

## Project Background

### Client Background:

- Family-owned architectural sheet metal shop
- Specializing in sheet metal fabrication for building exteriors
- Known for rapid response and short lead times

### Client's Current State

- Current expenditure of \$30,000 per year on external powder coating services for gutter support brackets
- Demand for brackets increase by 10% annually

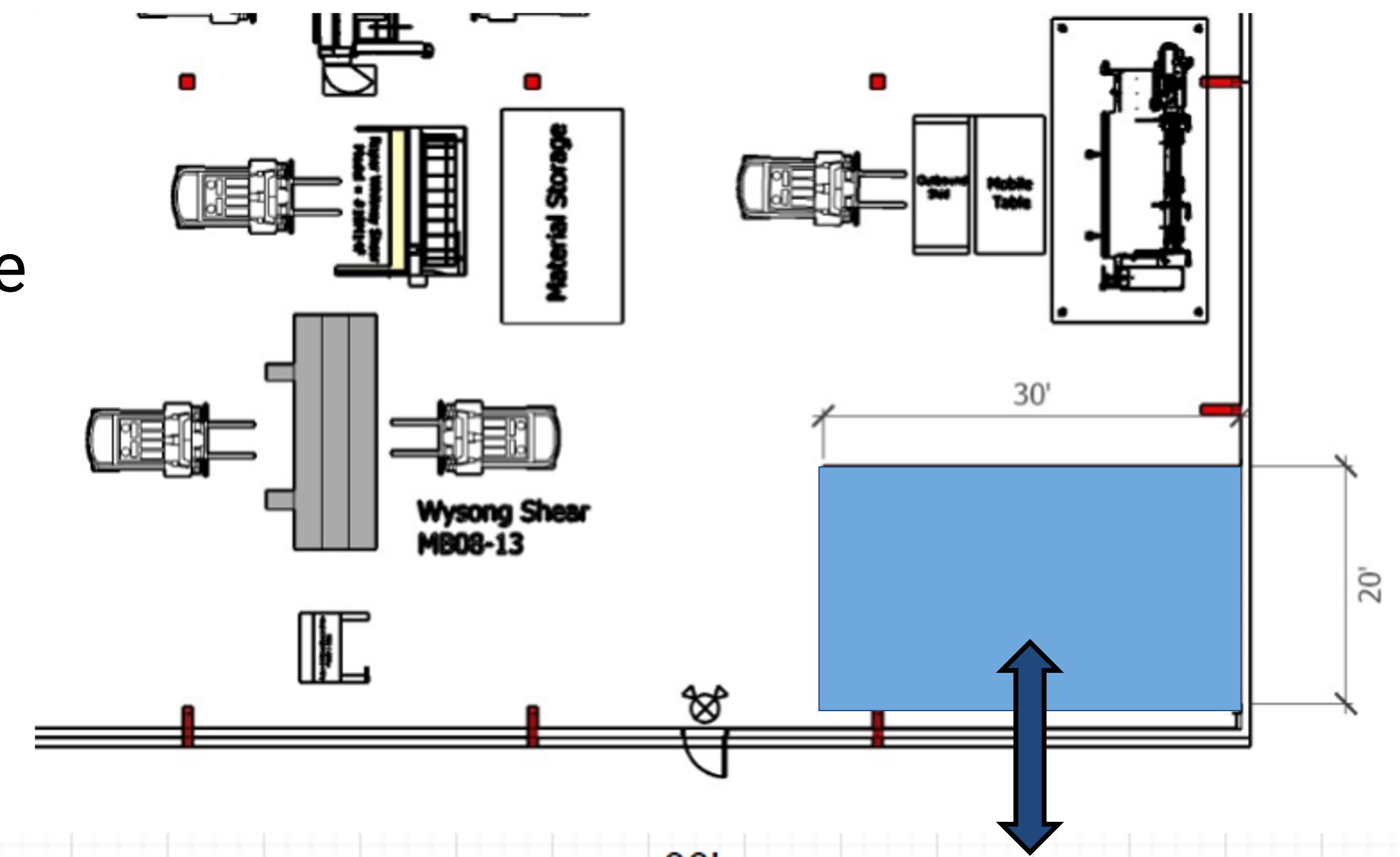
### Project Goals:

