EHS receives many Live Animal Requests every year from student organizations wishing to include live animals as part of their events. This petting zoo featured a baby llama, baby goats, and a wallaby.

Cover photo: Concrete balusters on the stairwell between Anna Hiss Gym and Pharmacy.
Photo credit: Joseph Bussey, used with permission.
EHS receives many Live Animal Requests every year from student organizations wishing to include live animals as part of their events. This petting zoo featured a baby llama, baby goats, and a wallaby.
OVERVIEW

Environmental Health and Safety, EHS, is a campus department with a mission to promote healthy and safe operations on campus, to protect students, faculty, staff and visitors, and to ensure the protection of the environment. EHS works closely with campus departments such as Facilities Services, UT Police Department, Fire Prevention Services, Emergency Preparedness, Project Management and Construction Services, Utilities and Energy Management, and Capital Projects and Construction to achieve our mission.

EHS has both primary program areas and support services, and each has several areas of emphasis. Our program areas include Campus and Occupational Safety, Environmental Programs, Biological and Laboratory Safety, and Radiation and Laser Safety. Our Support Services include Animal Make Safe, On-Call Response, Food and Drinking Water Safety, Indoor Air Quality, Unmanned Aerial Vehicles, Training and Outreach, and Project Planning and Design Review.

Much of our focus is mandated from city, state and federal regulations that are designed to protect human health and the environment. By focusing our attention on complying with these regulations, and applying best practices, we ensure a safe learning, working and visiting environment for everyone at the University of Texas at Austin.

Environmental Health and Safety works to protect the health and safety of the faculty, staff, students, and visitors at UT in compliance with local, state, and federal regulations.

EHS staff attending autoclave system technical training.
Welcome to the 2018 Annual Report for Environmental Health and Safety (EHS). Please understand that this is a condensed snapshot of the various programs within EHS. We have not attempted to describe everything we do because it would likely be rather long and boring. Instead, we provided facts and information that will provoke some thought about campus safety and hopefully, reflect the contributions of the entire staff.

EHS has many programs to help provide a safe and environmentally responsible campus, but we cannot do it alone. We hope you find this information to be both interesting and useful.

John
DIRECTOR, EHS

SAFETY IS THE RESPONSIBILITY OF EVERY MEMBER OF THE CAMPUS COMMUNITY: STUDENTS, FACULTY, STAFF, AND VISITORS.

Together we must maintain a healthy and safe campus and foster a culture of safety throughout the university.
STATEMENTS

VISION, MISSION & VALUES

VISION

It is our vision to become a recognized national leader and innovator in campus environmental health and safety.

MISSION

The mission of Environmental Health and Safety is to promote healthy and safe operations on campus, to protect students, faculty, staff, and visitors and to ensure the protection of the environment.

VALUES

- **Service**: We are customer service-oriented and offer responsive, reliable and seamless support.
- **Stewardship**: We are exceptional caretakers of the resources entrusted to FAS.
- **Integrity**: We perform our work in a transparent, honest, and accountable manner. We also commit to meeting all compliance and reporting standards.
- **Innovation**: We are creative and innovative in our service to the campus community.
- **Diversity**: We believe the best ideas are born from sharing viewpoints, opinions, and perceptions from colleagues with varied backgrounds and experiences.
- **Teamwork**: We work collaboratively across our organizations on common objectives and develop efficient and cost-effective systems and processes for campus.
Environmental Health and Safety is under the Campus Safety office within the Financial and Administrative Services portfolio. Units under this portfolio support and enhance the University’s core mission to be more effective, efficient, and achieve operational excellence.

FINANCIAL AND ADMINISTRATIVE SERVICES
DARRELL BAZZELL, SENIOR VICE PRESIDENT AND CHIEF FINANCIAL OFFICER

CAMPUS SAFETY
JIMMY JOHNSON, ASSISTANT VICE PRESIDENT

ENVIRONMENTAL HEALTH AND SAFETY
JOHN SALSMAN, DIRECTOR
NENA ANDERSON, ASSOCIATE DIRECTOR
ANDREA MCNAIR, ASSOCIATE DIRECTOR
DEWAYNE HOLCOMB, ASSOCIATE DIRECTOR

