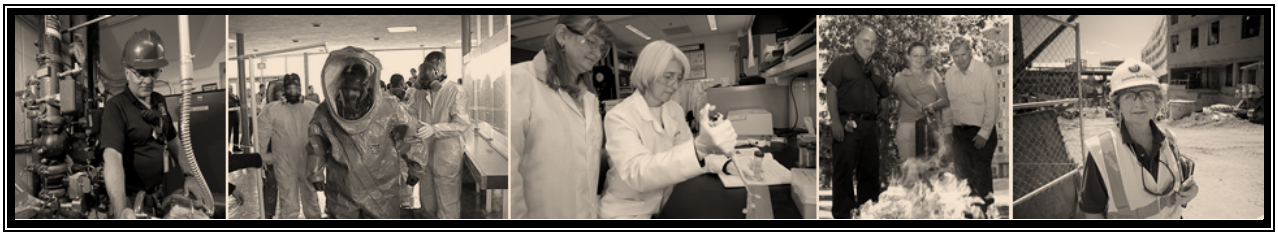
UMASS AMHERST



Environmental Health and Safety

Promoting a safe and healthful environment for living, learning and working

FY14 ANNUAL REPORT

Program Leadership

Donald Robinson, Executive Director

Edward Mientka, Associate Director, Campus Safety and Fire Prevention Program Manager

Christine Rogers, Assistant Director, Academic Safety and Environmental Health

Theresa Wolejko, Assistant Director, Environmental and Hazardous Materials Management Services

Jeffrey Hescock, Director of University Emergency Management and Business Continuity

CONTENTS

Message from the Executive Director, Donald A. Robinson, Ph.D.

Last year I started my report with a bit of nostalgia, so indulge me once again to reminisce about the history of EH&S. My beginnings with EH&S as director started in 1975 with a staff of 7 employees including George Reed (Environmental Health), Jay Stryker (Radiation), Ed Goetzl (Fire Safety), Roger Chouinard (Fire Safety), Maria Coach (Secretary) and Bob Gleason (Safety Officer and former director). Our total organizational state budget was a little over $100K. At that time, we were housed in Health Services having moved there from Brooks Dormitory. Fast forward almost 40 years and the changes are astounding. We are now a 40 person organization with a budget exceeding $3 million. It is hard to understand how far we have come unless you have been on this four decade trek. Suffice it to say it has been an amazing journey and, being in the winter of my life, I think increasingly about succession planning and finishing well. We did pass our 50th organizational founding milestone in June 2014 with little fanfare. However, it is a significant event given the evolution of our department and the sustained support we have received from the campus community.

EH&S is now a nationally recognized full-fledged professional services organization with a full array of programs encompassing Fire Safety, Occupational Health and Safety, Academic Safety, Environmental Services, and Emergency Management and Business Continuity. We serve as the flagship EH&S organization and have, particularly this year, provided expertise and services to the other UMass campuses.

FY14 has been an extension of initiatives begun previously. The new EH&S services software tool continues to be rolled out to provide an assessment tool, a compliance calendar and an event tracking feature. The software, presented to the other UMass campuses, was well received. Glitches remain to be worked out but, when fully operational, it should substantially improve our service delivery mission. We are ever mindful of the terrible fatal lab fire at UCLA that has, on a national level, heightened concerns about lab safety in terms of training, protocols, and personal protective equipment. Much in enhancing lab safety remains to be done.

Our accomplishments have been the result of dedicated staff and institutional support. In terms of staffing during FY14, we promoted Gary Ritter (Lab/Industrial Hygiene Program Head), hired Jeffrey Hescock (Director, University Emergency Management and Business Continuity) and Shaina Kosloski (Environmental Compliance Services Technician).

I invite you to read this full report to better appreciate the dedicated work of the EH&S staff.

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AMHERST

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A Policy of Environmental Health & Safety

It is a policy of the University of Massachusetts at Amherst to maintain, insofar as it is reasonable and within its control, an environment for its faculty, staff, students, and visitors that does not adversely affect their health and safety. In support of this policy the University will give high priority, appropriate support, and steady implementation to eliminate where possible, or to reduce to acceptable limits, environmental and occupational hazards that are a threat to the health and safety of personnel or to property.

The ultimate responsibility for the campus safety and environmental health rests with the Chancellor. The Chancellor has delegated to each dean, director, chairperson, and supervisor the responsibility for safety performance within their respective unit. Everyone with supervisory responsibility will be expected to take the initiative so that safe working conditions are maintained, and to request the assistance of the Department of Environmental Health and Safety to expedite action when necessary. Each supervisor must take the initiative to train the employees and students under his/her supervision in safe work practices. In particular, supervisors should ensure that employees and students know (a) all potentially hazardous conditions associated with the operation and the method established to control them, (b) all safety regulations for the area of operation. In addition, supervisors are expected to promote a safety attitude and awareness that will lead employees and students working under their supervision to take a safe course when faced with situations which are not covered by established regulations and practices.

It is incumbent upon each member of the faculty, staff, and student body to provide the constant vigilance necessary to avoid unsafe acts on his/her part. Faculty, staff, and students have an obligation to take all reasonable precautions to prevent injury to themselves or to their fellow employees or students. They are expected to learn and to follow approved standards and procedures which apply to their activities, and to check with their supervisors when they have any doubts concerning potential hazards.

The Chancellor has delegated to the Director of Environmental Health and Safety the responsibility and authority for assuming overall compliance with applicable* health and safety standards on campus. The Director shall adopt as guides applicable health and safety standards promulgated by Federal and State agencies in establishing campus regulations and policy. Published standards of nationally recognized professional health and safety groups may serve as guidelines in the absence of appropriate statutes and governmental regulations. The Department of Environmental Health and Safety is responsible for working with and through academic and service units by identifying and assisting in resolving health and safety problems, recommending standards, evaluating and reporting on the status of compliance with standards, providing technical and support services, recommending necessary modifications, recording, analyzing and reporting accident experience, and developing training resources.

***Applicability will be determined in consultation with the appropriate faculty committees.**

In emergency situations and when required to do so by code, regulation, or licensure agreement, the Director of Environmental Health and Safety or his/her representative, in consultation with the appropriate Dean or Director, may require the immediate halt or control of practices or conditions that have been determined to constitute an immediate and serious risk of death or serious harm to members of the campus community. Such actions may be appealed to the Chancellor who will make the final determination as to whether the practices may be reinstated.

The University Health Council serves as a referral board for all advisory and administrative committees related to the matters of environmental health and safety and shall review and recommend changes in University policies pertaining to Environmental Health and Safety issues.

Specific committees on Radiation Safety, Biological Safety, Chemical Safety, and Animal Care which report administratively to the Vice Chancellor for Research and Engagement shall be responsible for reviewing and recommending specific operational policies and practices within their area of expertise. In addition, they may advise the Director of Environmental Health and Safety regarding the application of relevant standards for hazards control.

Kumble R. Subbaswamy, Chancellor
University of Massachusetts Amherst

November 2013

Environmental Health & Safety (AMBU404500)

Summmary of June 30, 2014

	NON-PAYROLL				PAYROLL				ALL BUDGET	REVENUE			BUDGET + REVENUE	R&R
	OPS	HW	Total CS, AS, EP/BC	ALL NON-PAYROLL	OPS	HW	Total CS, AS, EP/BC	TOTAL PAYROLL		OPS	HW	TOTAL REVENUE		
Department ID	A735500000	A735501000	A735504 - A735506	Total	A735500000	A735501000	A735504 - A735506	Total	Total	A735500000	A735501000	Total	Total	A735500000
Base - Original Budget Allocation	(91,679)	446,551	245,088	599,961	408,271	272,503	1,373,899	2,054,673	2,654,634	-	-	-	2,654,634	
FY14 Additional base	-		-	-			-	-	-	-	-	-	-	
Base Transactions (1)	(35,000)	108,718	33,000	106,718	6,432	6,724	119,147	132,303	239,021	-	-	-	239,021	
Non-Base Transactions (2)	243,366	20,963	(59,604)	204,725	(148,317)	(2,512)	44,934	(105,895)	98,830	-	-	-	98,830	-
Revenue/Transfer in to R&R			-	-				-	-	312,684	19,667	332,351	332,351	30,000
Total Budget/Revenue Available	**116,688**	**576,232**	**218,484**	**911,404**	**266,386**	**276,714**	**1,537,980**	**2,081,080**	**2,992,484**	**312,684**	**19,667**	**332,351**	**3,324,835**	**30,000**
Expenditures									-			-	-	
AA Regular Employee Compensation		4,028	15,145	19,173	263,367	273,519	1,520,295	2,057,181	2,076,354	191,353	-	191,353	2,267,707	-
CC Payroll Operational Services--Students & Contracted	4,328	28,671	72,369	105,368			-	-	105,368	26,037	-	26,037	131,404	-
DD Fringe Benefits and Pension and Insurance	38	521	993	1,552	4,504	4,677	25,997	35,178	36,730	32,835	-	32,835	69,566	-
BB Employee Related Expenses	2,402		12,883	15,285			-	-	15,285	-	-	-	15,285	-
EE Administrative Expenses	53,570	4,798	69,269	127,637			-	-	127,637	2,900	-	2,900	130,537	-
FF Facility Operational Expenses	8,363	6,888	25,760	41,010			-	-	41,010	-	-	-	41,010	-
GG Energy and Space Rental (Fuel for Vehicles)	13,739	35,890	-	49,629			-	-	49,629	-	-	-	49,629	-
JJ Operational Services (Trainers--Ops; Lab Svcs.--HW)			247	247				-	247	-	4,160	4,160	4,407	-
KK Equipment Purchases	2,025		-	2,025				-	2,025	-	-	-	2,025	69,722
LL Equipment Lease and Maintenance	23,538	1,842	16,439	41,819				-	41,819	-	-	-	41,819	48,986
NN Infrastructure and Land--HW Removal		361,679	39	361,718				-	361,718	-	14,051	14,051	375,768	-
UU Information Technology	1,224		984	2,208				-	2,208	-	-	-	2,208	-
Subtotal Expenditures	**109,227**	**444,317**	**214,128**	**767,672**	**267,871**	**278,196**	**1,546,292**	**2,092,359**	**2,860,031**	**253,124**	**18,211**	**271,335**	**3,131,366**	**118,708**
Surplus/(Deficit) Before Transfers to R&R	**7,461**	**131,915**	**4,356**	**143,732**	**(1,484)**	**(1,482)**	**(8,312)**	**(11,279)**	**132,453**	**59,559**	**1,457**	**61,016**	**193,469**	**(88,708)**
Transfers to R&R/Out	**0**		**(732)**	(732)	0		-	0	(732)	30,000	-	30,000	29,268	
Projected Surplus/(Deficit) Before BBA	**7,461**	**131,915**	**5,088**	**144,463**	**(1,484)**	**(1,482)**	**(8,312)**	**(11,279)**	**133,185**	**29,559**	**1,457**	**31,016**	**164,201**	**(88,708)**
BBA	3,073	95,050	71,557	169,679			-	0	169,679	41,515	7,527	49,042	218,721	145,163
Balance after BBA	**10,533**	**226,964**	**76,644**	**314,142**	**(1,484)**	**(1,482)**	**(8,312)**	**(11,279)**	**302,863**	**71,075**	**8,983**	**80,058**	**382,921**	**56,455**
Encumbrances--per UMGL7045	0	-	-	0	0	-	-	0	-		-	-	-	-
Balance after BBA and Encumbrances	**10,533**	**226,964**	**76,644**	**314,142**	**(1,484)**	**(1,482)**	**(8,312)**	**(11,279)**	**302,863**	**71,075**	**8,983**	**80,058**	**382,921**	**56,455**
UMGL 7045	10,533	226,964	76,644	314,142	(1,485)	(1,482)	(8,313)	(11,280)	302,862	71,075	8,983	80,058	382,920	56,455
	(0)	-	(0)	0	(0)	(0)	(1)	(1)	(1)	-	-	-	(1)	-

