

# OTA RESOURCES &



## CLIMATE CHANGE PREPAREDNESS

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# MASSACHUSETTS OFFICE OF TECHNICAL ASSISTANCE (OTA)

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- ✕ Toxics Use Reduction Act (TURA) of 1989
- ✕ Three partnering agencies:
  - + MassDEP (Regulatory)
  - + TURI (Research & Grants)
  - + OTA (Technical Assistance)

# OTA'S ROLE

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- × Non-Regulatory Agency
- × Work with MA Toxics Users
- × Free & Confidential Technical Assistance
- × 50% of companies we have visited invite us back

**We will not tell any enforcement agencies  
what we see at a facility unless it's an  
imminent threat to public health.**

**We never have!**

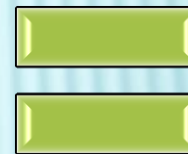


# CHEMICAL SAFETY & CLIMATE CHANGE RESILIENCY

Toxics  
Use  
Reduction



Climate  
Change  
Resiliency  
Planning



Reduced  
Risk of  
Industrial  
Accidents





# **“HURRICANE HARVEY’S TOXIC IMPACT DEEPER THAN PUBLIC TOLD” (3/23/18)**

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- ✖ The Associated Press and Houston Chronicle cataloged more than 100 Harvey-related toxic releases – on land, in water, and in air – in Metropolitan Houston

# “FIRST RESPONDERS FILE SUIT AGAINST ARKEMA OVER ‘SERIOUS BODILY INJURIES’ IN HOUSTON CHEMICAL PLANT FIRE AFTER HURRICANE HARVEY”

- First responders filed a lawsuit in Harris County court alleging [Arkema](#) failed to take adequate safety steps to secure dangerous chemicals ahead of [Hurricane Harvey](#)
- The lawsuit filed by seven police, fire and emergency service workers seeks at least \$1 million

Published 11:22 PM ET Thu, 7 Sept 2017



REUTERS

# What Are The Risks?



# Floods

Chemical Releases & Spills  
Emergency Shutdowns

# Extreme Heat

Chemical Temperature  
Explosion Risks

Climate Change  
& Chemical  
Releases

# Extreme Cold

Power Outages  
Frozen pipes  
HVAC Failure

# Storms

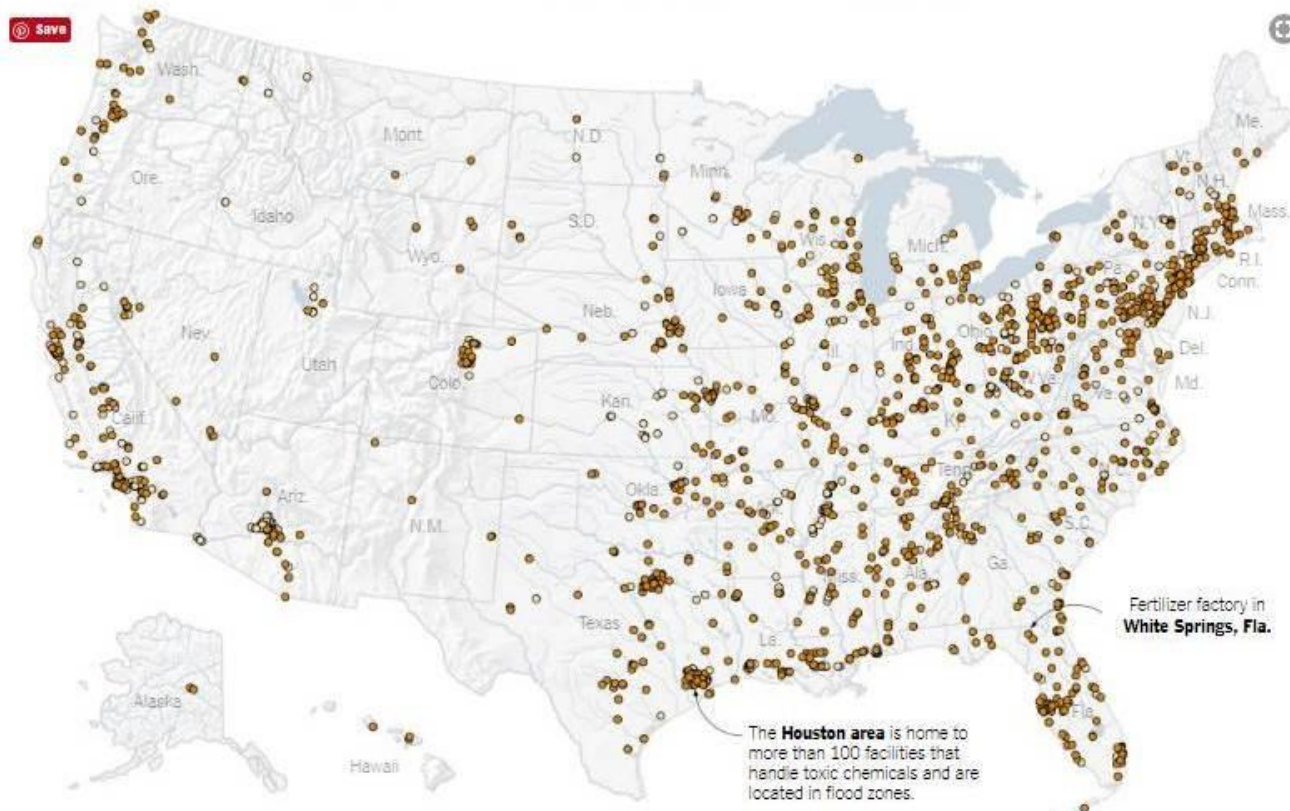
Power Outages  
HVAC Failure  
Infrastructure Failure