Total 34 employees
MANAGEMENT

THE TEAM

NENA ANDERSON
ASSOCIATE DIRECTOR
ENVIRONMENTAL PROGRAMS

- Environmental Programs
- Food and Drinking Water Safety
- On-Call Response

ANDREA MCNAIR
ASSOCIATE DIRECTOR
CAMPUS, OCCUPATIONAL, AND LABORATORY SAFETY

- Biological and Laboratory Safety
- Campus and Occupational Safety

DEWAYNE HOLCOMB
ASSOCIATE DIRECTOR, RSO, LSO
RADIATION AND LASER SAFETY

- Radiation Safety
- Laser Safety
# WHAT WE DO

## OUR PROGRAMS AND SERVICES

### PROGRAM AREAS

#### BIOLOGICAL AND LABORATORY SAFETY
- Chemical Safety
- Biological Safety
- Laboratory Evaluations
- Respiratory Protection

#### CAMPUS AND OCCUPATIONAL SAFETY
- Fall Protection
- Asbestos
- Hearing Conservation
- Aerial Lift and Crane Safety
- Machine Shop Safety
- Respiratory Protection

#### ENVIRONMENTAL PROGRAMS
- Regulatory Compliance and Support
- Hazardous Waste Management
- Water Quality (Stormwater and Wastewater)
- Pollution and Spill Prevention

#### RADIATION AND LASER SAFETY
- Radioactive Materials Permitting and Licensing
- X-ray and Laser Registration
- Laboratory Evaluations

### SERVICES

#### ANIMAL MAKE SAFE
- Wildlife Incidents
- Animals on Campus

#### FOOD AND DRINKING WATER SAFETY
- Food Safety Inspections
- Food Distribution Approval
- Drinking Water Testing

#### ON-CALL RESPONSE
- On-Call Program
- 24/7 Emergency Response

#### PROJECT PLANNING AND DESIGN REVIEW
- New and Existing Construction Review
- Design and Construction Standards

#### UNMANNED AERIAL VEHICLES
- UAV Request Approval

#### TRAINING AND OUTREACH
- Training Management
- Campus Outreach
HOW WE WORK

BUILDING RELATIONSHIPS

CAMPUS PARTNERS
EHS works closely with other campus departments such as Fire Prevention Services, Emergency Preparedness, Project Management and Construction Services, Facilities Services, Utilities and Energy Management, Campus Planning and Construction, and the University's Colleges and Schools.

COMMUNITY PARTNERS
EHS serves as a liaison with regulatory and compliance agencies such as the Environmental Protection Agency, the Drug Enforcement Administration, the U.S. Department of Transportation, the City of Austin, the Texas Commission on Environmental Quality, and the Texas Department of State Health Services. EHS is charged with certain health and safety inspections and compliance for all applicable federal, state, and local regulations and other EHS requirements intended to protect safety, health, and the environment.

CUSTOMERS
EHS serves the campus community. Our customers include faculty, staff, students, campus visitors, and volunteers.

IN 2018 THE FACILITIES SERVICE CENTER ROUTED 129 CAMPUS TROUBLE CALLS TO EHS.
UT AUSTIN

EHS provides support in ensuring healthy and safe operations on campus, protecting students, faculty, staff, and visitors, and ensuring protection of the environment.

TRAINING
* Update and maintain online safety courses
* Instructor-led training as requested

TECHNICAL KNOWLEDGE
* Construction plan review
* Serving on regulatory committees
* Subject matter experts on health and safety issues

RESEARCH
* Technical review for renovations
* Space evaluations
* Biosafety cabinet evaluations
* Lab evaluations
* Controlled substances
* Committee reviews
* Consulting on safe lab practices
* New PI orientation
* Equipment cleanup/monitoring
* Lab closeouts

STUDENTS
* Review and consultation for student events
* Provide student-oriented training

CAMPUSS EVENTS
* Technical knowledge and emergency response support
* Safety reviews
* Outreach to campus community

ENVIRONMENTAL
* Collaboration relating to Waller Creek and urban ecosystems
* Chemical and Biological spill cleanup

SAFE WORK ENVIRONMENT
* Odor/IAQ response
* Hazardous materials shipments
* Risk assessments
* Accident investigations
* Emergency incident response
* Exposure monitoring
* Fit test suitability

