

Exhibit No. 11, Schedule 1
Capital Investment Business Case Justification Narratives Index

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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 \$1,500,00 over five years to remove copper wire and install fiber optic cable to the identified substations. 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.

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	
3.0	Shawna Kiesbuy	BCJN Revision	6/2021	
4.0	Shawna Kiesbuy	BCJN Revision	7/2022	

High Voltage Protection

GENERAL INFORMATION

Requested Spend Amount	\$1,500,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Mandatory
Driver	Mandatory & Compliance

1. BUSINESS PROBLEM

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.

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

The main driver for this 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.

High Voltage Protection

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

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

The 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.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

Lumen (formerly known as CenturyLink), Tariff FCC Number 1, Section 13.

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

Not applicable. This business case is aligned with Mandatory & Compliance.

Option	Capital Cost	Start	Complete
Recommended Solution – Replace copper communication equipment with fiber for protection of equipment and personnel by 2032.	\$1,500,000	01/2023	12/2027
Alternative 1 – A reduction of funding which reduces the number of projects completed to replace copper communication equipment with fiber for protection of	\$1,200,000	01/2023	12/2027

High Voltage Protection

equipment and personnel by 2032.			
Alternative 2 – Do not fund the program	\$0	01/2023	12/2027

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

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, 23 locations do not have the current HVP standard package installed.

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 because of this investment.

This business case contains multi-year projects which address the business needs listed above. Each year, with management oversight from the Program Steering Committee, projects are sequenced to capitalize on substation availability, outage windows, resources, and funding allocations.

No Direct or Indirect Savings - 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.

[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 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 High Voltage Protection 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

High Voltage Protection

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.

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, 23 locations do not have the current HVP standard package installed. This business case intends to complete approximately four sites per year at \$75,000 per site.

Two alternative funding options were reviewed:

Alternative 1: Fund the business case at an amount which is less than the original request

Funding this business case at an amount less than the full request each year will result in ad-hoc funding requests to the CPG (Capital Planning Group) for work approved outside of the 5-year capital planning process. Safety risks related to the High Voltage Protection work would be mitigated at a much slower pace than if the program were funded as requested.

Alternative 2: 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.

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 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.

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

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. Data communications that monitor and control Avista substations are critical in the support of bulk electric system. The implementation of HVP technology will continue to enable and support these

High Voltage Protection

critical communications in a manner that is much safer to all workers in and around the substation locations.

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

Avista's mission is to improve our customers' lives through innovative energy solutions in a safe, responsible, and affordable manner. The funding amount and project portfolio have been determined to maintain a velocity that allows for the completion of 4 projects each year. With project priorities tied to enterprise strategies and risk objectives, the funding is reviewed monthly allowing for adjustments to be made to the portfolio as demands change across Avista's control and safety environments. If project priorities do change, a request is then made to the program steering committee to evaluate and determine if the change is prudent to accomplishing the goals and objectives established for the current funding year.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the High Voltage Protection business case, the discrete projects interface with various internal Avista groups such as ET (Enterprise Technology) engineering, Substation engineering, GPSS (Generation Production and Substation Support), and the Telecommunications Shop.

The ET Business Case Owner works in conjunction with the 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.

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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 documents. 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 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 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 for providing guidance and making decisions on key issues that affect the following topics:

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- 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.

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

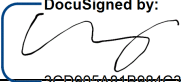
Project prioritization is evaluated by the management team monthly. Each program and project steering committee meet regularly and oversee scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning 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.

The undersigned acknowledge they have reviewed the High Voltage Protection 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.

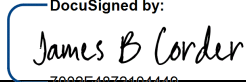
High Voltage Protection

Signature:  DocuSigned by:
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Print Name: Shawna Kiesbuy

Title: Sr. Manager, Network Engineering

Role: Business Case Owner

Signature:  DocuSigned by:
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Print Name: Jim Corder

Title: IT Director

Role: Business Case Sponsor

Technology Failed Assets

EXECUTIVE SUMMARY

Technology assets enable automated business processes. These technology assets range from computers to hand-held radios carried by our field staff to printers in remote offices to networking equipment. Sometimes these technology assets fail prior to being refreshed as part of a lifecycle management program. These failures can be caused by manufacture defects, human error, natural disasters, malicious actors, or age/runtime of equipment. In those cases, the failed asset can cause downtime for an employee or system resulting in significant disruption to daily operations across our service territory depending on where and to what asset the failure occurred.

To support these types of unplanned failures, the Technology Failed Assets business case was established and consists of in-portfolio technology assets for rapid replacement of assets as they fail and when repairs are not feasible. A technology inventory is maintained to quickly restore business automation. They can include, but not be limited to laptops, mobile phone and tablets, printers, field area network (FAN) equipment, monitors, audio-visual equipment, routers, switches, servers, and fiber cable. The cost of each technology solution will vary depending on the type of asset, scope of failure, required lead time, and location. However, funding for this business case has been calculated based on predictable technology asset failure rates over the last three years and is requested at \$556,200 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 available to quickly replace a failed asset is critical to the daily operations of the Company. If the Technology Failed Assets business case funding is not approved, replacement of failed assets will result in individual requests for funding each time an asset fails potentially extending the downtime of a system until the funding is approved and the asset is replaced.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Mike Beil	BCJN 1.0 Created	7/2019	
2.0	Mike Beil	BCJN 2.0 Revised	7/2020	
3.0	Kaitlyn Richardson	BCJN 3.0 Revised	7/2022	

Technology Failed Assets

GENERAL INFORMATION

Requested Spend Amount	\$2,781,000
Requested Spend Time Period	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

1. BUSINESS PROBLEM

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

Technology assets enable automated business processes. These technology assets range from computers and mobile devices to radio systems and pole-mounted network devices. Sometimes these technology assets fail prior to being refreshed as part of a lifecycle management program. These failures can be caused by manufacture defects, human error, natural disasters, malicious actors, or age/runtime of equipment. In those cases, the failed asset can cause downtime and loss of performance for an employee or system resulting in significant disruption to daily operations across our service territory depending on where and to what asset the failure occurred.

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

The main driver for this program is Failed Plant & Operations which is also related to asset management strategies being driven by technology lifecycles and technology obsolescence. As outlined in section 1.1 of this Business Case Justification Narrative, at times technology may unexpectedly fail. This program provides a technology inventory to quickly restore business automation and reduce the downtime caused by the failure.

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

Since technology asset failures will happen across Avista's territory, having budget allocation available to quickly replace a failed asset is critical to the daily operations of the company. If the Technology Failed Assets business case funding is not approved, replacement of failed assets will result in individual requests for funding each time an asset fails potentially extending the downtime of a system until the funding is approved and the asset is replaced.

Technology Failed Assets

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

Since the main driver behind this program is Failed Plant & Operations, the success of this program can be measured by the timely replacement of failed technology assets and restoration of automated business processes and overall productivity.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

See below for supporting details

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

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 to annual funding amounts. The table below represents the annual amount proposed for 2022 based on 2021 failures.

Category	2021 Failure Count	Avg Cost	Fullfillment
AV Blanket	2	\$ 7,171	\$ 14,341
Comm Devices	14	\$ 1,742	\$ 24,381
FAN Blanket	40	\$ 2,912	\$ 116,489
Mobile Devices	75	\$ 1,251	\$ 100,118
Monitors	6	\$ 1,801	\$ 10,805
Network Devices	3	\$ 7,232	\$ 21,696
Personal Computer	24	\$ 2,267	\$ 54,419
Printers	7	\$ 5,535	\$ 38,748
Repeaters	15	\$ 5,620	\$ 84,302
Storage Devices	5	\$ 13,548	\$ 67,738
YTD Fullfillment:			\$ 533,037

Option	Capital Cost	Start	Complete
Funding based on previous 3-year failure rates (Recommended)	\$ 2,781,000	01 2023	12 2027
Request funding when needed	\$0	01 2023	12 2027
Funding based on 5% failure rates of all technology assets	\$6,225,000	01 2023	12 2027

Technology Failed Assets

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

To support these types of unplanned failures, the Technology Failed Assets business case was established and consists of in-portfolio technology assets for rapid replacement of assets as they fail and when repairs are not feasible. A technology inventory is maintained to quickly restore business automation. They can include, but not be limited to laptops, mobile phone and tablets, printers, field area network (FAN) equipment, monitors, audio-visual equipment, routers, switches, servers, and fiber cable. The cost of each technology solution will vary depending on the type of asset, scope of failure, required lead time, and location. However, funding for this business case has been calculated based on predictable technology asset failure rates over the last three years. For unpredictable failed assets, additional funding requests will be made to replace the failed asset.

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

The requested capital cost amount per year has been calculated to replace failed assets based on a three-year failure history. This level of funding is critical to maintain an inventory of in-portfolio assets to be available for rapid replacement during failures or unplanned outages (i.e. laptops, mobile phones, field area network equipment, etc.). The funding amounts within this program undergo regular review to balance the asset failure forecast within the predetermined budget allocations. Since technology asset failures will happen across Avista's territory, having budget allocation available to quickly replace a failed asset is critical to the daily operations of the Company.

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

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 would

Technology Failed Assets

not replace these assets when failed. This is a high-level estimate that the Company does not have a way to track.

Quantified indirect savings:

2022	2023	Lifetime
\$100k-\$10M	\$100k-\$10M	\$100k-\$10M/year

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

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

Since technology asset failures will happen across Avista's territory, having budget allocation available to quickly replace a failed asset is critical to the daily operations of the Company. Each time an asset fails, Avista employees and customers can be affected by the downtime related to the automated process not performing. Rapid replacement of the asset is critical to maintain safety and performance.

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

Alternative 1: Request Funding when Needed

Funding will only be requested once an asset fails beyond repair. The risk with this alternative is additional down time of our automation systems due to the time needed to request/approve funding to replace the failed asset.

Alternative 2: Funding based on 5% failure rates of all technology assets

Funding would be based on an assumed 5% failure rate of all technology assets. Each assets lifecycle is managed under a different business case. This option assumes a 5% funding level of the sum of all technology business cases which manage technology asset lifecycles.

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

The Technology Failed Assets business case is managed as a program of blanket projects which manage the replacement of failed assets tracking their used and usefulness on a monthly cadence. All individual projects set up for unplanned asset failures are managed through the PMO, which follows the Project Management Institute (PMI) standards. These projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the installed assets. Over the course of a calendar year, the blanket projects, along with the individual projects, equate to the funded budget.

Technology Failed Assets

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

This is a program with discrete projects that align with Avista's vision, mission and strategic objectives:

- To provide Better Energy for Life, you need systems that perform at an optimal level to deliver electricity and gas in a safe and reliable manner. The team supporting asset failures are highly skilled and responsive to the needs of these systems so critical business services continue to be delivered without interruption. The Technology Failed Assets Business Case aligns with Avista's "Perform" Strategic Focus Area.

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

Based on the individual asset data listed above, the requested funding amount will allow for an inventory of in-portfolio technology assets for rapid replacement of assets as they fail and when repairs are not feasible. Since the projects within the business case are evaluated monthly for used and usefulness, the forecasted failures and subsequent planned costs are also adjusted monthly based on failure rates. If there are trends appearing in the failure rates resulting in a higher velocity of spend in one asset area versus another, forecasted costs will be adjusted to make sure dollars are available across all projects.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Within the Technology Failed Assets business case, the projects interface with various internal Avista groups such as ET Engineering, the Telecommunications Shop, various operations teams, and procurement to name a few.

Steering Committee members include Business Case Sponsors, Directors and Managers within the Enterprise Technology group long with the Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), and assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.2 Identify any related Business Cases

There are no related business cases currently.

Technology Failed Assets

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. For the Technology Failed Assets business case, the Steering Committee will consist of the Directors and Managers within ET and the Business Case Owner.

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

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

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department.

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

Technology Failed Assets

- 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.

Technology Refresh to Sustain Business Process

1 GENERAL INFORMATION

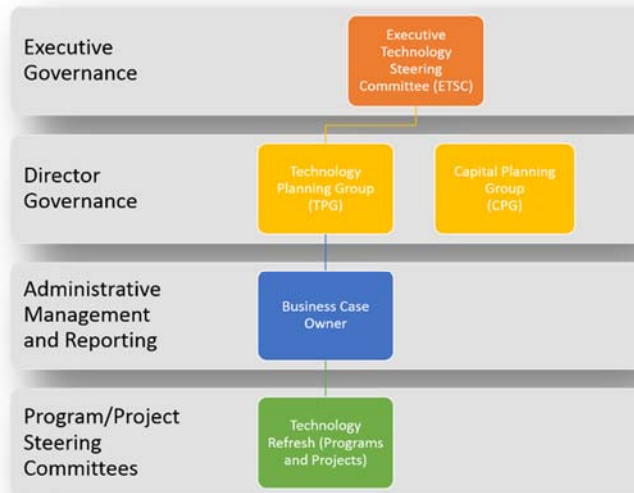
Requested Spend Amount	\$17,917,613
Requesting Organization/Department	IS/IT
Business Case Owner	Andy Leija
Business Case Sponsor	Jim Corder/Hossein Nikdel
Sponsor Organization/Department	IS/IT
Category	Program
Driver	Asset Condition

1.1 Steering Committee or Advisory Group Information

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

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

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two 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.



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

Technology Refresh to Sustain Business Process

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

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

2 BUSINESS PROBLEM

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

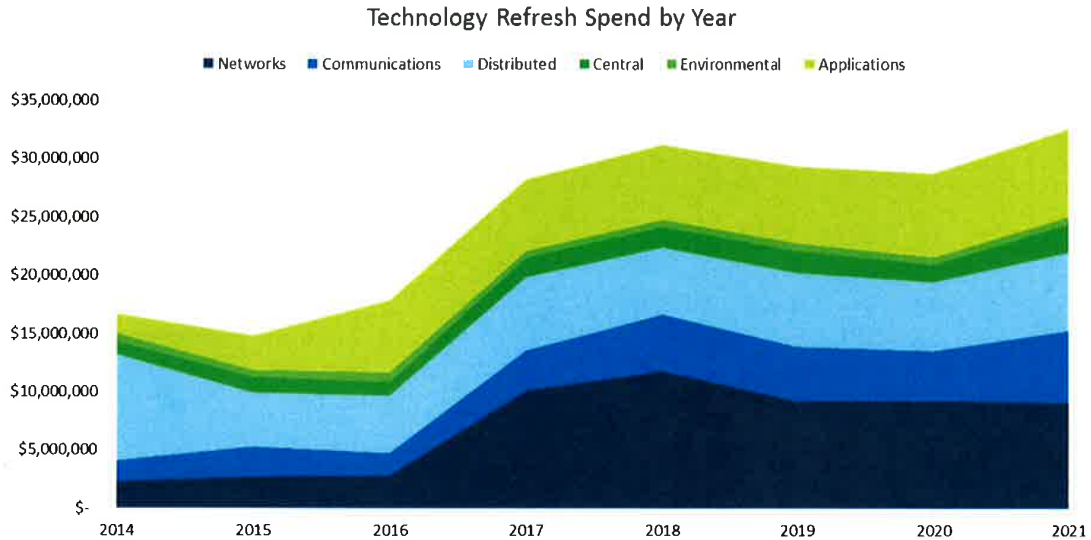
Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. These upgrades can in turn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

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

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

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



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

3 PROPOSAL AND RECOMMENDED SOLUTION

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

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

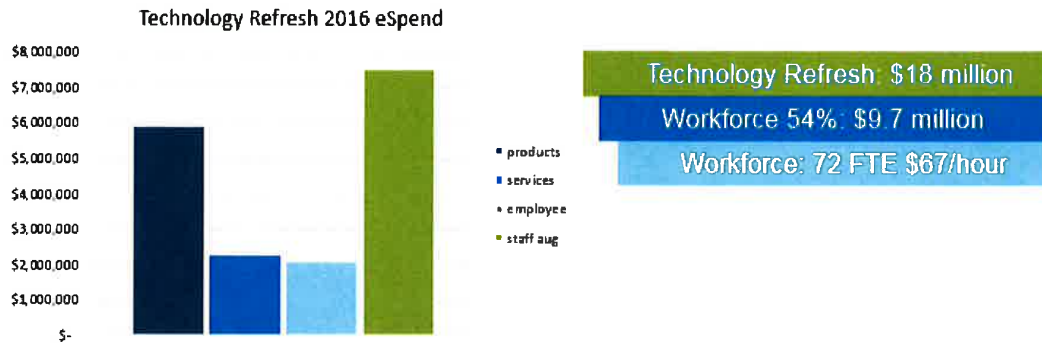
The basis for measuring the business impact of not funding the Technology Refresh to Sustain Automated Business Process Business Case program is realizing the loss of business process automation. As technology products reach manufacturer planned or real obsolescence, they then cease product maintenance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

Funding at current level analysis

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

Technology Refresh to Sustain Business Process

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



Funding at a lower level

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

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


Technology Refresh to Sustain Business Process

4 APPROVAL AND AUTHORIZATION

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

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

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

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

5 VERSION HISTORY

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

Template Version: 03/07/2017

Basic Workplace Technology

EXECUTIVE SUMMARY

The nature of basic workplace technology requests can vary, be either planned or unplanned and generally have short turnaround cycles. The short turnaround nature of the requests can cause chaos in the procurement processing of basic workplace technology, as the lag time from when a request is submitted to when it is fulfilled can exceed expected timeframes. Additionally, ad-hoc requests, impact business value by un-batching technology orders, as well as reduce employee productivity and experience by submitting individual orders to meet requests.

The Basic Workplace Technology business case responds to five essential functions that equip our staff to optimize our business and be responsive to our customers. The five essential functions include: Employee Onboard; Contractor Onboard; Job Function Change; Off Cycle Exchange; and General Additions. This requires a need to keep a small amount of inventory to meet business value timeframes.

The primary driver for this program is performance and capacity, whereby the Company balances the need to meet job function requirements and technology availability. To do so, it requires historical trend analyses, technology inventory management, and cost per unit control measures. The costs associated with each solution can vary by the type of solution and number deployed.

Therefore, regular review of inventory levels, historical trends, and planned requests help determine the overall performance and capacity standards under the established budget allocations. These reviews can result in calling for additional investment under this program from time to time for technology procurement trending behind planned requests. Not funding this program can result in delays in hiring, onboarding, job function changes, automation opportunities, etc.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	7/2019	
2.0	Walter Roys	Revision of BCJN to new template	7/2020	
3.0	Dave Husted	Revision of BCJN	7/2022	

Basic Workplace Technology

GENERAL INFORMATION

Requested Spend Amount	\$7,200,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Dave Husted Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

Basic workplace technology required by Avista's workforce to perform office, call center, or field day-to-day job functions is a requirement, which either automates or enables business processes to provide gas and electric service to our customers. Regular job changes can occur in our workforce throughout our service territory as new employees or contractors are hired, leave, or retire, while others can change in job role or responsibilities. These changes at times result in technology requests that can vary, and generally have short turnaround cycles of (2) two weeks or less to fulfill them, at times planned and at other times unplanned. This could range from a new hiring of a cohort of customer service center staff needing a computer and monitors with call center applications, headsets, and communication equipment to a change in job function for an existing employee moving from the office out to the field and requiring a rugged computer or tablet with a different application portfolio, and hand radio.

The short turnaround nature of the requests can cause challenges in processing procurement requests, which can result in lag time from when a request is submitted to when it is fulfilled and put worker productivity at risk of not having the technology to perform their new job assignment. Additionally, the ad-hoc nature of requests, can impact business value by un-batching technology orders, as well as reduce employee productivity and experience by submitting individual orders to meet requests.

Basic Workplace Technology

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

The Basic Workplace Technology Business case is to respond to technology requests that allow workers to meet performance in their respective job functions within the capacity of in-portfolio technology at Avista. Therefore, the major driver for this business case is Performance & Capacity. The business requests generally fit within these major categories:

- Employee Onboard
- Contractor Onboard
- Job Function Change
- Off Cycle Exchange
- General Additions

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

Assuring that each technology request is met within the expected timeframe for job additions or changes, allows for Avista's workforce to continue to provide gas and electric service to our customers across all our service territory. Job role additions, and changes are not new and will not stop, as the utility workforce continues to evolve with many retiring from older roles, and new roles created to meet the changing nature of our industry. The risk of not approving this program will result in delay of technology fulfillment to Avista's workers who are requiring new technology due to a new job or change in job function.

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

Tracking of each request is done to determine if each technology request is fulfilled within the (2) two-week timeframe, as the objective of this business case is to meet in-portfolio technology requests for employee and contractor onboarding, job function changes, off-cycle exchanges, and general additions.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

There are no specific studies to point to on the need for basic workplace technology, since it is now an expected norm. Generally, all job functions require some form of basic technology equipment to perform day-to-day job assignments. From a computer with the right set of applications to a mobile radio that keeps field workers safe in remote and hard to reach locations. This program was designed to deliver on each of those requests based on the criteria mentioned above.

Basic Workplace Technology

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

Not applicable, as the investment under this program business case is to respond to technology requests that allow workers to meet performance in their respective job functions within the capacity of in-portfolio technology at Avista.

The basic workplace technology requests may generally include personal computers, tablets, print/copy/scan systems, television displays, monitors, telephones, etc., and the basic software productivity tools. They generally fall within these major categories, and are therefore tracked accordingly:

- **Employee Onboard:** A request from leadership to deliver workspace technology for a new employee.
- **Contractor Onboard:** A request from leadership to deliver workplace technology for a new contractor.
- **Job Function Change:** A request from leadership to add or change workplace technology to enable a job function change for an existing employee or contractor.
- **Off-Cycle Exchange:** A requests from leadership to exchange in service workplace technology, in a timeframe that does not align with a technology refresh cycle.
- **General Additions:** General requests from leadership for additional workplace technology.

The technology solutions fall within the capacity of in-portfolio technology at Avista, and therefore the recommended solution is a funding level commensurate with historical technology requests for employee and contractor onboardig, job function changes, off-cycle exchanges, and general additions. This business case does not include planned technology refresh investments based on technology obsolescence.

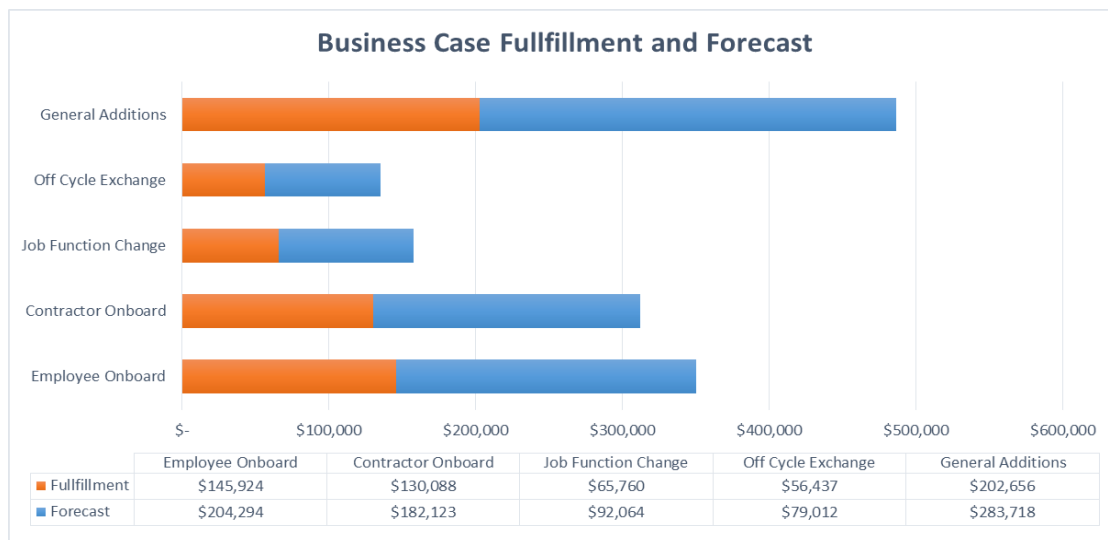
The recommended solution allows the business case program to proactively plan for procurement intervals to maintain small-batches of technology inventory in-house to meet the short-turnaround requests over the course of the year.

Option	Capital Cost	Start	Complete
Recommended Solution	\$7,200,000	01/2023	12/2027
[Alternative #1] – 80% Funding Level	\$5,760,000	01/2023	12/2027
[Alternative #2] – 70% Funding Level	\$5,040,000	01/2023	12/2027

Basic Workplace Technology

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

Due to the nature of unpredictability of job role additions or changes, in 2019, a historical trend analyses provided the estimate required to fulfill these orders based on year to date requests fulfilled and those forecasted.



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

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

The funding requested under the Basic Workplace Technology business case will be invested in technology to fulfill business requests in the areas of employee and contractor onboarding, job function changes, off-cycle exchanges, and general additions. Generally basic workplace technology includes personal computers, tablets, print/copy/scan systems, television displays, monitors, telephones, etc., and the basic software productivity tools.

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. Sparring 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

Basic Workplace Technology

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.

Investment in these technologies can result in added O&M expenses from an increase in licenses from time to time. There are no O&M reductions or offsets resulting from these investments, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

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

All Avista business functions requesting basic workplace technology due to a job addition or change, off-cycle exchange, or general addition is affected by this business case, as it enables everyday work activities and automated business processes.

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

Several options were considered and proposed. However, the 'Do Nothing' alternative was removed as an option, as it is not realistic. Below are the alternatives discussed in detail:

- **A 'Do Nothing' option** would not fund the basic technology items and become a blocking factor of productivity; job functions are extremely difficult to perform without digital productivity tools. For example, a new worker would not be able to adequately meet job function performance requirements in a customer call center without a personal computer and telephone.
- **Alternative #1 is to fund at 80%** of the recommended solution and seek alternative ways to reduce deployment costs to deliver basic workplace technology and return during the year for additional funds to meet business demand, if not successful.

Basic Workplace Technology

- **Alternative #2 is to fund at 70%** of the recommended solution and seek alternative ways to reduce deployment costs to deliver basic workplace technology and return during the year for additional funds to meet business demand, if not successful.

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

This business case is a program of blanket technology projects that transfers to plant monthly. Quarterly forecasts capture changes in transfers to plant based on trends of fulfillment requests.

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

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

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

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

The reason that the technology investment under the Basic Workplace Technology program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in an office, customer service center, or in the field.

Basic workplace technology deployments that fall under this business case are often in short notice, and minimum inventory quantities are maintained to meet business value time frames. The business case is structured in such a way to handle both planned or unplanned short-cycle business demand to deliver basic technology items to all job functions and office areas.

Alternative funding levels are considered, yet not investing in it is not an option as basic workplace technology is a minimum requirement to perform day-to-day

Basic Workplace Technology

job functions to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting.

Additionally, the existing governance structure overseeing this business case program meets regularly to oversee and make decisions on the ongoing needs, benefits, costs, and risks associated with basic workplace technology fulfillment requests.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce interface with basic workplace technology business case, either as a leader requesting technology changes or a worker responding to job role and responsibility changes.

2.8.2 Identify any related Business Cases

The technology deployed under this business case is in the existing technology portfolio, which is driven by engineering teams who are responsible for managing technology obsolescence and asset lifecycles.

3.1 Steering Committee or Advisory Group Information

The Basic Workplace Technology Delivery governance team will act as the governance committee that oversees investment under this business case. The governance team consists of the Business Case Owner, Business Case Sponsor, and may include other key leadership stakeholders.

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

The governance team is accountable for the financial performance of this business case. The governance team will have regular monthly meetings to review the progress of the program and make decisions on the following topics:

- Prioritization of Business Drivers
- Funding Constraints
- Long-term Planning
- Scope of Workplace Technology
- Monitoring Workplace Technology Productivity

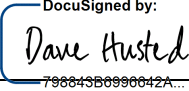
Basic Workplace Technology

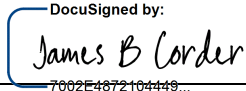
3.3 How will decision-making, prioritization, and change requests be documented and monitored

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Basic Workplace Technology

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

Signature:  DocuSigned by: 798843B0990042A... Date: Sep-02-2022 | 9:03 AM PDT
Print Name: Dave Husted
Title: Manager Technical Services
Role: Business Case Owner

Signature:  DocuSigned by: 7002E4872104449... Date: Sep-02-2022 | 2:13 PM PDT
Print Name: Jim Corder
Title: IT Director
Role: Business Case Sponsor

Template Version: 05/28/2020

Control and Safety Network Infrastructure

EXECUTIVE SUMMARY

This business case administers multiple projects specifically scoped for the provisioning and expansion of network communications for Avista's generation, transmission, and distribution assets which support the safe and reliable energy delivery to Avista customers. 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 could fail, become vulnerable to cyber-attacks from bad actors or the technology becomes obsolete which would result in a lack of communication paths 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. In addition, as Avista's service area and business functions expand, needed communication network assets could not be placed if this business case is not sufficiently funded.

For this business case, funding is being requested for \$12,106,538 over five years to upgrade or replace 476 network communication systems within the control and safety environments. Collectively these systems are tracked by 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 also driven by the ongoing modernization and digitization of energy delivery infrastructure.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Shawna Kiesbuy	Initial BCJN Draft	6/2021	
2.0	Shawna Kiesbuy	BCJN Revision	7/2022	

Control and Safety Network Infrastructure

GENERAL INFORMATION

Requested Spend Amount	\$12,106,538
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?

This business case administers multiple projects specifically scoped for the provisioning and expansion of network communications for Avista's generation, transmission, and distribution assets which support the safe and reliable energy delivery 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 paths 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. In addition, as Avista's service area and business functions expand, needed communication network assets could not be placed if this business case is not sufficiently funded.

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

The main driver for this business case is Performance and Capacity. The network communications infrastructure is tied to command-and-control applications within Avista's critical business and safety systems. Creating and managing this 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

Control and Safety Network Infrastructure

communications to field and line crews working on outage events. 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.

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

The network project work captured in this 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.

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 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.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

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

Control and Safety Network Infrastructure

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

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

Not applicable. This business case is aligned with Performance & Capacity, not Asset Condition.

