



# **The Massachusetts Toxics Use Reduction Institute (TURI): A Resource You Should Know About**

2018 TURA and TRI Reporting Workshops

**Massachusetts  
Toxics Use Reduction**



Making Massachusetts a Safer Place to Live and Work

# TURI Resources and Activities

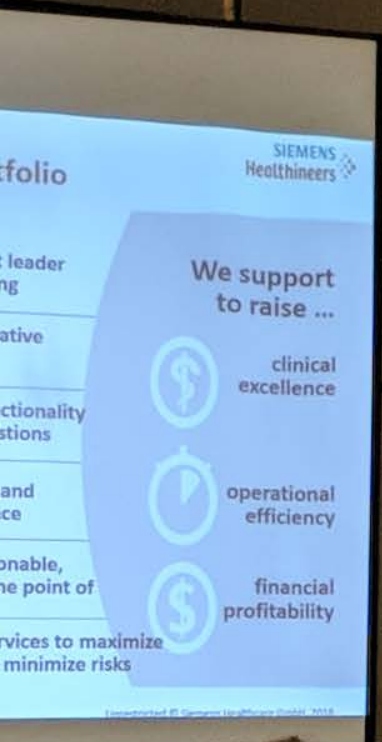
- Training
  - Planner certification and continuing education
  - Demonstration sites
- Grants
  - Large and small businesses
  - Municipalities, regional governments and community organizations
  - University research on safer alternatives
- Laboratory performance testing
- Library/Research services
- Policy analysis



