

# 2024-2029 OREGON WATER RESOURCES IT STRATEGIC PLAN



OREGON



WATER RESOURCES  
DEPARTMENT

HOW IT WILL SUPPORT AGENCY STRATEGY

*BRAD MELENDY*

*IS MANAGER*

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## Message from the Chief Information Officer

This Information Technology (IT) Strategic Plan provides direction on how the Information Services (IS) Section must focus its resources over the next five years to support and advance the mission of the agency. It will do this by aligning IT strategic initiatives with the priorities and objectives of the broader agency. These IT strategic initiatives are the tactics we will use to support our business stakeholders in achieving their goals.

This strategy was developed in cooperation with business stakeholders, IS staff, and external consultants. Everyone's input has been critical to the creation of this document and will be again in future strategic planning efforts. A big thanks to all who have provided input and to those who will support the implementation of this plan. I look forward to working with all of you in advancing the mission and objectives of the Oregon Water Resources Department (OWRD).

*-Brad Melendy, IS Section Manager and CIO*

## Agency Summary

### Agency Overview

The Oregon Water Resources Department is the state agency that is focused on “water quantity.” To achieve its mission, the Department’s major functions include: (1) Collecting, analyzing, and providing water data; (2) Protecting public safety through well construction and dam safety programs; (3) Distributing water under the water rights system of prior appropriation; (4) Providing planning, technical assistance, and funding to address instream and out-of-stream water supply needs; and (5) Processing water rights transactions.

### Agency Vision and Mission

The Oregon Water Resources Department’s vision and mission statements are:

#### Vision

To assure sufficient and sustainable water supplies are available to meet current and future needs.

#### Mission

The Department's mission is to serve the public by practicing and promoting responsible water management through two key goals:

- To directly address Oregon's water supply needs.
- To restore and protect streamflows and watersheds in order to ensure the long-term sustainability of Oregon's ecosystems, economy, and quality of life.

### Agency Core Values

The agency’s core values guide the actions of the agency. Those values are:

- **Integrity** – We are accountable for all that we do. We act with honesty and promote transparency.
- **Service** – We are dedicated to providing outstanding service and treating everyone equitably in our management and stewardship of state resources.
- **Technical Excellence** – We base our resource decisions on law, science, and expertise.
- **Teamwork** – We are united in our mission, relying on one another and working together with the communities we serve.
- **Forward-Looking** – We seek innovative and practical solutions to the water challenges of today and tomorrow.

### Agency Priorities and Objectives

The agency has several strategic priorities, supported by a larger number of key objectives. IT initiatives will support these priorities and objectives.

#### Strategic Priorities

- Modernize our management of Oregon’s surface water and groundwater resources to meet instream and out-of-stream uses.
- Work to secure Oregon’s instream and out-of-stream water future in the face of increased water scarcity.
- Foster a forward-looking team dedicated to serving Oregonians with integrity and excellence.

## Key Objectives

- Advance responsible groundwater and surface water management
- Modernize water transactions systems and processes
- Increase protection of public safety and health
- Improve instream protections and increase water conservation
- Understand Oregon's expected future water supply
- Equip basins to plan for their water future
- Invest in Oregon's built and natural water infrastructure
- Maintain technical excellence and improve customer service by investing in training for staff
- Improve agency communications

## Agency Organizational Structure

Currently, the Agency is headquartered in Salem, with 21 offices located throughout the state. The State Agency is comprised of five divisions, The Director's Office, Field Services, Technical Services, Water Right Services, and Administrative Services.

The IS Section currently resides within the Administrative Services Division and is comprised of 19 staff and one Manager. The IS Section is comprised of teams that include Application Development, Geospatial Information Services (GIS), Network and Infrastructure, and Data.

## Current IT Landscape

### Overview

The current state of information technology at OWRD follows a general theme of lagging behind the curve in both technology and resources. There is an acknowledgement of historical lack of investment by OWRD executive management. This lack of investment has presented the agency with obstacles as it tries to modernize itself. Because of this executive management has expressed support to catch the IS section up with resources needed to effectively support the agency's strategic priorities and objectives.

The current state of the IS Section and information technology at OWRD has been developed from a collection of surveys and analysis which include Info-Tech diagnostics, SWOT analysis, PESTLE analysis, review of application inventory, project lists, section maturity level, and budget.

### Diagnostics

The IS Section employed Info-Tech to facilitate survey diagnostics to help ascertain the current state of customer satisfaction, and the importance and effectiveness of core IT processes.

#### *IT Satisfaction*

The Info-Tech CIO Business Vision diagnostic (Appendix C) was performed to survey management and leadership throughout the agency for IT satisfaction. The results yielded an overall satisfaction score of 64% with an IT value score of 73%. This diagnostic revealed key areas that needed improvement which included Business Apps, Requirements Gathering, Client-Facing Technology, Analytical Capability and Reports, IT Innovation Leadership, and Projects.

#### *Key IT capabilities needing attention*

The Management and Governance diagnostic (Appendix D) also revealed core services that were scored as being both high importance and low performance: IT Strategy and Governance, Stakeholder Management, Availability and Capacity Management, Application Portfolio. These became areas of focus for the IT Strategic plan. The Info-Tech Management and Governance diagnostic was executed to inform the results of the CIO Business Vision diagnostic. Both diagnostics together improved the understanding and value of the results.

These two diagnostics together along with work sessions targeted at the IS Section resulted in the identification of six key IT processes needing attention. Those core IT processes included **IT Strategy and Governance, Stakeholder Management, Project Management, Data Architecture and Governance, and Project Portfolio Management**. Improving the maturity of these core IT processes will be key to improving the IS Section's overall IT maturity and in turn helping to advance the agency's strategic objectives.

### PESTLE Analysis

The agency conducted a PESTLE (Political, Economic, Social, Technological, Legal, Environmental) analysis (Appendix F). Items identified in that analysis help to shape the understanding of external impacts facing the agency at this time. Awareness of these impacts will help to better shape this plan's strategy and targeted objectives.

