



Agency Recommendation Summary

The Department of Health request funds to sustain investments in new cloud infrastructure, adopted modern tools, technologies, and developed many innovative solutions which help meet demands of the COVID-19 pandemic in Washington. The capabilities these investments enabled have proven to be essential to informing actions, decisions, and public policy based on timely and accurate data. DOH plays critical roles in disease surveillance, data analysis, visualization, and data sharing with governmental partners, tribes, and healthcare sectors. Continued funding supports the public health system maximizing the investments made during the pandemic and provides core capacity, protecting and improving health of all people.

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	96.3	125.0	110.65	126.7	132.6	129.65
Operating Expenditures						
Fund 001 - 1	\$24,859	\$31,252	\$56,111	\$33,057	\$36,974	\$70,031
Total Expenditures	\$24,859	\$31,252	\$56,111	\$33,057	\$36,974	\$70,031

Decision Package Description

Problem:

The COVID-19 outbreak proved timely and accurate data is critical for public health. Yet the technology infrastructure supporting the Department of Health was outdated. The legacy disease reporting systems hosted in our on-premises data center were unable to keep up with the volume of COVID-19 case reports and began to fail. The department immediately engaged private sector expertise to partner on development of a public health cloud environment and migrate these mission critical systems – the only option to stabilize them and improve performance. As the pandemic continued and urgent problems emerged, many technology solutions leveraging these modern cloud capabilities and tools were quickly developed and deployed. Ongoing funding is needed to maintain the modern cloud data center, systems, tools, and analytics and reporting environment which have proven essential during the pandemic and build on this foundation to modernize data and systems to meet the needs of public health well into the future.

Proposal:

Staffing

The department added time-limited staffing capacity to support technology investments required for pandemic response. The environments established and the technologies and systems developed have only increased in their value to public health. Skilled technologists are critical for the maintenance and operations of current solutions as well as the development of new capabilities to meet emergent needs and future challenges. Technology and operations staffing investments provide:

Business analysts to document requirements, conduct testing to ensure solutions deliver promised value, and support maintenance, enhancement and operations of emergency response systems and beyond (WA HEALTH, WA Verify, WA Notify, Vaccine Locator, QR Portal, CREST, eCR, CEDAR, CHARS, FHIR, Rhapsody).

Project managers, coordinators and change management professionals to oversee scope/schedule/budget and stakeholder engagement in support of emergency response and data modernization initiatives and enhancements following OCIO policies for successful outcomes and adoption (WA Verify, WA HEALTH, WA Notify, resource dashboard, SMART health care initiatives).

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 emergency response systems and modernize solutions required by public health programs and laboratories; and

Data management staff to support data analytics and cloud needs for database management modernization and interoperability (FHIR, Rhapsody, Power BI, Tableau, HL7).

Systems

Hosting public health technology systems in the cloud enables scaling of infrastructure to satisfy the exponential growth in data experienced during the pandemic. The cloud provides resilience by design for high availability and disaster recovery. Our cloud environment also allows for rapid deployment of modern technology to meet emergent needs and enables development of interfaces among systems for accuracy and efficiency.

Deploying a cloud environment for data analytics and reporting provides:

Relief to technology systems from the supporting the load of data queries for analytics.
Computing capacity required to run analytics code against very large datasets.
The ability to combine datasets from disparate technology systems to reveal trends, disparities and other critical insights; and
An informatics community of practice to create and share building blocks required to perform public health data analytics that are valuable and interoperable among partners.

Federal funding allowed the department to staff up to meet the data demands and provide capacity to process the massive amounts of data needed for critical public health response. For example, in 2019 the agency exchanged over 50 million transactions with our Health Information Exchange (HIE) and in 2021 that number was over 105 million. Onboarding more partners for data exchange is essential for timely and accurate decision-making. It allows providers to query the immunization registry, prevents duplicate data entry, and informs dashboards and reporting.

The department worked with partners to launch several innovative solutions such as WA Notify (Bluetooth exposure notification) and Epic Rover (an Electronic Health Record lite app to help long term care and similar facilities better manage their patient's care during an outbreak or pandemic). Maintaining and leveraging these successful apps preserves our readiness for future outbreaks and supports the health of vulnerable populations at relatively low cost. As home testing becomes the norm, apps like WA Notify inform the public of possible exposure and reduce the spread. Epic Rover has also proven to be highly valuable in long term care settings and we look forward to exploring potential opportunities with the Health Care Authority to enable data exchange via an EHR-lite for other partners in the healthcare sector.

The department has been leveraging our new cloud environment for data analytics and reporting, including a master person index solution, to transcend data silos. During the pandemic, many questions arose that required integrating data from multiple systems – to identify breakthrough cases we had to link case and immunization data. The ability to quickly link data sets together to answer critical public health questions for good decision making is important. This critical infrastructure is necessary to enable timely response to outbreaks and maintain our ability to bring together multiple datasets and understand causal factors and address important public health crises such as the opioid epidemic. The investments made during the pandemic, if maintained and leveraged effectively, will serve the public health system and people in Washington for many years to come.

