

**Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014  
Madison, Wisconsin**

**DATE:** April 22, 2014

**TO:** Chancellor Rebecca Blank, UW-Madison – Darrell Bazzell, Designated Representative  
Kitty Rhodes, Secretary, DHS – Karen McKeown, Designated Representative  
Cathy Stepp, Secretary, DNR – John R. Sullivan, Designated Representative  
Ben Brancel, Secretary DATCP – Susan Buroker, Designated Representative  
Barry Irmien, Chair  
Dr. Robert Corliss, Vice-Chair  
Darryll Farmer, Member  
Jeffery Kindrai, Member

Ron Arneson, DNR Alternate  
Scott Hildebrand, UW-Madison Alternate  
Steven Sobek, DATCP Alternate  
Charles Warzecha, DHS Alternate

**FROM:** Dr. Charles Brokopp, Secretary  
Director, Wisconsin State Laboratory of Hygiene



**RE:** Wisconsin State Laboratory of Hygiene Board of Directors Meeting  
Wisconsin State Laboratory of Hygiene  
2601 Agriculture Drive  
Madison, WI 53718  
April 29<sup>th</sup>, 2014  
1:00p.m. — 4:00p.m.

**C:** Scott Becker  
Cynda DeMontigny  
Kristine Hansbery  
Linda Johnson  
Jan Klawitter  
Dr. Daniel Kurtycz  
Dr. Sharon Long  
Steve Marshall  
Marie Ruetten  
Dr. Peter Shult  
Steve Strebel  
David Webb

**WISCONSIN STATE LABORATORY OF HYGIENE  
BOARD OF DIRECTORS  
MEETING NOTICE**

**Tuesday, April 29, 2014**

**1:00p.m. – 4:00p.m.**

**MEETING LOCATION**

**Wisconsin State Laboratory of Hygiene  
2601 Agriculture Drive  
Madison, WI 53718**

**Notice is hereby given** that the Wisconsin State Laboratory of Hygiene Board of Directors will convene at 1:00 p.m. on Tuesday, April 29, 2014 at the Wisconsin State Laboratory of Hygiene in Madison, Wisconsin.

**Notice is further given** that matters concerning Wisconsin State Laboratory of Hygiene issues, program responsibilities or operations specified in the Wisconsin Statutes, which arise after publication of this notice may be added to the agenda and publicly noticed no less than two hours before the scheduled board meeting if the board Chair determines that the matter is urgent.

**Notice is further given** that this meeting may be conducted partly or entirely by teleconference or videoconference.

**Notice is further given** that questions related to this notice, requests for special accommodations, or requests for a public appearance are addressed by the Wisconsin State Laboratory of Hygiene Administrative Offices by phone at (608) 890-0288 or in writing to the Wisconsin State Laboratory of Hygiene, 465 Henry Mall, Madison, Wisconsin, 53706.

**ORDER OF BUSINESS:** See agenda.

Respectfully submitted,



Charles D. Brokopp, DrPH  
Secretary, Wisconsin State Laboratory of Hygiene Board of Directors  
Director, Wisconsin State Laboratory of Hygiene  
April 22, 2014

Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29, 2014  
1:00 P.M. – 4:00 P.M.

Wisconsin State Laboratory of Hygiene  
2601 Agriculture Drive  
Madison, WI 53718

**AGENDA**

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Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**PROCEDURAL ITEMS**

**Item 1. APPROVAL OF MINUTES**

**Description of Item:**

The draft minutes of the February 18<sup>th</sup>, 2014 board meeting are submitted for approval.

**Suggested Board Action:**

Motion: Approve the draft minutes of the February 18<sup>th</sup>, 2014 board meeting as submitted.

**Staff Recommendation and Comments:**

Approve draft minutes.

Once approved, minutes become part of the public record and are posted on the WSLH website: <http://www.slh.wisc.edu/about/board/board-meetings-agendas-and-minutes/>.

Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**PROCEDURAL ITEMS**

**Item 2. REORGANIZATION OF AGENDA**

**Description of the Item:**

Board members may suggest changes in the order in which agenda items are discussed.

**Suggested Board Action:**

None.

**Staff Recommendation and Comments:**

Reorganize the agenda as requested by the Board

**Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014**

**PROCEDURAL ITEMS**

**Item 3. PUBLIC APPEARANCES**

**Description of the Item:**

Under the board's *Policies and Procedures* nonmembers are invited to make presentations.

**Suggested Board Action:**

Follow WSLH *Policies and Procedures*.

**Staff Recommendation and Comments:**

Follow WSLH *Policies and Procedures*.

*Per Policies and Procedures of the Wisconsin State Laboratory of Hygiene Board of Directors:*

§6.12 *Speaking privileges.* When the board is in session, no persons other than laboratory staff designated by the director shall be permitted to address the board except as hereinafter provided:

- (a) A committee report may be presented by a committee member who is not a member of the board.
- (b) A board or committee member in the course of presenting a matter to the board may request staff to assist in such a presentation.
- (c) If a board member directs a technical question for clarification of a specific issue to a person not authorized in this section, the Chair may permit such a person to respond.
- (d) The board may by majority vote or by decision of the Chair allow persons not otherwise authorized in this section to address the board if the situation warrants or the following criteria is followed:
  - (1) Written requests for public appearances on specific current agenda items shall be made to the board Secretary no later than two working days prior to the meetings. The request shall outline the reasons for the request including the subject matter to be discussed in as much detail as is feasible prior to the meeting of the board. Those requesting an appearance may, at or prior to the board meeting, provide board members copies of any written materials to be presented or a written statement of a position.
  - (2) Individual presentations will be limited to five minutes, unless otherwise authorized by the Chair.
  - (3) To schedule an appearance before the Wisconsin State Laboratory of Hygiene Board of Directors, contact the board Secretary, c/o Director, Wisconsin State Laboratory of Hygiene, 465 Henry Mall, Madison, Wisconsin 53706. Telephone (608) 890-0288. The subject or subjects to be discussed must be identified.
  - (4) The Wisconsin State Laboratory of Hygiene "Guidelines for Citizen Participation in WSLH Board Meetings" are published on its website: <http://www.slh.wisc.edu/index.shtml> and printed copies are available on request. (See Appendix 5) [Section §6.12 approved 5/27/03 board meeting.]

## Appendix 5

### Guidelines for Citizen Participation at WSLH Board Meetings

The Wisconsin State Laboratory of Hygiene board provides opportunities for citizens to appear before the board to provide information to the board on items listed on the agenda. Such appearances shall be brief and concise. In order to accommodate this participation in the allotted time, the guidelines are as follows:

- A. Items to be brought before the board:
  - 1. The board Secretary and Chair will assign a specific time on the agenda to hear public comment when a request to speak has been received from a member of the public.
  - 2. Individuals or organizations will be limited to a total of five (5) minutes to make a presentation to the board. Following the presentation board members may ask clarifying questions.
  - 3. An organization is limited to one (1) spokesperson on an issue.
  - 4. On complex issues, individuals wishing to appear before the board are encouraged to submit written materials to the board Secretary in advance of the meeting so the board may be better informed on the subject in question. Such information should be submitted to the board Secretary for distribution to all board members no later than seven (7) working days before the board meeting.
  - 5. No matters that are in current litigation may be brought before the board.
- B. The board encourages individuals to confine their remarks to broad general policy issues rather than the day-to-day operations of the Wisconsin State Laboratory of Hygiene.
- C. Citizens who have questions for board members should ask these questions prior to the board meeting, during any recess during the board proceedings, or after board adjournment.
- D. Written requests to appear before the WSLH Board of Directors should be submitted no later than two (2) working days prior to a scheduled board meeting.
- E. Submit written requests to:  
Secretary, Wisconsin State Laboratory of Hygiene Board of Directors  
C/O WSLH Director  
465 Henry Mall  
Madison, WI 53706  
Telephone: (608) 890-0288  
Email: [charles.brokopp@slh.wisc.edu](mailto:charles.brokopp@slh.wisc.edu)

Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**BUSINESS ITEMS**

**Item 4. BOARD MEMBERS' MATTERS**

**Description of the Item:**

Board Members' Matters will present board members with the opportunity to ask questions and/or discuss issues related to the Wisconsin State Laboratory of Hygiene.

**Suggested Board Action:**

Receive for information.

**Staff Recommendations and Comments:**

Receive for information.



Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**BUSINESS ITEMS**

**Item 5. SCIENTIFIC PRESENTATIONS**

- A. Scott Becker, MS, Executive Director, Association of Public Health Laboratories on “An Introduction to APHL: Your Association.”
  
- B. Sharon Long, PhD, Professor, Wisconsin State Laboratory of Hygiene, on “Microbiology 201: Higher Level Microbial Testing and Fecal Source Tracking.”

**Suggested Board Action:**

Receive for information.

**Staff Recommendations and Comments:**

Receive for information.



## An Introduction to APHL: “Your Association”

Scott Becker, MS  
Executive Director  
Association of Public Health Laboratories

April 29, 2014



## What is APHL?

- A 501(c)(3) non-profit organization
- Has over 800 members from state and local public health labs, state environmental and agricultural labs and others including federal agencies and academic institutions.
- Advocates at the national level for critical laboratory issues and for increased support/resources for member labs.
- Provides training and best practices for public health laboratory policy and programs.



### **Vision**

A healthier world through quality laboratory systems.

### **Mission**

Shape national and global health outcomes by promoting the value and contribution of public health laboratories and continuously improving the public health laboratory system and practice.



## **APHL Values**

**Service Excellence**

**Leadership and Creativity**

**Respect and Integrity**

**Interconnectedness**

**Professional Development**



## Strategic Effectiveness

Strategic effectiveness is an organization's ability to set the right goals and consistently achieve them



## Overview of Strategic Effectiveness





## Principles of Strategic Effectiveness

- Quickly formulate a “good enough” plan
- Move immediately to implementation
- Review Progress Regularly
- Make real time adjustments
- Focus on results, not activities

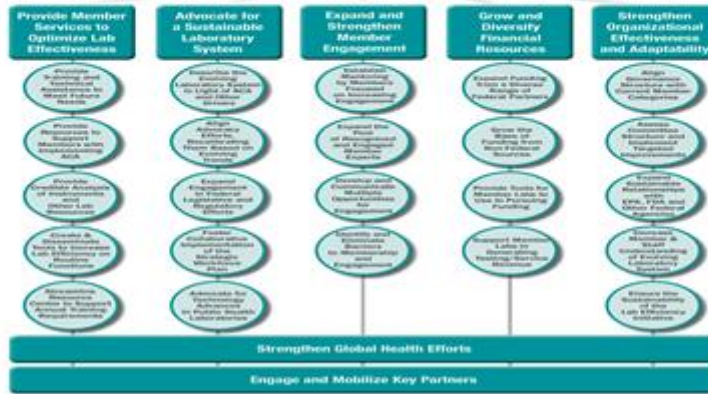


## Outcomes of Strategy Formulation

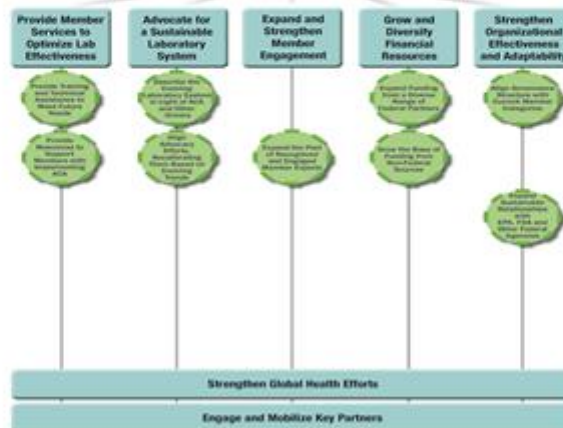
- A clear direction for the organization
- Strong agreement on that direction
- Enthusiasm and commitment
- A clear path toward implementation of the strategy



**Advance the Capabilities and Capacities of the Public Health Laboratory System**



**Advance the Capabilities and Capacities of the Public Health Laboratory System**



## Association History



1899 APHA formed the Committee of Laboratories  
1921 Southern Public Health Laboratory Association formed  
1927 became State Laboratory Directors Conference and opened membership to other states  
1939 changed its name to Conference of State and Provincial Laboratory Directors  
1951 Association of State and Territorial Public Health Laboratory Directors founded



## ASTPHLD to APHL



1998

A more inclusive organization with new membership categories



## Funding

Overall budget is ~\$41 Million

### Grants and Cooperative Agreements

- CDC/APHL CA is \$25,473,847
- FDA/APHL CA \$1,107,923
- PEPFAR is \$13,189,092
- HRSA is \$1,077,349
- EPA is \$80,287
- Membership Dues \$205,750
  - Institutional members
  - Corporate members

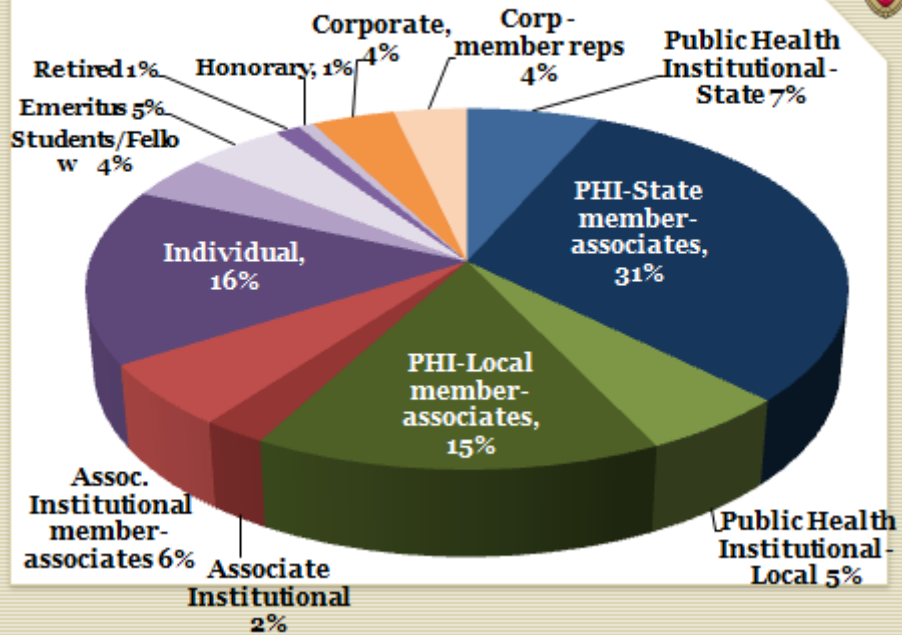


## Membership

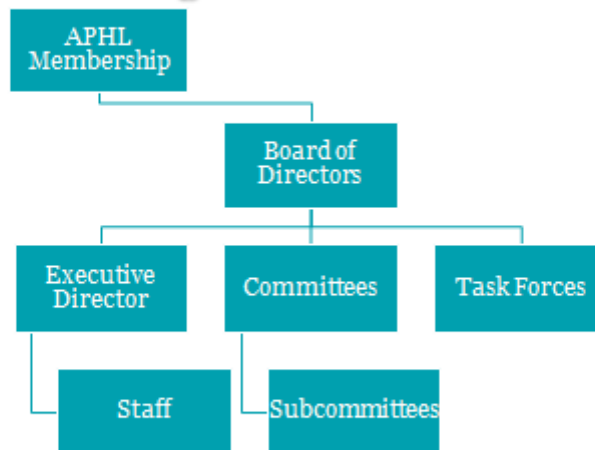
Membership Type	Numbers
Public Health Institutional - States	53
State PHL Member-Associates	248
Public Health Institutional - Locals	44
Local PHL Member-Associates	120
Public Health Associate Institutional	19
PHAI Member-Associates	45
Individual	123
Student/Fellow	32
Emeritus	37
Honorary	10
Retired	6
Corporate (companies)	32
Corporate - member reps	29
<b>TOTAL</b>	<b>807</b>



## Membership & Marketing April 2014



## APHL organizational structure



## Committees (many have subcommittees)



- Environmental Health
- Environmental Lab Science
- Finance
- Food Safety
- Global Health
- Infectious Diseases
- Informatics
- Knowledge Management
- Laboratory Systems and Standards
- Local Laboratory committee
- Membership and Recognition
- Newborn Screening and Genetics in Public Health
- National Legislative Review Work Group
- Public Health Preparedness and Response
- Workforce Development

## Public Health Programs



### Preparedness & Response

- LRN

### Environmental Health

- Environmental Labs

### Infectious Diseases

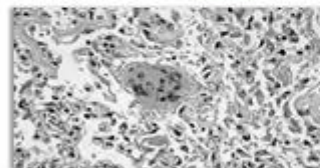
- HIV, TB & STDs
- Flu, EIDs

### NBS & Genetics

- NewSTEPS

### Food Safety

- PulseNet
- FDA



## Program Activities



### Information broker

- CDC ↔ Member labs
- CDC ↔ CDC
- Member labs ↔ Member labs
- Member labs ↔ CDC ↔ Other federal agencies

