

Mitchell Plastic Welding

Image by Mitchell Plastic Welding

Overview

Mitchell Plastic Welding (MPW) is at a pivotal stage in establishing a vertically integrated closed-loop plastic manufacturing system in Tasmania. Operating for over 18 years, MPW has evolved from providing pipe welding services to the aquaculture industry to becoming an innovator in plastic solutions, recycling, and injection molding.

The driving vision of the leadership team is “to be a trusted innovator in plastic products, solutions and services to enable our stakeholders to thrive”.

Objective

The business is expanding its operations to a new facility at the Brighton Transport Hub, near Hobart in Tasmania. This state-of-the-art facility will house Tasmania’s largest injection molding machine and advanced recycling technology, for fully integrated re-manufacturing of plastic materials.

A major challenge for MPW is gathering the right type of plastic, in the right order and quantity, from across Tasmania and transporting it to their facility in a ‘reverse supply chain’.



John Meehan

Operations Manager, Mitchell Plastic Welding

“Having to clearly define the problem to a group is helpful. Active listening and open questions are really valuable.”

“How do we get the right type of plastic, in the correct order and quantity, from across Tasmania and into our facility?”

MPW is exclusively recycling post-industrial waste, targeting reliable sources of single-stream materials. This includes high-density polyethylene (HDPE), found in irrigation and tunnel plastic, low-density polyethylene (LDPE) and polypropylene (PP), found in feed bags in aquaculture, and both rigid and flexible plastic products found in medical waste. Working with more homogenous input streams simplifies the sorting process but the sources of these materials are geographically dispersed and often located in regional and remote areas in Tasmania.



Identify and map sources

John created a simple map to illustrate the types and quantities of materials to be collected, and their source location.



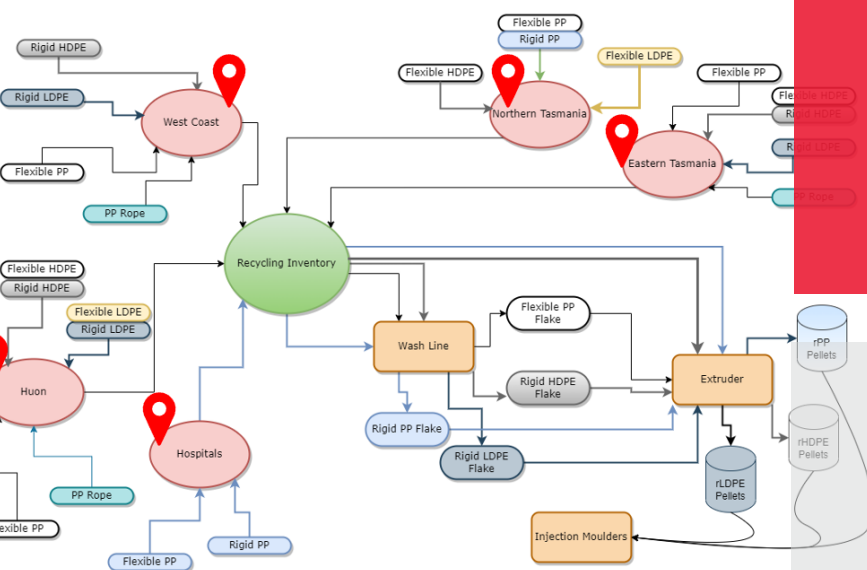
Balance material flows

John analysed the supply of materials against the production capacity to identify potential bottlenecks and optimise inventory.



Leverage existing systems

John investigated opportunities for aggregation and ‘back loading’ on existing distribution channels in regional centres.



Lessons Learnt

Reverse supply chain management refers to the process of moving goods from their typical final destination back to the manufacturer or another handler for reuse, recycling, refurbishment, or disposal. Unlike traditional supply chains, which focus on the flow of goods from production to consumers, reverse supply chains deal with the return flow; the collection and processing of used goods and materials, to be reintroduced into the production cycle.

Effective reverse supply chain management involves logistics, remanufacturing, recycling processes, and, importantly, designing products with their end-of-life in mind. It requires high levels of cooperation across stakeholders, including manufacturers, consumers, waste management entities, and policymakers, to create a seamless system that supports the transition to a circular economy in Tasmania.

Learning into action

What have you learnt from John’s experience that you could put into action in your business? Here are three actions you could take right now:

- Identify single-stream products or materials in your operations that could be diverted for recycling.
- Design products that are easy to disassemble into single stream materials.
- Start a conversation with your suppliers and customers about how materials could be transported for remanufacture.

Outcomes

A process map to model material flows from source to the recycling facility in Brighton.

A model for balancing throughput on the recycling, extrusion and moulding lines at MPW.

Qualified proposals for aggregating loads in regional centres and ‘back-loading’ on existing distribution channels.