Infrastructure Security Agency (CISA) and the Department of Energy (DoE) call for utilities to step up their physical security posture and take mitigating steps that include physical protective security measures to reduce or minimize the impact of an attack. The physical security enhancement should include a risk based, layered approach that dissuades a potential attacker through visible security measures.⁴

While these federal agency warnings are specific to the protection of electrical and gas infrastructure based on recent incidents across the country, the ancillary infrastructure required to operate the safe and reliable delivery of electric and gas service is concurrently at risk. This was evident in the Colonial Pipeline ransomware attack that resulted in a shutdown of refined gas flow to the east coast for several days, causing chaos among the public. Additionally, recently published warnings in the Annual Threat Assessment of the U.S. Intelligence Community (Feb. 2023) clearly state that “China almost certainly is capable of launching cyber-attacks that could disrupt critical infrastructure services within the United States, including against oil and gas pipelines, and rail systems.”⁵ Therefore, enhanced physical security measures are required to protect both physical and cybersecurity risks.

³ [The Third Quadrennial Homeland Security Review \(dhs.gov\)](#)

⁴ [Sector Spotlight: Electricity Substation Physical Security \(cisa.gov\)](#)

⁵ [ATA-2023-Unclassified-Report.pdf \(odni.gov\)](#)

Telecommunication & Network Distribution Security

2. PROPOSAL AND RECOMMENDED SOLUTION - 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).

2.1 Please summarize the proposed solution and how it helps to solve the business problem identified above.

Characteristics for each telecommunication and network distribution location vary, such as when it was built, the size, and location, as well as the risk posed to it. Investments under this program business case are therefore risk based and the proposed physical security enhancements are layered for each location. Physical security enhancements consist of fencing, gates, doors, cameras, sensors, and access management systems. The proposed solutions will implement new or replace inadequate security measures to mitigate the increasing risk at these locations. Because of where these facilities are located, much of the physical security enhancements are implemented during construction season when access to the locations is feasible. In addition to accessibility constraints, other construction season projects can impact labor resource availability. Therefore, we continue to address the risk at each of these locations one per year.

2.2 Describe and provide reference to CIRR/IRR analyses, relevant studies, documentation, metrics, data, analysis, risk reduction, or other information that was considered when preparing this business case (i.e., samples of savings, benefits or risk avoidance estimates; description of how benefits to customers are being measured; metrics such as comparison of cost (\$) to benefit (value), or evidence of spend amount to anticipated return).⁶

There are over two dozen telecommunication and network distribution locations across our service territory. The funding request is based on historical costs for previous physical security enhancements at a telecommunication and network distribution location. The costs consist of product replacement, professional services, and labor.

While an actual threat has not occurred at any of these sites to date, the probability is increasing as reported by federal agencies.⁷ And while an attack at one of these locations is low in comparison to an urban infrastructure location, the impact is high. Therefore, assuming that one telecommunication and network distribution location was attacked over a period of twenty years, the replacement cost of equipment, plus delivery up to a mountain top would be on the high side of the estimate or around \$2.2M. The amortized costs over the same 20-year period, would result in approximately \$110K per year or equivalent to the cost of investment, which is \$112.5K per year, to reduce this risk.

⁶ Please do not attach any requested items to the business case, be sure to have ready access to such information upon request.

⁷ https://www.dhs.gov/sites/default/files/2023-04/23_0420_plcy_2023-qhsr.pdf

Telecommunication & Network Distribution Security

The physical security investment is but a fraction of the cost associated with the technology that is being protected, which includes enclosed equipment and that which is mounted on the tower. While the replacement of the equipment is on average \$1.85M per location, the cost to deliver it to a mountain summit and install it can triple the cost of the equipment, which can include trailering it up very steep mountain logging roads or flying it in via helicopter.

In addition to the costs associated with a breach, there are operational savings from telecommunication technicians using the installed video cameras to inspect the equipment before rolling a vehicle up to the mountain top. Utilizing video footage from a mountain top in the middle of winter can prevent a trip or prepare the technicians for the weather conditions, as well as the tools necessary to address the issue reducing their personal safety risk. Annual indirect offsets can average \$22.2K per year from avoiding trips up to repair mountain top equipment.

