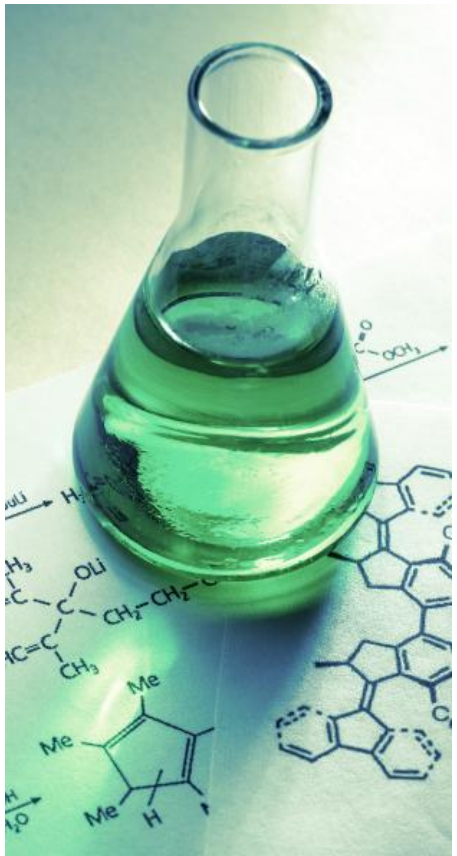
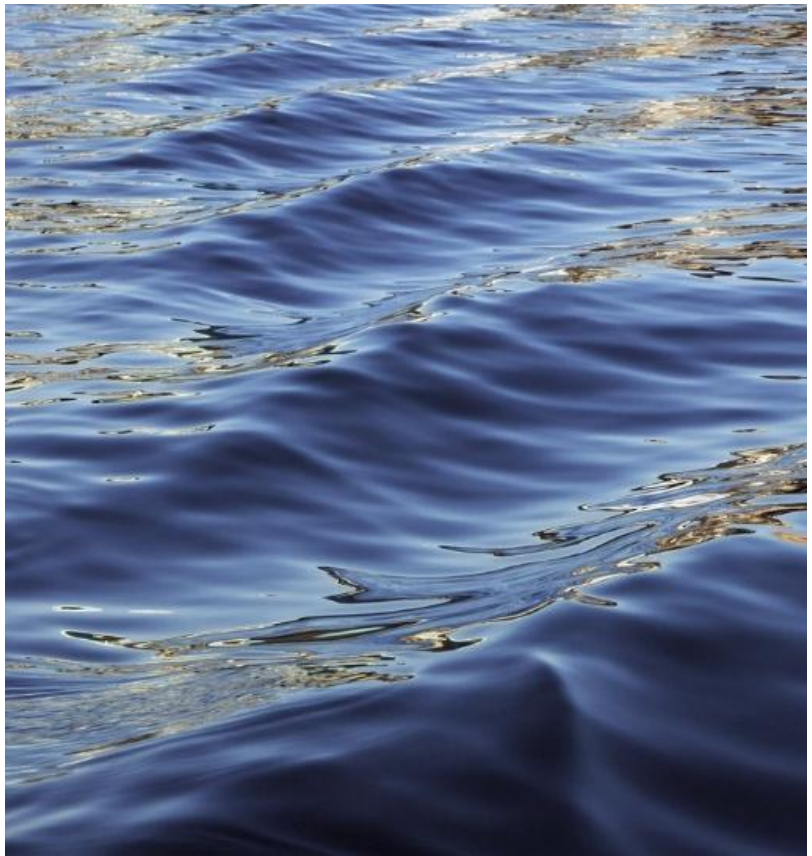
TURI Report: Enhancing Competitiveness through Toxics Use Reduction

