

August 2023



Washington Department of
FISH & WILDLIFE



5-YEAR IT STRATEGIC PLAN

A Path to an Improved Era for
Fish, Wildlife and People

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Table of Contents

Letter from the Chief Information Officer 3

Message from the Commission 4

Introduction 6

Agency 25 Year Strategic Plan Data Management Goal 8

STRATEGY | IT Governance, Business Services and Organizational Structure 9

STRATEGY | Project Management/IT Resourcing 11

STRATEGY | Data Management 12

STRATEGY | Infrastructure & Cloud 13

STRATEGY | Infrastructure & Cloud (cont'd) 14

STRATEGY | Network Improvement 15

STRATEGY | Cyber Security 16

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Letter from the Chief Information Officer

The Department of Fish and Wildlife finds itself in a moment of incredible opportunity. I have been the CIO for 6 years, and the journey of creating this plan with staff across the agency has been both humbling and inspiring. The mission of the agency is something both staff and the public are passionate about. This passion is what I see driving a business desire across all levels of the agency for greater investments in innovative science technologies, business management technologies, and data management tools.

Over the last several years, I have watched an amazing transformation within the agency as we adopt tools like M365, Esri, drones, mobile technologies, Starlink, and advanced cyber security tools. These and other technologies help us work in remote environments across Washington, better serve the public interest, better communicate, coordinate teams, organize data, and re-engineer our business processes to be more efficient. Each technology deployed shapes business outcomes and human behaviors.

Time and time again, through multiple state of emergency events, the DFW IT teams have not just kept operations running, but used crisis moments to lead by example at the state enterprise level. During COVID, DFW helped other agencies, adopted new technologies to meet business needs, and was holding agency-wide video calls for the Director to address 1,500 staff six months ahead of other agencies. During statewide cyber security events, DFW continually reacts faster, providing executive leadership and resources, and leading the adoption of innovative tools. When other agencies ask for help, DFW quickly rallies assistance when asked. This is part of our values, our principles, and part of this strategic plan.

Top performing staff want to be on top performing teams, innovating, and making a positive difference. Purpose drives high morale and engagement. DFW IT Sr. Management is leaning forward with a growth mindset intentionally focusing on Staff Satisfaction, Customer Satisfaction, and Financial Health. We are engaging with our staff where they work, participating in state enterprise committees, engaging in state level strategic planning, and participating in events to make DFW IT visible as a leader in the state operating space.

By supporting other agencies and leading by example with positive persistence, empathy, and ambition to improve things we influence positive outcomes. This reputation has a gravity which I believe will make us more competitive when recruiting top talent and it will help us retain top talent. I playfully jest and challenge other state CIOs that if I can build a better culture, I will steal talented staff. I want DFW IT to be out front and I want to make DFW IT a place staff are proud of and want to work. From there, these talented skilled IT

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professionals will accomplish and make possible amazing things for Washington State and the public we serve.

The agency staff IT serves are equally hard working and amazing to work with. I am continually amazed at the dedication and incredible types of work DFW staff perform in all areas of Washington State. You will find DFW staff in offices, in labs, underwater, on boats, in helicopters, on ATVs, snowmobiles, trucks, cars and hiking into the most remote areas of the state. This is because of the vast level of responsibilities the agency has when it comes to species management, land management, conservation, enforcement, research, engineering, and public engagement. This plan focuses on how IT needs to adapt and grow to meet the needs of these customers and the awesome work they do.

I am incredibly grateful to work with such a talented and amazing group of professionals at the Department of Fish and Wildlife. We have purposefully laid out an ambitious strategic plan and we know it will not be easy. We will grow into our lessons learned. We will adapt as new things are thrown our way. We will lead by example with our values of Accountability, Service, Professionalism, Integrity, Respect, and Empathy.

Matthew Oram, CIO

Message from the Commission

As individuals, we nine fish and wildlife commissioners are as diverse as the state that we represent. Some of us are anglers, some hunters and some just like being outdoors in a wild world. These different individual perspectives cause us to struggle at times as we set policies to meet the needs of wildlife conservation and all Washingtonians who depend on us both for stewardship of our natural resources and the harvest opportunities they provide. We all agree on some things: foremost of which is our responsibility to leave our state better than we found it, both in the short term and into the future. This duty is a big job requiring better partnerships and more engagement. We need to continue to listen. We need to continue to be guided by science in our decision making. Going forward, we hope every person in the state will believe that we are working on their behalf. These goals are the genesis of this plan.