The ability for Avista office and field workers to communicate with one another and for systems to transmit information and data required to operate our electric and gas systems brings direct benefits to our customers. So, while our electric and gas infrastructure can continue to provide service, the data that is carried on these networks is necessary to assure it is provided safely and reliably.

2.3 Summarize in the table and describe below the DIRECT offsets⁸ or savings (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	N/A	\$0	\$0	\$0	\$0	\$0
O&M	N/A	\$0	\$0	\$0	\$0	\$0

There are no direct offsets associated with investments in physical security enhancements in telecommunications and network distribution locations. Doing nothing is not an option, especially as threats grow.

2.4 Summarize in the table and describe below the INDIRECT offsets⁹ (Capital and O&M) that result by undertaking this investment.

Offsets	Offset Description	2024	2025	2026	2027	2028
Capital	Telecommunication System replacement	\$370,000	\$370,000	\$370,000	\$370,000	\$370,000

⁸ Direct offsets are defined as those hard cost savings Avista customers will gain due to the work under this business case. Such savings could include reductions in labor, reduced maintenance due to new equipment, or other.

⁹ Indirect offsets are those items that do not directly reduce the current costs of the Company, but may serve to reduce future hirings, improve efficiencies, reduces risk (cost or outage), or allows current employees to focus on higher priority work.

Telecommunication & Network Distribution Security

O&M	Mountain top repairs	\$22,260	\$22,260	\$22,260	\$22,260	\$22,260
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Indirect offsets are the avoided costs from a physical and cyber security breach resulting from an intrusion or attack at one of these locations. Depending on the severity of the breach, the costs can vary from simple repairs to larger replacements. Using historical costs for technology system upgrades to a land mobile radio location on a mountain top, including the replacement of tower antennas, it is between \$1.5M - \$2.2M, or an average of \$1.85M. Assuming the full capital replacement cost amortized over 5 years, the annual cost is \$370k. Based on an \$112.5k annual allocation, the benefit is \$257.5k per year.

In addition to the costs associated with a breach, there are operational savings from telecommunication technicians using the installed video cameras to inspect the equipment before rolling a vehicle up to the mountain top. Utilizing video footage from a mountain top in the middle of winter can prevent a trip or prepare the technicians for the weather conditions, as well as the tools necessary to address the issue reducing their personal safety risk. On average, Avista's technicians make 6-9 trips to a mountain top per year to respond to an outage alarm. Each trip consists of 2-3 technicians a minimum of two days utilizing daylight for safety (visibility and warmer temperatures). The trip requires multiple vehicles to the trailhead, whereby the logging roads are traveled via snowcat or snowmachines to the mountain top. Based on this information, 3 technicians traveling 7 times each year for 2 days, with no overtime pay and an average cost of \$300 in fuel per incident equals (\$60/hour x 8 hours a day x 2 days x 3 technicians x 7 incidents) = \$20,160 per year plus \$2,100 in fuel costs is \$22,260 total indirect savings. This operational expense can instead be performing preventative maintenance or project related assignments and reducing personal safety risk for each responding technician.

2.5 Describe in detail the alternatives, including proposed cost for each alternative, which were considered, and why those alternatives did not provide the same benefit as the chosen solution. Include those additional risks to Avista that may occur if an alternative is selected.

Option	Capital Cost	Start	Complete
Address security at telecommunication and network distribution locations as funding allows, with a minimum of one site per year (Recommended)	\$562,500	01 2024	12 2028
Address security at telecommunication and network distribution locations in 10 years or at 2 locations per year.	\$2,250,000	01 2023	12 2033
Address security at telecommunication and network distribution locations in 7 years or at 3 locations per year.	\$2,362,500	01 2023	06 2030

Telecommunication & Network Distribution Security

Alternative 1: The recommended alternative is to invest in one mountain top location per year. This amount is based on historical costs from previous physical security enhancements at telecommunication and network distribution locations. It also considers construction season and labor constraints. Like other physical security protective measures, the investments identified are risk-based and layered, addressing the higher risk locations with easier public access. This steady investment amount keeps continuous improvements at these locations and reduces risk accordingly. However, should additional funding be identified, or risks increased increasing the priority of this work during construction season over other, physical security enhancements at a higher number of locations should be considered over the same 5-year period.