### Technology transfer

- CDC ↔ Member labs
- Training

### Partnership development and relationship management

### Policy

### Best/Model practices

## Public Health Systems



### • Informatics

- PHLIP
- ELRTA
- Knowledge Management (Surveys)
- Informatics

### • Institutional Research

- Knowledge Management (Surveys)

### Quality Systems

- L-SIP
- LEI

### • Global Health

- International Institute for Public Health Laboratory Management
- PEPFAR
- Global Health Security

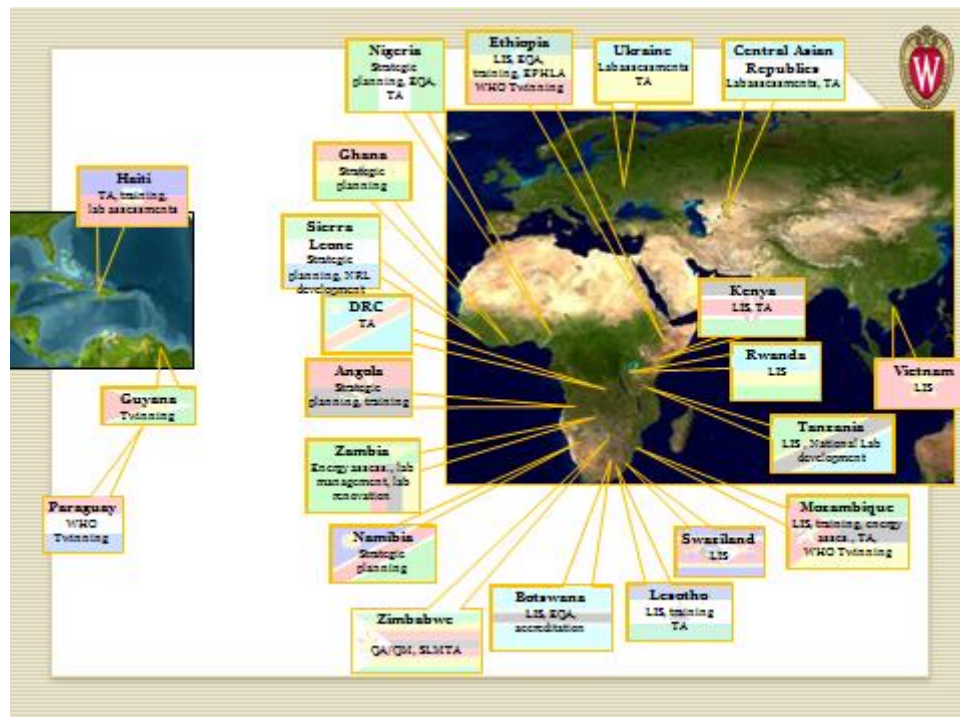
# Global Health



APHL is working in 23 countries, on 4 continents to help build laboratory capacity



- Technical Assistance
- Training
- Laboratory Systems Development
- Laboratory Policy
- Networking and Association building, and accreditation support



## Workforce



### National Center for Public Health Laboratory Leadership

- Fellowships
- Emerging Leaders



### National Laboratory Training Network



## What APHL Offers WSLH



- National Engagement/Dialogue
- Professional Development Opportunities
- Support for Public Health Labs



## How WSLH Engages in APHL (1)

- Vaccine preventable disease project – Dr. Shult and staff
- Influenza and respiratory virus project- Dr. Shult and staff
- PulseNet and FoodNet – Dr. Warshauer and Tim Monson
- International health – Eric Reisdorf, John Pfister

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## How WSLH Engages in APHL (2)

- Training fellowships – Environmental, EID, and NBS
- Participation on APHL committees and workgroups
- Infectious disease - Dr. Shult, Dr. Warshauer
- Tuberculosis – Julie Tans-Kersten, Dr. Warshauer

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## How WSLH Engages in APHL (3)

- Preparedness – Dr. Warshauer, Noel Stanton
- NBS and Genetics – Dr. Baker, Dr. Held, Dr. Brokopp
- LEI – Dr. Brokopp, Steve Marshall
- APHL Board of Directors – Dr. Brokopp

**A LOT!**

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## APHL FY15 legislative priorities

- Health Reform
  - Prevention and Public Health Fund
- Preparedness
- Infectious Diseases
  - Epi-Lab Capacity
  - Food Safety
  - TB/HIV/TB
- Environmental Health
  - Biomonitoring
- Newborn Screening
- Electronic Lab Messaging
- Workforce Development/Retention





## Information

### Web/Communication

- Member-only web content (e.g. protocols, survey data)
- Listservs & Web boards
- Email Communications
- Press releases

### Social Media

- Twitter, Facebook, LinkedIn
- YouTube and Vimeo for video sharing
- The Public Health LabLog

### Publications

- Lab Matters
- E-Update
- Promotional Brochures

### Survey/Data Collection

- Issue Briefs



## Key Groups We Interact With-Federal

- |            |        |
|------------|--------|
| ▪ CDC      | ▪ NIH  |
| ▪ FDA      | ▪ FBI  |
| ▪ USDA     | ▪ DHS  |
| ▪ EPA      | ▪ DOD  |
| ▪ HRSA     | ▪ USPS |
| ▪ HHS-OPEP | ▪ GAO  |





## Other Key Groups

### Non-Federal Laboratory

- CLSI, ACLA, ASM, ASCP, CLMA, CAP, AACC

### Veterinary

- AAVLD, NAHLN

### Public Health

- ASTHO, NACCHO, CSTE, NASTAD, NTCA, NCSD, APHA, TFAH, PHII



**Thank You!**

Scott J. Becker  
Executive Director, APHL  
240-485-2747  
scott.becker@aphl.org



# Water Microbiology: Beyond Total Coliforms

Sharon C. Long  
Director of Environmental Microbiology  
Professor of Soil Science



Wisconsin State  
Laboratory of Hygiene  
UNIVERSITY OF WISCONSIN-MADISON

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## Acknowledgements

Students: Jamie Stietz, Leah Cronin, Sam Sibley, Samantha Scott, Zong Liu, Beth Pfothenauer, Jon Wenzel, India Mansour, Mark Walter, and Rebecca Munson-Salzwedel

Funding: WARF, Groundwater Coordinating Council, Water Research Foundation, U.S. EPA, National Science Foundation, Hatch - USDA



**WARF**  
Wisconsin Alumni Research Foundation



**Water  
Research  
Foundation**



4/23/2014

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## Today's Presentation

- Sampling
- Testing
- On-going research



4/22/2014

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## Sampling

Warden Kits



Large Volume Sampling





## The Need to Concentrate

- Many analytical targets are present at very low concentrations
- Typically concentrate tens to thousands of liters to achieve adequate detection limits
- Concentration can be performed in field or in laboratory
- Certain targets may help determine the source of contamination to inform well rehabilitation and corrective actions

4/23/2014

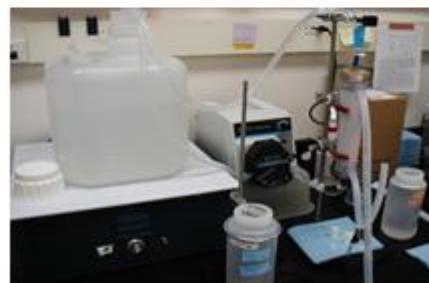
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## Concentration Methodologies

- Ultrafiltration
  - Well water samples
- Membrane filtration
  - qPCR bacterial targets
- Precipitation
  - Viral targets



4/23/2014

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## Ultrafiltration

- Effective for bacteria, viruses, parasites, spores and large biotoxin molecules using 30K Da molecular weight cut off
- Block filters with calf serum (proteins) to prevent adsorption
- Add polyphosphates to create “charged cloud” around microorganisms to prevent adsorption
- Collect concentrate (retentate)
- Wash ultrafilter with polyphosphate and surfactant (Tween 80), combine with concentrate
- Used to concentrate trace pathogens and source tracking targets
- Sample volumes typically tens to hundreds of liters



## Membrane Filtration

- Effective for bacteria, parasites, and spores using 0.4  $\mu\text{m}$  polycarbonate membrane
- Used to concentrate up to 250 mL of sample or HFUF concentrate

## Precipitation

- Effective for viruses
- Used to concentrate up to 200 mL of sample or HFUF concentrate



## Virus Testing at WSLH

- Coliphages by culture or PCR
- Human adenovirus by PCR
- Total infectious virus by MPN on BGMK cells

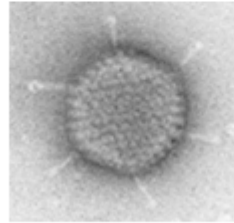
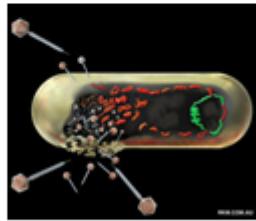
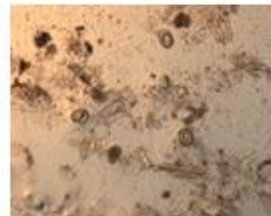
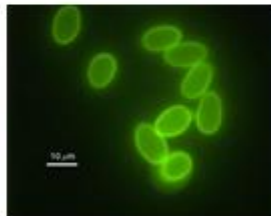
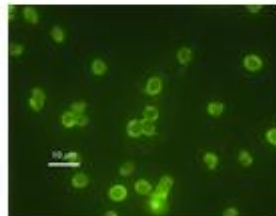


Photo left credit: Russell Kightley; photo right credit: <http://www.molbiol.princeton.edu/flint/>



## Parasite Testing at WSLH

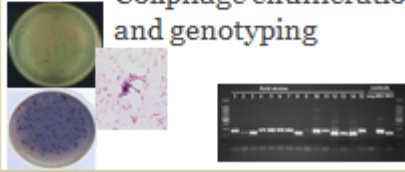
- *Cryptosporidium* by EPA Method 1623 and 1623.1
- *Giardia* by EPA Method 1623 and 1623.1
- *Ascaris* by floatation and embryonation





## WSLH's Current Microbial Toolbox

- Indicates humans
  - *Bifidobacteria* and sorbitol-fermenting spp.
  - *Bacteroides/Bacteriodales*
  - *Human adenovirus*
- Discriminates between humans and animals
  - Coliphage enumeration and genotyping
- Indicates certain animals
  - *Rhodococcus coprophilus*: grazing animals
  - *Bacteroides/Bacteriodales*: certain targets indicate cows/bovine
  - *Cryptosporidium* genotypes
- Indicates total microbial content
  - ATP
  - Toxigenic *E. coli* (STEC)



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## FST Reporting

- *Bacteriodes* is reported in gene copies (GC) per 100 mL
- *Rhodococcus coprophilus* is reported in cell equivalents (CE) per 100 mL
- *Bifidobacteria* is reported in colony forming units (CFU) per 100 mL
- Coliphage is reported in plaque forming units (PFU) per 100 mL
- Results are released as a group, however verbal results can be given as testing is completed
- Currently, total coliform is the shortest turnaround time and *Bifidobacteria* is the longest





## WSLH's Current Chemical Toolbox

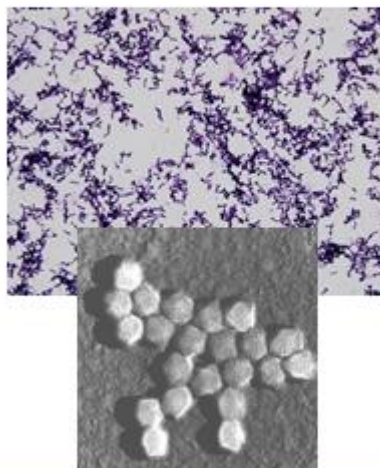
- Specific chemicals/compounds
  - Endocrine disrupters
    - 17-beta-estradiol (human)
    - Progesterones (human)
  - Pharmaceuticals and personal care product constituents (PPCPs)
    - Caffeine (human)
    - Acetaminophen (human)
    - Antibiotics (human or veterinary)
  - Fecal sterols/stanols
    - Coprostanol/Cholesterol ratio (human or animal)
    - Stigmasterol (animal/plant)
    - Beta-sitosterol (animal/plant)
    - Stigmastanol (animal/plant)

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## On-going Research

- *Bifidobacteria* by PCR
  - Human
  - Bovine
  - Swine
  - Poultry
- Bovine polyomavirus
- Bovine adenovirus



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# The Water Micro Lab Group



Jeremy



Sharon K



Nancy



Jamie



Jennifer

Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**BUSINESS ITEMS**

**Item 6. FISCAL YEAR 2014 REPORT**

**Description of the Item:**

Marie Ruetten will present the budget update for the first nine months of Fiscal Year 2014 and the first look at the FY 15 budget. The FY 15 budget will come back to the Board in June for final approval.

**Suggested Board Action:**

Receive for information. Ask questions regarding budgets and provide input.

**Staff Recommendations and Comments:**

Receive for information.

**Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014**

**WISCONSIN STATE LABORATORY OF HYGIENE  
STATEMENT OF INCOME  
For the period July 1, 2013 through March 31, 2014**

	FY 14 APPROVED ANNUAL BUDGET	FY14 YEAR-TO- DATE BUDGET	FY14 YEAR-TO- DATE ACTUAL	VARIANCE Over/(Under)	VARIANCE % of BUDGET
<b>SUPPORT AND REVENUE</b>					
Laboratory Services Revenues (Note 3)					
Agency	\$ 6,527,860	\$ 5,075,445	\$ 4,668,938	\$ (406,507)	-8.0%
Nonagency	20,160,470	14,877,342	15,077,231	199,889	1.3%
GPR Funding	10,682,523	8,019,212	8,078,179	58,967	0.7%
OWI Fund Revenues	1,619,200	1,229,294	1,068,875	(160,419)	-13.0%
Grant Funding	5,931,539	4,664,531	3,594,402	(1,070,129)	-22.9%
Interest Income	6,000	4,500	6,128	1,628	36.2%
<b>TOTAL SUPPORT AND REVENUE</b>	<b>44,927,592</b>	<b>33,870,324</b>	<b>32,493,753</b>	<b>(1,376,571)</b>	<b>-4.1%</b>
<b>EXPENSES</b>					
Salaries	18,631,424	13,844,615	13,173,552	(671,063)	-4.8%
Fringe Benefits	7,602,158	5,955,543	5,381,197	(574,346)	-9.6%
Supplies & Services	12,471,250	9,408,132	10,000,766	592,634	6.3%
Transfer Overhead to UW	811,416	599,928	578,749	(21,179)	-3.5%
Building Rent	2,460,577	1,807,803	1,530,340	(277,463)	-15.3%
Depreciation	1,802,434	1,351,826	1,370,940	19,114	1.4%
Bad Debt Expense	60,000	44,982	88,648	43,666	97.1%
Interest Expense	7,200	6,900	4,021	(2,879)	-41.7%
<b>TOTAL EXPENSES</b>	<b>43,846,459</b>	<b>33,019,729</b>	<b>32,128,213</b>	<b>(891,516)</b>	<b>-2.7%</b>
<b>NET OPERATING INCOME OR (LOSS)</b>	<b>\$ 1,081,133</b>	<b>\$ 850,595</b>	<b>\$ 365,540</b>	<b>\$ (485,055)</b>	

**Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014**

**WISCONSIN STATE LABORATORY OF HYGIENE  
COMPARATIVE INCOME STATEMENT  
For the 9 months ended March 31, 2014 and March 31, 2013**

	<b>9 Months Actual FY14</b>	<b>9 Months Actual FY13</b>	<b>Variance Over/(Under)</b>	<b>Percentage Change</b>
<b>SUPPORT AND REVENUE</b>				
Laboratory Services Revenues (Note 3)				
Agency	\$ 4,668,938	\$ 5,180,921	\$ (511,983)	-9.9%
Nonagency	15,077,231	15,442,887	(365,656)	-2.4%
GPR Funding	8,078,179	7,085,428	992,751	14.0%
OWI Fund Revenues	1,068,875	876,855	192,020	21.9%
Grant Funding	3,594,402	4,142,114	(547,712)	-13.2%
Interest Income	6,128	11,113	(4,985)	-44.9%
<b>TOTAL SUPPORT AND REVENUE</b>	<b>32,493,753</b>	<b>32,739,318</b>	<b>(245,565)</b>	<b>-0.8%</b>
<b>EXPENSES</b>				
Salaries	13,173,552	12,132,295	1,041,257	8.6%
Fringe Benefits	5,381,197	4,850,125	531,072	10.9%
Supplies & Services	10,000,766	10,178,653	(177,887)	-1.7%
Transfer Overhead to UW	578,749	646,550	(67,801)	-10.5%
Building Rent	1,530,340	1,500,904	29,436	2.0%
Depreciation	1,370,940	1,392,990	(22,050)	-1.6%
Bad Debt Expense	88,648	379,170	(290,522)	-76.6%
Interest Expense	4,021	6,751	(2,730)	-40.4%
<b>TOTAL EXPENSES</b>	<b>32,128,213</b>	<b>31,087,438</b>	<b>1,040,775</b>	<b>3.3%</b>
<b>NET OPERATING INCOME OR (LOSS)</b>	<b>\$ 365,540</b>	<b>\$ 1,651,880</b>	<b>\$ (1,286,340)</b>	

