# University of Wisconsin System

## State Laboratory of Hygiene

(LFB Budget Summary Document: Page 669)

**LFB Summary Items for Which an Issue Paper Has Been Prepared**

| Item # | Title |
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| 17, 18 & 19 | State Laboratory of Hygiene Structural Deficit: Newborn Screening, Forensic Toxicology Testing, and Rent (Paper #816) |
| 20 & 21 | State Laboratory of Hygiene -- Soil Health and Cyanobacterial Blooms Monitoring (Paper #817) |

## Veterinary Diagnostic Laboratory

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**LFB Summary Items for Which an Issue Paper Has Been Prepared**

| Item # | Title |
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| 22 & 23 | Veterinary Diagnostic Laboratory Microbiologists and Bioinformatics (Paper #818) |

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June 8, 2023 Joint Committee on Finance Paper #816

# State Laboratory of Hygiene Structural Deficit: Newborn Screening, Forensic Toxicology, and Rent (UW System)

[LFB 2023-25 Budget Summary: Page 669, #17, Page 670, #18, and Page 670, #19]

## CURRENT LAW

Attached to the University of Wisconsin-Madison's School of Medicine and Public Health, the State Laboratory of Hygiene (SLH) is Wisconsin's public, environmental, and occupational health laboratory. The SLH provides laboratory testing and related services to individual, private, and public entities, including the Department of Health Services (DHS) and the Department of Natural Resources (DNR) in the areas of water quality, air quality, public health, and contagious diseases. The lab is under the supervision and direction of the SLH Board, which meets quarterly to approve the laboratory budget, set fees, establish priorities, and approve use of laboratory resources. The Board is composed of the following, appointed for three-year terms: the Chancellor of UW-Madison; the Secretary or their designee of the Departments of Health Services, Natural Resources, and Agriculture, Trade and Consumer Protection; a representative of local health departments; one physician representing clinical laboratories; one member representing private environmental testing laboratories; one member representing occupational health laboratories; three additional members including one who is a medical examiner or coroner; and the director of the laboratory as a nonvoting member.

## DISCUSSION POINTS

1. Approximately 80% of SLH operations are funded through program revenues including contracts (including federal contracts), grants, and fee-for-service billing. A portion of newborn screening card fees is provided to SLH to support the newborn screening program (generating approximately $4.4 million in fiscal year 2021-22), and a portion of driver impairment fee surcharge revenues is provided to the lab to support alcohol and drug testing related to intoxicated vehicle

operation ($1.6 million annually). The remainder of operations are funded through a general purpose revenue (GPR) appropriation with adjusted base funding of $12,332,600. The SLH currently has 350.40 FTEs, including 132.25 supported by GPR, 183.46 supported by PR, 16.00 supported by driver surcharge revenues and the remainder funded through other sources (primarily federal).

2. Clinical testing services provided by the SLH include: communicable disease testing, newborn screening, cytogenetics, biochemical genetics, cytology, cytotechnology, and testing for clinical metals. The communicable disease division coordinates a network of clinical laboratories throughout Wisconsin for emergency and public health response. For example, the SLH helped bring over 130 labs in Wisconsin online for COVID-19 testing and continues to perform COVID-19 testing using funding from DHS, including antibody testing and statewide wastewater surveillance testing. As a Centers for Disease Control (CDC)-designated Laboratory Response Network (LRN) testing lab, the SLH has also recently worked with DHS on responding to the May, 2022, monkeypox outbreak by performing polymerase chain reaction (PCR) testing of Wisconsin residents as well as providing monkeypox testing for several national commercial labs. Clinical testing also includes work by the UW Cytogenetic and Molecular Genetic Services Lab, which uses conventional and modern genetic testing approaches to diagnose a variety of inherited and acquired conditions. The Biochemical Genetics Lab specializes in the diagnosis and monitoring of metabolic disorders such as phenylketonuria (PKU), a condition in which the body cannot break down the amino acid phenylalanine. This laboratory works closely with the newborn screening program and the UW School of Medicine and Public Health. Another unit of the lab, the cytology unit, conducts cellular testing, including gynecological analysis such as pap tests, human papilloma virus (HPV) tests, and cervical sample biopsies, as well as non-gynecological cell analysis to identify various types of premalignant, malignant, inflammatory, and infectious changes. In addition, the UW cytotechnology program trains medical laboratory professionals who specialize in finding and diagnosing cancer cells under the microscope. The Chemical Emergency Response (CER) section of the SLH provides testing for toxic elements in biological samples including lead and mercury for physicians, clinics, and public health agencies.

3. SLH also generates revenue through environmental testing conducted by the SLH Environmental Health Division for DNR and other agencies, including water, wastewater, groundwater, air, sediment, solid wastes, and tissue testing for pesticides, nutrients, metals, radionuclides, industrial chemicals, air pollutants and pathogenic microbes; laboratory proficiency testing which enables other laboratories to evaluate their performance by analyzing reference samples and inputting results to SLH, which generates evaluation reports and provides peer laboratory statistics for comparison; and the SLH Occupational Health Laboratory, which provides industrial hygiene chemical analysis and occupational health analytical services for public agencies and private sector clients including international clients. The SLH serves as the central laboratory for 46 states participating in the Occupational Safety and Health Administration (OSHA) on-site consultation program. Through a federal grant from the U.S. Department of Labor, the SLH also offers free on-site workplace safety consultation services to assist Wisconsin employers in meeting their obligations and responsibilities under the federal Occupational Safety and Health Act.

4. The SLH also receives federal funding from the U.S. Department of Agriculture National Institute of Food and Agriculture to support the National Atmospheric Deposition Program

(NADP), and also has fee-for-service customers such as universities and non-profit organizations who pay the SLH to maintain a collection unit on their site. In March, 2018, NADP moved their program office from the University of Illinois Urbana-Champaign to the SLH. The NADP is a cooperative effort between federal, state, tribal, and local governmental agencies, educational institutions, private companies, and non-governmental agencies to monitor precipitation chemistry. Sites in the NADP precipitation chemistry network began in 1978 to provide data on the amounts, trends, and geographic distributions of acids, nutrients, and base cations (potassium, calcium and magnesium) in precipitation. The network currently has 260 sites.