# Floods Are Getting Worse, and 2,500 Chemical Sites Lie in the Water's Path

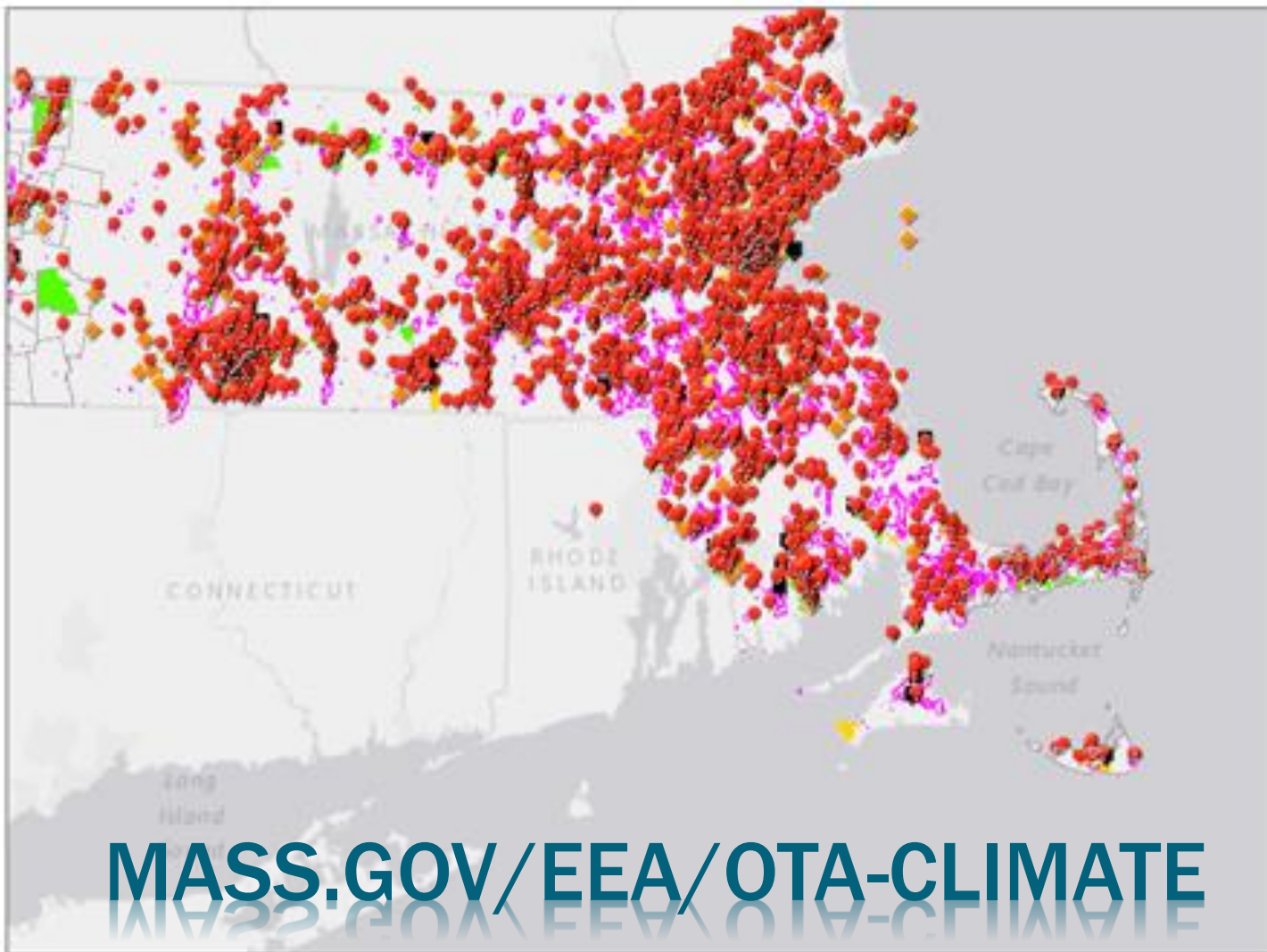
By HIROKO TABUCHI, NADJA POPOVICH, BLACKI MIGLIOZZI and ANDREW W. LEHREN FEB. 6, 2018