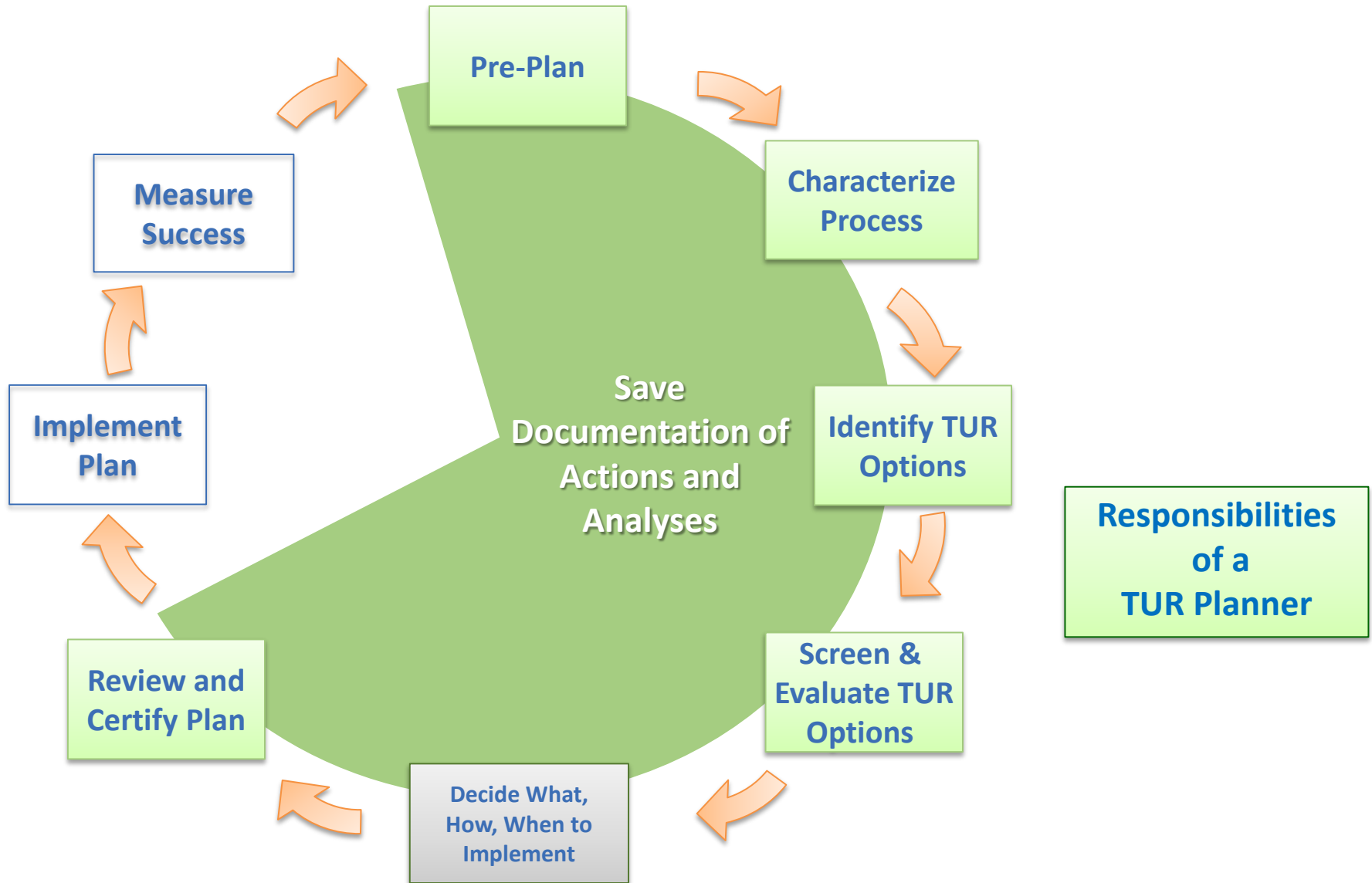


# Training

- Professionals with current knowledge of opportunities and techniques, dedicated to continual improvement
- Certification authority to assure good faith effort

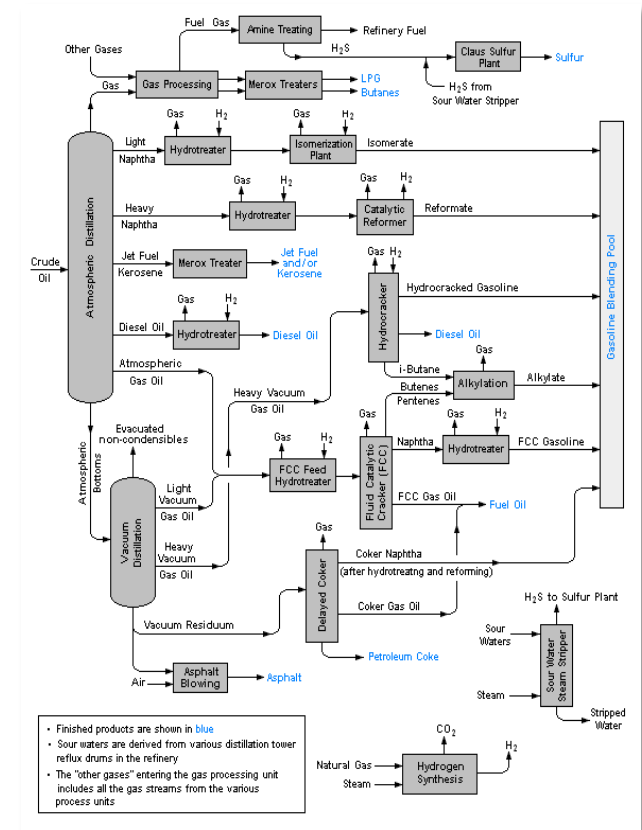


# The Toxics Use Reduction Planning Cycle



# Key Element: Characterizing the Process

- Tour the site
- Create a process flow diagram
- Account for material inputs and outputs
- Ask the most important question: **Why** are chemicals used?
- Determine the chemical use per unit of product
- Determine the byproduct generated per unit of product
- Evaluate the cost of using toxics



# Identifying, Screening and Evaluating Options



**TUR OPTION SCREENING MATRIX**

COMPANY: XYZ	11 CHEM USE: 16,744 lbs
PRODUCTION UNIT NO: 008	UNIT OF PROD: 9,989 lbs metal product
CHEMICAL: FERRIC CHLORIDE	BYPROD/UOP: 2,391 lbs/ UOP
Use/UOP: 1.68 lbs/UOP	EMISS/UOP: 1.56 lbs/UOP

ITEM NO	"BRAINSTORMING" OPTION DESCRIPTION	PRELIMINARY SCREENING EVALUATION COMMENTARY	IMPLEMENT THIS OPTION	FURTHER EVALUATION REQUIRED	OPTION NOT APPROPRIATE	BY	TUR TYPE CODE	MEETS DEP TUR DEFN?	TECH FEAS?	ECON FEAS?	PROCESS CNCRNS?	HEALTH/ SAFETY CNCRNS?	ENVIRON CNCRNS?	ACTION ITEMS	TTL PTS	IMPLEMENTED? YES/NO DATE
2012																
27	Use waste ferric chloride in cupric chloride etcher	We already use waste ferric chloride in E-10	Already Implemented													
28	Install filters on Etcher # 16	Not that much sludge-would have to fix filter vessel, \$5K. If one bath is saved, would be 2 yr pay back			Yes	RR	PURM	3	3	1	2	1	1		11	No
29	Research an electrolytic process to remove chromium and nickel	Have intern from WPI research		Yes		SR	PURM	3	?	?	?	2	2	Summer 2012 Research	?	
30	Allow baths to settle in a separate tank, then pump back into etcher	Discussed with MassDEP and determined that it needs to be permanently attached in order not to be considered treatment. Save possibly 3 X 200 gallons.		Run treatability test		MM	RR	3	3	2	2	1	2	Run treatability test before June 25th.	13	
31	Improve Materials Accounting System	Make sure the data is correct	Already Implemented													