SAFE CAMPUS
* 24/7 incident response
* Food establishment inspections
* Drinking water testing
* Identification of slip/trip/fall hazards
* Spill cleanup
* Wildlife incident mitigation
## Year in Review

### Highlights

<table>
<thead>
<tr>
<th>Area</th>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Programs</strong></td>
<td>2</td>
<td>City of Austin Excellence in Pretreatment Awards received</td>
</tr>
<tr>
<td><strong>Training and Outreach</strong></td>
<td>5</td>
<td>Training modules developed (3) or updated (2), and published to UTLearn</td>
</tr>
<tr>
<td><strong>Campus and Occupational Safety</strong></td>
<td>136</td>
<td>Indoor Air Quality Responses</td>
</tr>
<tr>
<td><strong>Biological and Laboratory Safety</strong></td>
<td>463</td>
<td>Research protocols reviewed (364 Institutional Biosafety Committee (IBC), 99 Institutional Animal Care and Use Committee (IACUC))</td>
</tr>
<tr>
<td><strong>Hazardous Waste</strong></td>
<td>7,926</td>
<td>Individual chemical waste items submitted for pickup</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td></td>
<td>Biological and Laboratory Safety and Campus and Occupational Safety joined to become COALS</td>
</tr>
<tr>
<td><strong>Food, Water, Sanitation</strong></td>
<td>27</td>
<td>Food truck permits issued</td>
</tr>
<tr>
<td><strong>University Support</strong></td>
<td>1,797,349</td>
<td>Increase in square footage from 2017-2018 that EHS supports</td>
</tr>
</tbody>
</table>
EMERGENCY RESPONSE

CITY-WIDE BOIL WATER NOTICE

In October of 2018, Austin Water issued a city-wide boil water notice for all of their customers, including the University of Texas at Austin. This was the first time a city-wide boil water notice had been issued in the history of the city's water utility.

Historic flooding into the city's water supply lake created very high levels of silt which required extended filtration and limited the availability of safe, treated water for consumption. The boil water notice remained in place for seven days, creating an unprecedented water crisis on campus.

Staff from Environmental Health and Safety worked with Facilities Services and Utilities and Energy Management to ensure the safety of the drinking water. EHS also worked with Building Managers to cover campus water fountains and with on-campus food establishments for food and water issues caused by the notice.
Lab Safety conducts safety evaluations of research and teaching laboratories at UT Austin and satellite facilities. This program also provides training and guidance on a number of laboratory topics including bloodborne pathogens, hazardous materials shipping, chemical safety, biological safety, select agents and toxins, and controlled substances. Lab Safety also investigates laboratory incidents including fires, spills, laboratory injuries, and any chemical or biological exposure.

Accomplishments
• Assisted the CDC in an inspection for the import of non-human primate materials.
• Reviewed 99 IACUC and 364 IBC protocols.
• Provided design support to initial Energy Engineering Building (EEB) planning process.
• Supported decommissioning and close out of laboratories in W.R. Woolrich Labs (WRW) Building.
• Initiated the campus-owned liquid nitrogen tank testing program.
• Onboarded 25 new PIs on laboratory safety (up from 14 last year) which consumes about 15 hours of staff time for each PI.

Future
• Develop a Handbook of Operating Procedures (HOP) on hazardous materials shipping.
• Create a formal written laboratory close out program.
• Transition from an older version of the EHS Assistant laboratory safety database to a more versatile and mobile application.
Although lab evaluation workload has been steadily increasing, the number of inspectors was reduced from 5.75 to 5.17 FTEs in 2018. To manage increased workload, a risk assessment of lower hazard (LHL1) labs allowed us to change evaluation frequency from annual to once every two years. Unfortunately, with the increase in new labs, there was a negligible change in the number of lab evaluations. Estimated projections of new labs include EER (2019), WEL '78 wing (2020), and EEB (2021).

In 2017, new construction (EER and HDB) and taking over MSI/FAML fume hood testing caused a large spike in the number of fume hoods tested annually. Then in 2018, 133 fume hoods were removed for the WEL ‘78 wing renovation. Additional new fume hoods will be added to the testing inventory when WEL ‘78 wing (2020) and EEB (2021) are completed. Currently, one FTE completes all fume hood evaluations for the entire university.

