



RUBBER
manufacturers
association

The Industrial Resources Council

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Defining the IRC

- The Industrial Resources Council (IRC) is a collaborative partnership working to develop markets for industrial materials
- Goals:
 - Create awareness & increase understanding
 - Share technical & environmental information
 - Develop codes, standards, and regulatory guidance through organizational partnerships



Defining the IRC

- IRC was started by non-profit industry associations who spearhead their industry's efforts on material utilization
 - American Coal Ash Association
 - Construction Materials Recycling Association
 - Foundry Industry Recycling Starts Today (now AFS-FIRST)
 - National Council for Air & Stream Improvement
 - National Slag Association
 - Rubber Manufacturers Association



Why was the IRC formed?

- All 6 material associations were engaging with same people in same forums
 - Similar issues & opportunities
 - Similar markets
- Create single point of contact for national & state partnerships
- Coordinate technology transfer & market development efforts



IRC: Focus on Priority Materials

- **U.S. EPA**

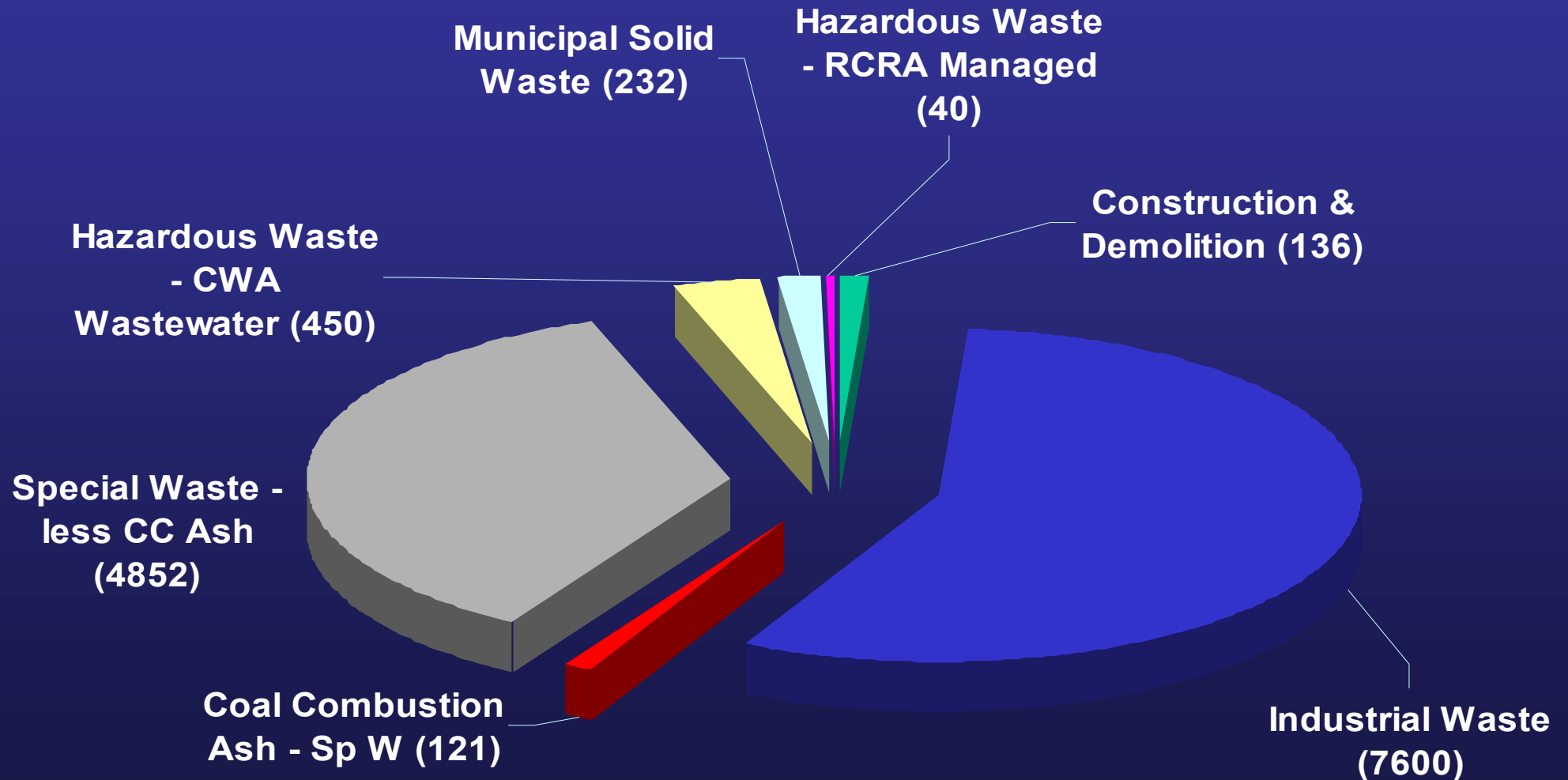
- Coal Combustion Products (CCP's)
- Foundry Sand
- Construction & Demolition Debris
- Others under consideration

- **Federal Highway Administration**

- Recycled Asphalt
- Recycled Concrete
- Coal Ash
- Foundry Sand
- Steel Slag
- Tires

The RCRA Program

Total Quantity of Wastes Generated (million tons)





How Much Material?

