

Public Meeting for the 2006 Preliminary Effluent Guidelines Program Plan



U.S. Environmental Protection Agency
EPA Headquarters, Washington, DC
September 20, 2005; 9AM – 12PM

Public Meeting Overview

- Overview of effluent guidelines and standards (ELGs) and the planning process
- Discussion of the EPA's 2005 annual review of ELGs and industrial categories without ELGs
- Overview of the industry sectors EPA identified for detailed studies in 2006 annual review and additional data needs
- Highlight EPA voluntary pollution prevention programs
- Answer questions from the audience

Public Meeting Schedule

Topic*	Time	Speaker
Introduction	9 – 9:10 AM	Ephraim King
Overview of ELGs and 2006 Preliminary Plan	9 – 10:00 AM	Carey Johnston
EPA Voluntary Programs:		
Performance Track	10 – 10:30 AM	Dan Fiorino
Design for the Environment (DfE)	10:30 – 11 AM	Clive Davies
Open Session	11 – 12 PM	

* **Note:** Questions are encouraged!

For Further Information...

- **Website:** <http://www.epa.gov/guide/plan.html>
- **Docket:** Most record documents, including all public comments, can be viewed online at:

<http://www.epa.gov/edockets>
(Docket #OW-2004-0032)
- **Contacts:**
 - Carey Johnston, Project Lead, 202-566-1014, johnston.carey@epa.gov
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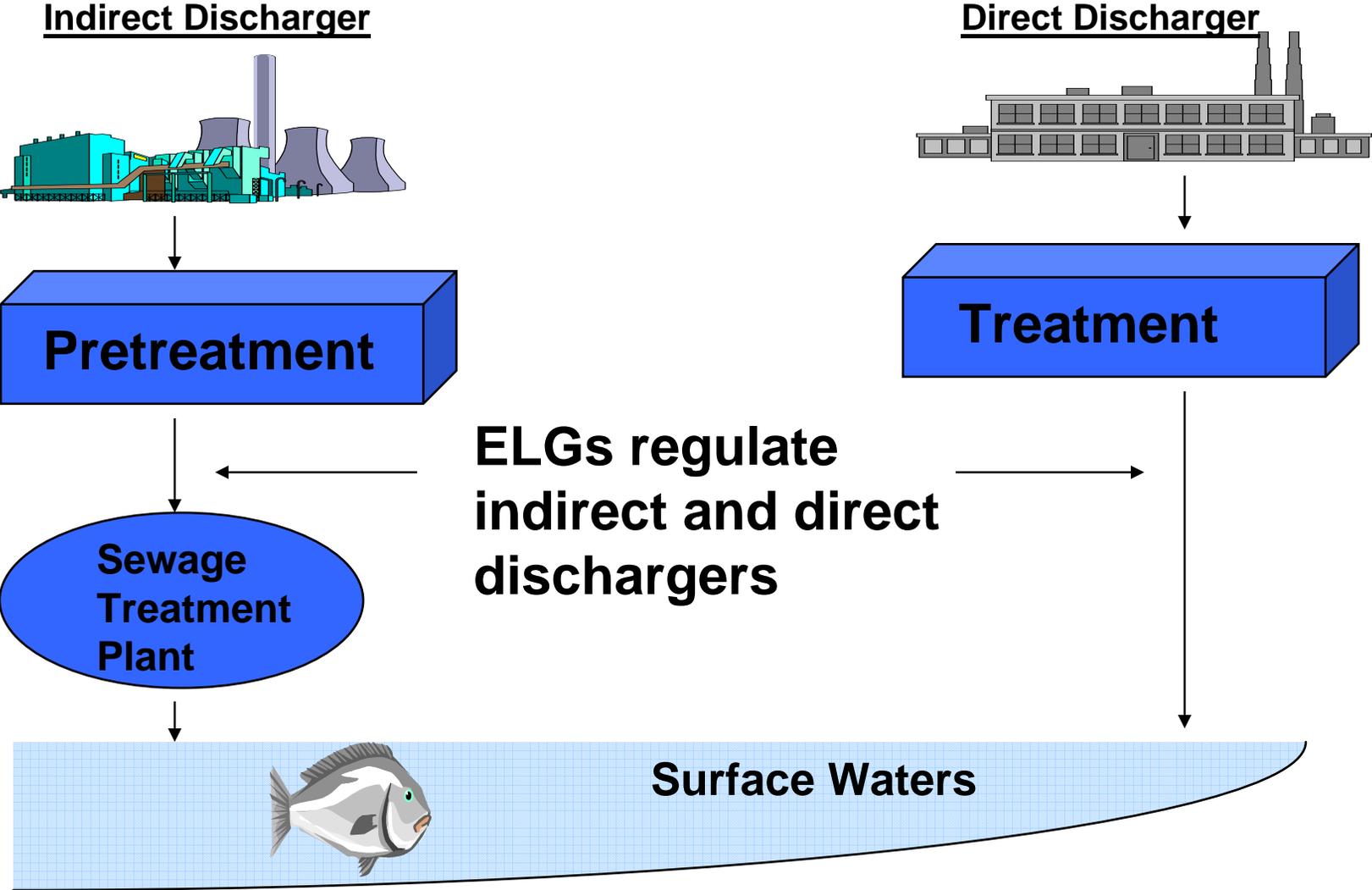
I. Overview of Effluent Guidelines and Standards (ELGs) and Effluent Guidelines Planning



What are Effluent Limitations Guidelines and Standards (ELGs)?

- National industrial wastewater regulations for both direct and indirect dischargers
- Industry Specific (e.g., metal finishing, iron and steel)
- Technology-based limitations and standards (however, specific technology not mandated)
- Economically Achievable
- ELGs are incorporated into NPDES permits (direct dischargers) or into controls set by POTWs (indirect dischargers)

What are Effluent Guidelines?



What are Effluent Guidelines and Standards?

- EPA has published effluent guidelines for 56 major industrial categories (over 450 subcategories) since the passage of the 1972 Clean Water Act
- These national industrial regulations are estimated to result in the removal of over 690 billion pounds of pollutants each year, and substantially contribute to improvements in the quality of water nationwide
- Limits on industrial indirect dischargers designed to prevent the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of publicly owned treatment works (POTW)
- General Pretreatment Regulations (40 CFR 403) set the framework for the implementation of categorical (technology-based) pretreatment standards

Effluent Guidelines Planning: Direct Dischargers

- The 1987 Clean Water Act Amendments added Section 304(m), which re-enforced Congress' intent that effluent guidelines keep pace with pollution prevention and treatment technology
- EPA must review all promulgated effluent guidelines annually
- Every other year: after proposal and public comment, EPA must publish a two-year plan for the guidelines program which:
 - Identifies and establishes a schedule for any effluent guidelines revisions
 - Identifies any industries not currently subject to effluent guidelines that discharge nontrivial amounts of toxics and establishes a schedule to take final action within three years

Effluent Guideline Planning: Indirect Dischargers

- For indirect dischargers, Clean Water Act requires:
 - Promulgation of pretreatment standards if there is pass through or interference at POTWs
 - Annual review of existing categorical pretreatment standards to identify candidates for revision
 - No publication requirement
 - As good government practice, we include findings in the Preliminary and Final Plans
 - Previous plans included review of existing pretreatment standards
 - 2006 Preliminary Plan also includes findings for potential new categories

Effluent Guidelines Planning: Goals

- Involve stakeholders from the start of the Plan
- Assure transparent decision-making
- Evaluate sound information against broad and balanced decision criteria