5. Table 1 shows SLH revenues and expenditures for fiscal year 2021-22 and 2022-23, and estimated revenues and expenditures for 2023-24 and 2024-25.

**TABLE 1**

**State Laboratory of Hygiene Revenues and Expenditures**

| | | | Current Law | |
|---|---|---|---|---|
| | 2021-22 Actual | 2022-23 Budgeted | 2023-24 Estimate | 2024-25 Estimate |
| **Revenue** | | | | |
| Clinical | $18,904,200 | $18,737,400 | $18,800,000 | $18,800,000 |
| Environmental | 6,380,300 | 7,570,600 | 7,300,000 | 7,300,000 |
| Newborn Screening | 4,397,000 | 4,150,000 | 4,000,000 | 3,900,000 |
| Lab Proficiency | 3,467,600 | 4,155,100 | 3,900,000 | 3,750,000 |
| Occupational Health | 1,893,000 | 2,156,600 | 2,000,000 | 2,000,000 |
| National Atmospheric Deposition Program | 1,632,200 | 1,657,300 | 1,600,000 | 1,600,000 |
| Driver Improvement Surcharge | 1,619,200 | 1,619,200 | 1,619,200 | 1,619,200 |
| Laboratory Services subtotal | $38,293,500 | $40,046,200 | $39,219,200 | $38,969,200 |
| GPR | $12,030,200 | $12,142,000 | $12,332,600 | $12,332,600 |
| Sponsored Projects* | 6,224,100 | 5,567,500 | 6,000,000 | 6,000,000 |
| Federal Indirect | 789,100 | 852,000 | 850,000 | 850,000 |
| DHS Contracts | 893,700 | 862,800 | 900,000 | 900,000 |
| Other Revenue | 4,600 | 6,000 | 5,000 | 5,000 |
| Total Revenue | $58,235,200 | $59,476,500 | $59,306,800 | $59,056,800 |
| **Expenditures** | | | | |
| Salaries | $23,405,900 | $23,744,200 | $24,220,000 | $24,750,000 |
| Fringe Benefits | 8,601,300 | 8,888,600 | 9,160,000 | 9,360,500 |
| Supplies and Services | 20,937,100 | 21,544,600 | 21,550,000 | 21,550,000 |
| Facilities Rent | 3,321,200 | 3,207,000 | 3,300,000 | 3,300,000 |
| Transfer Overhead to UW | 965,000 | 921,100 | 950,000 | 950,000 |
| Depreciation | 2,442,400 | 2,551,600 | 2,500,000 | 2,500,000 |
| Other Expenses | 1,000 | 7,200 | 5,000 | 5,000 |
| Total Expenditures | $59,673,900 | $60,864,300 | $61,685,000 | $62,415,500 |
| Revenues - Expenditures | -$1,438,700 | -$1,387,800 | -$2,378,200 | -$3,358,700 |

*Primarily Federal grants

6. As shown in Table 1, in fiscal year 2021-22, expenditures exceeded revenues by $1.4 million. Expenditures are expected to again exceed available revenues by a similar amount in fiscal year 2022-23. The SLH utilized their unrestricted cash reserves to cover the shortfall in fiscal year 2021-22 and will utilize reserves again in fiscal year 2022-23. However, these reserves are expected to be below $500,000 at the close of fiscal year 2022-23, and without additional funding, operating at current levels would create an even larger structural deficit. Therefore, the lab indicates they would significantly curtail activities in order to avoid such a deficit. According to the SLH chief financial officer, the two primary drivers of this structural deficit are the newborn screening and forensic toxicology programs where expenditures exceed revenues from the newborn screening cards and driver improvement surcharge.

7. Based on the revenues and expenditures shown in Table 1, it is estimated that an additional $2.4 million in 2023-24 and $3.4 million in 2024-25 would be needed to resolve SLH's structural deficit. That amount could be generated through increased fees or through GPR. [Alternative 1] A larger amount could be provided, such as $4 million in each year, which would allow SLH to maintain a positive net balance and restore the cash reserve that has been used to cover the laboratory's revenue shortfall in recent years. [Alternative 2] The amount requested by SLH in the UW System's agency budget request, and the amount provided in Assembly Bill 43/Senate Bill 70, totals $4,471,200 GPR in 2023-24 and $4,571,200 GPR in 2024-25. [Alternative 3]

**A. Newborn Screening**

8. Currently, section 253.13 of the statutes requires newborn screening of all infants born in Wisconsin for 48 disorders, such as cystic fibrosis and sickle cell disease, which if left untreated could lead to severe health problems. The screening also includes a hearing test and a pulse measurement to screen for critical congenital heart disease. DHS is responsible for monitoring the screening program and providing necessary diagnostic services, special dietary treatment, periodic evaluation, and counseling to affected patients with a congenital disorder identified by the screenings and their families. Current law requires DHS to contract with the SLH to perform any necessary laboratory tests for the newborn screenings. The SLH is also responsible for furnishing materials for use in the laboratory tests and ensuring a referral to the appropriate specialist occurs when there is a positive panel test result. DHS is required to impose a fee, by administrative rule, for the newborn screening tests, which is sufficient to pay for the services provided under the contract with SLH and any necessary diagnostic services, dietary treatment, evaluation, and counseling services required as well as the costs of administering infant hearing screening required under section 253.115 of the statutes, and administrative costs of the screenings.

9. Since 2010, the cost of the newborn screening card fee has been $109. Hospitals and midwives or other medical professionals attending a birth outside of a hospital purchase the cards. Newborn screening is one of the first tests a newborn receives after birth. A tiny prick of the baby's heel provides a few drops of blood which are placed on the newborn screening card. The cards are then transported to the SLH by a courier. According to the federal Health Resources and Services Administration, initial newborn screening specimens should be collected no later than 48 hours after birth, and specimens should be received at the laboratory as soon as possible, ideally within 24 hours of collection, as early detection is critical. According to the SLH, approximately 125 to 140 babies

born in Wisconsin each year are found to have one of the 48 disorders, out of 62,000 newborn screening laboratory tests conducted annually.

