



Agency Recommendation Summary

Outdated public health technology systems were not able to keep up with the volume of cases reported during the pandemic. This hampered efforts to slow the spread and share real-time information with policymakers and the public. Private partners and federal funding helped DOH rapidly migrate from an onsite data center to the cloud to stabilize failing systems. In the months that followed, new solutions were developed to meet emergency response needs and provide important services. Returning to pre-pandemic hardware and systems is not possible due to technical and statutory requirements. Ongoing funding to maintain public health technology is critical.

Fiscal Summary

Fiscal Summary <i>Dollars in Thousands</i>	Fiscal Years		Biennial	Fiscal Years		Biennial
	2024	2025	2023-25	2026	2027	2025-27
Staffing						
FTEs	0.0	62.0	31.0	62.0	62.0	62.0
Operating Expenditures						
Fund 001 - 1	\$0	\$28,953	\$28,953	\$33,292	\$37,554	\$70,846
Total Expenditures	\$0	\$28,953	\$28,953	\$33,292	\$37,554	\$70,846

Decision Package Description

The demands of the public health COVID-19 response and the statutory mandate to move out of the agency data center (RCW 43.105.375 and OCIO Policy 184) propelled the DOH cloud migration. Federal funding which supported this work as part of our pandemic response has ended. Federal grants generally support research and development efforts but not ongoing maintenance of technology solutions. To sustain these essential investments, DOH submitted a budget decision package for consideration in 2023 and received state funding for one fiscal year (FY24). A report to the legislature is due September 15, 2023, detailing this need and identifying potential funding options. It is very unlikely DOH will find allowable and sufficient alternatives to support maintenance and operations of this vital public health technology in 2025 and beyond. The agency cannot support public health programs, services, and clients without sustainable funding for cloud computing and storage, service costs, software licensing and subscriptions, and staff support. This proposal is aligned with the WaTech Statewide IT Strategic Plan, Cloud Strategy and security best practices, supporting better government through technology.

DOH programs and services rely on a portfolio of over 400 technology solutions hosted in the state data center, Microsoft Azure, Amazon Web Services, and the Google cloud. Moving out of the DOH data center and adopting a multi-cloud strategy provided essential capabilities, resilience, and scalability. The speed of our cloud migration to meet the demands of the pandemic dictated a “lift and shift” approach. Legacy applications must now be assessed and either refactored to run efficiently or modernized to leverage new technologies and services available in the cloud and increase system interoperability. We are also navigating a learning curve and working now to gain more visibility into the drivers of our cloud spend and align resources to a broader transformational IT strategy. DOH has engaged an expert consultant to baseline and assist in building robust financial models to support optimization initiatives. It may be possible to “harvest and invest” within our current spend over time, fueling innovation and efficiency.

Solutions and servers hosted in the interconnected state data center and DOH multi-cloud environment include:

- **Services** such as identity management for user login, data pipelines for data exchange, master person index for client matching, and security firewalls.
- **Databases** with millions of elements that support each application.
- **Systems of record** that support transactions such as health care provider and facility licensing, vital records, immunizations, WIC.
- **Systems of insight** that support analysis and inform action such as newborn and developmental screening, electronic lab reporting, trauma registry, cancer registry, communicable disease reporting and case investigation, hospital discharge data, prescription monitoring, hospital bed and resource tracking, whole genome sequencing.

- **Systems of engagement** that support data sharing with partners and the public such as our COVID dashboards (which will be replicated for other disease outbreaks such as RSV), geographic information systems with apps and maps, vaccine verification and vaccine locator.

What are we purchasing to maintain vital public health technology?

- High availability computing and storage capacity in the cloud,
- Service costs,
- Software licensing and subscriptions fees,
- Staff support.

Of note, proviso 29 in the biennial budget stated, “\$17,752,000 of the general fund—state appropriation for fiscal year 2024 is provided solely to sustain information technology infrastructure, tools, and solutions developed to respond to the COVID-19 pandemic. The department shall submit a plan to the office of financial management by September 15, 2023, that identifies a new funding strategy to maintain these information technology investments within the department's existing state, local, and federal funding.”

This report is in development. It is unlikely that existing funding sources, due to restrictions associated, will be sufficient.

Failure to fund ongoing maintenance and operations would be catastrophic. Statutory requirements (OCIO Policy 184 and RCW 43.105.375) prevent DOH from migrating back to its agency data center. The state data center does not provide the capabilities required. Cloud environments offer the computing capacity to support whole genome sequencing, run analytics code against multiple and massive datasets to reveal trends, disparities and other critical insights, and provide access to data and tools for local public health and tribal partners to conduct analyses and inform their decisions. The cost and risk associated with any migration from the current multi-cloud environment is untenable. Funding support is essential to maintain current programs and services.