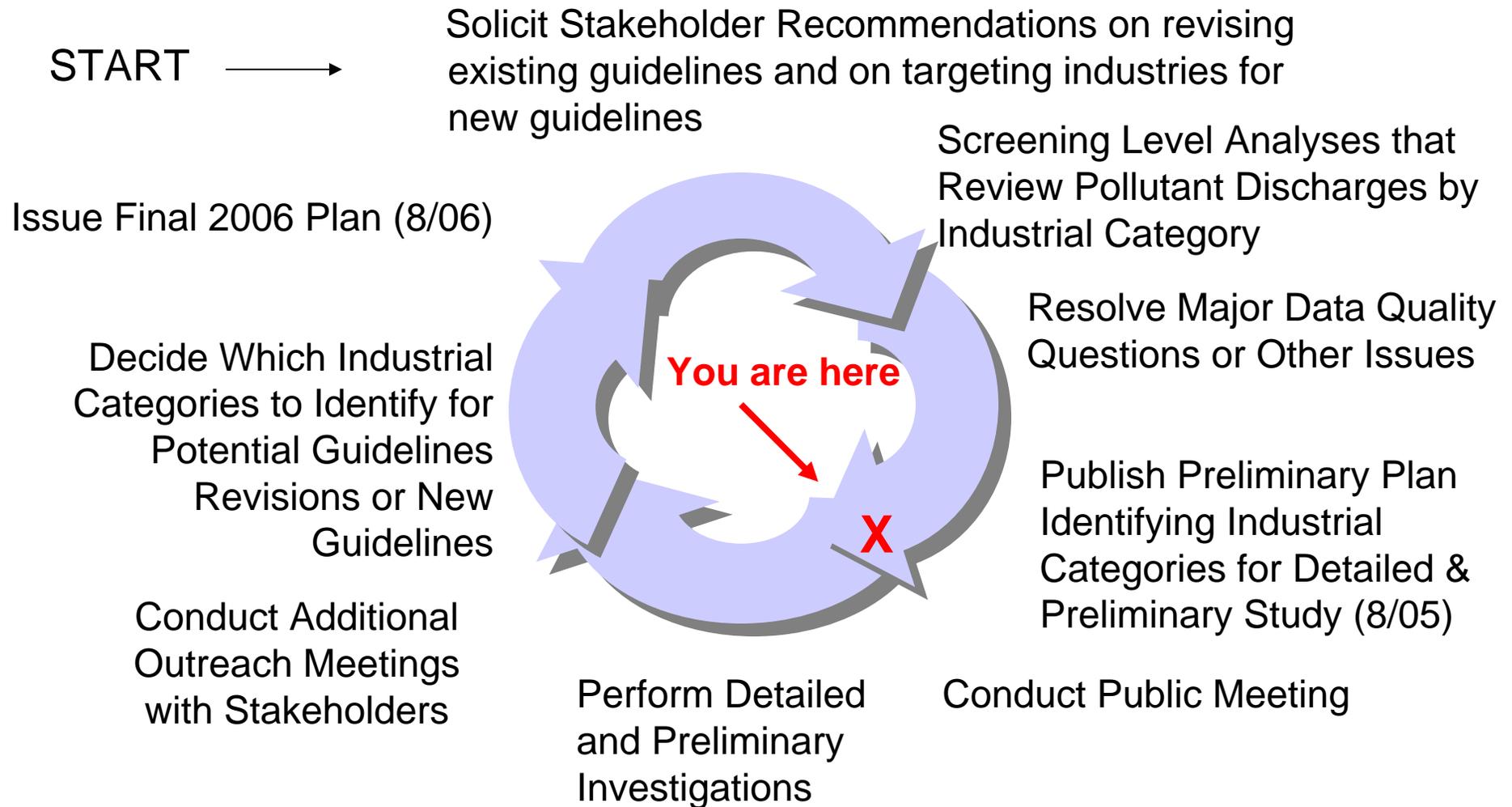
Review of Existing Effluent Guidelines: Factors

- Pollutant discharges by industrial category
- Current and potential technology and pollution prevention options by industrial category
- Economic considerations – growth, affordability
- Implementation/efficiency considerations of revising existing effluent guidelines or publishing new effluent guidelines

Review of Existing Effluent Guidelines: Phased Process

- Screening level review to identify categories needing further investigation
- Prioritizing candidates using selection criteria
- In-depth review to characterize industry categories
- Decide on course of action
- Present decisions in final Plan

Process for 2006 Reviews and Plan



Final 2004 Plan (September 2, 2004)

- Two industries selected for potential revision of existing effluent guidelines (ELGs):
 - Vinyl chloride sector of organic chemicals; and
 - Chlor alkali sector of inorganic chemicals
- Petroleum refining identified in preliminary 2004 Plan for detailed review but not selected for an ELG rulemaking in the Final 2004 Plan
 - Estimated discharges much lower than appeared in initial data; at or below treatable levels
- Two industrial categories identified for potential new rulemaking:
 - Airport deicing operations; and
 - Drinking water supply and treatment facilities

II. Overview of the 2005 Annual Reviews and the 2006 Preliminary Plan (Published on August 29, 2005)



What Does the Preliminary 2006 Plan Do?

- Describes the factors and methodology EPA used in conducting its annual reviews and developing the preliminary plan
- Presents the results of EPA's 2005 annual review of existing effluent guidelines and pretreatment standards
- Identifies industrial categories for further study and additional data needs and analyses
- Solicits public comment

Screening Level Review for 2005

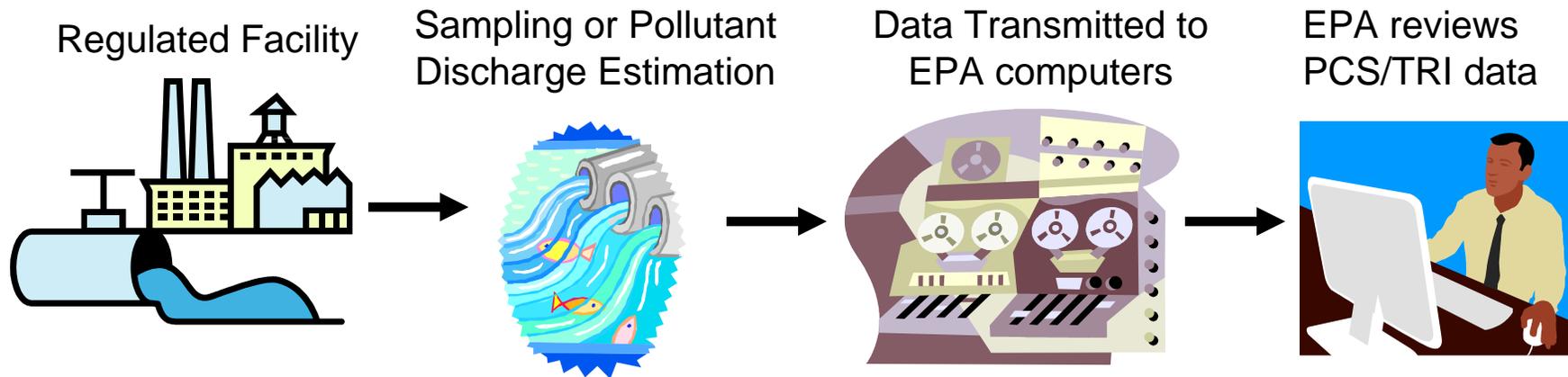
- Pollutant discharge estimates were a major factor in our 2005 screening level review of existing effluent guidelines and pretreatment standards
 - Used 2002 pollutant data from the Permit Compliance System (PCS) and Toxics Release Inventory (TRI) to estimate pollutant discharges (pounds) for an industrial category; and
 - Used Toxic Weighting Factors to convert “pounds” to “toxic pounds” – some measure of the relative toxicity of a pollutant to human health and the environment
- Performed data quality reviews on pollutants or facilities that were major contributors to the toxic pounds discharged for an industrial category
 - Data completeness
 - Reasonableness review of reported pollutants and the pollutant loadings
- Also considered other factors raised by stakeholders - often revolved around efficiency and implementation of a specific effluent guidelines

Screening Level Review for 2005 (cont.)

- The screening level review also excluded the following industrial subcategories from further review:
 - Subcategories currently subject to an effluent guidelines rulemaking
 - Subcategories for which effluent guidelines regulations were promulgated or revised within the last seven years
- EPA also separated the toxic pollutant discharges associated with a single facility that dominates (>95%) an entire industrial category but continued to analyze the remaining toxic pollutant discharges for the category.
 - In this case, the pollutant issue of the dominant facility may not represent the entire category
 - EPA will review these facilities for potential additional technology-based controls via BPJ permitting controls in the 2006 annual review

Screening Level Review for 2005 (cont.)

- Data from TRI, PCS, and the U.S. Census were the major sources of data used in the 2005 annual review
- These data sources have sufficient data to support a national comparison and prioritization of the 56 existing industry categories.
- Industry-supplied information
- Literature
- Permitting authorities



Data/Methodology Challenges

- Facilities
 - No central database for indirect dischargers
 - Primary industry SIC classifications do not directly correspond to an ELG category or wastewater generating operations
- Pollutants:
 - PCS only contains information for regulated pollutants for only ~10% of direct discharging industrial facilities
 - TRI reporters often estimate pollutant discharges (e.g., using method detection level) or report releases as ranges
 - Lack of toxic weighting factors for some reported pollutants
 - Nutrients not fully addressed through toxic weighting factors
 - Non-process events (e.g., oil spills) included in environmental release estimates
 - All data is reviewed for quality and accuracy - significant effort!

Data/Methodology Challenges (cont.)