10. According to the SLH, the estimated cost of the newborn screening program is currently expected to be approximately $94.05 per test as of fiscal year 2023-24, including courier costs, lab personnel and equipment costs. The SLH receives $60.50 per newborn screening card, including an agreed upon $2.00 for cystic fibrosis screening, while DHS receives the remaining $48.50 per fee. Since the fee was last raised in 2010, SLH indicates that newborn screening lab operation costs have increased by 46% due to several factors including testing expansion (including the addition of second tier tests to reduce false positive rates and new disorders added to the panel of disorders tested), inflation, and increased courier service costs.

11. Recent courier service costs have increased significantly. For the most recent contract, UW-Madison issued a request for proposals for courier services on October 15, 2021. Purple Mountain Solutions, Inc., formerly Gold Cross Courier, was the only contractor that responded to the RFP. The contract period is April 1, 2022 through March 31, 2025, with automatic renewal extensions to March 31, 2027, unless amended, cancelled, or rebid. Under the contract, Purple Mountain Solutions picks up newborn screening specimens Sunday through Friday and delivers them to the SLH for testing Monday through Saturday. All orders placed before noon are picked up on the same day, and those placed after noon are picked up the following day. An amendment to the contract includes increased fees as of April 16, 2023, of $42.10 (increased from $39) per newborn screening envelope pickup stop in a specified section of Wisconsin generally south of Highway 29 and $70.20 (increased from $65) per stop north of Highway 29. The amendment also specifies delivery rates of $22.40 for Monday through Friday, $39.20 for Saturday and Sunday, and $33.60 plus $1.40 per mile for state holiday services, and a daily linehaul charge of $1,400. According to SLH, courier costs totaled $341,000 in fiscal year 2021-22. Through March 2023, fiscal year 2022-23 courier fees totaled $512,000 and are expected to cost approximately $800,000 in total for fiscal year 2022-23. The projected costs for fiscal years 2023-24 and 2024-25 are approximately $846,000 annually, an increase of approximately $505,000 annually compared to 2022-23.

12. Assembly Bill 43/Senate Bill 70 would provide $2.2 million GPR for newborn screening operations, including $1,119,800 annually for staff salaries and fringe and $1,080,200 for supplies (including courier service costs). This additional funding is intended to address the difference between the current amount of revenue SLH receives for each test and the costs of providing the tests.

13. The statutes require DHS to impose a fee sufficient to cover the costs of the newborn screening services. The fee was last increased in 2010; at that time, the fee was set to create an initial revenue surplus. Given the declining birth rate and the increased costs of transporting and analyzing each test, revenues have declined and are expected to continue to do so. In 2017, DHS asked SLH to provide newborn screening program cost data and a five-year projection of anticipated program costs to begin the administrative rule process in anticipation of the next increase in the card fee. However, no such rule has been put forward to date.

14. The revenue shortfall for the newborn screening program could be addressed by providing state GPR, as under the bill, or by establishing a minimum statutory fee for the program. The current law language allowing DHS to establish the fee could be maintained, which would allow

DHS to increase the fee in the future by administrative rule. Each $25 increase in the fee would be expected to generate approximately $1,337,500 million annually in revenue. Table 2 below shows examples of the amount that could be generated through an increase in the fee. (As shown in the table, the amount of GPR provided in the bill could be generated by raising the fee by approximately $40.)

**TABLE 2**

**Examples of Additional Revenue Generated By Increase in Newborn Screening Card Fee**

| Total Cost of card | Increase Per Card | Additional Revenue |
|---|---|---|
| $109 | $0 | $0 |
| 134 | 25 | 1,337,500 |
| 149 | 40 | 2,140,000 |
| 159 | 50 | 2,675,000 |
| 184 | 75 | 4,012,500 |
| 209 | 100 | 5,350,000 |

15. In addition to the funding for the SLH discussed in this paper, AB 43/SB 70 would provide $3,556,300 GPR in 2023-24 and $1,669,600 GPR in 2024-25 in a new DHS appropriation to supplement the fee revenue used by DHS for treatment and follow-up services. Similar to the SLH program, declining screening card fee revenue and increasing costs have created a structural deficit in the DHS program. This program, including alternatives to further increase the screening card fee to provide additional revenue to DHS, will be addressed in a future Legislative Fiscal Bureau paper when the Committee addresses other Division of Public Health items. The alternatives presented in this paper address only the SLH deficit and would provide additional fee revenue or GPR funding only to SLH.

### B. Forensic Toxicology Testing

16. The forensic toxicology section of the SLH serves the state's police departments, prosecutors' offices, and coroner/medical examiner (C/ME) facilities. The laboratory conducts blood alcohol and drug testing for OWI enforcement and motor vehicle deaths in Wisconsin as well as drug and alcohol testing for C/ME. Testing for law enforcement agencies is limited to traffic safety and motor vehicle matters (including boats, all-terrain vehicles, and snowmobiles); samples from non-traffic felony cases must be sent to the state crime laboratory. Scientists at the SLH conduct sample analysis and provide expert testimony regarding the samples analyzed. SLH staff make about 300 court appearances annually in response to subpoenas in OWI cases. DHS also utilizes program data for drug abuse surveillance.

17. In recent years, SLH indicates that it has analyzed approximately 20,000 alcohol samples per year, and approximately 10,700 of those samples were also analyzed for drugs of abuse. The SLH indicates OWI drug testing cases have increased by 260% from 2014 to 2021. As these tests are more

complicated than forensic alcohol testing, requiring multiple analysts and instruments, SLH indicates they require additional program resources. The SLH has implemented new testing using an instrument which has enabled the laboratory to expand the scope and capability of the total number of drugs tested and detect synthetic drugs, such as fentanyl analogs and synthetic cannabinoids. According to DHS data, the number of fentanyl overdose deaths in Wisconsin grew by 97 percent from 2019 (651) to 2021 (1,280).