WA HEALTH – A portion of the staff identified above will support the WA HEALTH (Washington's Healthcare and Emergency & Logistic Tracking Hub) system. The WA HEALTH system collects hospital capacity and COVID-19 data from hospitals daily to support situational awareness on disease spread and health system capacity, aid in patient movement across the state and to support resource (PPE, ventilator, etc.) needs. In addition, WA HEALTH also supports Vaccine Locator, Washington State's online resources to help the public identify available COVID-19 vaccine in their community.

Alternative:

There was no choice but to develop a cloud environment and migrate failing disease reporting systems to support the response to COVID-19 in Washington. The department has sought to leverage federal funding to the fullest, investing in systems that provide value well into the future rather than short term solutions. Ongoing funding is essential to maintain the department's cloud data center, systems, tools, and analytics and reporting environment. This is the foundation on which we will modernize data and systems that serve the public health community, policy makers and the public.

Consequences of not funding this proposal

The department cannot abandon its cloud data center and the systems which are hosted in that environment. Our data center migration project is underway with OCIO oversight and external quality assurance. In compliance with the legislative mandate, physical servers are being decommissioned in our Tumwater data center and systems are currently being migrated to the state data center and the cloud.

A few specific and detailed impacts:

Not supporting this ask would put at risk several key systems that rely on data exchange as well as hinder health care providers' ability to query our immunization registry. If the systems do not receive timely, accurate data, critical public health activities cannot be performed including things like case investigation, contact tracing and surveillance (dashboard, reports, etc.). It also puts at risk our ability to stay compliant with the new Office of National Coordinator rules, CDC requirements and ensure we can continue to exchange data with our clinical partners who are all required to move to FHIR by the end of 2022.

Not funding this work would put at risk a novel way to advance contact tracing in an automated fashion that has been very successful and low-cost based on partnerships with Apple and Google. As home testing becomes the norm this is essential for ensuring we can try to help the public become aware of possible exposure and reduce spread. WA-Verify has been used to verify COVID vaccination for travel and large events and has been a valuable tool in reducing exposure risk. Epic Rover has proven to be an effective tool for our facility partners and as we look to partner with HCA to broaden electronic health record solutions for other public health use cases, we need staffing to support this work.

The ability to quickly link data sets together to answer critical public health questions for good decision making is important. Without the technologies and workforce, we lose our ability to continue the important work we have begun and need to continue for not only outbreak response but other use cases where we need to use multiple data sets to address an important public health crisis (the opioid epidemic for example).

Assumptions and Calculations

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

These assumptions are based on a continuation of the current (FY23) funding level for FY24.

Detailed Assumptions and Calculations:

Costs in the FNCal reflect actual costs for current staff, technical environments, and licensing as well as projections based on needs and data.

Staffing Costs

Costs associated with the workforce to maintain and leverage investments in our infrastructure, 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

Additional detail provided below and in the FNCal.

Systems Costs

Costs associated with the environments, solutions and tools in our cloud data center and cloud environment for data analytics and reporting include, at a high level:

- Hosting costs (Microsoft Azure, AWS 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:

Workforce Assumptions FY24 Projections Only, Startup Costs only for 29 FTEs,
break-out at bottom of graph