- Technology:
 - No central database for technology for each industrial category
 - Current treatment-in-place and technology performance data is not readily available
- Environmental Impacts
 - Lack of data prevents the assessment of potential environmental impacts from industrial discharges
 - Some preliminary screening analyses can be done with nutrient modeling for a industries undergoing detailed review

Identifying and Prioritizing Categories for Detailed Studies or Additional Study

- Calculate two measures of loadings (or toxic weighted pound equivalents) for a category using data in PCS and TRI
 - TRI loadings reflect direct and indirect dischargers
- Develop a single loading for each category by adding the toxic weighted pound equivalents (TWPE) calculated with PCS data and TRI data
 - May double count some pollutants at some facilities
 - However, this approach focuses our resources on categories that rank high using both data sources or which have high TWPE in only one source
- Prioritized the 13 categories cumulatively discharging 95% of total TWPE for further review
- Prioritized the Top 2 categories for detailed studies:
 - Pulp, Paper, and Paperboard
 - Steam Electric Power Generation
- Prioritized the remaining 11 categories for additional study

Combined TRI and PCS TWPE Loadings

Point Source Category	TRI TWPE	PCS TWPE	Total TWPE	% of Total TWPE	Cumulative % of Total TWPE	Rank
Pulp, paper and paperboard ¹	3,181,631	1,633,450	4,815,081	40.20%	40.20%	1
Steam electric power generation ¹	804,471	1,614,291	2,418,762	20.19%	60.40%	2
Organic chemicals, plastics and synthetic fibers ²	644,411	620,884	1,265,295	10.56%	70.96%	3
Petroleum refining ²	498,127	198,073	696,201	5.81%	76.77%	4
Nonferrous metals manufacturing ¹	63,694	450,525	514,219	4.29%	81.07%	5
Ore mining and dressing ¹	66,544	406,548	473,093	3.95%	85.02%	6
Inorganic chemicals ¹	282,570	139,696	422,265	3.53%	88.54%	7
Rubber Manufacturing	173,304	2,386	175,691	1.47%	90.01%	8
Textile mills ¹	32,762	124,085	156,847	1.31%	91.32%	9
Fertilizer manufacturing ¹	6,403	143,795	150,198	1.25%	92.57%	10
Pesticide chemical manufacturing	18,137	91,180	109,317	0.91%	93.48%	11
Plastic molding and forming	97,297	466	97,762	0.82%	94.30%	12
Porcelain Enameling	88,749	3,478	92,228	0.77%	95.07%	13

¹Additional review for 2004 Plan

²Detailed study for 2004 Plan

Source: TRI and PCS Data, 2002.

New Effluent Guidelines Evaluation: Possible Identification of New Categories of Direct Dischargers

- EPA must identify potential new categories of point sources directly discharging toxic or non-conventional pollutants :
 - Legislative history says EPA must address “significant” or “nontrivial” discharges.
 - If identified, EPA must establish a schedule for taking final action within 3 years
- Our evaluation includes the following questions:
 - Is this a new category or is this a new subcategory of an existing ELG?
 - Are facilities in this category direct dischargers?
 - Does this category, as a whole, discharge non-trivial amounts of toxic or non-conventional pollutants?

Findings of New Effluent Guidelines Evaluation

- Tobacco Products Processing (SIC 21)
 - Identified in comments to the preliminary 2004 plan
 - Sparse data in PCS and TRI
- EPA will complete a detailed study for this industrial sector for the final Plan
- This detailed study will include site visit and sampling data recently collected by EPA

New Pretreatment Standards Evaluation: Possible Identification of New Categories of Indirect Dischargers

- EPA stakeholders identified the following indirect dischargers for this review:
 - Food Service Establishments
 - Industrial Laundries
 - Photoprocessing
 - Printing and Publishing
 - Hospitals
 - Independent and Stand Alone Laboratories
 - Offices and Clinics of Dentists
 - Industrial Container and Drum Cleaning (ICDC)
 - Veterinary Care Services
 - Health Care Services

New Pretreatment Standards Evaluation: Possible Identification of New Categories of Indirect Dischargers

- Is there pass-through?
 - For most industries, we did not calculate the actual amount of pass through. Instead, we looked at one or more of the following:
 - Potential pass through based on the total annual TWPE *per facility*
 - Potential pass through at national level based on total annual TWPE for all indirect dischargers in an industrial category
- Is there interference?
 - Evaluated anecdotal and qualitative information
- If potential pass through/interference: then look at “appropriate factors”:
 - Amount of wastewater pollution discharged and relative toxicity
 - Whether other regulatory tools (e.g., local limits set by POTWs, voluntary initiatives) would be more appropriate
 - Cost effectiveness (\$/TWPE) of potentially available technology options

Findings of New Pretreatment Standard Evaluation: National Categorical Pretreatment Standards May Not Be Necessary

- Pass through potential (measured as total annual TWPE discharged per facility) represents few toxics per facility – therefore, national regulation is not warranted at this time

 - Food Service Establishments

 - Industrial Laundries

 - Photoprocessing

 - Printing and Publishing

- Interference from conventional-type pollutants can be adequately addressed by Part 403 requirements and enforcement

 - Food Service Establishments

Findings of New Pretreatment Standard Evaluation: Additional Data Collection or Analysis May Be Necessary

- Recommend grouping the following industrial sectors into a possible “Health Services Industry” category:
 - Independent and Stand Alone Medical and Dental Laboratories
 - Offices and Clinics of Doctors of Medicine
 - Offices and Clinics of Dentists
 - Nursing and Personal Care Facilities
 - Veterinary Care Services
 - Hospitals (existing ELG for hospitals – no pretreatment standards)
- Limited data in PCS and TRI
 - All or nearly all of these facilities discharge to POTWs
 - Pollutants of concern can include silver, phenols, barium, acetone, and mercury
 - Hospital industry current subject to 1998 EPA/Industry MOU and recent Regional enforcement initiatives to promote EMS
- Industrial Container Drum Cleaning (ICDC)
 - Conducting formal pass through analysis using information from a 2002 detailed study

III. Data Gathering Activities and Analyses for the 2006 Annual Reviews and Final 2006 Plan



Detailed Studies

- Confirm problem, identify possible solutions
- Detailed verification of TRI- and PCS-reported discharges
 - Communication with facilities and trade associations
 - Identification and review of additional data sources
- Identification of process source(s) of discharged pollutants
- Identification of potential control alternatives
 - In-plant pollution control alternatives, feasibility, cost
 - End-of-pipe treatment, feasibility, cost
 - Other control strategies
- Generally use information collected in detailed studies to make a determination in final plan whether category should be selected for revision

Preliminary Category Review

- Similar to detailed studies
- Verification of TRI- and PCS-reported discharges
 - Communication with facilities
 - Limited identification and review of additional data sources
- Preliminary identification of process source(s) of discharged pollutants
- Limited identification of potential control alternatives
- Preliminary Category review may lead to many outcomes:
 - Additional study not warranted
 - Detailed study warranted
 - Rulemaking to potentially revise effluent guidelines is warranted

Detailed Study – Pulp & Paper

- Phase I – 78 bleached papergrade kraft and sulfite mills
 - Effluent guidelines last revised on April 15, 1998
 - Limits for TCDD, TCDF, chloroform, and chlorinated phenolic compounds at the bleach plant
 - Limits for AOX at the final effluent
- Phase III – 4 dissolving kraft and dissolving sulfite mills
 - In 2004 plan, EPA determined no ELGs due to small number of facilities
 - Support individual permit writers with technical support
- Phase II – 170 mills
 - Pulping; secondary (recycled) fiber; paper and paperboard from purchased pulp

Detailed Study – Pulp & Paper

- Cover both Phase I & Phase II
- Phase I & Phase II mills reported discharges of “dioxin & dioxin-like compounds” to TRI in 2002
 - 2.81 million TWPE (66.4 grams various congeners)
- Phase I mills in PCS in 2002 showed discharges of TCDD and TCDF
 - 1.37 million TWPE (0.9 gram TCDD)
 - EPA notes that one mill accounted for more than 99 percent of the PCS dioxin discharges for this industrial category in 2002 and has since stopped discharging dioxin
- Other pollutant releases
 - Polycyclic aromatic compounds
 - Metals (manganese, lead, zinc, mercury)
 - Nitrate

Detailed Study – Pulp & Paper

Key Questions

- Are pulp and paper mills generating and discharging TCDD and TCDF?
 - From bleaching?
 - From other sources?
- Have the 1998 ELGS been incorporated into NPDES permits and pretreatment agreements?
- What other toxic pollutants are discharged by pulp and paper mills?
 - What are the sources of these pollutants?

Detailed Study – Pulp & Paper Information Collection & Outreach

- EPA met with AF&PA and NCASI:
 - AF&PA members provided EPA with 48 NPDES permits for Phase I mills (representing 63% of the Phase I mills in the industry).
 - NCASI provided written documentation and data on the details of TRI release estimates and PCS errors
- Contacting states and regions for additional permits, fact sheets, and permit application monitoring data.
- Collecting case-study reports of mill upgrades.
- Reviewing technical literature for documentation of non-bleaching sources of toxic wastewater pollutants.