Option	Capital Cost	Start	Complete
Recommended Solution – Asset upgrade or expansion for optimized performance and capacity.	\$12,106,538	01/2023	12/2027
Alternative 1 – A reduction of funding which reduces expansion to meet control and safety system needs and does not allow for the necessary number of devices to be refreshed increasing risk of failure or cyber vulnerability to unauthorized access by bad actors.	\$9,685,231	01/2023	12/2027
Alternative 2 – Do not fund the program	\$0	01/2023	12/2027

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

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	EoS <2023	EoS 2023-27	EOL 2023-27	Total Scope of Request
689	102	26*	348	476

Control and Safety Network Infrastructure

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

EoS= End of manufacturer software and/or hardware support

Devices that cannot be patched or updated are considered vulnerable to cyber threats and must be refreshed.

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.

2.2 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 BECAUSE OF THIS INVESTMENT.

In the current year, the project focus will be on network router and switch refreshes tied to push-to-talk radio connectivity for field crews and other personnel, refresh and expansion of routing and switching equipment

at critical generation facilities, and refresh of network assets to alleviate cyber security threats on devices deemed obsolete by vendor lifecycles. Historical costs and timelines related to similar project work provide support for the requested allocations above.

Direct Savings – There are no direct savings related to this business case.

Indirect Savings –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 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.

This business case catalog of use cases includes 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.

Control and Safety Network 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.

Investment percentage for the cybersecurity Initiative is 44% in 2022, Reliability projects are 56%. In 2023, Reliability projects are 100% of the investment.

Quantified indirect savings:

2022	2023	Lifetime *
\$0.00	\$0.00	\$10mm-\$20mm

*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.

[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 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 project work in this business case enables network communications within generation, substation, transmission, and distribution sites and Avista service territories in general for LMR (Land Mobile Radio). 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.

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

The requested funding amount allows the network communication systems tied to this business case to be maintained and expanded based on a periodic upgrade schedule. If this business case did not exist or receive funding, the network communications assets could fail, or the technology becomes obsolete which would result in a lack of communication paths for field crews, a lack of

Control and Safety Network Infrastructure

visibility into generation, transmission, and distribution status, or even a lack of control of field assets for safety and control events.

Two alternative funding options were reviewed:

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 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 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, 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.

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.

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.

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

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.

Control and Safety Network Infrastructure

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

Avista's mission is to improve our customers' lives through innovative energy solutions in a safe, responsible, and affordable manner. This business case is tasked with enhancing and maintaining network communication systems in control and safety areas of Avista's infrastructure. The funding amount and project portfolio has been determined to maintain current performance and capacity while also scaling for customer growth. With project priorities tied to enterprise strategies and risk objectives, the funding is reviewed monthly allowing for adjustments to be made to the portfolio as demands change across Avista's control and safety environments. If project priorities do change, a request is then made to the business case governance team to evaluate and determine if the change is prudent to accomplishing the goals and objectives established for the current funding year.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the Control and Safety Network Infrastructure business case, the discrete projects interface with various internal Avista groups such as ET (Enterprise Technology) engineering, Substation engineering, GPSS (Generation Production and Substation Support) and Generation Plants, the Telecommunications Shop, along with our internal business partners at various office and remote facilities.

The ET Business Case Owner works in conjunction with the PMO (Project Management Office), 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

The investments included in this business case were previously included in the Enterprise & Control Network Infrastructure business case. For better visibility, and stronger investment driver alignment, we have split the single Enterprise & Control Network Infrastructure business case into three separate business cases beginning with the 2022 calendar year: Enterprise Network Infrastructure, Control and Safety Network Infrastructure, and Network Backbone Infrastructure.

Control and Safety 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 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.

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

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 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 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 for providing guidance and making decisions on key issues that affect the following topics:

- Scope
- Schedule

Control and Safety Network Infrastructure

- 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.

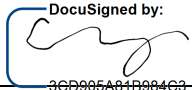
3.3 How will decision-making, prioritization, and change requests be documented and monitored?

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.

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: Sep-02-2022 | 3:06 PM PDT
 Print Name: Shawna Kiesbuy
 Title: Sr. Manager, Network Engineering

Control and Safety Network Infrastructure

Role: Business Case Owner

Signature: 

Date: Sep-02-2022 | 4:43 PM PDT

Print Name: Jim Corder

Title: IT Director

Role: Business Case Sponsor

Data Center Compute and Storage Systems

EXECUTIVE SUMMARY

Business processes require automated technology solutions to meet the overwhelming need for data and information to make decisions. All industries are reliant on the ability to produce, transmit, analyze, and store information to meet various business requirements. This digitalization is resulting in an ever-growing need for data processing and storage for on-demand requests and decision-making. Avista is no different. The Company produces, transmits, analyzes, and stores meter data, telemetry data, asset data, customer billing data, geographic information systems data, etc. Data processing and storage requires high reliability no different than our electric and gas grids supplying customers with power and gas. The Data Center Compute and Storage Systems business case is a program of investments in server technology required to process and store massive amounts of data to automate and enable business processes that support our gas and electric customers across our service territory.

The technology solutions to meet performance standards and reliability requirements can vary from hardware and software upgrades in an on-premise data center, offsite storage, or service provider (cloud) facility, or in operating technology to optimize compute and storage capacity. Solution costs can also vary depending on the magnitude of the technology footprint or vendor licensing model(s). As enabling technology, data center processing and storage investment benefits all Avista customers, as it optimizes cost and productivity by not reverting to manual business processing, which would result in increased labor costs, human error, and overall processing delays. Because technology is evolving so quickly, this program undergoes regular review of the levels of investment and utilization to meet performance and capacity standards, and reliability requirements, while balancing against pre-established budget allocations. These reviews can result in calling for additional investment under this program for technology at risk of poor application system performance, system unavailability and risk of cyber attack.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	6/2017	
2.0	Walter Roys	Revision of BCJN to new template	7/2020	
3.0	<i>Walter Roys</i>	<i>Revision of BCJN</i>	<i>8/2022</i>	

Data Center Compute and Storage Systems

GENERAL INFORMATION

Requested Spend Amount	\$12,828,007
Requested Spend Time Period	5 years.
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

Technology is not only subject to the traditional mortality rate or lifecycle, but it is compounded by planned obsolescence, also known as technology obsolescence.¹ That is, whereby, the technology asset although within its functional lifespan is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology that is available in the market. Data center compute and storage technology is no different.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies. Additionally, the endpoint compute and productivity technology is necessary to enable the capabilities that align with our strategic goals of putting our customers at the center.

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

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

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

Data Center Compute and Storage Systems

All Avista customers benefit from maintaining data center compute and storage systems, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers. Additionally, assets that fail due to not being replaced within their technology lifecycle are replaced by the Technology Failed Asset business case, which tracks technology asset failures, and is also used as a data point to inform the technology lifecycles under this business case.

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

Avista's office, call center, and field staff require on-demand information to meet customer expectations when providing gas and electric service to customers across our service territory. The information can be critical to prevent, reduce, affect, or optimize an outcome that benefits our customers.

Reliance on obsolete technology that stores and computes many of our on-premise business applications to automate business processes presents significant risk that may only be solved with the reinstatement of manual process. Sustaining automated business process by replacing automation with workforce would increase labor expense, and delay response times to meet customer needs.

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

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Enterprise Technology team references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

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

Data Center Compute and Storage Systems

Directions on Roadmaps, Independent IT Planning Information and Advisory Service focused exclusively on Microsoft enterprise software and services. Retrieved from <https://www.directionsonmicrosoft.com/>

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

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

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

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
Alternative #1: Retire assets and remove automation	\$1,338,700	01 2023	12 2027
Alternative #2: Address 100% obsolete products and capacity constraints (recommended)	\$17,104,010	01 2023	12 2027
Alternative #3: Address 75% obsolete products and capacity constraints	\$12,828,007	01 2023	12 2027
Alternative #4 Address 40% obsolete products and capacity constraints	\$9,841,604	01 2023	12 2027

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

The funds request was based on a calculation of the 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

Data Center Compute and Storage Systems

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.

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

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

The funding requested under the Data Center Compute and Storage Business Case will be invested in technology, such as:

- Data center compute technology, which includes both on premise servers and cloud services
- Remote office compute and storage
- Application systems to manage compute and storage technology
- Server operating systems (OS)
- Data storage systems
- Data center racks and power distribution units (PDU)
- Backup and recovery systems

Investment in these technologies can 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.

Data Center Compute and Storage Systems

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.

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

All Avista business functions are affected by this business case, as it enables all day-to-day work activities and automated business processes. From service center to call center to field work, every worker requires endpoint technology to perform their business function and deliver gas and electric service to our customers.

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

Retire assets and remove automation

This option assumes the assets would not be replaced upon end of life and be removed from service due to product incompatibility, business risk or safety risk.

The basis for measuring the business impact of not funding this business case is realizing the loss of business process automation. As products reach the manufacturer-defined planned obsolescence, business process automation is jeopardized, and business risk is increased as manufacturers cease product maintenance and support. This condition would drive action. The alternative could lead to a mitigation plan of having to re-instate manual business process, which would likely require increased staffing in many departments for creation and maintenance of resources such as maps, meter reading, customer billing, etc.

This option bears the cost of asset retirement for failed assets. The retirement cost is estimated at 10% of the cost to replace the asset.

Data Center Compute and Storage Systems

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.

Address 40% of obsolete products and capacity constraints

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. Interoperability constraints may force unplanned funding requests. Multi-year, complex projects are at risk of completion prior to product obsolescence. This option impacts the workforce.

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

This business case is a program that transfers to plant the total cost of each sub-project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

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

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

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

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

The reason that the technology investment under this program business case is prudent is because the Avista workforce requires this technology every day to

Data Center Compute and Storage Systems

deliver gas and electric service to our customers either in an office, customer service center or in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process would either stop or be removed, thereby crippling our workforce's ability to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce as well as customers interface with the technology investments under this business case, depending on the application systems being used to perform any given business or consumer function.

2.8.2 Identify any related Business Cases

The technology investment under this business case allows for upgrade and refresh of the compute and storage from investments in other business cases, such as all business application systems, security systems, operations tools, etc. Basically, almost every software application used by Avista to conduct business functions is either processed or stored in servers refreshed under this business case.

3.1 Steering Committee or Advisory Group Information

The **Data Center Compute & Storage Systems** Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

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

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk

Data Center Compute and Storage Systems

- 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

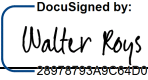
The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

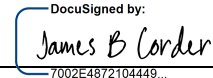
3.3 How will decision-making, prioritization, and change requests be documented and monitored

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Data Center Compute and Storage Systems

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

Signature:  DocuSigned by: Walter Roys Date: Sep-01-2022 | 8:29 AM PDT
Print Name: Walter Roys
Title: System Engineering Manager
Role: Business Case Owner

Signature:  DocuSigned by: James B Corder Date: Sep-02-2022 | 2:04 PM PDT
Print Name: Jim Corder
Title: IT Director
Role: Business Case Sponsor

Signature: _____ Date: _____
Print Name: Elisabeth Sibulsky
Title: IT Program Manager
Role: Steering/Advisory Committee Review

Signature: _____ Date: _____
Print Name: Karen Schuh
Title: ET PMO Manager
Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Digital Grid Networks

EXECUTIVE SUMMARY

This business case includes network communications technology that establishes a more 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 the assigned TTR (time to restoration) is outside of Avista's control. Overreliance on these commercial systems presents a risk to the stability of critical core services, therefore Avista's control and safety communication networks are being moved to utility-grade leased or private services.

For this business case, funding is being requested for \$11,481,900 over five years to upgrade or replace approximately 800 network communication systems within the field area network. For assets connected to 3rd 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 in order to generate the desired mix of private and leased services to support the Field Area Networks. 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.

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	
3.0	Shawna Kiesbuy	Annual Revision	6/2021	
4.0	Shawna Kiesbuy	Revision to BCJN	8/2022	

Digital Grid Networks

GENERAL INFORMATION

Requested Spend Amount	\$11,481,900
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?

This business case includes network communications technology that establishes a more 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 the assigned TTR (time to restoration) is outside of Avista's control. Overreliance on these commercial systems presents a risk to the stability of critical core services, therefore Avista's control and safety communication networks are being moved to utility-grade leased or private services.

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

The main driver for this business case is Performance and Capacity. Since the wireless transport systems support both back office and critical infrastructure, creating and managing the business case is crucial to building a wireless transport architecture 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, and supporting ADMS functions including the automation of outage restoration and optimizing the

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performance of the distribution grid and in some cases, 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 is deferred.

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 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 in order 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 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 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.

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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.

Not applicable. This business case is aligned with Performance & Capacity.

Option	Capital Cost	Start	Complete
Recommended Solution – Upgrade of assets identified with cyber vulnerabilities and optimization or expansion for performance and capacity.	\$11,481,900	01/2023	12/2027
Alternative 1 – A reduction of funding which reduces expansion to meet wireless transport needs and does not allow for the necessary number of devices to be refreshed increasing risk of failure or cyber vulnerability to unauthorized access by bad actors.	\$9,185,520	01/2023	12/2027
Alternative 2 – Do not fund the program.	\$0	01/2023	12/2027

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

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 3rd 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 in order 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	3rd Party Service	Private Service	Forecasted Growth 2023-2027	Total Scope of Request
599	59x	0	~300*	~800

** Approximate only and subject to change*

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EoS= End of manufacturer software and/or hardware support, includes devices that cannot be patched or updated are considered vulnerable to cyber threats and must be refreshed.

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.

2.2 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 because of this investment.**

In the current year, the project focus will be on expansion of 700 MHz implementation and the replacement of the Tropos network technology with expanded wireless communications systems to increase performance and capability and alleviate cyber security threats on devices deemed obsolete by vendor lifecycles. Historical costs and timelines related to similar project work provide support for the requested allocations above.

Direct Savings - No direct savings from this business case.

Indirect Savings - The network infrastructure investments in this business case sustain our business by using technology to automate business processes. 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.

This business case catalog of use cases includes the network infrastructure requirements for distribution automation, automatic 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 80% in 2022, Reliability projects are 20%. In 2023, the cybersecurity Initiative is 70% and Reliability projects are 30% of the investment.

Quantified indirect savings:

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2022	2023	Lifetime *
\$0.00	\$0.00	\$10mm-\$20mm

*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.

[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 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 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.

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

The requested funding amount allows the wireless network communication systems tied to this business case to be maintained and expanded based on a periodic upgrade schedule. If this business case did not exist or receive funding, the network communications assets could fail, or the technology becomes obsolete which would result in a lack of communication paths for Wildfire prevention, ADMS (Advanced Distribution Management System), and EV (Electric Vehicle) charging systems.

Two alternative funding options were reviewed:

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 wireless communication systems to meet business needs

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in 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 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.

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

The Digital Grid Network business case is managed as a program of projects planned yearly. All individual projects are managed through the 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.

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

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.

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

Avista's mission is to improve our customers' lives through innovative energy solutions in a safe, responsible, and affordable manner. This business case is

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tasked with enhancing and maintaining wireless network communication systems. The funding amount and project portfolio has been determined to maintain current performance and capacity while also scaling for customer growth. With project priorities tied to enterprise strategies and risk objectives, the funding is reviewed monthly allowing for adjustments to be made to the portfolio as demands change across Avista's environments. If project priorities do change, a request is then made to the business case governance team to evaluate and determine if the change is prudent to accomplishing the goals and objectives established for the current funding year.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the Digital Grid Network business case, the discrete projects interface with various internal Avista groups such as ET (Enterprise Technology) engineering, Substation engineering, GPSS (Generation Production and Substation Support) and Generation Plants, the Telecommunications Shop, along with our internal business partners at various office and remote facilities.

The ET Business Case Owner works in conjunction with the PMO, the assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.1 Identify any related Business Cases

There are no related business cases.

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to project deliverables outlined in this document, which also typically have an impact on the scope, schedule, or budget of a project. Steering Committee members will also provide approval on Change Requests, Go-Live, and the Approval to Close 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.

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

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 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 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.

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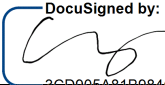
3.3 How will decision-making, prioritization, and change requests be documented and monitored

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.

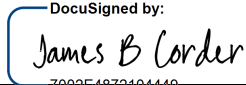
The undersigned acknowledge they have reviewed the Digital Grid Network business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Sep-02-2022 | 3:05 PM PDT
DocuSigned by: 36D905A01B984C3...

Print Name: Shawna Kiesbuy

Title: Sr. Manager, Network Engineering

Role: Business Case Owner

Signature:  Date: Sep-02-2022 | 4:42 PM PDT
DocuSigned by: 7882E4872104449...

Print Name: Jim Corder

Title: IT Director

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Role: Business Case Sponsor

Endpoint Compute and Productivity Systems

EXECUTIVE SUMMARY

Business processes require automated technology solutions to meet the overwhelming need for data and information to make decisions. All industries, including the utility industry, are reliant on the ability to produce, transmit, analyze, and store information to meet various business requirements. Avista's office, call center, and field staff require on-demand information to meet customer expectations when providing gas and electric service to customers across our service territory. The information can be critical to prevent, reduce, affect, or optimize an outcome that benefits our customers. Technology investments under the Endpoint Compute and Productivity Systems business case enable our staff with information to optimize our business and be responsive to our customers.

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.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	6/2017	
1.1	Walter Roys	Update Investment Driver	7/2019	
2.0	Walter Roys	Revision of BCJN to new template	7/2020	
3.0	Walter Roys	Revision of BCJN	8/2022	

GENERAL INFORMATION

Requested Spend Amount	\$22,400,000
Requested Spend Time Period	5 years

Endpoint Compute and Productivity Systems

Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

Endpoint compute and productivity technology is not only subject to the traditional mortality rate or lifecycle, but it is compounded by planned obsolescence, also known as technology obsolescence.¹ That is, whereby, the technology asset although within its functional lifespan is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology (with greater performance and capacity) that is available in the market.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies.

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

The Endpoint Compute and Productivity Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps 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 is deferred

Avista's office, call center, and field staff require on-demand information to meet customer expectations when providing gas and electric service to customers

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

Endpoint Compute and Productivity Systems

across our service territory. The information can be critical to prevent, reduce, affect, or optimize an outcome that benefits our customers. Additionally, the endpoint compute and productivity technology is necessary to enable the capabilities that align with our strategic goals of putting our customers at the center.

Reliance on obsolete technology for automated business process presents significant risk that may only be solved with the reinstatement of manual process. Sustaining automated business process by replacing automation with workforce would increase labor expense, and delay response times to meet customer needs.

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

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk. Additionally, assets that fail due to not being replaced within their technology lifecycle are replaced by the Technology Failed Asset business case, which tracks technology asset failures, and is also used as a data point to inform the technology lifecycles under this business case.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Enterprise Technology team references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

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

Endpoint Compute and Productivity Systems

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.

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 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.

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.

Option	Capital Cost	Start	Complete
Recommended Solution - Address 100% of obsolete products and capacity constraints (recommended)	\$30.0 M	01 2023	12 2027
Alternative #1 – Address 75% obsolete products and capacity constraints	\$22.5 M	01 2023	12 2027
Alternative #2 - Address 50% obsolete products and capacity constraints	\$15.0 M	01 2023	12 2027

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

The funds request was based on a calculation of the 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

Endpoint Compute and Productivity Systems

points inform the team's decisions and recommendations, which include, but are not limited to vendor-driven obsolescence, compute capacity and storage, historical project costs for similar type projects, etc.

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

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

The funding requested under the Endpoint Compute and Productivity Business Case will be invested in, 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 included 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.

Endpoint Compute and Productivity Systems

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.

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

All Avista business functions are affected by this business case, as it enables all day-to-day work activities and automated business processes. From service center to call center to field work, every worker requires endpoint technology to perform their business function and deliver gas and electric service to our customers.

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

Address 75% of obsolete products and capacity constraints

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. To minimize the impact of this risk, the Program Steering Committee will manage project sequence according to the investment priority documented in Section 3.2.

Address 50% of obsolete products and capacity constraints

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of

Endpoint Compute and Productivity Systems

technology impact to business is increased. Interoperability constraints may force unplanned funding requests. Multi-year, complex projects are at risk of completion prior to product obsolescence. This option impacts the workforce.

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

This business case is a program that transfers to plant the total cost of each project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

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

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

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

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

The reason that the technology investment under this program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in an office, customer service center or in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process would either stop or be removed, thereby crippling our workforce's ability to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

Endpoint Compute and Productivity Systems

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce interface with the technology investments under this business case. Selected leaders in organizational business units, known as technology stakeholders, work closely with the technology teams to help with business roadmaps, use case definition, gather non-functional requirements, test design and deployment approaches to inform technology investments.

2.8.2 Identify any related Business Cases

The technology investment under this business case allows for the deployment and use of outputs from other business cases, such as application access and delivery on personal computers and servers, connecting to a virtual private network or cloud service, managing data storage and compute, security updates and patching, etc.

3.1 Steering Committee or Advisory Group Information

The Endpoint Compute & Productivity Systems Business Case has two levels of governance: The Program Steering Committee and the Project Steering Committee.

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

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- 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:

Endpoint Compute and Productivity Systems

- 1) Safety Systems
- 2) Control Systems
- 3) Customer Facing Systems
- 4) Back Office Systems

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

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

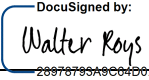
The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

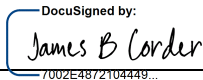
3.3 How will decision-making, prioritization, and change requests be documented and monitored

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Endpoint Compute and Productivity Systems

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

Signature:  DocuSigned by: Walter Roys Date: Sep-01-2022 | 8:29 AM PDT
28976795A9C62D0...
 Print Name: Walter Roys
 Title: System Engineering Manager
 Role: Business Case Owner

Signature:  DocuSigned by: James B Corder Date: Sep-02-2022 | 2:05 PM PDT
7002E4872104449...
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: Karen Schuh
 Title: IT Program Manager
 Role: Steering/Advisory Committee Review

Signature: _____ Date: _____
 Print Name: Andy Leija
 Title: ET PMO Manager
 Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Enterprise and Control Network Infrastructure

EXECUTIVE SUMMARY

Technology that enables Avista's safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to generation plants across our service territory. Managing our network technologies to optimize communications and operations of the enterprise and control systems in these locations is extremely important. Technology investments under the Enterprise and Control Network Infrastructure business case are needed to expand and maintain these network assets in support of system reliability and business productivity throughout our service territory, ensuring our ability to appropriately respond to the needs of our customers.

The technology solutions under the Enterprise and Control Network Infrastructure business case will vary by site location and the systems supported in each facility or environment. They will included, but are not limited to, emergency and safety systems, control systems, customer systems, and enterprise back office productivity systems. This infrastructure is core to utility operations, thus demanding reliable networks utilizing commercial carrier services and private network solutions. The cost of each solution will vary with the type of solution identified for the appropriate level of network access at each site. Avista and its customers will experience the benefits through ongoing system reliability.

The main driver behind this program is asset performance and capacity in alignment with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps and planned obsolesces. The technology solutions within this program undergo regular review to balance the asset management strategy within the predetermined budget allocations. The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increased safety risks in sending field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems supported. New investments will be required when existing assets do not provide adequate capacity, performance, and functionality.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Jim Ogle	Initial BCJN Draft	6/2017	
2.0	Shawna Kiesbuy	Revision of BCJN to new template	7/2020	

Enterprise and Control Network Infrastructure

GENERAL INFORMATION

Requested Spend Amount	\$35,365,826
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

Technology that enables Avista's safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to generation plants across our service territory. Managing our network technologies to optimize communications and operations of the enterprise and control systems in these locations is extremely important. Technology investments under the Enterprise and Control Network Infrastructure business case are needed to expand and maintain these network assets in support of system reliability and business productivity throughout our service territory, ensuring our ability to appropriately respond to the needs of our customers.

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

The main driver behind this program is asset performance and capacity in alignment with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps and planned obsolescence. The technology solutions within this program undergo regular review to balance the asset management strategy within the predetermined budget allocations.

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

The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to

Enterprise and Control Network Infrastructure

procure and replace the failed asset, increased safety risks in sending field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems supported. New investments will be required when existing assets do not provide adequate capacity, performance, and functionality.

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

Executing planned projects will refresh assets prior to the asset's obsolescence and in this way, the business case should be able to support the asset lifecycles and reduce the risk of failing assets affecting critical business systems, processes and infrastructure reliability.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

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

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

This business case is aligned with Performance & Capacity; not Asset Management.

Option	Capital Cost	Start	Complete
Asset replacement for optimized performance and capacity	\$35,365,826	01 2021	12 2025
Do not fund the program	\$0	01 2021	12 2025

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

The main driver behind this program is performance and capacity aligned with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps, which can compound planned obsolescence. The asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages. Tracking of the assets' installation and lifecycle durations are maintained to plan the program projects over the course of future years driving the annual budget request to maintain the refresh roadmap.

Enterprise and Control Network Infrastructure

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

This business case includes network solutions for both expansion requirements and systematic refresh of existing devices that provide access to our enterprise and control networks. Life cycle schedules allow for a known number of assets, by type, to be refreshed based on impact and likelihood of realized risk to the environment. Historical costs and timelines provide indicators in support of the requested allocations above.

Through roadmapping activities and known pressures on existing network capacity, expansion work has been identified for each year. Again, using historical data along with current product cost estimates, the team developed a cost plan for work by year. Combined with the refresh work cost estimates, the overall business case request amount is determined.

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

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

The projects in this program are standalone projects within the Enterprise and Control Network Infrastructure business case but are dependent on length of construction season and other geographically similar but unrelated work being performed at impacted substations. Through those projects, business functions and processes might be impacted but the technology upgrades being made at the varied locations throughout Avista's service territory should strive to increase performance and capacity for employees in their daily work life.

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

Alternative 1: FUND PROGRAM BASED ON OPTIMIZED PERFORMANCE AND ASSET MANAGEMENT

Funding the Enterprise and Control Network Infrastructure business case minimally each year based on a reduced capital plan and request incremental increases as projects are completed. This would result in ad-hoc funding requests to the Capital Planning Group for work approved outside of the 5-year capital planning process.

Enterprise and Control Network Infrastructure

Alternative 2: DO NOT FUND THE PROGRAM

Enterprise and Control Network Infrastructure projects would not be funded. Enterprise network access, optimization and/or unfunded capacity management could result in minimized network capacity reducing the ability to perform ordinary and necessary daily business operations. Control network access, optimization and/or unfunded capacity management could result in minimized control network capacity reducing the ability to manage and control our generation and control system assets.

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

The Enterprise and Control Network Infrastructure business case is managed as a program of projects planned yearly. All individual projects are managed through the PMO, which follows the Project Management Institute (PMI) standards. Throughout the year, the business case's projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the scope requests which over the course of a calendar year equates to the funded budget allocation.

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

This is a program with discrete projects that align with Avista's vision, mission and strategic objectives:

- The Enterprise and Control Network Infrastructure business case investments align with Avista's commitment to invest in its infrastructure to achieve optimal lifecycle performance – safety, reliability, and at a fair price. Network communications that monitor and control Avista enterprise networks and control networks are critical in support of the bulk electric system. The implementation of these network technologies will continue to enable and support these critical communications in a manner that is much safer to all workers and at all locations across Avista.

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

Enterprise and Control Network Infrastructure

Throughout the course of a year, all project requests are vetted before the Steering Committee to validate the request against the business case purpose and making sure the request can be delivered within the approved funding allocation.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the Enterprise and Control Network Infrastructure business case, the discrete projects interface with various internal Avista groups such as ET engineering, Substation engineering, GPSS and Generation Plants, the Telecommunications Shop, along with our internal business partners at various office and remote facilities.

Steering Committee members include Business Case Sponsors, Directors and Managers within the Enterprise Technology group along with the Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), the assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.1 Identify any related Business Cases

There are no related business cases.

Enterprise and Control Network Infrastructure

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to project deliverables outlined in this document, which also typically have an impact on the scope, schedule, or budget of a project. Steering Committee members will also provide approval on Change Requests, Go-Live, and the Approval to Close document. For the High Voltage Protection business case, the Steering Committee will consist of the Directors and Managers within ET, Energy Delivery, GPSS and the Business Case Owner.

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

The Enterprise and Control Network Infrastructure Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically in order to plan and sequence work to the levels of funding allocation received.

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

- Scope

Enterprise and Control Network Infrastructure

- Schedule
- Budget
- Project Issues
- Project Risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

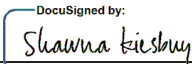
3.3 How will decision-making, prioritization, and change requests be documented and monitored

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

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

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

The undersigned acknowledge they have reviewed the Facilities Driven Technology Improvements business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

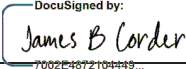
Signature:  Date: Jul-31-2020 | 8:58 AM PDT

Print Name: Shawna Kiesbuy

Title: Sr. Manager, Network Engineering

Enterprise and Control Network Infrastructure

Role: _____
Business Case Owner

Signature: _____


Date: _____
Aug-03-2020 | 5:52 PM PDT

Print Name: _____
Jim Corder

Title: _____
IT Director

Role: _____
Business Case Sponsor

Signature: _____

Date: _____

Print Name: _____

Title: _____

Role: _____
Steering/Advisory Committee Review

Enterprise Communications

EXECUTIVE SUMMARY

Communication is at the very essence of human interaction, and thus a pillar of business processes. 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 from any mobile device or location.

The primary driver for the Enterprise Communication Systems business case is performance and capacity, whereby the Company balances the need to meet performance standards and system reliability for the various technologies under this program with annual budget allocations, and their respective technology lifecycles.