There were multiple impacts identified in every PESTLE category, painting a picture of an agency that must be aware of and plan for all of them. However, it was observed that a higher percentage of technological impacts were things that the agency has direct control over, where most of the other category impacts involved much broader concerns which are more difficult to influence. That said, technological impacts appear to be the area where the agency can exert the most influence, making this strategy document necessary tool in addressing those impacts.

## SWOT Analysis

A SWOT (Strengths, Weaknesses, Opportunities, and Risks) analysis (Appendix E) was performed. The results helped to feed into the management and governance framework capabilities that should be focused on in this plan. Those capabilities included:

- IT Strategy & Governance
- Stakeholder Relations
- Project Portfolio Management
- Project Management
- Data Governance
- Data Architecture

The SWOT analysis very much aligned with results from the Management and Governance diagnostic and many of the survey's core IT processes matched items identified as Strengths and Weaknesses. This further supported the results of both the SWOT and the diagnostic.

## Core Applications

The agency has identified a list of 26 core applications that are either custom developed, COTS (Commercial Off the Shelf) or SaaS (Software as a Service) solutions. These are all applications that have significant use and impact within the agency. Additionally, there are nearly 200 applications in total when smaller and less used utilities are included. These are used less frequently and by smaller groups of users, overall reducing their level of criticality. These are applications that if unavailable, they won't adversely affect agency staff to a significant degree.

## Project List

The agency has a current list of 24 projects that are in flight. Projects are identified as work efforts that are measured in weeks, months, or years. This list will change over the course of the strategic plan period as work efforts are completed and new concepts are promoted to project status.

There are currently 12 concepts identified. Concepts are defined as work efforts that have not yet been prioritized or approved for commencement of work but are in the project pipeline. There is currently an effort to gather concepts from business stakeholders to better understand and respond to the agency's future technological needs.

Projects and concepts can be found in Appendix H.

## Budget

The current 2023-2025 Information Services Section budget sits at \$6.6 million total fund. Most of this funding (~\$5m) supports costs associated with staffing. Remaining funds support services and supplies



costs of the section and the agency. WRD's IT Department follows the state's budget development process as outlined in the biennial budget instructions published by the Department of Administrative Services.

## Current Maturity Level

OWRD's IS Section currently operates at the firefighter maturity level. As seen illustrated above, this is the second of five possible maturity levels, just above the lowest level, unstable. The IS Section supports business stakeholders but struggles to be proactive. This is illustrated in Figure 1.

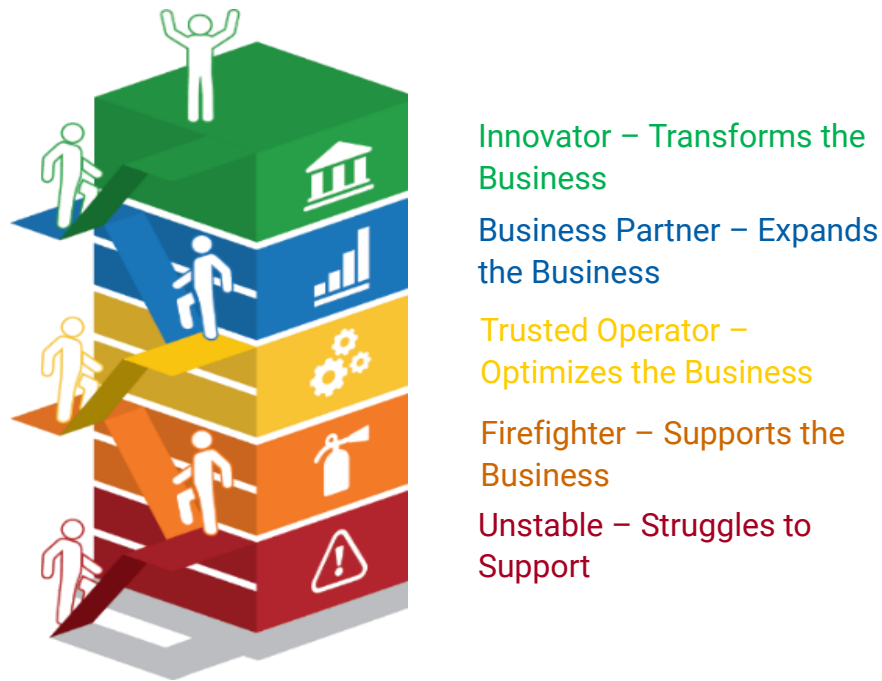


Figure 1. IT Maturity Levels. OWRD currently operates at Firefighter Level.

## IT Context

### Overview

The IT Strategic Plan for the Oregon Water Resources Department is a plan designed to strategically align IT initiatives with the agency's vision, mission, and broader agency strategic plan. This plan is further guided by the agency's core values and aims to position the Information Services Section as a trusted operator who helps optimize the business units within the agency.

### IS Vision, Mission, and Guiding Principles

The Information Services Section's vision, mission and guiding principles were created jointly with input from IS Section staff and guidance from consultants contracted to assist with development of the IT Strategic Plan. They are:

#### *IS Vision*

To be a trusted partner, fostering and supporting agency objectives through a skilled and effective IT workforce.

#### *IS Mission*

We collaborate with the business to provide innovative solutions and services by facilitating teamwork while remaining true to the agency's core values of Integrity, Service, Technical Excellence, Teamwork, and Forward-Looking.

#### *IS Guiding Principles*

Guiding principles were developed in alignment with the agency's core values, with two IT guiding principles to each agency core value. This helps to ensure alignment with the agency's broader strategic efforts that are themselves crafted to align with and support the broader agency core values.

