



Agency Recommendation Summary

The Department of Health requests funds to hire two engineers to address fundamental program activities in the Large Onsite Sewage Systems (LOSS) program. One would add capacity to allow the program to implement a program of routine inspections to support regulating LOSS throughout Washington State. The other would focus on updating the LOSS rules, developing guidance documents, and planning for emerging issues. Routine inspections of LOSS would allow the department to be able to proactively identify failing, malfunctioning, improperly operated LOSS, improving public health protections and compliance with the LOSS rule. LOSS rules and guidance tools are out of date.

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	2.9	2.8	2.85	2.8	2.8	2.8
Operating Expenditures						
Fund 001 - 1	\$378	\$367	\$745	\$367	\$367	\$734
Total Expenditures	\$378	\$367	\$745	\$367	\$367	\$734

Decision Package Description

Problem:

The Department of Health (DOH), Large Onsite Sewage System (LOSS) program permits and regulates 542 LOSS across Washington. The Department of Health has regulated LOSS since 2011. Each LOSS is designed to treat between 3,500-100,000 gallons of wastewater per day. Together, these systems treat over 5 million gallons of sewage per day. The program lacks capacity to appropriately enforce the rule and engage in long-term projects that support its success and ensure continued public health protection.

The program currently performs pre-project inspections (site and soil inspections) and post-construction inspections (final inspections). The program also investigates failures (failure inspections). The LOSS program has authority to perform inspections and audits of records for any valid reason but does not have the capacity to perform routine inspections of existing LOSS. Third party Operations and Maintenance (O&M) providers are the only source of ongoing inspections. Owners and operators self-report all information the program reviews and uses in determinations. The program has no capacity to verify the accuracy of self-reporting, validate the findings of third-party inspections, or act preventatively in cases where violations exist but go unreported. This issue impacts low income and rural communities the most because systems lack access to qualified operators, and therefore may be more likely to miss warning signs of imminent failure.

The program also lacks capacity for rule review and revision, updating out-of-date standards, providing technical assistance, developing guidance, and investigation of and planning for emergent issues. The LOSS rule, WAC 246-272B has not had any significant updates since 2011. Existing DOH Wastewater Management Section's Recommended Standards & Guidance (RS&Gs) documents are tailored to smaller onsite sewage systems (OSS) under WAC 246-272A. RS&Gs are needed specifically tailored to LOSS.

Proposal:

The LOSS engineering staff currently includes 2.0 FTE Environmental Engineers (1 EE2 & 1 EE3) located in Spokane, and 1.0 FTE Environmental Engineer 2 and 1.0 FTE LOSS Supervisor (EE5) located in Tumwater.

The LOSS program is requesting funding for two new positions (2.0 FTE), each described below.

1. LOSS Engineer, Environmental Engineer 2, 1.0 FTE

This position will be part of the LOSS team to review permits, projects, and perform regular inspections of LOSS. The additional engineer will expand existing engineer capacity and allow all LOSS engineers to perform regular inspections within their service area. The proposed FTE would be stationed Tumwater to assist with westside LOSS.

Many LOSS are located in remote and rural settings. The department needs expanded engineer capacity to handle the amount of travel time required to visit each LOSS. The LOSS program will work to create efficient inspection trips and target specific areas so that multiple inspections can be completed at once.

2. LOSS Special Projects Engineer, Environmental Engineer 5, 1.0 FTE

This position will help the Wastewater Management section modernize LOSS rules and develop plans to deal with emerging issues like nutrient treatment and water reuse and to ensure that the affected communities are engaged in the processes to address these issues.

The Special Projects Engineer would be an expert in the engineering and operation of LOSS, would be proficient in community engagement, and would:

- Lead a collaborative review and revision process for the LOSS rule, WAC 246-272B;

- The LOSS rule has not been updated since 2011. There are several known implementation issues in the rule. There are also several current/emergent engineering solutions precluded by the rule.

- The LOSS community is served by a limited number of engineers with experience with the LOSS rule. Revising the rule will provide

opportunity for other engineers and practitioners to provide perspective on the rule's design.