We chose a 25-year timeline for our long view. The ambitious timeline allows enough time for some species life cycles (e.g. four or five generations of salmon and steelhead returns) to measure biologic progress. It also allows enough time for habitat and biodiversity improvements to take hold. We also understand that we must quantify deliverables in the near future so strategies and actions



have been established using four-year increments. The incremental measures allow us to pull people together, access resources, and establish partnerships to accomplish our shared objectives.

We are mindful of our responsibility to set policy and regulations that address the inherent tension between the use and conservation of our state's diverse resources. We know that this leadership is what the citizens of this state expect from us, especially as we face unprecedented challenges, such as human population growth, development pressure, degradation of ocean conditions, fire, and invasive species, that are contributing to the decline of viable fish and wildlife populations.

We appreciate those who have come before us, particularly the work that has been done by private property owners, hunters, anglers and conservation groups, to define problems, suggest solutions, and assist policymakers on all levels to implement improvements. We wouldn't be where we are now without them.

Now we need a new plan - a plan that continues the good work of the past, acknowledges and collaborates with current partners including tribes, and envisions pathways for the future. The plan is just the beginning. Much work remains. We envision a system of stewardship guided by sound science, strong partnerships, and active listening that will result in abundant fish, wildlife, and resilient lands now and into the future.





Introduction

The Washington Department of Fish & Wildlife (WDFW) mission is to preserve, protect, and perpetuate fish, wildlife, and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities. The WDFW IT Mission is to provide quality, secure, cost-effective services to achieve business goals and objectives.

Information technology resources, services, and staff will continue to play a growing critical role in this mission as the modern business world embraces technology innovations that exponentially change the way business is done. In today's digital age, technology is outpacing state government's Information Technology budget and strategies, creating a dilemma where staff are often able to use more advanced technology in their schooling and personal lives than at work. With this acknowledgement, WDFW has re-examined its vision and charted a new course for the future through this strategic plan.

This IT Strategy is focused on business needs, staff development, operational efficiencies, and innovations that will lead to long-term solutions that support the agency mission.

The IT Assessment included:

- ▶ Reviewing previous IT strategic plans
- ▶ Briefings with the agency director on vision, goals, and approach.
- ▶ 23 Strength, Weakness, Opportunity, and Threat (SWOT) analysis interviews with business units across the agency.
- ▶ Monthly meetings with the Information Technology Governance and Steering Committee
- ▶ 1:1 interviews with IT classed agency staff
- ▶ Agency IT Strategic Planning Survey sent to all agency staff
- ▶ InfoTech: IT Customer Satisfaction Survey to all agency supervisors
- ▶ InfoTech: IT Org, Design and Staffing Assessment
- ▶ Reviewed IT staff position descriptions
- ▶ Reviewed Budget Centralization lessons learned

The Needs of Tomorrow

Fortunately, we know what needs to be done. If we act now, we can stem the rate of loss and change the current trajectory. Healthy fish, wildlife, and habitats safeguard our own existence into the future. People still receive significant value from opportunities and livelihoods provided by fish and wildlife. There is a growing movement for stronger connections with healthy, local, and natural foods. It is increasingly essential to the public that we manage our public resources for both consumptive and non-consumptive uses in a



OUR MISSION

To preserve, protect, and perpetuate fish, wildlife, and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities.

manner that serves existing and future generations. Quality science and WDFW's conservation principles, per its conservation policy, will continue to drive management decisions. Decisions will be made with the understanding that Washington's residents hold diverse values and interests related to fish and wildlife and yet will attempt to ensure legitimate access to the environmental benefits by *all* of Washington's diverse people.

People's connections and ethical relationships with nature, fish, and wildlife are varied. We have a responsibility, to manage fish and wildlife in trust for the public, to consider diverse values as long as they don't jeopardize the sustainability of fish, wildlife, and nature for generations to come. With the diversity of values and expectations come different judgments about the appropriate management for fish, wildlife, and habitat (e.g. the levels of protection, harvest amounts and allocations, when or if removal is appropriate). This reality brings significant conflict and management challenges before the Department.