Detailed Study – Steam Electric

- Effluent guidelines and standards first promulgated for the Steam Electric Point Source Category in 1974. Significant revisions in 1982
- Guidelines are applicable to discharges from steam electric generating units that are primarily engaged in generating electricity for distribution and sale and that use fossil-type or nuclear fuels
- Regulates *traditional utilities* and some *non-utilities*. SIC 4911 and 493

Detailed Study – Steam Electric

Key Issues/Questions

- Evaluate applicability of electric generators currently not regulated
 - Industrial non-utilities (steam electric facilities co-located with manufacturing/commercial facilities)
 - Facilities using generation technology other than steam electric and other fuels
- Identify sources of pollutants of concern
 - TRI/PCS Data—arsenic, boron, metals, and chlorine
 - Are there industry trends that may impact loadings?
- Identify applicable pollutant control technologies
 - High flows and low concentrations may limit treatment options

Detailed Study – Steam Electric Information Collection and Outreach

- Analyzing 2002 Data from PCS, TRI, and DOE's Energy Information Administration (EIA)
- Augmenting above with data collected for section 316(b) rulemaking
- Reviewing data collected by Utility Water Act Group (UWAG) for the 2006 Plan
- Other sources of information including, industry trade associations and other industry sources, other EPA Offices, technical literature, State and Regional contacts, and NPDES permits

Detailed Study – Tobacco Products

- SIC Code 21 – Tobacco Products Processing
 - Tobacco (chewing and smoking)
 - Stemming and redrying
 - Cigarettes
 - Cigars
- Approximately 114 facilities; 9 of which have NPDES permits
- No existing effluent guidelines
- Extremely little data in TRI or PCS
- EPA concluded in the final 2004 Plan that it had insufficient information to determine if discharges from this industrial sector were significant and warranted identification

Detailed Study – Tobacco Products

Key Questions

- Identification of discharging facilities
 - Direct
 - Indirect
- Identification of pollutants discharged and in what quantities and from which industrial sectors
- Information and data on the fate and effects of nicotine discharges to surface waters
- Data on the treatment effectiveness of POTWs in removing nicotine from tobacco products processing wastewaters

Detailed Study – Tobacco Products Information Collection & Outreach

- Outreach and information requests to most significant companies (90% of U.S. market)
 - Phillip Morris USA, RJ Reynolds, Lorillard Tobacco Company, Dimon International
 - Philip Morris, RJ Reynolds, and Dimon have provided extensive information on processes, pollutant discharges and existing permits
- Based on information collected to date, we believe that cigarette plants (including mfg reconstituted tobacco sheet) are the largest generators and dischargers of wastewater
- Next Steps:
 - Review site visits and wastewater characterization sampling data to understand wastewater generation, quality, and treatment
 - Contacts to State and POTWs to obtain existing permits and to identify any concerns

IV. Considering Voluntary Reductions



Voluntary Loading Reductions

EPA encourages voluntary efforts, especially those that:

- Are widely adopted within an industry
- Result in significant reductions in toxic and non-conventional pollutant discharges to surface waters

Select EPA Voluntary Programs



Performance Track Program
Dan Fiorino, Program Director



Design for the Environment
Clive Davies, Program Director

EPA's Performance Track: An Opportunity for Leadership

**Presentation to Public Meeting on the
Preliminary 2006 Effluent Guidelines Program
Plan Washington, DC
September 20, 2005**

Daniel J. Fiorino



What Is Performance Track?

- Differences in environmental performance
- Recognized in EPA-State actions and policies
- Incentives are an important motivator
- Strive for collaboration with accountability
- Goal is to continually improve performance



Performance Track: Key Facts

- Facility based, for private & public sectors
- Launched in June 2000
- Currently more than 370 members
- Two application periods annually (Feb-Apr; Aug-Oct)
- Work in close collaboration with States
- Application & reporting systems are online
- Involves benefits & obligations for members
- Site visits with a sample of members each year



Criteria for Performance Track Membership

- Working environmental management system (EMS)
- Commitment to continuous improvement
 - set four goals for each three-year membership period
 - report annually on results
- Record of sustained compliance
- Commitment to public outreach



Performance Indicators

- **Upstream**
 - supplier's performance; material procurement
- **Inputs**
 - energy, water, & materials use; habitat conservation
- **Downstream**
 - product impacts
- **Non-product outputs**
 - air & water discharges; wastes generated



Performance Track Member Results Through 2004

- **Water Use**: reduced by more than 1.3 billion gallons
- **Solid Waste**: amount generated has declined by nearly 600,000 tons
- **Energy Use**: Decreased by over 8.4 trillion British Thermal Units (BTUs)
- **Habitat Conservation**: set aside 7,871 acres of land
- **NOx**: reduced by almost 3,900 tons



Some Renewing Members' Achievements Over 3 Years

- **3M Nevada (Missouri):**
 - reduced energy use by 27,500 mmBtu
 - reduced air toxic emissions by 146 tons
- **Dow (West Virginia):**
 - reduced non-hazardous solid waste generated by 188 tons
 - reduced hazardous solid waste generated by 878 tons
- **International Paper (South Carolina):**
 - reduced BOD releases by 106 tons
 - used 46,205 tons of tires for an energy source

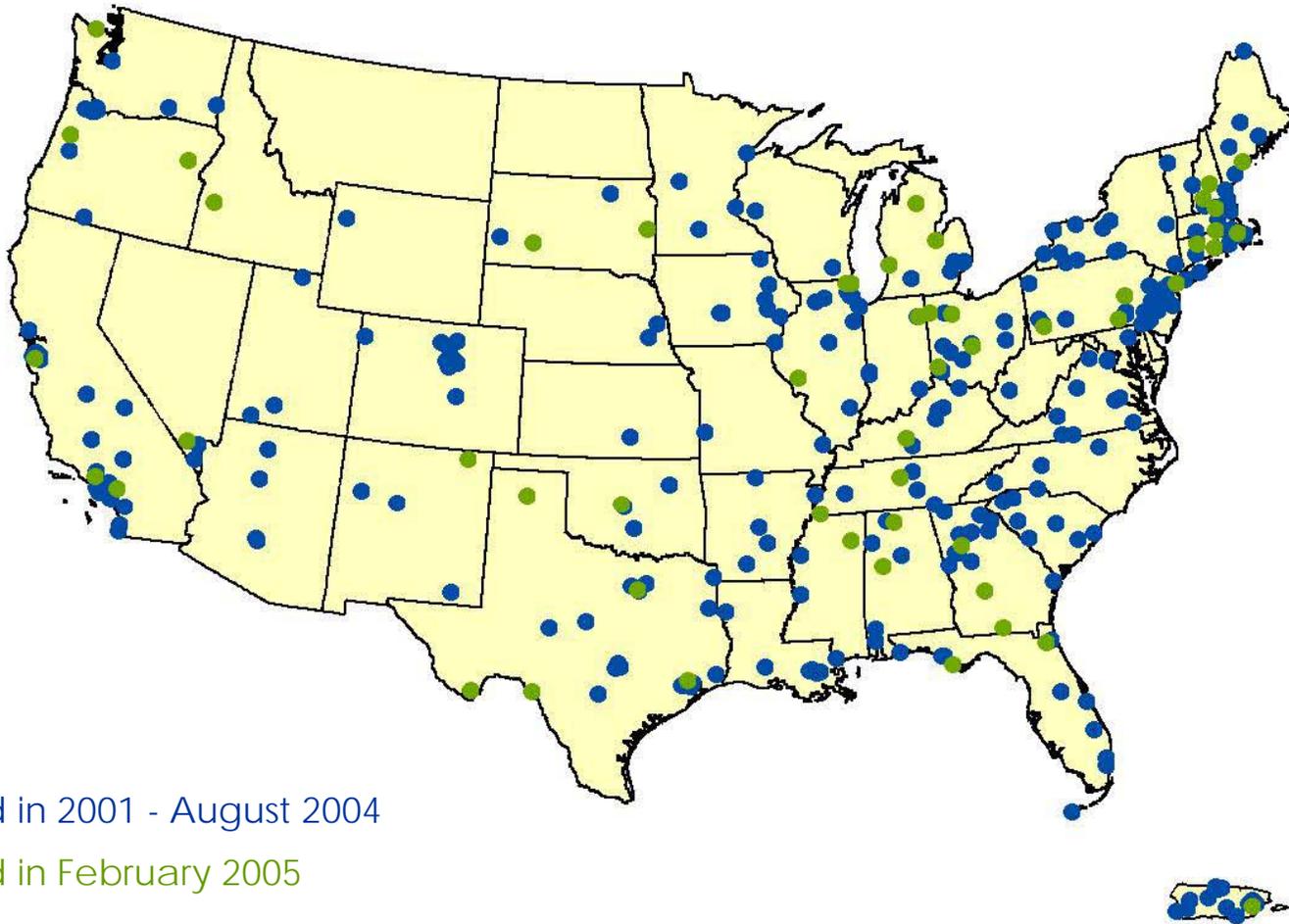


Some Renewing Members' Achievements Over 3 Years (cont.)

