



The Boeing Company



Innovative Solutions

Aerospace Technology and the Environment

Environmental Stewardship Strengthens Business

- Pollution and climate change are serious challenges that require aggressive action.
- Customers, communities and investors expect environmental stewardship.
- Environmental improvement supports business performance.



Innovating Breakthrough Technologies

Developing Innovative Solutions

“ We recognize the importance of protecting our ecosystem. That is why we are unleashing the expertise of Boeing employees to design environmentally progressive products, research cleaner fuels, [and] enhance the global air traffic system to reduce the carbon footprint of air travel. ”



Jim McNerney
Chairman, President and CEO
The Boeing Company

Life Cycle Environmental Footprint Reduction



Life Cycle Environmental Footprint Reduction

- Minimizing manufacturing waste
- Conserving energy and water
- Reducing emissions



Boeing's 2012 Environmental Targets

- Energy consumption*
- Greenhouse gas emissions*
- Water consumption*
- Hazardous waste*
- Solid waste recycling

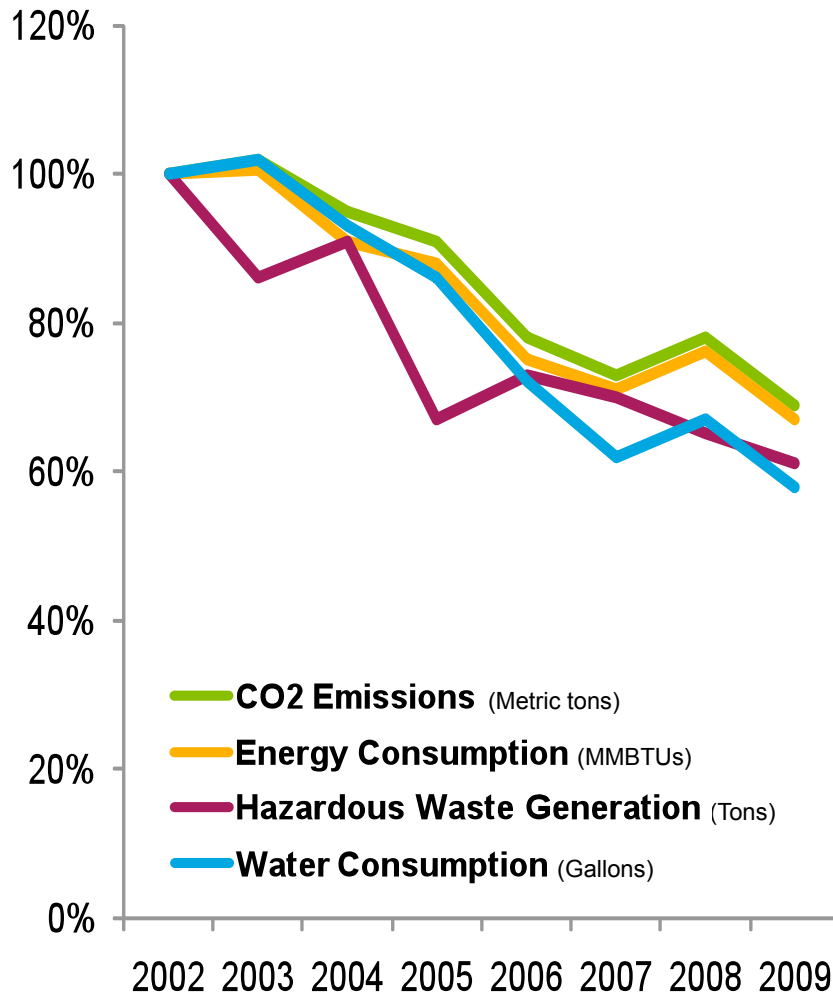
25%
Improvement
Over 5 Years

*Revenue-adjusted basis



Outperformed Our 2009 Plan

Making Steady Progress *Smaller Environmental Footprint**



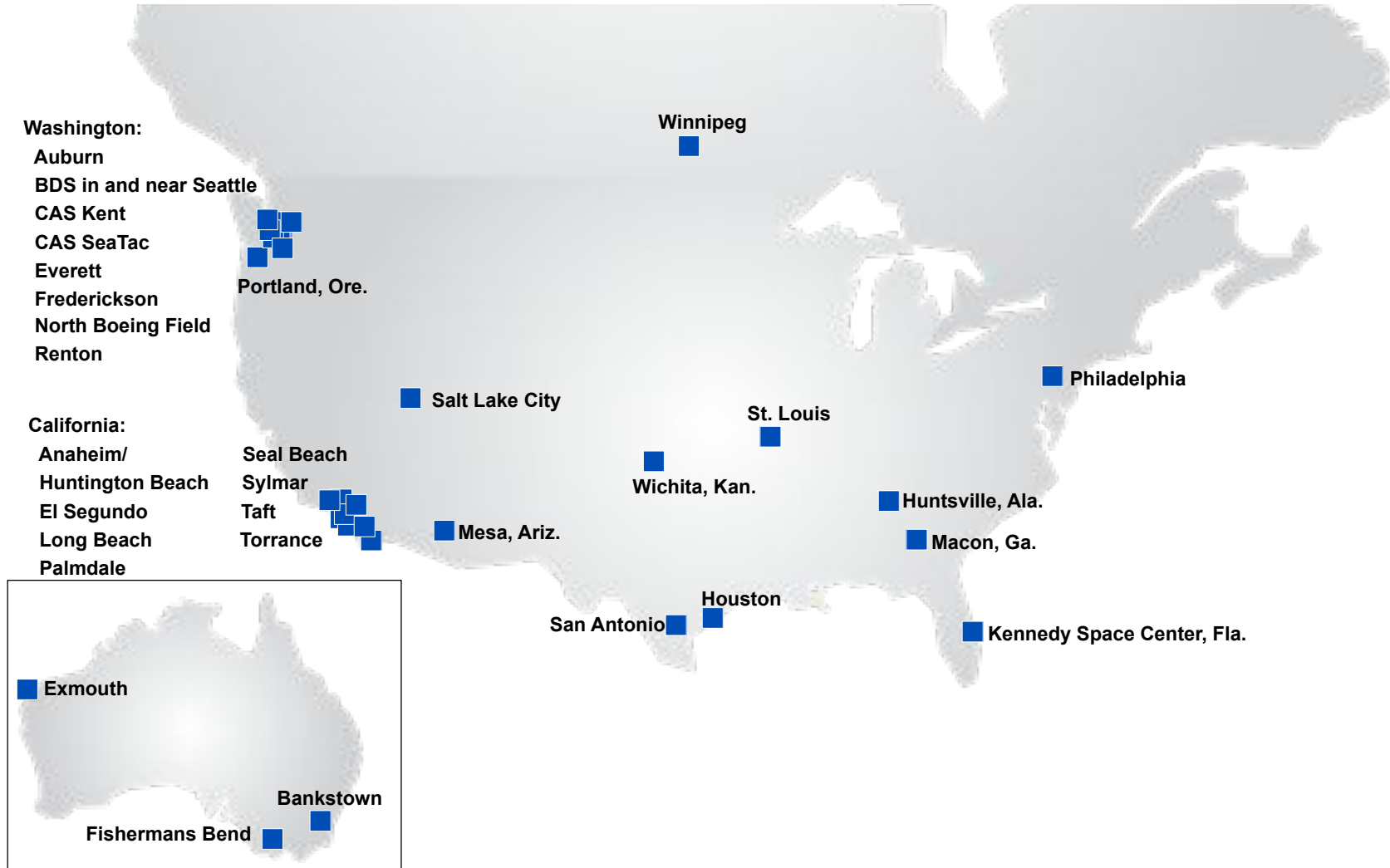
*Major U.S. facilities on revenue-adjusted basis

Environmental Improvement Platforms

- **Lean+** improves efficiency and minimizes waste
- **Reuse and recycling** minimizes solid waste
- **ISO 14001** environmental management system ensures continual improvement throughout Boeing