Being no different than most businesses, Avista requires continuous communication among our staff and customers throughout our service territory. However, to do it effectively, we require communication technology for greater agility, flexibility, and scalability to enable many business processes, such as 24 x 7 x 365 communication with our gas and electric customers by telephone, fax, or email. Additionally, email, instant messaging, text and collaboration platforms support a digital workforce that 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.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	6/2017	1.0
1.1	Walter Roys	Update Investment Driver	7/2019	1.1
2.0	Walter Roys	Revision of BCJN to new template	7/2020	2.0
3.0	Walter Roys	Revision of BCJN	7/2022	3.0

Enterprise Communications

GENERAL INFORMATION

Requested Spend Amount	\$10,838,608
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

Communication technology enables business processes beyond people exchanging information, but across systems that communicate with one another to exchange data in near-real time.

Communications technology is not only subject to the traditional mortality rate or lifecycle, but it is compounded by planned obsolescence, also known as technology obsolescence¹. Technology obsolescence is defined as when the technology asset, although within its functional lifespan, is technologically flawed or no longer meets the need of users or customers, as expectations increase due to newer and more powerful technology (with greater performance or capacity) that is available in the market.

Additionally, with the rapid pace of technological change, technology vendors require continuous upgrades to maintain system maintenance and support, which can include security patching, bug fixes, version upgrades, interoperability, and compatibility with other technologies.

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

The Enterprise Communications Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps 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.

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

Enterprise Communications

All Avista customers benefit from maintaining communication systems, as this technology enables the Avista workforce to perform their day-to-day job functions in delivering gas and electric service to our customers.

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

All Avista business functions are affected by this business case, as it enables all day-to-day work activities and automated business processes around communications. From service center to call center to field work, every worker requires communications systems technology to perform their business function and deliver gas and electric service to our customers. 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.

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

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Enterprise Technology team references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

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

Enterprise Communications

Directions on Roadmaps, Independent IT Planning Information and Advisory Service focused exclusively on Microsoft enterprise software and services. Retrieved from <https://www.directionsonmicrosoft.com/>
Gartner Industry Research and Reference Material. Retrieved from <https://www.gartner.com/en/information-technology>

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

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.

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	\$13,548,260	01/2023	12/2027
Alternative #1 – Address ~75% of technology that no longer meets performance and capacity requirements	\$10,838,608	01/2023	12/2027
Alternative #2 - Address 50% of technology that no longer meets performance and capacity requirements	\$6,774,130	01/2023	12/2027

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

The funds request was based on a calculation of the 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

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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.

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

The funding requested under the Enterprise Communication Systems Business Case will be invested in, but not limited to, the following technologies:

- Instant messaging systems
- Contact Center automatic call distribution system
- Contact Center scheduling and QA systems
- Customer interactive voice response (IVR) system
- Voice recording systems
- Electronic mail and calendar system
- Voicemail system
- Telephone systems
- Teleconferencing systems
- Video conferencing systems
- Conference room technology
- Media Walls
- Enhanced 911 emergency services
- Electronic fax systems
- Paging systems
- Application systems to manage enterprise communication technology

Investment in these technologies can 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

Enterprise Communications

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.

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

All Avista business functions are affected by this business case, as it enables all day-to-day work and communications activities and automated business processes. From service center to call center to field work, every worker requires enterprise communication technology to perform their business function and deliver gas and electric service to our customers. This technology is even more important in a work from home environment to keep employees and departments connected while minimizing risk to essential employees.

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

Retire assets and remove automation

This option assumes the assets would not be replaced upon end of life and be removed from service due to product incompatibility, business risk or safety risk.

The basis for measuring the business impact of not funding this business case is realizing the loss of business process automation. As products reach the

Enterprise Communications

manufacturer-defined planned obsolescence, business process automation is jeopardized, and business risk is increased as manufacturers cease product maintenance and support. This condition would drive action. The alternative could lead to a mitigation plan of having to re-instate manual business process or eliminate the business process.

Address approximately 75% of obsolete products and capacity constraints (Recommended). This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. To minimize the impact of this risk, the Program Steering Committee will manage project sequence according to the investment priority documented in section 3.2.

Address 50% of obsolete products and capacity constraints

This will introduce risk associated with technology systems reliability, interoperability and capacity. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology impact to business is increased. Interoperability constraints may force unplanned funding requests. Multi-year, complex projects are at risk of completion prior to product obsolescence. This option impacts the workforce.

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

This business case is a program that transfers to plant the total cost of each project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

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

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

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

Enterprise Communications

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

The reason that the technology investment under this program business case is prudent is because communication is at the very essence of human interaction, and thus a pillar of business processes. As such, the Avista workforce requires this technology every to deliver gas and electric service to our customers either in an office, customer service center or in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process would either stop or be removed, thereby crippling our workforce's ability to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all Avista's workforce interface with the technology investments under this business case. Selected leaders in organizational business units, known as technology stakeholders, work closely with the technology teams to help with business roadmaps, use case definition, gather non-functional requirements, test design, and deployment approaches to inform technology investments.

2.8.2 Identify any related Business Cases

The technology investment under this business case requires deployment and use of outputs from other business cases, specifically delivery on personal computers and servers, connecting to a virtual private network or cloud service, security updates and patching, etc.

3.1 Steering Committee or Advisory Group Information

The **Enterprise Communication Systems** Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

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

Program Steering Committee

Enterprise Communications

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.

Enterprise Communications

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

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Enterprise Communications

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

Signature: DocuSigned by:
Walter Roys
28978793A9C64D0... Date: Sep-01-2022 | 8:28 AM PDT
 Print Name: Walter Roys
 Title: System Engineering Manager
 Role: Business Case Owner

Signature: DocuSigned by:
James B Corder
7002E4872104449... Date: Sep-02-2022 | 2:06 PM PDT
 Print Name: Jim Corder
 Title: IT Director
 Role: Business Case Sponsor

Signature: _____ Date: _____
 Print Name: Karen Schuh
 Title: IT Program Manager
 Role: Steering/Advisory Committee Review

Signature: _____ Date: _____
 Print Name: Andy Leija
 Title: ET PMO Manager
 Role: Steering/Advisory Committee Review

Template Version: 05/28/2020

Enterprise Network Infrastructure

EXECUTIVE SUMMARY

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. The 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 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 \$7,982,000 over five years to upgrade or replace 497 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.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Shawna Kiesbuy	Initial BCJN Draft	6/2021	
2.0	Shawna Kiesbuy	BCJN Revision	7/2022	

Enterprise Network Infrastructure

GENERAL INFORMATION

Requested Spend Amount	\$7,982,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

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 access to the Internet wherever our people might be working. The 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 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.

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

The main driver for this 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

Enterprise Network Infrastructure

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.

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

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 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 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.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

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) (Original Equipment Manufacturer) also provide valuable information about industry trends and the evolution of technology. Avista

Enterprise Network Infrastructure

uses these tools to accurately project growth and develop strategies for scaling new use cases.

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

Not applicable. This business case is aligned with Performance and Capacity, not Asset Condition.

Option	Capital Cost	Start	Complete
Recommended Solution - Asset replacement or expansion for optimized performance and capacity.	\$7,982,000	01/2023	12/2027
Alternative 1 – A reduction of funding which reduces expansion to meet enterprise system needs and does not allow for the necessary number of devices to be refreshed increasing risk of failure or cyber vulnerability to unauthorized access by bad actors.	\$6,385,600	01/2023	12/2027
Alternative 2 – Do not fund the program	\$0	01/2023	12/2027

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

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

Gross Total Assets	EoS <2023	EoS 2023-27	EOL 2023-27	Total Scope of Request
832	106	221*	170	497

Enterprise Network Infrastructure

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

EoS= End of manufacturer software and/or hardware support, includes devices that cannot be patched or updated are considered vulnerable to cyber threats and must be refreshed.

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.

2.2 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 because of this investment.**

In the current year, the project focus will be on network switch refreshes tied to enterprise employee connectivity for office locations and generating plants, refresh, and expansion of enterprise switches for back-office data, and expansion of network assets to increase performance and capacity and to alleviate cyber security threats on devices deemed obsolete by vendor lifecycles. Historical costs and timelines related to similar project work provide support for the requested allocations above.

Direct Savings – There are no direct savings related to this business case.

Indirect Savings – 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 cs, 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.

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Investment percentage for the cybersecurity Initiative is 100% in 2022. In 2023, the cybersecurity Initiative is 50% and Reliability projects are 50% of the investment.

Quantified indirect savings:

2022	2023	Lifetime *
\$0.00	\$0.00	\$10mm-\$20mm

[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 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 project work in this business case enables enterprise network communications within office locations and generation plants. 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 employees and customers. Specific business functions and processes affected are determined project by project.

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

The requested funding amount allows the enterprise network communication systems tied to this business case to be maintained and expanded based on a periodic upgrade schedule. If this business case did not exist or receive funding, the enterprise network communications assets could fail, or the technology becomes obsolete which would result in a lack of enterprise communication paths for offices, generation and substation locations, and customers.

Two alternative funding options were reviewed:

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

Enterprise Network Infrastructure

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.

2.5 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 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.

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

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.

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

This business case is tasked with enhancing and maintaining enterprise network communication systems in employee and customer areas of Avista's infrastructure. The funding amount and project portfolio has been determined to maintain current performance and capacity while also scaling for customer growth. With project priorities tied to enterprise strategies and risk objectives, the funding is reviewed monthly allowing for adjustments to be made to the portfolio as demands change across Avista's enterprise environments. If project priorities do change, a request is then made to the business case governance team to evaluate and determine if the change is prudent to accomplishing the goals and objectives established for the current funding year.

Enterprise Network Infrastructure

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the Enterprise Network Infrastructure business case, the discrete projects interface with various internal Avista groups such as ET (Enterprise Technology) engineering, Customer Solutions, Substation engineering, GPSS (Generation Production and Substation Support) and Generation Plants, the Telecommunications Shop, along with our internal business partners at various office and remote facilities.

The ET Business Case Owner works in conjunction with the PMO (Project Management Office), 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

The investments included in this business case were previously included in the Enterprise & Control Network Infrastructure business case. For better visibility, and stronger investment driver alignment, we have split the single Enterprise & Control Network Infrastructure business case into three separate business cases beginning with the 2022 calendar year: Enterprise Network Infrastructure, Control and Safety Network Infrastructure, and Network Backbone 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 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.

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

The Enterprise Network Infrastructure Business Case has two levels of governance: The Program Steering Committee and the Project Steering Committee.

Enterprise Network Infrastructure

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 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 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.

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

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

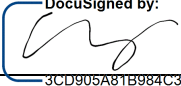
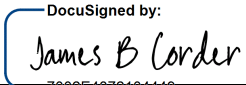
Enterprise Network Infrastructure

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.

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:		Date: Sep-02-2022 3:09 PM PDT
Print Name:	Shawna Kiesbuy	
Title:	Sr. Manager, Network Engineering	
Role:	Business Case Owner	
Signature:		Date: Sep-02-2022 4:29 PM PDT
Print Name:	Jim Corder	
Title:	IT Director	
Role:	Business Case Sponsor	

Enterprise Network Infrastructure

Environmental Control and Monitoring Systems

EXECUTIVE SUMMARY

Technology that enables Avista's safety, control, customer-facing, and backoffice systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to call centers across our service area 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 likely hood 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	Notes
1.0	Michael Busby	Original business case request	7/2017	
1.1	Michael Beil	Updated investment driver	7/2019	
2.0	Michael Busby	Narrative added to new template	7/2020	
3.0	Michael Busby	Updated to new Template requirements	5/2022	

GENERAL INFORMATION

Requested Spend Amount	\$4,750,000
Requested Spend Time Period	5 years (\$950k annually, perpetually)
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Michael Busby Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Asset Condition

1. BUSINESS PROBLEM

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

Technology that enables Avista's safety, control, customer-facing, and back office systems is critical to the operations that serve our gas and electric customers. It is found in many different environments from office locations to mountaintop sites to call centers across our service area. Managing the facility and power environments to optimally run the systems housed in these locations is extremely important, as environmental condition changes can adversely affect them. The parameters monitored and controlled include but are not limited to temperature, humidity, fire protection, and backup power supply systems. If these parameters should fall outside of the device specification levels, it can cause damage to the technology equipment impacting business automation processes.

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

The main driver behind this program is asset condition aligned with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps, which can compound planned obsolescence. The asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages.

Environmental Control and Monitoring Systems

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

The technology solutions under this program undergo regular review to balance the asset management strategy within the predetermined budget allocations. The risks of not approving this business case at the level to which it can maintain the balance of meeting its asset management strategy can result in unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increase safety risk to send field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems that it supports.

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

The main driver behind this program is asset condition aligned with asset management strategies driven by technology lifecycles. Executing planned projects will refresh assets prior to the asset's obsolescence and in this way, the business case should be able to support the asset lifecycles and reduce the risk of failing assets affecting critical business systems and processes.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

See below for supporting details.

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

EMERGENCY GENERATORS (EGEN)

Emergency Generator assets are located at facilities where critical technologies are located. We currently have 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

Environmental Control and Monitoring Systems

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

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 significant 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 significant reduce the risk of DC System failures.

Environmental Control and Monitoring Systems

DC BATTERIES

DC Batteries store electrical energy used to provide power to technology equipment during loss of AC power event. We have 2 type of DC batteries in portfolio. A “Standard 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 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

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 on replacing the DC Battery system before replacing the whole rectifier system.

HVAC SYSTEMS

HVAC Systems monitor and control the environments temperature and/or humidity. Avista’s technology assets may experience physical damage if operated in temperatures and/or humidifies outside of their specifications. We have 23 HVAC systems in portfolio. They have a 20-year life cycle. 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	\$4,750,000	01 2023	01 2028
Asset Replacement when Obsolete	\$6,162,500	01 2023	01 2028
Asset Replacement upon Failure	\$4,621,875	01 2023	01 2028

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

The main driver behind this program is asset condition aligned with asset management strategies driven by technology lifecycles that are based on manufacturer product roadmaps, which can compound planned obsolescence. The asset management strategy is critical to optimize the overall lifecycle value of the product and reduce potential for failure or unplanned outages. Tracking of the assets' installation and lifecycle durations are maintained to plan the program projects over the course of future years driving the annual budget request to maintain the refresh roadmap.

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

The Environmental Control and Monitoring systems business case will represent projects that are driven by performance and capacity related issues on the following assets:

- Emergency Generation systems at Telecom facilities
- DC power supply plants at Telecom facilities
- HVAC systems at Telecom facilities
- RTU technologies related to Telecom facilities
- Telecom Facility buildings and lighting
- Microwave towers at Telecom facilities
- UPS Systems support Telecom facilities
- Applications systems used to monitor and manage the environment

The Environmental Control and Monitoring systems ensure reliable operation of assets that support safety, control, customer facing, and back office automated business processes. Assets require specific operating environments to prevent physical damage, such as temperature, humidity, and power supply voltages. Environmental Control and Monitoring systems will monitor and control these environmental parameters and alert operational personnel when they fall outside of optimal conditions. Environmental condition alarms allow operational personnel to respond to issues that may cause damage to other assets well in advance on any failure resulting in loss of business automation processes.

The program will replace existing assets in alignment with the manufacturer's product roadmaps. Not only is the asset condition subject to the traditional mortality rate or

Environmental Control and Monitoring Systems

lifecycle, but it is compounded by planned obsolescence. Reliance on obsolete products for automated business processes presents significant risk that may only be solved with the reinstatement of manual processes. Sustaining business processes by replacing automation with workforce would increase labor expenses.

Should this business case not be funded sufficiently, and we run these assets past their recommended life, we will experience increased downtime of our automated business processes related to safety, control, customer facing, and back-office systems. The technology assets that are managed in this business case also monitors and controls some environmental variables that other technology assets require in order to prevent damage. The risk and likelihood of failures with this asset grows exponentially when they run past their expected life. Failures with these technology assets would increase labor costs in other areas of the company by having to implement manual processes. We would experience an increase in the cost of technology asset replacements because other technology assets could experience damage if the environment, they run in is not controlled within their manufacturer specifications.

Avista needs to replace these technology assets for cost avoidance related to significant risk of failures:

- 14 DC power supply battery banks a year at approx. \$10k each
- 6 DC Converters a year at approx. \$65k each
- 12 AC UPS systems a year at approx. \$25k each
- 2 HVAC systems a year at approx. \$70k each
- 1 Emergency Generator a year at approx. \$150k each

Investments in these technology asset replacements provide indirect savings to our customers by cost avoidance related to increase in operating expense due to reinstating manual business processes. Avista Customers will also see cost avoidance related to early replacement of other technology assets that experienced damage because their environment was not controlled adequately. The amount of indirect savings would depend on the site and associated business process systems impacted by the failure.

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 process. This is also assuming we would not replace these assets when failed.

Indirect savings related to early replacements of other technology assets could range from \$100k - \$10M depending on the site that has environment control impacts. \$100k is a representation of a standard remote site with standard technology deployments. The \$10M represents our central Datacenter environment.

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

Technology that enables Avista's safety, control, customer-facing, and back office systems is critical to the operations that serve our gas and electric customers. It is found

Environmental Control and Monitoring Systems

in many different environments from office locations to mountaintop sites to call centers across our service area. Managing the facility and power environments to optimally run the systems housed in these locations is extremely important, as environmental condition changes can adversely affect them. The parameters monitored and controlled include but are not limited to temperature, humidity, fire protection, and backup power supply systems. If these parameters should fall outside of the device specification levels, it can cause damage to the technology equipment impacting business automation processes. Maintaining the environmental assets through this business case allows for the refresh of the asset proactively in order to not affect the critical business functions and processes housed at these locations.

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

Alternative 1: Asset Replacement When Obsolete

This alternative maintains all Environmental Control and Monitoring systems in alignment with product lifecycles.

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.

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

The Environmental Control and Monitoring Systems business case is managed as a program of projects planned yearly which align with asset lifecycles that are based on manufacturer product roadmaps. All individual projects are managed through the PMO, which follows the Project Management Institute (PMI) standards. Throughout the year, the business case's projects are Initiated, Planned, Executed, and then Completed with a Transfer to Plant for the installed assets which over the course of a calendar year equates to the funded budget. Within this business case, there is one blanket project for battery refreshes which Transfers to Plant on a monthly basis.

Environmental Control and Monitoring Systems

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

This is a program with discrete projects that align with Avista's vision, mission and strategic objectives:

- To provide Better Energy for Life, you need systems that function at an optimal level to deliver electricity and gas in a safe and reliable manner. The team supporting the environmental control and monitoring systems is highly skilled and responsive to the needs of these systems so critical business services continue to be delivered without interruption.

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

Based on the individual asset data listed above, the requested funding amount will allow for a group of discrete projects each year which will strive to maintain a refresh cycle ahead of the assets' obsolescence reducing the risk of unplanned failures, which result in unplanned labor and non-labor costs, risk of delay to procure and replace the failed asset, increase safety risk to send field staff in extreme weather conditions to remote locations, as well as downtime to the critical operations and safety systems that it supports.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Within the Environmental Control and Monitoring Systems business case, the projects interface with various internal Avista groups such as ET engineering, the Telecommunications Shop, real estate, contracting, and accounts payable to name a few. While in the field, the teams also interface with landowners, local governments, environmental groups, and others related to mountaintop sites, office locations, and shared substations.

Steering Committee members include Business Case Sponsors, Directors and Managers within the Enterprise Technology group long with the Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), and assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

Environmental Control and Monitoring Systems

2.8.2 Identify any related Business Cases

There are no related business cases currently.

3. MONITOR AND CONTROL

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to project deliverables outlined in this document, which also typically have an impact on the scope, schedule, or budget of a project. Steering Committee members will also provide approval on Change Requests, Go-Live, and the Approval to Close document. For the Environmental Control and Monitoring business case, the Steering Committee will consist of the Directors and Managers within ET and the Business Case Owner.

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

The Environmental Control and Monitoring systems Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically and will consist of projects needed to maintain the reliability and performance of all Environmental Control and Monitoring systems.

Product roadmaps identify investment demand that is generally not fully funded. Product investments are prioritized in this manner:

- 1) Safety Systems
- 2) Control Systems
- 3) Customer Facing Systems
- 4) Back Office Systems

Environmental Control and Monitoring Systems

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

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

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

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

Project prioritization is evaluated by the management team on a weekly basis. Each program and project steering committee meet regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

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

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

Environmental Control and Monitoring Systems

4. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the Environmental Control and Monitoring Systems business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:	<div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block; font-size: 8px;">DocuSigned by: <i>Michael Busby</i> 947D03559AC4478...</div>	Date: <u>Sep-02-2022 8:17 AM PDT</u>
Print Name:	Michael Busby	
Title:	Manager of NOC and Comm Shop	
Role:	Business Case Owner	
Signature:	<div style="border: 1px solid black; border-radius: 5px; padding: 2px; display: inline-block; font-size: 8px;">DocuSigned by: <i>James B Corder</i> 7002E4872104449...</div>	Date: <u>Sep-02-2022 2:12 PM PDT</u>
Print Name:	Jim Corder	
Title:	IT Director	
Role:	Business Case Sponsor	

Enterprise Technology (ET) Modernization and Operational Efficiency Technology

EXECUTIVE SUMMARY

The ET (Enterprise Technology) Modernization and Operational Efficiency (ETMOE) 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. The Enterprise Technology (ET) business areas includes the delivery and support of enterprise Information Systems (IS), Infrastructure Technology (IT), Security Management, Shared Services, Project Management Office (PMO), Technology Service Center, Digital Innovation, IT Finance, and Software Compliance. 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 business case, the recommended funding amount is \$14,665,000 over the next five years (roughly \$2M to \$3.9M per year). 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 through focused cost management, timely rate recovery, business transformation, and unregulated business development. 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 additional 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.

Failure to approve the recommended funding would risk the reduction of skilled resources that have institutional business process and technical knowledge. Our employees and customers would also be impacted through the deferment of upgrades and enhancements, resulting in unsupported applications, security liability, non-compliance, and significantly higher costs.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Leianne Raymond	Draft for 2023-2027 submission	6.30.22	

Enterprise Technology (ET) Modernization and Operational Efficiency Technology

GENERAL INFORMATION

Requested Spend Amount	\$14,665,000
Requested Spend Time Period	5 Years
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

BUSINESS PROBLEM

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

The growth in business application technology, as part of the 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 and the benefits to the customer

The Enterprise Technology Modernization and Operational Efficiency (ETMOE) Business Case is primarily driven by Performance and Capacity to support business application implementation, development, operations, support, delivery automation, and data delivery. 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

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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) (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.

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 is deferred

If the technology investments under this business case are not approved, it would result in technology platforms and tools falling behind their technology vendor required upgrades, which in turn hinders any support needed for business applications or information storage and workflow management used daily for investment planning and delivery, managed file transfers, pre-production testing, and technology lifecycle management. For example, this is very similar to not furnishing a mechanic with either the tools or equipment necessary and required to fix a car when it breaks down or does

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not perform as expected. The technology teams would be hindered in their ability to assist or repair business applications and their respective information storage and workflows when they become unresponsive or inoperable, especially for reoccurring issues where root cause analysis is necessary to prevent future events or incidents.

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 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 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 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.

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

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements for existing technology under the ETMOE program, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk to

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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 from inefficient processes to more value-driven activities by leveraging technology to meet both planned and unplanned business needs.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

ET Modernization and Operational Efficiency Monthly Stakeholder and Steering Committee teams references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

- Roadmaps for specific platforms and tools, such as Opentext (for Enterprise Content Management) and Biztalk (for Enterprise Service Bus) are examples of vendor roadmaps regularly referenced.
- Gartner Industry Research and Reference Material. Retrieved from <https://www.gartner.com/en/information-technology>

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

Not applicable, as the investment under this program business case is to maintain performance and capacity standards in each respective technology that falls within it.

Option	Capital Cost	Start	Complete
Recommended Solution – fund at requested allocation	\$14,665,000	01 2023	12 2027
Alternative #1 - Reduced funding by deferring the IT Service Management (ITSM) project and funding with productivity funds.	\$10,850,000	01 2023	12 2027

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

These estimates were derived from calculated employee and contract labor costs for the primary teams working in this business case area, as well as historical trends, product roadmaps and high-level industry estimates for technology products. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s).

Upstream investment in enhancements and upgrades to these platforms can result in savings by not incurring downstream costs when applications break, or simply stated,

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avoid costs associated with system inoperability that can hinder worker productivity. Non-production systems (such as Azure DevOps) allows the organization to test enhancements, upgrades, and new implementations prior to deployment in production. This results in reduced errors in production systems, which could also affect employees and customers negatively, from untested changes or upgrades.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). Include any known or estimated reductions to O&M as a result of this investment.

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 2022:

- 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

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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 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.

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

These technology platforms are used by all areas of the organization, or they furnish tools for the technology team to support other business application systems. The business function or processes that may be impacted include, but are not limited to:

- 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.
- Pre-production environment testing and quality assurance tools to minimize or avoid errors in production systems from upgrades or changes to application business systems.
- Root cause 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.

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

Alternative #1 – This business case could reduce funding by moving the IT Service Management (ITSM) project out of this business case and into a productivity business case or deferring the project all together. If the ITSM project is delayed or eliminated from the funding, we would continue to aggravate the security and compliance risks

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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. Our current solution is also out of alignment with our COTS (Commercial off the Shelf) strategy. The COTS 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.

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

This Business Case is a program 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). 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.

- See "Attachment 1 - 5 Year Project Roadmap"

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

This is a program with discrete projects and packages that align with Avista's vision, mission and strategic objectives. An example of this is to improve our customers' lives through innovative energy solutions. To do this we need to have technology systems and processes that ensure we are making decisions that focus on continuously improving our delivery of safe, reliable, clean, and affordable electric and natural gas service. In addition, achieving financial objectives through focused cost management, timely rate recovery, business transformation, and unregulated business development are also alignments of this business case.

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

The platforms and tools under the ETMOE Business Case provide essential functions to Avista's workforce and customers throughout all service territories. These vital systems require systematic upgrades and enhancements to maintain reliability, interoperability, and reduce security vulnerabilities.

The reason that the technology investment under this program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in an office, customer service center or in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process would either stop or be removed, thereby crippling our workforce's ability to deliver gas and electric service to our customers, respond to compliance requirements, and conduct business operations and reporting. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all of Avista's workforce interfaces with the technology investments under this business case, depending on the application systems being used to perform any given business function. In some cases, the technology investments are primarily interfacing with the technology operations teams whose job is to support business application systems.

The stakeholders that interface directly with the business case include, the ETMOE Business Case Sponsors and Owner who work in conjunction with the assigned Program Manager, and subsequent Project Managers. The Business Technology Analyst (BTA) team is also engaged at all levels.

2.8.2 Identify any related Business Cases

The ET Modernization and Operational Efficiency Business Case works closely with all other Enterprise Technology business cases to determine which platforms and tools provide functionality to all areas of the business, as opposed to department specific platforms and tools that respond to specific business unit needs.

3.1 Steering Committee or Advisory Group Information

The ETMOE Business Case consists of Program Steering Committees and the Project Steering Committee for respective project investments.

Enterprise Technology (ET) Modernization and Operational Efficiency Technology

The ET Modernization and Operational Efficiency Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

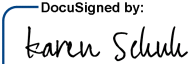
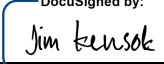
The IOC evaluates and compares all the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC.

The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise. The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two constrains are established, the Business Case owner will work with steering committee(s) to set project priority and sequence over a five-year planning period, subject to additional funding changes as directed by the CPG.