The Department will continue to evolve to understand and where possible, reduce disruptive conflict arising from the spectrum of the public's values. This means increasing public engagement and participation, listening to understand and fostering conflict resolution skills. As we do so, we will be better equipped to find the best balance for competing interests among the residents of Washington while ensuring that we are achieving our mandates.

To be more effective, the Department can improve how it makes and communicates decisions, engages with communities and youth, works with our tribal partners, and provides sustainable opportunities for both outdoor recreation and natural resource-based industries.

Collaborative Conservation

The Department does not have the ability nor authority to achieve the necessary change alone. We must also invest in helping others' efforts, to preserve, protect, and manage fish and wildlife. Conservation at this scale can only happen through collaboration and building new and strengthening old partnerships - including tribes and other natural resource agencies.

It's going to take all of us working together. Local, state, federal, tribal governments, non-governmental, and conservation organizations, land managers, farmers, commercial industries, private landowners, hunters, anglers, and others of all ages and backgrounds are needed to cooperate and work toward a more resilient future for fish, wildlife, and people.

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Agency 25 Year Strategic Plan Data Management Goal

Page 19 near-term goal 3. Develop an agency-level data management system to provide better science for agency decision-making and constituent outreach. This will include:

- ▶ Developing a system that allows for the intake and analysis of data across programs.
- ▶ Modernizing and standardizing technology to allow for integration and transparency of scientific data across the agency.
- ▶ Identifying business needs and ensuring appropriate investments in the right tools.

DFW IT Goals

- ▶ **Goal 1:** Ensure full visibility into all IT resources to ensure safety of WDFW business and meet state, national and international standards
- ▶ **Goal 2:** Ensure that data development, data architecture and data management are complementary throughout the enterprise.
- ▶ **Goal 3:** Decision making for new technology investments, approaches, and strategy are informed through an enterprise-wide approach to achieve efficiencies.
- ▶ **Goal 4:** Ensure that all technology investments include maintenance and operations funding for appropriate lifecycle management.

2023 areas of focus

- ▶ IT Governance, business services and organizational structure
- ▶ Project Management/IT Resourcing strategy
- ▶ Data Management Strategy
- ▶ Infrastructure/Cloud Strategy
- ▶ Network Improvement Strategy
- ▶ IT Risk Management/Cyber Security Strategy

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STRATEGY

IT Governance, Business Services and Organizational Structure

Vision

Technology is transforming how Fish and Wildlife and the state does business. The IT Division provides consumable and administrative services to the business. Improving and developing new services the business needs directly impacts DFW's ability to achieve its mission. By consciously organizing and planning our technology projects and investments under consolidated IT leadership strategy, DFW IT staff will be able to provide higher quality, secure, cost effective, and efficient services to the business. This will result in growing the agency's potential at developing positive outcomes for DFW partners and Washington State citizens.

IT Division leadership serves the agency and partners with business leaders to prioritize both the quality of existing services and the innovational development of new IT service offerings. Investing in IT Portfolio Management of projects, hardware, software, and budget will make transparent how IT is prioritizing and working to partner and will build the needed relationships to continually improve.

The IT Division will develop the working environment that builds strong teams and the trust needed to be successful by focusing on Staff Satisfaction, Customer Satisfaction, and Financial Health. This focus will help DFW IT create a reputation of being a great place to work that will attract new talent and retain skilled IT staff that are in high demand. Maintaining a skilled and engaged IT work force will allow DFW IT to better serve agency needs. Growth in trust will come from providing excellent customer service and quality services resulting in greater support for IT funding which will reinforce Staff Satisfaction and Customer Satisfaction.

The Opportunity

By providing more leadership, investment, and commitment, WDFW can become a stronger collaborator and more effectively connect with decision makers to provide actionable information and solutions for net ecological gains (i.e. more eco-friendly construction/ use than damage to the ecosystem), while achieving benefits for local communities. Ensuring that the worth provided by healthy functioning habitats, such as outdoor recreation and human health, are more effectively included in traditional economic analyses will further the understanding of these benefits.

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Other agencies, private landowners, tribes, and the public are ready to work together with us and we can take advantage of previous and existing planning efforts (such as the State Wildlife Action Plan, Washington's Biodiversity Conservation Strategy, and game management plans) to help us build upon the great work already done. We have untapped opportunities to leverage our efforts with others' to improve synergies and accomplish better conservation across Washington.