Of the 1256 fume hoods evaluated in 2018, 9% failed. As a result of these evaluations, EHS entered 193 work orders to restore either fume hood functionality or proper room pressurization.

Lab hazard levels (LHLs) were implemented in 2018 to account for a reduction of inspectors and increase in the number of labs. LHL1 are the lowest hazard level, evaluated once every two years. LHL2 labs are evaluated annually and LHL3 labs (also referred to as high hazard) are evaluated twice each year. As hazard levels increase, there was an increase in the number of evaluation items noted in 2018.
Program Areas

Campus and Occupational Safety focuses on preventing incidents to ensure the safety of students, faculty, staff and visitors. Initiatives include the Occupational Safety Committee, Respirator Protection, Fall Protection, Machine Guarding, Construction Design Review, Aerial Lifts and Cranes, Indoor Air Quality, Confined Space, Hearing Conservation and Industrial Hygiene.

Accomplishments

- Redesigned and deployed hot work permit program to achieve campus consensus.
- Developed and implemented Campus Mobile Crane program and procedures.
- Contributed to 5 separate design and construction standard divisions. Planned and developed the first gas monitoring design standard.
- Reactivated the campus ventilation committee due to stop work order at NHB.
- Developed Asbestos Protected Building Program.
- Four, week-long site visits to McDonald Observatory to provide assessments for occupational safety and industrial hygiene support. Provided respirator fit testing and personal protective equipment training/demonstration.
- Supported CPC demolition of WRW with identification of hazardous materials.
- Coordinated confined space drills with Austin Fire Department.
- Successfully convinced PMCS and CPC the cost-effectiveness of parapets and guardrails rather than active fall protection with anchors.

Future

- Finalize the gas monitoring design standard.
- Establish online hot work permit approval system (with a mobile application).
- Establish confined space inventory database and finalize campus confined space program.
- Redevelop and re-organize occupational safety program information for departmental EHS webpage redesign.
- Plan review for new UT Football South Endzone project.
- Contribute to the successful design and construction of EEB. Identify project costs for fall protection to save funds for EEB.
Currently, a significant number of employees are seeking advanced medical care from an external provider and underutilizing the campus occupational health clinic (HealthPoint – OHP). Injury reports are limited to injuries reported to OHP and WCI. Lack of a shared and easily accessible incident database prevents injury trend analysis and communicating lessons learned since departmental safety coordinators conduct independent investigations.

The initial architectural design process typically neglects fall protection to maintain aesthetics, for example at EEB. Once added to the design, campus is unaware of the costs associated with active fall protection systems (anchors tiebacks). Passive fall protection (parapets and guardrails) are significantly more cost-effective than active fall protection.

The Asbestos Service Center data suggests that projects have a ~25% chance of identifying asbestos in disturbed materials.
PROGRAM AREAS

ENVIRONMENTAL PROGRAMS

Environmental Programs is tasked with ensuring compliance with City, State, and Federal permits and regulations related to water quality (stormwater and sanitary sewer), water recycling, flood control, and erosion control. This program is also responsible for the proper disposal of chemical and biological waste for the University.

Accomplishments

• Received two City of Austin Excellence in Pretreatment awards- Main Campus and PRC.
• Main campus upgraded to Major Industrial User (wastewater permit).
• Developed Pretreatment Device Training modules (OH 108, OH 109) in UTLearn.
• Increased support for Dell Medical School.
• Addressed systemic hood failure in NHB; participated in problem identification and tested all hoods.

Future

• Implementation of Environmental Management System.
• Development of Environmental Programs training module.
• Development of an MOU with Utilities for water and wastewater emergencies.
Environmental Programs provides a range of services, from responding to environmental incidents to construction site plan review and inspections, to full-fledged compliance support. We manage the University’s state-issued stormwater permit and City-issued wastewater permits. With a focus on maintaining compliance, the Environmental Programs team offers support for multiple sites, in addition to the UT main campus, by conducting sampling, reviewing stormwater pollution prevention plans (SWPPP), providing guidance and inspections on spill prevention, control, and countermeasures (SPCC) and providing compliance support for water, wastewater and petroleum storage tank regulations.

Energetic waste streams such as non-halogenated solvents are blended at the Port Arthur facility and shipped to one of our approved Cement Kiln Partners. The Waste Derived Fuels that are generated provide a direct fuel replacement of fossil fuels (coal, natural gas or fuel oil) that are required to maintain kiln temperatures.