All Major Sites Certified to Global Standard



31 Sites Certified to ISO 14001 Global Environmental Standard

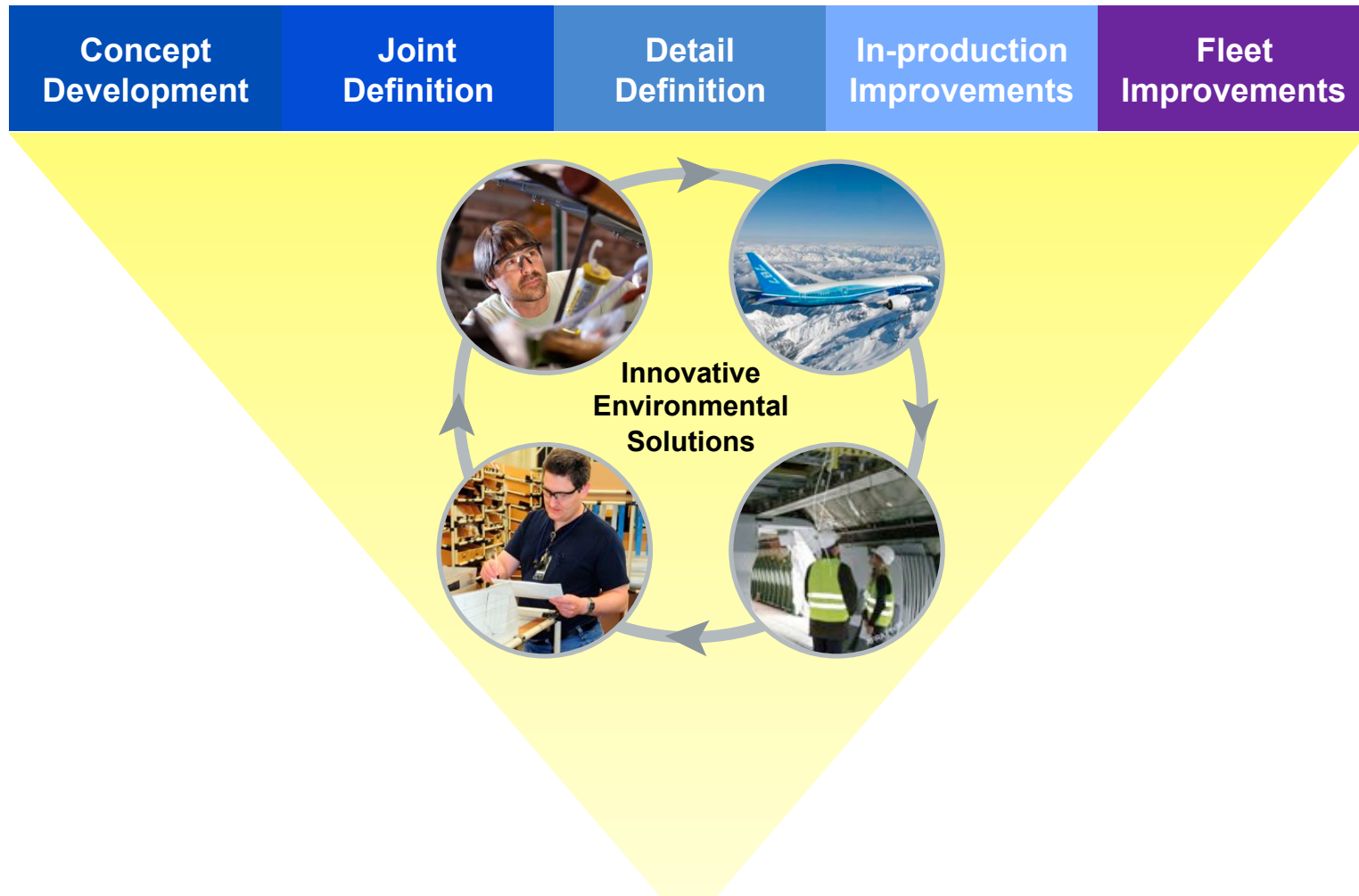
Conservation Through Innovation

- **Designing** sustainable facilities
- **Increasing** energy efficiency
- **Promoting** renewable energy sources
- **Reducing** solid waste generation and increasing reuse & recycling
- **Reducing** water consumption