IT Guiding Principle Name	IT Guiding Principle Statement
<b>Transparency and accountability</b>	We act with transparency and accountability in all IT decision-making.
<b>Data stewardship</b>	We safeguard the confidentiality, integrity, and availability of state data.
<b>Customer focused</b>	We deliver exceptional IT services that meet the needs of state employees and citizens.
<b>Proactive service</b>	We proactively identify and address IT issues to minimize disruptions and downtime to customers.
<b>Continuous improvement</b>	We continuously improve IT services through feedback and innovation.
<b>Always learning</b>	We continuously invest in IT training and development.
<b>Team oriented</b>	We foster a collaborative and supportive work environment.
<b>Effective communication</b>	We encourage open communication and information sharing among IT staff.
<b>Strive for innovation</b>	We embrace innovation and new technologies to improve IT services and operations.
<b>Anticipate needs</b>	We anticipate future IT needs and plan accordingly.

## IS Section Goal

The IS Section's primary goal is **to improve its IT maturity level**. By improving the section's maturity level, it will improve its ability to support the business as it strives to achieve its strategic priorities of modernization, securing Oregon's water future, and fostering a forward-looking team. More than ever before, the agency's broader strategic priorities rely on technology and improved IT maturity will enable the IS Section to meet those technological needs. This is illustrated in the figure 2.

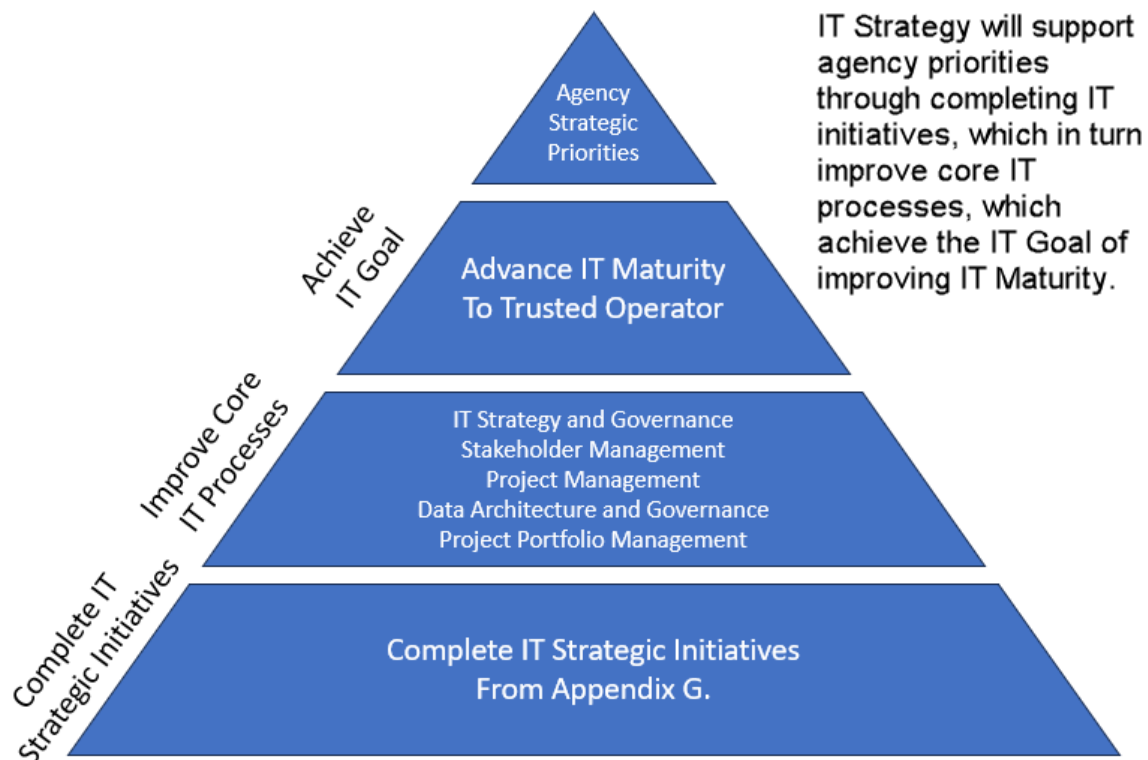


Figure 2. How IT initiatives support agency strategic priorities.

### *Target Maturity Level*

OWRD's IS Section's target maturity level is the Trusted Operator which optimizes the business. As shown below, this is the third of five possible maturity levels. This is seen as a realistic goal for the IS Section over the course of this strategic plan timeframe. Maturity levels are shown in figure 1.

## IT Strategic Initiatives

### Overview

The IS Section started with results from two key diagnostics, the CIO Business Vision and the Management and Governance surveys to identify critical IT processes needing attention to support efforts to advance the IT Sections goal of improving the maturity level of Information Technology at OWRD. As mentioned earlier, six core IT processes of **IT Strategy and Governance, Stakeholder Management, Project Management, Data Architecture, Data Governance, and Project Portfolio Management** were identified.

Through a series of work sessions with IS lead staff and the CIO, 18 strategic initiatives were identified to improve each of the six identified core IT processes. Furthermore, they were categorized into the areas of Business Support, IT Excellence, and Innovation to better understand how they advance the IS Section’s goal of improving IT maturity and supporting the agency’s key objectives.

More detailed information on IT Strategic Initiatives can be found in Appendix G.

### Initiatives

#### *Business Support Initiatives*

The Business Support Initiatives will be executed to advance the agency’s strategic priorities and key objectives. These items represent work efforts that have immediate impact on agency operations.

#### *Innovation IT Initiatives*

The IS Section conducted brainstorming sessions to identify strategic initiatives for improving IT operational excellence through innovation. It is believed these items will elevate the IS Section’s maturity level to trusted operator, up from firefighter, ultimately enabling the IS Section to better serve the agency’s needs and advance agency strategy.

#### *IT Excellence Initiatives*

The IS Section has identified a series of initiatives aligned with and supporting findings in the Management and Governance diagnostic executed by Info-Tech. They have been identified through work sessions within the IS Section to support the areas of IT Governance, Stakeholder Relations, Project Management, Project and Portfolio Management, Data Governance and Architecture.

