



**E3: ECONOMY - ENERGY - ENVIRONMENT**

SUPPORTING MANUFACTURING LEADERSHIP THROUGH SUSTAINABILITY

## Impact:

- **\$238,000  
Cost  
Savings**
- **16 tons  
solid waste  
reductions**
- **10,500 kWh  
electricity  
reductions**
- **5.7 Metric  
tons CO<sub>2</sub>e  
reductions**



Founded in 1972 and headquartered in Arlington Texas, Metro Custom Plastics has been a leader for over 40 years in the injection plastics industry and is a specialist in conventional injection-based plastic molding. Supported materials include Recycled Plastic, Polyethylene, Polypropylene, ABS, Nylon, Polycarbonate, Polyester, and Styrene. They emphasize modern technology in their manufacturing process enables them to deliver customer's products in a timely manner to enhance their competitive edge in the market.

### The Situation

Mike Havel, president of Metro Custom Plastics, Inc. previously lead the organization to implement its ISO 9001 Quality Management System which requires continued improvement throughout the organization. Mike understood the value of his staff being involved in improvement efforts, but getting engagement was more difficult.

Value Stream Mapping (VSM) proved to be a valuable tool and foundation to demonstrate the importance of integrating the wastes of lean with the additional wastes of energy, water, materials and solid waste. The VSM of a selected product showed that total value added time to produce a product was just over an hour while non-value added time was significantly higher.

### The Solution

The Texas Manufacturing Assistance Center (TMAC) contacted Metro Custom Plastics about an EPA grant-funded opportunity to deliver an on-site training program to assist staff to identify all types of wastes including Lean, energy and environmental wastes.

The E3 training included classroom training followed by walks of the production and warehouse floors as a cross- functional team including quality, maintenance, managers and production staff identified various lean, environmental and energy wastes. They followed the production of a custom container from start to finish. The team was trained to watch the product to see if movement or flow was occurring through the process. Non value added tasks were recorded and later quantified to determine their significance.

E3 provides manufacturers with customized, hands-on assessments of production processes and assists with the implementation of energy-saving projects. As a result, E3 is increasing manufacturers' productivity, while making them more competitive. This assessment helps drive innovation and improves the regional economy by retaining jobs and reducing environmental impacts

The team also identified 23 areas of lean, energy and environmental wastes which, if addressed by staff and management, could result in significant time- and cost-savings which could help Metro Custom Plastics achieve production, environmental and energy efficiencies.

Metro Custom  
Plastics, Inc.  
<http://www.metrocustoplastics.com>

County:  
Tarrant County, TX

Industry:  
Plastic Injection  
Molding

NAICS:  
333249

TMAC Services:  
E3 Assessment

Who to contact:  
TMAC  
Kurt Middelkoop  
(817) 307-0613

Specifically, the team filmed and reviewed a 95 second process to remove and assemble a customer product. The team identified that the value added time was 25 seconds with 70 seconds of possible time that could be simplified, reduced or eliminated. The team is now working to reduce the process cycle time by up to 30 seconds. Based on the large volume of product flowing through this process this improvement will save over \$300,000 in labor. The improvements will included locating bins closer to work area, introduction of tool balancers to provide easy access to tools and easy access bins to stock all required parts for this process.



### Results

Metro Custom Plastics has recognized that the E3 training now gives them the information needed to help increase production efficiencies and reduce their production times to expand their capacity in the future.

***“For the first time our management team has listened to our operators for their improvement ideas. This process opened our eyes to many new opportunities that we have been overlooking for years”  
Mike Havel-Owner***



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Our goal is to help increase U.S. manufacturers’ productivity, while making them more competitive and gain access to new markets by reducing environmental and energy costs through the development of new sustainable materials, products and processes. We see this as an opportunity to strategically re-position U.S. manufacturing.

— Brian Lagas, NIST Manufacturing Extension Partnership. NIST is the National Institute of Standards and Technology, an agency of the U.S. Department of Commerce, and a part of E3.

Take the first step to a more successful future!  
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Call 800-625-4876 or visit our website at [www.tmac.org](http://www.tmac.org)