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STRATEGY

Project Management/IT Resourcing

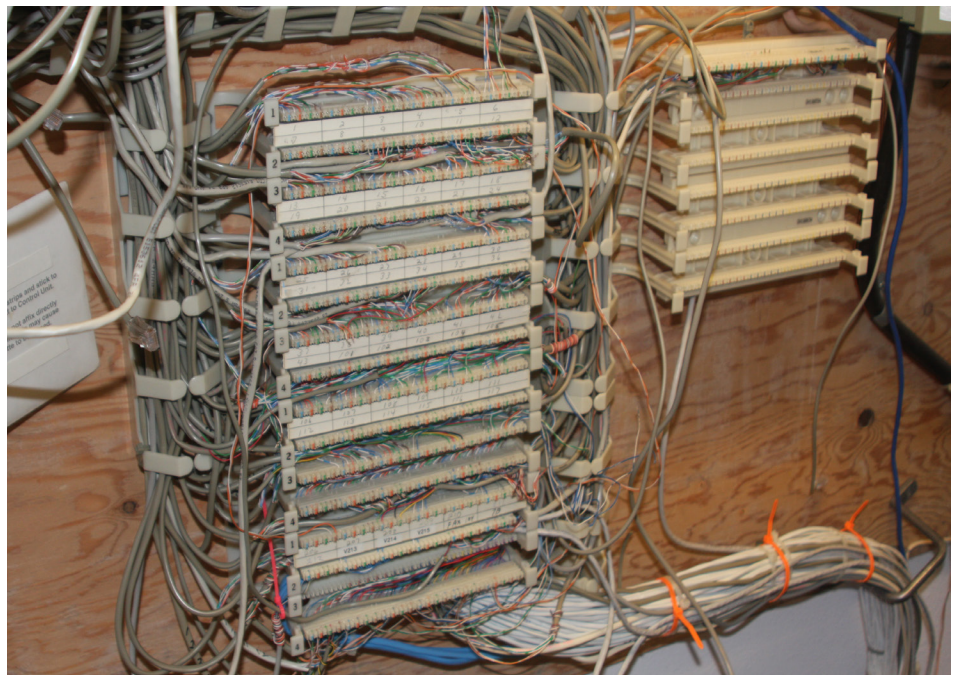
Vision

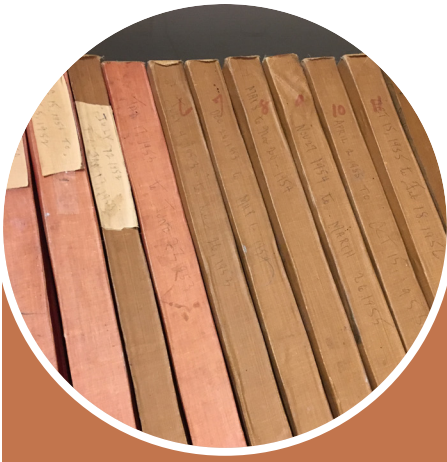
Project management is critically important for an effective IT team. The ability to accurately estimate the schedule, scope, and budget of projects as well as the ability to appropriately manage issues, risks, and remediations along the way will keep projects on target to meet promised commitments which enables the business to achieve its goals.

As skills in project management improve we are able to reach higher confidence in our ability to deliver which directly impacts both staff satisfaction, customer satisfaction, and financial health.

Applying Project Management principals to our current work efforts will result in better IT resource planning. Resource strategy is crucial to finding balance between operations and innovations workload. The resource strategy informs budgetary decisions necessary to sustain and achieve business objectives without compromising previous commitments.

Making and maintaining an agency IT Project portfolio will provide visibility into the number of projects staff are working on, project investments, and increase project accountability. This transparency will influence and help business leaders focus resources on areas of highest importance.





STRATEGY

Data Management

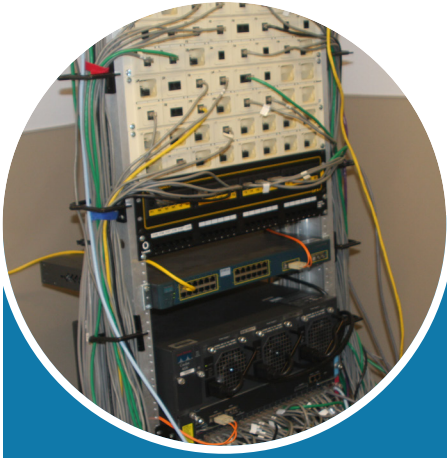
Vision

DFW has a 25 year strategic goal to better utilize its scientific data for policy decision making and to build trust with the public. To accomplish this, DFW IT Division will invest and focus on creating a reputation of being a great place to work to attract and retain skilled experts in data architecture and engineering that will develop self-serve scientific data services for agency staff to utilize to do their work.