Through Veolia’s fuel blending process UT Austin’s hazardous waste streams provided approximately 575,385,000 BTUs of energy. This is enough energy to power an average American house using 911 kW/hr a month, for 185 months. On the high-end UT Austin’s hazardous waste streams provide enough energy to power the same house for 444 months.

*Waste streams that are diverted from traditional landfill disposal. In 2018 a total of 40% was diverted.

In 2018 UT Austin shipped out approximately 5 tractor trailers worth of biological waste or 18,071 cu ft.
PROGRAM AREAS

RADIATION AND LASER SAFETY

Radiation and Laser Safety provides safety and compliance support and training for the use of radioactive materials, x-ray machines, and lasers. Training provided includes Basic Radiological Health, Laser Safety, and refresher training. EHS holds the registrations and licenses for University lasers and radioactive materials, and issues permits to users.

Accomplishments

• Dell Medical School was approved for their own radioactive materials (RAM) license for diagnostic and research use.
• Radiation Safety added a Radiation Safety Officer to oversee the use of RAM and x-ray units at Dell Medical School.
• Licensing of PET/CT scanner for UT Health Austin.
• Full certification of UT Health Austin's state-of-the-art 3D mammography facility.
• Laser Safety staff member was recognized by the Board of Laser Safety as a Certified Laser Safety Officer.
• Completed the safety evaluation for the new veterinary laser system at MSI, and for two UV room sterilization systems.
• Devised a creative solution to overcome Department of Energy laser safety course technical issues to incorporate the course into UTLearn.

Future

• Development of a new X-ray Safety training module in UTLearn.
• Development of a Liquid Scintillation Counter calibration program.
• Complete the ten-year technical renewal for UT Austin’s Texas Department of State Health Services registration for lasers.
• Support and upgrade safety analysis for revitalized Texas Petawatt laser projects.
• Continue support for the installation of the NASA laser ranging station at McDonald Observatory.
• Coordinate logistics for the DOE Laser Safety Workshop.
The number of Authorized RAM Users (AUs) has remained relatively constant over the last nine years. In 2018, there were two new Authorized Users (AUs) of radioactive materials.

This chart of the number of Authorized Laser Users (Principal Investigators) arriving and leaving UT annually demonstrates the continuous increase in laser use over the last seven years. These figures show an average annual net gain, varying widely year to year, of about ten new ALUs per year.
Lab Safety Specialist, Anthony Garza, performs a lab evaluation.
SUPPORT SERVICES

**SUMMARY**

**ANIMAL MAKE SAFE**
The Animal Make Safe (AMS) program works to minimize negative human/wildlife interactions by safely and humanely responding to live animal incidents on campus. Techniques include capture and removal, live trapping, and exclusion. AMS also reviews and approves requests to include animals as part of special events.

**FOOD, WATER, AND SANITATION**
EHS staff are responsible for conducting food safety inspections of the permitted food vendors and kitchen facilities on campus, approving the distribution of food on campus by staff, students, or vendors, and ensuring quality drinking water.

**ON-CALL RESPONSE**
Environmental Programs oversees the coordination and training for the EHS on-call program to ensure incident response 24 hours a day/7 days a week. Incidents that EHS responds to include hazardous material spills, fires, odors, animals, and lab incidents.

**PROJECT PLANNING AND DESIGN REVIEW**
The primary function of Project Planning and Design Review is to ensure that facilities are designed and constructed to meet established safety and environmental regulations and best practices. EHS works closely with PMCS to coordinate projects needing EHS input.

**TRAINING AND OUTREACH**
EHS offers a variety of health and safety training opportunities to the campus community including classes in laboratory safety, laser and radiation safety, occupational safety and environmental concerns. EHS produces informational brochures, posters, signs, and other outreach materials to keep UT Austin students, faculty, staff, and visitors informed and safe. EHS also participates in campus events to raise awareness about our department and general safety.