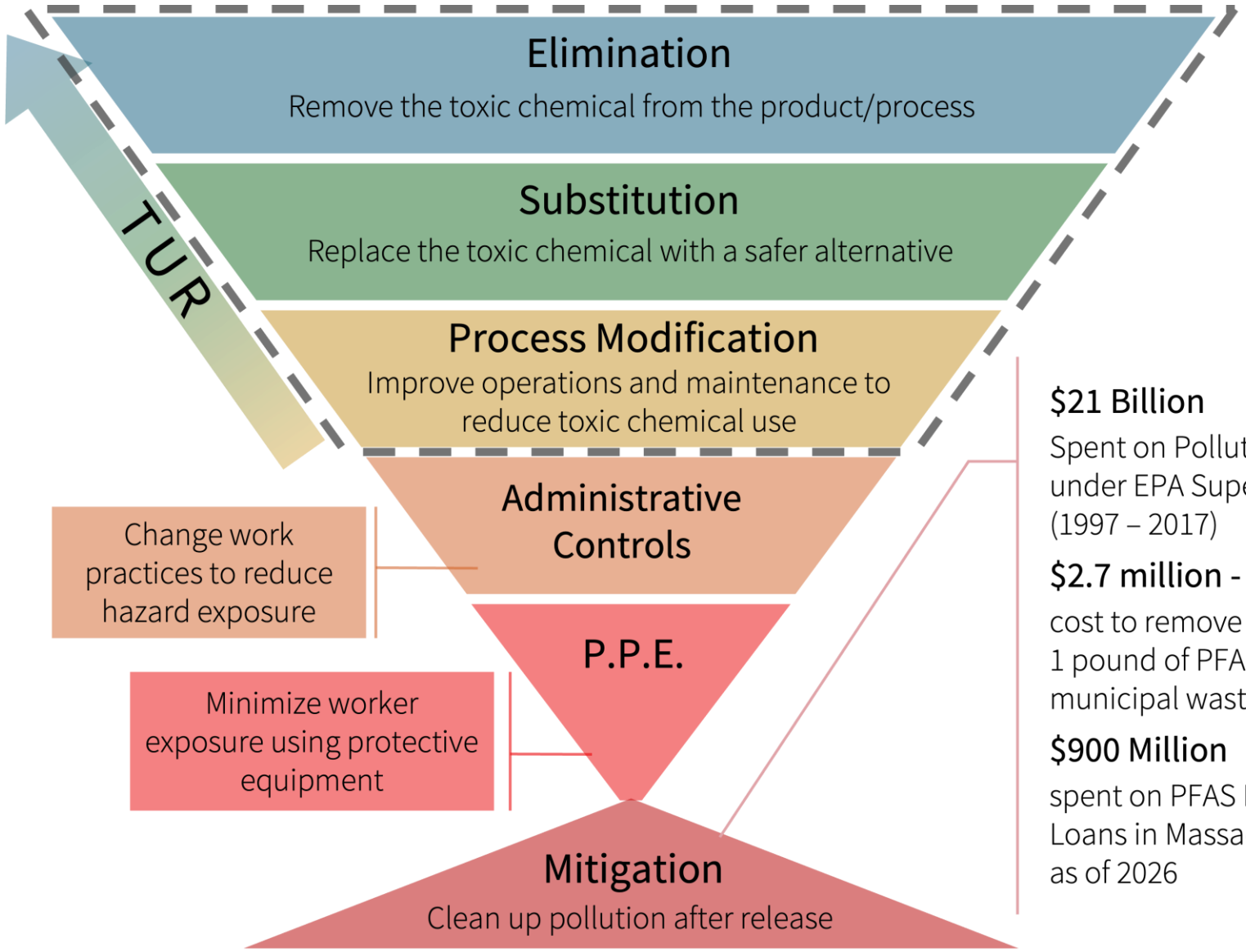


April 8th, 2026

TUR Conference, Session A



Cost Effectiveness and Cost Savings



$21 Billion
Spent on Pollution Clean Up under EPA Superfund (1997 – 2017)

$2.7 million - $18 million
cost to remove and destroy 1 pound of PFAS from municipal wastewater

$900 Million
spent on PFAS Mitigation Loans in Massachusetts as of 2026

$2.3 Billion
Saved by Businesses Under EPA's P2 program from 2011 to 2022

115%
Annual savings generated relative to TURI grant funding (2017-2025)

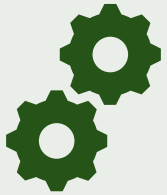
Competitive Advantages Gained through TUR

Improved Productivity

Eliminates process bottlenecks, reduces waste, and increases throughput—allowing companies to produce more with fewer resources.