- Enhance operational efficiency
- Strengthen responsiveness
- Explore the feasibility of bringing the powder coating process in-house

## Facility Layout

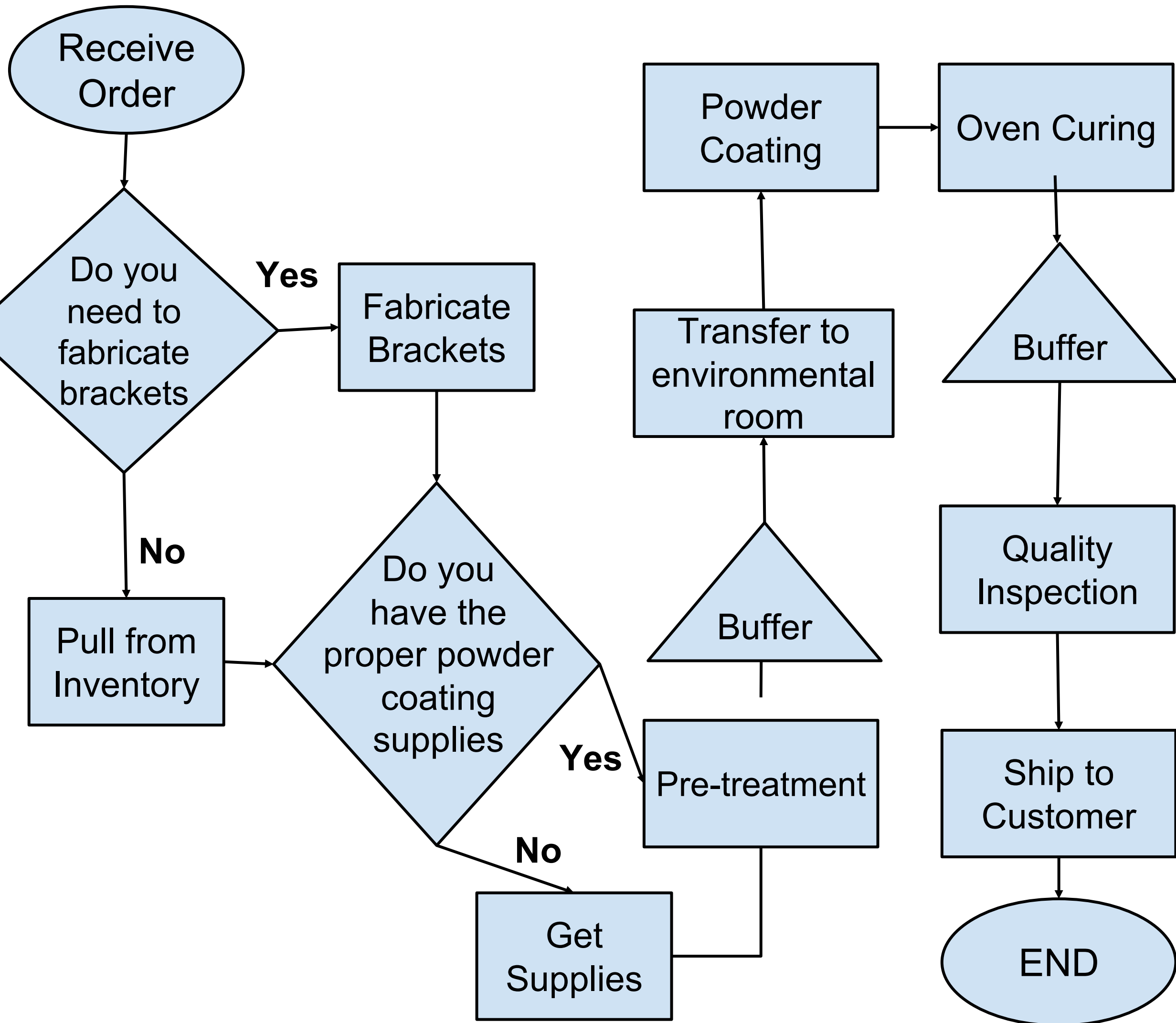
### U-Shaped Layout:

- Minimal backtracking
- Reduced material handling
- Flexible for future redesigns



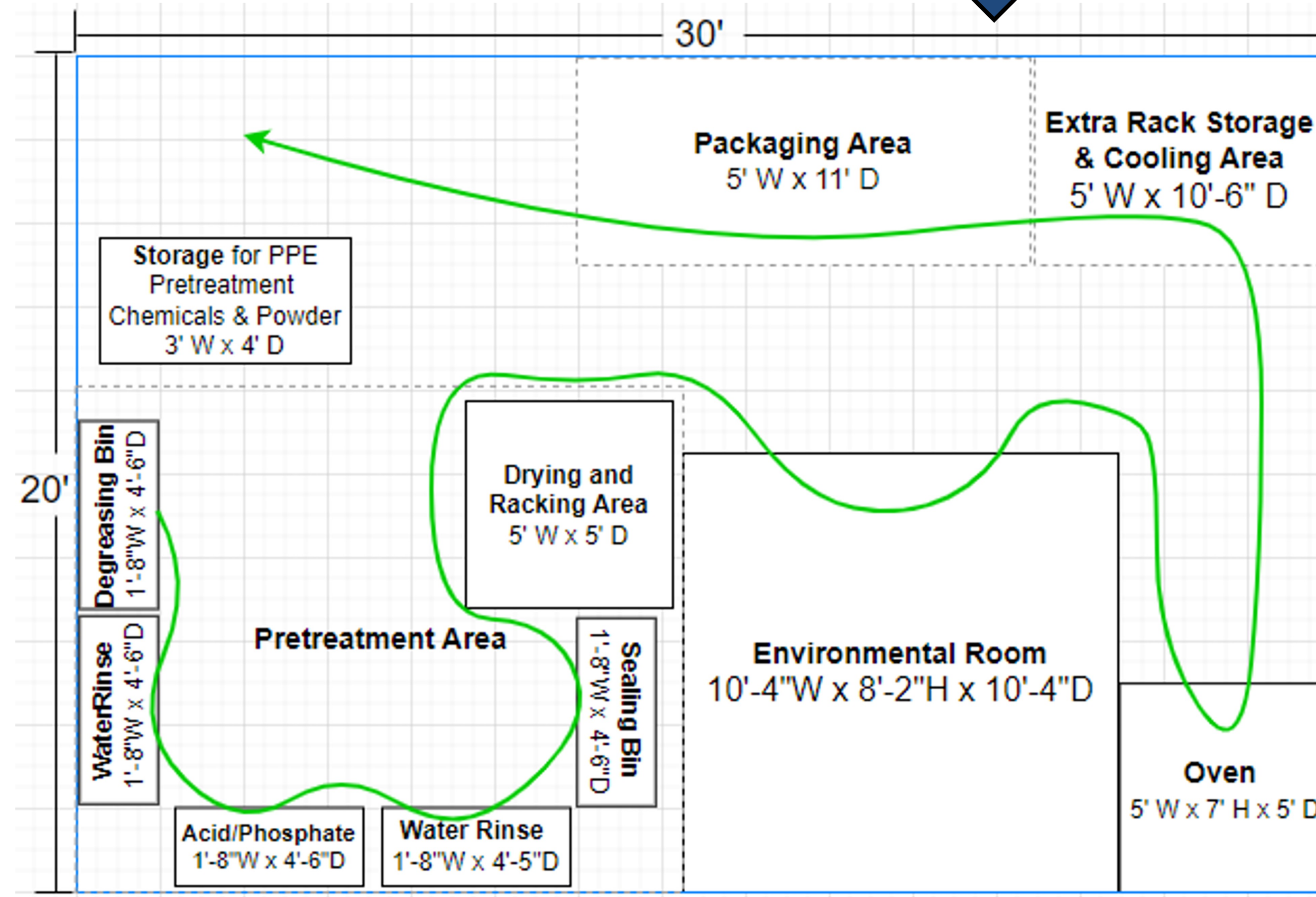