Lead development and maintenance of standards, technical assistance, and guidance documents;

Design Manual. The LOSS program has long needed a Design Manual to facilitate design of typical engineered components. The LOSS program has attempted to develop this tool in the past but have been unable to complete the work due to the magnitude of the undertaking weighted against a lack of capacity to perform work outside of routine permit/project and emergency failure response. This document would increase protection of public health by establishing standards for certain design conventions while simultaneously increasing efficiencies in the LOSS program and facilitating successful designs. It may increase accessibility of LOSS work to engineers that prefer or expect these regulatory tools to guide their work and increase their confidence in successful designs. Similar design documents are available for other adjacent regulatory programs (e.g. [Ecology Sewer Design Manual](#)) and have been available for LOSS in the past (e.g. [2002 EPA Onsite Wastewater Treatment Systems Manual](#)), but none cover modern LOSS rules and design standards.

Guidance and Technical Assistance Documents. Guidance and technical assistance documents would increase public health protections, compliance with the LOSS rule, and efficiencies for the LOSS engineers and compliance manager for several common issues. Topics include (but are not limited to):

- Operation of certain technologies
- Design standards for certain technologies
- Interpreting and reporting laboratory data
- Guidance for optimizing designs for nutrient removal
- Support creation of water reuse guidance

Conduct research to address emergent issues and technologies such as:

Nutrients (nitrogen and phosphorus) from LOSS are related to dangerous impacts to drinking water, harmful algal blooms, and eutrophication of freshwater habitats. These issues can lead to costly drinking water treatment, toxic contamination of shellfish growing areas and recreational waters, and degradation of salmon habitat.

Water reuse (reclaimed water and onsite non-potable water systems) has emerged as the primary source of new water sources on the West Coast and is critical to sustainability, climate change, and resiliency planning.

Contaminants of emergent concern (CECs) are chemicals and toxics that are found in waterbodies and may cause ecological or human health impacts and are not currently regulated. Research and news stories increasingly connect CECs to wastewater systems. Very little is known about the fate and transport of CECs in LOSS. Almost no guidance regarding CECs exists for LOSS designers or operators.

There are 542 LOSS across the state treating over five million gallons of sewage a day. These facilities, and their operators, are generally the only wastewater treatment option for the schools, businesses, government facilities, campgrounds, mobile home parks, churches, and towns they serve. They range in size, resources, and operational capacity, with many depending heavily on LOSS program staff for technical assistance and monitoring of safe operation. These positions will ensure that all LOSS are routinely inspected, modernize LOSS rules standards and guidance, and streamline LOSS design and treatment selection, resulting in systems that function better, last longer, and are more up-to-date in addressing current and emerging issues.

Alternative:

Prior to 2019, LOSS fees (fees collected from LOSS permit processes) accounted for approximately 18% of the LOSS program’s operating budget, with the remainder coming from GFS. Under this funding scenario, LOSS permit processes were severely understaffed and only minimal permit and LOSS operation review were possible.

The department increased the fees in 2020 (see table below), bringing the fee-funded percentage of the budget to approximately 40%. The increased fees (and current allocations of GFS) allow the program to maintain compliance with permit timeliness requirements but do not add enough capacity to routinely inspect LOSS or accomplish the proactive, capacity building, tasks that the Special Projects Engineer will be assigned.

This increased the permit fees for LOSS owners by approximately 300%. Many owners reported that this drastic increase in in the fee was burdensome and difficult to manage. Many reported that the increase would necessarily take away from funds dedicated to the operation of the LOSS or other important services provided to their community, resulting in a decrease in service delivery. The primary message from owners was that routine, incremental fee increases are preferred over infrequent large increases, since the former are easier to manage and plan for and have much less impact on the community the LOSS serves.

The department has committed to conduct routine reviews of the LOSS fees and expects to implement modest fee increases every few years going forward. This is expected to increase the fee-funded percentage of the LOSS budget over time. This request will facilitate necessary timely improvements to public health protections provided by the department without compromising service delivery provided by LOSS owners. LOSS customers want and deserve the public health protections this request will add. And, while nearly all LOSS owners will benefit from the support these positions will add, many cannot afford any increases to their fees at this time.