Stronger Market Position

Better prepares businesses for evolving regulations and customer expectations, reducing compliance costs and expanding market access.



Greater Resource Efficiency

Reduces use of chemicals, energy, and water along with lower costs associated with waste management, PPE, and pollution control equipment.

Table 1: Key Massachusetts Companies Highlighted in this Report

Company (sector)	Annual Savings	Toxics Use Reduction (lbs./year)	Competitive Advantages Gained
CD Aero (electronics component manufacturing)	$46,450	5,600	
Steel Art Co. (signage)	$52,275	6,020	
Boyd (electronics component manufacturer)	$31,000	16,000	
Umicore (industrial metals)	$24,461	2,000	
New Method Plating (metal finishing)	$57,000	980	
Synventive (plastics)	$31,000	2,800	
Vishay Sprague (semiconductors)	$8,750	1,700	

New Method Plating Case Study

Implemented a safer chemical solution with TURA support to achieve the following

$57,000
Annual Cost Savings

65%
Reduction in Energy Use

1.5x
Greater Throughput

New Method Plating - TURI Case Study

Improved Productivity

Increased throughput with reduced need for worker training and maintenance.

Stronger Market Position

Avoided federal restrictions while strengthening supply chain relationships. Saved on costs related to regulations and hazardous waste management.

Resource Efficiency

Drastically reduced energy use while lowering chemical and PPE costs.

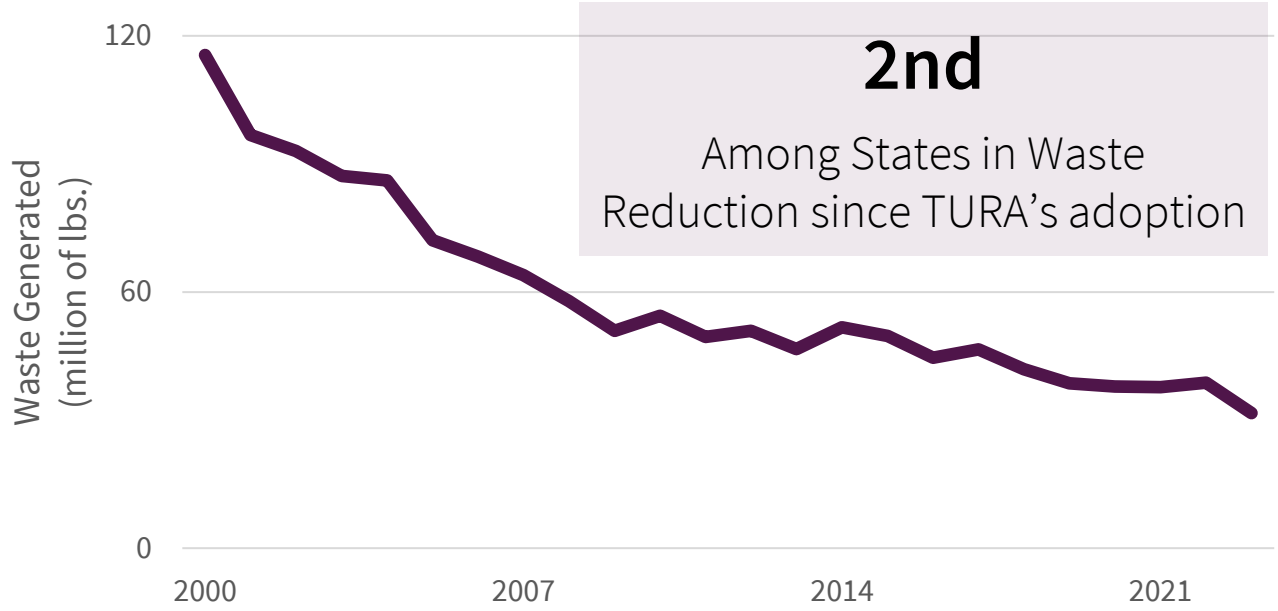
Improved Productivity through Toxics Use Reduction

- 2.1 Increased Throughput
  - Speeding up production cycles
  - Reduced need for maintenance
  - Eliminating process bottlenecks
- 2.2 Waste Reduction as a Measure of Productivity
  - Producing more output with less waste
  - Lower costs associated with waste handling