## Proposed System Model

### Projected:



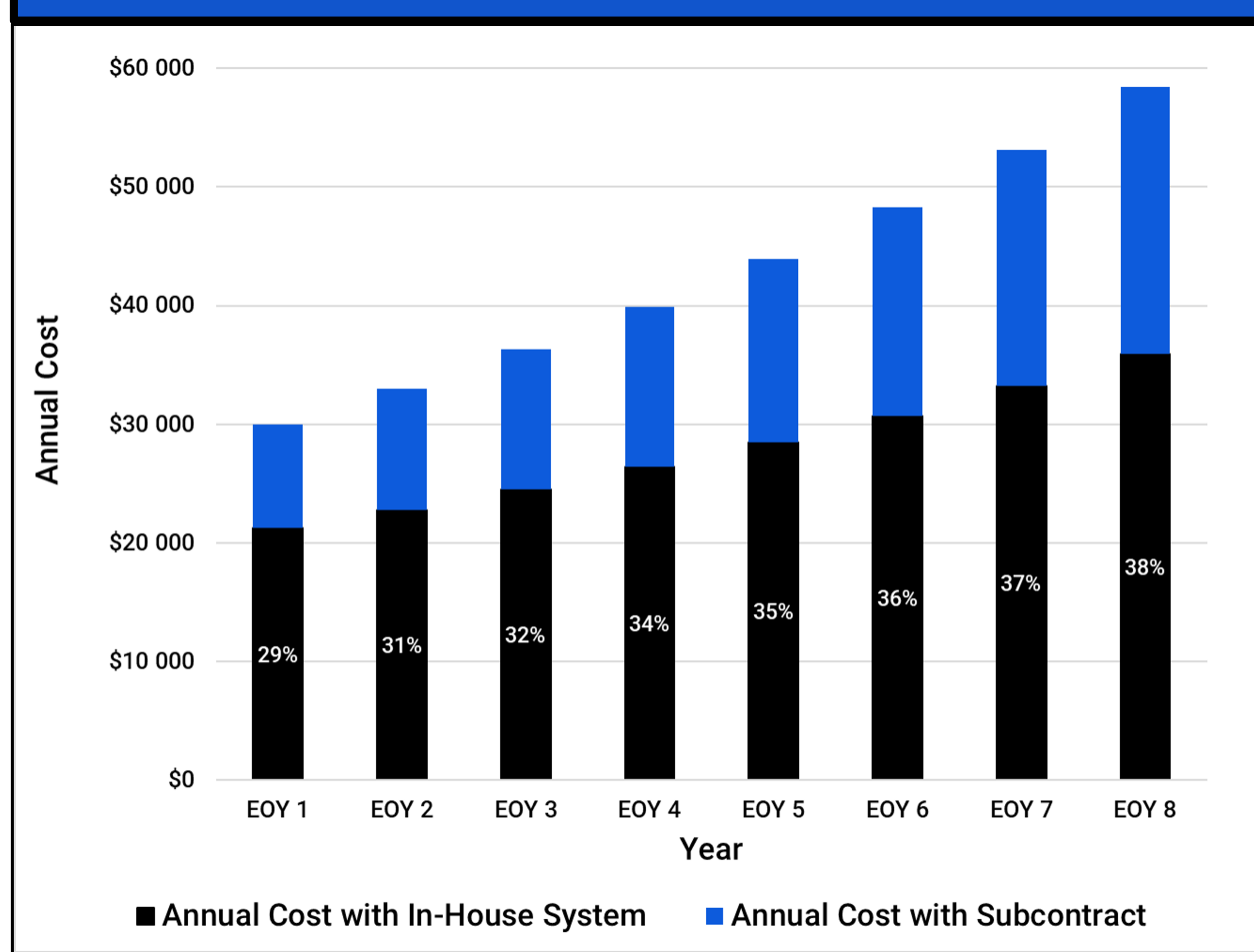
### Total Processing Time for a batch (150 brackets): 5hr 10min

