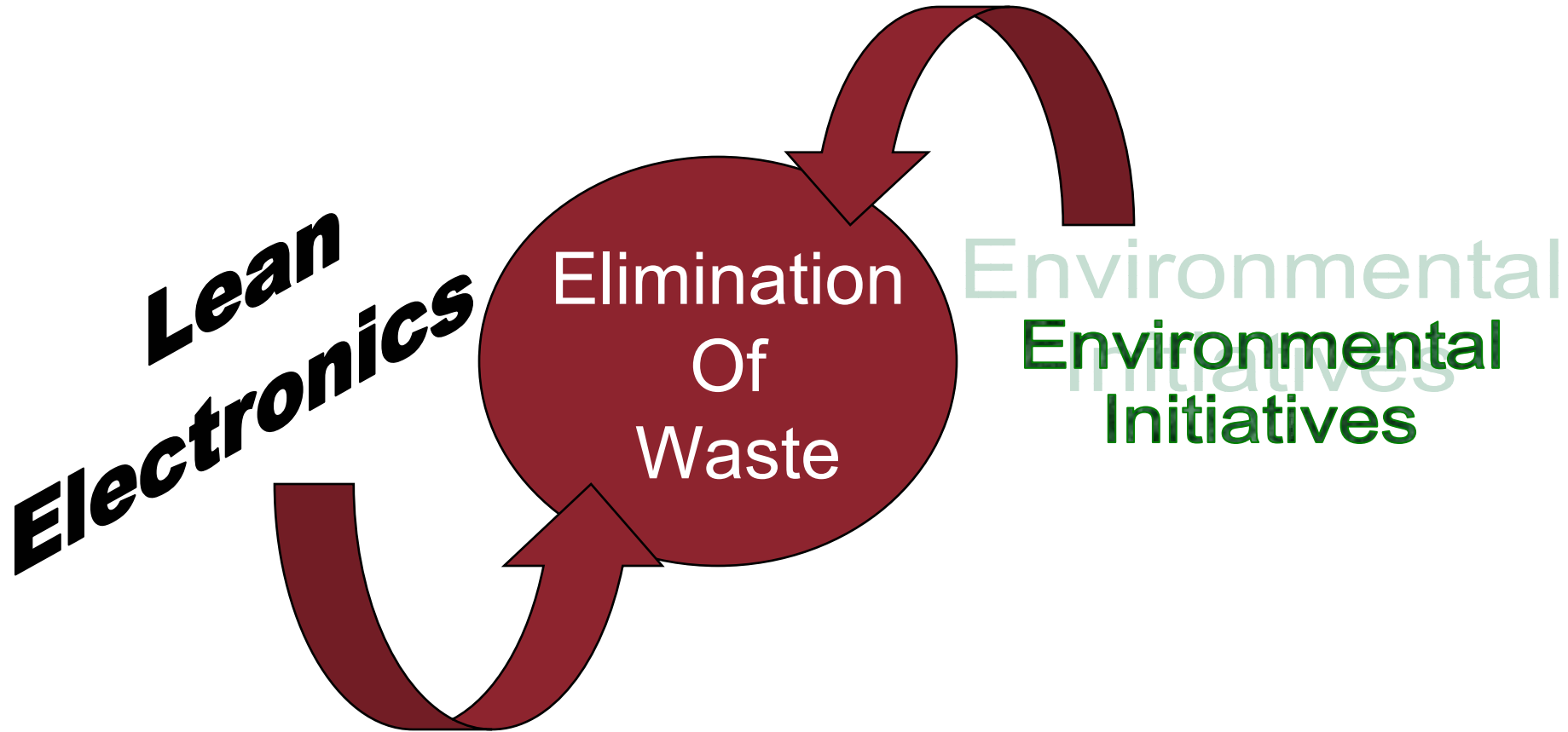

Lean Manufacturing and the Environment

Rockwell Collins

Common Goal



Rockwell Collins Lean Journey

- **1998 – Lean Electronics Launched:** Adopted as a philosophy and process applicable to both factory and office areas. Involved communication, training and event activities.
- **1999 – Core Process Optimization Begins:** Five core enterprise processes identified for improvement using Lean Electronics Philosophy.
- **2000-2001 - Value Stream Mapping Adopted:** An overarching look at processes that cross organizational boundaries. A Lean Transformation process is developed laying out the future steps required to improve efficiency and performance.
- **2002 – Lean Roadmap:** Step-by-step path to success in creating a Lean enterprise. Quantification of the improvement efforts is aided by the introduction of the Rockwell Collins Scorecard.
- **2003 – Life Cycle Value Stream Management:** Identifies an individual responsible for a product or group of products throughout the entire life cycle.

Resources

- **RPI/5S Guiding Principles – Provided to lean leaders and identifies subjects encountered in these rapid improvement processes, the guiding principles/actions and things to consider in the areas of quality, facilities and environmental management systems.**

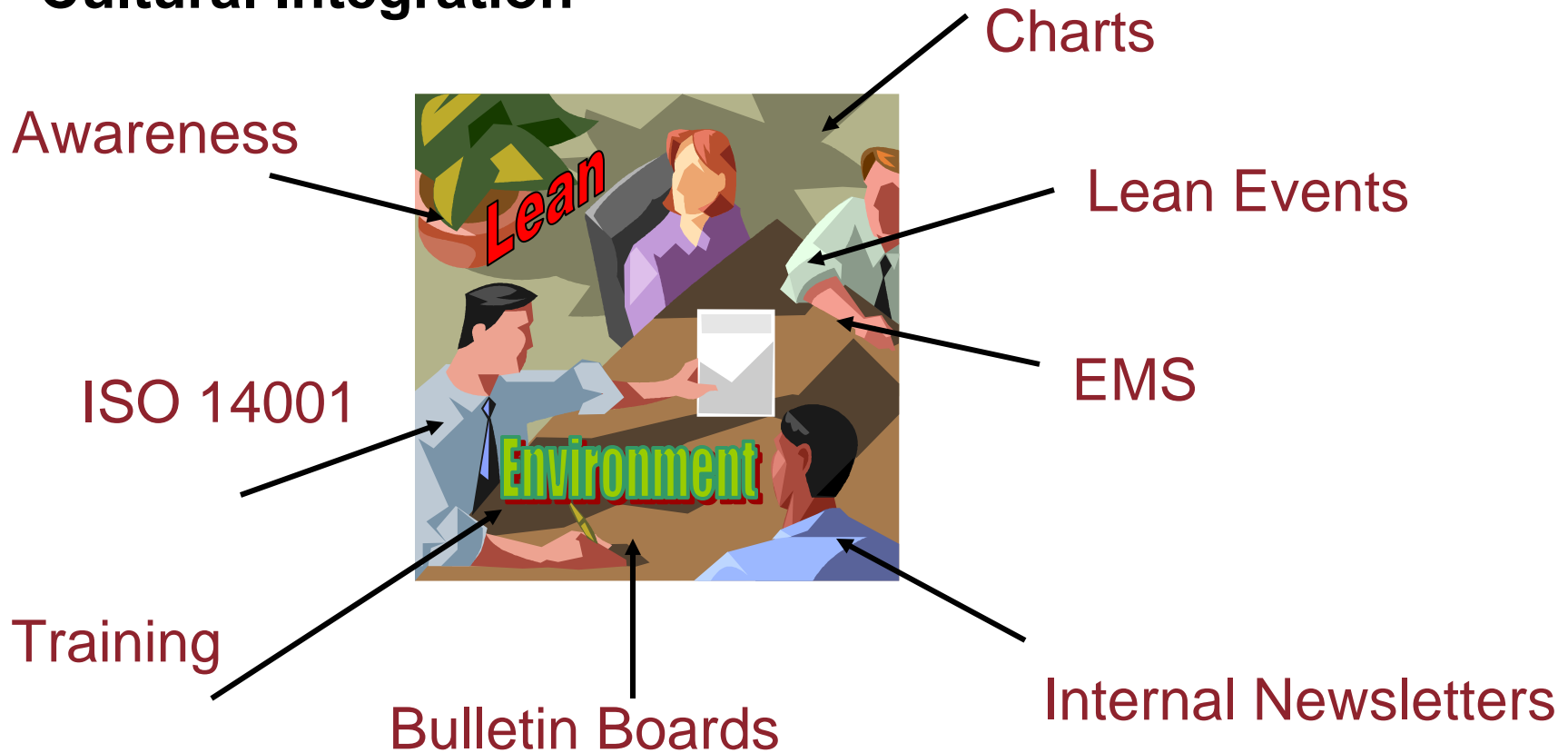
Subject	Guiding Principles	Actions/Considerations	Applicable Procedures
Plant Layouts	Areas for proper handling and disposal of waste (hazardous and non-hazardous) have been maintained.	Ensure new layouts include recycling bins for non-hazardous waste and satellite accumulation areas for hazardous waste generated in the area.	RC-ENV-P-007 RC-ENV-P-008
	Principle Affected by RPI: Yes No	Action Taken:	
Hazardous Waste Disposal During 5S Activities	Proper handling and disposal of hazardous wastes generated at RC facilities is required to ensure that RC complies with applicable federal, state and local waste management regulations, as well as RC environmental policy standards.	When disposing of material during 5S activities, evaluate whether hazardous waste handling is required. Depending on handling and disposal processes, the following waste streams may be classified as hazardous: Fluorescent light bulbs/ballast's, lead trims, batteries, cathode ray tubes (CRTs), liquid crystal displays (LCDs), scrap circuit boards (including all laminates), empty chemical containers, Q-tips, Kimwipes, and other materials used in production. Contact the site Environmental Coordinator to request the appropriate waste container and "Hazardous Waste" labels, when appropriate.	RC-ENV-P-007
	Principle Affected by 5S: Yes No	Action Taken:	