Development of data services to meet business needs will transform how staff collect and interact with scientific data. By enabling staff with modern data tools within an enterprise planned and managed architecture, the agency will be able to reduce the time it takes to process data, automate data processing through standardization of business processes, reduce dark data repositories, and improve analytical capabilities across business units. These improvements within a structured system will result in greater defensibility when scientific data is questioned, thus resulting in greater trust in agency science.

Due to the size and scope of scientific data collected and managed by DFW, a steering committee of business leaders led by the agency CIO will be established. The Data Steering Committee will focus on development of data governance policies, assessment of enterprise data management problem statements, and the development of a data solutions project roadmap prioritized by greatest desired business impact and desired outcomes. By having the policy, governance, problem solving, and solutions directed by business leadership it will focus IT and business resources to partner on desired outcomes thus delivering faster and more results over the next five years.





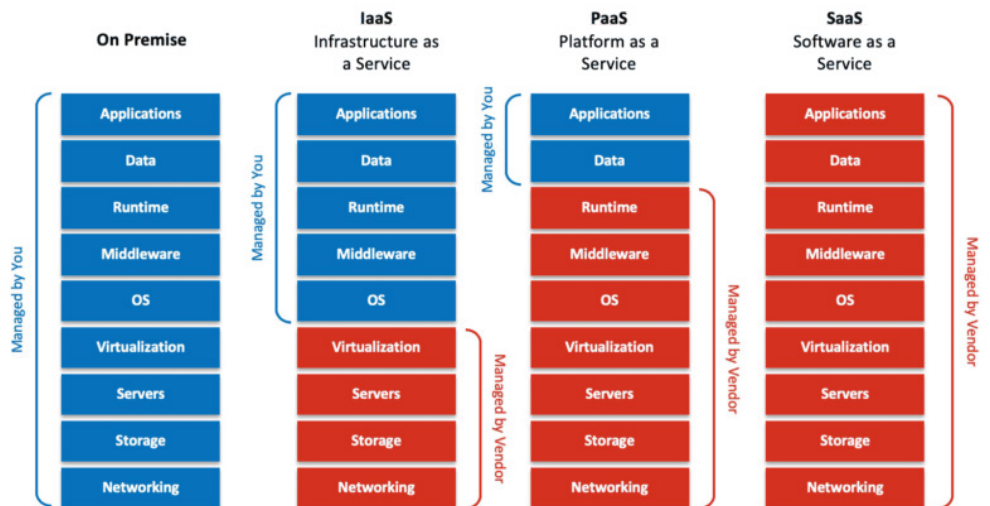
STRATEGY

Infrastructure & Cloud

Vision

Investing in standardized infrastructure planning and cloud capabilities will give WDFW the ability to leverage new technologies to meet business needs faster, increasing agency potential for better conservation and recreational outcomes for Washington State.

Agency level planning of IT infrastructure to meet business needs will result in reduction of duplicate spending, improve incident management capabilities, reduce single threaded skills, and create a model to better use the IT funding we have for IT infrastructure by moving from a primarily capital asset model to operational expenditure model. This will include investing in vendor partnerships for cloud Infrastructure As A Service (IAAS), Platform As A Service (PAAS), and Software As A Service (SAAS) solutions.





STRATEGY

Infrastructure & Cloud (cont'd)

IAAS

Today many of the agencies legacy applications and data systems are built on older technologies stacks and are not optimized for cloud. It will require significant investments to rebuild or re-platform these applications and systems. To grow the skills and incentivize cloud innovation, DFW will lift and shift its virtualized environment to the cloud and then work in parallel to optimize legacy solutions and develop new solutions.