	NON-PAYROLL				PAYROLL				TOTAL BUDGET	REVENUE			BUDGET + REVENUE	R&R
	OPS	HW	Total CS, AS, EP/BC	TOTAL ALL NON-PAYROLL	OPS	HW	Total CS, AS, EP/BC	TOTAL PAYROLL		OPS	HW	TOTAL REVENUE		
Department ID	A735500000	A735501000	A735504 - A735506	Total EH&S	A735500000	A735501000	A735504 - A735506	Total EH&S		A735500000	A735501000	Total EH&S	Total EH&S	A735500000
	10,533	**226,964**	**76,644**	**314,142**	**(1,484)**	**(1,482)**	**(8,312)**	**(11,279)**	**302,863**	**71,075**	**8,983**	**80,058**	**382,921**	**56,455**
(1) Summary of Base Transactions														
Distribute State and GOF base allocations from Ops to Depts.	**(91,679)**	446,551	**210,088**	**564,961**	**408,271**	272,503	**1,373,899**	**2,054,673**	**2,619,634**					
PcB Monitoring	**-**		**28,000**	**28,000**			**-**	**-**	**28,000**					
LSL funding		108,718												
C.S. Salary	**(35,000)**													
COLA			**-**	**0**			**-**	**-**	**0**					
Salary Increases			**-**	**0**	**6,432**	6,724	**42,864**	**56,020**	**56,020**					
Totals	**(126,679)**	555,269	**238,088**	**592,961**	**414,703**	279,226	**1,416,763**	**2,110,693**	**2,703,654**					
(2) Summary of Non-Base Transaction														
P/B HW and AS FY13 Balances	**95,050**	(95,050)	**-**	**0**			**-**	**-**	**-**					-
Lab Decom funding	**-**	113,500	**-**	**113,500**			**-**	**-**	**113,500**					
NB P/B LSL Salary			**-**	**0**			**(14,670)**	**(14,670)**	**(14,670)**					
NB Pull back 12/31 Salary Increase (EP/BC -- NB Pullback unused salary)			**-**	**0**			**-**	**-**	**-**					
F1 Uniforms			**-**	**0**										
Mid Year Trades	**147,232**	1,030	**(66,913)**	**81,349**	(147,231.99)	(1,030.12)	**66,913**	**(81,349)**	**-**					
3rd QTR trades			**-**	**0**			**-**	**-**	**-**					
4th Quarter Trades	**1,085**	1,482	**7,309**	**9,876**	**(1,085)**	(1,482)	**(7,309)**	**(9,876)**	**-**					
Totals	**243,366**	**20,963**	**(59,604)**	**204,725**	**(148,317)**	**(2,512)**	**44,934**	**(105,895)**	**98,830**					

Academic Safety and Environmental Health Program supports the research and teaching mission of the University by assisting faculty, staff and students in maintaining safe work, research, studio, and laboratory environments and ensuring compliance with various state and federal standards and regulations. The program ensures that the University maintains compliance with state sanitary and food codes in our dining commons, academic buildings, residence halls and family housing.

The Biosafety Program oversees biological research at the UMass Amherst. It covers biosafety training, designation of laboratory biosafety level, protocol review for compliance committees, assurance of compliance for purchasing biological agents, and field research safety with sessions in the classroom and online. Challenges unique to biomedical and biotechnology research such as the potential to transmit infectious diseases or the possible risks of working with genetically altered microorganisms are addressed by this program. The Biosafety Program collaborates closely with University faculty to help develop safe research protocols in compliance with federal and state regulations.

FY14 BIOSAFETY METRICS	TOTAL
Biosafety Cabinets	
New reports retrieved/entered into database	230
BSC decontaminations planned/completed	22
Number of BSCs certified (assisted in scheduling; PO number retrieval)	202
BSC certification issues resolved (schedule, billing, wrapping, decon)	48
Training Checks	
Number of people identified for training checks	1,690
Number of people contacted for updating online and/or classroom trainings	1,125
Number of training issues resolved	150
Biosafety Trainings	
Number of people trained in Biological Safety	1,028
Number of training sessions conducted	53
Number of people trained in Non-Human Primate Biological Safety	20
Number of training sessions conducted	18
Respirator Fit Tests	
Number of people contacted for respirator fit tests	314
Number of respirator fit tests	197
Number of people fit, trained and issued cards	125
Lab Assessments	
Number of visits without written assessment (consult re: space, equipment)	174
Number of biosafety lab assessments conducted	18
Number of biosafety lab assessment reports completed	11
Number of biosafety lab assessment reports followed up for corrective actions	6

Trainings Attended	
HAZWOPER	18
Other	89
Lab Incident Investigations	
Number of lab incidents investigated	30
Incident investigation meetings	31
Number of lab incident investigation reports completed	21
Lab incident investigation reports followed up for corrective actions	13
Meetings Attended	
Meetings with PIs/Consults on campus	79
Construction Safety/Contractor oversight	68
IBC/IACUC/Infection Control/Occ. Health	58
OWL	9
Protocol Reviews	
IBC/IRB/IACUC/Shipping	141
Other	
Spill response	2
Transport or order supplies	331
Select Agent Tasks	86
SOP's written	9
Policies Evaluated	24
Created Training PowerPoint	3
Autoclave Audits/visits	21

Laboratory Chemical Safety and Industrial Hygiene (LCSIH) assesses hazards, evaluates chemical risks, manages chemicals, reviews research protocols, investigates laboratory incidents and provides industrial hygiene consultative services throughout the campus. LCSIH provides safety training to all University personnel, contractors and students working in laboratories ensuring that affected employees and students are aware of the risks, hazards, PPE requirements and other controls associated with working in laboratories.

Other responsibilities include: investigating laboratory incidents, regular inspections of emergency drench showers and eyewash stations, ventilation systems and laboratory fume hoods, responding to indoor air concerns, odor issues, workplace exposure assessments, noise issues and participating in the emergency response program.

FY14 LCSIH STATISTICS
>>Investigations<<
43 Odor**;** 92 Industrial Hygiene**;**
36 Mold**;** 30 Indoor Air Quality
>>Evaluations<<
51 Noise

LCSIH provides guidance to campus construction projects to ensure they are conducted safely with adequate exposure controls. During FY14, a campus-wide Hearing Conservation Program was initiated to reduce potential hearing loss among UMass employees. The program monitors noise levels in the workplace, verifies that hearing protection is adequate, and provides audiometric testing to affected employees.

LCSIH presented the Hearing Conservation Program at the *OSHA 2014 Summer Summit Program* hosted by UMass Amherst.

Institutional Chemical Safety Committee (ICSC) consists of representatives from each academic department who provide senior guidance on the implementation of the campus-wide Chemical Hygiene Program. The Chemical Hygiene Program is a detailed document used to verify that applicable rules and standards are met, especially with research involving extremely hazardous chemicals or new research projects that have a higher risk potential.

Laboratory Safety Coordinators and Training Managers are appointed in those departments with laboratory or research spaces in order to facilitate the implementation of the Chemical Hygiene Program and provide contact with EH&S on laboratory safety issues. ***Over 900 campus laboratories are represented by 46 lab safety coordinators.*** Monthly meetings answer questions, communicate important new safety issues and/or regulations, and build relationships with the academic community.

LABORATORY SAFETY STATISTICS FOR FY14

240 Lab inspection reports
32 Lab incidents investigated
592 Drench showers/eyewash units tested
14 Laboratory renovation/construction projects completed/in progress
55 Laboratory and Fire Safety Training sessions including distribution of safety glasses to 1,257 attendees
9 Contractor Laboratory Safety Training sessions for 75 attendees
1,134 Individuals refreshed Laboratory Safety Training online via OWL
1,657 Individuals refreshed Hazardous Waste Training online via OWL
1,633 Individuals refreshed Right-to-Know online via OWL

TOTAL FY14 TRAININGS:
401 Classroom trainings conducted for 8,364 attendees.
8,952 OWL Online refresher trainings.

Managing Chemical Safety in Laboratories involves an inventory system in which all laboratory hazardous substances are bar-coded and entered into a web-based database called: CEMS (Chemical Environmental Management System). CEMS also enables First Responders to view the hazardous materials in any research building at UMass Amherst. The database has been expanded to include the University's biological and radiological inventory, as well as controlled substances, and provides critical information to ensure compliance with federal agency regulations.