- **Louisiana Refining Division (Louisiana):**
 - reduced SOx emissions by 4 tons
 - reduced water use by 2,600,000 gallons
- **Nucor Steel Auburn (New York):**
 - reduced non-hazardous solid waste generated by 276 tons
 - reduced water use by 277,361 gallons
- **Rockwell Collins (Texas):**
 - reduced non-hazardous solid waste generated by 55 tons
 - reduced water use by 6,366,000 gallons

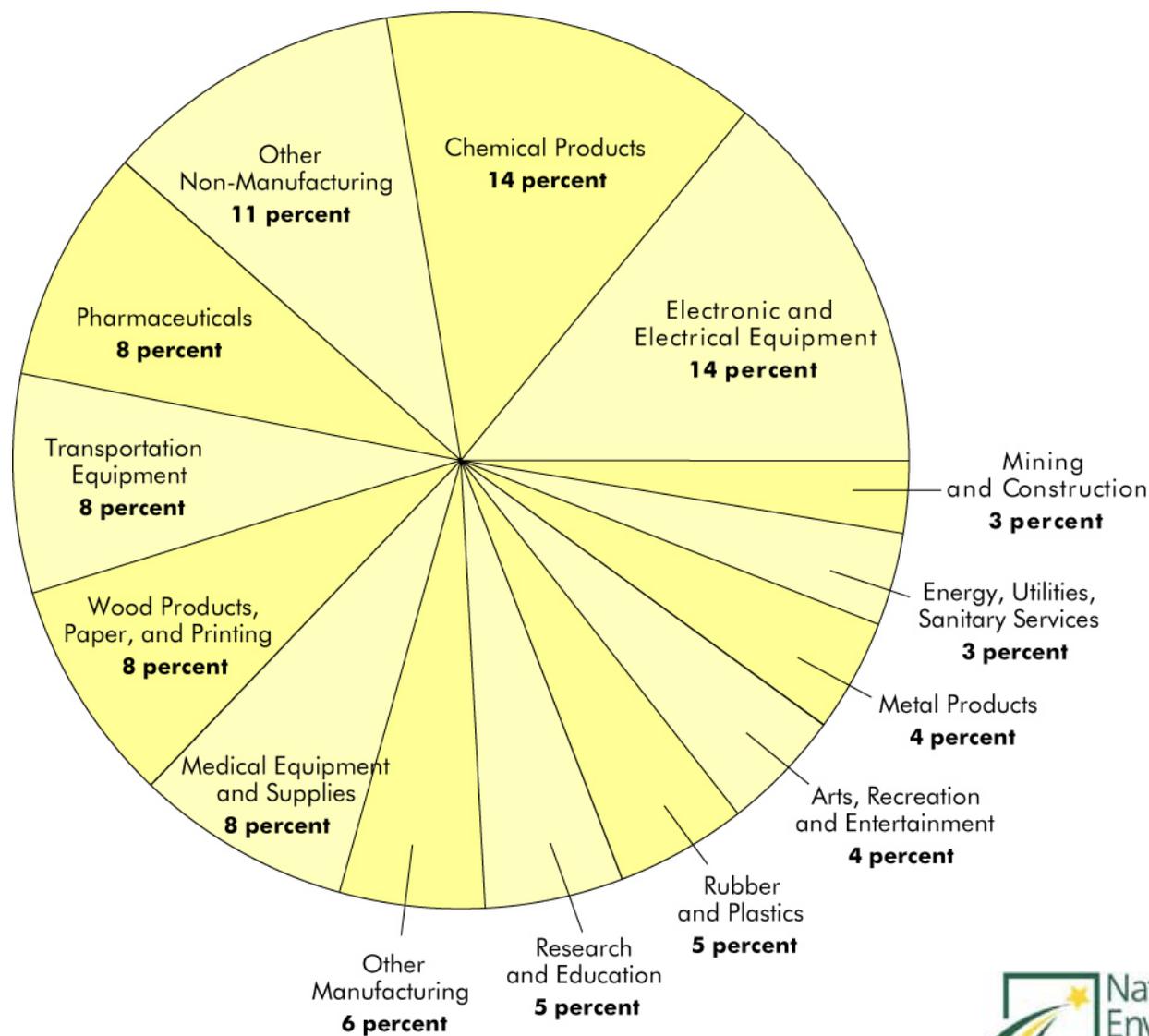


Member Locations

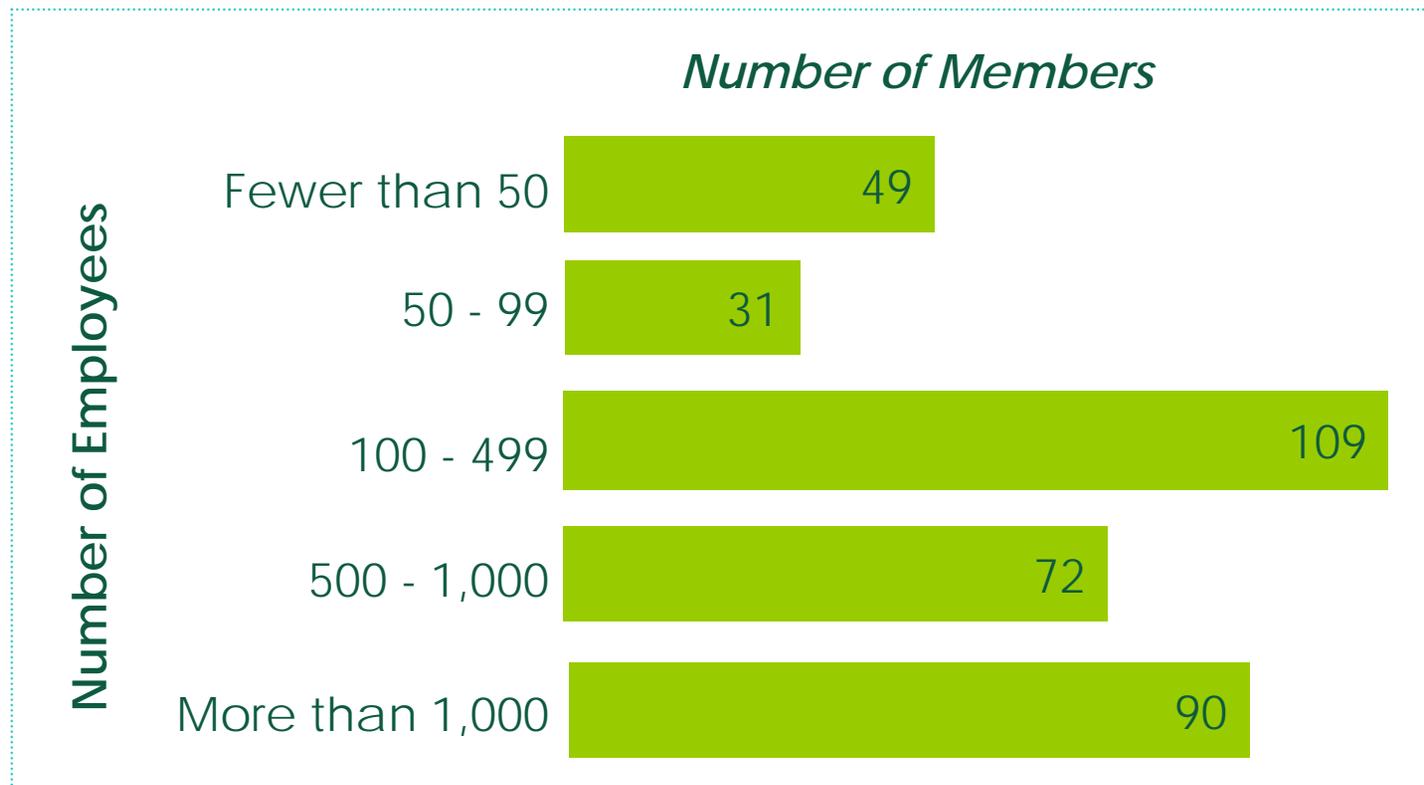


- Accepted in 2001 - August 2004
- Accepted in February 2005

Distribution of Members



Size of Performance Track Facilities



Criteria for Performance Track Corporate Leaders

- Company exhibits behaviors associated with environmental excellence:
 - robust corporate management of environmental issues
 - improved company-wide environmental performance
 - improved environmental performance of value chain
 - public outreach and reporting on environmental performance
- Company is substantially involved in Performance Track at the facility level:
 - at least 5 facilities are members of Performance Track
 - at least 25% of its U.S. operations, or at least 25 facilities, are members of Performance Track or similar state performance-based programs
- 2005 Performance Track Corporate Leaders: Baxter Healthcare Corporation, Johnson & Johnson, and Rockwell Collins



Why Join Performance Track?