LOSS Operating Permit Fees

Operating Permit Fees	Effective January 1, 2007	Effective July 1, 2020	Effective July 1, 2021
Base fee	\$150.00	\$450.00	\$608.00
Department-approved LOSS design flow fee	\$.01 Per gallon	\$.03 per gallon	\$.0405 per gallon

Currently, due to limited capacity, program knowledge of LOSS operation is based on reporting by owners and operators, complaints, and occasional assistance from Local Health Jurisdiction (LHJ) staff. The department does not have the staff resources to routinely or proactively visit LOSS, even on a risk-based frequency.

The program has historically relied on owners, operators, and LHJ staff as the primary *boots on the ground*. These local staff provide the program with information about the condition and operation of the LOSS. The effectiveness of this arrangement varies greatly from region to region, site to site, person to person.

Without a sustainable routine inspection program, our knowledge, evaluation, and analysis of these systems will continue to be dependent on third parties (with possible conflicts of interest) and LHJ staff. The most reasonable way for department staff to get in the field, visit LOSS routine, and provide direct LOSS support, is for the department to have more staff available for existing permitting and expanded inspection work.

LEAN analysis has shown that the LOSS program's engineers are burdened with tedious, labor-intensive process due to how permitting services and technical assistance are delivered. These processes are very difficult to change without the development of new technical assistance and guidance tools. This makes the engineering positions in the Wastewater Management difficult to recruit and retain in comparison to other programs which employ the same classifications across the State system. The Special Projects Engineer will create efficiencies and improve job satisfaction across the LOSS program.

Assumptions and Calculations

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

Starting in fiscal year (FY) 2024 and ongoing, this proposal requests salary, benefits, standard technology requirements, and travel associated for:

1.0 FTE of an Environmental Engineer 2, and about 100 miles a week for travel. LOSS program offices are located in Spokane and Tumwater. The longest distance from staff home locations to outlier LOSS is about 200 miles. In most cases LOSS are located within 50 miles of department offices. With the addition of this FTE, staffing will be at 4 LOSS engineers. Each engineer will be expected to inspect 50 LOSS a year, for a total of 200 LOSS inspections each year. This will allow the program to inspect all 542 LOSS every three-years. Savings on time and travel distance can be made by grouping LOSS inspections up where it makes sense. The LOSS program will adjust inspection routines and requirements as necessary to ensure the program meets goals and remains under budget.

1.0 FTE Environmental Engineer 5. Task will include program-specific rules, standards, and guidance creation. This will expand the existing LOSS engineering team and require a higher level of technical expertise and experience than an existing EE2 or EE3 LOSS Engineer. There will be limited costs associated with travel and field work.

Environmental Engineer 5 will be hired as 1.0 FTE. Salary schedule 71. There are no other related costs besides those related to standard salary, benefits, & technology requirements.

Detailed Assumptions and Calculations:

Starting in fiscal year (FY) 2024 and ongoing, this proposal requests salary, benefits, standard technology requirements, and travel associated for:

1.0 FTE of an Environmental Engineer 2, and about 100 miles a week for travel. LOSS program offices are located in Spokane and Tumwater. The longest distance from staff home locations to outlier LOSS is about 200 miles. In most cases LOSS are located within 50 miles of department offices. With the addition of this FTE, staffing will be at 4 LOSS engineers. Each engineer will be expected to inspect 50 LOSS a year, for a total of 200 LOSS inspections each year. This will allow the program to inspect all 542 LOSS every three-years. Savings on time and travel distance can be made by grouping LOSS inspections up where it makes sense. The LOSS program will adjust inspection routines and requirements as necessary to ensure the program meets goals and remains under budget.

Environmental Engineer 2 will be hired as 1.0 FTE. Salary Schedule 61. Estimated travel costs will be 100 miles of vehicle rentals per week. Budget will cover standard salary, benefits, & technology requirements.

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Environmental Engineer 5 will be hired as 1.0 FTE. Salary schedule 71. There are no other related costs besides those related to standard salary, benefits, & technology requirements. This position will be forward looking and focus on tackling WA State’s toughest onsite sewage treatment challenges. The expertise we develop with this position will provide a net benefit to all of WA State as the updated guidance we develop will be useful to local health jurisdictions, community managers, designers & operators, as well as our partners in other regulatory agencies.

Environmental Engineer 2

This position focuses on supporting the toughest challenges in onsite sewage treatment by putting trained professionals in a position to directly assist with the operations and maintenance with LOSS.