### Costs Associated with IT Strategic Initiatives

Making improvements in the IS Section’s ability to execute identified IT Strategic Initiatives will come with some costs. Below are projected staffing and fiscal costs associated with the proposed strategic initiatives.

#### *Staffing Needs*

Key IT Initiative	Additional Staffing Resource
Dedicated Project Manager Positions	+2 x Project Manager
Centralization and normalization of all data sets	+1 x Network Specialist +1 x Database Specialist
Having Business Analyst(s) in IS Department	+2 x Business Analysts
<b>Total:</b>	<b>+6 FTE</b>

*Fiscal Needs*

Key IT Initiative	Budget Costs
P&PM Information System	Project & Portfolio Management Information System – Cost to be determined
Identify stakeholder metrics for success	\$40K for Info-Tech subscription & diagnostics
Apply project management to all projects	Project Management software and training– Cost to be determined
Analysis effort to catalog current state and need of data infrastructure	\$30K for consultant to perform external analysis
<b>Total:</b>	<b>\$110K</b>

## Metrics and Targets

### Overview

The IS Section will adopt metrics and targets that help determine the success of the section's IT initiatives in relation to the needs of the agency. This will be determined through continued use of survey diagnostics of agency staff and management. Those diagnostics will be performed annually and compared to past results as an indicator for progress in target areas of improvement if funding exists.

### Metrics for Success

In building this strategic plan, the data gathered by the Info-Tech diagnostics were found to be very valuable in measuring the current state of IT at OWRD. Since having that baseline for comparison to future measurements advances the IS Section as it strives to improve its IT maturity, the IS Section will continue to use these diagnostics over the course of this strategic plan to measure performance (if funding exists).

As mentioned previously, the CIO Business Vision diagnostic resulted in overall **IT Satisfaction of 64%** and overall **IT value of 73%**. Additionally, the Management and Governance diagnostic identified four core IT processes that were of High Importance and Low Effectiveness (Appendix D). The IS Section will follow this Strategic Plan with a goal of achieving the following target metrics at the end of each year based on the diagnostics.

#### *Target Metrics for Success*

These represent the target metrics for success spanning the five-year duration of this strategic plan. This will give the plan a chance to scale to the final target of a satisfaction and value score of **at least 80%**, and **zero core IT processes with a high importance and low effectiveness at the end of 2028**.

#### CIO Business Vision (Appendix C)

- 2024: IT Satisfaction 69%, IT Value 74%
- 2025: IT Satisfaction 71%, IT Value 76%
- 2026: IT Satisfaction 74%, IT Value 77%
- 2027: IT Satisfaction 77%, IT Value 79%
- 2028: IT Satisfaction 80%, IT Value 80%

#### Management and Governance (Appendix D)

- 2024: No more than 4 Core Processes with High Importance and Low Effectiveness
- 2025: No more than 3 Core Processes with High Importance and Low Effectiveness
- 2026: No more than 2 Core Processes with High Importance and Low Effectiveness
- 2027: No more than 1 Core Processes with High Importance and Low Effectiveness
- 2028: 0 Core Processes with High Importance and Low Effectiveness

Achieving these metrics would position the IS Section very well for achieving its goal of advancing its IT maturity to the Trusted Operator stage throughout the duration of this strategic plan.

### Metric Lifecycle

Metrics and targets will be reviewed and updated for effectiveness and alignment with the IT Strategic Plan as it is updated. It is important that baseline metrics are maintained year-over-year for comparison.

Metrics should only be changed during a strategy update cycle and when the metric is no longer providing value.

## IT Roadmap

Over the course of this strategic plan, the IS Section will execute key initiatives in three support areas: Business Support, IT Excellence, and Innovation. These initiatives will elevate the IS Section’s IT Maturity and result in improved support of agency goals and objectives. Planned progress is illustrated in figure 3.