PR - product reformulation	OM - imprvd ops & maint of prod unit equip & methods
PURM - production unit redesign/modification	RR - recycling, reuse, or extended use of toxics
PUM - production unit Modernization	IS-Input Substitution



# Recent Small Business Grants

- Eliminating perchloroethylene in dry cleaning
- Replacing caustic sodium hydroxide and acids used for cleaning in breweries
- Eliminating of solvents in printing operations
- Replacing flame retardant laden foam pit cubes in gyms
- Reducing solvent use in technical high school auto shop



# Brewery Finds Safer Ways to Clean and Sanitize

<https://www.youtube.com/watch?v=4l4Nfo6lQwE>





# Recent Industry Grants

- Optimizing the use of cleaning chemicals at soup processor
- Reducing the use of HF at a fiber optic cable facility
- Increasing efficiency of product usage at aftermarket liquid formulating and packaging facility
- Eliminating the use of TCE in degreasing operations at a liquid cooling systems manufacturer



Kettle Cuisine



US Pack, Inc

# Recent Community Grants

- Providing safer household cleaners in bodegas
- Educating workers and consumers about BPA exposure in cash register receipts
- Delivering green building educational programs for architects, developers, and homeowners
- Supporting adoption of organic grass fields over artificial turf



# Call for Proposals: FY19 Grants

**Industry Grants:** up to \$30,000 and intended for manufacturing facilities to improve processes or install technology that results in reducing toxics.

**Small Business Grants:** up to \$10,000 and intended for businesses that provide services directly to consumers. For example, dry cleaners, restaurants, auto repair and tire shops, bathtub refinishers, etc.

**Community Grants:** up to \$20,000 available for regional or statewide projects and up to \$10,000 for local projects. Municipal governments, environmental and community organizations, youth organizations, housing authorities and school districts are all eligible to apply.

**Academic Research Grants:** up to \$25,000 and available to UMass faculty and their graduate students to partner with Massachusetts companies on researching safer alternatives to toxic chemicals.

For more information go to:  
[https://www.turi.org/Our\\_Work/Apply\\_for\\_a\\_Grant](https://www.turi.org/Our_Work/Apply_for_a_Grant)

# TURI's Cleaning Laboratory

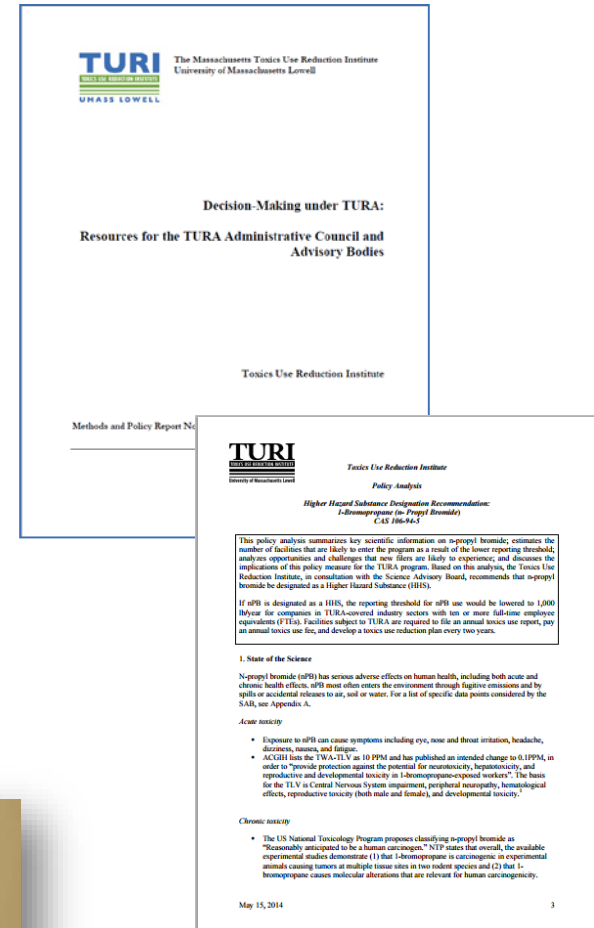
- Assists industry and communities in the search for safer cleaning processes
  - Tests the performance of alternatives to hazardous solvents
  - Extensive database of results
    - [www.cleanersolutions.org](http://www.cleanersolutions.org)
- Industrial parts cleaning
- Janitorial cleaning





# Policy

- Science Advisory Board
- Administrative Council and Advisory Committee
- Analysis of state and federal policy initiatives
- Assessments of TURA program results



# TURI's Library

- Extensive collection of materials on chemicals and safer alternatives
- Searchable online library catalog
- Greenlist – weekly sampling of new publications of interest
- Research assistance
- Subject guides
- Research databases



# Questions?

The Massachusetts  
Toxics Use  
Reduction Institute

*[www.turi.org](http://www.turi.org)*

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