- **Generation Rate:**
 - **CCPs**
 - 122 million TPY
 - **Steel Mill Residuals**
 - 19.7 million TPY
 - **Foundry Sands & Slags**
 - 10 million TPY
 - **Paper Mill Residuals, Boiler Ash & Others**
 - 15 million TPY
 - **Tires**
 - 300 million tires/yr
 - **Recycled Concrete**
 - 180 million tons est.
 - 325 million total C&D
- **Number of Facilities:**
 - **Power Plants: ~500**
 - **Steel Mills: ~130**
 - **Foundries: 2,800**
 - **Pulp & Paper Mills: ~430**
 - **Tires: Municipal, commercial & industrial generation points**
 - **Recycled Concrete: ~2,300**



Industrial Generators Are Recycling Partners

Steel Mills/Foundries

- Recycle 77 Million tons of scrap
 - 14 Million vehicles
 - 90% of Appliances
 - 60 % cans
 - 96% construction scrap
 - Recycles 1.5 Million Tons of B Scrap
 - Recycles 4.6 Million Tons of Flux slag
- Use Tires for Fuel, Iron and Carbon

Pulp/Paper Industry

- Recycles 50 Million tons of paper per year
- Recovered fiber is use in making:
 - Paperboard grades
 - Newsprint
 - Tissue & toweling
 - Printing & writing grades

C&D Recyclers

- Recycle 168 Million tons of Construction and Demolition materials per year, including 140 million of concrete



Tools & Resources

- Website
 - www.industrialresourcescouncil.org
 - Informational portal
 - Links to association & agency websites
 - Sector & Material profiles
 - Application Profiles
 - Resources & References
- Regional and state construction workshops



IRC Matrix

APPLICATIONS		MATERIALS					
		Coal Combustion Products	Slag Products	Foundry Sands	Recycled Tires	Recycled Construction Materials	Paper Production Materials
Highways and Roads	Asphalt Concrete						
	Fine Aggregate or Filler	✓	✓	✓	✓	✓	
	Coarse Aggregate	✓	✓	✓		✓	
	Binder	✓	✓		✓		
	Portland Cement						
	Replacement for PC	✓	✓				
	Fine Aggregate	✓	✓	✓		✓	
	Coarse Aggregate		✓	✓		✓	
	Granular Bases						
	Fine Aggregate	✓	✓	✓		✓	
	Coarse Aggregate	✓			✓	✓	
	Subbase	✓	✓	✓	✓	✓	
	Stabilized Bases						
	Aggregate	✓	✓	✓		✓	
	Binder	✓	✓				
	Flowable Fill						
	Binder	✓	✓				
	Fine Aggregate	✓	✓	✓			
	Coarse Aggregate	✓	✓		✓		
	Other						
	Concrete Barriers	✓	✓	✓		✓	
	Sound Barriers	✓	✓	✓	✓	✓	
	Vegetation Control				✓		✓
Construction	Embankments	✓	✓	✓	✓	✓	
	Structural Fills	✓	✓	✓	✓	✓	
	Soil Stabilization	✓	✓			✓	
	Drainage Layers	✓	✓	✓	✓	✓	
Land Use	Compost	✓		✓			✓
	Soil Conditioning	✓	✓	✓			✓
	Manufactured Soils	✓	✓	✓			✓
	Fertilization	✓	✓				✓

- Industrial Resources Council is a resource for information about how to use industrial materials in various applications
- Matrix identifies which materials “work” in which applications
- E-matrix provides more details of how each material works in each application, inc. references & case studies



For More Information

American Coal Ash Association

www.acaa-usa.org



Construction Materials Recycling
Association

www.cdrecycling.org
www.concreterecycling.org



AFS-FIRST, Inc.

www.foundryrecycling.org





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For More Information

National Council for Air & Stream
Improvement

269-276-3548

www.NCASI.org

ncasi

National Slag Association &

www.nationalslag.org



Rubber Manufacturers Association

www.rma.org