FY14 CEMS STATISTICS

109,791 bar-coded containers in inventory verified
154 controlled substances
13,150 bar-coded items
18,817 packages received
57,110 MSDS on file
155 surplus chemicals obtained from labs
537 lab door cards updated
2,114 bar-coded chemicals removed from service through usage or waste disposal

Radiation Safety Services (RSS), a service area within EH&S, provides support for the safe use of radioactive chemicals, sealed radioactive sources, X-ray generating instruments and devices emitting laser, microwave or radio-frequency electromagnetic radiation. Of these, radioactive chemicals, sealed radioactive sources and x-ray generating instruments require licenses or permits from either the Massachusetts Department of Public Health Radiation Control Program (MRCP) or the U.S. Nuclear Regulatory Commission (USNRC). These agencies perform announced and unannounced inspections of all licensed and permitted activities. To avoid violations, RSS routinely audits licensed and permitted operations to ensure that deficiencies are addressed before an inspection.

RSS also provides technical services such as instrument calibration, testing radioactive sources for leaks, maintaining radioactive inventory, delivering incoming radioactive samples, storing radioactive waste and performing monthly contamination surveys within the laboratory.

Major off-campus RSS customers for FY14 included the Conte Anadromus Fish Laboratory, the Gloucester Marine Laboratory and Amherst College. RSS also provides calibration services for personal radiation monitors owned by the Massachusetts Department of Environmental Protection

Some major accomplishments for FY14:

- Selected and purchased a new liquid scintillation counter.
- Convinced the Radiation Use Committee to require laser safety training for all laser users.
- As Vermont Yankee Nuclear Station will be shutting down by January 1, 2015, UMass participation and maintenance of the evacuation plan and housing of students from Northfield/Mt. Hermon School at UMass Mullins Center ends.
- Due to termination of the National Nuclear Security Administration (NNSA) grant for security systems, transitioned funding of service contracts for preventive maintenance to UMass entities as contracted.

➢ Provided technical expertise to Amherst College with their liquid scintillation counter .
➢ Evaluated two laser incidents that caused temporary vision impairment.
➢ Provided general EH&S training/supplies/ assistance to the Gloucester Marine Station.
➢ Before being put into service, provided technical recommendations for proper exhausting, fire/emergency procedures and user training for industrial cutting lasers acquired under the MLSC grant.
➢ Authored/implemented OWL-based radiation safety refresher training.
➢ Contracted for a vendor to transition the electronics of the security systems for a device requiring increased security controls from Blackboard to C·Cure Communication System.

Radiation Use Committee (RUC) reviews, approves and records all uses of radioactive material at UMass. Currently, RUC has eight members, with the RSO serving as an *ex officio* member. During FY14, the RUC approved three new Principal Investigators as radiation users and six additions of new radionuclides or protocols to existing permits.

FY14 RSS SERVICES	UMASS AMHERST	AMHERST COLLEGE
Surveys:	4852	431
Calibrations:	56	4
X-ray Surveys:	7	1
Leak Tests:	62	38
Thyroid Bioassays:	0	0
Lab Audit Deficiencies:	1	0
Radiation Work Permits:	2	0
Training Sessions:	28	0
People Trained	149	2
Radionuclide Deliveries:	58	0
Radioactive Waste Pickups:	26	6
Total Dosimeters Processed:	1371	54

Radioactive Waste Storage and Shipment is handled three ways: 1) disposal via the sanitary sewer; 2) shipping off campus; 3) decay-in-storage. The MRCP strictly limits the monthly concentration of radioactive material by radionuclide, which may be released via the sanitary

sewer. RSS tracks the activity as a concentration ration versus the amount of water sent to the sanitary sewer in any one month. No monthly activity disposal concentration was greater than at 4% of any regulatory limit.

A portion of the solid and scintillation vial radioactive waste has a long half-life or may contain a hazardous chemical component. These wastes are stored by RSS until they are shipped via carrier to an off campus, regulated radioactive waste disposal site. RSS did not accumulate enough radioactive waste for a cost effective shipment during FY14.

Laser Safety Program conducts laser safety trainings and makes recommendations regarding eyewear and other safety devices. FY14 saw an increase in the number of Class 4 self-contained cutting lasers on campus. Some of the larger units have doors which open to allow large sheets on rolls to be passed automatically through the laser cabinet. When these doors are open, there could be an interrupted view of the laser head during operation.

Cutting lasers also exhaust smoke and gases. RSS has informed researchers that the accepted method for providing exhaust to laser cabinets is either through a house chemical fume hood or directly into the atmosphere with the discharge point above the roofline.

In FY14, two incidents involving low power lasers led to temporary vision impairment to the users. As a result, the RSO has posted signs at laboratory locations stating that laser safety training is required before using any laser equipment.

Environmental Health Program is the watchdog for the campus's overall food safety and sanitation, housing conditions, water supply quality, swimming pool water quality, solid waste disposal, and conditions at the child care facilities. Routine inspections of many operations are conducted to assure compliance with federal and state health and sanitation codes.

Some responsibilities include: Food safety training for employees and student events; ServSafe Certification Classes; Right-to-Know training for Dining Services and summer housing; Food waiver approval and facility inspections; Food poisoning investigations; Vendor/caterer certifications and inspections; Campus allergy management programs; Evaluation/integration of pest management practices; Flood response unit; Mold complaint investigations; Monitoring water quality in campus pools; Summer camp inspections; Potable water issues.

ENVIRONMENTAL HEALTH PROGRAM STATISTICS FOR FY14:	
402	Food inspections/reinspections, walk-throughs, food complaints
32	Food waivers for student groups
60	Tests for water, mold, and soft serve ice cream
16	Training sessions (food safety, Right-to-Know, bed bugs) for 576 participants
7	Food Safety Certification (ServSafe) courses to Auxiliary Services and Center for Student Businesses for 109 participants
2,480	Students completing the online food safety course, a 90 % increase over last year
94	Miscellaneous inspections
16	Flood trailer used to mitigate water infiltration and damage.
1	Assisted with annual Dining Services Event: The World's Largest Fruit Salad

Campus Safety and Fire Prevention (CSFP) provides UMass with 24/7 routine and emergency response capability. Calls dispatched through UMPD and the Environmental Health and Safety (EH&S) main office vary from a hot works permit request to a fire incident to a hazardous materials spill. With life safety a priority, CSFP serves an important liaison role with the Amherst Fire Department.

FY14 RESPONSE DATA
2,105 Emergency/Service Responses
832 Academic Buildings/Areas
921 Residential Buildings/Areas
352 Other Areas
214 Fire Department Responses

Inspection Services conducted 196 annual life safety inspections of campus buildings with 324 deficiencies observed in F14. During January Term, 7,832 residential dorm rooms were inspected by CSFP technicians and Residential Life student employees for fire safety hazards. These inspections disclosed 215 fire safety violations. Students who violate safety policy go through the Residential or Dean of Students judicial process and attend a Fire Safety Disciplinary Class. Re-inspection of the dorm room verifies that the fire hazards have been eliminated.

Life Safety/Code Compliance/Agency Liaison. CSFP technicians accompany inspectors from the MA Dept. of Public Safety, the Amherst Fire Department, Hadley Fire Department, and *FMGlobal* (UMass building property insurance carrier) on inspections. Our technicians fulfill a liaison coordinator role with fire department and state building inspectors for campus building construction and/or renovation projects. Code-required acceptance testing of fire protection systems is also done.

OUTSIDE AGENCY INSPECTIONS

Facility/Occupancy Type	Frequency	Inspector/Department
Child Day Care Centers	Quarterly	Hadley Fire Department
Assembly Occupancies	Quarterly	Amherst Fire Department
Assembly Occupancies	Annual	State Building Inspector
Residence Halls	Annual	State Building Inspector
Fire Protection Projects (sprinkler systems, fire alarm systems, fixed extinguishing systems)	Progress Inspections and Final (includes final acceptance testing)	Amherst Fire Department, Hadley Fire Department (facilities in Hadley), State Building Inspector
Building/Construction Projects	Progress and Final	Amherst Fire Department, Hadley Fire Department

		(facilities in Hadley), State Building Inspector
UMass Building Authority Buildings	Annual	*FMGlobal*

Fire Evacuation Drills are conducted by CSFP technicians for nearly all UMass buildings. Residence Hall drills are conducted once a semester; drills for service and academic buildings are conducted in June and July. The purpose of fire evacuation drills is to ensure that: 1) building occupants are familiar with the sound of the fire alarm system; 2) they know their means of egress; 3) they know they must evacuate immediately; 4) they are familiar with emergency evacuation procedures.

Fire Protection System Inspection and Testing Program improves fire safety by retrofitting campus buildings with automatic fire sprinkler and upgraded fire alarm systems. Massachusetts State Building Code and Fire Prevention Regulations require that all fire protection systems be inspected, tested and maintained according to National Fire Protection Association standards to ensure operability. CSFP techs inspect, test and facilitate maintenance of our water-based fire sprinkler systems, standpipe systems, and fire pumps to meet these regulatory requirements.

FY14 FIRE PROTECTION INSPECTION AND TESTING	
	TOTALS
Sprinkler System Weekly Inspections	1,476
Fire Alarm System Weekly Inspections	4,308
Fire Protection System Engineer's Tests	32
AFD Final Acceptance Tests	30
Flush/Hydrostatic/Flow Tests	39
Fire Pump Weekly Inspections and Run Tests	766
Other Fire Protection Equipment Inspections	1,676
Non-Residential Fire Alarm Tests	110
Residential Fire Alarm and Emergency Power Tests	46

Portable Fire Extinguisher Maintenance Program oversees 4,000 portable fire extinguishers available to the UMass community. Following state and national standards, portable fire extinguishers are inspected monthly with maintenance and testing performed by our technicians as necessary. In addition, fire extinguishers in residence halls are inspected once each semester.

4,310 Portable Fire Extinguishers were serviced in FY14.

Construction Safety Management oversees site safety and environmental protection for the well-being of the university community. Safety oversight is achieved through: 1) contractor pre-construction orientation; 2) site specific safety plan review; 3) crane plan review; 4) issuance of excavation permits; 5) attendance at job meetings; and 6) site auditing with documentation and follow-up of deficiencies observed.