Workforce Assumptions:

Workforce Assumptions FY24 Projections Only					
FTE	Job Classification	Salary	Benefits	Startup Costs	FTE Related Costs
1.0	ENVIRONMENTAL ENGINEER 2	\$85,000	\$33,000	\$5,000	\$8,000
0.5	FISCAL ANALYST 2	\$27,000	\$13,000	\$0.00	\$0.00
0.4	HEALTH SERVICES CONSULTANT 1	\$19,000	\$9,000	\$0.00	\$0.00
1.0	ENVIRONMENTAL ENGINEER 5	\$109,000	\$38,000	\$5,000	\$8,000
2.9		\$240,000	\$93,000	\$10,000	\$16,000

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:

By enhancing public health protections for LOSS, which provide critical wastewater treatment services to communities across Washington, this position will support, and advance **Goal 4: Healthy and safe communities of the Governor's Results Washington. It may also advance Goal 5: Efficient, effective and accountable government.** In addition, by providing more direct support for LOSS. Adding this position will advance the management capacity of LOSS owners and operators varies greatly based on resources and operation expertise. This position will ensure all LOSS owners and operators are provided expert guidance in the operation of their LOSS.

DOH Transformational Plan

This proposal supports the Dept. of Health's **Transformational Plan Priority I. Health and Wellness, Priority III. Environmental Health, IV. Emergency Response and Resilience** in that all Washingtonians will thrive in a broad range of healthy environments — natural, built, and social, and that all Washington communities have the information and resources they need to build resilience in the face of myriad public health threats and are well-positioned to prepare for, respond to, and recover from emergencies and natural disasters. In addition, that all Washingtonians have the opportunity to attain their full potential of physical, mental, and social health and well-being. This proposal achieves this priority within the management capacity of LOSS owners and operators as they vary greatly based on resources and operational expertise. This proposals position will ensure all LOSS owners and operators are provided expert guidance in the operation of their LOSS. This will advance *Strategy 4.4 Ensure equitable access to information and services*, of the agency's strategic plan, which aids our communities in health and wellness.

Performance Outcomes:

The Environmental Engineer 2 position and inspection program will result in direct improvements to LOSS operations and compliance. Expected outcomes include:

- Every LOSS inspected every three-years and begin tracking our progress.
- Failures and critical deficiencies, environmental concerns, and health hazards found more quickly.
- Crucial feedback for LOSS and direct repairs provided before they reach crisis.
- Accountability for permit requirements, improved reporting, and more timely and accurate permit renewals assured.

The Environmental Engineer 5 position will result in regularly updated rules and guidance, an improvement in the quality of LOSS designs, improved accessibility for new design engineers, and better support to regulators who enforce design standards. Expected outcomes include:

- Updated LOSS rules.
- Updated and current guidance tools.
- Improved designs.
- More efficient review processes saving the customer's time and money.
- More new LOSS to be built.

Equity Impacts

Community outreach and engagement:

The capacity of the program to conduct community outreach and engagement has historically been limited by resource limitations. Through eliciting feedback on a recent fee increase the program learned from LOSS owners that are disproportionately impacted by increases in fees that large fee increases take services away from the communities they serve.

This proposal was developed to address inequities in compliance assistance and enforcement across LOSS owners without exacerbating socioeconomic inequalities between these communities. By engaging owners and operators of all LOSS directly through routine inspections, the program will provide more equitable direct support and engagement as well as a more personal connection with the engineer with oversight of their LOSS. Through routine review and revision of rules and guidance, with a focus on serving historically underserved communities, the program will incorporate engagement and transparency into its rules and rulemaking processes.

Disproportional Impact Considerations:

This proposal seeks to increase engagement, transparency, and accessibility to the LOSS program, particularly for the regulated community, by engaging LOSS owners and operators directly through routine in person interactions during regulatory inspections. This will provide opportunities for public health interventions and education for LOSS owners and operators (as well as ensure regulatory compliance). Others, such as communities that are close enough to be directly impacted by LOSS operations but are not part of the regulated LOSS community, will not have direct access to these educational opportunities. Revised rules and guidance will be designed to improve health outcomes and provide increased access and transparency equitably.