51% Increase

In Production among TURA Filers from 2000 to 2023

Figure 3: Chart Showing Reduction in Waste Generation Under TURA from 2000 to 2023*



2nd

Among States in Waste Reduction since TURA's adoption

Stronger Market Position through Toxics Use Reduction

- 3.1 Meeting market expectations
  - Responding to customer and corporate demands
  - Expanding Market Access
- 3.2 Facilitating Supply Chain Collaboration
  - Bring together diverse supply chain actors
  - Enable small manufacturers to use safer chemicals

“This collaboration accelerated our ability to manufacture and sell safer etching products, which helps companies in the electronics supply chain meet new regulatory requirements and protect health and the environment.”

— Christopher Christuk, President of Transene Company

LOCKHEED MARTIN

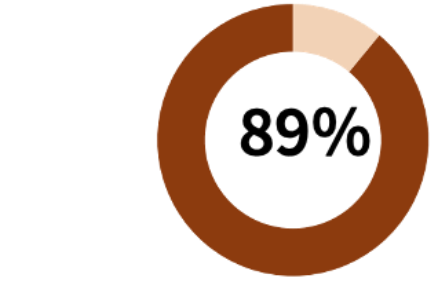
BOEING

NASA

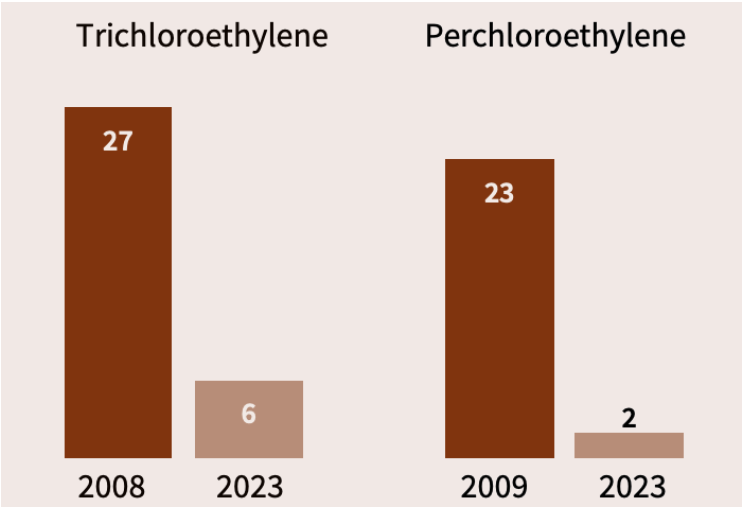
Raytheon Technologies

Stronger Market Position through Toxics Use Reduction

- 3.3 Staying Ahead of Regulations
  - Proactively avoiding chemical prohibitions
  - Having substitutions in place ahead of competitors
- 3.2 Lower Regulatory Costs
  - TURA Fees and TUR Planning
  - Avoiding Workplace Compliance Costs



Support the goal of the U.S. Toxics Substances Control Act (TSCA) to ban harmful chemicals [19]



Administrative Costs
Labor costs for rule familiarization, recordkeeping and customer notification
$593 Up front + **$522** Per year

Skin Protection
Costs for gloves and other dermal protection equipment, labor costs for development of procedures and training
$357 Up front + **$1,008** Per year

Respiratory Protection
Costs related to workplace air monitoring program and respirator equipment
$9,225 Up front + **$20,692** Per year

Greater Resource Efficiency through Toxics Use Reduction

- 4.1 Lower Water, Energy and Chemical Costs
  - Safer does not mean more expensive
  - Efficient equipment operating at lower temperature and pressure
- 4.2 TUR Planning to Increase Resource Efficiency
- 4.3 Personal Protective Equipment

$2,000 Up front + $3,000 Annually

Cost per Worker for Respirator Program under proposed EPA rule for Perchloroethylene [25]

Synventive molding solutions
A business of BARNES

Plastics, Peabody, MA

$20,000

Annual Savings on Chemical Costs

RESULTS

RIVERDALE

$5,460

Annual Savings

182,500 Gallons

Annual Water Savings

4.4 Million BTU

Annual Energy Savings

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

Thank you!

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