18. Any person convicted of an OWI offense is required to pay a $435 driver improvement surcharge, in addition to the fine or forfeiture and other general surcharges. The state and counties each receive a percentage of this surcharge to fund OWI-related services. Failure to pay the surcharge may result in a license suspension of up to two years, or until the surcharge is paid. Of the amount of driver improvement surcharge revenues collected by the courts, 50.3% is retained by the county in which the conviction occurred and 49.7% is forwarded to the state. When the driver improvement surcharge was last increased, by 2013 Act 20, from $365 to $435, the percentage allocated to counties was adjusted so that counties continued to receive $218.80 per offense. The county share is allocated to county human service departments to offset a portion of the costs of alcohol assessments and driver safety plan services. The state share supports a variety of OWI enforcement and prevention programs, and is allocated to these programs by the Department of Administration. In fiscal year 2021-22, the state share totaled $4.4 million, of which $1,619,200 was allocated to the SLH.

19. SLH estimates current costs of OWI testing, including drug testing, are approximately $3,240,000 per year, which exceeds the current $1.6 million of driver improvement surcharge revenues allocated to the SLH for OWI testing, contributing to the current structural deficit. Assembly Bill 34/Senate Bill 70 would provide $2 million GPR annually for forensic toxicology testing.

20. Table 3 shows examples of the amount that could be generated through an increase in the fee. The table assumes that approximately $437,500 in additional revenue would be generated in the second year of the biennium from each $25 increase in the fee, based on estimates of the number of OWI convictions in Wisconsin (18,999 convictions in 2021) and the number of convicted individuals who pay the fee. It is estimated that the revenue generated in the first year of the biennium would be approximately half that amount due to a lag between the imposition of the new fee amount and the collection of test fees. To ensure that the additional revenue goes to SLH, the Committee could adjust the percentage of the fee that is retained by the counties, and require that DOA provide a minimum amount to the SLH.

**TABLE 3**

**Examples of Additional Revenue Generated by Increase in Driver Surcharge Fee**

| Total Cost of Fee | Increase From Current Law | Counties Amount Per Fee | Counties % of Total | State Amount Per Fee | State % of Total | Total SLH Revenue 2023-24 | Total SLH Revenue 2024-25 | SLH Revenue Change from Current Law 2023-24 | SLH Revenue Change from Current Law 2024-25 |
|---|---|---|---|---|---|---|---|---|---|
| $365 | $0 | $218.80 | 50.3% | $146.20 | 49.7% | $1,619,200 | $1,619,200 | $0 | $0 |
| 460 | 25 | 218.80 | 47.6 | 241.20 | 52.4 | 1,838,000 | 2,056,700 | 218,800 | 437,500 |
| 485 | 50 | 218.80 | 45.1 | 266.67 | 54.9 | 2,056,700 | 2,494,200 | 437,500 | 875,000 |
| 510 | 75 | 218.80 | 42.9 | 291.20 | 57.1 | 2,275,500 | 2,931,700 | 656,300 | 1,312,500 |
| 535 | 100 | 218.80 | 40.9 | 316.20 | 59.1 | 2,494,200 | 3,369,200 | 875,000 | 1,750,000 |

21. As noted above, in addition to the OWI casework testing, SLH provides no-fee testing for coroner/medical examiners (C/ME). The SLH began performing this testing more than 25 years ago when test volume was relatively low. However, test volume has grown significantly due to the increase in opioid use in recent years. The number of samples increased by 355% from 2014 to 2021. Currently, SLH indicates that of the 20,000 samples tested per year, approximately 10% of the tests for alcohol and 17% of the drug tests are for C/ME. In 2010, SLH reports the cost of the C/ME testing program was only about 5% of the cost of the OWI testing, but has risen significantly, to 11% of OWI costs, or approximately $360,000 annually. Currently, the SLH indicates that the average turnaround time for alcohol and drug testing is 50 and 270 days, respectively. In 2015, the average turnaround time for alcohol testing was three days and drug testing was 48 days. SLH indicates increased ongoing funding would be utilized to increase staff support to reduce turnaround time. As the testing program is provided at no-fee, SLH indicates that if no state funding is provided to support the program, SLH would approach the SLH Board and DHS to discuss making cuts to the C/ME program. However, SLH notes the data are utilized not only by coroners and medical examiners but also by law enforcement in cases associated with the manufacturing and distribution of controlled substances resulting in death. In addition, the data are used by DHS in monitoring overdose deaths and opioid and illicit drug overdose surveillance programs. The data are also utilized by the State Council on Alcohol and Other Drugs of Abuse (SCADOA) to analyze drug trends and inform intervention policies and practices for treatment providers working to avoid fatal overdoses.

### C. Rent

22. Another contributor to increased expenditures over the last several years was facility rental costs. SLH currently operates in four facilities including: (1) a facility at 465 Henry Mall on the UW-Madison campus where SLH conducts newborn screening, cytology testing, cytogentetics testing, other non-clinical activity including the NADP, and SLH administration - SLH pays rent to UW-Madison for this facility; (2) a facility at 2810 Walton Commons Lane where SLH conducts occupational health and safety consultation and which also houses the SLH information technology department - SLH pays rent to SSM Health for use of this facility; (3) the UW Soil and Forage Lab facility at 4702 University Avenue - SLH pays rent to DOA for this facility; and (4) the main facility at 2601 Agriculture Drive which houses the communicable disease, environmental, occupational, and forensic toxicology laboratories, as well as proficiency testing - SLH pays rent to DOA for this facility as well.

23. In 1999, two divisions of the SLH moved into the facility located at 2601 Agriculture Drive and the Legislature authorized a GPR increase to cover 50% of the cost of the SLH's rent. In 2013, and again in 2021, this facility was expanded to provide increased space for the SLH. Rent increases have since resulted in the current GPR funding level falling below the 50% level. The Governor's 2021-23 budget proposal included a request to provide $228,600 GPR annually for rental costs to bring funding to 50% of rental costs but no increase was included in the 2021-23 budget act. Assembly Bill 43/Senate Bill 70 would provide $271,300 GPR in 2023-24 and $371,100 GPR annually beginning in 2024-25 for rental costs to bring GPR funding to 50% of rental costs.

24. In the UW System budget request, SLH requested $199,900 annually for rental costs. According to DOA, the increase in proposed GPR as compared to the agency request is due to a plan

to move SLH staff out of the SSM Health facility at 2810 Walton Commons Lane and into the Department of Agriculture and Consumer Protection building at 2811 Agriculture Drive on approximately January 1, 2024. The plan may also include moving some administrative staff out of the Henry Mall facility to free up additional lab space at that facility. As the DATCP facility would be a state-owned facility, DOA included 50% of estimated annual rental costs for the new 13,047 square feet of space beginning in fiscal year 2024-25, and 50% of five months of rental costs for fiscal year 2023-24. Annual rental costs of the new space are estimated at $342,400.