**WISCONSIN STATE LABORATORY OF HYGIENE**  
**COMPARATIVE BALANCE SHEET**  
As of March 31, 2014 and June 30, 2013

**ASSETS**

	March 31, 2014	June 30, 2013
<b>CURRENT ASSETS</b>		
Cash	\$ 10,023,623	\$ 8,597,506
Cash-restricted-newborn screening surcharge	1,802,335	1,435,900
Net accounts receivables (Note 2)	5,683,832	5,832,065
Other receivables	1,024,696	1,556,015
Inventories	68,957	66,772
Prepaid expenses	223,641	163,878
Total current assets	18,827,084	17,652,136
<b>EQUIPMENT AND BUILDING IMPROVEMENTS</b>		
Equipment	24,535,942	26,089,246
Building improvements	7,234,117	5,616,318
	31,770,059	31,705,564
Less accumulated depreciation	(21,387,683)	(22,484,591)
Total net fixed assets	10,382,376	9,220,973
<b>Total Assets</b>	<b>\$ 29,209,460</b>	<b>\$ 26,873,109</b>

**LIABILITIES AND EQUITY**

**CURRENT LIABILITIES**

Salaries payable	\$ 98,306	\$ 477,820
Accounts payable	1,798,491	516,229
Newborn screening surcharge payable	1,802,335	1,435,900
Accrued expenses	123,483	122,745
Current obligations under capital leases	29,629	57,526
Notes Payable - current	98,352	108,136
Proficiency testing deferred revenue	2,267,300	1,588,607
Newborn screening deferred revenue	2,182,610	2,104,139
Compensated Absences (Note 5)	813,915	682,778
Total current liabilities	9,214,421	7,093,880

**LONG TERM DEBT**

Obligations under capital leases	-	29,629
Compensated Absences (Note 5)	1,411,567	1,261,718
Total long term debt	1,411,567	1,291,347
<b>Total Liabilities</b>	<b>10,625,988</b>	<b>8,385,227</b>

**EQUITY**

Retained earnings-restricted (Note 4)		
Operating contingency	2,136,900	2,078,669
Total restricted retained earnings	2,136,900	2,078,669
Net Operating Income or (Loss)	365,540	1,812,286
Retained earnings-unrestricted	10,665,619	9,192,549
Contributed capital	5,415,413	5,404,378
Total unrestricted retained earnings	16,446,572	16,409,213
<b>Total Equity</b>	<b>18,583,472</b>	<b>18,487,882</b>
<b>Total Liabilities and Equity</b>	<b>\$ 29,209,460</b>	<b>\$ 26,873,109</b>

Contingency Funding	9,612,663	10,558,256
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**WISCONSIN STATE LABORATORY OF HYGIENE**  
**STATEMENT OF CASH FLOWS**  
For the Period July 1, 2013 through March 31, 2014

**CASH FLOWS FROM OPERATING ACTIVITIES**

Net income	\$ 365,540
Adjustments to reconcile net income to net cash provided by operating activities:	
Depreciation	1,370,940
Changes in working capital components:	
Decrease in net accounts receivables	148,233
Decrease in other receivables	531,319
(Increase) in inventories	(2,185)
(Increase) in prepaid expenses	(59,763)
(Decrease) in salaries payable	(379,514)
Increase in accounts payable	1,282,262
Increase in newborn screening surcharge payable	366,435
Increase in accrued expenses	738
(Decrease) in current obligations under capital leases	(27,897)
(Decrease) in notes payable - current	(9,784)
Increase in proficiency testing deferred revenue	678,693
Increase in newborn screen deferred revenue	<u>78,471</u>
 Net cash provided (used) in operating activities	 4,343,488

**CASH FLOWS FROM INVESTING ACTIVITIES**

Purchase of equipment and physical plant improvements	<u>(2,521,307)</u>
 Net cash (used in) investing activities	 <u>(2,521,307)</u>

**CASH FLOWS FROM FINANCING ACTIVITIES**

Principal payment on Capital Lease	<u>(29,629)</u>
 Net cash provided (used in) financing activities	 <u>(29,629)</u>

Net increase (decrease) in cash	1,792,552
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**Cash:**

Beginning	<u>10,033,406</u>
Ending	<u>\$ 11,825,958</u>

**WISCONSIN STATE LABORATORY OF HYGIENE**  
**NOTES TO THE FINANCIAL STATEMENTS**  
**For the period July 1, 2013 through March 31, 2014**

**NOTE 1 –NATURE OF BUSINESS AND SIGNIFICANT ACCOUNTING POLICIES**

Nature of Business:

- The Wisconsin State Laboratory of Hygiene (WSLH) is a governmental institution which provides medical, industrial and environmental laboratory testing and related services to individuals, private and public agencies, including the Department of Natural Resources (DNR) and the Department of Health Services (DHS). Approximately 75% of the WSLH operating revenues are program revenues, including contracts, grants, and fee-for-service billing. The remainder are general purpose revenues (GPR), which are Wisconsin state general fund dollars.

Budgetary Data:

- Fiscal Year 2013-2014 operating budget amounts were approved by the WSLH Board on June 18, 2013.

Basis of Presentation:

- The financial statements have been prepared on a modified accrual basis following Generally Accepted Accounting Principles (GAAP).

Basis of Accounting:

- Revenues are recognized at the completion of the revenue generating processes. Fee-for-service revenues are generally recognized in the period services are completed.
- Revenues from GPR, OWI, Grants, and expense reimbursement contracts for salaries, fringe benefits, capital, and supplies are recognized as expended.
- Expenses are recognized and accrued when the liability is incurred.

Estimates and assumptions:

- The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying footnotes. Actual results could differ from those estimates.

Assets:

- Cash is considered restricted if, by prior agreement with an outside entity, it must be segregated for future use by the outside entity or by WSLH at the outside entity's behest. As of March 31, 2014 available cash is restricted in an amount equal to the newborn screening surcharge payable to the Wisconsin Department of Health Services.
- Accounts receivable are reported at net realizable value. Net realizable value is equal to the gross amount of receivables less an estimated allowance for uncollectible amounts.
- Inventory is stated at cost (first in, first-out method).
- Equipment and building improvements are carried at cost. Expenditures for assets in excess of \$5,000 are capitalized. Depreciation is computed by the straight-line method.

Liabilities

- A liability for unearned revenue is recognized for prepaid receipts for WSLH-provided Proficiency Testing programs and for prepaid newborn screening tests.

**NOTE 2- ACCOUNTS RECEIVABLE**

- Accounts receivable and allowance for uncollectible account balances as of March 31, 2014 and June 30, 2013 are as follows:

	<u>March 31, 2014</u>	<u>June 30, 2013</u>
Accounts Receivable Total	\$6,249,161	\$6,357,695
Allowance for bad debt	<u>(565,329)</u>	<u>(525,630)</u>
Net Receivables	\$5,683,832	\$5,832,065

**NOTE 3- LABORATORY SERVICES REVENUES**

- At the Board’s request, Laboratory Service Revenues on the Income Statement have been divided into two groups, Agency and Non-Agency, as follows:

Agency:

- DNR contracts
- DHS contracts
- DATCP
- University of Wisconsin
- Office of Justice Assistance
- Wisconsin Emergency Management

Non-Agency:

- UW Hospital Authority
- Medicare and Medicaid
- Municipalities
- Law Enforcement Agencies
- Proficiency Testing
- Newborn Screening
- All other revenues from individuals, businesses, clinics, and hospitals.

**NOTE 4- RETAINED EARNINGS - RESTRICTED**

- The operating contingency is computed annually and reflects two months of salary and fringe benefit cost for positions funded from program revenues. The contingency fund is considered adequately funded if working capital is greater than the contingency fund restriction. As of March 31, 2014 working capital (current assets less current liabilities) was \$9,612,663 thereby meeting the target contingency reserve requirement of \$2,136,900.

**NOTE 5- COMPENSATED ABSENCES**

- GASB Statement No. 16, “Accounting for Compensated Absences,” establishes standards of accounting and reporting for compensated absences by state and local governmental entities for which employees will be paid such as vacation, sick leave, and sabbatical leave. Using the criteria in Statement 16, a liability for compensated absences that is attributable to services already rendered and that is not contingent on a specific event that is outside the control of the State and its employees has been accrued. The table below details the liability by benefit category:

	Total	Vacation	Pers Hol	Legal Hol	Comp Time	Sabbatical
Current	\$813,915	\$497,213	\$115,866	\$3,657	\$2,069	\$195,110
Long Term	1,411,567	0	0	0	0	1,411,567
	\$2,225,482	\$497,213	\$115,866	\$3,657	\$2,069	\$1,606,677



**Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014**

Fiscal Year 2015 Budget			
State Laboratory of Hygiene			
Twelve Months ending June 30, 2015			
	Fiscal Year 2015 Budget	Fiscal Year 2014 Budget	Increase/ (Decrease)
Support and Revenue			
Agency	\$6,302,708	\$6,527,860	(\$225,152)
Nonagency	18,873,306	20,160,470	(1,287,164)
GPR Funding	11,092,523	10,682,523	410,000
OWI Funding	1,654,421	1,619,200	35,221
Grant Funding	4,912,391	5,931,539	(1,019,148)
Interest Income	7,200	6,000	1,200
<b>Total Support and Revenue</b>	<b>42,842,549</b>	<b>44,927,592</b>	<b>(2,085,043)</b>
Expenses			
Salaries	19,592,671	18,631,424	961,247
Fringe Benefits	7,756,397	7,602,158	154,239
Supplies and Services	12,578,114	12,471,249	106,865
Transfer-Ovhead Allow-133&144	775,992	811,416	(35,424)
Building Rent	2,712,175	2,460,577	251,598
Capital Expense	1,036,968	3,011,657	(1,974,690)
Bad Debt Expense	60,000	60,000	0
Interest Expense	4,200	7,200	(3,000)
<b>Total Expenses</b>	<b>44,516,517</b>	<b>45,055,681</b>	<b>(539,164)</b>
<b>Net Operating Income or (Loss)</b>	<b>(1,673,968)</b>	<b>(128,089)</b>	<b>(1,545,879)</b>
Reserve Expenditures	1,673,968	0	1,673,968
<b>Modified Net Operating Income or (Loss)</b>	<b>(\$1)</b>	<b>(\$128,089)</b>	<b>\$128,089</b>

**Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014**

<b>Fiscal Year 2015 Budget State Laboratory of Hygiene Twelve Months ending June 30, 2015</b>									
Support and Revenue	WSLH	Disease Prevention Division	Environmental Health Division	Occupational Health Division	Laboratory Improvement Division	Communicable Diseases Division	Administrative Services		
Agency	\$6,302,708	\$1,089,779	\$2,610,628	\$95,000	\$9,500	\$1,619,834	\$877,967		
Nonagency	18,873,306	9,131,000	2,096,066	2,337,000	3,571,580	1,737,660			
GPR Funding	11,092,523	1,310,849	4,815,498	251,709	43,300	4,487,322	183,845		
OWI Funding	1,654,421		1,654,421						
Grant Funding	4,912,391	21,888	281,986	3,873,963			734,554		
Interest Income	7,200						7,200		
<b>Total Support and Revenue</b>	<b>42,842,549</b>	<b>11,553,516</b>	<b>11,458,599</b>	<b>6,557,672</b>	<b>3,624,380</b>	<b>7,844,816</b>	<b>1,803,566</b>		
<b>Expenses</b>									
Salaries	19,592,671	3,948,477	4,915,931	2,629,616	856,133	2,969,799	4,272,715		
Fringe Benefits	7,756,397	1,482,031	2,043,222	1,184,203	339,655	1,188,114	1,519,172		
Supplies and Services	12,578,114	4,204,075	2,198,261	919,765	1,884,860	1,913,941	1,457,213		
Transfer-Ovrhead Allow-133&144	775,992	5,794	58,188	712,011					
Building Rent	2,712,175		1,524,799	518,070	75,982	435,551	157,773		
Capital Expense	1,036,968	16,221	840,234	42,161		30,000	108,352		
Bad Debt Expense	60,000	30,000	5,000	20,000		5,000			
Interest Expense	4,200		3,000				1,200		
<b>Total Expenses</b>	<b>44,516,517</b>	<b>9,686,598</b>	<b>11,588,634</b>	<b>6,025,826</b>	<b>3,156,631</b>	<b>6,542,405</b>	<b>7,516,423</b>		
<b>Net Operating Income or (Loss)</b>	<b>(1,673,968)</b>	<b>1,866,918</b>	<b>(130,035)</b>	<b>531,846</b>	<b>467,749</b>	<b>1,302,411</b>	<b>(5,712,857)</b>		
<b>Reserve Expenditures</b>	<b>1,673,968</b>	<b>308,221</b>	<b>840,234</b>	<b>42,161</b>	<b>220,000</b>	<b>155,000</b>	<b>108,352</b>		
<b>Modified Net Operating Income or (Loss)</b>	<b>(\$1)</b>	<b>\$2,175,139</b>	<b>\$710,199</b>	<b>\$574,007</b>	<b>\$687,749</b>	<b>\$1,457,411</b>	<b>(\$5,604,506)</b>		

Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**BUSINESS ITEMS**

**Item 7. FORENSIC TOXICOLOGY UPDATE**

**Description of the Item:**

Amy Miles, WSLH, and Dave Webb, WSLH will provide an update on forensic toxicology at the WSLH. The final report on the process improvement project (attached) and recent requests for alcohol test data will be shared with the Board.

**Suggested Board Action:**

Receive for information and input.

**Staff Recommendations and Comments:**

There are no contracts requiring board approval.

Wisconsin State Laboratory of Hygiene  
Forensic Toxicology Lab  
Blood Sample Testing  
Process Improvement project

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Final Report & Recommendations

February, 2014

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## Background

The Wisconsin State Laboratory of Hygiene (WSLH) Forensic Toxicology Lab provides alcohol and drug testing, testimony and support services to the law enforcement community for OWI (Operating While Intoxicated) investigations. In 2011, the WSLH tested over 19,000 OWI blood alcohol samples. Since 2003, when Wisconsin Act 97 (Restricted Controlled Substances Law) was passed, the number of OWI blood samples submitted to WSLH also tested for drugs other than alcohol has increased by over 130% from 1,462 to over 3,400 in 2011. The increase in OWI drug testing has resulted in unacceptably long testing turnaround times for OWI blood alcohol and drug samples and has delayed reporting toxicology results to prosecuting attorneys and defendants.

In 2012, a statewide OWI Task Force was formed to bring together stakeholders and help guide the WSLH in addressing the increasing sample turnaround times. A report of the Task Force (see Appendix A) presented short and long term recommendations to reduce turnaround times, including the initiation of an internal LEAN Six Sigma quality improvement effort.

This Lean Six Sigma project, in collaboration with the UW-Madison Administrative Process Redesign (APR) Department, was chartered to identify ways to improve OWI sample testing turnaround times and productivity in the agency's toxicology laboratory using the DMAIC (Define, Measure, Analyze, Improve, Control) approach. The team that completed the project provided a cross-section of WSLH and Toxicology Lab staff.

- Team Leader – David Webb, WSLH
- Team Member – Miel Barman, WSLH
- Team Member – Kristin Drewieck, WSLH
- Team Member – Laura Liddicoat, WSLH
- Team Member – Daniel McManaway, WSLH
- Team Member – Amy Miles, WSLH
- Team Member - Ed Oliver, WSLH
- Team Member – John Shalkham, WSLH
- Project Staff – Jim Thompson, APR
- Project Staff – Nevin Olson, APR

The charge to the team included the following goals:

1. Improve OWI blood alcohol sample turnaround time to report all blood alcohol test results within 14 days of receipt by WSLH.
2. Reduce the average OWI blood drug testing turnaround times to a target goal of 60-90 days from WSLH receipt of the blood sample to reporting of drug testing results (recommended in the Task Force report).