- Recognition for environmental results
- A different relationship with government
- Lower regulatory transaction costs
- More flexibility
- Part of a learning network



Why Join? Recognition

- EPA and state agencies
 - website
 - national & regional events
 - publications
- Communities
- Investors
- Employees
- Customers



Why Join? Relationships

- Low inspection priority
- Dialogue with EPA and States
- Priority on administrative issues
- Addressing problems in different ways

Why Join?

Reduce Costs & Gain Flexibility

- Reduced routine compliance reporting
- Extension in the 90-day hazardous waste storage rule
- Preference for NPDES permit renewals
- Attention in flexible air permitting
- Preferred terms for State Revolving Fund loans
- Streamlined requirements in RCRA



Why Join?

A Learning Network

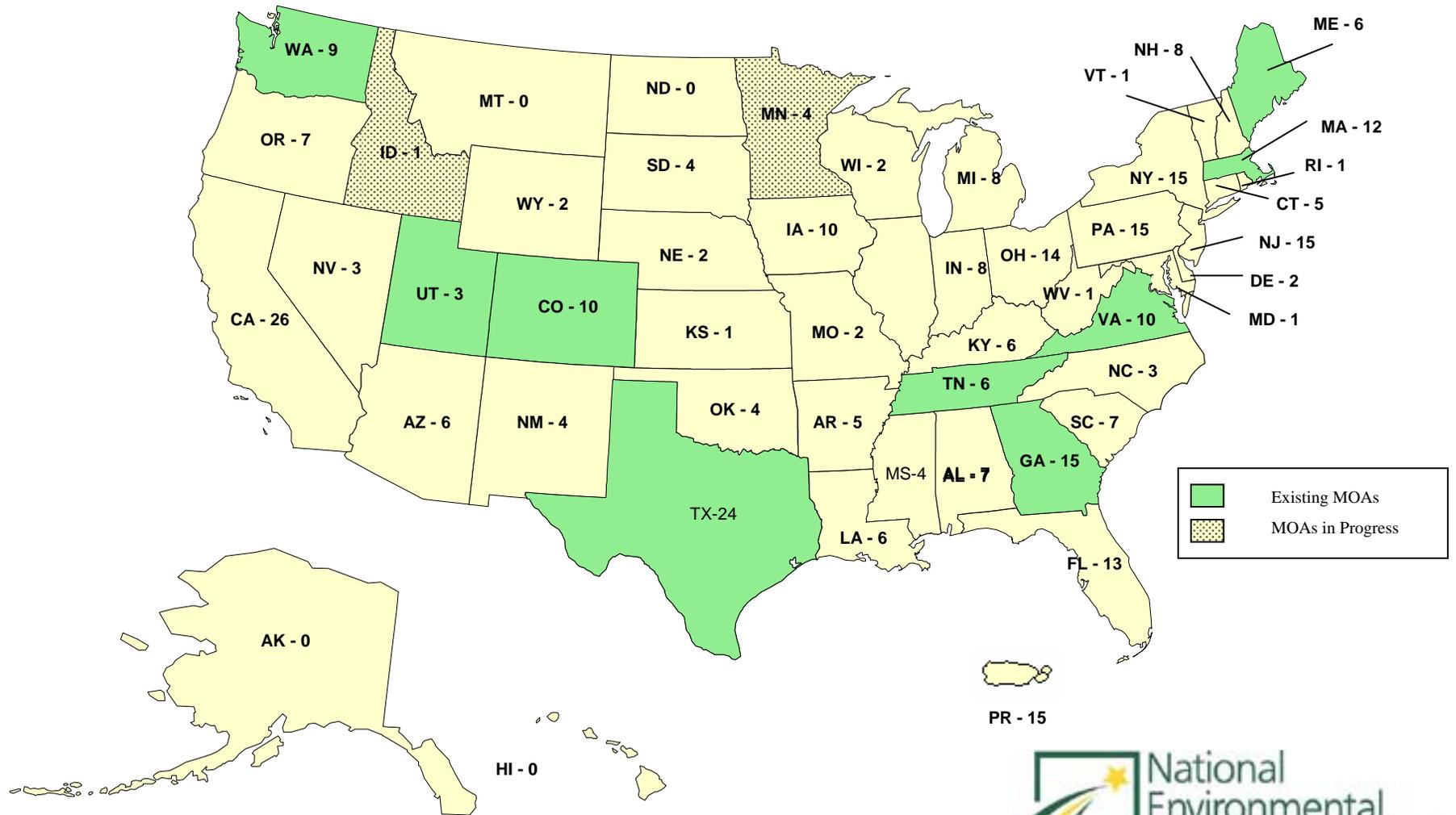
- Recognized community of high performers
- Promote the value of the Performance Track “brand”
- Tele-seminars/learning opportunities
- Leadership Practices Database
- Performance Track Participants Association



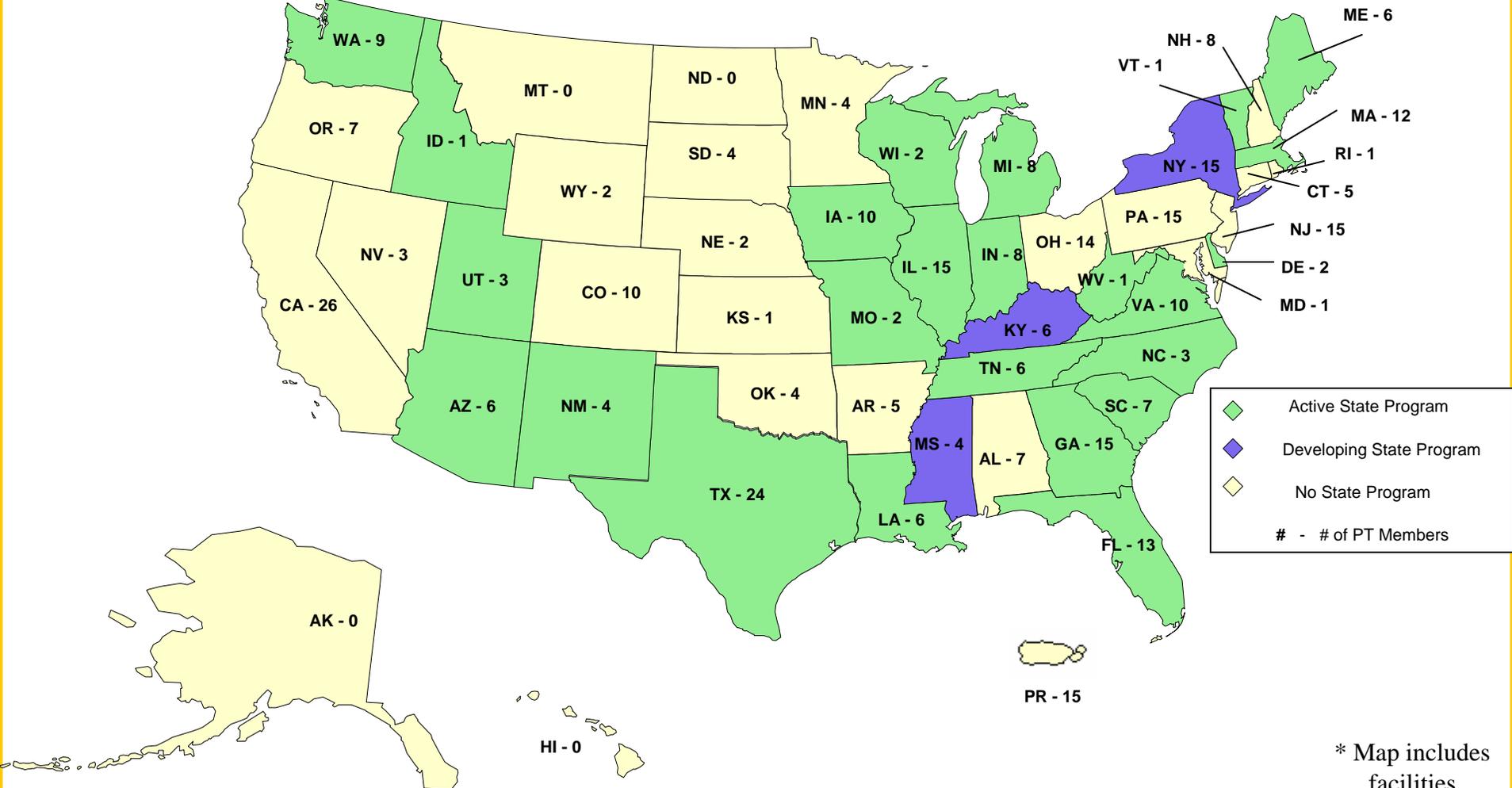
Working with States

- Joint effort with ECOS
- MOAs set terms for close collaboration
- Annual conference and regular consultation
- Advise on application reviews

States With EPA Agreements



States With Performance-Based Programs



* Map includes facilities accepted through Round 9

Where Do We Want to Go?