FY14 CONSTRUCTION SAFETY MANAGEMENT ACTIVITIES

Meeting attended: 48 Pre-construction; 15 Contractor oversights
Issued: 26 Excavation permits; 17 OSHA 10 Construction industry certificates
Reviewed: 53 Site-specific safety plans; 42 Crane plans
Monitored: 88 projects
Classes: 1 OSHA 10 Construction industry classes
Investigations: 9 Incident/near misses

MAJOR CAMPUS PROJECTS

Central Campus Infrastructure; Champions Center;
Commonwealth Honors College Residential Complex;
Hampshire Dining Common Renovation; Integrative Learning Center;
Life Science Laboratories; Lincoln Campus Center Dining Renovations;
McGuirk Alumni Stadium upgrades.

Technical safety compliance issues concerned: 1) A safety review of the Orchard Hill standpipe refurbishment; 2) Campus Center power washing using a suspended scaffold; 3) Demolition of a specialized research building and greenhouses; and 4) Follow-up on reported electrical shocks at the Fine Arts Center.

EH&S Hosts 1st Annual OSHA Summer Summit 2014 at UMass on June 26th, along with the OSHA Training Institute at Keene and the American Society of Safety Engineers. The Summit offered high quality safety training to 366 attendees, many of whom were UMass employees.

Along with fifteen technical sessions, presentations included Keynote Speaker and OSHA Region 1 Assistant Regional Administrator James Mulligan and a Confined Space rescue demo by Amherst Fire Department's Technical Rescue Team. Topics involved workplace violence, active threat training, ergonomics and the aging workforce, temporary and new workers, fleet safety and distracted driving, electrical safety, industrial hygiene topics, as well as OSHA case studies.

Physical Plant Safety Management investigates accidents, performs safety inspections, attends pre-construction and contractor meetings, and presents training sessions for Physical Plant employees. During FY14, there were: 39 accident investigations; 169 safety inspections; 32 pre-construction/contractor meetings; and 213 training sessions.

<< NOTEWORTHY ACTIVITIES IN FY14 >>

Crane Safety Focus
Developed and/or Updated 9 Training Programs
Electrical Safety Program Development
Excavation Safety Training/Inspections
Fall Hazard Assessments for Various Campus Roofs
Hearing Protection Program Enhancement
Ladder Safety Initiative
Pre-Construction Safety Checklist Modification
Safety Audits of Deerfield and Hadley Farms
Safety Procedures/JSA Development Including "Working in Laboratories"
Vehicle Safety Initiative Training Sessions for Physical Plant Staff

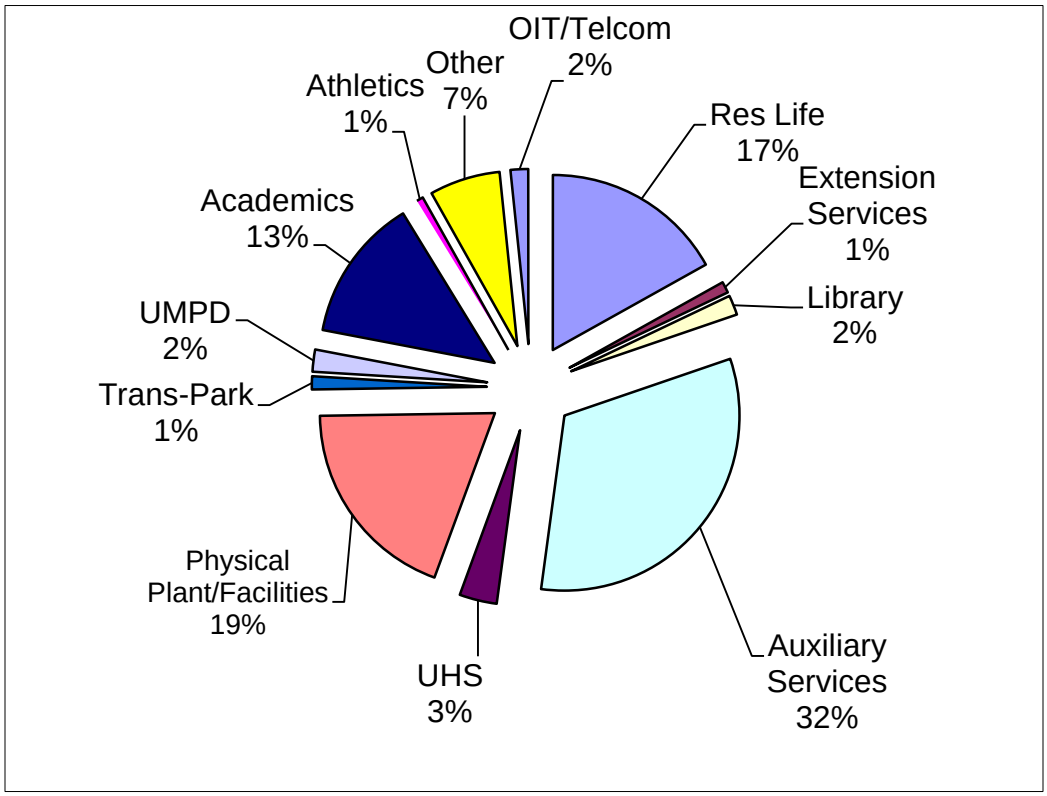
Notice of Injury (NOI) Reports forwarded to EH&S for FY14 totaled 504, a 3% reduction from FY13's 522 cases, but still higher than the previous three years.

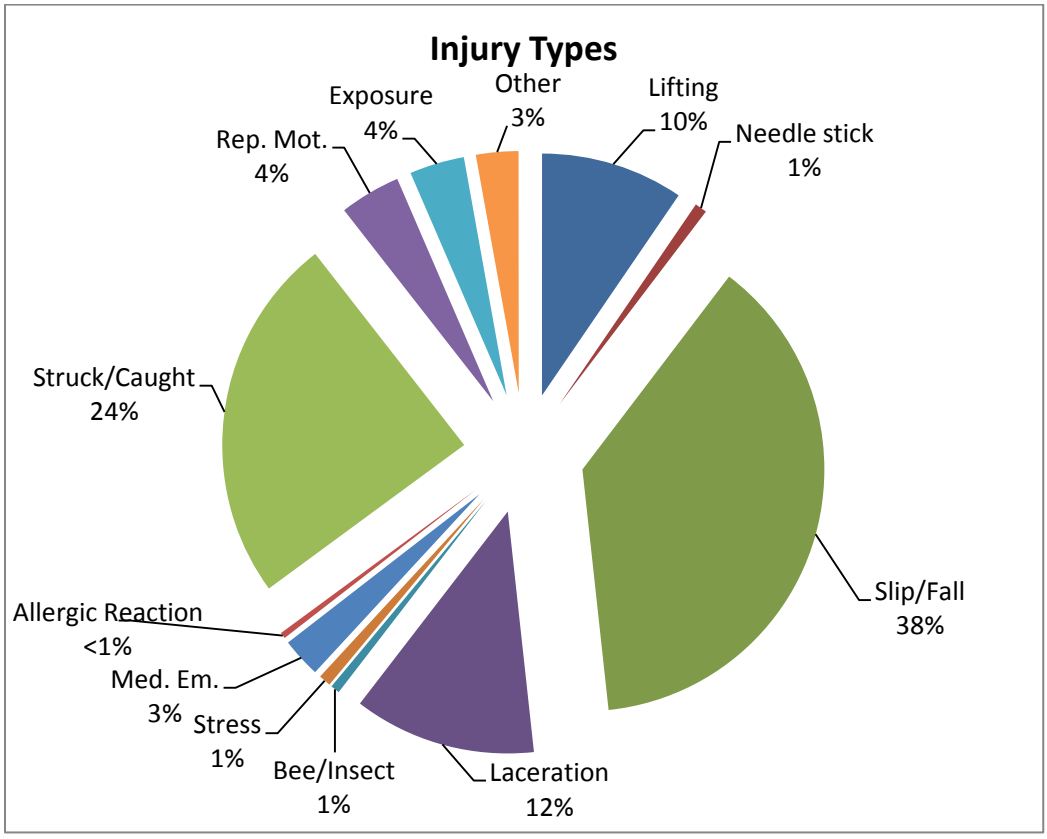
Of the 3,021 number of days away from work report for FY14, ten cases were between 50 and 100 days, eleven were between 101 and 200 days; there were no cases over 200 days of lost time.

Campus-wide slips, trips, and falls and materials handling accounted for 48% the Notice of Injury reports filed for FY14 (38% slips and falls, 10% lifting injuries). Of the slips, trips, and falls for FY14, 46% of them were exterior falls.

Muscle distress related to repetitive motion and other ergonomic issues is often easily corrected. When a Notice of Injury report is filed for workstation-related concerns, EH&S contacts the employee for a workstation evaluation and employee education. During FY14, EH&S provided workstation evaluations for 59 members of the community, as well as three separate Ergonomic Workshops for a total of 15 people.