Stretch Goal: Reduce the OWI blood drug testing turnaround times from an average of 245 days to 90% of all OWI blood drug sample testing results reported in less than 60 days (by 12/31/2013).

## LEAN Six Sigma DMAIC methodology

The project team met 14 times over a four-month period and worked collaboratively to define, measure and analyze the current state of existing OWI testing and reporting processes, court testimony preparations and other administrative activities supporting the Toxicology Lab OWI testing processes to identify areas for improvement and define future state opportunities. A consensus decision-making model was employed to define and discuss lab testing processes and analyze findings leading to the team's conclusions and recommendations.

The project team began the **Define** phase of the project by using the report of the statewide OWI Task Force as a voice-of-the-customer exercise that represented discussions and expectations of the laboratory's largest customers, including district attorneys, law enforcement, coroners, legislators and others. The Task Force report identified customer priorities to ensure that the project team's efforts were focused on activities with the most value to customers. These priorities were translated into the project goals (see above) that provided the project team's direction.

The project team developed high-level process maps of the OWI testing processes, including ethanol (alcohol), enzyme immunoassay (EIA), basic drug screening / confirmation and Quantitation (see Appendix B). The development of current-state process maps allowed the project team to identify measurement points in the processes that reflect the start and end points of specific sample testing and reporting activities. The project team defined the methods to measure the volume and frequency of samples tested, duration of process activities and the intervals between process activities.

In addition to mapping lab testing processes, the project team defined high-level process maps for other activities related to responding to customer and stakeholder inquiries and preparation and presentation of expert court testimony. These activities are more ad hoc and responsive to customer and stakeholder demand and the frequency, duration and sequence of occurrence are more variable, requiring the team to use different strategies for estimating and measuring the frequency and amount of staff time needed to complete these activities.

During the **Measure** phase of the project, the project team established valid reliable measures to capture process cycle and activity times. Using the high-level current state process maps developed in the Define phase, the project team created a process to measure operational definitions for all process steps, activities and intervals (see Appendix C). The team compiled resulting data to represent sample volumes, process activity frequencies and turnaround times on a monthly basis (see Appendix D). The project team relied heavily on the IT staff to provide relevant process and activity data. The Forensic Toxicology Department implemented a new LIMS system in 2012, which challenged the project team to capture consistent data across different LIMS systems and limited the available historical data.

Next, the project team identified the instrument resources that are available in the Toxicology Lab, and compiled the amount of available instrument time used for OWI testing and the number of OWI testing methods available on each instrument. This information provided the project team with a current state process capability measure of instrument resources.

Finally, the team participated in compiling a current state process utilization measure of staff resources. This information also provided the project team with a current state process capability and capacity measure of staff resources.

In the **Analyze** phase, the project team looked at all the available data from Toxicology Lab processes over the previous 6-12 months and a review of the current OWI sample testing processes to calculate the demand for sample testing and reporting and determine the capacity of current processes and staff resources to meet those demands, including:

- The estimated number of OWI samples received for testing annually and monthly.
- The estimated number of OWI samples annually and monthly for each testing process (alcohol, EIA, Basic drug and Quantitation).
- The time needed to complete each test.
- The number of resource hours needed monthly to complete each process step and activity based on the volumes received and the time to complete testing.
- The amount of time and resources needed to process each step and activity based on the volumes received.
- The amount of time and number of resources needed and available to review completed testing and reporting.
- The duration of time OWI sample processing activities are waiting for available resources or scheduled activity.

The team used these and other data to complete value stream analyses of all OWI sample testing process flows (see Appendix E). As a result of value stream analysis, the project team has been able to compile project Findings and Conclusions (see page 6).

Having analyzed and reviewed all of the data, identified the findings and reached the abovementioned conclusions, the team defined and prioritized the best ways to **Improve** to move toward the desired goals of the project in their PProject Recommendations (see page 8). To improve process productivity and ensure timely and consistent process results, the team has:

- Identified ways to streamline some of the process steps, reducing or eliminating points where OWI blood samples are waiting for the next step in the standard workflow.
- For each of the testing and reporting roles, the team has identified the number of resources for each process step and activities related to responding to customer and stakeholder inquiries and preparation and presentation of expert court testimony.

After the implementation of prioritized recommendations, the **Control** phase will be initiated to ensure that the lead time and productivity gains established from the project will not be lost or eroded over time. To ensure that Toxicology department staff members know exactly what is expected of them, the team designed a set of performance indicators which clearly showed:

- The level of performance of OWI testing toward achieving the project goals.
- The volume and schedule of activities required to successfully sustain the productivity within the laboratory.
- Any additional improvements that could be made to the process to reduce turnaround time and improve service to stakeholders and customers.



## Findings and Conclusions

1. The process flowcharting, data collection and value stream analyses reveal that a significant portion of blood sample testing turnaround time in each of the testing processes is the amount of time spent waiting between successive testing process activities. The chart below shows the range and average times for each testing process (reported in calendar days). These data indicate that an effort to reduce waiting time will have the most significant effect on improving turnaround times.

Activity / Process	Alcohol Testing	EIA	Basic Drug Testing
Sample processing	<ul style="list-style-type: none"> <li>Check-in, set up, testing and review 1-2 days avg. 2 days</li> <li>Verify results, prep, review and sign-off report 1-9 days avg. 4 days</li> </ul>	<ul style="list-style-type: none"> <li>Perform EIA 1 day</li> <li>Review 1 day</li> </ul>	<ul style="list-style-type: none"> <li>Perform basic Drug test 1 day</li> <li>Confirm 1-5 days avg. 5 days</li> <li>Review 1 day</li> </ul>
Waiting	<ul style="list-style-type: none"> <li>Receipt to check-in 1-9 days avg. 5 days</li> </ul>	<ul style="list-style-type: none"> <li>In storage after alcohol test until EIA screen avg. 47 days</li> <li>wait for review avg. 12 days</li> </ul> <p>Avg. 59 days</p>	<ul style="list-style-type: none"> <li>In storage after alcohol test until Basic Drug test avg. 90 days</li> <li>Waiting for confirm avg. 52 days</li> <li>wait for review avg. 33 days</li> </ul> <p>Avg. 175 days</p>
Total waiting	Avg. 5 days		
Total processing + waiting	Avg. 11 days	Avg. 61 days	Avg. 182 days

2. The process flowcharting and value stream analyses also reveal that the grouping of consecutive work activities does not take advantage of efficiencies of batch processing when the average length of time that samples wait between activities can far exceed the total processing time.

3. The change in testing procedures to end further testing if the presence of THC or cocaine is confirmed in the blood sample has significantly reduced the number of Basic Drug Tests that need to be completed and has allowed the Toxicology Lab to meet the current level of demand for blood sample testing with the current staffing capacity.

4. An evaluation of the demand for blood testing versus the capacity of resources to meet that demand (using the model outlined in Appendix F) shows that the number of samples received and types of tests needed can be met with the current staffing capacity and instrument resources.

5. The value stream mapping by the project team confirmed that testing process activities could be accomplished to reduce the amount of waiting time if there were better utilization of the qualified staff resources. Toxicology Lab staff are expected to be testing generalists, e.g., able to learn and perform progressively more testing procedures and protocols. The staff tends to specialize in particular testing procedures and protocols. For example, the number of staff qualified to confirm and or review completed testing and reports belies the reported practice of limiting the confirmation and review activities to a select few staff whose availability may be limited. This can cause unnecessary delays and waiting time.

6. After blood alcohol testing has been completed on a sample, there is no clear scheduling or prioritization of further testing for that sample. The Toxicology Lab staff does use a first-in-first-out strategy for building batches for drug testing. The value stream analyses calculated the estimated number of batches that would be required for testing, confirmation and quantitation of restricted controlled substances (RCS) on a monthly basis. Drug testing and quantitation for any sample may be delayed until a sufficient quantity of samples being tested for the same substance(s) have accumulated to set up a testing batch, or longer.

7. In general, results reports for any sample test are held until all testing of that sample have been completed. Results reports are not reviewed until all testing of that sample has been completed and all results reported.

## **Recommendations**

### **1. Make the lab technician sample check-in process permanent.**

At the time of study, blood samples received by WSLH were batched together with other samples received that same day and placed in the storage cooler until a Chemist was preparing to create a batch of blood sample to test for alcohol. Sample identity and information was registered in WSLH system at the time the Chemist prepared the batch for testing. This recommendation is to check-in and register samples on the same day they are received. At the end of study, WSLH implemented a pilot process to have a lab tech check-in and register samples before a Chemist prepares a batch of samples. This change can be accomplished by reassigning duties of an existing staff member to free the amount of time needed to complete sample check-in and can be implemented at any time. A critical step will be to ensure the reassigned duties are completed to avoid overload.

This change would check in and register all samples on the day they are received at WSLH, establish the date of custody by the WSLH and establish the start of the turnaround time measure. This change also allows the Chemists to be more efficient in their preparations for alcohol testing and reduce the overall time they need to prepare batches for alcohol testing. Shortening the time required to set up sample batches for alcohol testing will reduce the overall turnaround time. The new position created for sample check-in will not only be responsible for receiving samples but will be expanded to include other duties that will free up Chemists' time. Examples of increased duties may include oversight of the walk-in cooler and its contents, making phone calls to agencies regarding discrepancies of samples received, and oversight of blood alcohol kit manufacturing and shipping.

Measures of success:

- Amount of time required to check-in and register samples daily.
- Amount of time for chemists to set-up alcohol testing without having to check-in samples.
- Amount of time reduced from alcohol testing turnaround time.

### **2. Limit availability of Chemists for court appearances and records requests to a specific schedule.**

The intent is not to reduce the amount of staff time available for customer and stakeholder responses, but to create a schedule of when staff would be available so that the Toxicology lab is able to establish stable, reliable staff resource availability for scheduling testing work to be done. This will be accomplished in the following manner:

- Continue cube assignments for telephone calls to assist in lab scheduling.
- Re-emphasizing the importance of remote testimony whenever possible - especially to counties who currently do not allow any video/phone testimony.
- Pilot reserving one to two additional days per month for an analyst to perform other activities than court.
- Create a SOP for open records requests (inclusive of alcohol) to streamline the record request process.

Measures of success:

- Achieve more time for analysts to schedule lab and paperwork
- Reduce time wasted to trips cancelled en route and appearing without testifying.

### **3. Implement process scheduling for alcohol and drug testing and optimize staff specialization groupings to more effectively meet the needs of stakeholders and customers.**

The value stream mapping exercise and resulting findings of wait time embedded in all testing processes (see Findings and Conclusions table, page 6) demonstrates that the most significant opportunities for improvement in testing turnaround time are in reducing the wait time in each step of the testing processes. The largest periods of wait time are; a) sample waiting for the next testing process to begin, and b) testing completed and results and/or reports waiting to be reviewed.

Currently the staff is not appropriately optimized which also adds to the increase in wait time. There are opportunities to optimize the combination of generalization and specialization to better meet process demands. For example, use the generalized skill set of each Chemist to provide flexibility to scheduling testing and review while offering variety to staff. These findings lead to several options for reducing wait time:

- Continue cancelling all subsequent testing if an RCS substance is detected on a short-term basis.
- Schedule and perform subsequent drug testing upon completion of the preceding testing process.
- Schedule EIA and basic screen workups the day after the testing is completed.
- Schedule basic screen reviews immediately after workup.
- Introduce a 'fixed date' or 'fixed interval' for scheduling the next test, e.g., sample testing to be completed 30 days after check-in, or, next test to be completed within 30 days.
- Cross-train staff to provide greater scheduling opportunities in the review and final report stages.
- Schedule a monthly calendar and assign resources based on the volume of testing required as determined by the value stream mapping.
- Schedule a monthly calendar and assign resources based on the volume of reviewing required as determined by the value stream mapping.
- Optimize the scheduling of instruments for protocol testing based on the volumes of testing required as determined by the value stream mapping.
- Establish a "date-aging" schedule for all Basic Drug and Quantitation processes as well as open records requests.

Measures of success:

- Amount of time reduced from alcohol testing turnaround time.
- Amount of time reduced from drug testing turnaround time. Use caution when interpreting turnaround time reports, testing that has not been completed is not included in the overall average for any given time period.
- Lowered turnaround time for open records requests.

#### **4. Establish a Process Control plan**

After recommendations have been prioritized and an implementation plan has been established, it is vital that the project team compile a set of measures of success of implementation and an ongoing monitoring plan to ensure that process improvements are effective.

### **Accomplishments to date**

#### **1. Initial trial of Sample check-in process**

Following the team's value stream analysis of processes, a trial sample check-in process was begun.

- The designation for a technician to perform the sample check-in process began October 2013. Since that time the technician has spent time every day checking-in samples as they are received. During the same time period a new position has been created to assemble legal blood draw kits and distribute them to various agencies which will allow the sample check-in process to become a priority for the technician. While not all samples are checked-in every day, once the kit assembly is streamlined this will free up the technician's time to make sample check-in the priority.
- This establishes an operational definition of when the sample testing process turnaround time begins. Checking-in the sample on the day it arrives will be a more accurate reflection of turnaround time giving the laboratory a better assessment of whether or not the customer's expectation of turnaround time is met.
- Streamlining the check-in process has reduced the time a Chemist spends preparing samples from almost 2 hours to approximately 30 minutes.
- The effect or opportunity for reducing turnaround time has been the following:
  - Blood alcohol samples are analyzed more closely to the time the sample is received by the WSLH
  - Spending less time on sample check-in allows Chemists to work on reducing the drug testing backlog and decreasing turnaround time.

#### **2. Reducing testing and reporting burden by cancelling subsequent testing if RCS results are positive**

A recommendation of the Task Force report was to stop further drug testing when delta-9 THC or cocaine is confirmed in a blood sample. This change was implemented prior to the start of this study project and has continued throughout calendar 2013 and represents up to 15% reduction in subsequent testing and reporting.

#### **3.Reduced turnaround time by increasing available staff**

The backlog of samples and subsequent increase in turnaround time has led to a need to increase the number of analytical staff. The increase in project staff positions have added the potential for up to 10% increase in trained analytical resources to the alcohol and drug testing processes for the duration of the project appointments.

#### **4. Developed pilot plan for process scheduling**

Several WSLH staff members have developed a scheduling model based on the project team's analysis of processes and current demand. The scheduling model uses data from the detailed process flow

analyses process, value stream analyses and process demand and capacity models. Some of the features of the schedule model include:

- Planned tasks needed to meet the alcohol and drug testing and reporting demand based on the current volume of samples received by the WSLH.
- Identification of available staff resources with the capability to perform each of the needed tasks.
- A possible future state model for scheduling resources at a stage when all drug testing backlog has been eliminated and inventory of samples is 'current.'
- A two-week plan horizon that allows for testing protocols that may span work weeks and allows flexibility to adjust current scheduling based on process performance and demands.

## **5. Revised measurement and reporting process**

WSLH staff has redefined and implemented the operational definitions and methodologies for production and inventory reporting. This provides a more precise definition of start and end times for each process task and interval and allows for complete and accurate summary and calculation of lab production, inventory, turnaround time and resource use.

- The team used the revised measurements and reports as a part of their descriptions of processes and value stream analyses.
- The revised measurement processes will allow the WSLH the opportunity to adjust reporting to respond to analysis needs.
- Monthly reports are being generated for various metrics are being distributed to appropriate staff. Examples of metrics include numbers of incoming samples, TAT for the various sample types, numbers of samples grouped by test/client type such as coroners/medical examiners, OWI, Drug, Alcohol.

### **Next Steps:**

#### **1. Full-time implementation of Technician sample check-in on the day of WSLH receipt.**

**Schedule:** Quarter 1 2014

#### **2. Implement Process scheduling pilot**

**Schedule:** Quarter 1 2014

#### **3. Implement monthly and quarterly process reporting**

**Schedule:** Quarter 1 2014

## Appendix A: Task Force “Voice of the Customer” report

### FINAL REPORT

Task Force on Improving Services from the Wisconsin State Laboratory of  
Hygiene Forensic Toxicology Program  
July 30, 2012

#### **Background**

The Wisconsin State Laboratory of Hygiene (WSLH) provides testing, testimony and support services for operating while intoxicated (OWI) investigations throughout Wisconsin. The sole funding source for this service comes from an allotment of the Driver Improvement Surcharge. In 2011, the WSLH tested over 19,000 OWI samples, representing approximately 60% of all OWI alcohol tests. The remaining 40% were breath alcohol tests and about 1,500-1,800 blood samples analyzed by the State Crime Laboratory system. An increasing number of blood samples submitted to the WSLH are also tested for drugs other than alcohol. Since 2003 when Act 97 (the “Baby Luke Law”) was passed, the number of OWI drug samples has increased by over 230%, from 1,462 to over 3,400 in 2011. The 2003 law made it illegal to drive with any detectable amount of a Schedule I drug, methamphetamine, cocaine or its metabolites, or delta-9 THC (the active component of marijuana) in one’s blood. The increase in OWI drug testing corresponds to increased use of potentially impairing drugs (illicit, prescription and over-the-counter) in society, and increased training to detect drug impaired drivers by police officers, including the use of Drug Recognition Experts (specially trained police officers).