Resources

- **Posting on the internal website a recycling guide as well as training slides used in awareness classes to assist in proper segregation of waste during rapid improvement activities.**
 - **Solid waste reuse/recycling program enhanced beyond paper starting in 1991 to include plastic, cardboard, publications, excess PC hardware, packaging materials, wood products, metals, office supplies and furniture, construction waste**
- **Lean focal points and ISO 14001 steering committee representatives within the organizations to watch for and capture environmental improvements within lean activities.**
- **Environmental Engineers/Coordinators at each facility facilitating goal setting, metrics collection and**
- **Identification of significant environmental risk points on Value Stream Maps identified using the aspects and impacts process.**

Key to Success

■ Cultural Integration



The way we do business!

Integration of Lean and Environmental Improvement

- **Environmental Improvement Awareness Training**
 - New Hires
 - Annual Environmental Training (hazardous waste etc.)
 - Interactive Leader Awareness (Scenario based)
 - ISO 14001 Awareness
 - Lean Leaders
 - ISO 14001 Steering Committee Representatives/Teams
 - Internal Newsletters
- **Working Together on Initiatives (Environmental, Engineering, Ops, Procurement)**

Communication!

- **FY'02 vs FY'03 with increase in sales**
 - **Goal - 5% reduction in hazardous waste**
 - **Achieved 14%**
 - **Goal - 5% reduction in landfill contribution**
 - **Achieved 19%**
- **Diversion of all excess domestic PC waste to the Rockwell Educational Access to Computer Technology Center (REACT) for refurbishing then donation to schools and select nonprofit organizations for reuse.**
- **Leveraging Lean Process (Value Stream on Chemical Management) to identify environmental improvement opportunities**