By consolidating our IT teams focus and effort into one primary IAAS cloud we will:

- ▶ Be able to develop scientific data management services faster
- ▶ Be able to reduce architectural complexity required to meet business needs around analysis and usage of large data sets by collocating them in one datacenter
- ▶ Collocating large data sets in one datacenter also prevents network latency and costs
- ▶ Set clear expectations and direction for staff to increase morale and productivity
- ▶ Set focused training to upskill staff as well as define desired skills in recruitments for new staff
- ▶ Reduce the need to have dedicated resources to support unique skills required to properly maintain multiple IAAS cloud architectures
- ▶ Simplify infrastructure budgeting for compute, storage, and virtual networking

Moving DFW from an operating stance utilizing three datacenters to one primary datacenter over the next 2 years vs 5 or 10 will manifest greater business opportunities, reduce the time to deliver new enterprise data services, build in capacity to reskill and refocus our IT workforce to do a greater number of projects and provide greater business value.

PAAS and SAAS

When re-platforming legacy systems or developing new solutions, DFW IT architects will look to leverage cloud PAAS and SAAS solutions. This Architectural shift will lead to leaner and more cost beneficial solutions allowing staff to focus on service quality.



STRATEGY

Network Improvement

Vision

DFW Network need is much different than a state agency working from office buildings. DFW has 200 offices, field staff working in the field with fish and wildlife, and enforcement officers working from boats, helicopters, ATVs, and other motorized vehicles. The ability to stay connected for communication and the growing need to use applications and agency data in the field is growing. We want to invest in our digital culture to support staff satisfaction and agency success.

Over the past several years the state operating environment has rapidly shifted in regard to where people work and the growth of digital business solutions. Post COVID, the agency continues to allow much greater flexibility for telework. This means how we keep our environment, our organization and our end users safe is rapidly changing. DFW must invest in a more robust networking strategy that focuses on increased speed and increased security from endpoint to the data.

By investing in Secure Service Edge technologies, zero trust architecture, WAN, LAN, satellite and cellular technologies we will continue to provide agency staff with the security and flexibility they need. We can achieve this by centralizing ISP and hardware management, standardizing configuration, automating, adopting Continuous Improvement Continuous Development (CICD) practice, and adopting a practice of pre-and-post validation. Doing this will help with efficient auditing, governance, and troubleshooting.

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STRATEGY

Cyber Security

Vision

As agency business becomes more reliant on technology to operate so does the risk of cyber incidents causing major political reputational loss, service outages, loss of staff productivity, data breach, intentional manipulation of agency data, or destruction of agency data and assets. To reduce these and other risks, DFW will focus on growing the best cybersecurity and information governance team in the state. To grow the best cyber security team in the state, DFW will focus on Staff Satisfaction, Customer Satisfaction and Financial Health.

Building a culture of leadership, empowerment, and career development is instrumental to recruit and retain skilled cybersecurity and risk management staff at DFW. Staff are motivated by being on a high performing team and this means DFW will push its staff with carefully created key performance indicators and projects that will push the development of new skills. DFW continues to engage in enterprise steering committees and policy making, and will support other state agencies. Intentional encouragement in enterprise activities gives DFW staff leadership experience, provides visibility across the enterprise of staff expertise and will continue to build a reputation of DFW as the premier employer for cybersecurity and risk management.

Cyber Security Team and Information Governance training programs build technical and risk literacy across the agency. Training opportunities build cyber and records management hygiene awareness necessary to build and leverage business relationships before issues or incidents arise. This reduces staff level incidents, results in lower stress when working major incidents and fosters an environment of teamwork. Ensuring excellent customer service during Security Design Reviews, Incident Response, physical record digitization and public records request management builds partnerships with the business. Each of these services are a necessary inconvenience to agency customers and by focusing on excellent service, supporting the business needs and building strong business relationships it will result in quality business outcomes.

Focusing on excellent customer service will result in greater support for the funding of cyber and information governance services. Executive high level status reports of resolved, active and potential threats must also be periodically provided to business leadership to remind and make aware the work that is actively being done to protect the agency. Leveraging a proactive awareness model, these metrics should inform the business on effective return on investment strategies, risk management decision making and critical risk exposures to the business.



WDFW Values

- ▶ **Accountability:** We hold ourselves and each other responsible for acting consistent with our values and mission.
- ▶ **Service:** We add value to Washington communities and seek to improve the public's experience.
- ▶ **Professionalism:** We serve in a manner that reflects positively on the Department and on ourselves.
- ▶ **Integrity:** We are consistently open, honest, ethical, and genuine in our actions.
- ▶ **Respect:** We treat each other with dignity.
- ▶ **Empathy:** We take time to understand and appreciate others.