#### **Problem**

The increase in OWI drug samples tested by the WSLH has resulted in unacceptably long testing turnaround times, currently approaching one year. These long turnaround times have resulted in obvious consequences with delayed testing causing frustration from prosecutors, judges and defendants. Drug testing, unlike alcohol testing, is a series of complex tests designed to first identify the presence of various drug classes, and then to confirm and quantitate individual drugs in those classes. Testing must follow rigorous analytical and forensic guidelines to produce reliable and defensible results. Because of the variety of possible impairing drugs, the use of multiple drugs by drivers and the complexity of the testing, it takes at least 20 times longer to complete a full drug screen than it does for an alcohol test. Funding for OWI testing has not kept pace with the increased drug testing workload of the WSLH. Additionally the WSLH does not receive its full budgeted allotment of the Driver Improvement Surcharge fund. The lack of additional funding has kept the laboratory staffing levels unchanged since 2003. Existing resources at the WSLH are inadequate to address its workload, resulting in ever-increasing turnaround times for drug testing.

#### **WSLH ongoing efforts**

As drug testing workload has increased the WSLH has attempted to address the growing issue of turnaround time:

1. Requests for increased funding. In FY '08 the WSLH Driver Improvement Surcharge was increased by \$200,000. All other requests have been denied.

## Appendix A: Task Force “Voice of the Customer” report *continued*

2. October 2010 request for law enforcement to submit felony OWI (4<sup>th</sup>+ offenses) samples to the WI State Crime Laboratory. This has helped reduced alcohol testing workload, but has had little or no effect of drug testing.
3. Grant-funded purchase of new instrumentation (LC/MS/MS) to improve testing efficiency for cannabinoids (THC).
4. Grant-funded purchase of methodology for benzodiazepines utilizing LC/MS/MS
5. Grant-funded outsourcing of THC samples to reduce large backlog and allow for benzodiazepines method validation.
6. Limiting quantitations for other drugs when a restricted controlled substance (i.e. delta-9 THC, cocaine) is detected.
7. Strongly encourage telephone or videoconference testimony in all court trials.
8. Prioritize testing consistent with existing resources
  - a. Alcohol
  - b. EIA drug screen for THC, cocaine, opiates, benzodiazepines, barbiturates
  - c. Basic drug screen/confirm (the most time-consuming screening)
  - d. THC confirmation/quantitation
  - e. Oldest drugs
  - f. All other drug testing will take even longer

It became clear that the above efforts have only been able slow the increase in turnaround time. For instance, validating new methodology on the new instrumentation meant taking analyst time away from other drug testing. To improve turnaround time in the face of rising demand for testing requires taking additional measures.

### **The WSLH OWI Task Force**

The Task Force on Improving Services from the Wisconsin State Laboratory of Hygiene Forensic Toxicology Program (OWI Task Force) was formed to bring together stakeholders and help guide the WSLH in addressing this problem. During three meetings the members of the task force examined how the WSLH Forensic Toxicology Program operates and interacts with its stakeholders. Details of drug testing protocols and efforts by the WSLH to improve turnaround were also provided. The result of these productive meetings was a clearer understanding of the challenges that all laboratories, including the WSLH, face in providing high quality testing with limited resources, and how these challenges impact the ultimate goal of identifying impaired drivers and improving the safety of Wisconsin roadways.

Short and long term recommendations were identified to reduce turnaround times. Members agreed to a target goal of 60-90 days average turnaround time for drug testing results. It was recognized that there are no simple solutions to address the issue, and that several options must be simultaneously pursued in order to have a lasting impact. These recommendations would be added to the ongoing efforts of the WSLH to reduce turnaround time and align resources with workload. Implementation of the recommendations would increase staff and equipment, reduce workload and maximize the time that analysts are in the laboratory.

## Appendix A: Task Force “Voice of the Customer” report *continued*

### Task Force Recommendations

1. **Initiate an internal LEAN/Six-Sigma quality improvement effort to ensure that laboratory and program efficiencies are realized.**
2. **Promote the use of videoconference and telephone testimony.** WSLH analysts testified over 320 times and travelled over 45,000 miles in 2011. Court appearances represent lost laboratory time. Actual testimony typically takes less than one hour, but the travel and waiting time prior to testimony mean that each appearance in person represents a lost day in the lab. Appearances by video or phone allows analysts to testify and still be able to be productive in the laboratory.
3. **Encourage the use of breath alcohol testing by law enforcement, especially in first offense OWI cases.** Implementation requires the cooperation of police and prosecutors.
  - a. Pro: A reduction of alcohol testing allows WSLH analysts to spend more time on drug testing.
  - b. Con: Some police departments and DAs believe that blood testing is more cost effective to them, and less likely to be challenged in court.
4. **Stop further drug testing when delta-9 THC or cocaine is confirmed in a blood sample.** These drugs are the most common and efficiently detected restricted controlled substances found in drivers. Full drug testing would continue to be performed on all other samples.
  - a. Pro: Reduction of 750 full drug screens per year, eliminating the time consuming basic drug screening procedure and any subsequent quantitation of additional drugs for these samples.
  - b. Con: Other drugs will not be tested in these samples, leading to possible incomplete information to support the opinion of a Drug Recognition Expert, incomplete information on the overall scope of drug use in drivers and incomplete information of the scope of impairing drug use in the arrested individual.
5. **Partner with the WI State Crime Laboratory System to reduce overall workload and outsource backlogged WSLH drug samples.** Re-emphasize that felony cases (OWI fourth and higher offenses) should be sent to the Crime Labs. Identify targeted drugs where the Crime Labs may have the capacity to help reduce WSLH testing.
  - a. Pros: Reduction of 500 -1000 alcohol samples in felony cases still submitted to the WSLH. Reduction of samples with drugs having the highest backlogs at WSLH. Testimony, if needed, would remain in state rather than from an out-of-state outsourcing lab. Cons: The overall reduction in WSLH workload will be relatively small.
6. **Seek grant funding for two project chemist positions to perform drug testing procedures.** Preliminary drug screening procedures require the least amount of training (for the EIA screen approximately 1 month). As of May 29, 2012 there were 900 samples that needed to be screened. The project positions would fill a gap until additional permanent staff can be funded through the budget process.



## Appendix A: Task Force “Voice of the Customer” report *continued*

- a. Pro: Will provide immediate help to keep up with incoming samples and implement workflows that prioritize identifying THC and cocaine samples. Existing, more experienced staff, will be able to focus on more complex testing and peer review of work.
  - b. Con: Grant funds may not be available for this purpose and would be contingent on the WSLH having a long term plan to obtain permanent funding for increased staff.
7. **Increase the number of WSLH drug analysts.** The WSLH was able to achieve and maintain a 60-90 day turnaround time for drug testing when the workload was half of its current size and the number of drug analysts was the same as it is now. Identifying and implementing more efficient testing methods and workflows and reducing the backlog of samples will help to minimize the number of additional positions needed to accommodate current and projected workload.
- a. Pro: This is the long term solution to addressing drug testing turnaround time.
  - b. Con: Requires an increase of funding for positions, training, equipment and space.

### **Summary**

The recommendations represent a broad approach to improving turnaround time for drug testing results by reducing workload and increasing resources. Improvement will be realized incrementally as each of the recommendations is implemented. In order to be successful the cooperation and understanding of the major stakeholders is essential. There are no other alternatives in Wisconsin, public or private, for the vast majority of the OWI drug testing performed by the WSLH. By reducing alcohol testing submissions (utilizing breath more often), submitting all felony samples to the Crime Labs, keeping analysts in the lab instead of travelling to testify, improving laboratory efficiency and increasing staff and equipment, the WSLH will be better able to focus its unique and specialized resources on producing timely drug testing results.

## Appendix A: Task Force “Voice of the Customer” report *continued*

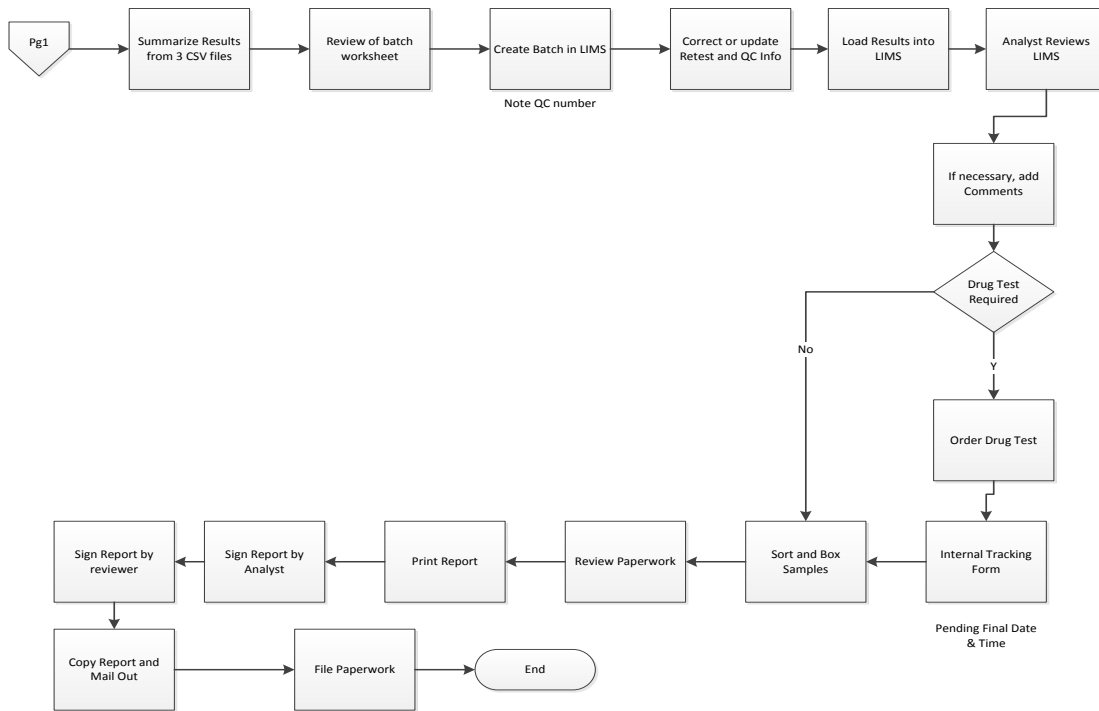
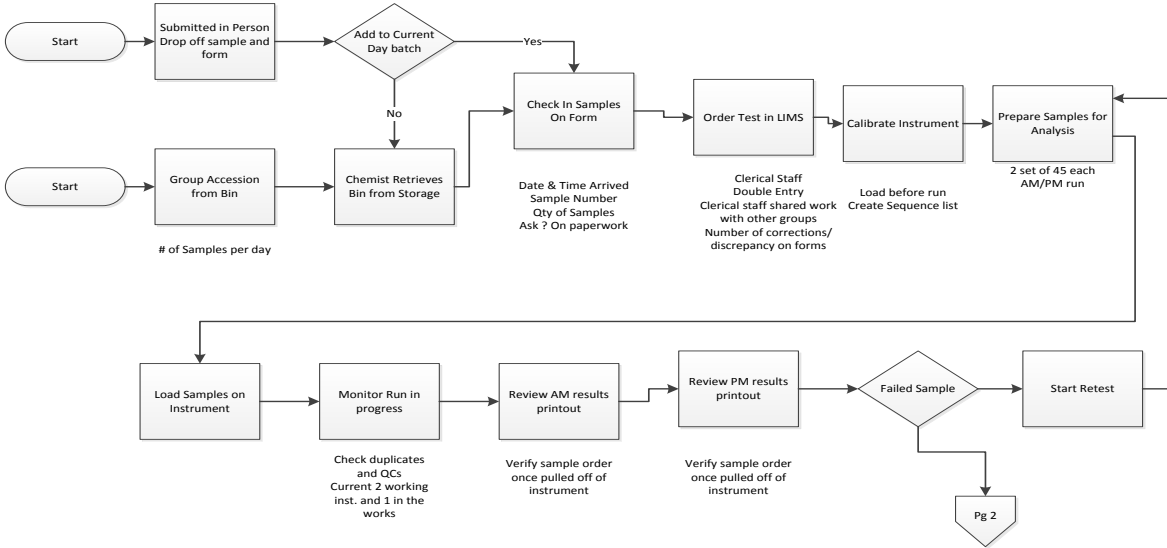
### Appendix 1

#### Wisconsin State Laboratory of Hygiene Forensic Toxicology Task Force Membership

Organization	Member
Wisconsin District Attorney Association	Adam Gerol
Dept of Justice Traffic Safety	Tara Jenswold-Schipper
Bureau of Transportation Safety	Sonya Sidky
Wisconsin State Crime Lab	Kevin Jones
Wisconsin Sheriffs and Deputy Sheriffs Association	Michael Horstman
Dept of Administration Policy and Budgets	Michelle Gauger
Wisconsin Drug Recognition Expert	Nate Thompson
Wisconsin Drug Recognition Expert	Jeff Meloy
Wisconsin DNR Law Enforcement	Todd Schaller
WSLH Board Member	Darryll Farmer
WSLH Board Member	Barry Irmén
UW Legislative Liaison	Don Nelson
Wisconsin Senate	Alberta Darling
Wisconsin Assembly	Sondy Pope-Roberts
Wisconsin Assembly	Garey Bies
Wisconsin Court System	John Voelker
UW Hospital and Clinics	Don Wiebe
Police Chiefs	Susan Riseling
UW School of Pharmacy	Cameron Scarlett

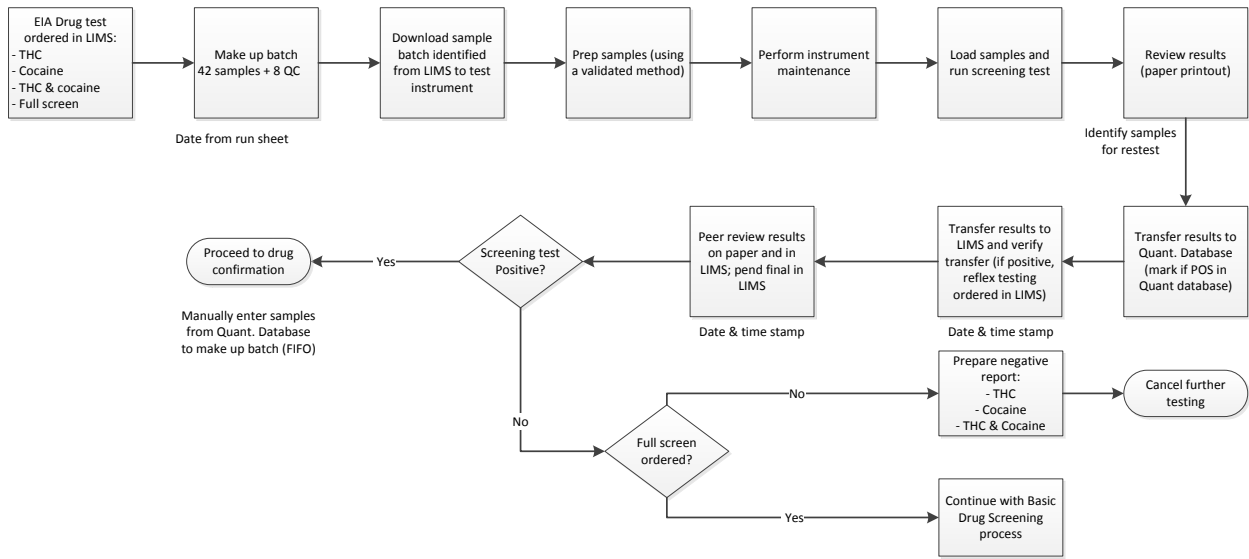
## APPENDIX B: Detailed Process Flowcharts