Alternative 2: Extending the physical security enhancements at over two dozen locations in a 10-year period results in two mountain top locations per year. This doubles the number of locations from the recommended amount, cutting the timeframe from two decades in half. This was the original recommended amount when this business case originated. However, after recognizing that other higher priority projects also competing for construction season and constrained resources, this recommended alternative became the next best option.

Alternative 3: Addressing the over two dozen locations in a 7-year period, assumes that physical security enhancements at 3 mountain top locations per year can be achieved by the project teams. While this is logistically possible, the previously identified constraints would make this incredibly challenging unless other higher priority projects during the construction season waned and labor became available.

2.6 Identify any metrics that can be used to monitor or demonstrate how the investment delivered on remedying the identified problem (i.e., how will success be measured).

Physical security enhancements at telecommunication and network distribution locations are necessary to maintain the identified high-risk locations safe, secure, and reliable. Metrics to demonstrate the success of the investments under this program business case include averted physical threats, reduction in problem location incidents, and keeping this equipment available and reliable to aid in deterring, detecting, and delaying an intrusion. Avista tracks physical security incidents and will monitor for a reduction in incidents, especially at historically high risk and problem locations that have implemented physical security enhancements.

Telecommunication & Network Distribution Security

2.7 Please provide the timeline of when this work is schedule to commence and complete, if known.

The Telecommunication and Network Distribution Location Security business case is a program that consists of multiple security projects per year that run concurrently, and at times over multiple years. They follow all phases of the project lifecycle, facilitated by a project manager, and governed by a steering committee to determine scope, schedule, and budget forecasts, including transfers-to-plant.

2.8 Please identify and describe the Steering Committee/governance team that are responsible for the initial and ongoing approval and oversight of the business case, and how such oversight will occur.

There are two levels of governance to the Telecommunication and Network Distribution Location Security program business case and the investments within it. They consist of a business case governance team and project specific steering committees for in-flight projects.

Business Case Governance Team: The Enterprise Security Governance Team provides monthly oversight of this program business case and makes recommendations based on forecasted inactive planned investments, the pace of in-flight investments, and any new unplanned activity that surfaces from an emerging security threat. The team also tracks business case risks and issues that can affect the portfolio of planned investments.

Monthly governance meetings consist of a full review of each in-flight investment, reasons for any delays or deviation to proposed completion and transfers to plant schedules and recommends necessary steps to bring the investments back into schedule or defer inactive work, when possible, to offset delays. However, should a security risk increase by deferring a planned or unplanned investment into future years, the Enterprise Security Governance Team will recommend a Capital Planning Group (CPG) In-Year Change Request to surface the impending need. The Change Requests are presented at a monthly Technology Planning Group meeting to inform the Director members who are also members of the CPG where the request will be considered and weighed against other pending requests.

The Enterprise Security Governance Team consists of Avista's Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, Security Delivery Manager, and the Project Management Office Manager. The sessions are facilitated by the Security Program Manager who manages the standing agenda.

Project Steering Committees: Additionally, each security investment is governed by a project steering committee that consists of the Enterprise Security Director, Cybersecurity Manager, Physical Security Manager, and Security Delivery Manager, as well as ancillary


Telecommunication & Network Distribution Security

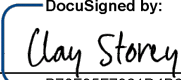
management team members required for the successful implementation of the security enhancement at the respective location. Steering committee meetings are facilitated by a Project Manager and held monthly to review scope, schedule, budget, and risks and issues surfaced from each in-flight project.

Telecommunication & Network Distribution Security

3. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Telecommunication & Network Distribution 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: Jun-12-2023 | 10:56 AM PDT
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Andy Leija
 Title: Security Delivery Manager
 Role: Business Case Owner

Signature:  Date: Jun-12-2023 | 11:30 AM PDT
 Print Name: B70F95F7961D4B6...
Clay Storey
 Title: Security Director
 Role: Business Case Sponsor

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