Continuous Environmental Footprint Reduction Improves Productivity

Design for Environment



Embedding Environmental Considerations Early in Design Process

Chemical Risk Management



- Chrome-free paints and primers*
 - AH-64 Apache
 - C-17
 - CH-47 Chinook
 - F-15SG
 - F/A-18
 - 737
 - 777
- Halon replacement
 - F/A-18
- Cadmium reduction
 - Constructing new Commercial Airplanes metal treatment facility in Portland to eliminate cadmium

* Piloting / investigation underway or concluded

Life Cycle Environmental Footprint Reduction



Boeing Is Leading Efforts to Identify Aircraft Recycling Options

First Comprehensive Airplane Recycling Program



- **AFRA goal:**
Certified members will recycle more than 90 percent of each end-of-service aircraft by 2012
- **Carbon-fiber recycling piloted at four Boeing sites in 2010**

AFRA member organizations have:

- Recycled more than 6,000 commercial aircraft
- Recycled more than 1,000 military aircraft
- Re-marketed approximately 2,000 airplanes



Committed to Transparency

- Sharing progress and successes
- Identifying areas for improvement
- Encouraging feedback



Inspiration: *Employee Talent and Knowledge*

Information and dialogue

- Environment Information Center: enterprise Web resource dedicated to environmental stewardship
- EnviroBlog: forum for employee and executive discussion

Collaboration and action

- Green Teams: employee-led teams focused on improving environmental performance
- Employee Advisory Council: employees help guide the growth of Boeing's environmental engagement program
- Site Events: opportunities to get involved in environmentally-focused events



Environmental Engagement in Communities



Los Angeles, Calif.



Nagoya, Japan



Ridley Park, Pa.



Warsaw, Poland

Boeing Employees for Environmental Protection (B.E.E.P.) – Mesa, AZ



Boeing Mesa Site

- Opened in 1982
- Approximately 4,400 employees
- 2 million square feet



B.E.E.P. Team Background

Formed in June 2009

- Volunteer organization of Boeing employees
- Sponsored by Site Leader
 - Instrumental in forming a similar team at the St. Louis site

Green Team Starter Kit

- Provided resources and tips to get started
- Developed a charter and Steering Committee
- Launched a web page

Early Success

- Recycling plastic spools
 - Article in Boeing News Now



B.E.E.P. Activities

- **Monthly Lunch and Learn Program**
 - Speakers from within Boeing and U.S. Forest Service, ASU, SRP, Valley Metro, Maricopa County Air Quality, etc.
- **Employee Events**
 - Employee Electronic Scrap Recycling
 - Office Supply Recycling
 - Salt River Clean-up
- **Off-site Tours**
 - Recyclers
 - Salt River landfill
- **Projects**
 - Environmental improvements tracked and reported to EHS Council
 - Dollars saved and tons diverted from landfill



Green Walks

- **Monthly Visits to Operating and Office Areas**
 - Checklist developed to guide the team to look for environmental improvements such as recycling opportunities
- **Multi-functional Team**
 - B.E.E.P. reps, Site Leader, Area personnel, energy conservation specialist
- **Results**
 - Best practices identified and posted on B.E.E.P. web site
 - Environmental project opportunities identified
 - Areas where help needed are identified
- **Winner of 2011 Boeing Conservation Award**



Current and Future Projects

- **Expand Plastics Recycling Program**
 - Starting with soft plastics (bubble wrap) and caps in Assembly Building
 - Utilizing personnel on Light Duty to collect, sort, and re-deploy
- **Focus on Items Previously Discarded**
 - Items in Bone Yard (e.g., office furniture)
 - Mixed scrap metals
- **Reusable Containers**
 - Coordinating with Packaging Engineers and suppliers to ship parts in reusable or environmentally-friendly packaging
- **Employee Communications**
 - Leverage resources within the 200+ employee “Go Green” distribution
 - Quarterly B.E.E.P. newsletter
 - Collect and implement employee ideas