### Alcohol testing Level 2 of details

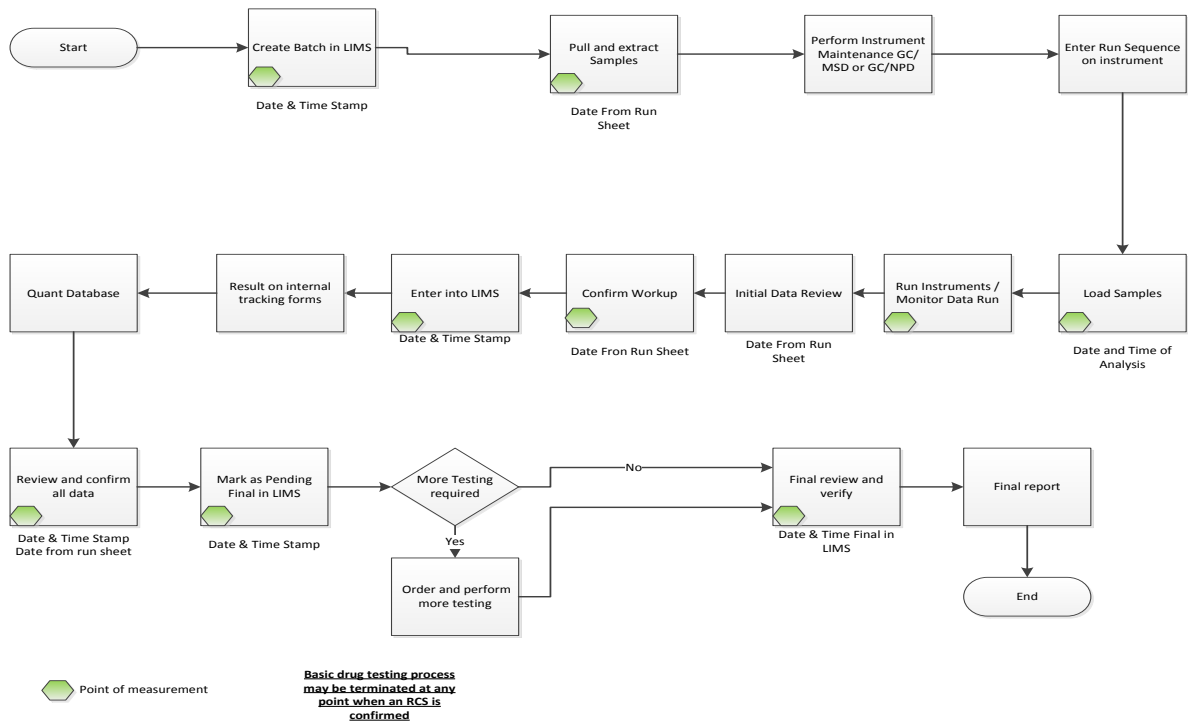


## APPENDIX B: Detailed Process Flowcharts *continued*

### Enzyme Immunoassay (EIA) Screening Test

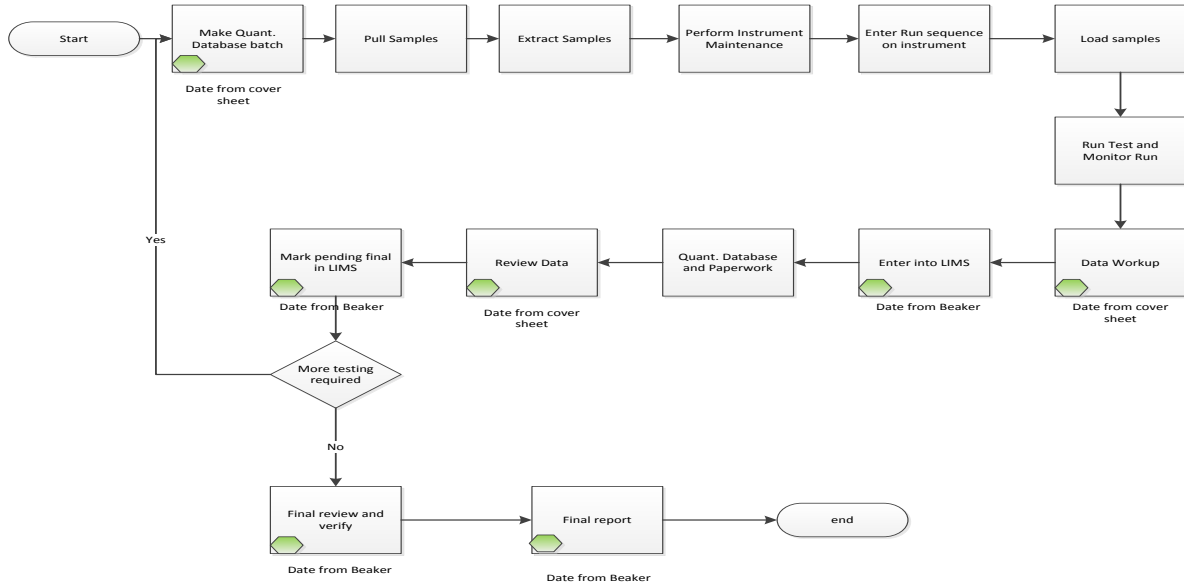


### Basic Drug Testing Detailed Process

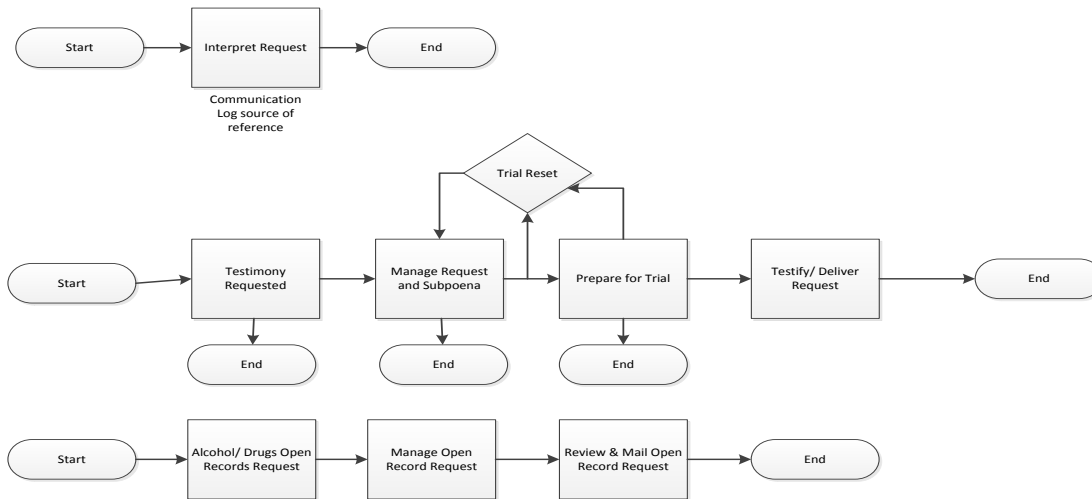


## APPENDIX B: Detailed Process Flowcharts *continued*

### Quantitative Analysis Detailed Process



### Testimony and Record Requests



**Notes:**

- Testimony takes staff away from test and analysis effort
- Staff tracks communication log to measure some of these activities
- Team suggested added some additional measure to understand to help scheduling

**APPENDIX C: Example Process Measure Operational Definitions**

<b>Measurement</b>	<b>Available?</b>	<b>Definition</b>	<b>Measurement Data</b>	<b>How recorded/calculated</b>
Sample collection	Y	CollectionDate		Beaker
Time between collection of sample and receipt by WSLH	Y	BlueBinDate-CollectionDate (Unable to obtain bin date with spec#)	<u>Not available</u>	Manual collection
Sample receipt	Y	BlueBinDate	See below	Manual collection
Amount of time samples are in storage before check-in	Y	Sample check in date – Blue bin date	Range of 1 – 9 days (from manual data) Avg: 5 Median: 6 Mode: 7	Manual collection
Time required to check-in samples	N		Check-in time (2-3 hours per 90 samples) Order tests occurs concurrently and uses clerical resources	Estimate
Time between	Y	AlcoholTestDate – AnalystReceivedDate	Min (0 days) Max (2 days) AVG (1.4 days) MEDIAN and MODE = (0 days)	Beaker
Time to prep equipment and samples for testing	N		Sample prep (2-3 hours per 90 samples)	Estimate
Time to run AM tests	Y		5.25 hours	Instrument start/stop times
Time to review AM test results	N		(optional for Day 1) 10 min	Estimate
Time to retest failed AM samples*		Sporadic occurrence		
Time to run PM tests	Y		5.25 hours	Instrument start/stop times
Time to review PM test results	N		10 min	Estimate
Time to retest failed PM samples*	N	Sporadic occurrence		
Time to summarize results	Y		5 minutes	Script start/stop time
Time to create batch in LIMS	N		5 minutes	Estimate

**APPENDIX C: Example Process Measure Operational Definitions *continued***

Time to correct, update retest and QC information	N		5 minutes	Script start/stop time
Time to load results into LIMS			5 minutes	
Time between load LIMS and add comment	N		Up to 15 minutes	Script every 15 min.
Time to add drug comments	Y		Range 5 – 60 min <sup>^</sup>	Manual Collection
Time to order drug tests	Y		Range 5 – 60 min <sup>^</sup>	Manual Collection
Time to record on internal tracking form, complete drug list for CSA	Y		Range 15 – 40 min <sup>^</sup>	Manual Collection
Time to sort and box samples	N		15 minutes	Estimate
Time between sort / box and review data	Y	FV – EthanolResulted  *Maximum outliers due to result correction, giving a later FV date.	AVG (0.7 Days) MIN (0 Days) MAX (205 Days) MEDIAN and MODE (0 Days)	Beaker
Time to review run data and batch worksheets	Y		Range 10 – 47 min	Manual Collection
Time to review Beaker results, final verify and print	Y		Range 7 -39 min	Manual Collection
Check report comments and drug forms	Y		Range 8 – 49 min	Manual Collection
Time for analyst to review and sign report	Y		Range 8 – 68 min	Manual Collection
Time for reviewer to review and sign report	Y		Range 14 – 32 min	Manual Collection
Time between date of analysis and date of reviewer sign report	y		<u>Full run:</u> Range: 1-9 Mode: 1 Avg: 4 Median: 4 <u>Half run:</u> Range: 0-9 Mode:2 Avg: 4 Median: 2	Manual Collection
Time to copy, tri-fold and mail out report	y		Full: 60 min Half: 30 min	Manual Collection
Time to file sample paperwork	Y		5 min	Manual Collection

\*Occurs infrequently, requires minimal time

<sup>^</sup>Often occurs simultaneously

**APPENDIX D**  
**Forensic Toxicology Lab Monthly Turnaround Time Reporting**

**PRODUCTION**

Number of samples received during calendar month

Number of Alcohol samples received during calendar month  
Number of Alcohol samples reported during calendar month

Number of Drug samples received during calendar month  
Number of Drug samples reported during calendar month

**INVENTORY**

Number of Alcohol samples pending on the last day of the calendar month  
Number, % of alcohol pending > 14 calendar days after received date

Number of Drug samples pending on the last day of the calendar month  
Number, % of drug pending > 90 calendar days after received date

**TURNAROUND TIME**

Number of Alcohol samples reported during calendar month  
Average TAT (number of calendar days between received date and reported date)  
Number, % of alcohol reported  $\leq$  14 calendar days after received date

Number of Drug samples reported during calendar month  
Average TAT (number of calendar days between received date and reported date)  
Number, % of drug reported  $\leq$  90 calendar days after received date

**TESTIMONY**

Number of subpoenas received during calendar month  
Number of court appearances during calendar month  
    In-person  
    Telephone  
    Video  
Number cancelled in-route during calendar month

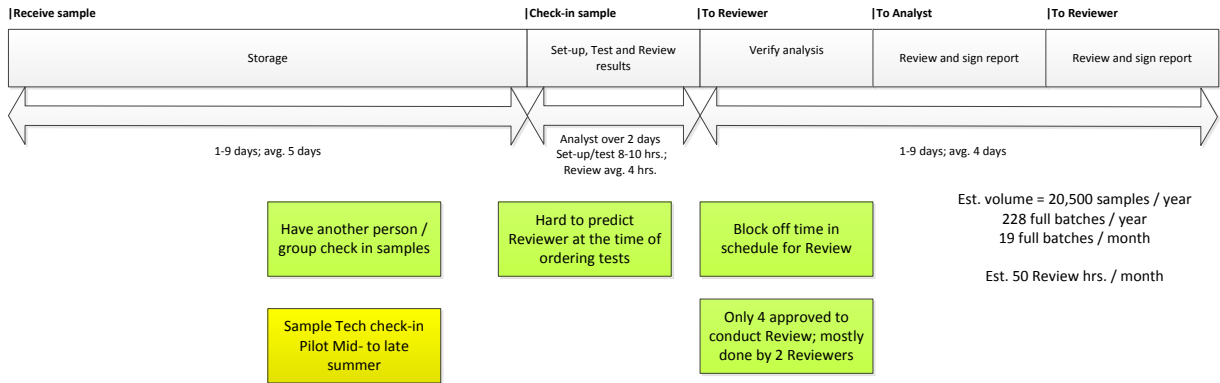


# APPENDIX E: Value Stream Analysis

## Value Stream Analysis Alcohol Testing process

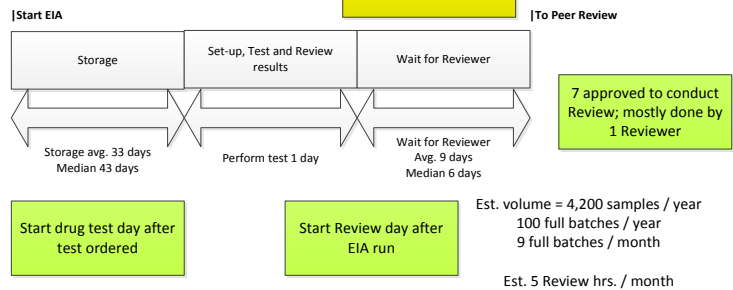
IC = 96.7%  
DI = 3.3%

Average Alcohol Turnaround time = 11 days



## EIA Testing process

IC = ~ 80%  
DI = ~ 20%



- opportunity
- improvement

# APPENDIX E: Value Stream Analysis *continued*

## Value Stream Analysis

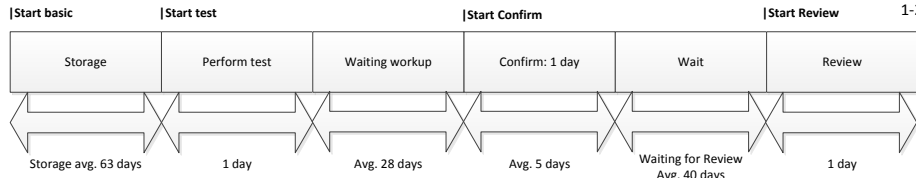
### Basic Drug process

Est. volume = 4,000 samples / year  
 121 full batches / year  
 10 full batches / month

Est. 80 Review hrs. / month

Z-fold and send  
 1-2 days

- Continue to cancel tests if RCS detected
- Use new instrument to increase volume and limit no. of instruments



- Multiple result entry:
  - LIMS
  - Internal tracking sheet
  - Quant. database
- IT Development
  - Epic change
  - Staff change
  - chain-of-custody for record request

- Same person to conduct Confirm analysis
- 9 qualified to conduct Confirm analysis: normally done by 3
- 4 qualified to conduct Review: normally done by 2

- Start new process
- Add resources, change schedules to reduce backlog

- Public policy of drugs in area?

- opportunity
- improvement

### Quant. process

2012 volumes  
 THC = 1,856  
 Opiates = 687  
 COC = 196  
 Benzos = 716

Storage  
 THC = 83 days (avg.)  
 COC = 60 days (avg.)