Stage	Processing Time
Get Supplies, Update Inventory	10 Minutes
Pre-Treatment	85 Minutes
Transfer to Environmental room	5 Minutes
Powder Coating	150 Minutes
Oven Curing	20 Minutes
Quality Inspection & Shipping	30 Minutes



## Financial Analysis

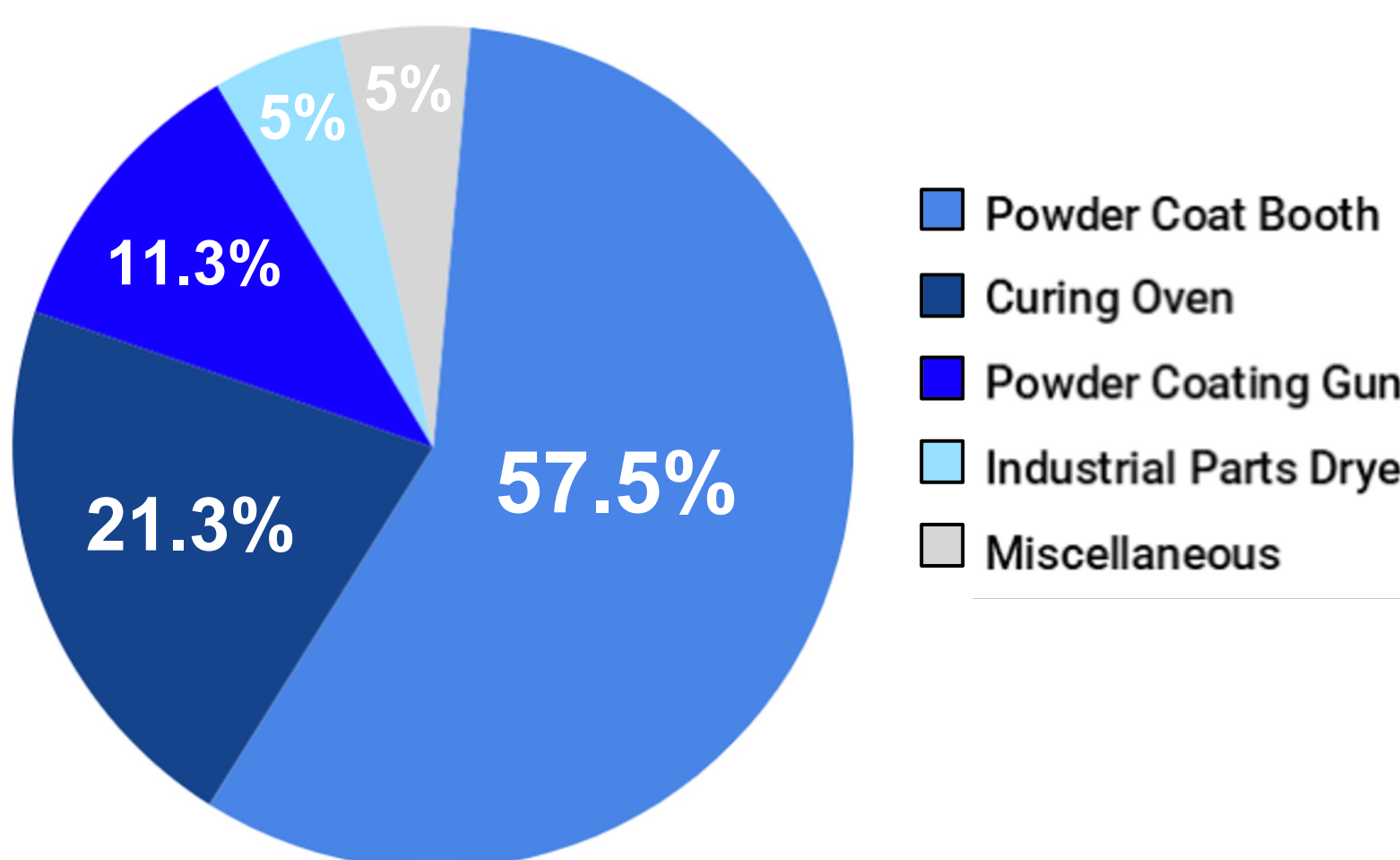
### Annual Cost for In-House vs Sub-Contracting & Percent Cost Reduction