**More Than 2,500 Sites That Handle Toxic Chemicals  
Are Located in Flood-Prone Areas Across the Country.**

● Site in area at high risk of flooding ○ Site in area at moderate risk of flooding



# WHAT ARE YOUR RISKS?



[MASS.GOV/EEA/OTA-CLIMATE](https://www.mass.gov/eea/ota-climate)

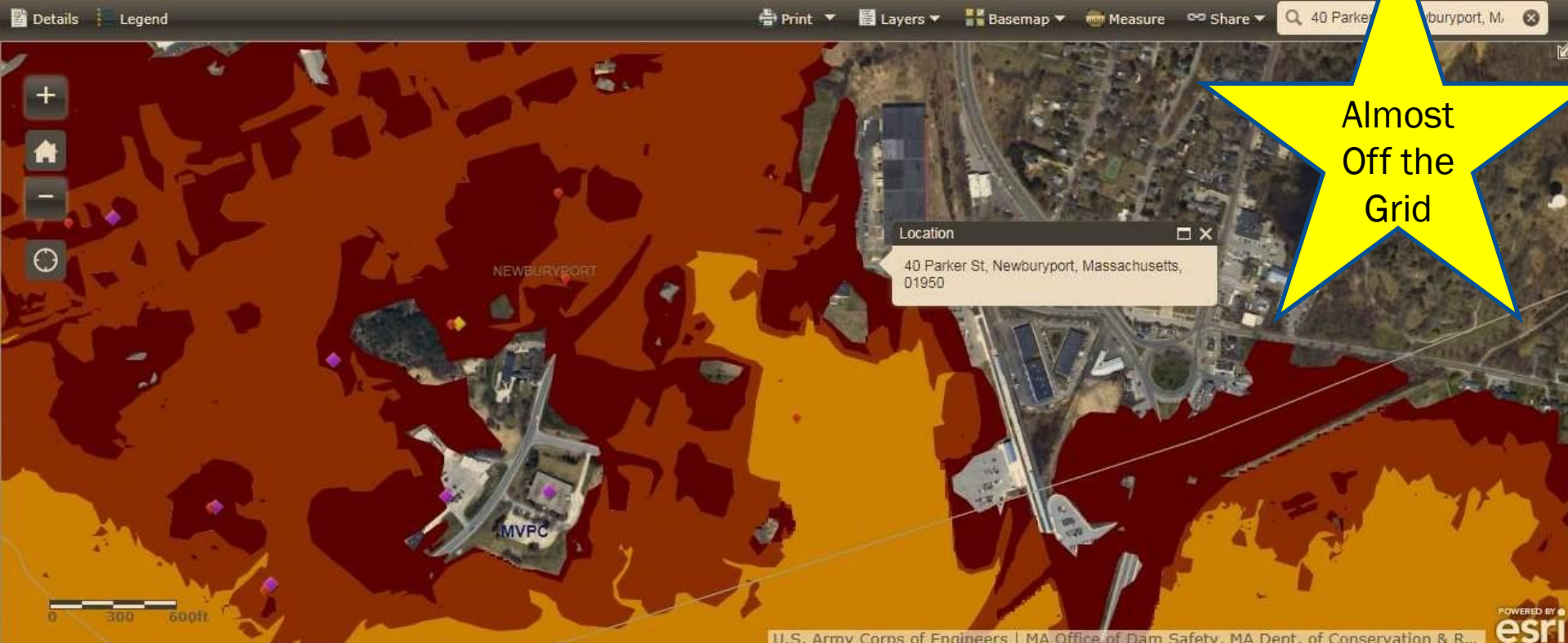


Are You Prepared  
For The Worst  
Case Scenario?