Review has no schedule or timeline to finalize

THC = 48 batches / year  
 4 batches / month  
 Est. 12 Review hrs. / month

Opiates = 40 batches / year  
 4 batches / month  
 Est. 12 Review hrs. / month

COC = 9 batches / year  
 1 batches / month  
 Est. 3 Review hrs. / month

Benzos = 48 batches / year  
 4 batches / month  
 Est. 12 Review hrs. / month

Reduce all test order backlog by drug type

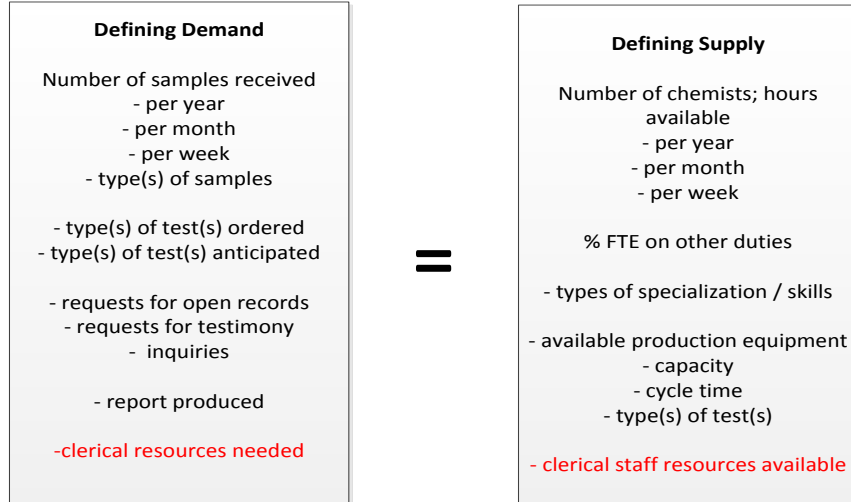
No aging check for age before required to run in batch

Review limited to 2 staff  
 1 does 80%; other does 20%

Set maximum no. days before starting Basic or Quant. processes

## APPENDIX F: Demand and Capacity Model

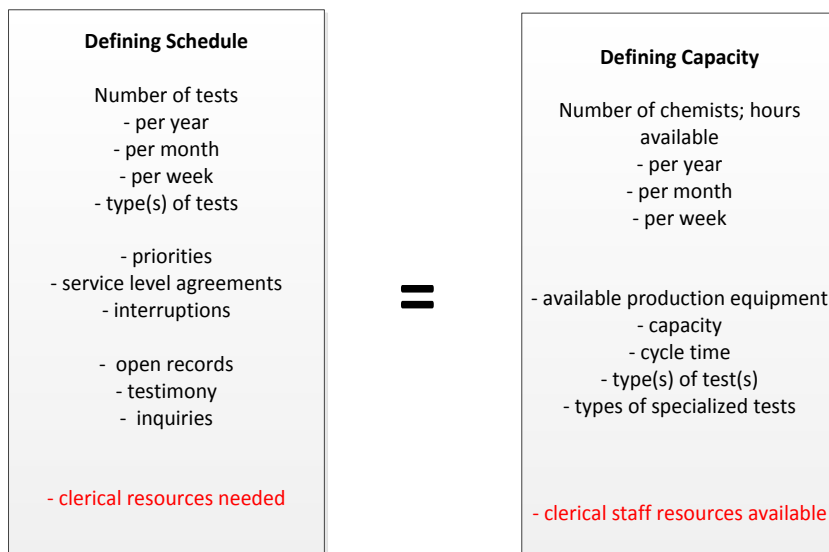
### Calculating Demand for Services and Available Supply



Imbalance in favor of Demand indicates not enough process resources available to meet Demand

Imbalance in favor of Supply indicates process resources are more than adequate to meet Demand

### Scheduling of Services and Available Capacity



Imbalance in favor of Scheduling indicates building inventory / backlog

Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**BUSINESS ITEMS**

**Item 8. CONTRACTS REPORT**

**Description of the Item:**

The table on the following page contains the major grants and contracts that have been received since the last Board meeting. Dr. Brokopp or other staff will be available to provide more details on these grants and contracts.

**Suggested Board Action:**

Receive for information.

**Staff Recommendations and Comments:**

There are no contracts requiring board approval.

WSLH BOARD DATE	CUSTOMER	CONTRACT NAME	START DATE	END DATE	ACCOUNT NAME	SCOPE OF WORK	AWARD AMOUNT	WSLH DEPT
Apr-14	APHIS	14 7100 0326 CA	07/01/13	06/30/14	2014 APHIS RABIES	ONGOING RABIES WORK	\$ 7,248.00	LID
Apr-14	APHL	56400 200 621 14 11	10/01/12	06/30/13	2013 APHL INFLUENZA NEURAMINIDASE INHIBITION NIS B	NO COST EXTENSION; ADDITION OF TWO TESTS TO ORIGINAL S.O.W.; EXTEND TIMEFRAME FROM 10/01/13 TO 06/30/14	N/A	CDD
Apr-14	APHL	56400 200 621 14 17	02/10/14	06/30/14	2014 APHL INFLUENZA rRT-PCR B	ONGOING INFLUENZA rRT-PCR B	\$ 30,000.00	CDD
Apr-14	CALIFORNIA ARB	09-363 (2) EXHAUST LIGHT DUTY TRUCK	06/15/10	05/15/14	2014 CARB TRUCK EXHAUST	REDUCTION OF ORIGINAL TIME FRAME, INCREASE OF \$1,548.00 OF AMOUNT OF CONTRACT	\$ 1,548.00	EHD
Apr-14	CB & I	PO 771355 3P 2015	03/04/14	03/04/15	2015 CB&I VOGTLE EPC	INCREASE ORIGINAL PO FROM \$176.00 TO 5,176.00	\$ 5,176.00	OHSD
Apr-14	CUMBERLAND NJ	PO 14 00156	01/01/14	01/08/14	2014 CUMBERLAND ANNUAL ENROLLMENT	PT PROGRAM	\$ 445.00	LID
Apr-14	EPA	EP BOA 11 W 0016	11/22/10	11/21/15	2015 EPA EDAN INC		\$ 3,058.63	
Apr-14	KIMBERLY CLARK	2014 CDA	01/01/14	12/31/14	2014 KC CONFIDENTIALITY AGREEMENT	CONFIDENTIALITY AGREEMENT WITH KIMBERLY CLARK	N/A	
Apr-14	MAINE	2014 022113 1912126	02/10/12	02/16/15	2015 MAINE DOL AIR QUALITY	ONGOING WORK FOR STATE OF MAINE DEPT OF LABOR AIR QUALITY TESTING	\$ 30,000.00	OHSD
Apr-14	NIH	NCE FOR MSN148986	04/21/14	04/21/15	2014 NIH NCE Acquisition Plasma Mass Spectrometer	NO COST EXTENSION FOR PURCHASE OF MASS SPEC FROM 04/21/14 TO 04/21/15	\$ 863,714.00	EHD
Apr-14	PRASA	PRASA PO 622014983	02/14/14	02/13/15	2015 PRASA	ONGOING WORK FOR PUERTO RICO WATER AUTHORITY	\$ 5,280.00	EHD
Apr-14	SAIC LEIDOS	PO 10134877 (2)	10/31/13	09/30/14	2014 SAIC NCE	NO COST EXTENSION FROM 10/31/13 TO 09/30/14	N/A	
Apr-14	UNIV OF BUCARAMANA	PO 110401	01/01/14	12/31/14	2014 TEFION FILTERS	TEFLON AND QUARTZ FILTERS TO UNIVERSITY IN COLUMBIA	\$ 26,650.00	EHD
Apr-14	UNIV OF IOWA	po 1001265460	03/11/14	03/10/15	2015 UIOWA ECOC SAMPLES ONGOING	ATMOSPHERIC POLLUTION TRACERS	\$ 798.00	EHD
Nov-13	USGS	G 13 PX 01354 (B)	08/12/13	08/11/14	2014 USGS BENZOTRIAZOLES ANALYSIS IN WATER	INCREASE AMOUNT FROM \$2,664.00 TO \$7,770.00	\$ 7,770.00	EHD
Apr-14	WDHS	FAD 40031	10/01/12	09/29/13	2013 WDHS HABS	ONGOING HARMFUL AGAL BLOOMS WORK	\$ 9,743.40	EHD
Apr-14	WDHS	FAD 40311	08/01/13	07/31/14	2014 WDHS ELC ELR	ONGOING ELC/ELR WORK	\$ 100,000.00	CDD
Apr-14	WDHS	FAD 40246	01/01/14	12/31/14	2014 WDHS HIV	ONGOING HIV WORK	\$ 227,711.00	CDD
Apr-14	WDHS	FAD 40223	08/01/13	07/31/14	2014 WDHS INFLUENZA	ONGOING INFLUENZA WORK	\$ 49,105.00	CDD
Apr-14	WDHS	FAD 40241	08/01/13	07/31/14	2014 WDHS NON INFLUENZA	ONGOING NON-INFLUENZA WORK	\$ 90,000.00	CDD
Apr-14	WDHS	FAD 40304	01/01/14	12/31/14	2014 WDHS PHIN AVR AIDS Ehar	ONGOING PHIN AVR AIDS WORK	\$ 10,000.00	OIS
Apr-14	WDHS	FAD 40294	01/01/14	12/31/14	2014 WDHS PHIN SPHERE	ONGOING PHIN SPHERE WORK	\$ 111,133.00	OIS
Apr-14	WDHS	FAD 40259	01/01/14	12/31/14	2014 WDHS STD	ONGOING STD WORK	\$ 49,075.00	CDD
Apr-14	WDHS	FAD 40289	01/01/14	12/31/14	2014 WDHS TB	ONGOING TB WORK	\$ 116,220.00	CDD
Apr-14	WDHS	FAD 40247	07/01/13	06/30/14	2014 WDHS WBDR	WISCONSIN BIRTH DEFECTS REGISTRY	\$ 14,000.00	OIS
Apr-14	WDNR	NMD00000297	07/01/13	06/30/14	2014 WDNR CFO16 LAKE PROTECTION	INCREASE FROM \$17,079.23 TO 24,492.20	\$ 24,492.20	EHD
Apr-14	WDNR	NMD00000731	07/01/13	06/30/14	2014 WDNR DG064 PUBLIC WATER SUPPLY	ONGOING PUBLIC WATER SUPPLY WORK	\$ 20,000.00	EHD
Apr-14	WDNR	NMD00000182	07/01/13	12/31/14	2014 WDNR SS084 ASHLAND CBSRP	ONGOING ASHLAND WORK	\$ 17,406.08	EHD
Apr-14	WDNR	2014 BA	03/30/14	12/31/14	2014 WDNR SS089 OPTICAL PROPERTIES OF WISCONSIN LAKES	ONGOING WISCONSIN LAKES WORK UNDER THE BASIC AGREEMENT	N/A	EHD
Apr-14	WDNR		07/01/13	10/31/14	2014 WDNR GLO29 ULAO CREEK	ONGOING ULAO CREEK WORK	\$ 3,355.96	EHD
Apr-14	WDNR	NMD00000845	07/01/13	06/30/14	2014 WDNR RR045 MILWAUKEE SOLVAY COKE SED ANALYSIS	ONGOING SED ANALYSIS	\$ 3,000.00	EHD
Apr-14	WDNR	NMD00000918	07/01/13	06/30/14	2014 WDNR WT177 PRONYL RESIDUAL IN WATER	ONGOING PRONYL IN WATER WORK	\$ 8,000.00	EHD
Apr-14	WDNR	NMD00000861	03/13/14	03/31/15	2015 WDNR AM160 PM 2.5 MONITORING	ONGOING PM 2.5 TESTING	\$ 56,936.00	EHD
Apr-14	WESTERN FUELS	PO 197492	03/01/14	12/31/14	2014 WESTERN FUELS TESTING	PVC FILTERS TO TEST MINE AIR	\$ 7,000.00	OHSD

Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**BUSINESS ITEMS**

**Item 9. DIRECTOR'S REPORT**

- A. FY14 Meeting Calendar**
- B. Public or Environmental Health Incidents of Educational Interest**
- C. Water Systems Report**
- D. Laboratory Accreditation Updates**

**WISCONSIN STATE LABORATORY OF HYGIENE  
BOARD OF DIRECTORS  
FY14 MEETING CALENDAR**

<p><b>June 17, 2014</b>  <b>1:00p.m. – 4:00p.m.</b>  <b>Wisconsin State Laboratory of Hygiene</b>  <b>2601 Agriculture Drive, Madison, Wisconsin</b></p>	<p><b>August 19, 2014</b>  <b>TBA</b></p>
<ul style="list-style-type: none"> <li>■ Approve FY15 budget</li> <li>■ Approval of DNR/DHS Basic Agreements</li> </ul>	<ul style="list-style-type: none"> <li>■ Present FY14 year-end closeout report</li> </ul>
<p><b>November 4, 2014</b>  <b>1:00p.m. – 4:00p.m.</b>  <b>Wisconsin State Laboratory of Hygiene</b>  <b>2601 Agriculture Drive, Madison, Wisconsin</b></p>	
<ul style="list-style-type: none"> <li>■ Present FY15 1<sup>st</sup> quarter report</li> <li>■ Present annual strategic plan update</li> </ul>	

## Report to the Wisconsin State Laboratory of Hygiene Board

### Representative Public or Environmental Health Incidents of Educational Interest For the Period Jan. 30 – April 10, 2014

Approx. Date	Agent or Event Name	Description	Current Status
<b>OUTBREAKS and INCIDENTS</b>			
Feb. 2014	Shigella sonnei	At least four customers and employees of a southern Wisconsin restaurant had GI illness. WSLH, local and state public health investigated and Shigella sonnei was determined to be the cause of the illness. The WSLH tested specimens from more than 100 restaurant employees as part of the investigation.	Complete
Feb. 2014	Measles	A Grant County resident who traveled out of state and internationally was diagnosed with measles after being treated at UW Hospital. WSLH, WDPH, Public Health Madison-Dane County, Grant County Health Department and the CDC collaborated on the investigation and response. No further cases identified at this time.	Complete
March 2014	Mumps	Four cases of mumps have been diagnosed in Wisconsin (1 in SE Wisconsin and 3 at UW-Madison). WSLH, local and state health departments and UW University Health Services are collaborating on the response.	Ongoing
<b>RECENT EVENTS and FINDINGS</b>			
Jan. 27, 2014	Micro 101: Basic Water Microbiology, Indicators, Sampling and Testing	Organized by WSLH Environmental Microbiology Director Dr. Sharon C. Long and co-taught by Jeremy Olstadt, Jennifer Allan, Sharon Kluender and Sharon Long from the WSLH Water Microbiology Unit. The target audience was DNR, DHS, and other county public health staff involved in water quality. Approximately 51 guests and 6 WSLH staff attended (webinar and in-person). WSLH Public Affairs live-streamed the webcast for those not able to attend in person and archived the session on the WSLH website.	Complete
Feb. 2014	Lean Six Sigma	Lean Six Sigma Process for Forensic Toxicology	Ongoing –



	Process for Toxicology	Section completed with aid of UW-Madison.	implementation has started in some areas, hope for full implementation by the end of Spring 2014
Feb. 4, 2014	Activated Sludge Workshop at MWIE (Central States Water Environment Association)	Dr. Sharon C. Long served on the Planning Committee and presented a module titled “Emerging Diagnostics – A Sneak Peak at How Tomorrow’s Technologies are Being Used at the University of Wisconsin Today.” Approximately 40+ Operators and Engineers attended. CEU and PE credits were awarded.	Complete
Feb. 12, 2014	Wisconsin Clinical Laboratory Network -- Communicable Disease Division	The WSLH presented an audio conference entitled “ <i>Overview of CLSI Document M35-A2 for Bench-level Identification of Clinically-significant Microorganisms</i> ”. Dr. Erik Munson, Technical Director at Wheaton Franciscan Laboratories in Milwaukee, provided guidance on bench-level biochemical testing in the clinical microbiology laboratory. His presentation focused on incorporating spot biochemical testing into same-day algorithms resulting in accurate identification of clinically-significant bacterial and yeast isolates. Roughly 179 clinical laboratorians attended the live audio conference. The audio conference has been posted in the WSLH archived past events for those who were unable to attend the live audio conference.	Complete
Feb. 26, 2014	Dr. Curtis Hedman – UW Wednesday Nite @ the Lab lecture	WSLH Assistant Scientist Dr. Curtis Hedman gave a UW Wednesday Nite @ the Lab lecture on research he conducted with UW-Milwaukee Associate Professor Dr. Rebecca Klaper that found traces of prescription drugs in Lake Michigan miles offshore from Milwaukee. Lecture video link -- <a href="http://video.wpt.org/video/2365203807/">http://video.wpt.org/video/2365203807/</a>	Complete
March 13, 2014	HFUF Training Workshop: A Component of the WI Well Assessment Protocol	Organized by Mark D. Walter (MS Candidate) and co-taught by Mark D. Walter, Jeremy Olstadt, Jamie Stietz and Dr. Sharon C. Long of the WSLH Water Microbiology Unit. Training session was part of a collaborative project with the DNR Public Water Supply Section. Involved the PWS Section Chief, Steve Elmore, and seven select DNR staff. WSLH Public Affairs shot “how-to” video with the	Complete