Target Populations or Communities:

LOSS serve a diversity of communities across Washington. Most serve housing communities. Some serve commercial or government facilities. A few serve churches and nonprofits. One commonality among these communities is that due to their geography away from urban centers they have less access to urban infrastructure and services and must use LOSS for wastewater treatment.

The communities that use LOSS depend upon the LOSS's owner and operator to ensure that the LOSS is operating correctly and protecting their community's health and environment. If a LOSS malfunctions or fails, the facility can become very dangerous to public health. Untreated sewage can contaminate the community's drinking water sources and surface waters. And the community can be left without functioning wastewater treatment, effectively unable to use their plumbing, until repairs are complete. The community's related impacts, timeframes, and capacity to cope with these events are highly variable based on socioeconomic and other risk factors.

The operational capacity of LOSS owners and operators varies greatly based on their available resources and expertise. While many have adequate operational capacity to protect the communities they serve, several lack critical resources and/or expertise. Many of these communities, such as mobile home/RV parks, are typically lower income populations that have historically experienced socioeconomic and environmental health disparities.

Attachment 1, Figure 1 is a chart of LOSS by the community type they serve. Notably, schools are the most common type of community served, subdivisions are the second most common, RV parks are the fourth, and low-income housing is the fifth most common.

Figures 2 and 3 (in Attachment 1) show socioeconomic disparities and wastewater discharge disparities (respectively) using the Environmental Health Disparities map. Figure 4 (in Attachment 1) of LOSS locations. The comparison of these maps reveals a colocation of LOSS with socioeconomic disparities and disparities in impacts related to wastewater discharge

Routine inspections will help ensure all LOSS are operated in a safe manner, protecting communities from the serious health impacts of failing LOSS. This will benefit all communities served by and living around LOSS, but particularly those facing socioeconomic inequities. Proactive identification of failing LOSS which may not have been reported, and identification of malfunctioning or improperly operated LOSS before failure occurs, will significantly improve public health protections. Routine inspections will give us the opportunity to intervene and before a system goes into total failure, preventing more expensive repairs that can be devastating to owners and rate payers. This is especially critical for communities challenged by socioeconomic and other inequalities.

The communities served by LOSS will benefit from increased and updated regulatory protections and service. Through the provision of updated rules and guidance, LOSS owners and operators will receive better guidance to prevent dangerous and expensive failures, more immediate and better resourced failure response support from DOH, more appropriate, and, ideally, more efficient and affordable service delivery. Improved rules, guidance and technical assistance would help improve health outcomes by ensuring LOSS are operated in a safe manner thereby ensuring these communities experience fewer health impacts by a failing LOSS.

Other Collateral Connections

Puget Sound Recovery:

N/A

State Workforce Impacts:

N/A

Intergovernmental:

The program does not expect any negative regulatory impacts on state agencies, tribal governments, or local health jurisdictions. This work will expand current on-site presence and allow LOSS engineers more direct involvement in preventative care of these systems and expand options and clarify requirements, making projects more straightforward. There will be no additional intergovernmental costs, and the work will facilitate more and deeper collaboration between regulatory communities.

Stakeholder Response:

Operators, maintenance providers, regulators, system owners, and other professionals related to LOSS are anticipated to support this proposal. Some owners may not be in favor due to an increase in accountability, however LOSS program has a track record of working closely with out of compliance owners and do not expect much friction. If the LOSS program seeks to fund these activities through higher fees, then would expect some opposition to that funding approach.

State Facilities Impacts:

N/A

Changes from Current Law:

N/A

Legal or Administrative Mandates:

N/A

Reference Documents

- [FINAL - OEHS - LOSS Program Improvement FNCal_submitted to CBO.xlsm](#)
- [LOSS Program Improvement 2022 Attachment 1 Backup.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?

No

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	\$239	\$238	\$477	\$238	\$238	\$476
Obj. B	\$93	\$93	\$186	\$93	\$93	\$186
Obj. E	\$13	\$13	\$26	\$13	\$13	\$26
Obj. G	\$7	\$7	\$14	\$7	\$7	\$14
Obj. J	\$10	\$0	\$10	\$0	\$0	\$0
Obj. T	\$16	\$16	\$32	\$16	\$16	\$32

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