# OTA Case Studies

# MARK RICHEY WOODWORKING – ENERGY EFFICIENCY AND TOXICS USE / WASTE REDUCTION

## Massachusetts Toxics Users and Climate Vulnerability Factors



## Reductions:



120 gallons lacquer thinner / acetone / other chemicals per year

1,200 gallons denatured alcohol per year

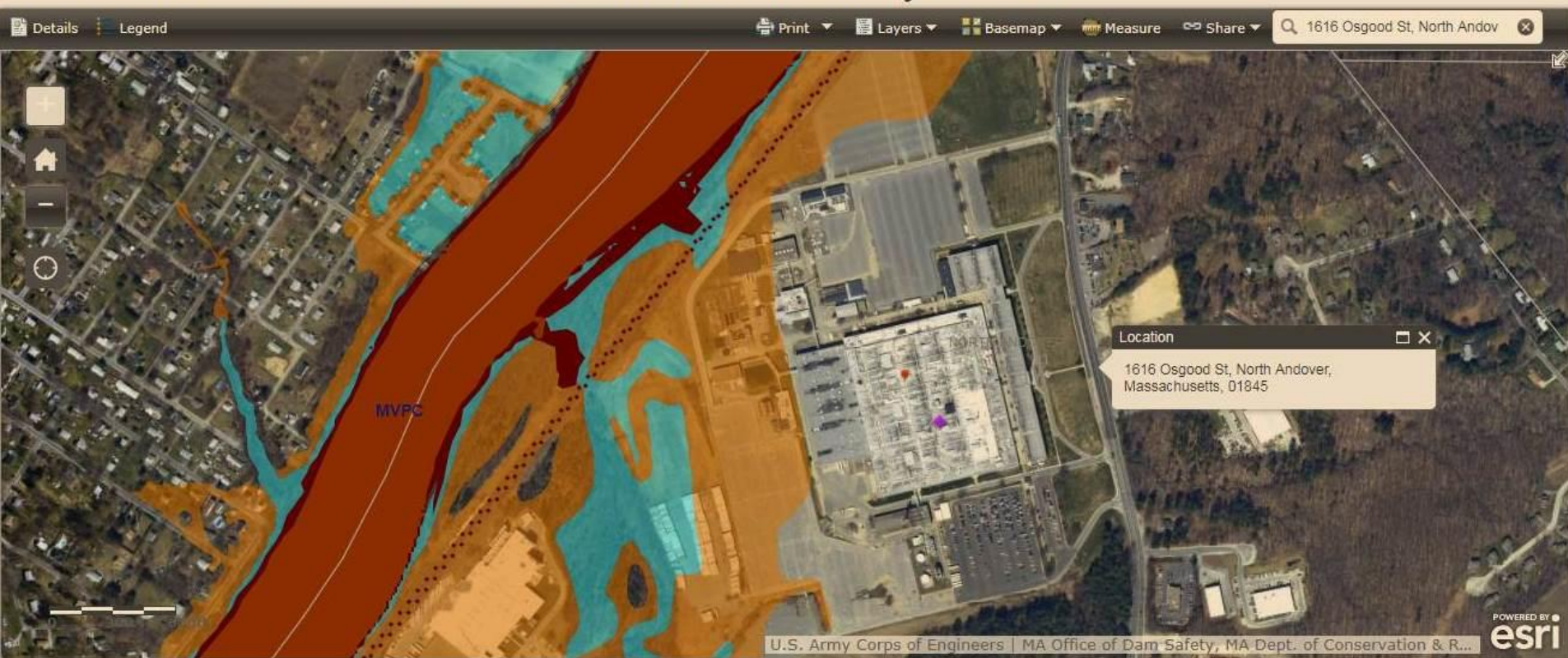
12 tons VOCs per year

Savings of \$16,435



# OPHIR OPTICS – TOXICS USE REDUCTION THROUGH LEAN MANUFACTURING & SIX SIGMA

## Massachusetts Toxics Users and Climate Vulnerability Factors



## Reductions:



3,870 lbs mineral spirits per year

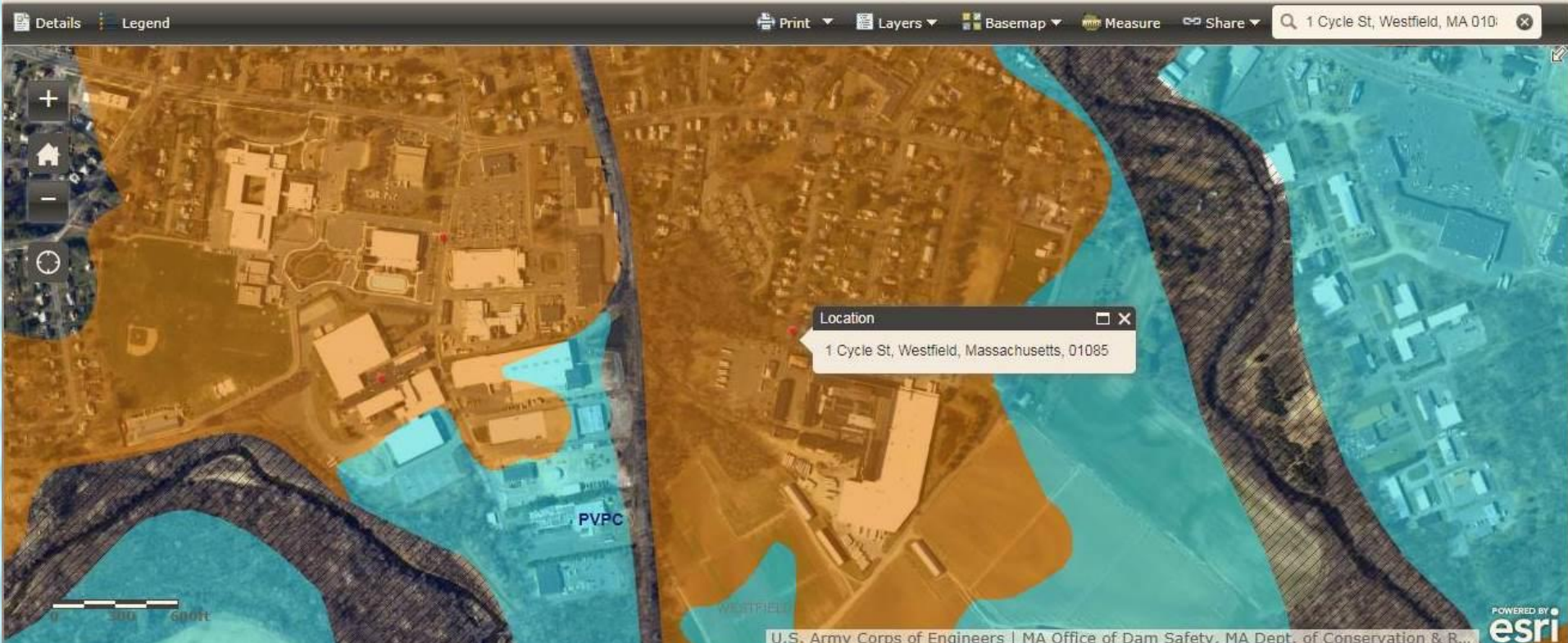
Went from Large Quantity Generator (LQG) to Small Quantity Generator (SQG)

Savings of \$1,000,000 in efficiency improvements, \$100,000 in scrap reductions, and \$60,000 in hazardous waste reductions



# COLUMBIA MANUFACTURING – ZERO WASTEWATER DISCHARGE & HAZARDOUS WASTE REDUCTION

## Massachusetts Toxics Users and Climate Vulnerability Factors



## Reductions:



147,000 lbs of water per day in plating operations

Recovered 98% of plating chemistry (nickel and chromic acid), saving 600 lbs per week

Exempt from air / water discharge & hazardous waste treatment permits

Savings of \$3,000,000 in water / sewer fees, \$3,850,000 nickel purchases, \$8,000,000 chrome purchases

# WHO OTA HELPS

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On-site visits and phone consultations for all MA companies where:

- + toxics are used, stored, or manufactured
- + energy efficiency opportunities exist
- + water conservation opportunities exist



# OTA STAFF

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- ✖ Chemists, engineers, public health professionals
- ✖ Hands on manufacturing experience
- ✖ Understanding of:
  - +regulations
  - +bottom line
  - +how to implement changes



Dangerous  
Chemical?

Human /  
Environmental  
Contact?



Potential for  
Hazard?

# EVALUATE RISKS



## Chemical Properties

Toxic  
Flammable  
Combustible



## Weather Risks

Flood  
Hurricane  
Freezing  
Heat



## Chemical Storage

Secondary  
Containment  
Compatibility



## Toxics Use Reduction

Product  
Substitution  
Reduce  
Inventory  
Engineering



# OPPORTUNITIES



# THANK YOU!



## FOR MORE INFORMATION:

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