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

The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

The undersigned acknowledge they have reviewed the *Enterprise Technology Modernization and Operational Efficiency* and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:	<small>DocuSigned by:</small>  <small>0D892330AD294F...</small>	Date:	Sep-02-2022 6:10 AM PDT
Print Name:	Karen Schuh		
Title:	Manager, ET PMO		
Role:	Business Case Owner		
Signature:	<small>DocuSigned by:</small>  <small>733AFC4130114FA...</small>	Date:	Sep-01-2022 3:13 PM PDT
Print Name:	Jim Kensok		
Title:	VP Chief Info. & Security Officer		

Enterprise Technology (ET) Modernization and Operational Efficiency Technology

Role: Business Case Sponsor

Signature:  DocuSigned by: Hossein Nikdel Date: Sep-01-2022 | 10:18 AM PDT

Print Name: Hossein Nikdel

Title: Director, App and Sys Planning

Role: Business Case Governance

Signature:  DocuSigned by: James B Corder Date: Sep-02-2022 | 2:10 PM PDT

Print Name: Jim Corder

Title: Director, IT and Security

Role: Business Case Governance

Signature:  DocuSigned by: Clay Storey Date: Sep-01-2022 | 10:34 AM PDT

Print Name: Clay Storey

Title: Director, Enterprise Security

Role: Business Case Governance

Enterprise Technology (ET) Modernization and Operational Efficiency Technology

ATTACHMENT #1 – ETMOE 5 YEAR PROJECT ROADMAP

2023	2024	2025	2026	2027
IT Service Management (ITSM) Implementation - Phase 1 (2023)	IT Service Management (ITSM) Implementation - Phase 2 (2024)	IT Service Management (ITSM) Expansion 2025	IT Service Management (ITSM) Expansion 2026	IT Service Management (ITSM) Expansion 2027
	IT Service Management (ITSM) Implementation - Phase 3 (2024-2025)			
BizTalk Upgrade 2023 / 2024		BizTalk Upgrade 2025 / 2026		BizTalk Upgrade 2027 / 2028
Enterprise Content Management (ECM) Application Upgrade 2023 / 2024		Enterprise Content Management (ECM) Application Upgrade 2025 / 2026		Enterprise Content Management (ECM) Application Upgrade 2027/2028
Enterprise Content Management (ECM) Features/Expansion 2023	Enterprise Content Management (ECM) Features/Expansion 2024	Enterprise Content Management (ECM) Features/Expansion 2025/2026	Enterprise Content Management (ECM) Features/Expansion 2026	Enterprise Content Management (ECM) Features/Expansion 2027
Globalscape Upgrade 2023	Globalscape Upgrade 2024	Globalscape Upgrade 2025	Globalscape Upgrade 2026	Globalscape Upgrade 2027
FME Application/Server Upgrade 2023	FME Application Upgrade 2024	FME Application Upgrade 2025	FME Application Upgrade 2026	FME Application/Server Upgrade 2027
Cognos Upgrade 2023	Cognos Upgrade 2024	Cognos Upgrade 2025	Cognos Upgrade 2026	Cognos Upgrade 2027
Java AMC Upgrade 2023	Clarity Application Upgrade 2024	Java AMC Upgrade 2025	Clarity Application Upgrade 2026	Java AMC Upgrade 2027
Data Analytic Platform (DAAP) Expansion 2023	Data Analytic Platform (DAAP) Expansion 2024	Data Analytic Platform (DAAP) Expansion 2025	Data Analytic Platform (DAAP) Expansion 2026	Data Analytic Platform (DAAP) Expansion 2027
BI / ETL Expansion 2023	BI / ETL Expansion 2024	BI / ETL Expansion 2025	BI / ETL Expansion 2026	BI / ETL Expansion 2027
Intranet Features/Expansion 2023	Intranet Features/Expansion 2024	Intranet Features/Expansion 2025	Intranet Features/Expansion 2026	Intranet Features/Expansion 2027
App Dynamics Expansion 2023	App Dynamics Expansion 2024	App Dynamics Expansion 2025	App Dynamics Expansion 2026	App Dynamics Expansion 2027
Alation Upgrade 2023	Alation Upgrade - 2024	Alation Upgrade - 2025	Alation Upgrade 2026	Alation Upgrade 2027
Tableau Creator Upgrade 2023	Tableau Creator Upgrade 2024	Tableau Creator Upgrade 2025	Tableau Creator Upgrade 2026	Tableau Creator Upgrade 2027
Azure DevOps Features/Expansion 2023	Azure DevOps Features/Expansion 2024	Azure DevOps Features/Expansion 2025	Azure DevOps Features/Expansion 2026	Azure DevOps Features/Expansion 2027
	Azure DevOps Upgrade 2024		Azure DevOps Upgrade 2026	
API Management Expansion 2023	API Management Expansion 2024	API Management Expansion 2025	API Management Expansion 2026	API Management Expansion 2027
Vuetify Upgrades 2023	Vuetify Upgrades 2024	Vuetify Upgrades 2025	Vuetify Upgrades 2026	Vuetify Upgrades 2027
Minor Application Purchases and Licenses - 2023	Minor Application Purchases and Licenses - 2024	Minor Application Purchases and Licenses - 2025	Minor Application Purchases and Licenses - 2026	Minor Application Purchases and Licenses - 2027
Mulesoft/API License Renewal 2023	Alation Licenses 2024 - 2 Year agreement	Tableau License Renewal 2025 - 3-year agreement	Mulesoft/API License Renewal 2026	App Dynamics Licensing 2026
Software Composition Analysis (SCA)		Devolutions: Remote Desktop Manager Enterprise (3-year agreement)	Alation Licenses 2026 -2 Year agreement	Non-Production Development Environment
App Dynamics Licensing 2023				

Fiber Network Leased Service Replacement

EXECUTIVE SUMMARY

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. 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 \$6,500,000 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.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Michael Busby	Original business case request	7/2017	
1.1	Michael Beil	Updated investment driver	7/2019	
2.0	Shawna Kiesbuy	Narrative added to new template	7/2020	
3.0	Shawna Kiesbuy	Annual Update	6/2021	
4.0	Shawna Kiesbuy	Annual Update	8/2022	

Fiber Network Leased Service Replacement

GENERAL INFORMATION

Requested Spend Amount	\$6,500,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Shawna Kiesbuy Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

Avista utilizes leased fiber optic cable to transport primarily safety and control 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.

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.

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.

Fiber Network Leased Service Replacement

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

The main driver for this 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 is deferred.

The work to move from leased fiber to private fiber is timebound by the expiration of lease agreements all of which are due to end by 2027. As noted above, 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

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.

Fiber Network Leased Service Replacement

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

Timely implementation and transfer to plant such that all segments are completed prior to an IRU, or segment lease expiration will determine success. The completion and transfer to plant will occur over time as each segment/project is completed.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

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

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

Not applicable. This business case is aligned with Performance & Capacity.

Option	Capital Cost	Start	Complete
Recommended Solution – Replace each identified segment of leased fiber optic cable with Avista owned/private fiber to meet the fiber lease agreement deadline.	\$6,500,000	01 2023	12 2027
Alternative 1 – A reduction of funding that increases the risk of not meeting the fiber lease agreement deadline in 2027, resulting in higher unplanned O&M annual costs	\$5,850,000	01 2023	12 2027
Alternative 2 – Do not fund the program	\$0	01 2023	12 2027

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

The requested amount of \$6,500,000 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.

2.2 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 because of this investment.

In the current year, the project focus will be on fiber replacement projects for segments already in flight along with new projects which have the highest priority to complete. With management oversight from the Program Steering

Fiber Network Leased Service Replacement

Committee, projects initiated through the FNLSR business case will be reviewed and sequenced in this business case on a per project basis spending the funded capital up to the approved allocation. Historical costs and timelines related to similar project work provide support for the requested allocations above.

Direct Savings - This program is currently scheduled to be completed in 2027. 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.

Quantified direct savings:

2022	2023	Lifetime
\$0	\$0	\$60,000 annual until completion

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

The projects in this FNLSR business case are standalone projects and are dependent on length of construction season and other geographically similar but unrelated work being performed at impacted locations. 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.

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

The requested funding amount allows for the replacement of leased fiber segments at a rate that can be accomplished each year and move towards the goal of being off all leased fiber by 2027.

Two alternative funding options were reviewed:

Alternative 1: Fund the business case at an amount which is less than the original request

Fiber Network Leased Service Replacement

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.

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

The FNLSR business case is managed as a program of projects planned yearly. This business case started in 2019 and is scheduled to sunset in 2027 when all segments are complete. 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.

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

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.

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

Avista's mission is to improve our customers' lives through innovative energy solutions in a safe, responsible, and affordable manner. This business case is tasked with replacing public leased fiber segments with Avista owned private fiber segments. The funding amount and project portfolio has been determined

Fiber Network Leased Service Replacement

to maintain the replacement schedule ahead of the 2027 IRU expiration date. With project priorities tied to enterprise strategies and risk objectives, the funding is reviewed monthly allowing for adjustments to be made to the portfolio as demands change across Avista's environments. If project priorities do change, a request is then made to the business case governance team to evaluate and determine if the change is prudent to accomplishing the goals and objectives established for the current funding year.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

Within the FNLSR business case, the discrete projects interface with various internal Avista groups such as ET (Enterprise Technology) engineering, Transmission and Distribution, Real Estate, the Telecommunications Shop, along with other internal business partners at various office and substation facilities.

The ET Business Case Owner works in conjunction with the PMO, the assigned Program Manager, and subsequent Project Managers.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments.

2.8.1 Identify any related Business Cases

There are no related business cases.

3.1 Steering Committee or Advisory Group Information

Steering Committee members are invaluable to the project and will provide approval on scope, schedule, and budget related changes. Additionally, they will provide approval on issues and risks pertaining to project deliverables outlined in this document, which also typically have an impact on the scope, schedule, or budget of a project. Steering Committee members will also provide approval on Change Requests, Go-Live, and the Approval to Close 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.

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

The FNLSR Business Case has two levels of governance: The Program Steering Committee and the Project Steering Committee.

Fiber Network Leased Service Replacement

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 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 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.

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

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

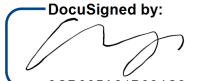
Fiber Network Leased Service Replacement

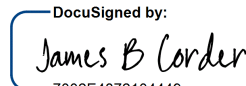
Planning Group (TPG) or Capital Planning Group (CPG) for decision-making around resource or funding constraints.

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.

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

Signature:  Date: Sep-02-2022 | 3:08 PM PDT
 Print Name: Shawna Kiesbuy
 Title: Sr. Manager, Network Engineering
 Role: Business Case Owner

Signature:  Date: Sep-02-2022 | 4:39 PM PDT
 Print Name: Jim Corder
 Title: Director, Information Technology
 Role: Business Case Sponsor

Land Mobile Radio & Real Time Communication Systems

EXECUTIVE SUMMARY

Avista's service territory consists of urban and rural environments with topologically difficult to reach areas. The remoteness of some locations, along with the temperature variances through the annual seasons can present additional challenges to field staff required to work under those conditions. Additionally, commercial cellular or telecommunication services are not offered in some of these locations, as they are not cost effective for commercial vendors to deploy. Finally, during unplanned emergency events, commercial telecommunication services are overloaded with the public reaching friends and family members affected by the event, thereby exacerbating the need for a separate land mobile radio and real-time communication system, much like those used by emergency service personnel.

As a Company that maintains critical infrastructure for gas and electric systems, we are required to do it safely and reliably to provide essential services to our customers. This requires that our staff communicate with one another in real time across our service territory to establish situational awareness and reduce the risk of a safety incident. The Land Mobile Radio & Real Time Communications System business case consists of mobile radio and communication technology solutions that enable our staff to communicate with each other in the field and office in real time. The investments under this program provide the communication technology that enables real time 24 x 7 x 365 communication with our gas and electric field staff in ever changing conditions. The costs associated with each solution can vary by the solution deployed. However, due to the remoteness and topology of our service territory, some of the technology investments in field radio sites on mountain tops can be costly but provide a valuable service to our customers in unplanned weather events, and most importantly bring safety to our field staff. Not investing in increasing radio coverage across our service territory can result in 'dead zones' with no radio coverage that may increase the safety risks of our field staff who rely on radio communication to perform their jobs.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Walter Roys	Initial BCJN Draft	6/2017	
1.1	Walter Roys	Updated Investment Driver	7/2019	
2.0	Walter Roys	Revision of BCJN to new template	7/2020	
2.1	Walter Roys	Error in calculation of Alt. #2	8/2020	Revised calculation
3.0	Walter Roys	Updated BCJN	8/2022	

Land Mobile Radio & Real Time Communication Systems

GENERAL INFORMATION

Requested Spend Amount	\$24,509,809
Requested Spend Time Period	5 years
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Walter Roys Jim Corder
Sponsor Organization/Department	Enterprise Technology
Phase	Monitor/Control
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

Avista's service territory is approximately 30,000 square miles across four northwestern states with nearly 7,800 miles of natural gas distribution mains, 19,000 miles of electric distribution lines, and 2,750 miles of electric transmission lines. Although many of these miles of gas and electric infrastructure run through urban and suburban areas to heat and power homes and businesses, some infrastructure travels across remote and hard to reach locations, such as steep canyons and mountain tops. As a pacific northwest region with four seasons, some of these remote locations can be even more difficult to reach in harsh weather conditions yet must be maintained safely and reliably. To add to it, commercial cellular or telecommunication services are not offered in these remote locations, thereby leaving communication service gaps. In other words, if there were commercial offerings, during an unplanned emergency event, the services could be overloaded with customers trying to reach friends or family members affected by the event and resulting in communication latency or unavailability.

The lack of radio communication coverage in these remote locations presents risk to our field workers who are required to respond to events throughout the year and must communicate with one another in real time across our service territory to establish situational awareness and reduce the risk of a safety incident.

Land Mobile Radio & Real Time Communication Systems

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

The Land Mobile Radio & Real Time Communications Systems Business Case is driven by managing technology replacement according to manufacturer product roadmaps 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 is deferred

Mobile radio coverage is an essential safety requirement for field staff working throughout our service territory to maintain a safe and reliable gas and electric infrastructure, and even more so in remote and hard to reach locations. Every day that goes by of lacking radio coverage can result in a safety incident, whereby field staff requiring emergency assistance could not communicate with either dispatch, a nearby co-worker, or emergency services. In some of these hard to reach locations, small logging roads can be buried in deep snow a few miles in from a paved road, thereby extensively prolonging any response should an emergency incident occur. Deferring the investments under this program puts field staff's lives at risk by lacking radio coverage in high risk areas.

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

Vendor roadmaps and technology asset lifecycles are data points that inform on how best to plan replacements, while meeting business value and strategic alignment, within the constraints of resource capacity and funding, which in turn can result in deferred replacement introducing the risk of technology failure. Ongoing reviews of vendor roadmap and technology asset lifecycle alignment provide necessary information to track how much of our investment in technology is lagging behind the vendor roadmap, and thereby introducing risk.

Land Mobile Radio & Real Time Communication Systems

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

The Enterprise Technology team references various technology vendor and third-party resources to stay informed and recommend decisions on the various technology investments. A few sample sources are included below:

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

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

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

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.

The Land Mobile Radio & Real Time Communications Systems business case will represent projects that are driven by performance and capacity for the following technology systems:

- Private 2-way Land Mobile Radio (LMR) System for field operations; and
- Radio Telephone Command and Control System (RTCCS) used by Dispatch and System Operations to perform critical radio and telephone communication to field personnel.

The Land Mobile Radio (LMR) system facilitates critical communication between field personnel, dispatch, system operations, and other end users. This radio system is used for normal day to day operation work, coordinating responses to outage events, switching and tagging procedures, communication with external agencies including Public Safety entities, and several other uses. It is a business-critical system used to maintain day to day operations and respond to emergency situations.

This program is in place to provide reliable LMR functionality at all times throughout Avista's service territory. The system contributes to the health and safety of employees, contractors, and the public.

Option	Capital Cost	Start	Complete
Recommended Solution – Address 100% obsolete products, unit growth, and expand radio coverage	\$24,509,809	01 2023	12 2027

Land Mobile Radio & Real Time Communication Systems

area at a reduced pace			
Alternative #1 - Address 100% obsolete products, unit growth, and radio coverage area	\$40,037,939	01 2023	12 2027
Alternative #2 – Address 100% of obsolete products and unit growth without expanding coverage	\$18,000,000	01 2023	12 2027
Alternative #3 – Expand radio coverage area only	\$12,500,000	01 2023	12 2027
Alternative #4 – Retire assets and remove automation	\$1,900,000	01 2023	12 2027

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

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

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

The funding requested under the Land Mobile Radio & Real Time Communications Systems business case will be invested in, 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 field workers at risk by not having radio communications across our service territory. There are

Land Mobile Radio & Real Time Communication Systems

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, 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 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.

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

All Avista field operations, dispatch, and system operations are affected by the technology invested under this business case program, as it is a critical tool that is heavily relied on for communication across our service territory.

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

Retire assets and remove automation

This option assumes the assets would not be replaced upon failure and be removed from service due to product incompatibility or business or safety risk.

The basis for measuring the business impact of not funding this business case is realizing the loss of business process automation. As products reach the manufacturer-defined planned obsolescence, business process automation is

Land Mobile Radio & Real Time Communication Systems

jeopardized, and business risk is increased as manufacturers cease product maintenance and support. This condition would drive action. The alternative would lead to a mitigation plan of having to re-instate manual business process or eliminate the business process.

This option bears the cost of asset retirement for failed assets. Failed assets are estimated to be 50% of obsolete products. The retirement cost is estimated at 10% of the cost to replace the asset.

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

This is the optimal solution. This option fully addresses and minimizes the likelihood of technology failure and impact to automated business process. It also expands the radio coverage area, adding value for employees, contractors, and the public by enabling safe and reliable radio communications in certain areas of poor coverage.

Address 100% of obsolete products and unit growth

Addressing 100% of obsolete products and unit growth will minimize likelihood of technology failure and impact to automated business process. However, this option does not address expanding the radio coverage area. This introduces risk to employees, contractors, and the public in areas where radio communications are unavailable.

Expand radio coverage area

This option addresses expansion of the radio coverage area, adding value for employees, contractors, and the public by enabling safe and reliable radio communications in certain areas of poor coverage. However, this option does not address obsolete products within the program and introduces risk associated with technology systems reliability and interoperability. The investment required to address obsolete technology products is deferred to subsequent years. The likelihood of technology failure and impact to business is increased.

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

This business case is a program that transfers to plant the total cost of each project at the completion of every project, which can straddle calendar years. Quarterly forecasts capture changes in transfers to plant based on project status.

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

Land Mobile Radio & Real Time Communication Systems

The technology investments under this business case program align with Avista's vision to deliver 'better energy for life' to our customers and in the area of 'Perform', which calls for "our focus on performance today to serving our customers well and unlocking pathways to growth."

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

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

The reason that the technology investment under this program business case is prudent is because the Avista workforce requires this technology every day to deliver gas and electric service to our customers either in dispatch and system operations, and in the field. Alternatives to each technology are considered, yet not investing in it is not an option as automated business process, such as radio communication could not be replicated manually, thereby crippling our workforce's ability to deliver gas and electric service to our customers in a safe and reliable way. Additionally, a two-tiered governance structure overseeing this business case program meets regularly to oversee and make decisions on the needs, benefits, costs, and risks of each investment.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Nearly all operations and field staff interface with the Land Mobile Radio (LMR) system, which facilitates critical communication between field personnel, dispatch, system operations, and other end users.

2.8.2 Identify any related Business Cases

There are not related business cases associated with this business case program.

3.1 Steering Committee or Advisory Group Information

The **Land Mobile Radio (LMR) & Real Time Communication Systems** Business Case has two levels of governance; The Program Steering Committee and the Project Steering Committee.

Land Mobile Radio & Real Time Communication Systems

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

Program Steering Committee

This business case is a program of related projects. The Program Steering Committee consists of members in management positions that are identified and responsible for prioritizing the projects within this program. The Steering Committee is also held accountable for the financial performance of this program. The Program Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Project prioritization and risk
- Approving business case funding requests
- New project initiation and sequencing

The Program will be facilitated and administrated by an assigned Program Manager within the Enterprise Technology (ET) Project Management Office (PMO) Department. The project queue will be reviewed periodically and will consist of projects needed to maintain the reliability and performance of all LMR and real time communication systems.

Project Steering Committee

Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics:

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

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

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

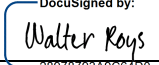
The governance structure under this business case program is responsible for decision-making, prioritization, and change requests. Through the regular Program Steering Committee Meetings, the team reviews and balances planned

Land Mobile Radio & Real Time Communication Systems

work versus unplanned work to determine prioritization, as well as pending project change requests. Any change request requiring either an increase or decrease of funds is reviewed at the upcoming Technology Planning Group meeting before it is submitted to the Capital Planning Group for consideration.

Land Mobile Radio & Real Time Communication Systems

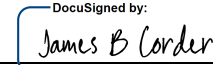
The undersigned acknowledge they have reviewed the **Land Mobile Radio & Real Time Communication Systems Business Case** and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  DocuSigned by:
28978793A9C64D0... Date: Sep-01-2022 | 8:30 AM PDT

Print Name: Walter Roys

Title: System Engineering Manager

Role: Business Case Owner

Signature:  DocuSigned by:
7002E4872104449... Date: Sep-02-2022 | 2:03 PM PDT

Print Name: Jim Corder

Title: IT Director

Role: Business Case Sponsor

Template Version: 05/28/20

Network Backbone Infrastructure

EXECUTIVE SUMMARY

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 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 \$19,383,973 over five years to upgrade or replace 284 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.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Shawna Kiesbuy	Initial BCJN Draft	6/2021	
2.0	Shawna Kiesbuy	BCJN Revision	7/2022	

Network Backbone Infrastructure

GENERAL INFORMATION

Requested Spend Amount	\$19,383,973
Requested Spend 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?

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 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 (*Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations*) and the benefits to the customer

The main driver for this 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

Network Backbone Infrastructure

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.

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

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.

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 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.

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. These materials include Utility Cluster

Network Backbone Infrastructure

Studies, External Service Provider Memorandums, Electric Distribution and Transmission Management Technology Roadmaps, etc..

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

Not applicable. This business case is aligned with Performance & Capacity, not Asset Condition.

Option	Capital Cost	Start	Complete
Recommended Solution – Asset upgrade or expansion for optimized performance and capacity.	\$19,383,973	01/2023	12/2027
Alternative 1 – A reduction of funding which reduces expansion to meet enterprise and control and safety system needs and does not allow for the necessary number of devices to be refreshed increasing risk of failure or vulnerability to unauthorized access by bad actors.	\$14,596,665	01/2023	12/2027
Alternative 2 – Do not fund the program	\$0	01/2023	12/2027

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

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 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	EoS <2023	EoS 2023-27	EoL 2023-27	Total Scope of Request

Network Backbone Infrastructure

322	65	16*	203	284
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**Accurate as of this writing and subject to change based on future manufacturer notifications*

EoS= End of manufacturer software and/or hardware support, includes devices that cannot be patched or updated are considered vulnerable to cyber threats and must be refreshed.

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.

2.2 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 because of this investment.**

In the current year, the project focus will be on expansion of network microwave technology and refresh of network assets to alleviate cyber security threats on devices deemed obsolete (or nearing obsolescence) by vendor lifecycles. Historical costs and timelines related to similar project work provide support for the requested allocations above.

Direct Savings – There are no direct savings related to this business case.

Indirect Savings – 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.

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.

Network Backbone Infrastructure

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.

Quantified indirect savings:

2022	2023	Lifetime *
\$0.00	\$0.00	\$10M - \$20M

*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.

[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 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 Network Backbone Infrastructure business case but are dependent on length of construction season and other geographically similar but unrelated work being performed at impacted telecommunication sites, such as substations and generation plants. 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.

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

The requested funding amount allows the network backbone infrastructure communication systems tied to this business case to be maintained and expanded based on a periodic upgrade schedule. If this business case did not exist or receive funding, the associated network communications assets could fail, or the technology becomes obsolete which would result in a lack of communication paths for field crews, a lack of visibility into generation, transmission, and distribution status, or even a lack of control of field assets for safety and control events.

Two alternative funding options were reviewed:

Alternative 1 – Fund the business case to an amount which is less than the original request

Network Backbone Infrastructure

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.

2.5 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 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, 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.

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

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.

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

Network Backbone Infrastructure

Avista's mission is to improve our customers' lives through innovative energy solutions in a safe, responsible, and affordable manner. This business case is tasked with implementing network communications for expansion requirements and periodic refresh of our mixed service transport backhaul solutions. The funding amount and project portfolio has been determined to maintain current performance and capacity while also scaling for customer growth. With project priorities tied to enterprise strategies and risk objectives, the funding is reviewed monthly allowing for adjustments to be made to the portfolio as demands change across Avista's backhaul environments. If project priorities do change, a request is then made to the business case governance team to evaluate and determine if the change is prudent to accomplishing the goals and objectives established for the current funding year.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case.

Within the Network Backbone Infrastructure business case, the discrete projects interface with various internal Avista groups such as ET (Enterprise Technology) engineering, Substation engineering, SCADA, System Operations, GPSS (Generation Production and Substation Support) and Generation Plants, the Telecommunications Shop, along with our internal business partners at various office and remote facilities.

The ET Business Case Owner works in conjunction with the PMO (Project Management Office), 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

The investments included in this business case were previously included in the Enterprise & Control Network Infrastructure business case. For better visibility, and stronger investment driver alignment, we have split the single Enterprise & Control Network Infrastructure business case into three separate business cases beginning with the 2022 calendar year: Enterprise Network Infrastructure, Control and Safety Network Infrastructure, and Network Backbone Infrastructure.

Network Backbone 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 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.

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

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 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 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.

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

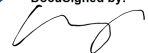
Project prioritization is evaluated by the management team monthly. Each program and project steering committee meet regularly and oversee scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning 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.

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: _____

DocuSigned by:

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Date: Sep-02-2022 | 3:08 PM PDT

Network Backbone Infrastructure

Print Name: Shawna Kiesbuy

Title: Sr. Manager, Network Engineering

Role: Business Case Owner

Signature: 

Date: Sep-02-2022 | 4:40 PM PDT

Print Name: Jim Corder

Title: IT Director

Role: Business Case Sponsor

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, both 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 2020-2027 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	Mike Littrel	Updated business case format	07/2020	
3.0	Mike Littrel	Updated program details and timelines	07/2021	
4.0	Mike Littrel	Updated program details and timelines	07/2022	

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GENERAL INFORMATION

Requested Spend Amount	\$30,000,000
Requested Spend Time Period	06/2015 – 12/2027
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.

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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 industry standard 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.

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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

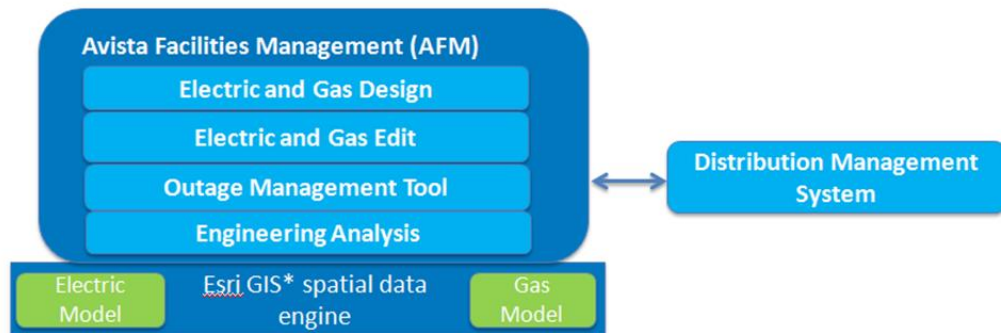
Justification for system replacement is based on comprehensive assessments of AFM technologies, processes and functions that were performed in 2015 and 2019 by third-party consultants as part of the project planning process. The details of the assessments are available in the following supporting documents:

- 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.

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- 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	12/2027
Alternative - Continue to utilize the custom AFM applications	\$10.0M	06/2015	12/2027

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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 2020-2027 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.

The Atlas Program has been and will continue to be divided into discrete projects that when possible have a duration of one calendar year. This will allow the capital expenditure for a given year to be transferred to plant in that year.

Project /Spend (\$1000)	2023	2024	2025	2026	2027
ESRI Utility Network	\$1,450	\$1,000	\$1,475	\$1,850	\$1,280
Mobility in the Field	\$1,240	\$1,080	\$875	\$875	\$875
Totals	\$2,690	\$2,080	\$2,350	\$2,725	\$2,155

Modernizing Avista's GIS and deploying mobile GIS applications is anticipated to provide the following indirect labor savings. The 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 2023 - 2027 have not yet been approved.

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Atlas Indirect Savings Estimates

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	

GIS Modernization Annual Indirect Offset Potential

Estimated Number of Users	200	
Estimated Efficiency per User	10	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	

Total Annual Indirect Labor Offset **\$664,063**

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.

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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.

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

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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.

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

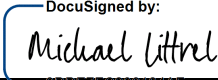
The Steering Committee for each project in the Atlas Program will be made up of stakeholders from across the functional business units and Enterprise Technology.

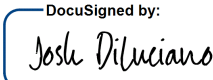
3.3 How will decision-making, prioritization, and change requests be documented and monitored

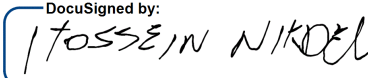
Status reports to the steering committees will be used as the official review and approval process for prioritization and change requests. Risks, issues and change requests will be documented in project logs and kept as artifacts of each project within Enterprise Technology's project management software system.

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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:  DocuSigned by: Michael Littrel Date: Sep-02-2022 | 9:24 AM PDT
9DDE7FC206184AF...
Print Name: Mike Littrel
Title: Manager of Energy Delivery Technology Projects
Role: Business Case Owner

Signature:  DocuSigned by: Josh DiLuciano Date: Sep-06-2022 | 11:01 AM PDT
A3C71874F0504DB...
Print Name: Josh DiLuciano
Title: Director of Electric Engineering
Role: Business Case Sponsor

Signature:  DocuSigned by: HOSSEIN NIKDEL Date: Sep-02-2022 | 9:49 AM PDT
E4E2D9C7EE4747F...
Print Name: Hossein Nikdel
Title: Director of Applications and Systems 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 and the overall life cycle of electric outages and 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 and have been used for nearly two decades and are approaching technology obsolescence. The existing operating platform used by OMT is scheduled for end of life in 2025 and is recommended for replacement in the Atlas business case. The application is showing increasing signs of fatigue 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 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 also provides 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 which will reduce the number of calls received by our customer service representatives, as well as call durations.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

The estimated project cost is \$45.5M 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 2022, with a Phase 0 effort focused on validating the data model. The Phase 0 effort will enable the project to proceed efficiently so that the implementation can be completed while the current operating platform used by OMT is still supported by the vendor.

Since this is a multi-year 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 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. It would not be prudent to wait until after our current system completely fails to meet our needs to start an ADMS project.

VERSION HISTORY

Version	Author	Description	Date	Notes
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	

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

GENERAL INFORMATION

Requested Spend Amount	\$45,550,000
Requested Spend Time Period	4 Years (mid 2022-mid 2026)
Requesting Organization/Department	Enterprise Technology
Business Case Owner Sponsor	Mike Littrel Josh DiLuciano, Hossein Nikdel
Sponsor Organization/Department	Energy Delivery Technology Projects
Phase	Initiation
Category	Project
Driver	Asset Condition

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

1. BUSINESS PROBLEM

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

Avista's 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 slow during high-volume outage conditions (storms), particularly in field division offices, impacting the ability to restore outages 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 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.

In addition, the 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, Clean Energy Transformation Act requirements.

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

Avista can gain significant operations and business advantages by replacing OMT and DMS with an ADMS. A modern ADMS can address many of the issues currently faced by Distribution System Operators and field personnel. Fully integrated with other enterprise systems along with optimized business processes, the benefits to be realized 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 split 75% capital and 25% O&M.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

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.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

Significant customer value from other corporate initiatives will be at risk if the 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 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:

<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

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

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

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 functionality it can provide to our staff as they respond to electric customer outages on an increasingly complex distribution system. The current system is highly customized making it very 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 service territories. If it is not replaced prior to system failure, it would likely double the amount time and effort required to complete the restoration efforts, while also increase public safety risks and lowering customer satisfaction. Based on actual storm costs for 2017-2021 that's an addition cost of \$3,403,795 per year 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.

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

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

Since this is a multi-year 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 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 Identify any measures that can be used to determine whether the investment would successfully deliver on the objectives and address the need listed above.

Avista 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.

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 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 2022 and run for five years. Results of the project will be used to determine which alternatives will move out to the larger customer base.

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

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

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.