### Key Diagnostic Milestones

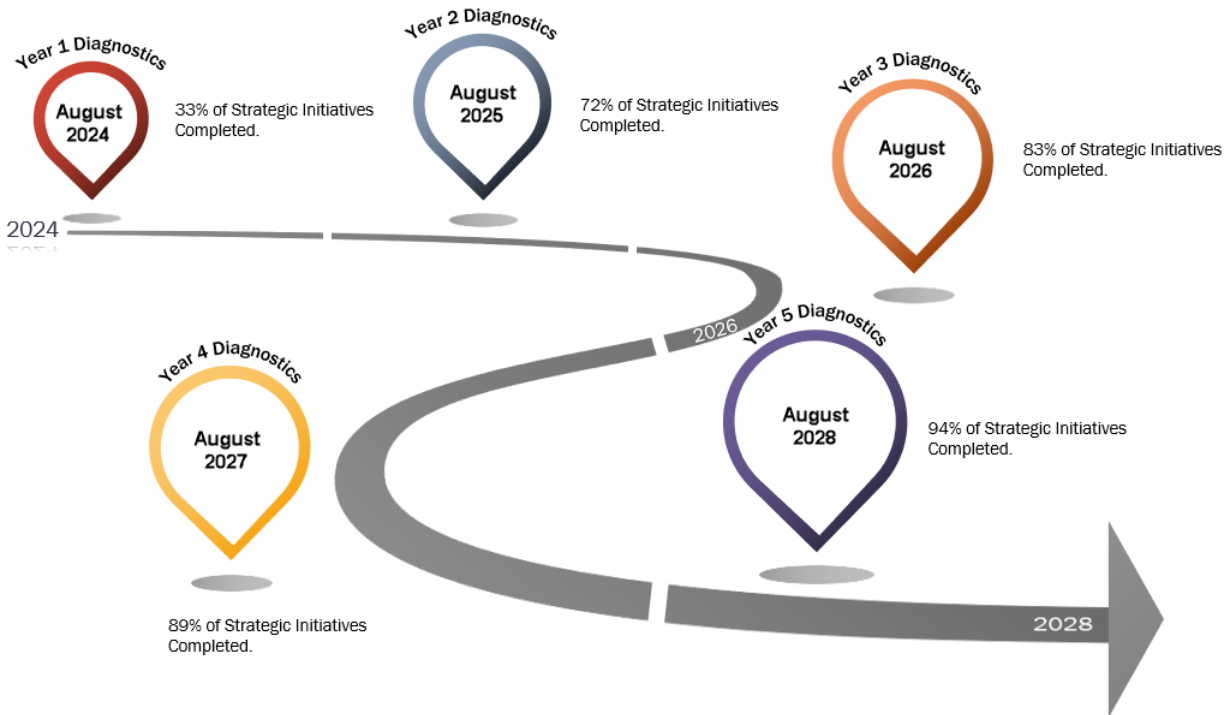


Figure 3: IT Strategy Roadmap

## Communication Plan

The communication plan focuses on seven key communication milestones, each with specific target dates. The following communication actions, formats and dates will be followed:

Communication Activity	Target Audience	Person Responsible	Communication Medium	Date
<b>IT Strategy Agency Draft Review</b>	ASD Division Administrator	CIO	Plan review in MS Word	12/12/2023
<b>EIS Asst. State CIO Preview</b>	Asst. State CIO for Natural Resources	CIO	Email with internal link to plan	12/14/2023
<b>IT Strategy Review</b>	Deputy Director, Strategy and Administration	CIO	Plan review in MS WORD	12/27/2023
<b>EIS IT Strategy Delivery</b>	Asst. State CIO for Natural Resources	CIO	Electronic Delivery	12/29/2023
<b>WRD IT Strategy Delivery</b>	Agency Leadership Team / Agency Management Team	CIO	Virtual meeting with PowerPoint	No later than 1/8/2024
<b>IT Strategy Introduction to IS Section</b>	IS staff	CIO	Electronic Review of Plan followed by Q&A Session	1/24/2024
<b>Public posting of IT strategic plan</b>	Public	CIO	Website	1/31/2024



## IT Strategic Lifecycle and Conclusion

### Alignment with Budget Timelines

The IS Section has adopted a biennial review process tied to the agency’s two-year budget cycle. The Information Services Governance Committee (ISGC) will review and make suggestions in Fall of odd number years, following the start of the new budget cycle. This provides opportunity to finalize strategy changes and incorporate needs into the agency’s budget building processes and policy option packages for the following budget cycle. IT Strategy will be re-evaluated based on actual funding.

Strategy Lifecycle Milestones	
DATE	MILESTONE
11/2023 - 1/2024	Identify Unfunded Strategic Initiatives
1/2024 - 6/2024	Prepare Requests for Next Budget Cycle
Summer	Budget Requests Submitted at Agency Level
12/2024	Budget Requests Submitted to Legislature by Governor
7/2025	Update Funded Strategic Initiatives
8/2025	IT Strategy Review by IS Governance Committee
9/1/2025	Determine Impact of Strategy Changes
11/2025 - 1/2026	Process Repeats

### OWRD Strategic Plan and Associated DEI Actions

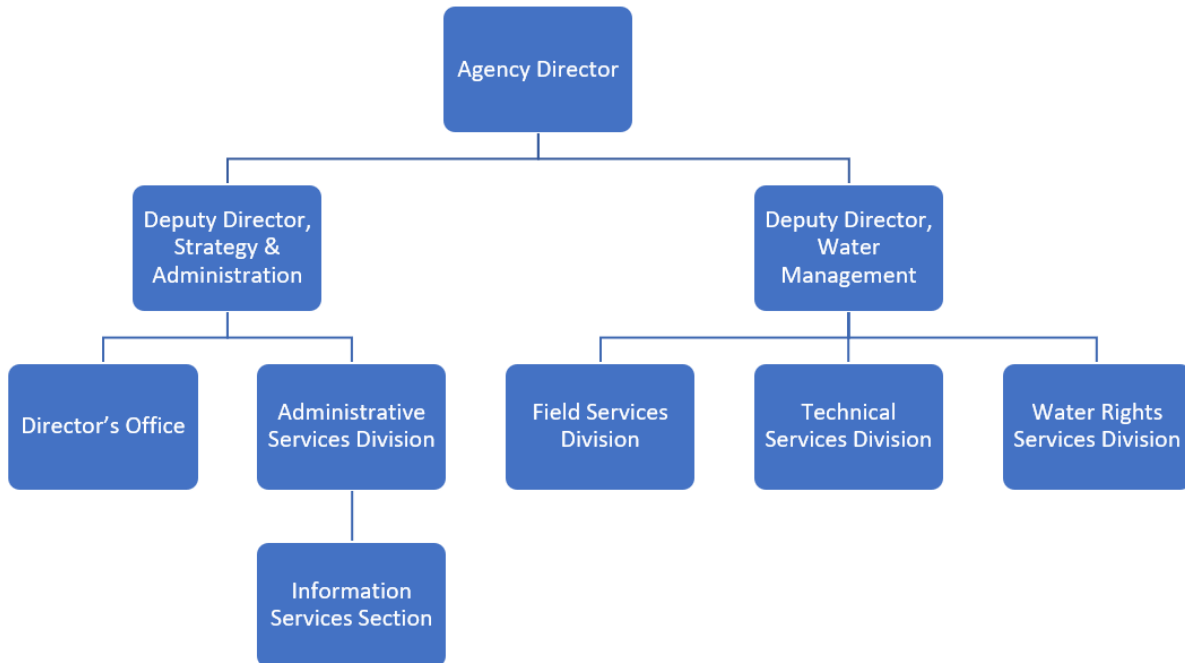
The Department also recognizes that there will need to be alignment of this strategy over time to the new OWRD Strategic Plan. While this IT Strategic Plan aligns with the current OWRD 2019-2024 Strategic Plan, a new OWRD Strategic Plan will be developed in 2024, possibly into 2025. As part of that Plan, the agency will be including actions to advance Diversity, Equity, and Inclusion in its work. Once adopted, it is anticipated that there will need to be a review and update to ensure this plan aligns with the OWRD Strategic Plan and associated DEI actions.