**ALTERNATIVES**

1. Provide an additional $2.4 million in 2023-24 and $3.4 million in 2024-25 to resolve SLH's structural deficit. The additional revenue could be generated through a combination of increased fees or GPR:

a. **Increase the fee for the newborn screening cards and provide GPR.** Specify that the newborn screening card fee imposed by DHS under s. 253.13 of the statutes must be no less than $134 per card (an increase of $25 per card) beginning in 2023-24, and specify that no less than $85.50 from each newborn screening card sold be provided to the State Laboratory of Hygiene. This would generate an additional $1,337,500 in revenue each year. Additionally, provide $1,062,500 GPR in 2023-24 and $2,062,500 GPR in 2024-25 for the forensic toxicology program and for rent.

| ALT 1a | Change to Base |
|---|---|
| GPR | $3,125,000 |
| PR | 2,675,000 |
| Total | $5,800,000 |

b. **Increase the fee for the driver improvement surcharge and provide GPR.** Increase the driver improvement surcharge by $75 (to $510) beginning in 2023-24, which is estimated to generate an additional $656,300 in 2023-24 and $1,312,500 in 2024-25. Direct DOA to provide $2,275,500 in 2023-24 and $2,931,700 in 2024-25 from the surcharge to the State Laboratory of Hygiene. Specify that beginning on the first day of the sixth month after the effective date of the bill, the percentage of the driver improvement surcharge paid by the county treasurer to the Secretary of Administration is 57.1%. Additionally, provide $1,743,700 GPR in 2023-24 and $2,087,500 GPR in 2024-25 for the newborn screening program and for rent.

| ALT 1b | Change to Base |
|---|---|
| GPR | $3,831,200 |
| PR | 1,968,800 |
| Total | $5,800,000 |

c. **Increase the fee for the newborn screening cards and the fee for the driver improvement surcharge.** Specify that the newborn screening card fee imposed by DHS under s. 253.13 of the statutes must be no less than $137.50 per card (an increase of $28.50 per card) in

2023-24 and $140 (an increase of $31 per card) in 2024-25, and specify that no less than $89 from each newborn screening card sold in 2023-24 and no less than $91.50 from each card sold beginning in 2024-25 be provided to the State Laboratory of Hygiene. This would generate an additional $1,525,000 in revenue in 2023-24 and $1,658,500 in 2024-25.

Increase the driver improvement surcharge by $100 (to $535) beginning in 2023-24, which is estimated to generate an additional $875,000 in 2023-24 and $1,750,000 in 2024-25. Direct DOA to provide $2,494,200 in 2023-24 and $3,369,200 in 2024-25 from the surcharge to the State Laboratory of Hygiene. Specify that beginning on the first day of the sixth month after the effective date of the bill, the percentage of the driver improvement surcharge paid by the county treasurer to the Secretary of Administration is 59.1%.

| ALT 1c | Change to Base |
|---|---|
| PR | $5,808,500 |

2. Provide an additional $4 million in each year, which would allow SLH to maintain a positive net balance and restore the cash reserve that has been used to cover the laboratory's revenue shortfall in recent years, through a combination of increased fees or GPR:

a. **Increase the fee for the newborn screening cards and provide GPR.** Specify that the newborn screening card fee imposed by DHS under s. 253.13 of the statutes must be no less than $159 per card (an increase of $50 per card) beginning in 2023-24, and specify that no less than $110.50 from each newborn screening card sold be provided to the State Laboratory of Hygiene. This would generate an additional $2,675,000 in revenue each year. Additionally, provide $1,325,000 GPR annually for the forensic toxicology program and for rent.

| ALT 2a | Change to Base |
|---|---|
| GPR | $2,650,000 |
| PR | 5,350,000 |
| Total | $8,000,000 |

b. **Increase the fee for the driver improvement surcharge and provide GPR.** Increase the driver improvement surcharge by $100 (to $435) beginning in 2023-24, which is estimated to generate an additional $875,000 in 2023-24 and $1,750,000 in 2024-25. Direct DOA to provide $2,494,200 in 2023-24 and $3,369,200 in 2024-25 from the surcharge to the State Laboratory of Hygiene. Specify that beginning on the first day of the sixth month after the effective date of the bill, the percentage of the driver improvement surcharge paid by the county treasurer to the Secretary of Administration is 59.1%. Additionally, provide $3,125,000 GPR in 2023-24 and $2,250,000 GPR in 2024-25 for the newborn screening program and for rent.

| ALT 2b | Change to Base |
|---|---|
| GPR | $5,375,000 |
| PR | 2,625,000 |
| Total | $8,000,000 |

c. **Increase the fee for the newborn screening cards and the fee for the driver improvement surcharge.** Specify that the newborn screening card fee imposed by DHS under s. 253.13 of the statutes must be no less than $159.25 per card (an increase of $50.25 per card) beginning in 2023-24, and specify that no less than $110.75 from each newborn screening card sold be provided to the State Laboratory of Hygiene. This would generate an additional $2,688,400 in revenue annually.