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 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:

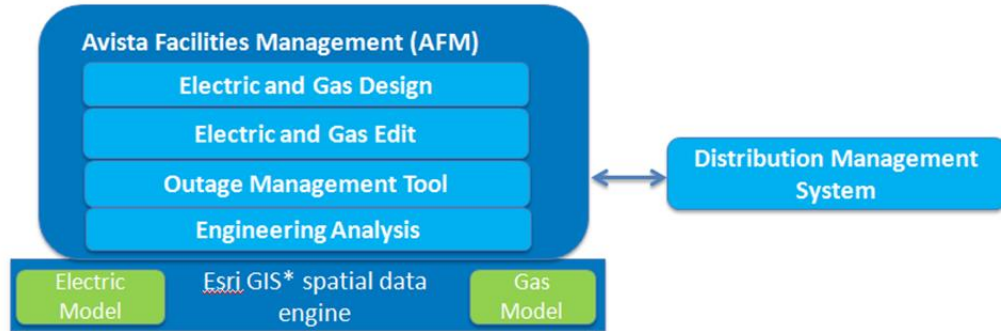
- Business Case
- Current State Report
- Future State Report
- Gap Analysis Report
- Industry Analysis Report
- Requirements Report
- Alternative Analysis Report

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.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

- 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 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

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 those for Wildfire Resiliency and the Clean Energy Transformation Act. A modern

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

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.

Option	Capital Cost	Start	Complete
Recommended Solution - Replace the custom OMT and DMS applications with an ADMS	\$45.5M	06/2022	12/2026
Alternative 1 – Rewrite Custom OMT and keep DMS	Not Available	01/2023	06/2026
Alternative 2 - Continue to utilize the custom OMT and DMS applications until OMT runs out of support in 2025	\$1.0M	06/2022	12/2025

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, 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 will release a Request for Proposal (RFP) in Q3-2022 to qualified ADMS software vendors and implementors. The responses will be evaluated and scored in order to determine the best ADMS solution. The RFP results will be provided to the project governance group for review and approval to proceed. Any differences from the current estimates and the RFP results will be used to refine the project's scope schedule and budget as needed before work proceeds.

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 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 mid-2022 and is currently planned to ramp up during that year, then have a levelized spend for multiple years over the duration of the project.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

Modernizing Avista's outage management software of business processes is anticipated to provide the following indirect labor savings. 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.

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	

Total Annual Indirect Labor Offset **\$120,063**

5-Year estimated savings **\$1,006,719**

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

In addition to the business functions and processes already documented in the reports referenced in section 1.5, the project will include a 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, develop end user training and determine the ongoing support structure.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

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

Alternative 1 – 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 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.
- 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.
- 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.

Alternate 2 -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 a modern ADMS. The support by Esri for the current software solution will be ending in January 2025. Continuing to use OMT beyond that

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

date would become increasingly costly and risky without an investment in an upgrade. Staying on the current platform version includes risks, such as:

- 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.
- 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.
- 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)

2.5 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 ADMS project is scheduled to start in mid-2022 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 early 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 DERMS 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 	

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

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 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.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

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 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 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 respond to electric customer outages on an increasing complex distribution system. The current system is highly customized making it very difficult to integrate with newer enterprise applications. The existing application platform used by the OMT is scheduled for end of support in 2025. 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 service territories. If it 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.

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 outage information that they will have access to through online methods such as the Avista website and the Avista mobile application.

2.8.2 Identify any related Business Cases

The work in this business case is related to and dependent on portions of the work in the Atlas business case, because this work was originally included on the Overall Atlas scope. Overtime the Atlas business case has remained focused on the GIS modernization components of the original scope while the modernization of OMT/DMS was moved to this business case. The work in this business case also supports the ongoing customer value in business cases such as Wildfire Mitigation, WA AMI, CEIP, etc.

Outage Management System and Advanced Distribution Management System (OMS/ADMS)

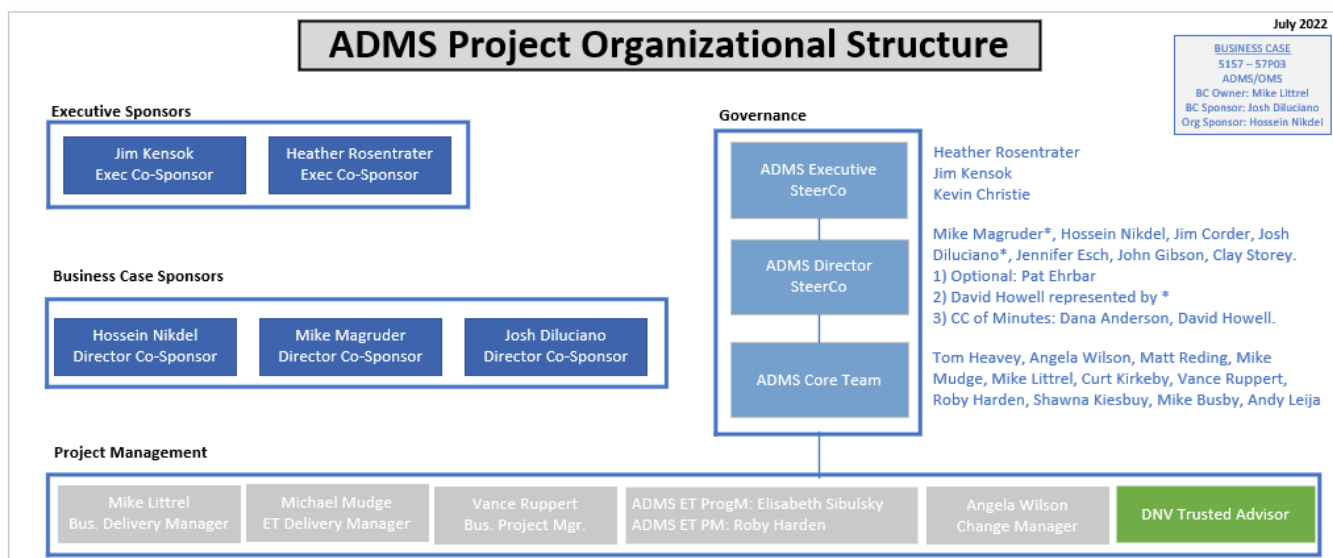
3. MONITOR AND CONTROL

3.1 Steering Committee or Advisory Group Information

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.

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

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



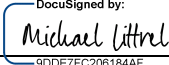
3.3 How will decision-making, prioritization, and change requests be documented and monitored

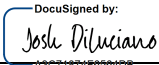
Status reports to the steering committees will be used as the official review and approval process for prioritization and change requests. Risks, issues and change requests will be documented in project logs and kept as artifacts of each project within Enterprise Technology’s project management software system.


Outage Management System and Advanced Distribution Management System (OMS/ADMS)

4. 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:  Date: Aug-31-2022 | 10:58 AM PDT
Print Name: Mike Littrel
Title: Manager of Energy Delivery Technology Projects
Role: Business Case Owner

Signature:  Date: Sep-01-2022 | 8:09 AM PDT
Print Name: Josh DiLuciano
Title: Director of Electric Engineering
Role: Business Case Sponsor

Signature:  Date: Aug-31-2022 | 10:58 AM PDT
Print Name: Hossein Nikdel
Title: Director of Applications and Systems Planning
Role: Steering/Advisory Committee Review

Energy Delivery Modernization and Operational Efficiency

EXECUTIVE SUMMARY

Energy Delivery Modernization and Operational Efficiency (EDMOE) as a business case supports both existing and new technologies leveraged by the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering. These technologies are used to automate and augment business solutions bringing efficiencies and capabilities to support the delivery of energy to our customers. This support includes the following: 1) improving the performance and capacity of business resources by implementing new functionality in existing technologies. 2) improving the performance and capacity of business resources by implementing overall new technologies. 3) modernizing existing technologies in accordance with product lifecycles and technical roadmaps, typically through product or system upgrades. Due to an increase in vendor-driven planned obsolescence, if these systems are not refreshed on a regular cadence, the ability of Avista to meet customer, regulatory and compliance requirements will be at risk. Although these are the primary purposes of this business case, other benefits include cost savings, safety, regulatory compliance and innovative customer-focused products and services.

The total program budget over the next five years is estimated to be \$22.7M 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 2023-2027 will be focused on the systems and capabilities detailed below.

VERSION HISTORY

Version	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Michael Mudge	07/21/2018			Initial version
2.0	Michael Mudge	06/29/2020			Updated Template
3.0	Michael Mudge	06/30/2021			Updated Information

Energy Delivery Modernization and Operational Efficiency

4.0	Michael Mudge	7/7/2023		Updated Information for 2023-2027 timeline
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GENERAL INFORMATION

Requested Spend Amount	\$22,655,000
Requested Spend Time Period	01/2023-12/2027
Requesting Organization/Department	Energy Delivery
Business Case Owner Sponsor	Michael Mudge Hossein Nikdel
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

The Energy Delivery and Shared Services (Fleet, Flight, Facilities, Supply Chain) business area utilizes a suite of technologies and applications in order to better and more efficiently execute ongoing business processes. As these business processes change, or new opportunities for better or more efficient business processes emerge, these technologies need to change as well. These changes often can be met through leveraging the capabilities of existing systems with minor modifications or configuration changes. We call these types of changes enhancements and set up minor programs to support these activities. Examples of this type of activity includes the GIS and Maximo enhancement packages. Sometimes these changes are larger and require a project of their own, but still leverage existing in portfolio products. Examples include the Centralized Planning and Scheduling project which leverages our Maximo and ABB/Service Suite systems. 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 in order 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.

Energy Delivery Modernization and Operational Efficiency

Under this business case, we are referring to the technologies and applications leveraged by the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering. These technologies are used to automate and augment business solutions bringing efficiencies and capabilities to support the delivery of energy to our customers. This support includes the following: 1) improving the performance and capacity of business resources by implementing new functionality in existing technologies. 2) improving the performance and capacity of business resources by implementing overall new technologies. 3) modernizing existing technologies in accordance with product lifecycles and technical roadmaps, typically through product or system upgrades. Although these are the primary purposes of this business case, other benefits include cost savings, safety, regulatory compliance and innovative customer-focused products and services.

The current major applications included in the Energy Delivery Program portfolio include:

- Geospatial platform environment - ArcGIS solution(s) - Esri
- Enterprise Asset Management system – Maximo solution(s) - IBM
- Time Series Operational Data - Plant Intelligence (PI) solution(s) – OSIsoft
- Mobile Workforce Management – Mobile Dispatch solution(s) – ABB/Service Suite
- 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
- 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 *(Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, or Failed Plant & Operations)* **and the benefits to the customer**

At the core of the EDMOE business case is the ongoing support and development of the technologies that enable the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering. These technologies enable the workers in these various teams to respond to customer requests faster; provide information to customers that is more accurate, timely and complete; and improves customer satisfaction when they interact with Avista. Other benefits for the company and our customers include cost savings, safety, regulatory compliance and innovative customer-focused products and services. This business case supports the ongoing changes necessary to improve the performance and capacity of these business areas. Although performance and capacity are the key driver, this business case where necessary also supports the other major drivers listed.

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

The suite of technologies managed under this business case and the business processes they enable in many cases are core to Avista's ability to deliver energy safely and reliably to our customers. These technologies and the business processes they support change on a continual basis based on both internal and external drivers. These drivers include continuous improvements in business process, continuous improvements in safety, changing compliance requirements, changing regulatory requirements, vendor driven change, product obsolescence, changes in customer expectations, as well as changes in system reliability.

Additionally, as these changes are ongoing in nature, they require a minimum level of staff capability to support these necessary changes. If the work is deferred or delayed, the technologies will not be in alignment with changing business processes, the technologies will not support improvements in safety, regulatory, or compliance, and the technologies will not be aligned with vendor driven change. Further, if deferred or delayed (meaning the labor required to do the work is made unavailable) when the work is funded the staff required to implement these changes will not be readily available or will likely be more expensive to hire.

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

Each project within the EDMOE business case has a project charter which includes project costs, schedule, deliverables and benefits. Each project will have a steering committee assigned. Throughout the duration of each project the steering committee will be provided status reports on a monthly basis. These status reports will include updates on project scope, schedule and

Energy Delivery Modernization and Operational Efficiency

budget, as well as any risks and/or issues that the project team is currently working on.

Each program within the EDMOE business case has a steering committee that prioritizes a backlog of required enhancements and changes in support of changing business process, cost savings, new safety, regulatory or compliance work, and customer driven requirements. These often result from technology demand related to transformations in the utility industry and continual changes required to meet expanding customer needs, as well as the drive to achieve operational efficiencies. Recent trends in the area of mobility, scalability, and the move towards Commercial off the Shelf (COTS) solutions that enhance and/or improve conventional business practices and processes also influence these efforts.

The technologies and applications improved upon and delivered under this business case automate and enable key business processes used today to deliver safe and reliable energy to our customers. These technologies and applications require ongoing enhancements and sometimes replacement to keep them in line with changing business processes and with changing vendor roadmaps. Technical resources with specialized skills who are familiar with these supported business areas are required to make the ongoing changes. This business case supports the required changes, along with the technical resources, for technologies and applications that support the Energy Delivery business areas including Gas Engineering & Operations, Electric Engineering & Operations, Asset Management & Supply Chain, Facilities, Fleet Operations & Metering.

Option	Capital Cost	Start	Complete
Recommended Solution	\$22.7 Million	01 2023	12 2027
Alternative 1 – Run solutions to end of life (no upgrades)	\$13.6 Million	01 2023	12 2027
Alternative 2 – Perform only work necessary to keep solutions on supported versions (upgrades only, no operational efficiency work).	\$15 - \$20 Million	01 2023	12 2027

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

A thorough review of the list of technologies and applications currently providing automation to Energy Delivery business processes was performed. Based on this cataloging, two types of activities were identified, projects and programs. Projects are typically used to support one-time major efforts such as software or platform upgrades, technology replacement or technology implementation. Programs are typically used to enhance existing technologies, keeping the technology in line with existing and evolving business process or to facilitate implementation of additional digitization of business process using

Energy Delivery Modernization and Operational Efficiency

existing technologies. For projects, estimates were developed based on identified staffing requirements, software and hardware requirements (license and product costs), and professional service requirements. These were based on current scope and schedule estimates. For Programs providing ongoing enhancements or new functionality to support changing or developing business process the costs were estimated based on staffing, license, professional service, and product costs identified through historical trends.

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

The costs incurred under this business case across the next five years will be spent on product licenses, hardware, professional services and labor in support of the technical systems in place across the Energy Delivery business area. Significant costs include the cost of ESRI term licenses, Designer term licenses, the cost to license and implement the new DIMP solution, labor to continue enhancements to our GIS system in support of business process, labor to upgrade our GIS solution in line with vendor product lifecycles, labor to continue enhancements our Maximo solution in support of business process, labor to upgrade our Maximo solution in line with vendor product lifecycles, labor to support enhancements to our Plant Information (PI) system in support of business process, Labor and hardware updates necessary to support enhancements and upgrades of our AMI head end platform in support of business process and vendor product lifecycles, Labor in support of upgrading MV90 in line with vendor product lifecycles, Labor and professional services to support upgrading Mobile Dispatch in line with vendor lifecycles. Labor and professional services for smaller applications in line with vendor product lifecycles. The timelines for this work have been developed with the best information available today and represent ideal scenarios. It is subject to change based on priorities, availability of shared labor, and our ability to find appropriate professional services.

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.

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, 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

Energy Delivery Modernization and Operational Efficiency

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.
- Creates language commonality, that can be used across business units, incorporating a riskbased approach, to better help 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

Energy Delivery Modernization and Operational Efficiency

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

Each project and program within the EDMOE business case includes a business process and stakeholder analysis to determine the organization change management and training needs where necessary. This analysis is then used to deliver communication to the stakeholders throughout the project or program and where required is used to develop end user training.

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

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 the 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.

Energy Delivery Modernization and Operational Efficiency

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

The timelines shown in the table below for this work has been developed with the best information available today and represent ideal scenarios. It is subject to change based on priorities, availability of shared labor, our ability to find appropriate professional services and current estimates of scope.

<u>Projects/Programs/Licenses</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>
ESRI ELA (Licenses)			Q1/2025		
Schneider ELA (Licenses)			Q1/2025		
ESRI Upgrade	Q1/2023- Q4/2023				
GIS Enhancements	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2025	Q1/2027- Q4/2027
Maximo Enhancements /Upgrade	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027
PI Enhancements /Upgrade	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027
AMI Enhancements /Upgrade	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027
MV90 Upgrade			Q1/2025- Q4/2025		
TWACS Upgrade				Q3/2026-	Q2/2027
Service Suite Upgrade	Q1/2023- Q4/2023			Q1/2026- Q4/2026	Q1/2027- Q4/2027
Misc. Upgrades	Q1/2023- Q4/2023	Q1/2024- Q4/2024	Q1/2025- Q4/2025	Q1/2026- Q4/2026	Q1/2027- Q4/2027

Energy Delivery Modernization and Operational Efficiency

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

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. That being said, 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. These systems are highly leveraged to enable the work our Field Workers perform for our customers and supports them doing so safely, reliably and affordably.

This business case also supports our Metering systems – MV90, TWACS, Fixed Network, and Itron RIVA. These systems are critical to obtaining our customers meter reads for proper billing. PI is our Engineering Analytics platform that collects sensor data from various distribution sensors including our Itron Riva Meters, this data is used to analyze the performance of our distribution system and to support making changes to improve efficiencies and identify anomalies requiring correction.

In 2023, the new Distribution Integrity Management Plan (DIMP) tool is scheduled to be completed. This plan is currently maintained by Avista's Gas Department and is a homegrown risk analysis tool used to address pipeline integrity risk on its gas distribution system. The current tool lacks the capability of being probabilistic in its risk assessment, a measure that increases transparency and effectiveness in terms of addressing critical system needs. Added to the business case for the year 2022 was the replacement of the Current homegrown DIMP tool with a SaaS solution.

The new solution will provide probabilistic risk measures to the Gas Department that are not currently available with the current DIMP risk model. It will promote decision transparency and better ensure that dollars are being targeted towards higher risk areas of the Gas business. Also, the Risk Model complements existing efforts in Avista's Asset Management to enhance the overall decision-making process by promoting capital efficiency in the overall thought process.

Energy Delivery Modernization and Operational Efficiency

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

Avista's Energy Delivery and Shared Services technology systems are a necessity, as they provide essential functions to our employees and customers throughout all service territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the Energy Delivery and Shared Services (ED) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher costs as a result of the deferment of upgrades and enhancements, etc.

Investment prudence is reviewed by the Steering Committee(s) to ensure alignment of initiatives through judiciously selected and implemented projects. The funding requested as part of this program generally fits these initiatives and are assigned to specific projects (with Steering Committee oversight) as they are identified. Also, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project steering committee meet regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Customers will interface with the technology in this business case both through their interactions with Avista personnel who will be using the technologies and through map-based information that they will have access to through online methods such as the Avista website.

2.8.2 Identify any related Business Cases

Atlas, ADMS

3.1 Steering Committee or Advisory Group Information

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

Energy Delivery Modernization and Operational Efficiency

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.


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

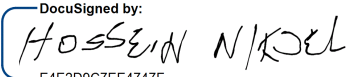
The Steering Committee for each project in the EDMOE business case will be made up of stakeholders from across the functional business units affected and Enterprise Technology.

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

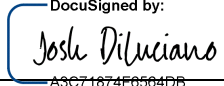
Monthly status reports to the steering committees will be used as the official review and approval process for prioritization and changes request. Risks, issues and changes requests will be documented in project logs and kept as artifacts of each project within Enterprise Technology's project management software system.

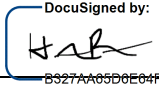
The undersigned acknowledge they have reviewed the **EDMOE** Business Case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Sep-01-2022 | 2:12 PM PDT
 Print Name: Michael Mudge
 Title: Manager of Application Delivery
 Role: Business Case Owner

Signature:  Date: Sep-01-2022 | 4:40 PM PDT
 Print Name: Hossein Nikdel
 Title: Director of Applications and Systems Planning
 Role: Business Case Sponsor

Energy Delivery Modernization and Operational Efficiency

Signature:  DocuSigned by: Josh DiLuciano Date: Sep-01-2022 | 3:16 PM PDT
Print Name: Josh DiLuciano
Title: Director of Electric Engineering
Role: Steering Committee Review

Signature:  DocuSigned by: Heather Rosentrater Date: Sep-02-2022 | 8:15 AM PDT
Print Name: Heather Rosentrater
Title: Sr. VP Energy Delivery
Role: Business Case Sponsor

Template Version: 05/28/2020

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

EXECUTIVE SUMMARY

The Energy Resources Modernization and Operational Efficiency Technology 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 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.

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, as well as strategic focus areas. In order to maintain these business processes and systems supported by this business case, the recommended funding amount is \$15,492,400 over the next five years (roughly \$2.9M to \$3.3M per year). This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the Energy Resources governance committee. This funding level also considers the development staff required to maintain these core technology solutions.

The technology systems and processes funded within this business case strengthens 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. 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	Notes
<i>Draft</i>	<i>Leianne Raymond</i>	<i>Initial draft of original business case</i>	<i>06/23/22</i>	<i>Added new info per BCAT</i>

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

GENERAL INFORMATION

Requested Spend Amount	\$15,492,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Energy Resources
Business Case Owner Sponsor	Brian Hoerner Scott Kinney
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 and the benefits to the customer

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
- 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

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

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

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

The Energy Resources business team utilizes technology as a critical component to meeting their strategic objectives. Some success measurements would include risk avoidance, system reporting, and better forecasting results.

Constraints and risks are possible and would hinder the delivery of the outlined objectives. In these circumstances, the Business Case owner would work with Steering Committee(s) to set project priority and sequence, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project Steering Committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

NA

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

NA

2. PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Recommended Solution</i>	<i>\$15,492,000</i>	<i>01 2023</i>	<i>12 2027</i>

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

<i>Alternative #1 – Reduce OPC Expansion</i>	\$14,300,000	01 2023	12 2027
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The recommended solution to ensure that Energy Resources can meet these initiatives and respective timelines over the next five years, is to follow the recommended application refresh and expansion requirements for Energy Resources applications. The requested allocation is based primarily on compatibility, reliability, security, adaptability, and safety. Additional criteria considers maintaining operational efficiencies and aligning with strategic objectives. Conventional business practices and processes must be scalable, provide mobility, and focus on the employee and customer experience.

The project roadmap for the next five years includes refreshing and/or expansion initiatives made possible by these core Energy Resources systems

- **Energy Risk Management and Energy Trading** – Managing Avista’s collection of energy assets, asset position, and relationships within the various energy markets. Supported applications include:
 - **Avista Decision Support System (ADSS)** – Forecasting and decision support for Energy Traders and Planners, developed and maintained by Avista. (NOTE: The ADSS development is funded via its own business case through 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.

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- **Fuel Inventory Management** – Management of Avista’s biomass fuel (in the form of logging and mill wood waste) at its Kettle Falls thermal plant. Supported applications include:
 - **WeighWiz** – Part of an off-the-shelf Log Inventory and Management System (LIMS) dedicated to timber and wood products procurement and management
- **Licensing / Cross-Functional / Other** – Not every project fits nicely into one of the initiatives above. Some are cross-functional, and some are simply good ideas that continue to improve upon Avista’s workplace (OATI / Gurobi).

Upcoming technology-related initiatives for the Energy Resources business area include the continuous improvements to work management processes via the Maximo Anywhere application, HMI (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.

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

As part of the 5-year planning process, Enterprise Technology and the Energy Resources department leaders meet to review the technology demand that is derived from maintaining the current ‘core’ systems currently in place, as well as enhancements or new technology that enables the business to meet their strategic initiatives.

These estimates were developed based on the historical trends for enhancement work (Nucleus, Maximo & ADSS), and the product roadmaps for upgrades and licensing renewals, as well as high-level estimates for new product technologies. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s). The schedule was developed with the most recently available information and is subject to change pending risks, competing priorities, dependencies, etc.

2.2 Discuss how the requested capital cost amount will be spent in the current year (or future years if a multi-year or ongoing initiative). Include any known or estimated reductions to O&M as a result of this investment.

Due to budget constraints within ET Applications and the Energy Resources Business Case over the past couple of years, the majority of 2023 will be focused on ensuring we are as current as we need to be to maintain support, compatibility, reliability, and

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

security. After 2023, 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 for 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 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

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range of overall EIM savings included in our 2020 Washington 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.

Quantified indirect savings (total estimate) is \$85 - \$410 million, assuming a 10-year software life

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

The function of Energy Resources and associated technology is critical to Avista's ability to function. Although there is not a direct touchpoint within every area of the company, the ability for this business area and job functions to succeed, is dependent on the understanding and support of Avista's employees and contractors.

This Business Case intends to grow significantly with many of the major initiatives and new technologies that will be supported under Energy Resources. (ADSS, HMI).

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

Alternative #1 – Reduce Oracle Primavera Cloud (OPC) Expansion

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 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.

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.

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),

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

and subsequent phases would be scoped accordingly, based on the next highest priority after MVP. This also allows for more accurate Transfer to Plant forecasts.

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

This is a program with discrete projects and packages that align with Avista's vision, mission and strategic objectives:

- To provide Better Energy for Life, you need Power and Gas Supply and Generation. The Energy Resources team is dedicated to the safe and reliable systems that are necessary to meet Avista's vision.
- To improve our customers' lives through innovative energy solutions, we also need to have technology systems and processes that ensure we are making good decisions, and consistently improving our ability to provide power utilizing innovative technology that enables safety, reliability, and is cost effective.

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

Avista's Energy 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.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The Energy Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Energy Resources, Finance, and the Enterprise Technology (ET) Business Case Owner.

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

The ET Business Case Owner works in conjunction with the Product Owners, Project Management Office (PMO), assigned Program Manager, and subsequent Project Managers. The Business Technology Analyst (BTA) is also engaged at all levels and serves as a liaison between ET and Energy Resources.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments, but the Energy Resources team is regularly consulted, informed as this directly impacts Energy Resources stakeholders. This model is conducive to a strong partnership, which is key to managing all of the dynamic intricacies throughout the course of the budget year.

2.8.2 Identify any related Business Cases

This Business Case is a program that has been functioning for the last 6 years (prior to 2017, the majority of these projects were in the Technology Refresh and Technology Expansion Business Cases).

3. MONITOR AND CONTROL

3.1 Steering Committee or Advisory Group Information

The Energy Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Energy Resources, and the Business Case Owner.

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

The Energy Resources Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

The IOC evaluates and compares all of the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two 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.

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

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

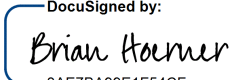
Project prioritization is evaluated by the management team on a weekly basis through the IOC. Each program and project steering committee meets regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

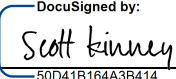
Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

4. 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:  Date: Sep-01-2022 | 2:54 PM PDT
 Print Name: Brian Hoerner
 Title: Manager, Application Delivery
 Role: Business Case Owner

Signature:  Date: Sep-01-2022 | 4:24 PM PDT
 Print Name: Scott Kinney
 Title: VP, Energy Resources
 Role: Business Case Sponsor

Energy Resources Modernization & Operational Efficiency (ERMOE) Technology

Signature: _____ Date: _____
Print Name: Alexis Alexander
Title: Director, Gen. Prod. Sub. Support
Role: Business Case Governance

Signature:  _____ Date: Sep-01-2022 | 4:42 PM PDT
Print Name: Hossein Nikdel
Title: Director, Applications & System Planning
Role: Business Case Governance

Finance and Accounting (FAT) Technology

EXECUTIVE SUMMARY

The Finance and Accounting Technology 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, and Tax Services. Avista's Finance and Accounting technology systems are a necessity as they provide essential functions to our employees and customers throughout all service territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This 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, as well as strategic focus areas. In order to maintain these business processes and systems supported by this business case, the recommended funding amount is \$14,365,000 over the next five years (roughly \$2.6M to \$3.6M 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 technology systems and processes funded within this business case strengthens our ability to perform, which impacts our capacity to achieve stated financial objectives through focused cost management, timely rate recovery, business transformation, and unregulated business development. 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 Finance and Accounting Governance Team (includes Business Sponsor, Director and Managers within Finance and Accounting).

VERSION HISTORY

Version	Author	Description	Date	Notes
<i>Draft</i>	<i>Leianne Raymond</i>	<i>Initial draft of original business case</i>	<i>06/27/22</i>	<i>Added new info per BCAT</i>

Finance and Accounting (FAT) Technology

GENERAL INFORMATION

Requested Spend Amount	\$14,365,000
Requested Spend Time Period	5 years
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, Corporate Accounting, Utility Accounting, Revenue-Financial Systems, Accounts Payable, Remittance, Resource Accounting, EIM Settlements, Risk Management, Treasury, and Tax Services.

Application refresh projects are necessary due to the continuous requirement to provide updates, upgrades and/or replacements on existing Finance and Accounting applications, as they are required to respond to changing business needs and/or technical obsolescence. Application refreshes/upgrades are essential in order to remain current, maintain compatibility, reliability, and address security vulnerabilities.

Application expansion projects result from demand related to transformations in the utility and continuous technology progression required to achieve operational efficiencies and strategic objectives. Recent trends in the areas of mobility, scalability, and employee experience, require technological expansion of conventional business practices and processes.

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

The primary investment driver for the Finance and Accounting Business Program is Performance and Capacity. A secondary investment driver, nearly as important as the first, is Asset Condition.

Many of the applications and respective component projects in this Business Case provide indirect support to Avista customers. The lifecycle management of the applications are also critical to maintain supportability and performance. These lifecycles are largely dictated by the technology solutions that we use. All of this work is being done to enable efficiencies, reduce risk and allow Avista to best serve our internal and external customers. Without properly managed business processes or lifecycles of these applications, our customers would potentially see difficulty in our ability to report

Finance and Accounting (FAT) Technology

company financials, which could jeopardize our ability to access capital markets and impair customers' ability to trust our integrity, and the reliability of services that we provide.