Federal funding

Washington received approximately \$120 million in federal COVID-19 funds for data systems to support critical efforts such as disease surveillance and reporting, testing, case investigation and contact tracing, and vaccine distribution. Through 14 response missions and 38 data system projects, we invested in our public health cloud environment, engaged vendor partners in development and modernization of essential infrastructure and systems, brought in new tools and resources, and ultimately over a hundred new staff members to be trained to support these new capabilities. Essential costs include equipment, cloud hosting, software licensing and maintenance.

We are currently leveraging federal grant funding such as the CDC Data Modernization Initiative to move from siloed and brittle public health data systems to connected, resilient, adaptable and response-ready systems that can help us solve problems before they happen and reduce the harm caused. Federal grants are limited in that they focus investment on research and development and decline to support ongoing maintenance of technology solutions.

Public/private partnership

During the pandemic, DOH gratefully accepted expertise and gratuitous services from the private technology sector to rapidly assess cloud readiness, establish a public health cloud data center, and accelerate migration and stabilization efforts. The value of this pro bono assistance from private partners is likely in the millions of dollars. We continue to engage in strategic partnerships with the technology sector and others to explore innovation opportunities. However, DOH requires state funding to assume fiscal responsibility for the solutions partners helped us to establish and to leverage this investment to deliver important public health programs and services well into the future.

Assumptions and Calculations

Expansion, Reduction, Elimination or Alteration of a current program or service:

Detailed historical financial information for the prior biennium.

FUND & APPN	OIT (Tech Ops and Data Modernization/Informatics)		Center for Data Science		Total
	SFY22	SFY23	SFY22	SFY23	BIEN 21-23
001-01	\$6,152,940	\$13,875,992	\$3,447,465	\$3,459,911	\$26,936,308
001-02	\$0	\$426,629	\$0	\$0	\$426,629
704-N	\$21,894,036	\$26,035,222	\$19,320,594	\$19,334,120	\$86,583,972
706-N	\$0	\$0	\$1,553,045	\$1,559,201	\$3,112,246
					\$117,059,155
Projections					
By Object	Tech Ops	CDS			
A	\$22,795,719	\$26,055,674			
B	\$8,727,432	\$9,078,533			
C	\$5,194,378	\$0			
E	\$25,461,249	\$576,012			
G	\$77,340	\$0			
J	\$4,489,489	\$435,666			
T	\$1,639,210	\$12,528,451			

Detailed Assumptions and Calculations:

Costs in the FNCal reflect current staffing costs, cost for computing and storage capacity, service costs, and licensing/subscription fees with projections based on technical requirements and data volumes.

Staffing Costs

Costs associated with the workforce to maintain and leverage investments in our infrastructure, multi-cloud environment, systems, and analytics capabilities include, at a high level:

- Business analysts
- Project managers, coordinators and organizational change management professionals
- Informaticians
- Telecommunications and network engineers
- Service desk technicians

- Application developers
- Data management professionals
- Data scientists

Systems Costs

Costs associated with the environments, solutions and tools in which comprise the public health technology environments include, at a high level:

- Hosting costs (Microsoft Azure, Amazon Web Services, Google cloud and WaTech)
- Virtual infrastructure
- Enterprise agreements and software maintenance and licensing (Microsoft unified and select agreements, ESRI, SQL, SAS VIYA, R Studio, Tableau, Dynamics, GITHUB, Security certificates)

Workforce Assumptions:

Technology and operations staffing investments include:

- Business analysts to document requirements, conduct testing to ensure solutions deliver promised value, and support maintenance, enhancement and operations of systems.
- Project managers and change management professionals to oversee scope/schedule/budget and stakeholder engagement in support of projects and data modernization initiatives and enhancements following OCIO policies for successful outcomes and adoption.
- Informaticians to enable data exchange, data modernization and development of analytic building blocks, inform architecture, match use cases to technologies, support data pipelines and data products, educate users, and onboard labs, providers and partners.
- Telecommunications and network engineers to support our cloud data center, network and data analytics environment and design solutions and data flows to meet the performance and capacity demands of the department, including the instruments and systems at our Public Health Laboratories.
- Service desk technicians to provision user access and security permissions, perform device and network troubleshooting, offer help desk services in support of our cloud environment, emergency response systems, instruments, and test lab.
- Application developers to support, maintain and enhance systems and modernize solutions required by public health programs and laboratories.
- Data management staff to support data analytics and cloud needs for database management modernization and interoperability.
- Data scientists develop data collection systems, data products and training to engage partners and communities in the use of data to inform policies and services and address health disparities.
- Data modernization and informatics staff lead agency strategy and adoption of modernized capabilities for cloud analytics, electronic health data exchange, data governance, workforce development, and innovation to create a resilient and sustainable public health ecosystem. Public health data modernization is a crucial endeavor that requires a collaborative funding approach between federal and state authorities to establish and sustain a response-ready public health system.