Increase the driver improvement surcharge by $100 (to $435) beginning in 2023-24, which is estimated to generate an additional $875,000 in 2023-24 and $1,750,000 in 2024-25. Direct DOA to provide $2,494,200 in 2023-24 and $3,369,200 in 2024-25 from the surcharge to the State Laboratory of Hygiene. Specify that beginning on the first day of the sixth month after the effective date of the bill, the percentage of the driver improvement surcharge paid by the county treasurer to the Secretary of Administration is 59.1%.

| ALT 2c | Change to Base |
|---|---|
| PR | $8,001,800 |

3. Provide an additional $4,471,200 GPR in 2023-24 and $4,571,200 GPR in 2024-25, the amount provided in Assembly Bill 43/Senate Bill 70, including the following: (a) $2,200,000 annually for newborn screening laboratory testing operations; (b) $2,000,000 annually for forensic toxicology testing; and (c) $271,200 in 2023-24 and $371,100 in 2024-25 for rent.

| ALT 3 | Change to Base |
|---|---|
| GPR | $9,042,300 |

4. Provide an additional $4,399,900 GPR annually, the amount requested by SLH in the UW System's agency budget request, including the following: (a) $2,200,000 annually for newborn screening laboratory testing operations; (b) $2,000,000 annually for forensic toxicology testing; and (c) $199,900 annually for rent.

| ALT 4 | Change to Base |
|---|---|
| GPR | $8,799,800 |

5. Take no action.

Prepared by: Erin Probst

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June 8, 2023 Joint Committee on Finance Paper #817

# State Laboratory of Hygiene -- Soil Health and Cyanobacterial Blooms Monitoring (UW System)

[LFB 2023-25 Budget Summary: Page 670, #20 and Page 671, #21]

## CURRENT LAW

### Soil Health

Wisconsin state statute requires that UW-Madison maintain a state soils laboratory. The UW-Madison soil and forage analysis lab is part of the UW-Madison Department of Soil Science within the College of Agriculture and Life Sciences (CALS). The lab provides a suite of soil testing for farm, lawn and garden, and turfgrass for farmers, gardeners, researchers, and others. It also offers individual lab tests quantifying single compounds or nutrients found in soil, forage, manure, and plants. Formerly housed at the CALS Marshfield Agricultural Research Station, the lab is now part of the Wisconsin State Laboratory of Hygiene (SLH) and located in a SLH facility in Madison.

### Cyanobacterial Blooms Monitoring

The SLH Environmental Health Division provides environmental testing for the Department of Natural Resources (DNR) and other agencies. This includes water, wastewater, groundwater, air, sediment, solid wastes, and tissue testing for pesticides, nutrients, metals, radionuclides, industrial chemicals, air pollutants and pathogenic microbes. The SLH can screen for various toxins in samples collected from surface waters and drinking waters, including cyanobacteria toxins.

**DISCUSSION POINTS**

**A. Soil Health**

1. The soil and forage lab moved to the SLH facility in December, 2021. The prior facility in Marshfield was outdated and renovation costs were prohibitive. According to the soil lab director, the SLH facility offers more modern facilities and some new equipment, including a soil dryer. Before soil can undergo testing, it must be dried; quicker drying times and the more modern space have allowed for faster soil and forage test turnaround times. The lab processes thousands of samples per week. Soil test results include information about pH, organic matter, phosphorus, potassium, and micronutrients. Forage tests reveal the levels of fat, protein, and starch in a sample. The lab conducts tests on a fee-for-service basis for farmers, crop consultants, UW-Extension educators, homeowners and gardeners. In addition, approximately half of their tests are for research, including research samples for scientists at UW-Madison and other institutions. The lab also runs the Wisconsin Department of Agriculture, Trade and Consumer Protection's (DATCP's) soil lab certification program to assess and certify soil tests offered by private labs.

2. The soil and forage lab's budget is funded primarily from program revenue from soil testing fees, which generated $256,300 in revenue in fiscal year 2021-22 and generated $317,700 in revenue through March, 2023. Prior to 2020-21, the lab also received GPR support from UW-Extension of approximately $75,000 annually. Assembly Bill 43/Senate Bill 70 would provide $97,400 in 2023-24 ($70,700 salary and $26,700 fringe) and $129,800 ($94,200 salary and $35,600 fringe) in 2024-25 with 1.0 position for a soil health faculty position in the soil and forage lab. The position would be located in the SLH Environmental Health Division and have an academic appointment in the UW-Madison Department of Soil Science in CALS.

3. According to the soil lab director, the proposed position would assist in the collaboration of soil health research, testing, and outreach between government agencies, agriculture producers, local communities, and academic researchers. The position may teach at UW Madison and partner with other UW-Madison faculty and staff on research to further collective efforts to sustain and protect Wisconsin soil resources through better management, guidance, and regulation.

**B. Cyanobacterial Blooms Monitoring**

4. Cyanobacteria, also called blue-green algae, are microscopic single-cell organisms found naturally in all types of water, some of which produce toxins, called cyanotoxins. The algae are a group of photosynthetic bacteria some refer to as "pond scum". Blue-green algae generally grow in lakes, ponds, and slow-moving streams when water temperatures are warm and enriched with nutrients including phosphorus or nitrogen. Under the right environmental conditions, blue-green algae grow quickly and most species float to the surface and form floating mats, referred to as a "blue-green algae blooms." According to DNR, in Wisconsin, blue-green algae blooms generally occur between mid-June and late September but have been observed in winter in rare instances.

5. While blue-green algae can cause aesthetic issues like discolored water, other impacts include reduced light penetration and potential health concerns. When algae reach bloom density levels, they can reduce light penetration which can adversely affect other aquatic organisms such as

other phytoplankton and aquatic plants as well as organisms that depend on those phytoplankton and plants such as zooplankton and fish. Blue-green algae sometimes produce toxins, naturally produced chemical compounds inside the cells of certain species of the algae. These toxins can cause illness in humans, pets, waterfowl, and other animals that come in contact with the algae. However, these chemicals are not produced at all times and it is difficult to tell when they are being produced. Laboratory analysis of water samples is the only way to be certain if the toxins are present.

6. In 2004 and 2005, DNR conducted a study to investigate the frequency, severity, and duration of blue-green algae blooms. Samples were collected from five lakes in each of five regions, five times over the course of each summer. DNR chose sample sites based on where blue-green algae blooms had occurred in the past or where they could potentially occur, based on nutrient concentrations. The study collected 187 samples in 2004 and 104 samples in 2005. Blue-green algae were present in 74% of samples collected. Four species of the algae were most commonly detected. A subset of the samples was analyzed for toxins including 45 samples in 2004 and 34 samples in 2005. Microcystin-LR (a hepatotoxin, which damages the liver) was the toxin most frequently detected and detected in the highest concentrations. It was detected in the northern, south central, and west central regions of Wisconsin. The toxin anatoxin-a (a neurotoxin) was detected in the northern and south central regions. DNR notes that this toxin was associated with a dog death in 2004. A cytotoxin (cell toxin) of concern was not detected in any of the samples. Currently, DNR is not conducting routine statewide monitoring for blue-green algae or blue-green algal toxins. Samples can be submitted by the public at their own cost to the SLH for testing. According to DNR, the Department plans to do more routine testing of blue-green algae, both on inland lakes such as Lake Winnebago and Wisconsin River impoundments, as well as on State Forest and State Park beaches, if staff time and funding permit.