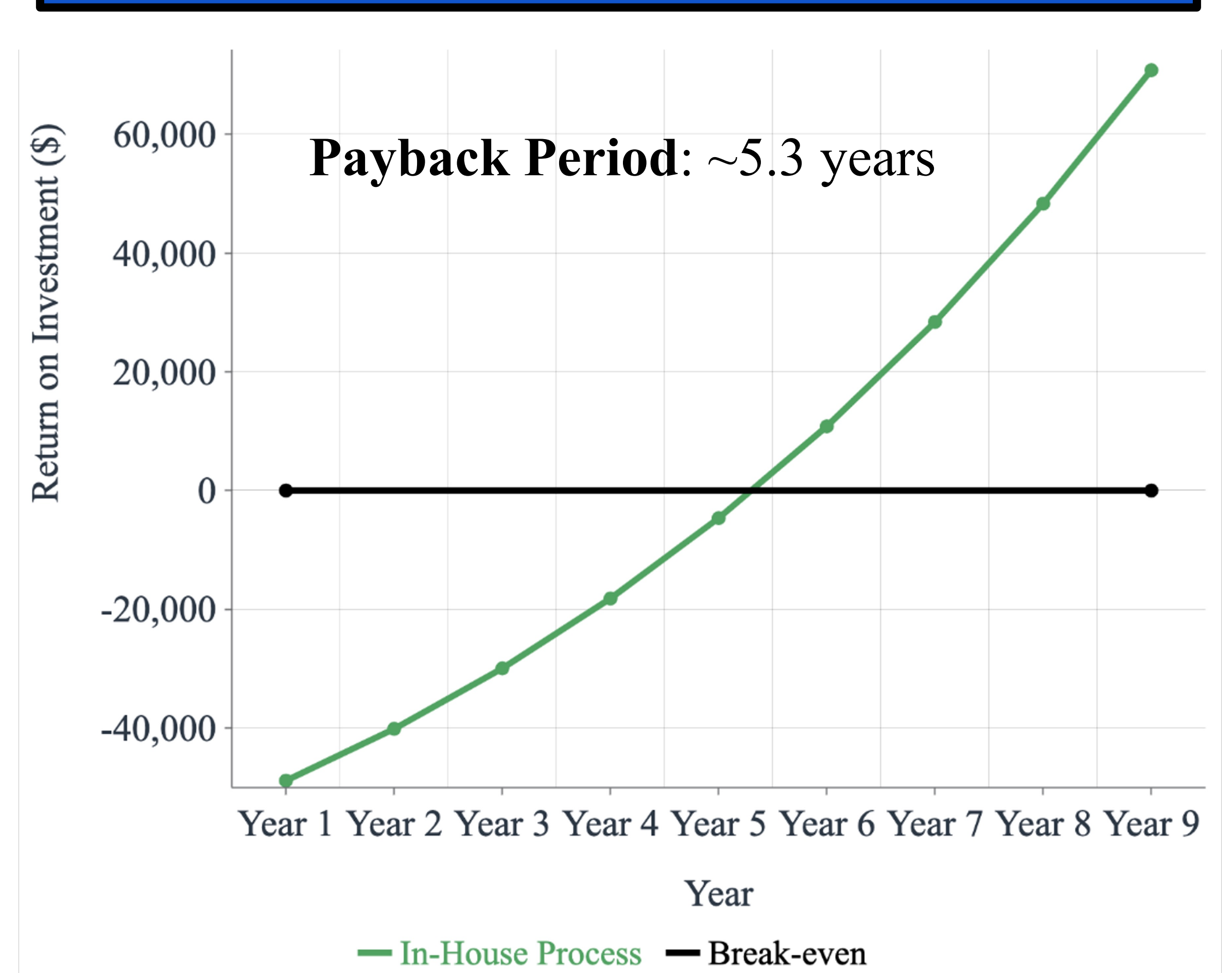
### 8 Year ROI

Total Cost	\$48,909.45
Net Savings	\$70,830.55
ROI	~143%

### Breakdown of Initial Investment

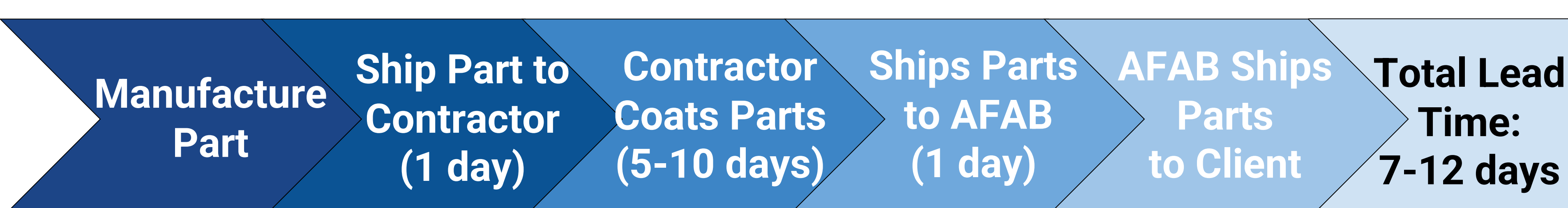


### ROI for Powder Coating Process

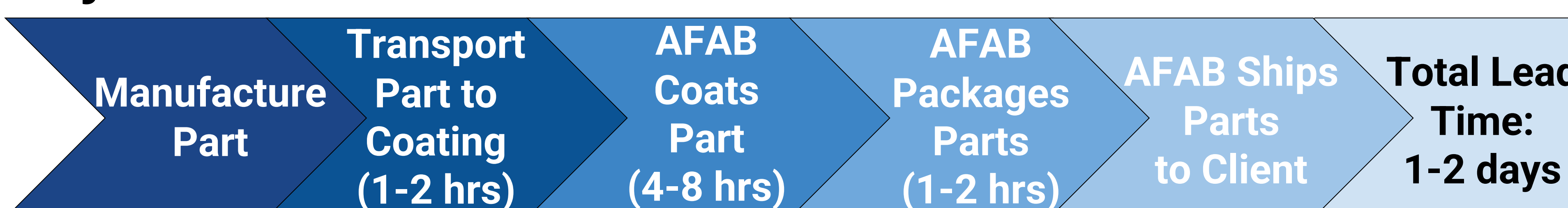


## Supply Chain Impact

### Current:



### Projected:



**Maximum Total Time Reduction: 10 Days**

## Final Recommendations

Due to the large initial investment, as well as AFAB's recent facility expansion, we recommend that AFAB implements the system in ~3-4 years time. This provides additional time for AFAB to evaluate whether their demand is stable enough to warrant the investment. The potential savings are significant based on our estimates and indicate the implementation of this system could be highly profitable.