Injuries by Major Department



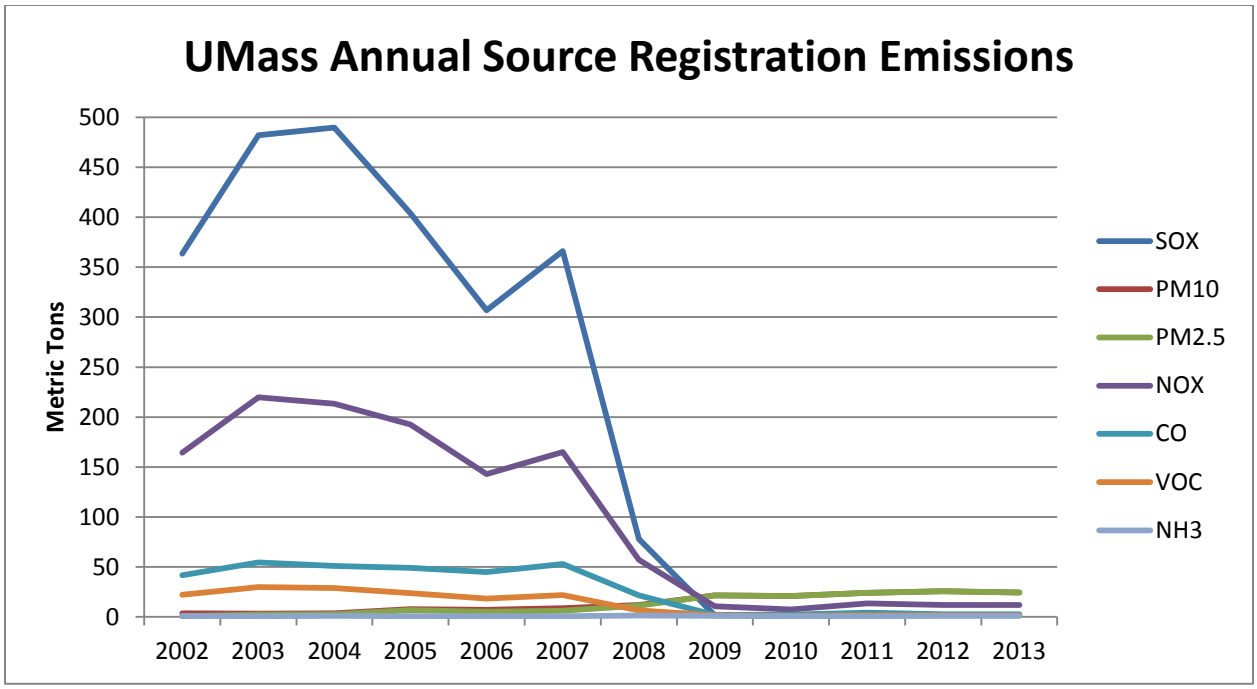


Environmental and Hazardous Materials Management Program (EHMM) assists and guides campus departments in environmental compliance issues and acts as a liaison between campus departments and environmental regulatory agencies to ensure compliance with local, state and federal laws and regulations. EHMM works very closely with Physical Plant, Design and Construction Management, Research and Engagement, Residential Life, and Auxiliary Enterprises, not only on maintaining compliance, but also sustainability practices to reduce associated emissions and hazards. Responsibilities include:

- Permitting, tracking, reporting of air and water (waste, reclaimed, storm), emissions;
- Sampling, inspecting, oversight and disposal of hazardous materials to include hazardous building materials, spills, solid waste and hazardous waste;
- Shipping of hazardous materials in compliance with DOT and IATA regulations;
- Oversight of environmental-related equipment such as storage tanks, generators, and central heating plant equipment;
- Providing environmental health and safety training, consultation and support to the campus community on areas related to chemical spills, laboratory use, demolition, construction, sustainability efforts, equipment, and maintenance;
- Updating technical expertise, maintaining appropriate credentials, keeping current with local, state, and federal regulation to ensure the campus community is provided with the most current safety and regulatory information, strategies for management, and ability to mitigate risk.

Air Emissions. From 2004-08, the campus reduced its overall carbon footprint by over 30% by phasing out the use of coal combustion and building an award winning co-generating Central Heating Plant that utilized the best available control technology at the time. Given newly built energy intensive buildings such as the Integrated Science Building and the Life Science Laboratory, the University's air emissions have stayed relatively steady. This was achieved by utilizing Liquid Natural Gas (LNG) instead of #2 fuel oil during Berkshire Gas curtailments.

UMass submits an Annual Source Registration Report to MA DEP, as required by the campus Title V Air Operating Permit. In coordination with utility personnel, EH&S compiles and reports information on Nitrogen Oxides, Carbon Monoxide, Ammonia, Volatile Organic Compounds, Sulfur Dioxide, and Particulate Matter. This report captures data associated with all emission sources across the campus including CHP boilers and combustion turbine, as well as other small boilers, emergency generators, painting operations, fuel tanks, parts degreasers, hot water heaters, and space heaters. A major emission reduction was realized with the installation of the Central Heating Plant in 2009, which utilizes natural gas and low sulfur diesel.

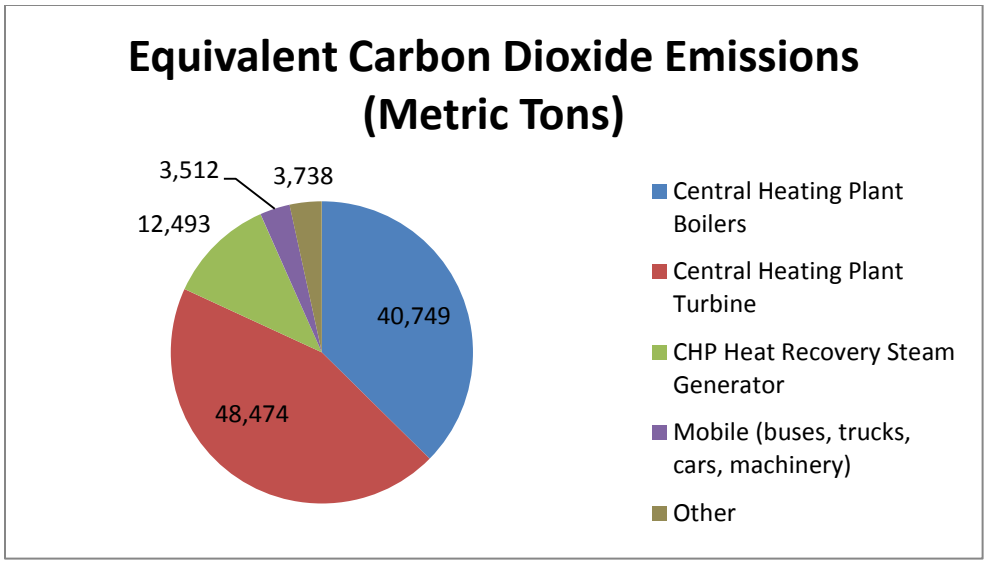


Greenhouse gases (GHGs) trap heat in the atmosphere. Several different kinds of GHGs are converted to Carbon Dioxide equivalents (eCO2). As well as providing information for our sustainability initiatives, EHMM tracks GHG emissions to satisfy the new regulatory reporting requirements as follows:

- The Massachusetts Department of Environmental Protection (MA DEP). MA DEP also requires a UMass hired 3rd party verification audit every three years.
- The US Environmental Protection Agency (EPA).
- The UMass Climate Action Plan.
- The American College and University Presidential Climate Commitment (ACUPCC).

Data captured for these GHG reports include:

- #2 fuel oil and natural gas used to fuel the Central Heating Plant boilers, turbine and heat recovery steam generator;
- Gasoline, diesel and biodiesel used to fuel mobile sources including buses, passenger cars, light duty vehicles (trucks, mowers), and heavy duty vehicles (trucks, tractors, excavators);
- Propane, natural gas and #2 fuel oil for small boilers, emergency generators, and space heaters;
- Fuels, gases and refrigerant used for Auxiliary Enterprises equipment (ovens/woks/grills), refrigerant used for vehicle air conditioning and refrigerators, chiller repairs, carbon dioxide used in beverage dispensers, VOCs released in paint booths, and gases used in laboratories and welding operations.

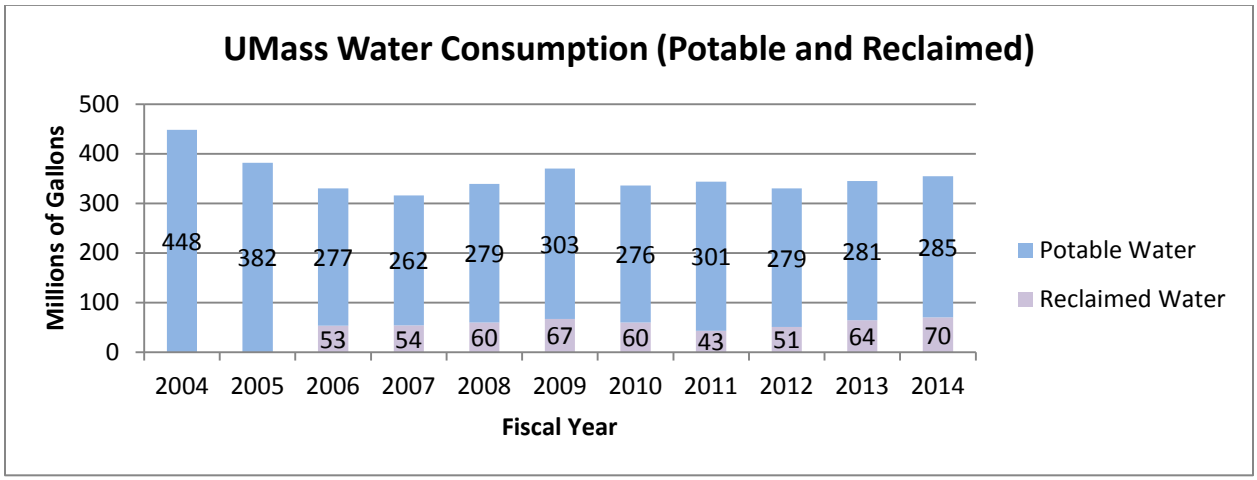


In FY13 and FY14 (November–April), the University sited a liquefied natural gas (LNG) storage facility, with a storage capacity of 2,500 dekatherms, adjacent to the Central Heating Plant (CHP) as a third fuel option to reduce reliance on fuel oil during the winter heating season.

Year	Natural Gas (dth)	Oil (gal)
2009	1,337,489	2,633,658
2010	1,344,776	2,543,201
2011	1,412,780	2,468,494
2012	1,576,122	1,123,562
2013	1,570,876	564,550

Potable and Reclaimed Water/Sanitary Sewer. Over the last 10 years, the Amherst Campus used an average of 354 million gallons of water/year. Eleven years ago, the Town of Amherst Department of Public Utilities requested that UMass investigate ways to reuse the town's Waste Water Treatment Plant's effluent (reclaimed water) on campus. UMass commissioned a study to investigate the feasibility of reusing this effluent and confirmed that the reclaimed water was possible for boiler water make up at the Old Power Plant. The best path was to use proven technology: multimedia filters, reverse osmosis membranes, and chlorination.