### Conclusion

The purpose of this IT strategic plan is to guide the actions of the Oregon Water Resources Department’s IT Operations and to ensure alignment of IT initiatives with that of the agency and the larger enterprise of the State of Oregon. This has been accomplished using a COBIT (Control Objectives for Information and Related Technologies) approach of identifying agency drivers, the current state of IT, IT context, IT strategic initiatives, and metrics for success. Furthermore, there was development of an IT roadmap, communication plan, and an IT strategy lifecycle schedule.

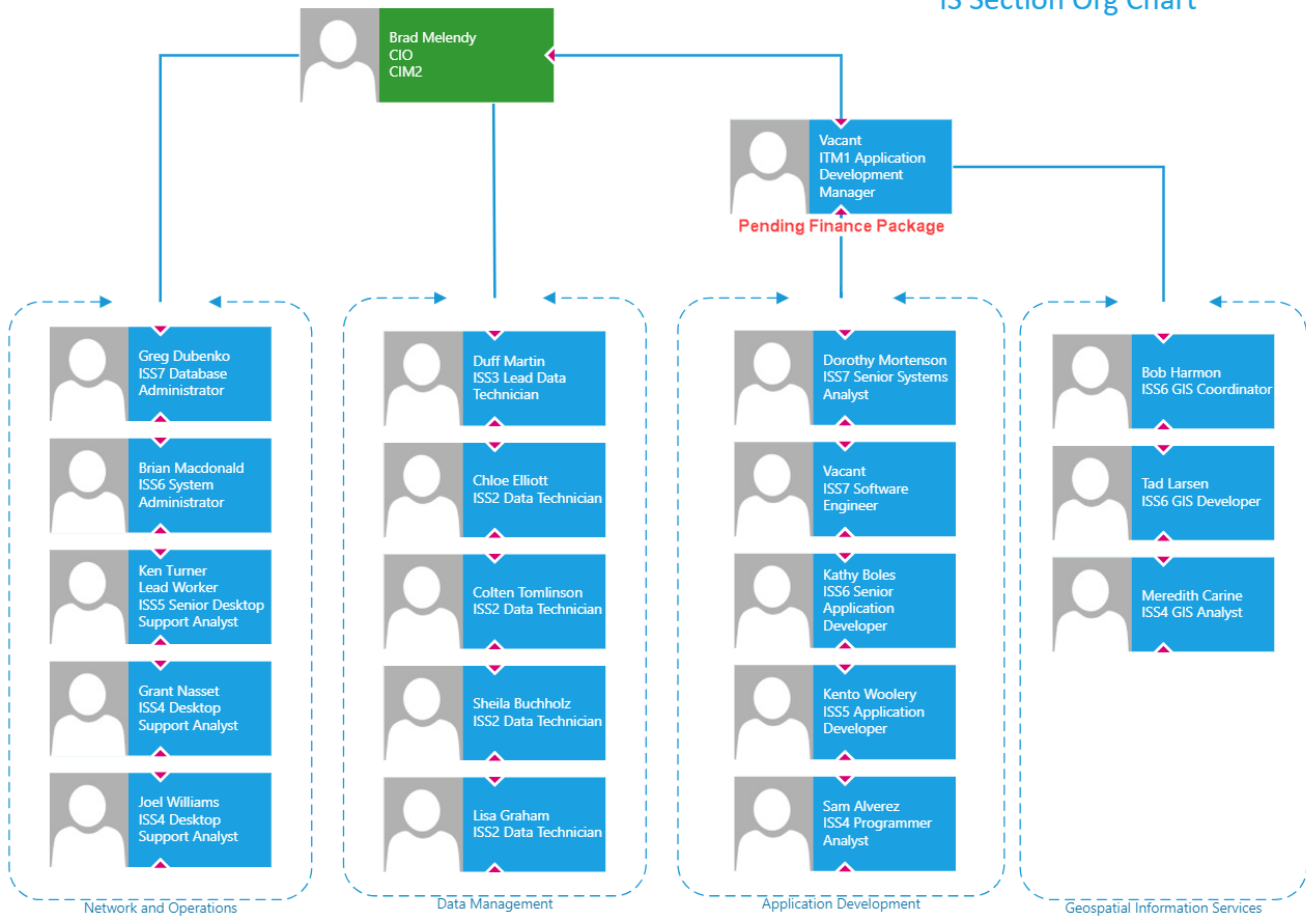
All these things were used to build the OWRD IT Strategy into something that can guide the IS Section in its mission of support and collaboration. This strategy will facilitate the growth of the IS Section into a trusted operator who optimizes the business. Furthermore, it will advance the IS Section’s ability to achieve future progress in IT maturity that aligns with and supports both the agency and the enterprise.

## Appendix A: Agency Organization Chart



# Appendix B: Information Services Organization Chart

IS Section Org Chart



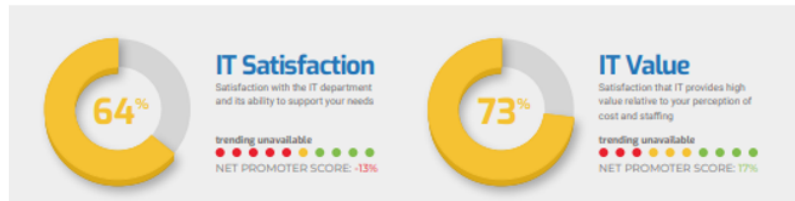
# Appendix C: IT Satisfaction Scorecard Areas of Focus

IT will focus on the highest importance, but lowest performing services and capabilities to drive improved satisfaction levels and to enhance IT service delivery maturity.