		scientists to use as part of the training, as well as be archived on the WSLH website.	
March 19, 2014	Wisconsin Clinical Laboratory Network -- Communicable Disease Division	Approximately 118 clinical laboratorians participated in the WSLH audio conference “2014 Update: STEC Diagnosis and Surveillance in Wisconsin”. Tim Monson and Mike Rauch from the WSLH Communicable Disease Division collaborated in a presentation on the presence of Shiga toxin-producing <i>E. coli</i> (STEC) in Wisconsin, reporting on some of the recent STEC studies that the WSLH has participated in and on our surveillance activities. Tim and Mike also reviewed the various diagnostic tests that are available for the detection of STEC for the clinical laboratories. The audio conference has been posted in the WSLH archived past events for those who were unable to attend the live audio conference.	Complete
March 20, 2014	Beneficial Reuse and Pathogen Risk	Organized by Dr. Sharon C. Long and co-taught by Zachary Carroll (Dissertator), Tom Bauman (DNR) and Sharon Long. The target audience was DNR, DHS, and other county public health staff involved in water quality. Approximately 32 guests and 3 WSLH staff attended (webinar and in-person). WSLH Public Affairs live-streamed the webcast for those not able to attend in person and archived the session on the WSLH website.	Complete
March 24, 2014	Micro 201: Higher Level Microbial Testing and Fecal Source Tracking	Organized by Dr. Sharon C. Long and co-taught by Jeremy Olstadt, Jamie Stietz and Sharon Long. The target audience was DNR, DHS, and other county public health staff involved in water quality. Approximately 63 guests and 6 WSLH staff attended (webinar and in-person). WSLH Public Affairs live-streamed the webcast for those not able to attend in person and archived the session on the WSLH website.	Complete
March 25, 2014	Metals –ICP Training	<p>WSLH Metals Supervisor DeWayne Kennedy-Parker and DNR Program Chemist Rick Mealy gave an all-day training session on interference correction in ICP analysis for labs certified by DNR.</p> <p>The session was offered by the WSLH and the DNR Laboratory Certification Program and sponsored by the Wisconsin Environmental Laboratories Association (WELA). WSLH Public Affairs Unit recorded the session for posting on the website for later viewing by attendees or those who</p>	Complete

		could not attend in person.	
March 27, 2014	UW Global Health course tour	<p>Nine students in the UW Global Health and Communicable Diseases course toured the Communicable Disease Division. This is the 2<sup>nd</sup> year for students from the course to tour CDD. Tour guides included Dr. Dave Warshauer, Jared Shelerud and Mei Chen from CDD and Jan Klawitter from WSLH Public Affairs.</p> <p>Trivia note: The instructor for the course, Joanne Weber, is a retired UW Medical Microbiology and Immunology faculty member who teaches this one course every spring as part of the Global Health certificate program. She also taught several of our WSLH microbiologists in their UW student days.</p>	Complete
April 9, 2014	Wisconsin Clinical Laboratory Network -- Communicable Disease & Proficiency Testing Divisions	<p>On April 9, 2014 the WSLH provided an audio conference for Wisconsin Sentinel Clinical Laboratories entitled “<i>2014 Updates: Completing the New Bioterrorism Proficiency Testing Result Form and Changes to the Rule-out Algorithms</i>”. Erin Bowles from the Communicable Disease Division and Amanda Weiss from WSLH Proficiency Testing teamed up for the presentation. After reviewing the Sentinel Clinical Laboratories role in the Laboratory Response Network (LRN) and providing updated information on revisions that have been made to testing protocols, the presentation focused on the changes that have been made to the educational bioterrorism proficiency testing exercise that will be sent out to the enrolled clinical laboratories later this month. About 30 clinical laboratories registered for the live audio conference. The presentation was recorded and will be posted in the WSLH archived past events for laboratories that were not able to participate in the live event.</p>	Complete

Wisconsin State Laboratory of Hygiene  
Board of Directors Meeting  
April 29<sup>th</sup>, 2014

**Report to the  
Wisconsin State Laboratory of Hygiene Board  
Water Systems Tests by the WSLH  
For the period January 1 – March 31, 2014**

Number of systems on a boil water notice	12
Number of water systems tested	2587
Percent of systems on a boil water notice	0.5%
Number of boil water notices for <u>municipal community water</u> systems.	0
Number of boil water notices for <u>other than a municipal community water</u> system	0
Number of boil water notices for <u>non-transient, non-community</u> water systems.	2
Number of boil water notices for <u>transient water systems</u> .	10

	# of systems tested by SLH				# of Boil Water Notices			
	MC	OC	NN	TN	MC	OC	NN	TN
Adams	3	0	0	0	0	0	0	0
Ashland	3	0	1	1	0	0	0	0
Barron	1	0	1	0	0	0	0	0
Bayfield	3	1	1	0	0	0	0	0
Brown	9	0	0	1	0	0	0	0
Buffalo	3	0	0	0	0	0	0	0
Burnett	0	0	1	0	0	0	0	0
Calumet	8	0	1	0	0	0	0	0
Chippewa	1	2	0	4	0	0	0	0
Clark	6	1	1	0	0	0	0	0
Columbia	10	2	7	7	0	0	0	0
Crawford	5	0	0	0	0	0	0	0
Dane	33	9	6	4	0	0	0	0
Dodge	16	0	6	6	0	0	0	0
Door	3	1	2	58	0	0	0	1
Douglas	0	0	1	0	0	0	0	0
Dunn	0	0	0	0	0	0	0	0
Eau Claire	0	0	0	0	0	0	0	0
Florence	1	0	1	0	0	0	0	0
Fond Du Lac	8	1	3	1	0	0	0	0
Forest	4	0	0	0	0	0	0	0
Grant	13	2	2	3	0	0	0	0
Green	8	0	3	0	0	0	0	0
Green Lake	5	1	1	2	0	0	0	0
Iowa	8	0	4	1	0	0	0	0
Iron	5	0	0	0	0	0	0	0
Jackson	3	0	1	3	0	0	0	0
Jefferson	6	3	1	1	0	0	0	0
Juneau	10	2	0	2	0	0	0	0
Kenosha	0	5	5	0	0	0	0	0
Kewaunee	3	0	1	1	0	0	0	0
La Crosse	0	2	2	0	0	0	0	0
Lafayette	6	0	0	0	0	0	0	0
Langlade	1	1	0	1	0	0	0	1
Lincoln	3	0	0	0	0	0	0	0
Manitowoc	6	2	4	4	0	0	0	0
Marathon	3	1	2	0	0	0	0	0
Marinette	7	1	2	0	0	0	0	0
Marquette	1	0	1	2	0	0	0	0
Menominee	0	0	0	0	0	0	0	0
Milwaukee	2	2	2	0	0	0	0	0
Monroe	6	2	0	0	0	0	0	0
Oconto	5	0	1	1	0	0	0	0
Oneida	1	3	0	0	0	0	0	0
Outagamie	9	0	0	0	0	0	0	0
Ozaukee	2	4	3	3	0	0	0	0
Pepin	0	0	0	0	0	0	0	0
Pierce	2	1	2	1	0	0	0	0
Polk	0	0	0	1	0	0	0	0
Portage	4	1	5	0	0	0	0	0
Price	3	0	0	0	0	0	0	0
Racine	1	1	6	21	0	0	0	0
Richland	6	0	1	1	0	0	0	0
Rock	7	4	4	5	0	0	0	1
Rusk	2	1	0	0	0	0	0	0
Sauk	11	2	2	2	0	0	0	0
Sawyer	3	1	0	0	0	0	0	0
Shawano	9	0	1	3	0	0	0	0
Sheboygan	8	0	3	3	0	0	0	0
St. Croix	2	1	1	0	0	0	0	0
Taylor	2	0	1	0	0	0	0	0
Trempealeau	6	1	1	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0
Vernon	4	0	1	0	0	0	0	0
Vilas	3	3	0	0	0	0	0	0
Walworth	2	1	2	4	0	0	0	1
Washburn	1	1	1	7	0	0	0	0
Washington	2	5	4	0	0	0	0	0
Waukesha	4	4	8	1	0	0	0	0
Waupaca	8	0	2	0	0	0	0	0
Waushara	4	0	0	1	0	0	0	0
Winnebago	4	1	2	0	0	0	0	0
Wood	5	4	3	2	0	0	0	0

## January 2014

### Report on Public Water System Testing

MC is municipal community water system which means a water system which serves at least 15 service connections used by year round residents or regularly serves at least 25 year round resident and is owned by a county, city, village, town, town sanitary district, or utility district.

OC is other than municipal community water system which means a community water system that is not a municipal water system. Examples of other than municipal community water systems include but are not limited to those serving mobile home parks, apartments and condominiums.

NN is non-transient non-community water system which means a non-community water system that regularly serves at least 25 of the same persons over 6 months per year. Examples of non-transient non-community water systems include those serving schools, day care centers and factories.

TN is non-community transient water system which means a non-community water system that serves at least 25 people at least 60 days of the year. Examples of transient non-community water systems include those serving taverns, motels, restaurants, churches, campgrounds and parks.

	# of systems tested by SLH				# of Boil Water Notices			
	MC	OC	NN	TN	MC	OC	NN	TN
Adams	3	1	0	0	0	0	0	0
Ashland	3	0	1	0	0	0	0	0
Barron	1	2	0	0	0	0	0	0
Bayfield	2	0	0	0	0	0	0	0
Brown	9	0	6	0	0	0	0	0
Buffalo	3	0	3	0	0	0	0	0
Burnett	0	0	1	0	0	0	0	0
Calumet	8	0	0	3	0	0	0	0
Chippewa	0	1	0	3	0	0	0	0
Clark	5	1	4	0	0	0	0	0
Columbia	10	0	4	2	0	0	0	0
Crawford	5	1	0	0	0	0	0	0
Dane	33	8	11	5	0	0	0	0
Dodge	15	2	8	7	0	0	0	3
Door	3	0	1	33	0	0	0	1
Douglas	0	0	1	0	0	0	0	0
Dunn	0	0	0	0	0	0	0	0
Eau Claire	0	0	0	0	0	0	0	0
Florence	1	0	1	0	0	0	0	0
Fond Du Lac	8	3	0	0	0	0	0	0
Forest	4	0	0	0	0	0	0	0
Grant	13	4	1	2	0	0	0	0
Green	8	1	3	0	0	0	0	0
Green Lake	5	0	1	1	0	0	0	0
Iowa	8	1	2	1	0	0	0	0
Iron	5	0	0	0	0	0	0	0
Jackson	3	0	2	2	0	0	0	0
Jefferson	6	3	8	20	0	0	0	0
Juneau	10	3	0	2	0	0	0	0
Kenosha	0	10	11	0	0	0	0	0
Kewaunee	3	1	3	0	0	0	0	0
La Crosse	0	3	3	1	0	0	0	0
Lafayette	6	0	0	0	0	0	0	0
Langlade	1	0	3	0	0	0	0	0
Lincoln	3	0	0	1	0	0	0	0
Manitowoc	6	2	1	10	0	0	0	0
Marathon	2	0	3	1	0	0	0	0
Marinette	7	1	1	0	0	0	0	0
Marquette	1	2	6	4	0	0	0	0
Menominee	0	0	0	0	0	0	0	0
Milwaukee	2	1	0	0	0	0	0	0
Monroe	6	2	1	1	0	0	0	0
Oconto	5	3	4	4	0	0	0	0
Oneida	1	3	0	0	0	0	0	0
Outagamie	9	0	1	1	0	0	0	0
Ozaukee	2	7	16	1	0	0	0	0
Pepin	0	0	1	0	0	0	0	0
Pierce	1	0	3	1	0	0	0	0
Polk	0	0	0	0	0	0	0	0
Portage	4	1	2	0	0	0	0	0
Price	3	0	0	0	0	0	0	0
Racine	1	4	7	10	0	0	0	0
Richland	5	0	2	0	0	0	0	0
Rock	7	4	7	9	0	0	0	1
Rusk	2	0	0	0	0	0	0	0
Sauk	10	2	5	3	0	0	0	0
Sawyer	2	0	1	0	0	0	0	0
Shawano	9	0	1	2	0	0	0	0
Sheboygan	8	0	0	0	0	0	0	0
St. Croix	2	3	3	3	0	0	0	0
Taylor	1	0	0	0	0	0	0	0
Trempealeau	6	1	1	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0
Vernon	4	1	0	0	0	0	0	0
Vilas	3	3	1	0	0	0	0	0
Walworth	2	3	5	5	0	0	0	0
Washburn	1	0	0	0	0	0	0	0
Washington	1	5	3	0	0	0	0	0
Waukesha	5	5	13	1	0	0	0	0
Waupaca	7	0	3	3	0	0	0	0
Waushara	4	0	0	0	0	0	0	0
Winnebago	4	0	0	0	0	0	0	0
Wood	5	1	4	0	0	0	0	0

## February 2014

### Report on Public Water System Testing

MC is municipal community water system which means a water system which serves at least 15 service connections used by year round residents or regularly serves at least 25 year round resident and is owned by a county, city, village, town, town sanitary district, or utility district.

OC is other than municipal community water system which means a community water system that is not a municipal water system. Examples of other than municipal community water systems include but are not limited to those serving mobile home parks, apartments and condominiums.

NN is non-transient non-community water system which means a non-community water system that regularly serves at least 25 of the same persons over 6 months per year. Examples of non-transient non-community water systems include those serving schools, day care centers and factories.

TN is non-community transient water system which means a non-community water system that serves at least 25 people at least 60 days of the year. Examples of transient non-community water systems include those serving taverns, motels, restaurants, churches, campgrounds and parks.

	# of systems tested by SLH				# of Boil Water Notices			
	MC	OC	NN	TN	MC	OC	NN	TN
Adams	4	2	0	0	0	0	0	0
Ashland	3	0	0	0	0	0	0	0
Barron	1	4	8	0	0	0	0	0
Bayfield	2	1	2	0	0	0	0	0
Brown	9	1	1	5	0	0	0	0
Buffalo	3	0	0	0	0	0	0	0
Burnett	0	1	0	1	0	0	0	0
Calumet	8	2	2	2	0	0	0	0
Chippewa	0	2	3	2	0	0	0	0
Clark	7	1	3	2	0	0	0	0
Columbia	10	5	3	8	0	0	0	0
Crawford	6	1	0	0	0	0	0	0
Dane	33	11	12	2	0	0	0	0
Dodge	16	4	11	8	0	0	0	0
Door	3	1	5	134	0	0	0	0
Douglas	0	0	0	10	0	0	0	0
Dunn	0	3	0	1	0	0	0	0
Eau Claire	0	6	8	0	0	0	0	0
Florence	1	0	0	0	0	0	0	0
Fond Du Lac	8	8	4	6	0	0	0	0
Forest	4	0	0	1	0	0	0	0
Grant	13	5	2	7	0	0	0	0
Green	8	0	1	2	0	0	0	0
Green Lake	5	1	5	2	0	0	0	0
Iowa	8	1	3	6	0	0	0	0
Iron	5	0	0	2	0	0	0	0
Jackson	3	0	1	9	0	0	0	0
Jefferson	6	7	6	23	0	0	0	0
Juneau	10	3	2	3	0	0	0	0
Kenosha	0	12	11	4	0	0	0	0
Kewaunee	3	0	3	2	0	0	0	0
La Crosse	0	3	3	1	0	0	0	0
Lafayette	6	0	0	1	0	0	0	0
Langlade	1	1	0	2	0	0	0	0
Lincoln	3	0	1	0	0	0	0	0
Manitowoc	6	3	11	4	0	0	0	0
Marathon	3	0	4	0	0	0	0	0
Marinette	7	1	1	10	0	0	0	0
Marquette	1	1	1	4	0	0	0	0
Menominee	0	0	0	0	0	0	0	0
Milwaukee	2	2	3	57	0	0	0	1
Monroe	6	3	3	6	0	0	0	0
Oconto	5	2	1	3	0	0	0	0
Oneida	1	5	4	4	0	0	0	0
Outagamie	9	0	2	0	0	0	0	0
Ozaukee	2	5	11	7	0	0	1	0
Pepin	0	1	1	0	0	0	0	0
Pierce	2	1	4	0	0	0	0	0
Polk	1	0	0	0	0	0	0	0
Portage	4	4	3	0	0	0	0	0
Price	3	1	2	0	0	0	0	0
Racine	1	1	15	15	0	0	0	0
Richland	6	0	3	4	0	0	0	0
Rock	7	11	8	29	0	0	0	0
Rusk	2	0	1	0	0	0	0	0
Sauk	10	0	1	1	0	0	0	0
Sawyer	2	0	3	0	0	0	0	0
Shawano	9	1	0	1	0	0	0	0
Sheboygan	8	1	6	4	0	0	0	0
St. Croix	2	1	3	2	0	0	0	0
Taylor	1	0	0	0	0	0	0	0
Trempealeau	6	2	0	1	0	0	0	0
Unknown	0	0	0	0	0	0	0	0
Vernon	4	0	0	2	0	0	0	0
Vilas	3	4	1	3	0	0	0	0
Walworth	3	1	5	10	0	0	0	0
Washburn	1	0	1	1	0	0	0	0
Washington	1	5	7	2	0	0	0	0
Waukesha	4	5	15	20	0	0	0	0
Waupaca	7	2	3	0	0	0	0	0
Waushara	4	1	5	11	0	0	0	0
Winnebago	4	0	2	0	0	0	0	0
Wood	5	1	4	0	0	0	1	0

## March 2014

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