With approval from the Town of Amherst and the Massachusetts Department of Environmental Protection, the University started utilizing reclaimed water in 2005. The water reuse initiative reduced potable water consumption by about 17%. On April 25, 2013, the University received approval from MA DEP to utilize reclaimed water for the cooling towers at the Central Heating Plant under a Class A Reclaimed Water Permit. UMass started utilizing the Class A permit in July 2013. In FY14, reclaimed water accounted for 20% of water usage on campus.

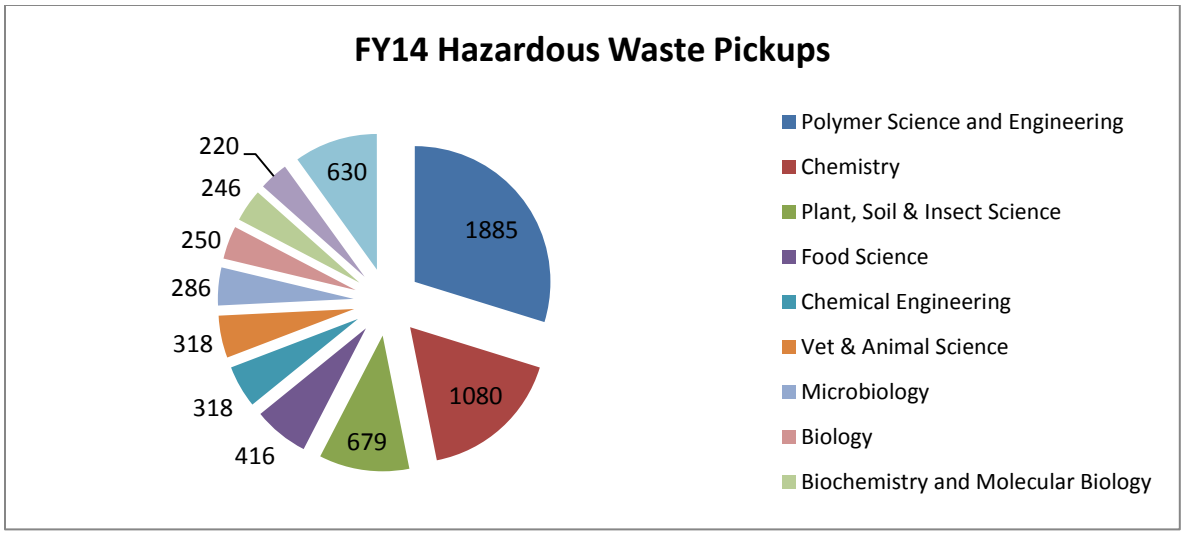


UMass works closely with the Amherst Waste Water Treatment Plant to minimize any disruptions to their system. Any non-standard discharge greater than 1,000 gallons must have authorization from the Town of Amherst, EHMM and/or Physical Plant. EHMM also works with campus departments to develop water efficient policies and programs which help reduce the quantity of water used and the amount of waste water generated.

Storm Water. Unlike sanitary sewers, storm drains are not connected to a treatment plant, but flow directly into local streams, rivers and lakes. Silt, soaps, degreasers, automotive fluids, litter, and other materials washed off buildings, sidewalks, plazas, parking areas, construction areas, vehicles, and equipment can all pollute our waterways. EHMM audits construction sites for best management practices for erosion and sediment control. Any sites impacting greater than one acre of soil must have a written Storm Water Pollution Prevention Plan and must obtain a Storm Water Construction General Permit. EHMM and CHP personnel regularly inspect drainage systems and sample quarterly per our permit.

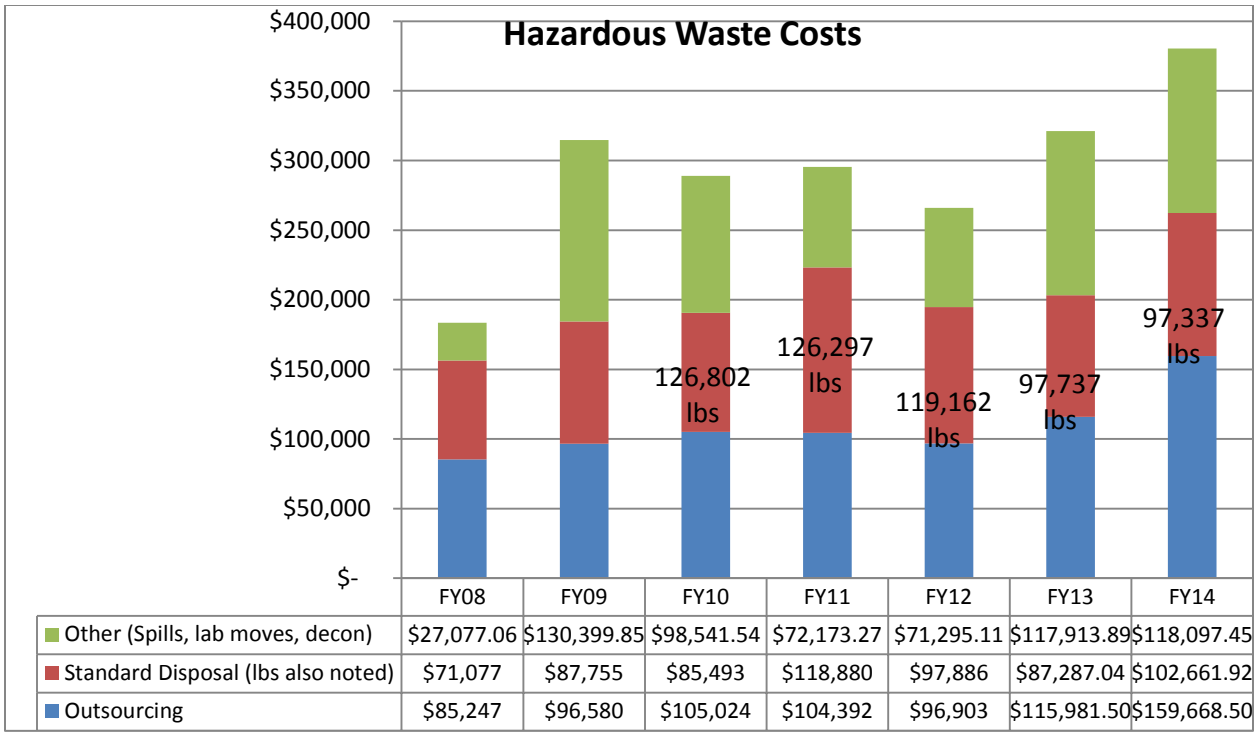
Hazardous Waste Management. EHMM is responsible for storage, tracking, and disposal of all hazardous waste generated by campus departments, its nearly 900 laboratories, Physical Plant, Auxiliary Service, Housing and construction sites including UMass' satellite locations in South Deerfield, Hadley, Gloucester, Belchertown and Wareham.

Ultimately, what is not used must be properly disposed of. Compared to other campus generators, laboratories utilize many containers and classes of chemicals which cannot be combined. In FY14, campus laboratories submitted 6,328 waste requests, the most prevalent requests were from Polymer Science and Chemistry. EHMM is required by regulation to move hazardous waste containers within three working days to a central storage area and works with a full time chemist outsourced through a contracted hazardous waste vendor.



Hazardous Waste Costs. Note the figures do not include hazardous material abatement costs. Chemicals with BTU value (oils and solvents) that can be incinerated are a lot less costly than items that need to be landfilled, treated prior to disposal, or incinerated under extremely high temperatures.

Starting in FY09, EHMM saw a huge increase in non-standard costs due to construction and renovations in the science buildings. The Integrated Sciences Building came on line in FY09, Lederle and Goessmann lab renovations followed in FY13, with the Life Science Laboratory in FY14. Associated with renovations are lab cleanouts of older chemicals, the moving of chemicals from one building to another, and the decontamination of the former laboratories and associated equipment, plumbing and ductwork. Even with the increase in the number of laboratories, UMass has reduced the amount of pounds of waste disposed by bulking like chemicals into 55 gallon drums.



	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Other (Spills, lab moves, decon)	$27,077.06	$130,399.85	$98,541.54	$72,173.27	$71,295.11	$117,913.89	$118,097.45
Standard Disposal (lbs also noted)	$71,077	$87,755	$85,493	$118,880	$97,886	$87,287.04	$102,661.92
Outsourcing	$85,247	$96,580	$105,024	$104,392	$96,903	$115,981.50	$159,668.50

Universal Waste. In conjunction with the Office of Waste Management at the Waste Transfer Facility, EHMM is responsible for and manages the disposal of all Universal Wastes which include lamps, batteries, paint and other mercury containing items.

Environmental Site Assessments and Abatement. EHMM assesses all construction projects from a hole in the wall to the demolition of a building for environmental concerns (Asbestos, Lead, Cadmium, Chromium, Polychlorinated biphenyls, contaminated soils, etc.) and reviews all in-house service requests.

EHMM reviews the service request as to whether it impacts a hazardous material. Some determinations can be made from the age of the original construction or from previous evaluations. EHMM will sample the suspect material, and, if there are no hazardous building materials involved, a Work Order is submitted. If there are hazardous materials, they need to be abated. At this point, Physical Plant estimates the cost and adds the abatement to a schedule. EHMM then notifies the appropriate regulatory agencies. If the project is being outsourced, EHMM works with the design team and their contracted industrial hygienist to ensure that appropriate materials are evaluated. Sampling results, both positive and negative, are recorded in the Tririga system for future renovations or demolition projects.

Asbestos Abatement. Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation, as well as a fire retardant. Because of its fiber strength and heat resistant properties, asbestos has been used in roofing shingles, ceiling and floor tiles, paper products, asbestos cement products, heat resistant fabrics, packaging, gaskets, adhesives and coatings. When asbestos-containing materials are damaged or disturbed by repair, remodeling or demolition activities, microscopic fibers can become airborne and inhaled into the lungs where they can cause significant health problems.

EHMM oversees the abatement of both in-house projects, 407 in FY14, as well as outsourced projects. EHMM evaluates a project for proper containment methods, proper removal techniques and methods, complete removal or encapsulation of the asbestos containing product, and appropriate disposal of removed asbestos containing materials.