**UNMANNED AERIAL VEHICLES (UAVS)**
EHS is responsible for the coordination of UAV flight requests in accordance with HOP 8-1070 Unmanned Aerial Vehicles. UT Austin requires that all UAV flight requests be submitted in advance for review and potential approval by the UAV Review Group.
SUPPORT SERVICES

ANIMAL MAKE SAFE

Accomplishments

- Answered 135 animal incident calls routed through the Facilities Service Center, UTPD, FCMS, and EHS front desk or direct calls to AMS during business hours.
- Processed 50 Live Animal Requests to bring animals onto campus.
- Cross-trained five EHS FTEs to respond to animal incidents.
- Investigated one potential rabies exposure and two animal contact incidents.
- Submitted four requests for animal exclusion/building repairs (PHR (2), GEA, LFH).

Future

- Revise guidelines for animal response and exclusion decisions, particularly raccoon incident response.
- Convert Live Animal Request form to online.
- Improve AMS incident response during the day - formalize procedures with FTEs and front desk staff.

Lab Safety Specialist, Corina Hernandez holds a baby Mockingbird that was rescued after becoming tangled in string.

Animal Incidents in 2018

Birds and bats make up the largest percentage of animal incidents.

Live Animal Requests 2018

Including live animals as part of events continues to be a popular request.

Lab Safety Specialist, Corina Hernandez holds a baby Mockingbird that was rescued after becoming tangled in string.
SUPPORT SERVICES

FOOD, WATER, AND SANITATION PROGRAM

Accomplishments

• Water testing on campus and at satellite locations during the Austin Flooding and Boil Water Notice. Seventy-five water samples on main campus and satellite facilities.
• Four new permitted food establishments.
• Assisted with the restoration of MSI Cafe following Hurricane Harvey.
• Twenty-seven food truck permits issued.
• Began temporary food event education for student groups through Dean of Students three times per year.
• Inspected eleven pools.
• Inspected four daycares.

Future

• Updating program information on EHS website.
• Develop a more efficient system for food distribution request system and student events.
• Create a digital database accessible on EHS website for health inspection scores.

Decreasing Food Distribution Request Submittals can be attributed to streamlining the process, providing training to end users, and combining recurring events.
EHS responds to a variety of emergency situations and incidents during regular work hours and on-call, after hours.

EHS may be called out to respond to anything from “near-miss” situations, where a major accident was avoided, to major fires and explosions. More commonly, EHS on-call staff respond to chemical spills, chemical exposures, and lab equipment incidents.

Accomplishments
- Supported the university by responding to incidents during working hours, after hours, and on weekends and holidays.

Future
- Continue to improve the on-call program through procedure review, communication, and training.
SUPPORT SERVICES

PROJECT PLANNING AND DESIGN REVIEW

Accomplishments

• 370 Project Reviews, an increase of 30% over the previous year. Projects included:
  - Finishing out laboratories for the new Energy Education and Research building.
  - Finishing out Vivarium, clinic spaces and Ambulatory Surgery Center at the Dell Medical Complex.
  - New Energy Engineering Building.
  - New Applied Research Laboratories at Pickle Research Campus.
• Began development of a Campus Ventilation Management Plan.

Future

• Anticipated 30% increase in Project Reviews for 2019 Including:
  - Major renovation for SEA building.
  - Major renovation for South End Zone of the stadium.
  - Development and revisions for UT Design and Construction Standards.
SUPPORT SERVICES

TRAINING AND OUTREACH

Accomplishments

• Developed, updated and published multiple training modules (Radiation Safety Awareness, Pretreatment Devices (2), Bloodborne Pathogens, SPCC).
• Participated in numerous outreach events, including UT Marketplace, Texas Family Showcase, the Sustainability Tabling Event, and Student Government Safety Week.
• Began regularly posting on the Campus Safety social media Facebook and Twitter accounts.

Future

• Develop a new system for entering OH 102 forms.
• Update website to reflect changes in organization structure and improve ease of finding information.
• Hire employee/student worker to assist with training, outreach, and social media.
• Continue to update existing classes and develop new online training.
• Update tabling event materials and improve community engagement.

7,000+ people took over 20,000 EHS online classes in 2018.

SUPPORT SERVICES

UNMANNED AERIAL VEHICLES (UAVS)

Accomplishments

- FTE designated to handle UAV requests.
- Approved forty-four UAV requests and denied eleven.

Future

- Update website to provide needed information for flight requests.
- Continue to work on improving the online request process.

As the use of UAVs for research becomes more popular, UAV requests and approvals are expected to increase yearly.