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

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

The Finance and Accounting Business team utilizes technology as a critical component to meeting their strategic objectives. Some success measurements would include financial forecasting, cost management, rate recovery and labor efficiencies. In these circumstances, the Business Case owner would work with Steering Committee(s) to set project priority and sequence, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project Steering Committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

NA

Finance and Accounting (FAT) Technology

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

NA

2. PROPOSAL AND RECOMMENDED SOLUTION

Option	Capital Cost	Start	Complete
<i>Recommended Solution</i>	<i>\$15,492,000</i>	<i>01 2023</i>	<i>12 2027</i>
• <i>Alternative #1 – funding at lower amount</i>	<i>\$12,500,000</i>	<i>01 2023</i>	<i>12 2027</i>

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 considers maintaining operational efficiencies and aligning with strategic objectives. Conventional business practices and processes must be scalable, provide mobility, and focus on the employee and customer experience.

The project roadmap for the next five years includes refreshing and/or expansion initiatives made possible by these core Finance and Accounting systems:

2023	2024	2025	2026	2027
PowerPlan Tax & FA Upgrade	Debt Database Replacement	PowerPlan Tax & FA (SaaS)	PowerPlan Tax & FA (SaaS) cont.	PowerPlan Core Accounting (SaaS)
Revenue Modeling & Forecasting Ph. 1	Revenue Modeling & Forecasting Ph. 2	Revenue Modeling & Forecasting Enh.	Robotics Process Automation	Oracle EBS to SaaS
APx Evaluation	APx Replacement	Robotics Process Automation	EPBCS Upgrade / Expansion	Robotics Process Automation
EPBCS Upgrade / Expansion	Oracle EBS Upgrade	Oracle EBS Upgrade cont.	UI Planner Replace	EPBCS Upgrade / Expansion
EBS/PP Expansion	EBS/PP Expansion	EBS/PP Expansion	EBS/PP Expansion	EBS/PP Expansion
UI Planner Upgrade	Extract DB Replacement	UI Planner Upgrade		
		Extract DB Replacement cont.		

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 mechanization 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

Finance and Accounting (FAT) Technology

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.

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

As part of the 5-year planning process, Enterprise Technology and the Finance and Accounting department leaders meet to review the technology demand that is derived from maintaining the current 'core' systems currently in place, as well as enhancements or new technology that enables the business to meet their strategic initiatives.

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:

- 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 Continuous Delivery and Continuous Integration are common practice within the SDLC.

These estimates were developed based on the historical trends for enhancement work and the product roadmaps for upgrades and licensing renewals, as well as high-level estimates for new product technologies. High level estimates are collected by the business level subject matter 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.

Finance and Accounting (FAT) Technology

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

This business case is in place to reduce the risk to the back-office business operations, specifically related to finance and accounting area. There are no explicit direct reductions to O&M investments by this capital investment, however not investing in this program on a year over year basis will result in increased expense to address application defects as a result of a non-supported platform. Additionally, not keeping the systems in line with current business processes will also result in inefficiency in work process, which creates increasing O&M pressure. Some examples of project investments planned within this Business Case and the associated benefits are:

- PowerPlan Upgrade - This project will upgrade our fixed assets software to the current supported version. We are currently utilizing an outdated version of the software that is only supported on a best effort basis. By moving the most current version of the software we reduce the risk of having an error in this system that would prevent the closure of the financial books on a monthly, quarterly, or annual basis. Failure to properly close the books on a quarterly or annual period could result in a material deficiency resulting in significant risk to the financial stability of the company.
- Financial System Enhancements - In order to ensure that Avista maximizes the benefits for the investments made in our enterprise applications we use an ‘Enhancement Program’ to provide incremental enhancements to the enterprise systems to maintain alignment between the business processes and system processes. The enhancements can be small improvements in the systems such as enabling electronic ordering delivery with our key suppliers. This improvement will improve the accuracy and timeliness of orders for key materials. An added example is to create a workflow to automate the process of approving new project numbers. This is currently a very manual process. The annual indirect offset potential is \$95,000/year.
- Reconciliation Automation – Avista is deploying a month end close automation solution to increase the efficiency of our reconciliation and month end close processes. This will be a new cost to the company but the indirect benefit of reducing the time it will take employees to complete the routine monthly reconciliation and close processes. This will enable employees to work on higher value tasks. We also believe the enhancements will improve internal control over financial reporting and decrease the risk for control deficiencies and financial statement misstatements. The indirect savings are estimated to be \$41,000 in 2022 and 2023.

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

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 examples include the creation of a new accounting project, a new customer construction request, or the payment of an invoice.

Finance and Accounting (FAT) Technology

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.

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

➤ **Alternative #1 – Funding at a lower amount**

Funding at a lower amount would impose risks of systems to fall out of support based on technology vendor-driven lifecycles, as well as degrade appropriate levels of performance and capacity needed to sustain existing automated or technology-supported business processes or to keep automated solutions in line with changing business processes. Estimates include labor and non-labor forecasts based on historical trends and anticipated expenses, which support the skillset, product, and licensing entitlements required to keep the systems current. This alternative has a number of factors working against it. It would result in the need to run the projects at a slower pace or defer existing system enhancements. This alternative would cause a decline in the number of enhancements implemented and efficiencies gained each year. While the work would likely get pushed to future years, the ability to meet planned strategic objectives would be delayed even further. In short, while feasible, funding at a lower level reduces the timing of efficiency gains, adds risk that Avista would have to take extra measures to retain functions and could impact Avista's ability to run the business. It would increase the number of software application assets that would need to be deferred, thereby increasing risk of obsolescence, losing maintenance and support, and reducing automation efficiencies.

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

This is a program with discrete projects and packages that typically run annually and Transfer to Plant within that same year. There are times that a project may start in Q3/Q4 of one year and Transfer to Plant the following year. Typically, application projects will Transfer to Plant about 60 days prior to the project completion date (due to the post implementation warranty period and to capture the trailing charges).

The goal is to break out large/complex projects into smaller projects (phases) to avoid scope creep, budget overages, and ensure the work can be properly prioritized. The first phase of every project would be scoped at the Minimum Viable Product (MVP), and subsequent phases would be scoped accordingly, based on the next highest priority after MVP. This also allows for more accurate Transfer to Plant forecasts.

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

This is a program with discrete projects and packages that strategically align with Avista's primary focus areas of:

Finance and Accounting (FAT) Technology

- Performance – by achieving stated financial objectives through focused cost management, timely rate recovery, business transformation, & unregulated business development. In addition, these internal business technologies enable other business areas to generate and deliver safe, reliable, clean, affordable electric & natural gas services.
- Invent – the finance and accounting department includes the strategic business development function that solely focuses on cultivating innovation skills and interests to support transformation and growth. The other business areas within the team are utilizing technology systems and processes that ensure we are making good decisions, and consistently improving our ability to advance our electric and natural gas strategy and optimization of the grid.
- Our Customers – the systems utilized are necessary to pursue evolving customer needs by offering products, services, and energy efficiency solutions.

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

Avista's Finance and Accounting technology systems are a necessity, as they provide essential functions to Avista. This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the Finance and Accounting 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.

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The ET Business Case Owner works in conjunction with the Product Owners, Project Management Office (PMO), assigned Program Manager, and subsequent

Finance and Accounting (FAT) Technology

Project Managers. The Business Technology Analyst (BTA) is also engaged at all levels and serves as a liaison between ET and Finance and accounting.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments, but the Finance and accounting team is regularly consulted, informed as this directly impacts Finance and accounting stakeholders. This model is conducive to a strong partnership, which is key to managing all of the dynamic intricacies throughout the course of the budget year.

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This Business Case is a program that has been functioning for the last 6 years (prior to 2017, the majority of these projects were in the Technology Refresh and Technology Expansion Business Cases).

3. MONITOR AND CONTROL

3.1 Steering Committee or Advisory Group Information

The Finance and accounting Steering Committee members include Business Case Sponsors, Directors and Managers within Finance and accounting, and the Business Case Owner.

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Finance and Accounting (FAT) Technology

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

Project prioritization is evaluated by the management team on a weekly basis through the IOC. Each program and project steering committee meets regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

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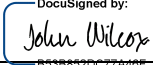
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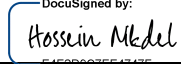
4. APPROVAL AND AUTHORIZATION

The undersigned acknowledge they have reviewed the *Finance 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="font-size: 8px; margin-right: 5px;">DocuSigned by:</div> </div> <div style="font-size: 8px; margin-top: 2px;">9EDC5D1773BD4CE...</div>	Date:	Aug-31-2022 11:07 AM PDT
Print Name:	Graham Smith		
Title:	Manager, Application Delivery		
Role:	Business Case Owner		
Signature:	<div style="display: flex; align-items: center;"> <div style="font-size: 8px; margin-right: 5px;">DocuSigned by:</div> </div> <div style="font-size: 8px; margin-top: 2px;">02B38C66587D411...</div>	Date:	Sep-01-2022 9:17 AM PDT
Print Name:	Ryan Krasselt		
Title:	VP and Controller		
Role:	Business Case Sponsor		

Finance and Accounting (FAT) Technology

Signature:  DocuSigned by:
Date: Sep-01-2022 | 10:59 AM PDT
Print Name: John Wilcox
Title: Director, Accounting
Business Case Governance

Signature:  DocuSigned by:
Date: Aug-31-2022 | 10:56 AM PDT
Print Name: Hossein Nikdel
Title: Director, Applications & System Planning
Business Case Governance

Human Resources Technology

EXECUTIVE SUMMARY

The Human Resources Technology (HRT) Business Case sponsors the technology related applications that support the Human Resources (HR) business areas strategic initiatives. The HR business area includes Benefits, Occupational Health, Avista First Care Clinic, HRIS/Payroll, Employee Relations, Leadership and Organizational Development, Corporate Training & Development, HR Shared Services, Recruiting, Equity-Inclusion-Diversity, HR Analytics & Compliance, Craft & Technical Training, Apprenticeships & Safety.

Avista's Human Resources technology systems are a necessity, as they provide essential functions to all our employees and customers throughout all service territories, such as hiring, payroll, benefits, safety, personnel development, and labor compliance. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities. This business case is intended to fund the portfolio of components that maintain the technology and licenses necessary to meet HR's internal and external business processes and strategic objectives.

In order to maintain these business processes and systems supported by this business case, the recommended funding is \$2,580,000 over the next five years (roughly 500k - 525k per year). This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the HR and Enterprise Technology (ET) Governance Committee. This funding level considers the development staff required to maintain the technology solutions.

If this business case is not funded at the recommended level, it will impact our performance objectives tied to focused cost management, timely rate recovery, business transformation, and unregulated business development. It will also impact our ability to mature our safety systems that promote learning and reduce risk, as well as the development, resiliency, and well-being of our people. Reduced funding can also result in a reduction of skilled resources, which greatly impacts the institutional business process and technical knowledge, as well as our employees, customers, and compliance efforts. Additionally, a lower funding amount will increase risk to the company through the deferment of upgrades and enhancements, resulting in unsupported applications, security vulnerabilities, system degradation, and increased costs.

VERSION HISTORY

Version	Author	Description	Date	Notes
1.0	Leianne Raymond	Draft 2023-2027	07/15/22	Draft for review

Human Resources Technology

GENERAL INFORMATION

Requested Spend Amount	\$2,580,000
Requested Spend Time Period	5 years
Requesting Organization/Department	Human Resources
Business Case Owner Sponsor	Brian Hoerner Bryan Cox
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

BUSINESS PROBLEM

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

This program is required to support the application-related technology initiatives for all areas within Human Resources (HR). Those areas include Payroll & Timekeeping, Benefits & Compensation, Leadership & Organizational Development, Labor & Employee Relations, Occupational Health, and Safety & Craft Training.

Application refresh projects are necessary due to the ongoing requirements to provide updates, upgrades and/or replacements on existing HR applications, as they are required to respond to changing business needs and/or technical obsolescence. Application refreshes/upgrades are essential in order to remain current, maintain compatibility, reliability, and address security vulnerabilities.

Application expansion projects result from demand related to transformations in the utility and continuous technology progression required to achieve operational efficiencies and strategic objectives. Recent trends in the areas of mobility, scalability, and employee experience, require technological expansion of conventional business practices and processes.

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

The primary investment driver for the Human Resources Business Program is Performance and Capacity. A secondary investment driver is Mandatory & Compliance.

Many of the applications and respective projects in this Business Case provide direct support to Avista customers, while the remaining provide many indirect benefits. Some benefits to upgrades and enhancements to these systems include:

- Advancing the 'Customer Experience' focus
- Improving the 'Employee Experience' and engagement
- Attracting and retaining diverse resources

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- 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

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

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, 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 would put Avista at a disadvantage through attrition and perpetuates inefficiencies as employees search to find the information they need.

Upgrading to the recommended or latest versions of software is important to maintain the overall health of our business. Upgrades reduce security, compatibility, and deficiency risks, and naturally provide increased 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.

Another alternative to taking on these projects as suggested, is to take them on at a slower pace. While feasible, it reduces the timing of efficiency gains, continues to risk attrition through employee dissatisfaction, and is harder to attract new talent as current talent retires.

Working through these projects as suggested reduces Avista's overall risk exposure by 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.

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

The HR business team utilizes technology as a critical component to meet their strategic objectives. Some tools used to measure success would include surveys, reporting (compliance, training, payroll), collaboration tools (Yammer, Avenue, Teams) and other various forms of employee input.

Constraints and risks are possible to hinder the delivery of the outlined objectives. In these circumstances, the Business Case owner and Program Manager will work with Steering Committee(s) to set project priority and sequencing, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project Steering 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. 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).

1.5 Supplemental Information

Please reference and summarize any studies that support the problem

These articles outline the overall priorities of HR functions, and also reinforces the need to gain momentum in the Digital Employee Experience space. The articles also provide information that is relative to the issues, gaps, and obstacles Avista faces with HR centric technology.

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Gartner:



The evolution of HR Technology Needs: HR Technology 2021 Guide Josh Bersin



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Hackett Group:

<p>1 ENABLE A HIGH-PERFORMING ORGANIZATIONAL CULTURE Improving the culture of the entire organization is the top issue for HR in 2020. With so many enterprise digital transformations underway, recognition of the need for culture change is paramount among business leaders and it has risen on the HR agenda.</p>	<p>6 ENABLE BUSINESS STRATEGY EXECUTION The ability of staff to effectively execute the business strategy is often a decisive success factor. HR recognizes its role in preparing future leaders, developing and deploying a workforce with the needed skills, and creating the organizational context to sustain success.</p>
<p>2 ADAPT TALENT MANAGEMENT CAPABILITIES TO SUPPORT CHANGE Addressing the shifting talent needs throughout the enterprise remains a persistent challenge for HR and a priority on its 2020 agenda.</p>	<p>7 RETAIN STAFF IN KEY POSITIONS WITH CRITICAL SKILLS Staff in critical roles with scarce skills are increasingly difficult to attract and replace. HR organizations recognize the need to meet greater business expectations for staff retention strategies and support.</p>
<p>3 INCREASE EMPLOYEE ENGAGEMENT Employee engagement is increasingly recognized as a key driver of performance and strongly correlated to the attraction and retention of high-caliber talent. HR needs to take the lead in developing strategies to measure and increase engagement.</p>	<p>8 IMPROVE TALENT MANAGEMENT CAPABILITIES Advanced talent management capabilities not only lead to better talent outcomes but can drive business performance as well. HR recognizes the importance of increasing not just its own talent management capabilities but those of people managers across the enterprise.</p>
<p>4 LEVERAGE TECHNOLOGY TO IMPROVE HR EFFICIENCY AND EFFECTIVENESS With a continuing mandate to do more with less, HR organizations are emphasizing the use of technology to improve productivity and increase the value of their services.</p>	<p>9 ACT AS A STRATEGIC ADVISOR TO THE BUSINESS With so many people-related issues affecting business success, HR organizations recognize the need to act as strategic advisors to top management. But many must upgrade their people and capabilities to successfully play this role.</p>
<p>5 SUPPORT GROWTH STRATEGIES AND INITIATIVES As more organizations anticipate challenges to achieving their 2020 growth objectives, HR is emphasizing support of growth initiatives through human capital strategies.</p>	<p>10 ADDRESS CRITICAL TALENT/SKILLS SHORTAGES Amid record numbers of open positions, HR organizations recognize the impact of this problem on the enterprise and their role in resolving it.</p>

Source: Key Issues Study, The Hackett Group, 2020



2020-Q2-state-of-digital workplace-rep

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

The recommended solution to ensure that HR can meet these initiatives and their timelines over the next five years, is to follow the recommended application refresh and expansion requirements for HR applications. The requested allocation is based primarily on compatibility, reliability, security, and safety. Additional criteria considers maintaining operational efficiencies and aligning with strategic objectives. Conventional business practices and processes must be scalable, provide mobility, and focus on the employee and customer experience.

The project roadmap for the next 5 years includes refreshing and/or expansion of the core HR systems that support these initiatives:

- Analytics / Compliance** – Compliance is an important part of Avista’s regulated business. This includes compliance with finance laws, safety laws, and more. Ensuring compliance requires a great deal of data discovery and analysis. Additionally, growing Operator Qualification Compliance for gas workers and contractors creates increased requirements for learning systems. This is one of the

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drivers behind reviewing Avista's current LMS (Learning Management System), a potential shift to other systems, and emerging needs for additional applications.

- **Employee Engagement and Belonging** – Study after study shows that an engaged workforce is a healthier workforce. Engaged employees have higher job satisfaction, lower attrition rates, and higher productivity. Some of that engagement comes in the form of Avista's LMS work mentioned above; some comes in the form of surveys and other forms of employee input. HR personnel are considering products and product suites that target employee sentiment and suggest new areas of employee engagement. Employee engagement also comes from having the people systems and tools that support ease of productivity, collaboration, communication, belonging, equity and fairness. Providing a modern and effective Digital Employee Experience is also important factor in attracting and retaining employee talent key to supporting our customers
- **HR Information Systems (HRIS)** – HR Information Systems (HRIS) are those that process and manage employee records and transactions. Examples include systems responsible for timekeeping (UltiPro), change of status (Resource Hub), performance management, employee perceptions, benefits enrollment, and more.
- **HR Management (HRM)** – HR Management (HRM) systems support the day-to-day management of employees from across the employee life cycle from recruiting to onboarding to exit interviews.
- **Learning and Ongoing Training** – Providing up-to-date training keeps the Avista workforce safe (through ongoing safety training), productive and customer-focused (by learning the latest approaches and techniques), and compliant (through ongoing FERC/NERC/Other training by Avista contractors and employees). Avista does this by accelerating the development of new leaders through guided talent management, building a skilled workforce, and providing central talent to Avista leaders through learning platforms (Avista Learning Network and other learning systems such as Articulate 360 learning design tools and Mandarin Learning Center software).
- **Safety and Health** – Safety and Health are key elements of Avista's culture. Promoting a culture of safety and health falls to Avista's HR team. (Enterprise Health and Safety System- Intelix, PrognoCIS EMR)
- **Cross-Functional / Other** – Not every project fits nicely into one of the initiatives above. Some are cross-functional, and some are simply good ideas that continue to improve upon Avista's workplace

These projects are within industry norms for like-sized HR departments within like-sized utilities. None of the proposed projects are on the leading edge of technological innovation; they are accepted and widely adopted approaches used within the energy industry.

Capturing every detail of every project over the course of the next five years is not possible. This is part of why the Steering Committee exists – to help propel Avista forward in its initiatives through intelligently selected and implemented projects, while maintaining the

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ability to be agile. The funding requested as part of this program generally fits these initiatives and will be assigned to specific projects (with Steering Committee oversight) as they are identified.

Option	Capital Cost	Start	Complete
Recommended Solution	<i>\$2,580,000</i>	<i>01 2023</i>	<i>12 2027</i>
➤ <i>Alternative #1 – accelerate the Digital Employee Experience initiative. (see section 2.4)</i>	<i>\$4,720,000</i>	<i>01 2023</i>	<i>12 2027</i>

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

As part of the ongoing planning and roadmap process, Enterprise Technology and the HR department leaders meet to review the technology demand that is derived from maintaining the current 'core' systems currently in place, as well as enhancements or new technology that enables the business to meet their strategic initiatives.

These estimates were developed based on the historical trends for enhancement work (Resource Hub, UltiPro, Learning Management System, etc.), the product roadmaps for upgrades and licensing renewals, as well as high-level estimates for new product technologies. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s). The schedule was developed with the most recently available information and is subject to change pending risks, competing priorities, dependencies, etc.

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

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 2022. Reduced costs by eliminating printing of paper
- Sum Total - \$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:

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- UKG - \$67,000 annually resulting from implementing a file and content management module in 2022 via electronic accessibility of needed records. 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
- 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 avoided from 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.

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

Human Resources impacts every area of the business. From pre-employment (recruiting), to post employment (retirement), and the many years in between, HR plays a critical role in every employee's tenure at Avista, which must include the technology to manage effectively.

Any deficiency in the technology is a direct and visible impact to Avista employees and contractors. Any shortfalls that employees experience, can have multiple downstream impacts, such as increased costs (inefficiencies / attrition, etc.), and an objectionable customer experience.

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

Alternative #1 - Funding at a Higher Level to accelerate the Digital Employee Experience initiative.

The employee digital experience is becoming more and more relevant to business growth and employee development. Employees want technology that improves productivity, helps with business process, and ultimately improves Avista's ability to keep pace with the digital transformation revolution. Investing more in the Digital Employee Experience would require more resources and time to plan and execute, but the output over time is significant. See supplemental information in section 1.5 for more detailed information.

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

This is a program with discrete projects and packages that typically run annually and Transfer to Plant within that same year. There are times that a project may start in Q3/Q4 of one year and Transfer to Plant the following year.

Typically, application projects will Transfer to Plant about 60 days prior to the project completion date (due to the post implementation warranty period and to capture the trailing charges).

The Tableau Dashboard reports below provide the visual roadmap (timeline), as well as Transfer to Plant forecasts (that includes rate case submissions).

[HR 5 Year Roadmap](#)

[HR Transfer to Plant Forecast](#)

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

This is a program with discrete projects and packages that align with Avista's vision, mission and strategic objectives:

The continued expansion of our Intalex technology investment and associated projects will mature our safety systems to promote learning and reduce risks. This should result in the reduction of serious injury occurrences and lost time injury rates.

Technology investments such as UltiPro (UKG), the Avista Learning Network (ALN), and Resource Hub allow the capability to invest in our people, supporting their development, resiliency and well-being. This will help attract and retain very skilled workforce with diverse experiences.

HR technology systems are also leveraged to strengthen equity, inclusion and diversity within systems, practices and behaviors. These systems and processes can range from education and training in the LMS, to student craft worker pilots and compensation modifications.

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

Avista's Human Resources technology systems are a necessity, as they provide essential functions to all of our employees and customers throughout all service territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the HR and Enterprise Technology (ET) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher costs as a result of the deferment of upgrades and enhancements, etc.

Investment prudence is reviewed by the Steering Committee to ensure alignment of initiatives through judiciously selected and implemented projects. The funding requested as part of this program generally fits these initiatives and are assigned to specific projects (with Steering Committee oversight) as they are identified. Also, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project steering committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

2.8 Supplemental Information

Identify customers and stakeholders that interface with the business case

The Human Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Human Resources, and the Enterprise Technology (ET) Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), and assigned Program Manager, and subsequent Project Managers. The Business Technology Analyst (BTA) is also engaged at all levels, and serves as a liaison between ET and HR.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments, but the HR team is regularly consulted, informed as this directly impacts HR stakeholders. This model is conducive to a strong partnership, which is key to managing all of the dynamic intricacies throughout the course of the budget year.

Identify any related Business Cases

This Business Case is a program that has been functioning for the last 5 years (prior to 2017, these projects were in the Technology Refresh and Technology

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Expansion Business Cases). There are some applications that HR is responsible for that are used 'Enterprise wide' and receive technology requests outside of the HR department. Those requests typically fall under the Enterprise Technology Modernization and Operational Efficiency (ETMOE) Business Case.

3.1 Steering Committee or Advisory Group Information

The Human Resources Steering Committee members include Business Case Sponsors, Directors and Managers within Human Resources, and the Business Case Owner.

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

The Human Resources Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

The IOC evaluates and compares all of the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

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.

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

Project prioritization is evaluated by the management team on a weekly basis by the IOC. Each program and project steering committee meets regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

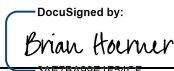
Any changes in funding or scope are documented at the Business Case level, via Change Request document that is presented to the CPG on a monthly basis and evaluated by the CPG for approval.

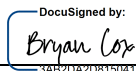
Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects

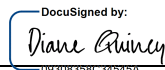
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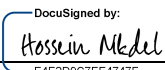
initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

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

Signature:  Date: Aug-31-2022 | 10:55 AM PDT
Print Name: Brian Hoerner
Title: Manager, Application Delivery
Role: Business Case Owner

Signature:  Date: Sep-01-2022 | 9:48 AM PDT
Print Name: Bryan Cox
Title: VP Safety & Human Resources
Role: Business Case Sponsor

Signature:  Date: Aug-31-2022 | 2:55 PM PDT
Print Name: Diane Quincy
Title: Director, Leadership & Org. Development
Role: Business Case Governance

Signature:  Date: Aug-31-2022 | 10:49 AM PDT
Print Name: Hossein Nikdel
Title: Director, Application Delivery
Role: Business Case Governance

Legal and Compliance Technology Business Case

EXECUTIVE SUMMARY

The Legal and Compliance Technology Business Case sponsors applications critical to Avista's legal, compliance, and regulatory initiatives and objectives that enable Avista to perform and ultimately provide 'Better Energy for Life' for our customers.

The Legal and Compliance business areas include Claims, Legal (Labor Relations, Data Privacy), and Compliance (Ethics, Environmental, FERC, NERC, ESG). Avista's Legal and Compliance technology systems are a necessity, as they provide essential functions to our employees and customers throughout all service territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This 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, as well as strategic focus areas. In order to maintain these business processes and systems supported by this business case, the recommended funding amount is \$2,150,500 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.

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 vulnerabilities, and significantly higher costs.

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	Notes
1.0	Leianne Raymond	2023- 2027 Business case	08/19/22	Draft

Legal and Compliance Technology Business Case

GENERAL INFORMATION

Requested Spend Amount	\$2,150,500
Requested Spend Time Period	5 years
Requesting Organization/Department	Legal and Compliance
Business Case Owner Sponsor	Graham Smith Greg Hesler
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Performance & Capacity

1. BUSINESS PROBLEM

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

This program is required to support the application-related technology initiatives for all areas within Legal and Compliance. These areas include Claims, Legal (Labor Relations, Data Privacy), and Compliance (Ethics, Environmental, FERC, NERC, ESG).

Application refresh projects are necessary due to the continuous need to provide updates and upgrades to existing Legal and Compliance applications, as they are required to respond to changing business needs and/or technical obsolescence. Application refreshes/upgrades are essential in order to remain current, maintain compatibility, reliability, and address security vulnerabilities.

Application expansion projects result from demand related to transformations in the utility and continuous technology progression required to achieve operational efficiencies and strategic objectives. Recent trends in the areas of mobility, scalability, and employee experience, require technological expansion of conventional business practices and processes.

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

The primary driver for this business case is “Performance and Capacity” with “Mandatory and Compliance” as secondary. Avista customers benefit by having efficient systems in place to manage legal and compliance matters effectively and avoid penalties or legal complications related to non-compliance. These fines range from \$1,000/day to \$1,000,000/day.

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

This funding supports a program to manage the on-going changes to legal and compliance business processes. Not funding this work increases the potential for costs and associated fines related to non-compliance with federal, state, or other regulations.

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

The Legal and Compliance Business teams utilizes technology as a critical component to meeting their strategic objectives. Some success measurements would include risk avoidance, system reporting, and better forecasting results.

Constraints are possible and risks hinder the delivery of the outlined objectives. In these circumstances, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project Steering Committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

NA

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

NA

<i>Option</i>	<i>Capital Cost</i>	<i>Start</i>	<i>Complete</i>
<i>Recommended Solution</i>	<i>\$2,150,500</i>	<i>01 2023</i>	<i>12 2027</i>
➤ <i>Alternative #1 – Waterline (see section 2.4)</i>	<i>\$2,000,000</i>	<i>01 2023</i>	<i>12 2027</i>

Legal and Compliance Technology Business Case

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

As part of the 5-year planning process, Enterprise Technology and the Legal and Compliance department leaders review the technology demand that is derived from maintaining the current 'core' systems currently in place, as well as enhancements or new technology that enables the business to meet their strategic initiatives.

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 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 a 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. 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 integration are common practice within the SDLC.

These estimates were developed based on the historical trends for enhancement work and the product roadmaps for upgrades and licensing renewals, as well as high-level estimates for new product technologies. High level estimates are collected by the business level subject matter expert(s), technology domain architect(s), and delivery management team(s). The schedule was developed with the most recently available information and is subject to change pending risks, competing priorities, dependencies, etc.

Legal and Compliance Technology Business Case

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

This program is set up to maintain and enhance the technology that supports the Legal and Compliance business processes. By keeping the technology current with industry standards and aligned with business processes this program reduces the risks that may incur additional O&M expense.

Much of 2021/2022 was focused on ensuring we are as current as we need to be to maintain support, compatibility, reliability, and security. The goal is to maintain that standard, while moving toward more strategic objectives, such as Contract Workflow Management and Tribal Service Agreements.

In order to ensure that Avista maximizes the benefits for the investments made in our enterprise applications, we use an 'Enhancement Program' to provide incremental improvements and optimization to the enterprise systems to maintain alignment between the business and system processes. The work under this business case enables improvements in the processes thus creating indirect labor efficiencies of at least \$45,000 a year. Additionally, enhancement work in this business case aids Avista's compliance capabilities, thus avoiding the risk of fines from the regulatory agencies that govern our business.