EHMM performs air clearances on in-house jobs and reviews clearances done by outside hygienists, and archives the documentation to include work plans, licenses of the abatement contractors, inspections, air clearances, and disposal records. Recently, EHMM has begun bulk sampling in-house, sending the samples directly to a certified laboratory. EHMM has also set up an in-house lab to provide internal air clearances.

Polychlorinated Biphenyls (PCBs). Polychlorinated Biphenyls (PCBs) are a family of man-made chemicals that contain 209 individual compounds with varying levels of toxicity. Because of their insulating and nonflammable properties, PCBs have been widely used as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacture and use of PCBs in new products stopped in the U.S. in 1977, because of evidence that PCBs accumulated in the environment and could cause serious human health hazards. In 1979, EPA banned the processing or use of PCBs, except in totally enclosed equipment such as fluorescent light ballasts and transformers.

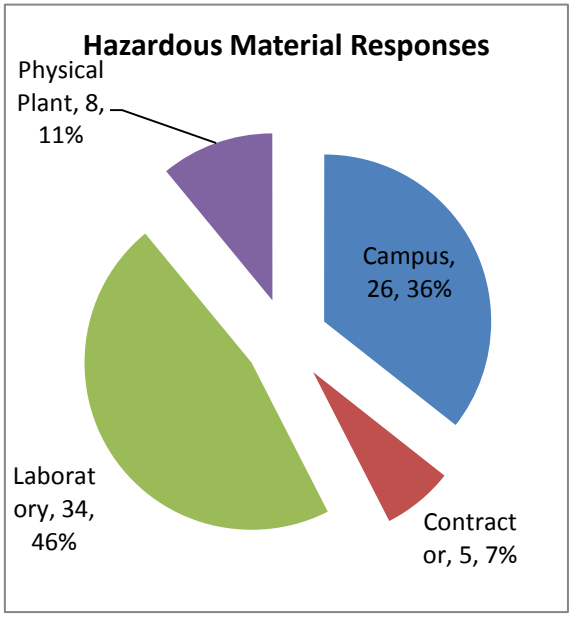
PCBs were also a common additive to caulking because of their water and chemical resistance, durability, and elasticity. They were added as a plasticizer in caulking used to seal joints between masonry units and around windows, and can be found in some buildings constructed between 1950 and 1980. Current PCB regulations can be found in Title 40 of the Code of Federal Regulations (40 CFR Part 761). The use of PCBs in caulk is not authorized under TSCA's PCB regulations. Thus, materials that contain PCBs greater than 50 parts per million must be removed prior to any alterations, renovations or demolition that impact the PCB containing material. PCBs may also migrate into porous adjacent materials such as brick and concrete. Therefore, adjacent materials including soil must meet the cleanup standards as well.

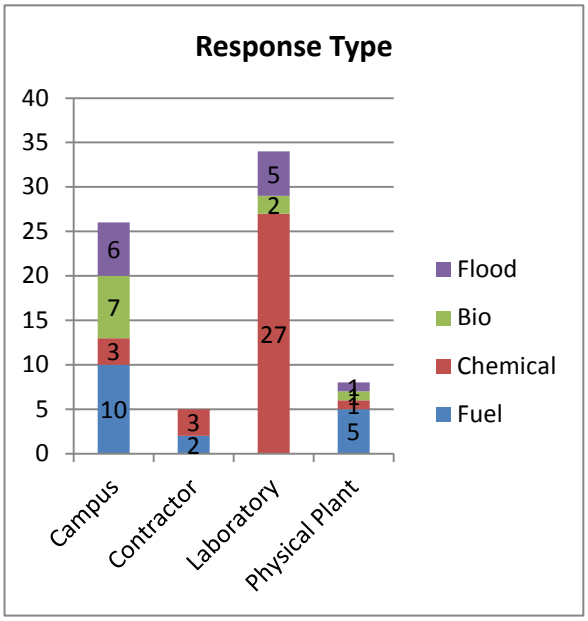
In 2006, Lederle Graduate Research Center was the first major PCB remediation project. In the last seven years, we have added 42 PCB remediation projects. EHMM has worked closely with the EPA Region 1 PCB Coordinator to properly remediate these building materials. As shown below, the remediation of PCBs under the current regulations is very costly.

Industrial Hygienist	Abatement Contractor	Disposal
• Initial sampling/delimitation of contamination • Writing Remediation Plans and correspondence with EPA • Oversight of Abatement Contractor; Sampling to meet cleanup standards • Deed restrictions • Final Completion Reports, Long Term Maintenance and Monitoring Plans where adjacent materials are encapsulated	• Removal of caulking (source material) • Removal of adjacent surfaces • Excavating contaminated soils where exterior substrates have weathered into adjacent soils • Encapsulation of adjacent materials that cannot be removed	• Roll off costs • Transportation to approved landfill (construction debris is most often shipped to Michigan) • Disposal costs

UMass is the first university in the United States to obtain a Consent Agreement and Final Order (CAFO) with EPA, which allows UMass to encapsulate the unauthorized PCB source material (window glazing sealant) in place at the Lederle Low Rise and Tower A for fifteen years. The CAFO was signed on June 20, 2012. Thus far, the majority of windows in Lederle Low Rise and on the 3rd, 5th, 7th and 8th floors of Tower A have been replaced.

EHMM Emergency Response. EHMM organizes monthly trainings, tabletop discussions and exercises with outside agencies for the EH&S Hazmat Team. In addition, EHMM responds to hazardous material emergencies which may cause injury or exposure, result in extensive property damage, or cause a release to the environment. In FY14, EHMM responded to 73 incidents which required some form of evaluation and cleanup.





The majority of EHMM responses are usually for small spills that require only a few people to cleanup. However, the following are some of the more memorable incidents of FY14 that required coordination between EH&S and/or contractors, utility companies, Facilities, Physical Plant, UMass Police or other outside regulatory agencies:

- Construction High Pressure Gas Leak. A contractor hit a high pressure gas line with an excavator on Massachusetts Avenue near Southwest Residential Complex. While Amherst Fire Department took over Incident Command, most EH&S personnel were involved in the incident which included: monitoring for methane, building evacuations, maintaining communication between Incident Command, Emergency Operations Center and Staging, and providing water/food on an extremely hot day.

- Peroxide Crystals Found During Lab Cleanout.
Over time Tetrahydrofuran can form peroxide crystals which can be explosive. As these peroxide crystals were deemed too dangerous to ship off site, EHMM worked with the Amherst Fire Department and Bomb Squad to destroy the crystals with RDK. The bottle was placed in a bomb box, transported via dump truck with soil and brought behind a large soil pile. Coordination with UMass Police kept non-essential personnel out of the area.

- Fuel Oil Spills. A Coca Cola truck driver had not replaced the diesel cap on his fuel tank. Consequently, diesel fuel was discovered in several areas of the campus where the truck was on a hill or went around corners. Luckily, the fuel did not enter any storm drains. Physical Plant provided a sander and street sweeper to absorb the fuel.

- Tractor Tire Leak. Tractor tires are sometimes filled with a type of beet juice for ballast. Foamy and sticky like molasses, this material cannot be pumped out. And, while the product may appear to be natural, it should never be dumped down a storm drain.

Contaminated Areas. EHMM oversees the monitoring and cleanup of University hazardous material sites on and off the Amherst campus. Many sites can be cleaned up with minimal effort under the direction of EHMM and a Licensed Site Professional. Other sites cannot be completely cleaned up and have to be periodically monitored. In FY14, EHMM oversaw the following:

- **Lot 12 Landfill**. Oversight for a twelve acre undocumented landfill that was discovered as part of the Central Heating Plant Access Road Project. The landfill also incorporates a MA DEP regulated chemical dumping site. During FY12, a risk assessment was performed which included determining: the boundaries of the landfill via test pits; if there are releases to nearby water bodies by sampling the sediment and water in the Tan Brook and the Mill River; and, if there are potential risks to the public by installing borings for water, soil and gas samples within the landfill. Results indicated that there is no significant risk from the landfill, although there has been an exceedence of 20% of the LEL for methane underground. In FY13 and FY14, the site was further delineated and a corrective action

design was developed to provide a sufficient cover for the landfill; this design was implemented in FY15.

- **Orchard Hill Standpipe.** The UMass water tower underwent a face lift and the paint was found to contain lead and PCBs. Over time the lead and PCBs had leached into the soil. The paint on the tank was meticulously removed and the soils surrounding the standpipe were excavated and shipped off site.

Shipping of Hazardous Materials. EHMM provides services to ship dangerous goods and/or research samples both domestically and internationally. Shipments must comply with the DOT (ground) or IATA (air) regulations and have the correct packaging, labels, and bill of lading. EHMM reviewed and prepared 118 dangerous goods packages for shipment during FY14. Major improvements of this program included resolving certain billing issues and adding Research Affairs to help with the challenges of meeting export regulations. EHMM is currently implementing *eShipGlobal* to further improve the handling and shipping of dangerous goods.

Design and Construction

EHMM plays an integral role in the design and construction of new campus buildings and building renovations. Some of the projects in which EHMM was involved in FY14 included: Design/construction of the Life Science Lab II; Physical Sciences Building; Integrated Design Building; Champion Center; Academic Classroom Building. Building renovations included: Furcolo, Marks Meadow, Clark, Paige, McGuirk Alumni Stadium, LGRC Low Rise Window Replacement, Physical Plant Lift Replacement, Draper Hall and Cold Storage Emergency Generators, Orchard Hill standpipe refurbishment, and Campus Center's Blue Wall. EHMM was also involved in demolishing Thayer and Munson Hall Annex.

Office of Emergency Management (OEM) began FY14 with the hiring of the new Assistant Director of Emergency Management and Business Continuity Robert Laford, who spent the previous sixteen years as Safety Services Manager in Campus Safety and Fire Prevention Services. Overall, Laford has an impressive 30+ years of emergency services experience.