IT Satisfaction Scorecard : Department Report / Oregon Water Resources Department



## IT Satisfaction Scorecard



Relationship

**75%** **Understands Needs**  
Satisfaction with IT's understanding of your needs.  
trending unavailable

**68%** **Communicates Effectively**  
Satisfaction with IT communication.  
trending unavailable

**67%** **Executes Requests**  
Satisfaction with the way IT executes your requests and meets your needs.  
trending unavailable

**60%** **Trains Effectively**  
Satisfaction with training quality and timing.  
trending unavailable



### Business Satisfaction and Importance for Core Services

The core services of IT are important when determining what IT should focus on. The most important services with the lowest satisfaction offer the largest area of improvement for IT to drive business value.

		Satisfaction	Importance
<b>Devices</b>	Satisfaction with desktops, laptops, mobile devices etc.	84% trending unavailable	6 <sup>TH</sup>
<b>Service Desk</b>	Satisfaction with responsiveness and effectiveness of service desk	81% trending unavailable	3 <sup>RD</sup>
<b>IT Security</b>	Satisfaction that organizational devices and data are properly secured.	81% trending unavailable	8 <sup>TH</sup>
<b>IT Policies</b>	Satisfaction with policy design and enforcement around security, governance, etc...	79% trending unavailable	12 <sup>TH</sup>
<b>Network &amp; Comm. Infrastructure</b>	Satisfaction with reliability of comm. Systems and networks	73% trending unavailable	2 <sup>ND</sup>
<b>Work Orders</b>	Satisfaction with small requests and bug fixes	72% trending unavailable	10 <sup>TH</sup>
<b>Data Quality</b>	Satisfaction with providing reliable and accurate data	71% trending unavailable	3 <sup>RD</sup>
<b>Business Apps</b>	Satisfaction with applications and functionality	68% trending unavailable	1 <sup>ST</sup>
<b>Requirements Gathering</b>	Satisfaction with BA's ability to understand and support the business	62% trending unavailable	13 <sup>TH</sup>
<b>Client-Facing Technology</b>	Satisfaction with user experience and effectiveness	62% trending unavailable	7 <sup>TH</sup>
<b>Analytical Capability and Reports</b>	Satisfaction with effective standard reports, custom reports capability, and the ability to generate business insights	62% trending unavailable	11 <sup>TH</sup>
<b>IT Innovation Leadership</b>	Satisfaction with providing opportunities for innovation and innovation leadership to improve the business	56% trending unavailable	9 <sup>TH</sup>
<b>Projects</b>	Satisfaction with large department or corporate projects	54% trending unavailable	5 <sup>TH</sup>

# Appendix D: Management & Governance Framework Diagnostic Results

## SE IT Management & Governance Framework

A comprehensive and connected set of research to help you optimize and improve your core IT processes



### STRATEGY & GOVERNANCE

**EDM01  
APO02**  
IT Strategy and Governance

**EDM05  
APO08**  
Stakeholder Management

**ITRG01**  
People & Resource Management

**BAI01**  
Project Management

### IT OPERATIONS

**APO10**  
Vendor Management

**DSS02**  
Service Desk

**BAI02**  
Requirements Gathering

### INFRASTRUCTURE MANAGEMENT

**DSS03**  
Incident & Problem Management

**BAI09**  
Asset Management

**BAI04**  
Availability & Capacity Management

**BAI07**  
Change & Release Management

### SECURITY & RISK MANAGEMENT

**APO13**  
Security Strategy

**DSS04**  
Disaster Recovery Planning

**DSS04**  
Business Continuity Planning

### APPLICATION MANAGEMENT

**BAI03**  
Application Selection & Implementation

**ITRG07**  
Data Architecture & Governance

**ITRG09**  
Analytics & Reporting

**ITRG04**  
Application Portfolio Management



This diagnostic program was developed using the Info-Tech World Class Operations framework which is made up of IT processes that map to the COBIT standard based on the numbers in the top right corner. This page is a snapshot of the IT process landscape within your IT department. The processes have been colour coded based on your team's importance and effectiveness scores for each IT process. Use this page to help you prioritize your IT process improvement initiatives.

## Appendix E: SWOT Analysis

Strengths (Internal)	Weaknesses (Internal)
<ul style="list-style-type: none"> <li>• Institutional knowledge in IT</li> <li>• Service Desk</li> <li>• Devices</li> <li>• Stakeholder view of security is positive</li> <li>• Staff viewed as responsive</li> </ul>	<ul style="list-style-type: none"> <li>• Staff resource level</li> <li>• Immature IT Governance framework</li> <li>• Business communication</li> <li>• Process documentation</li> <li>• Project Portfolio Management &amp; Project Management resources, skills, templates &amp; standards</li> <li>• Service Catalog requires work</li> <li>• Lack of formal Disaster Recover &amp; Business Continuity plans</li> </ul>
Opportunities (External)	Threats (External)
<ul style="list-style-type: none"> <li>• Cooperation/partnerships with other state agencies on common issues</li> <li>• Utilize student population</li> <li>• Migrate to cloud offerings</li> <li>• Emerging 4 IR technologies (Artificial Intelligence, Big Data, predictive analytics, development tools)</li> <li>• Artificial Intelligence for discovery or public info requests</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of formal Disaster Recovery Plan</li> <li>• External view of agency mandate/oversight, lawsuits</li> <li>• Legislative budget or regulatory changes</li> <li>• Shadow IT</li> <li>• Number of key staff approaching retirement (succession planning)</li> </ul>