FTE	Job Classification	Salary	Benefits	Startup Costs	FTE Related Costs
3.0	IT QUALITY ASSURANCE - JOURNEY	\$315,000.00	\$111,000.00	\$0.00	\$23,000.00
1.0	IT PROJECT MANAGEMENT - MANAGER	\$128,000.00	\$42,000.00	\$0.00	\$8,000.00
2.0	IT PROJECT MANAGEMENT - JOURNEY	\$210,000.00	\$74,000.00	\$0.00	\$15,000.00
1.0	SENIOR EPIDEMIOLOGIST (NON-MEDICAL)	\$123,000.00	\$41,000.00	\$0.00	\$8,000.00
7.0	EPIDEMIOLOGIST 3 (NON-MEDICAL)	\$762,000.00	\$264,000.00	\$0.00	\$53,000.00
10.0	EPIDEMIOLOGIST 2 (NON-MEDICAL)	\$986,000.00	\$355,000.00	\$0.00	\$76,000.00
1.0	IT CUSTOMER SUPPORT - JOURNEY	\$87,000.00	\$33,000.00	\$0.00	\$8,000.00
1.0	IT TECHNICIAN 2	\$53,000.00	\$26,000.00	\$0.00	\$8,000.00
5.0	IT BUSINESS ANALYST - JOURNEY	\$525,000.00	\$185,000.00	\$0.00	\$38,000.00
1.0	IT APPLICATION DEVELOPMENT - ENTRY	\$98,000.00	\$35,000.00	\$0.00	\$8,000.00
6.0	IT APPLICATION DEVELOPMENT - JOURNEY	\$630,000.00	\$221,000.00	\$0.00	\$45,000.00
0.5	IT APPLICATION DEVELOPMENT - SENIOR/SPECIALIST	\$61,000.00	\$20,000.00	\$0.00	\$4,000.00
1.0	IT BUSINESS ANALYST - ENTRY	\$91,000.00	\$34,000.00	\$0.00	\$8,000.00
4.0	WMS02 HEALTH SERVICES CONSULTANT	\$457,000.00	\$156,000.00	\$0.00	\$30,000.00
1.0	MANAGEMENT ANALYST 3	\$75,000.00	\$30,000.00	\$0.00	\$8,000.00
2.0	MANAGEMENT ANALYST 3	\$143,000.00	\$59,000.00	\$0.00	\$15,000.00
1.0	MANAGEMENT ANALYST 4	\$83,000.00	\$32,000.00	\$0.00	\$8,000.00
2.0	MANAGEMENT ANALYST 5	\$183,000.00	\$68,000.00	\$0.00	\$15,000.00
2.0	EPIDEMIOLOGIST 1	\$170,000.00	\$65,000.00	\$0.00	\$15,000.00
1.5	IT APPLICATION DEVELOPMENT - JOURNEY	\$150,000.00	\$54,000.00	\$0.00	\$11,000.00
2.0	IT BUSINESS ANALYST - JOURNEY	\$200,000.00	\$72,000.00	\$0.00	\$15,000.00
1.0	IT PROJECT MANAGEMENT - SENIOR/SPECIALIST	\$116,000.00	\$39,000.00	\$0.00	\$8,000.00
2.0	WMS04 HEALTH SERVICES CONSULTANT	\$166,000.00	\$64,000.00	\$0.00	\$15,000.00
-	TOTAL STARTUP COSTS	\$0.00	\$0.00	\$34,000.00	\$0.00
37.3	FISCAL ANALYST 2	\$1,977,000.00	\$955,000.00	\$0.00	\$0.00
1.0	WMS03 HEALTH SERVICES CONSULTANT 3	\$53,000.00	\$26,000.00	\$0.00	\$0.00
96.3		\$7,842,000.00	\$3,061,000.00	\$34,000.00	\$442,000.00

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 compute 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.

Equity Impacts

Community outreach and engagement:

Here is one example. In January 2021, there was no easy way to learn of COVID-19 vaccine availability in the state. Washingtonians were spending hours—sometimes days—searching websites and calling numerous providers to discover who had vaccine availability. The digitally savvy, with time and resources, were unfairly advantaged in getting vaccinated. For this reason, we worked with private partners to solve the absence of a simple-to-use tool to surface vaccine availability to book an appointment with a provider. We launched our Vaccine Locator mobile/web app on March 18, 2021

Disproportional Impact Considerations:

We worked with vaccinating providers to add accessibility features on provider sites. More than 2.5 million unique visitors have used the site, with a 70% click-through rate to vaccine provider scheduling sites. The user-friendly tool reflects our "Equity by Design" principle: launched in 30 languages with six accessibility settings. We coupled this with enhancing the DOH Call Center and 211 offer scheduling assistance to those without ready access to the internet. And as our cloud environment for data analytics and reporting matures, we plan to expand access to appropriate data and tools to serve our partners in local public health and the tribal community.

Target Populations or Communities:

The department has worked with tribal partners, stakeholders in the disability community, and others to develop systems and solutions which serve the needs of all people in Washington. The work completed could potentially impact any and all Washingtonians.

Other Collateral Connections

Puget Sound Recovery:

N/A

State Workforce Impacts:

N/A

Intergovernmental:

The systems served by these investments receive and provide data to various entities, including other government agencies to inform action. All communities statewide who benefit from public health and seek healthcare are positively impacted by this proposal. This includes tribal, urban, and rural communities. DOH's ability to collect, analyze, and disseminate data allows all communities to better prepare for, address, and monitor emerging and existing public health issues. State agencies that are also impacted by public health will benefit such as: 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 Health, and Department of Ecology.? Benefits will expand as access to our cloud environment for data analytics and reporting is made available to local governmental public health partners and tribal nations.

Stakeholder Response:

N/A

State Facilities Impacts:

N/A

Changes from Current Law:

N/A

Legal or Administrative Mandates:

N/A

Reference Documents

- [2023-25PrioritizationWorksheetIT-MaintainPHInfrastructure.xlsx](#)
- [FNCAL_2023-25_ver24.2 OIT ONGOING MPHI DP-NEW removed ELC 09022022.xlsm](#)
- [HTS FTE_SystemCosts - COVID Gap.xlsx](#)
- [ITaddendum_2023-MaintainPHInfrastructure-ML.docx](#)

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	\$7,843	\$10,178	\$18,021	\$10,240	\$10,554	\$20,794
Obj. B	\$3,061	\$3,970	\$7,031	\$4,008	\$4,160	\$8,168
Obj. E	\$13,473	\$16,499	\$29,972	\$18,231	\$21,682	\$39,913
Obj. G	\$10	\$10	\$20	\$10	\$10	\$20
Obj. J	\$34	\$20	\$54	\$0	\$0	\$0
Obj. T	\$438	\$575	\$1,013	\$568	\$568	\$1,136

Agency Contact Information

Kristin Bettridge

(360) 236-4126

kristin.bettridge@doh.wa.gov