Workforce Assumptions FY25 Projections Only

5.0 Senior Epidemiologist (Non-Medical) – \$860,937 (salary and benefits)

7.0 Epidemiologist 3 (Non-Medical) – \$1,076,876 (salary and benefits)

11.0 Epidemiologist 2 (Non-Medical) – \$1,547,998 (salary and benefits)

- 1.0 IT Project Management, Manager – \$178,020 (salary and benefits)
- 5.0 IT Business Analyst, Journey – \$712,814.9 (salary and benefits)
- 4.0 IT Application Development, Entry – \$534,424 (salary and benefits)
- 4.0 IT Application Development, Journey – \$570,251 (salary and benefits)
- 1.0 Health Services Consultant – \$110,600 (salary and benefits)
- 2.0 Management Analyst 3 – \$211,961 (salary and benefits)
- 2.0 Epidemiologist 1 – \$246,604 (salary and benefits)
- 1.0 IT Business Analyst, Entry – \$125,360 (salary and benefits)
- 2.0 WMS02 – \$321,901 (salary and benefits)
- 3.0 Health Services Consultant 2 – \$298,309 (salary and benefits)
- 1.0 Management Analyst 4 – \$120,578 (salary and benefits)
- 1.0 IT Project Management, Senior/Spec – \$160,831 (salary and benefits)
- 1.0 Administrative Assistant 3 – \$79,139 (salary and benefits)
- 1.0 IT Application Development, Senior/Spec – \$162,831 (salary and benefits)
- 1.0 IT Data Management, IT Manager – \$184,020 (salary and benefits)
- 1.0 IT Project Management, Journey – \$149,018 (salary and benefits)
- 1.0 IT Business Analyst, Senior/Specialist – \$155,739 (salary and benefits)
- 2.0 IT Customer Support, Journey – \$250,719 (salary and benefits)
- 1.0 IT Data Management, Journey – \$149,018 (salary and benefits)
- 3.0 IT Quality Assurance, Journey – \$427,689 (salary and benefits)
- 1.0 Health Services Consultant 4 – \$120,578 (salary and benefits)

Estimated expenditures include salary, benefit, and related costs to assist with administrative workload activities. These activities include policy and legislative relations; information technology; budget and accounting services; human resources; contracts; procurement; risk management, and facilities management.

Strategic and Performance Outcomes

Strategic Framework:

This proposal supports all Results Washington goals as arguably a healthy population is essential to providing:

- World Class Education
- Prosperous Economy
- Sustainable Energy and Clean Environment
- Healthy and Safe Communities
- Efficient, Effective and Accountable Government

This proposal contributes most directly to Goal 4 Healthy and Safe Communities and Goal 5 Efficient, Effective and Accountable Government:

- Fostering the health of Washingtonians from a health start to safe and supported future
- Fostering a Lean culture that drives accountability and results for the people of Washington

Agency strategic plan alignment

This proposal is directly aligned to the department's transformational plan which offers a vision of equity and optimal health for all. [Transformational Plan: A Vision for Health in Washington State \(2022-2024\) | Washington State Department of Health](#)

This proposal supports the Dept. of Health's **Transformational Plan Priority II. Health Systems and Workforce Transformation**, in that all Washingtonians are well served by a health ecosystem that is robust and responsive, while promoting transparency, equity, and trust. Specifically, this proposal is essential to our goals for health systems transformation and emergency response and resilience, and it is the foundation for our innovation and technology transformation in action.

This proposal is also aligned to the agency's technology strategic plan and the state's Enterprise IT Strategic Plan:

- Efficient and effective government – advance digital government, expand system integration.
- Accountable IT management – Promote reuse, reduce technical debt, align portfolio to statewide architecture.
- IT workforce – Train workforce for cloud adoption, support organizational change management, improve support for remote work.
- Enterprise architecture – Advance adoption of modern, cloud-based technologies.
- Security and privacy – Improve disaster recovery practices.

The department has engaged in significant cooperative planning and has taken care to consult with the OCIO and ensure the architecture of our cloud environment and security controls align with statewide direction and all applicable policy requirements. Cycles of agile planning and implementation have delivered rapid results and incremental value during the pandemic and are continuing to drive successful outcomes.