- Expand number and range of members
- Increase environmental value
- Enhance business value
- Transform relationships
- Institutionalize in EPA and State programs

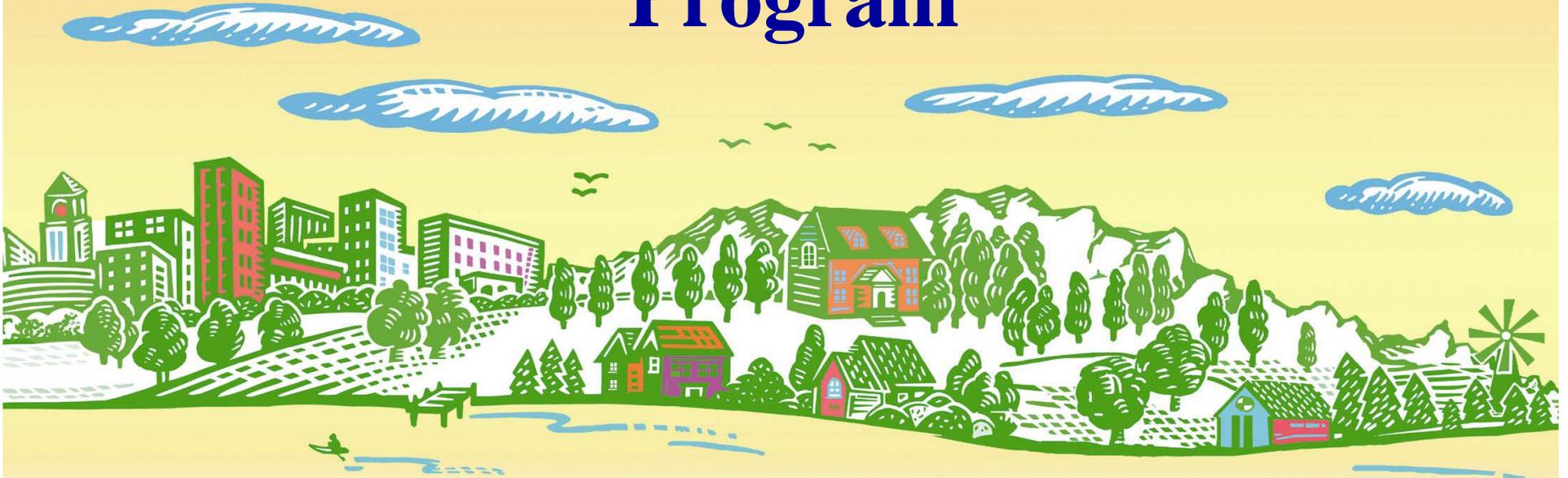
www.epa.gov/performance-track

(888) 339-PTRK

*Next application period ends
October 31, 2005*



Design for the Environment Program



Effluent Guidelines Public Meeting

September 20, 2005



DfE Themes

- **DfE provides access to OPPT technical tools and expertise that serve as an incentive for business participation in our work.**
- **DfE projects:**
 - are multi-stakeholder;
 - are driven by a business “client”;
 - have the potential to result in lasting change; and
 - benefit business and the environment.
- **DfE promotes reduction of priority chemicals.**

**DfE Projects have touched more than
200,000 business facilities and
approximately 2 million workers.**





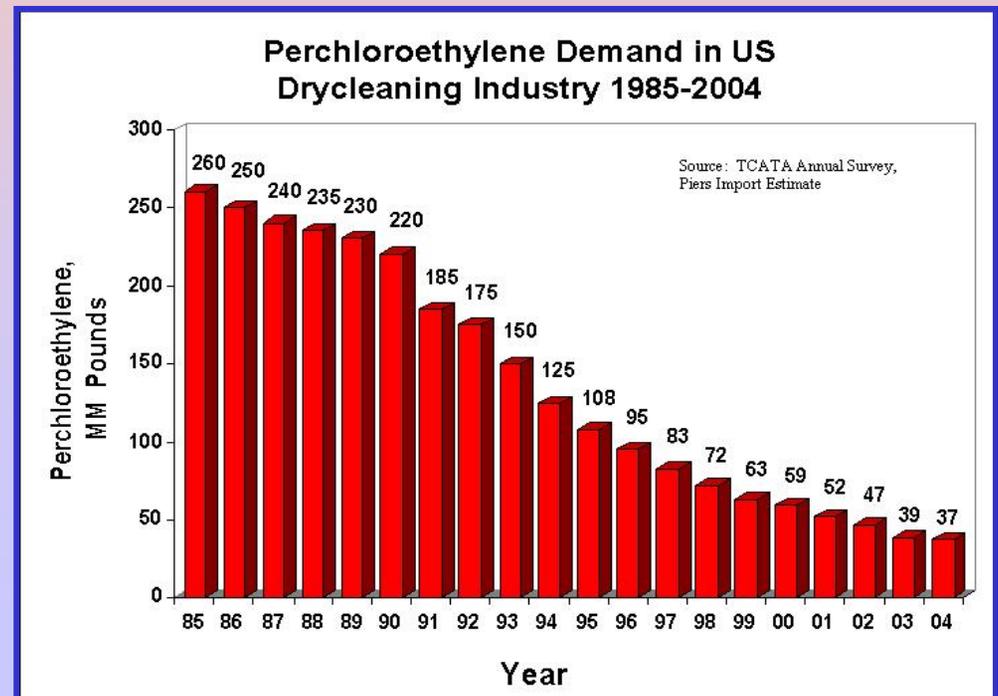
Example from the Drycleaning Industry

■ The DfE Garment Care Partnership

- Encouraged the use of environmentally preferable cleaning methods and
- Promoted technology and best practices for drycleaning with perchloroethylene

■ Industry Perc. Use has Decreased Substantially

- DfE contributed to the reduction

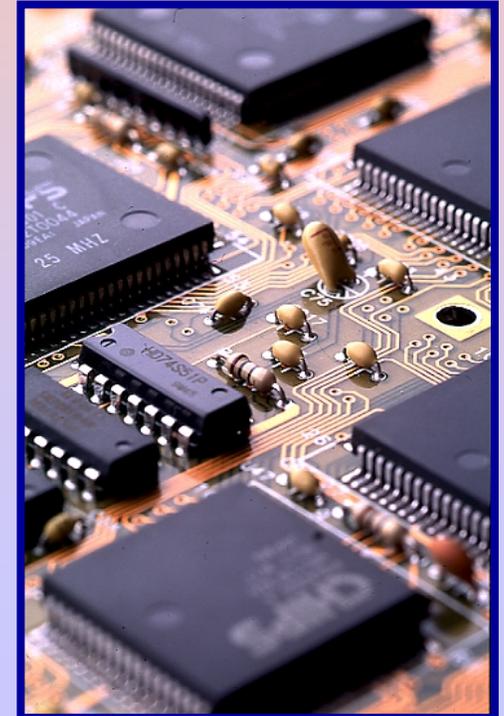




Examples from the Electronics Industry

DfE aided U.S. manufacturers to promote competitiveness and environmentally friendly manufacture

- **DfE Printed Wiring Board (PWB) Partnerships -- Examined cost, performance and environmental profile**
 - Surface Finishes – comparison of lead and non-lead methods
 - Reduction in lead use was estimated to be 2 million pounds per year over the first 3 years
 - Making Holes Conductive
 - Benefits include:
 - 240,000 lbs. per year decrease in formaldehyde use
 - 400 million gallons of water saved per year
 - 15 billion BTUs of energy saved per year





Lead-Free Solder Partnership

Life-Cycle Assessment

■ The U.S. electronics industry is moving away from lead solder

- E.U. will ban lead in electronics by 2006
- Industry approached DfE based on past relationship
- Partnership will help U.S. Industry adopt lead-free alternatives and maintain international competitiveness

■ Tin-lead and alternatives:

- 95.5% tin, 3.9% silver, and 0.6% copper
- 57.0% bismuth, 42.0% tin, and 1.0% silver
- 96.0% tin, 2.5% silver, 1.0% bismuth, 0.5% copper
- 99.2% tin and 0.8% copper





Lead-Free Solder Partnership (cont'd)

Life-Cycle Assessment

■ **Significant potential**

- Annual lead solder use in electronics estimated at 176 million pounds

■ **Key Findings**

- extraction of silver
- energy use in manufacture
- chronic human health
- aquatic ecotoxicity impacts

■ **Final Report in Fall 2005**



Furniture Flame Retardancy Partnership

■ The Partnership

- Chemical and furniture manufacturers
- Consumer Product Safety Commission
- NGOs
- National Institute of Standards & Technology
- Fire Safety Advocates and Environmental Groups



■ The Issue

- Predominant flame retardant (pentaBDE) was being found increasingly in human tissue, breast milk and the environment.
- This flame retardant was phased-out at the end of 2004.
- Need for fire safety will likely increase based on planned national standards.
- Decision-making for alternatives to a 18.7 million pound per year chemical.