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

Both the Legal and Compliance areas operate in a dynamic and everchanging world. This program provides these business areas the resources to react to the changes. For example, a change in a state law in one of the states that we serve, requires additional quarterly reporting requirements. This information can be entered into the reporting system and then provide the necessary tracking information and corresponding reminders for that specific compliance requirement.

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

➤ Alternative #1 - Funding at a Lower Level (or the Waterline)

The Waterline is bottom-up estimate for technology that is required to enable and sustain automated business processes of existing Enterprise Applications to essentially 'run the business'. 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.

Legal and Compliance Technology Business Case

If this Business Case was funded at the waterline, it would result in the need to run the projects at a slower pace or defer existing system enhancements. This alternative would cause a decline in the number of enhancements implemented and efficiencies gained each year. While the work would likely get pushed to future years, the ability to meet planned strategic objectives would be delayed even further. This action will also increase reporting and compliance risks. The scale of increased risk is dependent upon many factors such as, regulatory environment, license renewals and other factors outside of our direct control.

In short, while feasible, funding at a lower level reduces the timing of efficiency gains, adds risk that Avista would have to increase the number of software application assets that would need to be deferred, thereby increasing risk of obsolescence, losing maintenance and support, and reducing automation efficiencies.

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

This is a program with discrete projects and packages that typically run annually and Transfer to Plant within that same year. There are times that a project may start in Q3/Q4 of one year and Transfer to Plant the following year. Typically, application projects will Transfer to Plant about 60 days prior to the project completion date (due to the post implementation warranty period and to capture the trailing charges).

The goal is to break out large/complex projects into smaller projects (phases) to avoid scope creep, budget overages, and ensure the work can be properly prioritized. The first phase of every project would be scoped at the Minimum Viable Product (MVP), and subsequent phases would be scoped accordingly, based on the next highest priority after MVP. This also allows for more accurate Transfer to Plant forecasts.

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

This is a program with discrete projects and packages that align with Avista's vision, mission and strategic objectives:

To improve our customers' lives through innovative energy solutions, we also need to have technology systems and processes that ensure we are making decisions that focus on continuously improving our generation and delivery of safe, reliable, clean, and affordable electric and natural gas service, as well as achieving financial objectives through focused cost management, timely rate recovery, business transformation, and unregulated business development.

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

Avista's Legal and Compliance technology systems are a necessity, as they provide essential functions to all of our employees and customers throughout all service

Legal and Compliance Technology Business Case

territories. These vital systems require systematic upgrades and enhancements in order to maintain reliability, compatibility, and reduce security vulnerabilities.

This funding level will provide the appropriate technology and development to meet the periodic upgrades and enhancements prioritized by the LCT and Enterprise Technology (ET) governance committee. This funding is necessary to mitigate the risk of unsupported applications, security liability, and significantly higher costs as a result of the deferment of upgrades and enhancements, etc.

Investment prudence is reviewed by the Steering Committee to ensure alignment of initiatives through judiciously selected and implemented projects. The funding requested as part of this program generally fits these initiatives and are assigned to specific projects (with Steering Committee oversight) as they are identified. Also, the Business Case owner will work with Steering Committee(s) to set project priority and sequence over a five-year planning period, subject to any additional funding changes as directed by the Capital Planning Group (CPG). Each program and project steering committee meets regularly to review the demand to ensure that it aligns with Avista's strategies. The Steering Committee oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the Technology Planning Group (TPG) or CPG for decision-making around resource or funding constraints.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The Legal and Compliance Technology Steering Committee members include Business Case Sponsors, Directors and Managers within Legal and Compliance, and the Enterprise Technology (ET) Business Case Owner.

The ET Business Case Owner works in conjunction with the Project Management Office (PMO), and assigned Program Manager, and subsequent Project Managers. The Business Technology Analyst (BTA) is also engaged at all levels and serves as a liaison between ET and LCT.

The ET Business Case Owner is accountable and responsible for all Business Case related activities and assignments, but the LCT team is regularly consulted, and informed as this directly impacts LCT stakeholders. This model is conducive to a strong partnership, which is key to managing all of the dynamic intricacies throughout the course of the budget year.

2.8.2 Identify any related Business Cases

This Business Case is a program that has been functioning for the last 6 years (prior to 2017, these projects were in the Technology Refresh and Technology Expansion Business Cases).

Legal and Compliance Technology Business Case

3.1 Steering Committee or Advisory Group Information

This business case is governed by a steering committee made up of the principal managers of the legal and compliance domains, and typically facilitated by the Application Delivery Manager.

The roles include but are not limited to:

Director of Environmental Affairs, VP General Counsel Chief Compliance Officer, Manager Reliability Compliance, Manager Claims, Manager FERC Compliance, and Ethics and Compliance Manager.

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

The Legal and Compliance Technology Business Case has four levels of governance: The Executive Technology Steering Committee (ETSC); Technology Planning Group (TPG) of Directors; Integrated Oversight Committee (IOC), and Program/Project Steering Committees. Applicable stakeholders and disciplines meet regularly to govern the business case and subsequent programs and projects.

The IOC evaluates and compares all of the application portfolio project priorities on a weekly basis, utilizing risk, capacity, and other situational factors to ensure each planned project is meeting critical milestones. The TPG sets priority across the technology investment portfolio, balancing: strategic alignment, business value, and customer benefits, as driven by the strategic initiatives established by the ETSC. The Capital Planning Group (CPG), an independent body, establishes funding allocations for each Business Case across the enterprise.

The Business Case is largely limited by the funding allocation and resource capacity (staff) to meet its goals. The funding is generally established at the Business Case level by the CPG. The resource capacity constraint is generally managed by the TPG and the Business Case owner. Once the two 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.

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

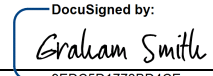
Project prioritization is evaluated by the management team on a weekly basis by the IOC. Each program and project steering committee meets regularly and oversees scope, schedule and budget within their respective programs and projects and inform the Business Case owner of any changes needing escalation to the TPG or CPG for decision-making around resource or funding constraints.

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


Legal and Compliance Technology Business Case

Changes in scope, schedule, or budget are also documented through a 'Change Request' at the project level and reviewed and approved through a formal workflow process. All Enterprise technology projects in this business case are managed through the PMO, which follows the Project Management Institute (PMI) standards. Projects initiate with a 'Charter' to begin the planning process. When planning is complete, a 'Project Management Plan (PMP)' is created and approved as the projects baseline for scope, schedule and budget. At the end of execution, an 'Approval to Go Live' is submitted and approved prior to implementation (Transfer to Plant). After the technology is in service and out of the warranty period, the Project Manager will hold a Lessons Learned, and subsequently submit an 'Approval to Close' prior to finishing the project. All Monitor and Control documentation and Change Requests are documented and stored to ensure a comprehensive audit trail.

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

Signature:  Date: Sep-01-2022 | 9:24 AM PDT
 Print Name: 9EDC5D1773BD4CE
 Graham Smith
 Title: Application Delivery Manager
 Role: Business Case Owner

Signature:  Date: Sep-02-2022 | 5:38 AM PDT
 Print Name: 725BDE91A5F5442...
 Greg Hesler
 Title: VP General Counsel & Chief Compliance Officer
 Role: Business Case Sponsor

Signature:  Date: Sep-01-2022 | 9:17 AM PDT
 Print Name: 9896614693A54DD...
 Kathy Nitteberg
 Title: Manager, Ethics & Compliance
 Role: Business Case Governance

Signature:  Date: Sep-01-2022 | 9:14 AM PDT
 Print Name: CDB9B5DD0114A5...
 Bruce Howard

Legal and Compliance Technology Business Case

Title: Sr. Director, Environmental Affairs

Role: Business Case Governance

Signature: 

Date: Sep-01-2022 | 10:16 AM PDT

Print Name: Hossein Nikdel

Title: Director, Application Development

Role: Business Case Governance

Legal and Compliance Technology Business Case

Signature: DocuSigned by:
Erin McClatchey Date: Sep-01-2022 | 10:25 AM PD
D4382A99C63E4CA...
Print Name: Erin McClatchey
Title: Manager, Reliability Compliance
Role: Business Case Governance

Signature: DocuSigned by:
Lisa Hairston Date: Sep-06-2022 | 7:37 AM PDT
AEBE15B5265F40D...
Print Name: Lisa Hairston
Title: Manager, FERC Compliance
Role: Business Case Governance

CIPv5 Transition

EXECUTIVE SUMMARY

Avista, as a regulated utility, is required to meet North American Electric Reliability Corporation (“NERC”) Critical Infrastructure Protection (“CIP”) Reliability Standards (“Standards”). Specifically, Avista must comply with the CIP Version 5 Standards (CIPv5). Our current cyber transient asset solution for substation engineers and relay technicians does currently meet the minimum compliance standard. However, the current process and technical solution is not viable long term as technology advances and the compliance standard changes in accordance with those advances. The requested amount is based off of 2022 planning efforts to identify a compliant and robust transient cyber asset technical solution.

Being compliant with industry standards and government agency mandates benefits customers by reducing the risk of electric and gas service interruptions associated with cyber or physical attacks. The requested funding amount is intended to achieve and maintain compliance with the effective dates defined by the governing entity. 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 the controls necessary to achieve compliance.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Updated 5-year funding request	8/09/2022	

CIPv5 Transition

GENERAL INFORMATION

Requested Spend Amount	\$250,000
Requested Spend Time Period	1 year
Requesting Organization/Department	C09 / Enterprise Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	Enterprise Technology
Phase	Execution
Category	Program
Driver	Mandatory & Compliance

1. BUSINESS PROBLEM

Meeting compliance standards for both cyber and physical security measures is a requirement for Avista and can result from regulatory and non-regulatory changes, mandates, and executive orders from various agencies and industry groups. As security threats become more and more sophisticated, security measures are also adjusted in response. In addition to protecting gas and electric services, meeting compliance standards by the specified timeframe will save Avista money from fines associated with the violation of a standard.

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

The Security Compliance business case addresses the following problems:

- Physical security: theft, vandalism, safety, service interruptions, fines
- Cyber security: customer accounts, payment transactions, identity theft, intellectual property, safety, service interruptions, fines

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

Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, and Failed Plant & Operations are all the major drivers in the Security Compliance business case. Each driver has its own security elements necessary to mitigate the risk to customers and the services they expect.

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

Compliance standards for physical and cyber security measures are an absolute necessity and will be for the foreseeable future. Avista must remain compliant to ensure service reliability and avoid fines.

CIPv5 Transition

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

Avista conducts internal audits to evaluate its ability to meeting compliance standards. These audits, along with utility industry forums, counsels, and organizations provide Avista with a strong baseline from which to measure its compliance and thus channel the appropriate level of investment to meet a new standard.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

- N/A

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

- N/A

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 security compliance standards.

Option	Capital Cost	Start	Complete
Address compliance standards as they are applicable (Recommended)	\$250,000	01 2023	12 2023

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

The capital dollar request was derived from the historical annual spend implementing physical and cyber security measures across the Avista service territory to reasonably mitigate risks based on input from the programs governing body. It also takes into account estimates of in-flight projects and a 1% per year increase for inflation for future projects.

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

Meeting industry compliance requirements is important to Avista. Improving the patching of operating systems and applications residing on the transient cyber assets (laptops) that directly connect to highly sensitive operational technology at generation and substation sites will significantly improve the cyber security posture of Avista and its networks. Additionally, FERC Critical Infrastructure Protection requirements continue to be updated to address emerging threats

CIPv5 Transition

from around the globe. This business case expects to continue to deliver physical and cyber tools contributing to compliance standards. Each project within the business case evaluates the potential impact to O&M costs and staffing.

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

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

Both physical and cyber security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

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

No alternative funding strategy is proposed. Compliance requirements will be identified, and corresponding projects will be sequenced to mitigate those risks based on the approved funding level.

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

Since this business case is comprised of projects running concurrently over multiple years, each one designates its own completion date and transfer-to-plant.

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

This business case is a compilation of discrete projects. The projects funded by this business case protect Avista's people, assets and information and will ensure compliance with the required standards.

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

Security measures to protect critical infrastructure is not only prudent but required. Reasonable and appropriate security measures are an expectation

CIPv5 Transition

from Avista's customers. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The Security Compliance business case significantly impacts all of Avista's staff and its customers. Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

The Compliance business case may interact with other security business cases as it invests in new compliance requirements. Other corresponding business cases may include investments in refresh or upgrades of these assets as part of their asset lifecycle through resulting from the Asset Condition driver.

3.1 Steering Committee or Advisory Group Information

The Reliability Compliance Advisory Committee will provide quarterly recommendations and guidance based on the required compliance standards.

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

The Reliability Compliance Advisory Committee acts as the guiding body for compliance related work. This group meets quarterly and is composed of senior leaders and directors from most of the lines of business. In addition, each project funded by the Security Compliance business case has project level steering committees.

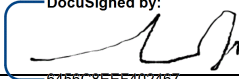
3.3 How will decision-making, prioritization, and change requests be documented and monitored

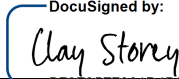
Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.

CIPv5 Transition

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the 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: Sep-02-2022 | 9:47 AM PDT
Print Name: Andy Leija
Title: Manager, Security Delivery
Role: Business Case Owner

Signature:  Date: Sep-02-2022 | 9:12 AM PDT
Print Name: Clay Storey
Title: Director of Security, IT & Security Management
Role: Business Case Sponsor

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, as well as revise and improve processes for validating, auditing, and reporting system privileges for individuals across the Company. The IAG program will create role-based profiles, define system privileges, automate access management, and facilitate regular user access review and validation. The initial cost of the solution will begin at approximately \$1.7M, which will include software licenses, integration with Avista's Sarbanes-Oxley (SOX) applications, and certification of individuals requiring access to them. As a program, additional investment over subsequent years will be required to integrate all Company systems and validate system access and privileges.

This solution will benefit Avista and its customers by adhering to the security principle of 'least privilege', whereby individuals are limited access 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. The timeline associated with initiating the IAG program is critical, as security threats continue to get more and more sophisticated, such as ransomware attacks and cybersecurity breaches, which can result in catastrophic consequences, such as forced system outages, financial losses, ransomware payments, and reactive investments. In addition, not approving this initiative will also lead to the continued challenge of staying compliant with evolving compliance requirements related to controlling identity and access.

VERSION HISTORY

Version	Author	Description	Date	Notes
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	

Identity and Access Governance (IAG) Program

GENERAL INFORMATION

Requested Spend Amount	\$2,738,902
Requested Spend Time Period	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

1. BUSINESS PROBLEM

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 access. The external audit scrutiny over the continued failures of these controls has also increased.

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

Mandatory & Compliance is the main driver behind the IAG program. Specifically, the IAG program responds to Sarbanes-Oxley (SOX) compliance requirements, in ensuring 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. An additional investment driver includes Customer Service Quality and Reliability, whereby reducing broad system access benefit Avista and its customers by adhering to the security principle of 'least privilege' and segregation of duties, whereby individuals are limited access only to information and resources necessary to perform their current and intended job functions. It reduces the risk associated with individuals having broad access to systems or to facilities their roles no longer require.

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

The timeline associated with initiating the IAG program is critical, as security threats continue to get more and more sophisticated, such as ransomware attacks and cybersecurity breaches, which can result in catastrophic consequences, such as forced system outages, financial losses, ransomware payments, and reactive investments. In addition, not approving this initiative will

Identity and Access Governance (IAG) Program

also lead to the continued challenge of staying compliant with evolving compliance requirements related to controlling identity and access.

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.

Simple measures that can be used to determine the investment successfully delivered on the desired objectives would include: 1) a review and certification of Avista's SOX applications and users; 2) annual validation and reporting in preparation for external audit requirements; 3) review and certification of additional applications.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

Bailey, T, Maruyama, A., and Wallance, D. (2020). The energy-sector threat: How to address cybersecurity vulnerabilities. McKinsey & Company, Risk Practice. Page 5. <https://www.mckinsey.com/business-functions/risk/our-insights/the-energy-sector-threat-how-to-address-cybersecurity-vulnerabilities>

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

Not applicable. No asset currently in place to manage role base access control.

2. PROPOSAL AND RECOMMENDED SOLUTION

Automating the existing IAG business process is critical to meeting compliance requirements and securing the Company's systems. The solution will require a centralized tool for provisioning user accounts to Company systems, as well as revise and introduce 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.

The current highly manual IAG business process consists of approximately 2-3 FTE, lacks a centralized system, is bogged down with approval delays, and cannot scale to meet compliance requirements or enhanced business practices (e.g. rapid growth in BYOD or system light apps, cloud computing, etc.) Although it seems that the solution has a high cost to adopt, the primary implementation costs include 3-year licensing and the labor associated to certify the Company's SOX applications and its users. As systems come online into the centralized solution, the cost will continue to drop to a point where the investment will only support license renewals and system enhancements and improvements.

Once the solution is in place with automation of existing IAG business processes.

Option	Capital Cost	Start	Complete
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Identity and Access Governance (IAG) Program

Recommended – IAG Program (Beginning ASAP) with Org. Change Management	\$2.74M	09 2021	12 2025
Alternative #1 – IAG Program (Beg. 2022) without Org. Change Management	\$2.42M	01 2022	12 2026
Alternative #2 – IAG Program (Beg. 2022) without Org. Change Management and ONLY SOX systems Not a desirable alternative, as staff will need to utilize two systems for provisioning user identity and access.	\$1.37M	01 2022	12 2026

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

There are various data points that were considered in preparing this capital investment request. However, the primary drivers for the request is to invest in a technology solution or platform that reduces the Company's risk exposure, strengthens security, improves compliance and audit performance, and delivers fast and efficient access to all business users. Anticipated operational costs savings due to automated efficiencies may stay neutral due to new software license costs.

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

[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.]

This business case provides assurance that Avista staff are provided with the appropriate access to systems and revoked when no longer needed in a timely manner. In addition, this system will ensure that Avista staff only have access to the systems they need to do their job. It also ensures we meet compliance and investor expectations to be compliant. Investment in 2022 and 2023 will include a Commercial Off The Shelf (COTS) solution to deploy role-based access control for employees and contractors of Avista. This will improve efficiency when granting user privileges to employees and contractors, narrowing access only to the systems associated with their current job role or function, and removing access to any system no longer needed in a timely manner.

Our current process for granting user privileges is all manual, whereby building a user profile for a new employee or contractor can take 15 minutes to create and 10-40 hours of waiting time for approvals from system or business unit managers. The new solution will enable pre-approved profile creations for roles across Avista. Pre-approved profiles will allow automation for system permissions, which will reduce the wait time for these requests. Although it may appear that 15 minutes is not much time, when you multiply it times the number of daily requests for system privileges, change of status, and removal of access, the number grows to 12-16k requests per year or approximately 4k hours/year. This is approximately 60% of our current 3-member team's workload, not

Identity and Access Governance (IAG) Program

allowing them to get to routine maintenance and process improvements in other areas of Identity Access Management. The team focuses primarily on new permission requests and removal of access, followed by change of status when a user's role changes. Based on this prioritization, users can find themselves with extended permissions when they change roles. The current process does not allow for periodic audits to catch overly permissive permissions and challenges our ability to consistently meet compliance requirements.

A significant efficiency that will be gained from this investment is in the wait time for each request, resulting from approval delays by system or business unit managers. The shortened or eliminated lifecycle of each request will be due to automation of pre-approved role-based access. This efficiency will allow requesters to receive system privileges more quickly. This may not have indirect savings, as requesters are likely not just sitting waiting and rather working on other assignments. Therefore, as it stands, we are not able to quantify the indirect savings from this investment.

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

The IAG program will affect all business units of the Company that own business systems, such as Accounting, Finance, Customer Service, Asset Management, Human Resources, Fleet, Energy Delivery, Energy Resources, Enterprise Technology, etc.) as employees, contractors, and temporary workers require access to Avista systems. Therefore, project sponsorship and organizational change management will be critical so that business unit leaders support the transition to a centralized solution. Business system owners will be required to create role base profiles, review and certify users for each of their systems, and begin regular reviews and attestations of their user base.

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

The alternatives are limited to on-prem vs. cloud implementations, as well as whether organizational change management is included or not. A cloud assessment is underway and will recommend the best implementation approach. Based on the results of the cloud assessment and available funding, management will determine when best to start the initiative. Tangible risks considered is that without proper sponsorship and change management the initiative will take longer than anticipated and the provisioning team will be stuck using two systems and processes.

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.

The initial implementation of an IAG program solution will include all SOX applications. It is anticipated that this can take 12-18 months, mostly due to business unit review, profile creations, and user certifications. Following the SOX applications, all other Company systems will begin their journey onto the

Identity and Access Governance (IAG) Program

new platform. The solution will become used and useful at the time each system and its users are certified. This means that full implementation may have multiple transfer to plant dates as more and more systems come online.

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

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

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

Transitioning the Company's IAG program into a centralized solution reduces risk, strengthens security, improves compliance and audit performance, and delivers results efficiently through automation. Doing nothing is not an option, as audit failures will continue, systems are more complex, security threats are more sophisticated, and manual processes continue to result in human error. Transitioning only some applications will result in two systems of record with two processes that may create confusion, frustration, and lead to fractured results in provisioning user identity and access, as well as information for auditors. Although minor process improvements continue to be made, the executive team has deemed this investment critical to the Company's approach to managing identity and access for its systems as part of the Company's remediation plan resulting from the Evaluation of User Provisioning Control Deficiencies Interoffice Memorandum, October 2020.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

All Avista employees, contractors, and temporary workers who have access to a Company's system via a username and password will be provisioned identity and access to their respective systems using this solution. However, only the system owners will be required to create role base profiles, define system access privileges, and review and validate system users.

2.8.2 Identify any related Business Cases

This is a new business case based on a compliance need for managing controls regarding segregation of duty, removal of access when individuals no longer need access, process efficiency, and reporting requirements. Depending on the scope of other compliance-driven business cases, it is possible that the IAG

Identity and Access Governance (IAG) Program

program business case may either interact with or have dependent deliverables associated with corresponding compliance requirements.

3. MONITOR AND CONTROL

3.1 Steering Committee or Advisory Group Information

The IAG program business case will have two levels of governance: The Executive Steering Committee and the Program/Project Steering Committee.

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

Executive Steering Committee

The IAG business case is a program of related projects and require regular report out to the Executive Sponsors. The Executive Sponsors consist of Jim Kensok, Chief Information and Security Officer and Ryan Krasselt, Controller and Principal Accounting Officer. They will be responsible for providing guidance to the program/project teams on prioritization of efforts within this program. The Executive Steering Committee is also accountable for the financial performance of this program and provide recommendations on actions needed from the program/project team. The Executive Steering Committee will have regular meetings to review the progress of the program and to make decisions on the following topics:

- Program/project prioritization and risk
- Approving business case funding requests
- New work effort 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.

Program/Project Steering Committee

Program/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

Identity and Access Governance (IAG) Program

- Project Risks

The Program/Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the ET PMO Department.

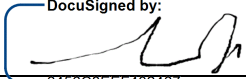
3.3 How will decision-making, prioritization, and change requests be documented and monitored

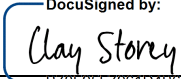
The governance structure under this business case program is responsible for decision-making, prioritization, and change requests.

All change requests 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 review, discussion, and consideration.

4. APPROVAL AND AUTHORIZATION

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

Signature:  DocuSigned by: _____ Date: Sep-02-2022 | 9:50 AM PDT
Print Name: Andy Leija
Title: Manager, Security Delivery
Role: Business Case Owner

Signature:  DocuSigned by: _____ Date: Sep-02-2022 | 9:13 AM PDT
Print Name: Clay Storey
Title: Director of Security
Role: Business Case Sponsor

Security Compliance

EXECUTIVE SUMMARY

Avista, as a regulated utility, is required to meet many different compliance standards. These standards continue to evolve to address emerging threats. To achieve and maintain compliance with compliance standards, an estimated \$250,000 annual investment is necessary. This business case will fund cyber and physical 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), and other emerging security compliance-driven requirements.

Being compliant with industry standards and government agency mandates benefits customers by reducing the risk of electric and gas service interruptions associated with cyber or physical attacks. The requested funding amount is intended to achieve and maintain compliance with the effective dates defined by the governing entity. 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 the controls necessary to achieve compliance.

VERSION HISTORY

Version	Author	Description	Date	Notes
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	

Security Compliance

GENERAL INFORMATION

Requested Spend Amount	\$1,250,000
Requested Spend Time Period	5 years
Requesting Organization/Department	C09 / Enterprise Security
Business Case Owner Sponsor	Andy Leija Clay Storey
Sponsor Organization/Department	
Phase	Monitor/Control
Category	Program
Driver	Mandatory & Compliance

1. BUSINESS PROBLEM

Meeting compliance standards for both cyber and physical security measures is a requirement for Avista and can result from regulatory and non-regulatory changes, mandates, and executive orders from various agencies and industry groups. As security threats become more and more sophisticated, security measures are also adjusted in response. In addition to protecting gas and electric services, meeting compliance standards by the specified timeframe will save Avista money from fines associated with the violation of a standard.

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

The Security Compliance business case addresses the following problems:

- Physical security: theft, vandalism, safety, service interruptions, fines
- Cyber security: customer accounts, payment transactions, identity theft, intellectual property, safety, service interruptions, fines

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

Customer Requested, Customer Service Quality & Reliability, Mandatory & Compliance, Performance & Capacity, Asset Condition, and Failed Plant & Operations are all the major drivers in the Security Compliance business case. Each driver has its own security elements necessary to mitigate the risk to customers and the services they expect.

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

Compliance standards for physical and cyber security measures are an absolute necessity and will be for the foreseeable future. Avista must remain compliant to ensure service reliability and avoid fines.

Security Compliance

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

Avista conducts internal audits to evaluate its ability to meeting compliance standards. These audits, along with utility industry forums, counsels, and organizations provide Avista with a strong baseline from which to measure its compliance and thus channel the appropriate level of investment to meet a new standard.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

- N/A

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

- N/A

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 security compliance standards.

Option	Capital Cost	Start	Complete
Address compliance standards as they are applicable (Recommended)	\$1,250,000	01 2023	12 2027

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

The capital dollar request was derived from the historical annual spend implementing physical and cyber security measures across the Avista service territory to address compliance requirements and reasonably mitigate risks based on input from the programs governing body. It also takes into account estimates of in-flight projects and a 1% per year increase for inflation for future projects.

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

Maintaining compliance helps Avista reduce the likelihood of security breaches while also avoiding financial penalties from regulatory bodies. Regulatory bodies requiring increased security posture include the U.S. Department of Energy (FERC/NERC CIP Requirements), U.S. Department of Homeland Security (TSA SD1 and SD2), and potentially the U.S. Department of Defense (Cybersecurity

Security Compliance

Maturity Model Certification and Compliance). This business case responds to new regulatory requirements to increase Avista's security posture and meet new compliance requirements. Future projects are forecasted based on regulatory requirements; therefore, five-year forecasts are not available.

[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.

Both physical and cyber security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

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

No alternative funding strategy is proposed. Compliance requirements will be identified, and corresponding projects will be sequenced to mitigate those risks based on the approved funding level.

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

Since this business case is comprised of projects running concurrently over multiple years, each one designates its own completion date and transfer-to-plant.

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

This business case is a compilation of discrete projects. The projects funded by this business case protect Avista's people, assets and information and will ensure compliance with the required standards.

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

Security measures to protect critical infrastructure is not only prudent but required. Reasonable and appropriate security measures are an expectation

Security Compliance

from Avista's customers. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

The Security Compliance business case significantly impacts all of Avista's staff and its customers. Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

The Compliance business case may interact with other security business cases as it invests in new compliance requirements. Other corresponding business cases may include investments in refresh or upgrades of these assets as part of their asset lifecycle through resulting from the Asset Condition driver.

3.1 Steering Committee or Advisory Group Information

The Reliability Compliance Advisory Committee will provide quarterly recommendations and guidance based on the required compliance standards.

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

The Reliability Compliance Advisory Committee acts as the guiding body for compliance related work. This group meets quarterly and is composed of senior leaders and directors from most of the lines of business. In addition, each project funded by the Security Compliance business case has project level steering committees.

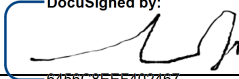
3.3 How will decision-making, prioritization, and change requests be documented and monitored

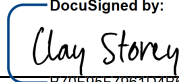
Project Steering Committees act as the governing body over each individual project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.

Security Compliance

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the 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:  DocuSigned by: _____ Date: Sep-02-2022 | 9:31 AM PDT
Print Name: Andy Leija
Title: Manager, Security Delivery
Role: Business Case Owner

Signature:  DocuSigned by: _____ Date: Sep-02-2022 | 9:11 AM PDT
Print Name: Clay Storey
Title: Director of Security, IT & Security Management
Role: Business Case Sponsor

Enterprise Business Continuity

EXECUTIVE SUMMARY

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

The capital budget request of \$2,025,000 funds projects that benefit Avista customers by mitigating service interruptions due to a disaster by continually enhancing and improving emergency response, business continuity, and disaster recovery capabilities. Not approving this business case or its recommended funding can pose risks to the business processes and systems that support the delivery of safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of the original business case	6/30/2020	
1	Andru Miller	Updated 5-year funding request	8/9/2022	

Enterprise Business Continuity

GENERAL INFORMATION

Requested Spend Amount	\$2,025,000
Requested Spend Time Period	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

1. BUSINESS PROBLEM

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

Severe storms, natural disasters, and significant security events are unpredictable and, while they may have a low probability, they can have a high consequence. These types of low frequency, high consequence events can have an impact on the resources Avista depends on for its operations. Many of Avista's critical business processes are now more than ever dependent on data, communication networks, and computer systems. Prolonged failure of any of these resources could have a significant impact on Avista's ability to sustain gas and electric operations for its customers.