7. Assembly Bill 43/Senate Bill 70 would provide one-time funding of $121,800 in 2023-24 to purchase instrumentation to facilitate more rapid testing of Wisconsin waters for cyanobacterial blooms. According to DNR, the equipment would consist of a FlowCam Cyano imaging particle analysis system. The FlowCam detects cyanobacteria, other algae, and particles in water samples. It uses the organism's florescent signature to differentiate cyanobacteria from other algae. The machine then uses a visual spreadsheet software to perform detailed image analysis to further organize the bacteria by taxonomy. This allows researchers to easily identify if toxic algae is present. If toxic algae is detected, then additional tests can be run. As the additional tests are more expensive, the Flowcam saves money by enabling the lab to run additional tests only for samples in which the toxic algae were detected. The proposed funding was based on a quote DNR received in March, 2022, and includes $113,800 for the instrument and associated equipment and $8,000 for a one-year maintenance package; the price was guaranteed through June 24, 2022. DNR indicates they have received an updated quote of $116,800 for the instrument and associated equipment and $8,000 for a one-year maintenance package for a total of $124,800. This price is guaranteed through August 1, 2023. [Alternative B1]

**ALTERNATIVES**

**A. Soil Health**

1. Provide $97,400 in 2023-24 and $129,800 in 2024-25 with 1.0 position for a soil health faculty position at the UW-Madison Soil and Forage Lab at the State Laboratory of Hygiene.

| ALT A1 | Change to Base | |
|---|---|---|
| | Funding | Position |
| GPR | $227,200 | 1.00 |

2. Take no action.

**B. Cyanobacterial Blooms Monitoring**

1. Provide one-time funding of $124,800 in 2023-24 to purchase instrumentation to facilitate more rapid testing of Wisconsin waters for cyanobacterial blooms.

| ALT B1 | Change to Base |
|---|---|
| GPR | $124,800 |

2. Take no action.

Prepared by: Erin Probst

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June 8, 2023 Joint Committee on Finance Paper #818

# Veterinary Diagnostic Laboratory -- Microbiologists and Bioinformatician Positions (UW System)

[LFB 2023-25 Budget Summary: Page 671, #22 and #23]

## CURRENT LAW

1999 Act 107 transferred the Wisconsin Animal Health Laboratory along with related funding, positions and the incumbents from the Department of Agriculture, Trade and Consumer Protection (DATCP) to a Veterinary Diagnostic Laboratory Board attached to the UW System and increased funding and staffing for the lab effective July 1, 2000. The Board contains representatives of state and federal governments, the University, and five nongovernmental members representing Wisconsin animal agriculture, who are appointed by the Governor, with terms varying in length from two years to four years. The Board operates a central animal health laboratory in Madison and a regional facility in the city of Barron. These laboratories provide animal health surveillance, diagnostic services, and testing, including those tests required by federal and state laws for disease control and the interstate movement of animals.

## DISCUSSION POINTS

1. The Wisconsin Veterinary Diagnostic Laboratory (WVDL) is a National Animal Health Laboratory Network (NAHLN) Level 1 laboratory (the highest tier laboratory based on laboratory capability and capacity). A cooperative effort between the U.S. Department of Agriculture (USDA) and the American Association of Veterinary Laboratory Diagnosticians (AAVLD), the NAHLN is a nationally coordinated network of federal, state, and university-associated animal health laboratories. The network laboratories provide animal health diagnostic testing, methodology research and development, and expertise in order to detect biological threats to animal agriculture and protect the nation's food supply and public health. According to the USDA, NAHLN laboratories regularly provide testing for surveillance programs for such diseases as bovine spongiform encephalopathy

(BSE), classical swine fever (CSF), chronic wasting disease (CWD), scrapie, influenza A virus of swine (IAV-S) and swine pseudorabies virus (PRV). In addition, NAHLN labs assist with preparedness for disease outbreaks by providing staff trained in testing for avian influenza, exotic Newcastle disease, foot and mouth disease, and vesicular stomatitis virus.

**A. Microbiologists**

2. The WVDL is the sole provider of diagnostic testing for CWD (an infectious prion disease) as well as foreign animal disease (FAD) surveillance, investigation, and outbreak response for Wisconsin. Providing CWD diagnostic testing supports Department of Natural Resources (DNR) efforts to manage CWD. In addition, the diagnostic testing provides hunters with important food safety information. Assembly Bill 43/Senate Bill 70 would provide $352,400 GPR ($261,000 salary and $91,400 fringe) in 2023-24 and $469,800 GPR ($348,000 salary and $121,800 fringe) annually beginning in 2024-25 with 6.0 GPR microbiologist positions beginning in 2023-24 to improve capacity and response to annual CWD and FAD surveillance surge testing.

3. Each year, the WVDL provides testing for 16,000 to 24,000 whitetail deer samples. Generally, the lab provides CWD testing weekly from March through October and daily from November through February (testing for veterinarian submitted tissue from captive herds is available daily year-round). Fees for CWD testing range from $20 for tissue samples of wild deer to $68.87 for whole-head hunter-submitted samples. Approximately 75% of samples are submitted within a four to six-week period following the November nine-day gun deer hunting season. During this testing surge, the CWD diagnostic facility operates for 20 hours per day, seven days per week. Currently, the WVDL hires seasonal microbiologists and technicians during this surge and some permanent staff work overtime hours. However, in 2021, the WVDL director indicates they were unable to fully staff the laboratory, and this seasonal labor shortage led to an increase in CWD testing turnaround time from nine to 19 days. In 2022, utilizing short-term seasonal staff required onboarding and management of 27 staff for three months including 16 seasonal microbiologists and 11 permanent staff working overtime.