The department's data strategy is in development, seeking to modernize and integrate public health systems in alignment with the national public health Data Modernization Initiative. The department is an active participant in the Washington Health and Human Services (HHS) Coalition, collaborating with partner agencies and the OCIO on shared goals and investments for maximum efficiency and service delivery.

Performance Outcomes:

This funding supports compliance with OCIO Policy 184 and RCW 43.105.375:

Findings—Intent—2021 c 40: "(1) The legislature finds that the advent of the COVID-19 pandemic has increased the needs of the people of Washington for state services. From unemployment benefits to information on the incidence of disease in the state, Washingtonians have increasingly turned to state government for vital services and information.

(2) The legislature further finds that the state's information technology infrastructure is outdated and with insufficient capacity to handle the increased demand and has, in many cases, not been adequate to enable the state to provide the needed services effectively and efficiently.

(3) Therefore, the legislature intends to migrate the state's information technology toward cloud services, which will deliver the capacity, security, resiliency, disaster recovery capability, and data analytics necessary to allow the state to provide Washingtonians the services they require during this pandemic and in the future." [[2021 c 40 § 1.](#)]

The cloud provides scalability, resilience, and interoperability to meet the needs of public health. Bringing together large datasets to study and devise interventions for serious issues such as the opioid epidemic requires cloud capacity. Datasets such as those which capture overdose emergency medical response, hospital admissions, and data on deaths due to overdose, require high computer and storage capacity. Use cases like these cannot be met by on premise data centers. Investing in and maintaining a modern public health cloud environment with robust tools and expertise helps to maintain Washington's position as a leader in use of technology to address complex problems, reduces data sprawl and duplication, and enables predictive analytics for proactive action to protect and improve health.

The systems and data served by these investments have proven their importance to the state's ability to respond to public health threats including the COVID-19 pandemic and the opioid crisis. Some of the performance outcomes that will be achieved through this request are:

- Critical data collection needed for all diseases, including COVID19, will be sustained and can serve CDC and other reporting requirements.
- Changes and creative solutions to capture relevant data for all diseases will be maintained and local partners will not need to use their own resources to implement less effective, workaround processes to capture this data.
- State level visibility to disease prevalence across local jurisdictions and their communications with the state will be supported.
- Data informed decisions about mitigation and prevention measures will be available and will not need to be pulled together from disparate, incomplete data sources;
- Data quality will be sustained and will remain reliable for surveillance and decision making. This will allow DOH and the other

governmental public health system partners to detect and understand emerging public health threats;

- Improved capacity to comply with statutory requirements; and
- Improved agency ability to link datasets efficiently for more robust insight and timely action.
- Ability to leverage modern technologies and services in the cloud, such as automated language translations and other innovations to increase equity and efficiency.

Equity Impacts

Community outreach and engagement:

Getting data categories correct requires meaningful engagement with a variety of communities, including Tribal nations. This takes time, resources, and trust. The 29 federally recognized Tribes in Washington are sovereign nations, each having distinct cultures, histories languages and priorities. We are developing frameworks for equitable engagement and collaboration to promote health and achieve health equity for all communities.

Disproportional Impact Considerations:

A person's environment, physical, societal, and emotional needs all contribute to their health and their immediate and future resiliency. Understanding these social determinant variables is crucial to public health programming and decision-making. Data reporting for variables that reflect the social determinants of health not as mature and inter-connected as it should be. Standards for housing, food insecurity and other variables are needed to collect meaningful and usable data.

In 2021, The Washington State Legislature passed House Bill 1272 that includes requirements for hospitals to submit patient discharge information to DOH that identifies race, ethnicity, gender identity, sexual orientation, preferred language, any disability, and zip code of primary residence. We are building digital bridges between the electronic health records systems used by the health care sector and public health to share data rapidly and securely. We are enhancing and building technical solutions to capture demographic data and protect against health threats for all people in all communities.

Target Populations or Communities:

Through ongoing community engagement processes, additional demographic variables are being considered, including but not limited to tribal affiliation, disability status, and housing status.

DOH focuses programs and services to meet the needs of people and communities who are traditionally underserved and experience inequities. These efforts are informed by our investments in technology, including chronic and communicable disease reporting systems, injury and trauma data, surveillance solutions, and community health assessment data.

Building equity and accessibility into modern systems

Those at highest risk of death from COVID-19 were had challenges accessing current information and vaccination. Seniors had difficulty navigating digital platforms to locate providers who had vaccine so they could schedule their appointment. People with disabilities were unable to determine which sites offered accessibility options. Non-English speakers needed information from trusted sources to locate services in their communities. DOH partnered with leaders and experts to develop human-centered approaches and deploy solutions that were equitable by design. These tools and partnerships are continuing to spark innovation in every public health technology program and project.