During 2014, OEM continued its work with campus and community stakeholders to finalize a Multiyear Department Strategic Plan that identified the direction for enhancing the University's capabilities to prevent and reduce the vulnerability of UMass to natural, human-caused and technological emergencies and disasters. Proud to have accomplished many of the strategic plan's objectives, the OEM:

- *Launched* a new OEM web site at: www.umass.edu/emergency, which provides a variety of emergency preparedness resources to students, faculty, staff, parents and visitors including how to sign up for UMass Amherst Alerts.

- *Transitioned* to a new Emergency Notification System (ENS) more user-friendly than the previous system, thus enhancing the response times that emergency messages are sent out

to the campus community improving the safety and security of the campus. The new system has been tested with positive results, and the UMASS Police Dispatchers and UMPD Command Staff have all been trained in the system's operation. The new system will also be a valuable tool in the University's Business Continuity plans enabling departments to use the system to provide timely notifications to their staff during a campus emergency.

- *Updated* the Campus Emergency Management Plan (CEMP) to reflect an Emergency Support Function (ESF) concept that organized University departments and resources into functional groups according to their roles in response to a campus emergency or incident. Fourteen ESF's were developed to provide basic information on the available internal/external departments and agencies, and their respective capabilities that might be utilized to manage and resolve campus incidents. The University's Emergency Operations Center (EOC) was activated several times during FY14 for both planned events like Commencement and unplanned emergencies like Hazardous Materials Incidents and crowd management issues effecting the campus. The EOC Team meets quarterly to prepare for their respective roles through training exercises used to test the CEMP and the team's specific ESF objectives.

- *Received* over $315,000 in Emergency Preparedness Grants:

  - $212,475 came from the MA Emergency Management Agency and Federal Emergency Management Agency to purchase/install a permanent generator at the Central Heating Plant (CHP), the installation of which will provide emergency electrical power to the Reclaimed Water Building and the Satellite Liquid Natural Gas complex. These buildings supply natural gas and water to the CHP which in turn produces steam and electricity for the campus. Thus, having full backup capabilities is essential.

  - $106,500 was received from the Massachusetts Executive Office of Public Safety and Security Office to conduct a Regional Active Shooter Full-Scale Exercise on campus. The full-scale exercise will promote preparedness, validate plans, policies, procedures, emergency notification systems and determine the effectiveness of the command, control, and communication functions from a university, local, regional and state perspective. The exercise is tentatively scheduled for Spring 2015, and will involve key departments from UMass Amherst, local colleges, area communities, and state agencies that would be responding to an active shooter incident impacting the campus.

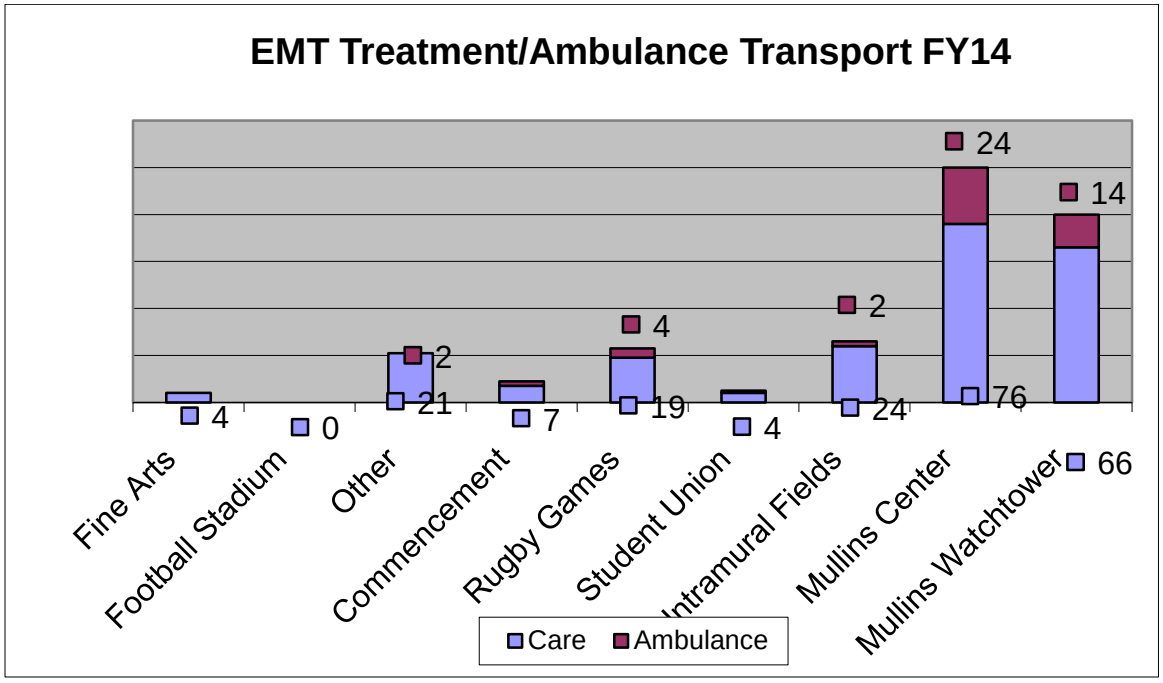
- *Collaborated* with ten select campus departments to act as a pilot group in the new *UMASS READY* Business Continuity tool. This web-based information management system helps departments identify their key functions and what internal/external resources would be needed to support their staff and operations in the event of an emergency.

As we work on strategic plans and objectives with the campus' internal and external partners, *OEM's overall vision is to create a disaster resilient university*.

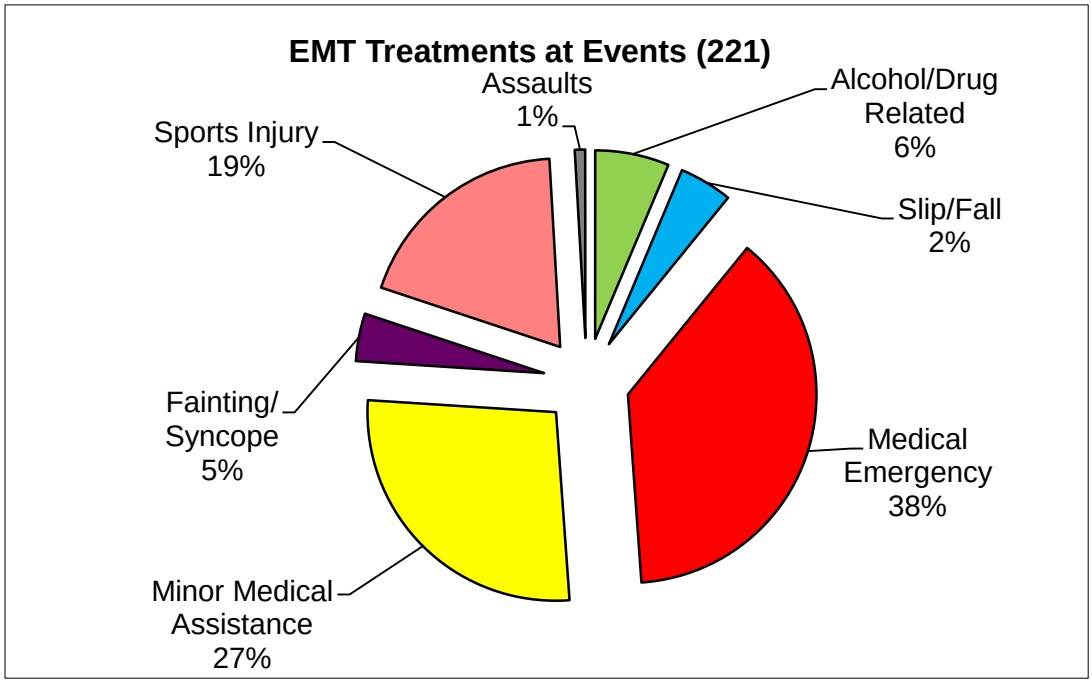
Emergency Medical Technicians (EMTs). The student-run Emergency Medical Technician unit, UMass Amherst EMS, attended to a number of sick or injured people at on-campus events throughout FY14, or 221 patient contacts, a significant drop from FY13's 531 patient contacts. A total of 47 requests for ambulance transport were initiated by UMass Amherst EMS, again less than the 74 requests in FY13.

The group worked 438 events in FY14. One contributing factor in the decrease in patient numbers was the campus' Electronic Dance Music (EDM) concerts at the Mullins Center for both Fall and Spring semesters. EDM performances are large generators of patient contacts and the lack of 4-6 of these events had a significant impact. Of note are the percentages of transports from patient contacts in each year: 17% in FY13; 21% in FY14. It could be argued that this is due to the decrease in EDM shows and more representative of on-campus data or the acuity of the patients being encountered is increasing. Analysis of future data will more accurately evaluate this change.

UMass Amherst EMS employed a new command structure for the few large Mullins shows and for Commencement at McGuirk Alumni Stadium. These deployments increased visibility, lowered response times and may have contributed to the low number of transports from certain sites. Note that in FY13, there were 120 patient contacts with 66 transports for a transport percentage of 55%. While in FY14, there were 76 patient contacts at the Mullins with only 24 transports for a transport percentage of 32%. It may be reasonable to assume that the new methods employed by this unit are helping to reduce the transport percentage at these large shows. Future data is needed for an accurate conclusion. (See the breakdown of care rendered versus transports on the chart below.)



Breakdown by chief complaint categories for FY14 vary from the previous year's results. Most notably is the significant decrease in the Alcohol/Drugs category, likely artificial as increased scrutiny of patient care documentation has resulted in chief complaints conforming more closely to the nationally accepted ICD-9 codes. In these circumstances, many patients listed as having altered mental status or vomiting may in fact have been intoxicated. The introduction of an electronic patient charting system will allow for better data tracking as alcohol and drug stats are separate fields outside of chief complaint in the National Emergency Medical Services Information System standard schema. Please see the chart representing the chief complaint categories for FY14.



UMass Amherst EMS continues to provide a valuable service to the campus community at both large and small events. The group has used this year of decreased activity to hone their skills and make equipment and system upgrades to better serve the anticipated return of higher numbers of patient contacts next year. Student groups, departments, and outside agencies holding events on campus recognize the cost-effective option UMass Amherst EMS offers in providing for the emergency medical needs of their planned activities.

UMASS AMHERST

Environmental Health and Safety

Promoting a safe and healthful environment for living, learning and working

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