4. According to the WVDL director, the cost and uncertainty of searching, screening, hiring, onboarding, training and then off boarding approximately 25% of staff on an annual basis is not a sustainable long-term model. The director estimates that in fall, 2023, the lab will need 22 temporary seasonal microbiologists as less than five WVDL staff will be able to work overtime hours due to Federal Labor Standard Act limitations on overtime compensation. The director indicates the additional six microbiologists proposed would serve multiple roles and fill unique workforce challenges for seasonal surges. This would include decreasing testing turnaround time to a week or less to provide quicker results to Wisconsin hunters. The positions would also be cross-trained for diagnostic testing so that they could be utilized to provide sustainable services to maintain Wisconsin agricultural industry testing services to support the poultry, dairy, and bovine genetics industries in the event of a FAD outbreak, such as was done with avian flu in 2022. WVDL responded to the avian flu outbreak for four months from March to July, 2022. During that time, same-day testing of samples required extended business hours seven days per week conducting testing for DATCP to facilitate disease management and business continuity for the poultry industry.

5. Another example of an FAD outbreak that WVDL has responded to recently is Seneca

Valley Virus, a foot and mouth disease-like virus affecting swine. According to WVDL, the lab has conducted testing for Wisconsin pork processors for the disease an average of 40% of business days during a given year over the last three years. This testing requires rapid same-day tests to minimize delays at slaughter facilities. Providing the full 6.0 positions would ensure WVDL would be able to continue to respond to known disease outbreaks as well as emerging disease outbreaks and provide consistent services to Wisconsin agricultural industries.

6. As DNR has primary responsibility for managing CWD in Wisconsin, it could be argued that DNR should pay for a portion of CWD testing. Under current law, $5 of each bonus deer permit sold in a county where CWD has been confirmed in a wild deer is deposited in a continuing appropriation for CWD management and testing. As of May 30, 2023, approximately $920,600 was available from this appropriation. The Committee could consider a one-time transfer of $411,100 to the state lab from the DNR CWD management appropriation. This would provide funding for 3.00 microbiologist project positions for the 2023-25 biennium. [Alternative A2]

**B. Bioinformatician**

7. According to the National Institutes of Health, the ability of public health laboratories to generate high-quality genome sequence data enables these labs to identify pathogenic strains, determine the relatedness among outbreak strains, and analyze genetic information regarding antimicrobial-resistant genes. Whole Genome Sequencing (WGS) is a laboratory procedure that determines the order of bases in the genome of an organism in one process using various sequencing techniques such as Sanger sequencing (as used in the human genome project), shotgun approach, or Next Generation Sequencing (NGS). NGS refers to high-throughput (involving very large quantities of data) DNA sequencing technologies which sequence many fragments of DNA in parallel. This enables scientists to read hundreds of millions of DNA fragments. NGS generates large quantities of DNA sequencing data, and is both less expensive and less time-consuming than traditional Sanger sequencing.

8. The WVDL has the gene sequencing equipment necessary and trained staff who can utilize the equipment to generate large quantities of genome sequence data. The process involves microbiologists processing samples to obtain quality nucleic acids from the samples or isolate bacteria and viruses. Then additional work is done to prepare DNA libraries that can be used for sequencing, which generates large quantities of data. The director indicates that a bioinformatician is needed to analyze the molecular sequencing data using computing. Assembly Bill 43/Senate Bill 70 would provide $91,100 GPR in 2023-24 and $121,500 GPR in 2024-25 with 1.0 GPR position for a bioinformatician ($67,500 salary and $23,600 fringe in 2023-24 and $90,000 salary and $31,500 fringe in 2024-25).

9. With a bioinformatician in place to analyze genome sequence data, the WVDL would be able to offer fee-for-service testing for a variety of diseases. The director indicates that current microbiologists would be utilized until it is financially feasible to add additional microbiologists with program revenue. The specific fees would be determined based on costs, peer laboratory fees, and approval by the WVDL Board of Directors. According to the WVDL, the WGS and NGS tests the WVDL lab would put in place would screen for specific diseases as well as for more than one disease at a time. WGS are used on known pathogens, one at a time. They are useful to identify virus and

bacteria pathogen lineage and changes and provide useful information for disease epidemiology. Sequences are also helpful in determining difficult serotypes and the presence of specific genes, such as the genes that encode antimicrobial resistance. NGS, also called metagenomics, looks for all pathogens in a sample and the director indicates this will be a key factor for future diagnostics, especially for specimens that showed negative results on known targeted tests and for finding new pathogens and emerging diseases.

10. The WVDL director indicates it is difficult to predict how much revenue would be generated by the WGS and NGS tests that would be analyzed by the bioinformatician. Similar to many of the lab's diagnostic services for agribusiness, it may not generate profitable margins in the first five years, but would ideally generate 20% to 30% profit margins by the 10-year mark to allow the lab to add additional microbiologists and grow the program.

## ALTERNATIVES

### A. Microbiologists

1. Provide $352,400 ($261,000 salary and $91,400 fringe) in 2023-24 and $469,800 ($348,000 salary and $121,800 fringe) annually beginning in 2024-25 with 6.0 microbiologist positions beginning in 2023-24 to improve capacity and response to annual chronic wasting disease (CWD) and foreign animal disease (FAD) surveillance surge testing.

| ALT A1 | Change to Base | |
|---|---|---|
| | Funding | Positions |
| GPR | $822,200 | 6.00 |

2. Provide a one-time transfer of $411,100 SEG from the DNR CWD management appropriation under s. 20.370(1)(hs) to the veterinary diagnostic laboratory general operations appropriation under s. 20.285(1)(fj), which would fund 3.0 PR positions in 2023-24 and 2024-25.

| ALT A2 | Change to Base | |
|---|---|---|
| | Funding | Positions |
| SEG | -$411,100 | 0.00 |
| PR | 411,100 | 3.00 |
| Total | $0 | 3.00 |

3. Take no action

### B. Bioinformatician

1. Provide $91,100 in 2023-24 and $121,500 in 2024-25 with 1.0 position for a bioinformatician ($67,500 salary and $23,600 fringe in 2023-24 and $90,000 salary and $31,500

fringe in 2024-25).

| ALT B1 | Change to Base Funding | Positions |
|---|---|---|
| GPR | $212,600 | 1.00 |

2. Take no action.

Prepared by: Erin Probst