## Appendix F: PESTLE Analysis

<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Political</b></p>	<ul style="list-style-type: none"> <li>• There is often not agreement on how water issues should be resolved, which can make it difficult to address policy and management challenges.</li> <li>• Legislative focus on water has led to significant new resources, as well as new responsibilities, which often require planning and time of existing staff.</li> <li>• Influence may alter the agency’s approach to its work, resources, and ability to sustainably manage water resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Agency budgets and support for programs relies on Oregon’s economic performance.</li> <li>• Fees for fee-supported OWRD programs have not kept pace with costs.</li> <li>• Growth can drive increased water demand for residential and industrial purposes.</li> <li>• Operational costs continue to increase.</li> <li>• The job market remains competitive in Oregon and in water-related careers.</li> <li>• Real estate prices and housing shortages poses challenges for recruiting and retaining staff.</li> </ul>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Economic</b></p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Social</b></p>	<ul style="list-style-type: none"> <li>• Water quality impacts to drinking water supplies are driving new workload</li> <li>• Varying societal expectations and understanding about water management, science, costs, and quantity</li> <li>• Media coverage of water issues influences public opinion, which may increase focus on certain water issues.</li> <li>• Public acceptance of new technologies or innovations in water management influences adoption of new solutions.</li> <li>• Water is essential to most of what people value and there are widely different views on how water should be allocated and managed.</li> <li>• Increased focus on understanding and addressing the needs of environmental justice communities</li> <li>• Water often treated as if it is an unlimited resource</li> </ul>	<ul style="list-style-type: none"> <li>• Technologies have advanced significantly in the last decade</li> <li>• OWRD has many older databases and systems that take significant resources to maintain.</li> <li>• AI is an emerging technology: need to assess if and how AI can help OWRD and address any concerns with AI use.</li> <li>• Asks by business units are outpacing capacity of the IS section</li> <li>• Business units report that many current technology solutions are not meeting their needs.</li> <li>• Increased public records requests and litigation, as well as hybrid work increase need to digitize existing paper records.</li> <li>• Customers increasingly request (and federal government requires) digital payments; OWRD does not have a digital payments system.</li> </ul>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Technological</b></p>

Legal

- New laws may require the agency to make significant changes to business workflows and rulemaking.
- Oregon Water Laws need modernization to better address the water challenges we face today.
- Rulemaking, litigation, and protest program workloads exceed available OWRD and DOJ resources.
- Federal water laws impact state water management especially in relation to the Endangered Species Act

Environmental

- Drought increases staff workloads across various sections of the agency.
- Climate change is driving changes in the hydrologic cycle, that will require the agency to update and adapt its policies, data, and management.
- Diminishing water supplies requires the Department to engage with other states on water management issues.
- Water is a finite resource; increased complexity and conflict as the resource is fully appropriate.



## Appendix G: IT Strategic Initiatives

Initiative	Initiative Type	Start Month & Year	Estimated Duration (Months)
Formal standards-based decision making	IT Excellence	Jan 2024	6
Apply Executive sponsorship needed to drive adoption	IT Excellence	Jan 2024	6
Define data ownership and classification	Business Support	Jan 2024	6
Creation of formal IT Governance Program	IT Excellence	Jul 2024	6
Creation of business engagement program	Business Support	Jan 2025	6
Define data dictionary and establish cycle for review	Business Support	Jan 2025	3
Adopt formal project management methodologies, standards, and procedures	Business Support	Apr 2025	6
PPM Information System	Innovation	Jul 2025	6
Apply project management to all projects	Business Support	Jul 2025	12
Analysis effort to catalog current state data infrastructure needs	Innovation	Jul 2025	6
Addition of Project Portfolio Management	IT Excellence	Oct 2025	6
Project Portfolio Manager Position	IT Excellence	Oct 2025	6
Having Business Analyst(s) in IS Department	Business Support	Oct 2025	6
Dedicated Project Manager Positions	Business Support	Oct 2025	6
Evaluate and address data schema gaps	Innovation	Jan 2026	6
Understanding of IT Capacity	IT Excellence	Mar 2026	3
Identify stakeholder metrics for success	Business Support	Apr 2026	6
Data Centralization and normalization	Innovation	Jul 2026	36

## Appendix H: IS Projects and Concepts List

This list is not all-inclusive of the projects that need to be completed by the agency, or an indication of priority. Once IT Governance has been implemented we anticipate this list will change.

Title	Item Type	Progress
GIS Server Migration	Project	In progress
2012 Server Upgrades	Project	In progress
IT Strategic Plan	Project	In progress
Trial Works Upgrade	Project	In progress
HB 2145 Phase 4 Enhancements	Project	In progress
IT Modernization Plan	Project	Not started
IT Governance Program	Project	In progress
ACH eChecks	Project	On Hold
Expanding Credit Card Payments	Concept	Not started
Field Activities Database MVP Enhancements	Project	Analysis
WARS	Project	Analysis
IT Governance Program	Project	In progress
Project and Portfolio Management	Concept	Not started
File Pickup Migration	Project	Not started
OWEB SharePoint Migration	Project	In progress
South Central Subdivision	Project	On Hold
Microsoft 365 External Collaboration	Project	Not started
ArchivesSpace	Project	In progress
Information Security Audit Remediation	Project	Not started
Well Log Data Remediation	Concept	Analysis
WARRF Secure Web Page	Concept	Not started
Dry Well Reporting Form	Project	In progress
HALO Version Upgrade	Project	Not started
Grants Pass Network Expansion	Project	In progress
Public Comment Form Enhancements	Concept	Not started
Accounts Receivable Interfaces	Concept	Not started
Hydroelectric Invoicing System	Concept	Not started
Vehicle Inspection Tool	Project	Not started
NAS Removal	Concept	Not started
Monitoring Solution	Project	Not started
DEV/TEST SQL Server	Concept	Not started
Migrate Off of Oregonh2o.org	Concept	Not started
Public Complaint Form	Project	On Hold
SMS Alert System	Concept	Planning
Federal Grant Program	Concept	Not started
URL Shortening Service	Project	In progress
Continuous Process Improvement Program	Concept	Not started
LAPS	Project	In progress
DTL Record for Claims	Concept	Not started
SFTP Server in DMZ	Concept	Not started
Dam Safety Inspection Tool Updates	Concept	Not started