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

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

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

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

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

Avista conducts an annual disaster recovery exercise to evaluate the effectiveness of its program. This exercise, along with utility industry forums, counsels, and organizations provide Avista with a strong baseline from which to

Enterprise Business Continuity

measure its recovery capabilities and channel the appropriate level of investment to address any identified issues or risks.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

N/A

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

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

Option	Capital Cost	Start	Complete
Address business continuity gaps outside of technology refresh or expansion projects	\$2,025,000	01 2023	12 2027

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

The historical spending trend has been \$405,000 annually. The requested funding level is derived from past projects and future estimates for projects to maintain and enhance Avista's ability to respond and continue operations in the event of major disasters. Projects within this business case are derived from each previous disaster recovery test event. Therefore, future projects are not included in the five-year plan.

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

Avista, like the rest of the energy sector, is highly dependent on technology and its availability to deliver energy to our customers. The time to recover technology due to an unplanned event is critical to business operations and can be costly. The cost can include employee time while technology systems are down, the time the employee needs to catch up from systems being down, and the cost of the employees working the incident to recover the systems down. Not to mention, depending on the severity or scale of the system outage, technology replacement costs and shipping times may also play a factor. Lastly, and as important but more difficult to calculate, our customer confidence and service value may also be affected.

Enterprise Business Continuity

The projects in this business case support continued disaster recovery investments to continue operating Avista's critical system by ensuring we have the right recovery capabilities to sustain operations in the event of a disaster. Without investments in recovery capabilities, critical systems would not be available in the event of a disaster and would cause operational inefficiencies and in extreme cases the inability to sustain operations. According to a recent article in Comparitech, the average cost of downtime for a medium-size company, such as Avista, is approximately \$74k per hour. This would include a full inoperable data center, which could be a target of a ransomware attack. The average downtime due to a ransomware attack is an average of 16.2 days. Therefore, an average ransomware attack that makes Avista's data center inoperable for approximately 16.2 days or 194 hours (based on a 12-hour day) can result in almost \$14.4M of loss time. This does not even include the actual ransomware payment, should paying it be an option. Although the probability of a ransomware attack is low, the consequence or result is high. Therefore, Avista continues to invest in disaster recovery efforts to reduce or control for this pending risk.

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

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

Business continuity and disaster recovery solutions for business functions can have an impact on how the function will be performed during a disaster. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to the business functions.

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

Not funding the program was considered. If the program was not funded, the risk of not having adequate recovery capabilities would have to be tied to the technology refresh cycles which is typically 3-5 years.

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

Since this business case is comprised of projects running concurrently over multiple years, each project designates its completion and transfer-to-plant timeline.

Enterprise Business Continuity

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

This business case best aligns with Avista's focus area of Perform as having reliable systems is essential to serving our customers.

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

The prudence of the program's projects will be evaluated by its governing body and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Each project within the business case will consider stakeholders during the chartering process.

2.8.2 Identify any related Business Cases

- None

3.1 Steering Committee or Advisory Group Information

Each project will have steering committees to monitor scope, schedule, and budget.

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

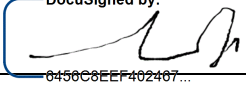
Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project.

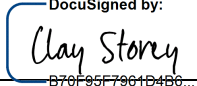
3.3 How will decision-making, prioritization, and change requests be documented and monitored

The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.

Enterprise Business Continuity

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

Signature:  DocuSigned by: _____ Date: Sep-02-2022 | 9:44 AM PDT
Print Name: Andy Leija
Title: Manager, Security Delivery
Role: Business Case Owner

Signature:  DocuSigned by: _____ Date: Sep-02-2022 | 9:11 AM PDT
Print Name: Clay Storey
Title: Director of Security, IT & Security Management
Role: Business Case Sponsor

Template Version: 05/28/2020

Enterprise Security

EXECUTIVE SUMMARY

Cyber security measures along with physical security is an expectation of all companies today by their customers. Especially companies that are considered critical infrastructure that are required to meet specific compliance standards. Protecting vital electric and gas services from cyber-attacks greatly benefits Avista's customers. In addition to protecting gas and electric services, cyber and physical security tools mitigate risks like theft and vandalism on Avista properties and identity theft and payment transactions from online attacks.

The capital budget request of \$12,180,000 for Enterprise Security funds the technology, tools, and systems that benefit all Avista customers as the funded projects maintain and enhance Avista's security posture to minimize the risks associated with cyber intrusions. Not approving this business case or its recommended funding can pose risks to the systems that Avista depends on to conduct business and deliver safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of original business case	7/01/2020	
1	Andru Miller	Updated 5-year funding request	8/09/2022	

Enterprise Security

GENERAL INFORMATION

Requested Spend Amount	\$12,180,000
Requested Spend Time Period	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

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

The security of our electric and natural gas infrastructure is a significant priority at a national and state level and is of critical importance to Avista. Threats from cyberspace, including viruses, phishing, and spyware, continue to test our industry's capabilities. And while these malicious intentions are often unknown, it is clear the methods are becoming more advanced and the attacks more persistent. In addition to these threats, the vulnerabilities of hardware and software systems continue to increase, especially with industrial control systems such as those supporting the delivery of energy. For these reasons, Avista must continue to advance its cybersecurity program and invest in security controls to prevent, detect, and respond to these increasingly frequent and sophisticated attacks.

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

Performance & Capacity is the primary driver for the business case as the projects it funds address security risks with the use of technology that keeps our systems secure and reliable.

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

Addressing security risks has been and will continue to be an ongoing issue. If the funding is not approved or is deferred, this increases the likelihood of a security event that could impact Avista's operations.

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

Avista utilizes third party assessments to evaluate the effectiveness of its security posture. These assessments, along with utility industry forums, counsels, and organizations provide Avista with a strong baseline from which to

Enterprise Security

measure its security capabilities and channel the appropriate level of investment to mitigate identified risks.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

1. Gartner has forecasted businesses will spend \$170.4 billion on security in 2022.
2. The average cost of a data breach jumped to \$3.86 million in 2021, according to IBM Security.
3. Ransomware payments rose to \$111,605 in 2020, according to Fintech News.
4. Cybercrime damages cost the world \$6 trillion in 2021.

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

Security assets such as firewalls, intrusion prevention, anti-virus, and endpoint protection systems must be regularly updated or replaced as they reach their end of life, so they don't become unreliable and become a security risk due to not being able to be patched.

The Enterprise Security business case provides funding for cyber and physical security-related projects and supports Avista's safe and reliable infrastructure strategy. The projects funded by this business case protect Avista's people, assets, and information. Without proper security protection the risk to Avista's people, assets, and information increases.

Option	Capital Cost	Start	Complete
Address 80% of obsolete technology and emerging risks (Recommended)	\$12,180,000	01 2023	12 2027
Address 40% of obsolete technology and emerging risks	\$4,872,000	01 2023	12 2027
Address 100% of obsolete technology and emerging risks	\$22,500,000	01 2023	12 2027

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

The capital dollar request was derived from the historical annual spend implementing security measures to reasonably mitigate risks based on input from the programs governing body. It also takes into account estimates of in-flight projects and a 1% per year increase for inflation for future projects.

Enterprise Security

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

Investments in cyber security tools like firewalls, security incident and event monitoring, intrusion prevention, and endpoint protection systems help identify, detect, protect, respond, and recover from a cybersecurity incident. Without these tools, cybersecurity attacks, such as ransomware, data breaches, distributed denial of service, and other methods would significantly reduce Avista's operational capability and potentially expose sensitive information, including customer data. Recent reports on ransomware threats show that an average ransomware demand in 2020 was approximately \$850k, not including the average cost of the associated forensic engagement to mitigate the incident, ranging from \$40k - \$208k or the average employee loss time due to the downtime of the data center or systems.

In addition to ransomware threats, the number and cost of data breaches continue to go up for the energy sector in the United States. According to a recent IBM report, the energy sector is second, only to healthcare, in the average total cost of a data breach by industry. Customer Personal Identifiable Information (PII) was the type of data most often lost or stolen in a breach. Each data breach incident, should it be realized, can cost an average of \$6.39M per event. Moreover, should any sensitive data be taken, additional costs could be incurred in the form of penalties, lawsuits, credit protection insurance, etc. Because the threat landscape continues to change and become more complex daily, Avista's continuous investment in cybersecurity tools is critical.

Therefore, should a data breach event occur, whereby customer data is stolen, it can cost an average of \$6.39M per event

Investments in these technology upgrades, enhancements, and licenses provide indirect savings by quantifying the efficiencies based on assumptions on minutes of loss time, percent of users, scale of attack, number of systems affected, etc. noted in the above projects. Continuous investment in cybersecurity reduces the likelihood of realizing the risk of a cybersecurity incident and adheres to growing security compliance requirements, and industry best practices. Depending on the type and reach of a cybersecurity incident, the consequence can be high. Therefore, Avista continues to invest in disaster recovery efforts to reduce or control for this pending risk.

2023	2024	2025	2026	2027
Firewall Refresh	Endpoint Security Refresh	User Behavior Analysis	Firewall refresh	Endpoint Security Refresh
Security Logging	Network Device Authentication	System Intrusion Detection	Hardware Security Modules	Cloud Security Enhancements

Enterprise Security

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

Security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

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

The first alternative strategy would be to fund the business case at roughly half the recommended budget amount (40%). This alternative significantly increases the risk of using outdated security systems to provide safe and reliable service to Avista's customers.

The second alternative would fully fund the business case and allow Avista the ability to implement new security systems as they become available and replace existing systems well before the end of their serviceability.

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

Since this business case is comprised of projects running concurrently over multiple years, each one designates its own completion date and transfer-to-plant.

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

The projects funded by this business case protect Avista's people, assets and information. Without proper security protection the risk to Avista's people, assets and information increases.

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

Security measures to protect critical infrastructure are not only prudent but required. Reasonable and appropriate security measures are an expectation of Avista's customers. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

Enterprise Security

2.8.1 Identify customers and stakeholders that interface with the business case

The Enterprise Security business case significantly impacts all of Avista's staff and its customers. Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

This Enterprise Security business case replaced the following business cases:

- Enterprise Security Systems Refresh
- Enterprise Security Systems Expansion

3.1 Steering Committee or Advisory Group Information

The Enterprise Security Committee will provide monthly recommendations and guidance based on security operations center updates, business case financial updates, and industry recommendations.

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

The Enterprise Security Committee acts as the custodian and governance body of security resources and investments which includes the Enterprise Security Business Case. This group meets monthly and is composed of directors and managers from most of the lines of business. In addition, each project funded by the Enterprise Security Business Case has project-level steering committees.

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

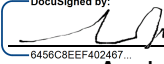
Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible for providing guidance and making decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.


The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the Enterprise Security business case and agree with the approach it presents. Significant changes to this will be

Enterprise Security

coordinated with and approved by the undersigned or their designated representatives.

Signature:  Date: Sep-02-2022 | 1:27 PM PDT
Print Name: Andy Leija
Title: Manager, Security Delivery
Role: Business Case Owner

Signature:  Date: Sep-02-2022 | 11:12 AM PDT
Print Name: Clay Storey
Title: Director of Security, IT & Security Management
Role: Business Case Sponsor

Template Version: 05/28/2020

Facilities and Storage Location Security

EXECUTIVE SUMMARY

Security is an expectation of companies today by its customers. Especially companies considered critical infrastructure. Protecting facility & storage locations benefits Avista's customers by protecting our people, equipment, and material that are critical to support our day-to-day operations. The capital budget request of \$1,900,000 funds the security protections that benefit Avista customers as the enhancements maintain and enhance Avista's security posture to minimize the risks associated with attacks at facility & storage locations within the Avista service territory. Not approving this business case or its recommended funding can pose risks to the people and assets Avista depends on to conduct business and delivery safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of original business case	7/01/2020	
1	Andru Miller	Updated 5-year funding request	8/09/2022	

Facilities and Storage Location Security

GENERAL INFORMATION

Requested Spend Amount	\$1,900,000
Requested Spend Time Period	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

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

Security remains a concern at our facility & storage locations. These locations contain people, equipment, and material that are critical to support our day-to-day operations and, in turn, the delivery of safe and reliable gas and electricity. A security incident at any of these locations may harm people, damage equipment, or even restrict our ability to respond to our customers. Also, attacks can give intruders access to critical cyber equipment, which can lead to a cybersecurity event.

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

Performance & Capacity is the primary driver for the business case as the projects it funds address security risks by protecting our people, equipment, and material that are critical to support our day-to-day operations.

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

Addressing security risks has been and will continue to be an ongoing issue. If the funding is not approved or is deferred, this increases the likelihood of a security event that could impact people, equipment, and materials that are critical to support our day-to-day operations.

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

Avista utilizes utility industry forums, counsels, organizations and knowledge from past security incidents to provided Avista with a strong baseline from which to measure its security capabilities and channel the appropriate level of investment to mitigate the identified risks.

Facilities and Storage Location Security

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

N/A

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

Option	Capital Cost	Start	Complete
Address security at facilities and storage locations as funding allows (Recommended)	\$1,900,000	01 2023	12 2027
Address security at facilities and storage locations in 7.5 years	\$4,000,000	01 2023	06 2030
Address security at facilities and storage locations in 10 years	\$6,000,000	01 2021	12 2033

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

The capital dollar request was derived from the historical annual spend implementing security measures across the Avista service territory to reasonably mitigate risks based on input from the programs governing body. It also takes into account estimates of in-flight projects and a 1% per year increase for inflation of future projects.

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

This business case is refreshing legacy access control systems that provide security and safety to Avista staff and customers by reducing the use of physical brass keys. Managing physical brass keys is extremely inefficient and insecure because they can be lost, stolen, or not returned upon employee departure. The cost to regularly replace keys or re-key each entry for all employees due to key loss, theft, or unreturned keys across multi-state facilities whereby employees come and go to and from various sites would be more costly over time than refreshing the existing badged access control system.

In addition, this business case funds video surveillance refresh projects that provide theft and vandalism deterrence and can aid law enforcement if those events are to occur by having video evidence. Investments in both access control systems and video surveillance help protect our tools, equipment, vehicles, parts, facilities, employees, and customers. Depending on the type of crime committed against our facilities or people, the cost can range from mere

Facilities and Storage Location Security

vandalism or copper theft to endangering the lives of our employees and customers.

Therefore, indirect savings associated with these investments in access control systems and video surveillance are prudent versus returning to a manual physical brass key management program, that would need to track incidents of lost, stolen, or unreturned keys, and the needed replacement of keys or re-keying locks, as well as the cost for any break-ins or theft incidents resulting from lost, stolen, or unreturned keys. In addition, should a break-in result in loss of life, the indirect savings are unquantifiable. Thus, continuous investment in the security of our facilities is paramount for the safety of our people, both customers and employees.

2023	2024	2025	2026	2027
Access Control upgrades	Access Control upgrades	Access Control upgrades	Access Control upgrades	Video Surveillance upgrades
	Lone worker security upgrades	Video Surveillance upgrades	Video Surveillance upgrades	

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

Security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

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

The alternative strategy would be to fund the business case based on a set schedule of 7.5 or 10 years rather than as funding allows. These options would require more funding and resources but would be more likely to address security needs in a timely manner rather than as needed.

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

Since this business case is comprised of projects running concurrently over multiple years, each one designates its completion date and transfer-to-plant.

Facilities and Storage Location Security

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

The projects funded by this business case protect Avista's people, equipment, and material. Without proper security protection, the risk to Avista's people, equipment, and material increase and could impact operations of the company and mission to provide safe and reliable infrastructure.

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

Security measures to protect critical infrastructure is not only prudent but required in some cases because of compliance. Reasonable and appropriate security measures are also an expectation of Avista's customers. The investments reduce the likelihood of a security event that could impact the people, equipment, and materials that are critical to support our day-to-day operations. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

- None

3.1 Steering Committee or Advisory Group Information

The Enterprise Security Committee will provide monthly recommendations and guidance based on security operations center updates, business case financial updates, and industry recommendations.

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

The Enterprise Security Committee acts as the custodian and governance body of security resources and investments which includes the Facilities and Storage Location Security business case. This group meets monthly and is composed of directors and managers from most of the lines of business. In addition, each project funded by the Facilities and Storage Location Security business case has project-level steering committees.

Facilities and Storage Location Security

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

Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the 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:	<div style="display: flex; align-items: center;"><div style="border: 1px solid blue; border-radius: 5px; padding: 2px; margin-right: 5px; font-size: 8px;">DocuSigned by:</div></div> <div style="margin-left: 20px;">Date: Sep-02-2022 9:51 AM PDT</div>
Print Name:	Andy Leija
Title:	Manager, Security Delivery
Role:	Business Case Owner

Signature:	<div style="display: flex; align-items: center;"><div style="border: 1px solid blue; border-radius: 5px; padding: 2px; margin-right: 5px; font-size: 8px;">DocuSigned by:</div></div> <div style="margin-left: 20px;">Date: Sep-02-2022 9:36 AM PDT</div>
Print Name:	Clay Storey
Title:	Director of Security, IT & Security Management
Role:	Business Case Sponsor

Generation, Substation & Gas Location Security

EXECUTIVE SUMMARY

Security is an expectation of companies today by its customers. Especially companies considered critical infrastructure. Protecting vital electric and gas services from attacks benefits Avista's customers by having safety and reliable energy. The capital budget request of \$2,700,000 funds the security protections that benefit Avista customers as the enhancements maintain and enhance Avista's security posture to minimize the risks associated with physical attacks at Avista generation, substation & gas locations. Not approving this business case or its recommended funding can pose risks to the assets Avista depends on to conduct business and delivery safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of original business case	7/02/2020	
1	Andru Miller	Updated 5-year funding request	8/09/2022	

Generation, Substation & Gas Location Security

GENERAL INFORMATION

Requested Spend Amount	\$2,700,000
Requested Spend Time Period	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

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

Security remains a concern for our generation, substation & gas locations. These locations contain equipment that is critical to the delivery of safe and reliable gas and electricity. Many of these locations are remote, unmanned, and vulnerable, which makes them difficult to protect. A security incident at any of these locations could deny, degrade, or disrupt the delivery of energy. Also, attacks can give intruders access to critical cyber equipment, which can lead to cybersecurity events.

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

Performance & Capacity is the primary driver for the business case as the projects it funds address security risks by protecting Avista's generation, substation & gas locations that are critical to supporting our customers.

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

Addressing security risks has been and will continue to be an ongoing issue. If the funding is not approved or is deferred, this increases the likelihood of a security event that could impact Avista's generation, substation & gas locations that are critical to support our customers.

Generation, Substation & Gas Location Security

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

Avista utilizes utility industry forums, counsels, organizations, and knowledge from past security incidents to provide Avista with a baseline from which to measure its security capabilities and channel the appropriate level of investment to mitigate the identified risks.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

N/A

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

Option	Capital Cost	Start	Complete
Address security at facilities and storage locations as funding allows (Recommended)	\$3,100,000	01 2023	12 2027
Address security at facilities and storage locations in 7.5 years	\$5,000,000	01 2023	06 2030
Address security at facilities and storage locations in 10 years	\$7,000,000	01 2021	12 2033

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

The capital dollar request was derived from the historical annual spend implementing security measures across the Avista service territory to reasonably mitigate risks based on input from the programs governing body. It also considers estimates of in-flight projects and a 1% per year increase for inflation of future projects.

2020	2021	2022
\$164,316	\$2,864,559	\$350,732

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

This business case is refreshing legacy access control systems that provide security and safety to Avista staff and customers by reducing the use of physical brass keys. Managing physical brass keys is extremely inefficient and insecure because they can be lost, stolen, or not returned upon employee departure. The

Generation, Substation & Gas Location Security

cost to regularly replace keys or re-key each entry for all employees due to key loss, theft, or unreturned keys across multi-state facilities whereby employees come and go to and from various sites would be more costly over time than refreshing the existing badged access control system at generation plants and smart key locks at substations.

In addition, this business case funds additional physical security hardening, such as gates, fencing, and video surveillance projects that provide theft and vandalism deterrence if a security event was to occur. Investments in access control systems and the physical hardening of our power generation plants, substations, and gas locations help protect our facilities, employees, and customers. Depending on the type of crime committed against any of these operational facilities or people, the cost can range from mere vandalism or tampering, which could result in affecting overall system reliability, to endangering the lives of our employees and customers. Examples of such criminal activity include copper theft from existing substations, whereby the copper cable acts as the ground cable. Once the ground cable is removed, the facility poses a danger to our field staff working in that plant or substation.

Therefore, indirect savings associated with these investments in access control systems and video surveillance are prudent versus returning to a manual physical brass key management program, that would need to track incidents of lost, stolen, or unreturned keys, and the needed replacement of keys or re-keying locks, as well as the cost for any break-ins or theft incidents resulting from lost, stolen, or unreturned keys. In addition, should a break-in result in loss of life, the indirect savings are unquantifiable. Thus, continuous investment in the security of our generation plants, substations, and gas facilities protects our employees, and allows Avista the ability to provide safe, secure, and reliable energy to our customers.

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

Security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

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

The alternative strategy would be to fund the business case based on a set schedule of 7.5 or 10 years rather than as funding allows. These options would require more funding and resources but would be more likely to address security needs in a timely manner rather than as needed.

Generation, Substation & Gas Location Security

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

Since this business case is comprised of projects running concurrently over multiple years, each one designates its completion date and transfer-to-plant.

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

The Generation, Substation, and Gas Location Security business case provides funding for security-related projects and supports Avista's safe and reliable infrastructure.

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

Security measures to protect critical infrastructure is not only prudent but required in some cases because of compliance. Reasonable and appropriate security measures are also an expectation of Avista's customers. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

- None

3.1 Steering Committee or Advisory Group Information

The Enterprise Security Committee will provide monthly recommendations and guidance based on security operations center updates, business case financial updates, and industry recommendations.

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

The Enterprise Security Committee acts as the custodian and governance body of security resources and investments which includes the Generation, Substation, and Gas Location Security business case. This group meets

Generation, Substation & Gas Location Security

monthly and is composed of directors and managers from most of the lines of business. In addition, each project funded by the Generation, Substation, and Gas Location Security business case has project-level steering committees.

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

Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, project risks

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the Generation, Substation, and Gas Location Security business case and agree with the approach it presents. Significant changes to this will be coordinated with and approved by the undersigned or their designated representatives.

Signature:	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">DocuSigned by:</div> </div> <div style="font-size: 8px; margin-top: 2px;">6456C8EEF402467...</div>	Date: Sep-02-2022 9:48 AM PDT
Print Name:	Andy Leija	
Title:	Manager, Security Delivery	
Role:	Business Case Owner	
Signature:	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">DocuSigned by:</div> </div> <div style="font-size: 8px; margin-top: 2px;">B70F95F7961D4B6...</div>	Date: Sep-02-2022 9:12 AM PDT
Print Name:	Clay Storey	
Title:	Director of Security, IT & Security Management	
Role:	Business Case Sponsor	

Generation, Substation & Gas Location Security

Telecommunication & Network Distribution Security

EXECUTIVE SUMMARY

Security is an expectation of companies today by customers. Especially companies considered critical infrastructure. Protecting communication infrastructure is vital as many of Avista's business processes depend on network communications and without them, they could not function which could have an impact on our day-to-day operations that are needed to support our customers. The capital budget request of \$1,212,500 funds the security protections that benefit Avista customers as the enhancements maintain and enhance Avista's security posture to minimize the risks associated with attacks at Avista telecommunication & network distribution locations. Not approving this business case or its recommended funding can pose risks to the assets Avista depends on to conduct business and delivery safe and reliable energy.

VERSION HISTORY

Version	Author	Description	Date	Notes
Draft	Andru Miller	Initial draft of original business case	7/06/2020	
1	Andru Miller	Updated 5-year funding request	8/09/2022	

Telecommunication & Network Distribution Security

GENERAL INFORMATION

Requested Spend Amount	\$1,212,500
Requested Spend Time Period	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

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

Physical security remains a concern at our telecommunication & network distribution locations. These locations contain equipment that is critical to the operation of safety, control, customer, and back-office networks. These networks support the delivery of safe and reliable gas and electricity. Many of these locations are remote, unmanned, and vulnerable, which makes them difficult to protect. A physical security incident at any of these locations could deny, degrade, or disrupt any of the networks and impact critical business processes. Also, physical attacks can give intruders access to critical cyber equipment, which can lead to a cybersecurity event.

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

Performance & Capacity is the primary driver for the business case as the projects it funds address security risks by protecting our telecommunication & network distribution locations that are critical to support our day-to-day operations.

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

Addressing security risks has been and will continue to be an ongoing issue. If the funding is not approved or is deferred, this increases the likelihood of a security event that could impact Avista's telecommunication & network communications.

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

Avista utilizes utility industry forums, counsels, organizations, and knowledge from past security incidents to provide Avista with a baseline from which to

Telecommunication & Network Distribution Security

measure its security capabilities and channel the appropriate level of investment to mitigate the identified risks.

1.5 Supplemental Information

1.5.1 Please reference and summarize any studies that support the problem

N/A

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

Option	Capital Cost	Start	Complete
Address security at facilities and storage locations as funding allows (Recommended)	\$1,212,500	01 2023	12 2027
Address security at facilities and storage locations in 7.5 years	\$1,462,500	01 2023	06 2030
Address security at facilities and storage locations in 10 years	\$1,950,000	01 2023	12 2033

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

The capital dollar request was derived from the historical annual spend implementing physical security measures across the Avista service territory to reasonably mitigate risks based on input from the programs governing body. It also takes into account estimates of in-flight projects and a 1% per year increase for inflation of future projects.

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

This business case is refreshing legacy access control systems that provide security and safety to Avista staff and customers by reducing the use of physical keys in our telecommunication and network distribution sites. Managing physical brass keys is extremely inefficient and insecure because they can be lost, stolen, or not returned upon employee departure. The cost to regularly replace keys or re-key each entry for all employees due to key loss, theft, or unreturned keys across multi-state mountaintop facilities whereby employees come and go to and from various sites would be more costly over time than refreshing the existing badged access system. In addition, this business case funds video surveillance projects that provide theft and vandalism deterrence, which can aid law enforcement if those events are to occur by having video evidence, as well

Telecommunication & Network Distribution Security

as provide operational awareness for our crews when weather conditions are extreme and undesirable. Operational awareness can allow for better preparation of tools, parts, vehicles, and crew required before rolling a vehicle in response.

In addition, this business case funds additional physical security hardening, such as gates and fencing to deter theft and vandalism at our telecommunication sites. Investments in access control systems and physical hardening of our telecommunication sites help protect the communication required to operate our system, our facilities, and stay in communication with our employees and customers.

Depending on the type of crime committed against any of these telecommunication sites, the cost can range from mere vandalism or tampering, which could result in damage to or negatively affecting the reliability of communication paths across our gas and electric distribution system and transmission system, to endangering the lives of our field employees relying on radio communications when working on mountain tops of remote locations in extreme weather conditions. Examples of such criminal activity include break-ins and vandalism in difficult to reach locations.

Therefore, indirect savings associated with these investments in access control systems and video surveillance are prudent versus returning to a manual physical brass key management program, that would need to track incidents of lost, stolen, or unreturned keys, and the needed replacement of keys or re-keying locks, as well as the cost for any break-ins or theft incidents resulting from lost, stolen, or unreturned keys. In addition, should a break-in result in loss of life, the indirect savings are unquantifiable. Thus, continuous investment in the security of our telecommunication and network distribution facilities protects our employees, and allows Avista the ability to provide safe, secure, and reliable energy to our customers.

2023	2024	2025	2026	2027
Devil's Gap Security	Micah Peak Security	Steptoe Butte Security	Kellogg Peak Security	Monumental Mountain Security

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

Security systems, processes, and procedures can have an impact on business functions. As a business case with multiple projects, Avista's project management office (PMO) tools and processes will be leveraged to coordinate and collaborate through standardized change management any changes to business functions.

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

The alternative strategy would be to fund the business case based on a set schedule of 7.5 or 10 years rather than as funding allows. These options would require more funding and resources but would be more likely to address security needs in a timely manner rather than as needed.

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

Since this business case is comprised of projects running concurrently over multiple years, each one designates its completion date and transfer-to-plant.

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

The telecommunication & network distribution locations business case provides funding for security-related projects and supports Avista's safe and reliable infrastructure.

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

Security measures to protect critical infrastructure is not only prudent but required in some cases because of compliance. Reasonable and appropriate security measures are also an expectation of Avista's customers. The prudence of the program's investments will be evaluated by its governing body every month and adjusted as necessary.

2.8 Supplemental Information

2.8.1 Identify customers and stakeholders that interface with the business case

Each project within the business case must carefully consider stakeholders and effected customers during the chartering process.

2.8.2 Identify any related Business Cases

- None

3.1 Steering Committee or Advisory Group Information

The Enterprise Security Committee will provide monthly recommendations and guidance based on security operations center updates, business case financial updates, and industry recommendations.

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

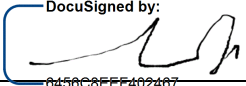
The Enterprise Security Committee acts as the custodian and governance body of security resources and investments which includes the Telecommunication & Network Distribution Security business case. This group meets monthly and is composed of directors and managers from most of the lines of business. In addition each project funded by the Telecommunication & Network Distribution Security business case has project-level steering committees.

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

Project Steering Committees act as the governing body over each project within the program and will consist of key members in management positions that are identified as responsible for the successful completion of the scope of work identified in the Charter document for the Project. The Project Steering Committee is responsible to provide guidance and make decisions on key issues that affect the following topics: scope, schedule, budget, project issues, and project risks.

The Project Steering Committee will meet at the defined intervals documented in the Charter of the project and will be facilitated by an assigned Project Manager from within the PMO Department.

The undersigned acknowledge they have reviewed the Telecommunication & Network Distribution 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: 
Print Name: Andy Leija
Title: Manager, Security Delivery

Date: Sep-02-2022 | 9:50 AM PDT

Telecommunication & Network Distribution Security

Role: _____
Business Case Owner

Signature: _____

DocuSigned by:
Clay Storey
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Date: Sep-02-2022 | 10:21 AM PDT

Print Name: _____
Clay Storey

Title: _____
Director of Security, IT & Security
Management

Role: _____
Business Case Sponsor