For example, COVID-19 took a disparate toll on black, native Hawaiian and Pacific Islander, Asian-American, and Hispanic communities. Insufficient collection of demographic data masked this inequity until federal and state policymakers acted. Updated requirements for health care providers, labs, and hospitals to report patient race and ethnicity were adopted here in Washington. DOH enhanced data systems to accept demographic data and worked with the State Board of Health to include 71 reporting categories for race and ethnicity that were community-informed and incorporated federal standards.

Other Collateral Connections

Puget Sound Recovery:

N/A

State Workforce Impacts:

N/A

Intergovernmental:

Vital public health technology investments receive and provide data to various entities, including other government agencies to inform program design and action. All communities statewide who benefit from public health services and seek healthcare are positively impacted by this proposal. This includes Tribal, urban, and rural communities. DOH's ability to collect, analyze and share data allows all communities to better prepare for, address, and monitor emerging and existing public health threats. State agencies that rely on public health data will benefit include but are not limited to: Office of Financial Management, Washington Traffic Safety Commission; Department of Social and Health Services; Department of Children, Youth and Families; Labor and Industries; Health Care Authority; Department of Ecology. Benefits will expand as access to our cloud environment for data analytics and reporting is made available to local governmental health partners and Tribal nations.

Stakeholder Response:

DOH anticipates full support from non-governmental partners and communities who may benefit from investment in public health technologies designed to increase access to services and equity.

Washington's Healthcare and Emergency & Logistics Tracking Hub (WA HEALTH) is a prime example. This system was developed early in the pandemic so healthcare staff could input information on resources (beds, ventilators, supplies, medications, staffing) to automatically update dashboards for hospital, local, and state decision-makers to view. This real-time data informed prioritization and distribution of critical resources and enabled patient movement and staffing decisions during surges in the outbreak which challenged our entire health care system. Data that healthcare providers input into WA HEALTH also feeds other solutions like Vaccine Locator, Washington's online resource to help people find available vaccine in their communities.

Use of WA HEALTH and the bed tracking capability is being considered by partner agencies, underscoring the value of investment in modern, interoperable, and extendable technologies.

State Facilities Impacts:

N/A

Changes from Current Law:

N/A

Legal or Administrative Mandates:

N/A

HEAL Act Agencies Supplemental Questions

1. Please describe specific likely or probable environmental harms and/or benefits and their associated health impacts to overburdened communities and vulnerable populations.

There will be no environmental impacts.

2. Please describe any potential significant impacts to Indian tribes’ rights and interest in their tribal lands.

There will be no impacts to tribes’ rights and interests in tribal lands.

3. Describe how your agency engaged with Tribes in developing this proposal, including offers for tribal consultation, and any direction provided by Tribes through this engagement.

N/A

4. Has an [Environmental Justice Assessment](#) been completed? If so, please submit the assessment as an attachment in ABS.

Not required.

5. Describe how your agency used the Environmental Justice Assessment process to eliminate, reduce, or mitigate environmental harms and equitably distribute environmental benefits? If your agency determined that you were unable to eliminate, reduce, or mitigate environmental harms and equitably distribute environmental benefits, please provide a justification for not doing so.

N/A

Reference Documents

- [FinancialCalculator_Vital Public Health Technology DP_2024 Supplemental.xlsm](#)
- [HTS FTE_SystemCosts_PHTechDP-2024_08-16-2023.xlsx](#)
- [IT addendum_2024-PHTechnology.docx](#)
- [ITaddendumBudget2024Supplemental.xlsx](#)

IT Addendum

Does this Decision Package include funding for any IT-related costs, including hardware, software, (including cloud-based services), contracts or IT staff?

Yes

Objects of Expenditure

Objects of Expenditure <i>Dollars in Thousands</i>	Fiscal Years		Biennial	Fiscal Years		Biennial
	2024	2025	2023-25	2026	2027	2025-27
Obj. A	\$0	\$6,570	\$6,570	\$6,570	\$6,570	\$13,140
Obj. B	\$0	\$2,181	\$2,181	\$2,181	\$2,181	\$4,362
Obj. E	\$0	\$19,624	\$19,624	\$23,963	\$28,225	\$52,188
Obj. T	\$0	\$578	\$578	\$578	\$578	\$1,156

Agency Contact Information

Kristin Bettridge
 (360) 236-4126
 kristin.bettridge@doh.wa.gov