Furniture Flame Retardancy Partnership (cont'd)

■ Partnership Goals:

- Facilitate industry decision-making
- Level the playing field
 - New and existing chemicals
- Drive innovation toward environmentally safer flame retardancy methods
- Develop a model for alternatives assessment

■ Final Report due out in Fall 2005



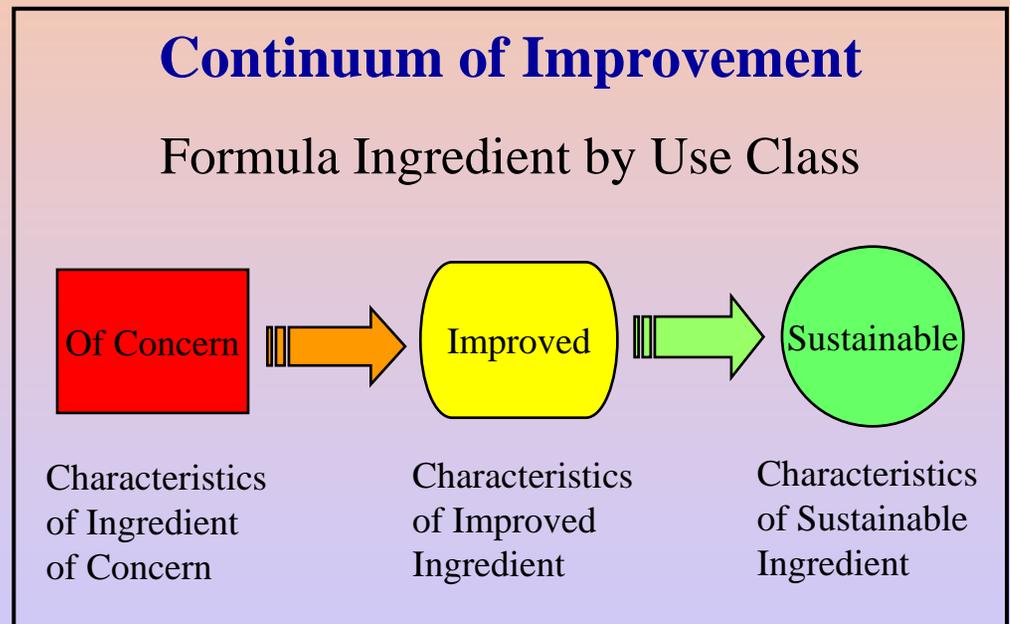


DfE Formulator

Partners with Chemical Product Manufacturers to Improve Health and Environmental Profile of Products

DfE Review

- Considers Every Formulation Ingredient
- Prepares Health and Environmental Profile
(Existing Data, Estimation Models, Chemical Expertise)
- Situates Chemical on Continuum of Improvement
- Recommends Safer Substitutes





DfE Formulator Partnerships

- **Offer Companies Access to EPA Expertise, Advice and Recognition**
- **Yield Measures of Environmental Benefit**
 - Partnerships have reduced the use of 40 million of pounds of chemicals of concern
 - More than 70 recognized products in the following sectors:
Industrial/Institutional Cleaners and Laundry Detergents, Holding Tank Treatments/Deodorizers, and Industrial Coatings





Cross-Agency Collaboration on Area Sources

- **Partnership among Regions, OPPT, and OAQPS**
- **Voluntary programs backstopped by regulations**
 - Evaluate P2 proposals from trade associations and similar organizations
 - Develop voluntary approaches and integrate P2 practices into rulemaking



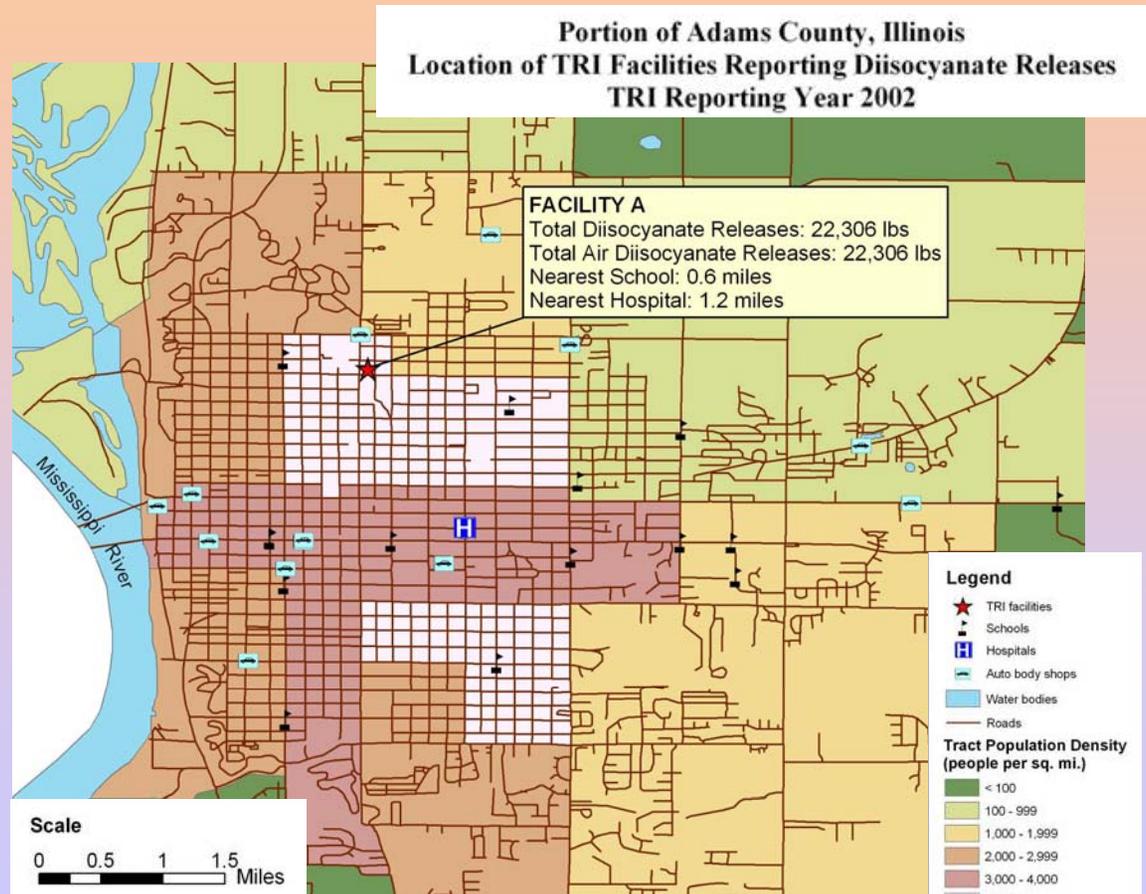
Area Sources Being Considered

- **Auto body**
- **Industrial boilers**
- **Plating and polishing**
- **Paint and allied sources**
- **Steel foundries**
- **Iron foundries**



Auto Body—Background

- Diisocyanates - leading cause of occupational asthma
- Linked to asthma in children
- Ranked among the most toxic risk-screening (RSEI) chemicals
- Most Significant Uses
- Foam manufacture uses 69% of 2.2 billion pounds of diisocyanates produced annually
- Auto Refinish is most dispersive use





Best Practices for Auto Refinishing

- Conduct all paint spraying and solvent wipe down in a well ventilated booth
- Use an HVLP spray gun or equivalent for all spray paint applications
- Install a vacuum sander or use wet sanding
- Use water-based paints for primer, base coat, and clear coat (if available)
- Use zero HAP, low VOC solvent during solvent wipe-down and equipment cleaning Auto Refinish is most dispersive use
- Keep all containers closed when not in use



Best Practices—Implementation Mechanism for an Area Source Rule

■ Benefits:

- Reduced emissions of diisocyanates, chromium, lead, cadmium, organic solvents in paint
- 81% participating shops made improvements
- Individual shops can reduce toxic paint emissions 30% - one ton per shop – and save \$13,000 annually
- Implementation on national level could reduce toxic emissions by 50,000 tons and save \$650 million annually

■ Stakeholders:

- Collision repair shops, vocational technical schools, trade associations, paint/equipment manufacturers, NIOSH, OSHA, local governments and communities



Summary

- **Collaborate broadly;**
- **Leverage OPPT technical tools and expertise;**
- **Help businesses weigh environmental considerations; and**
- **Focus on opportunities for lasting change.**

