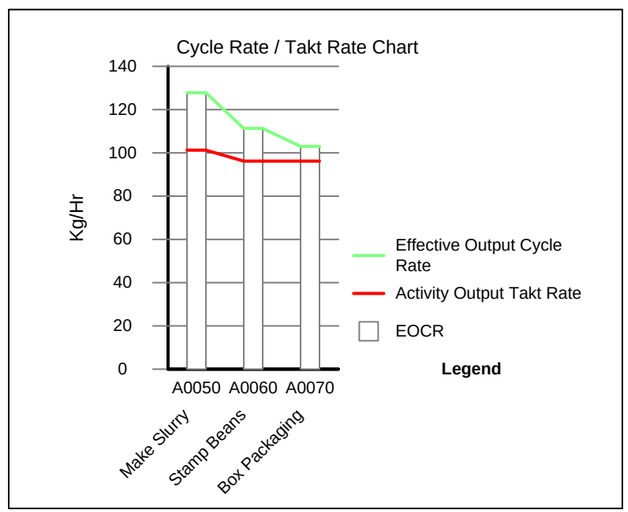
Processing Problem: Increasing Capacity

To meet an increase in demand from 7000 to 8500 lbs a day, we can increase the Cycle Rate of Box Packaging to 60 LOQ/Hr with a small capital investment in the machinery. Will we be able to meet the new demand?

Units	Week	day
	5	15
	day	Hr



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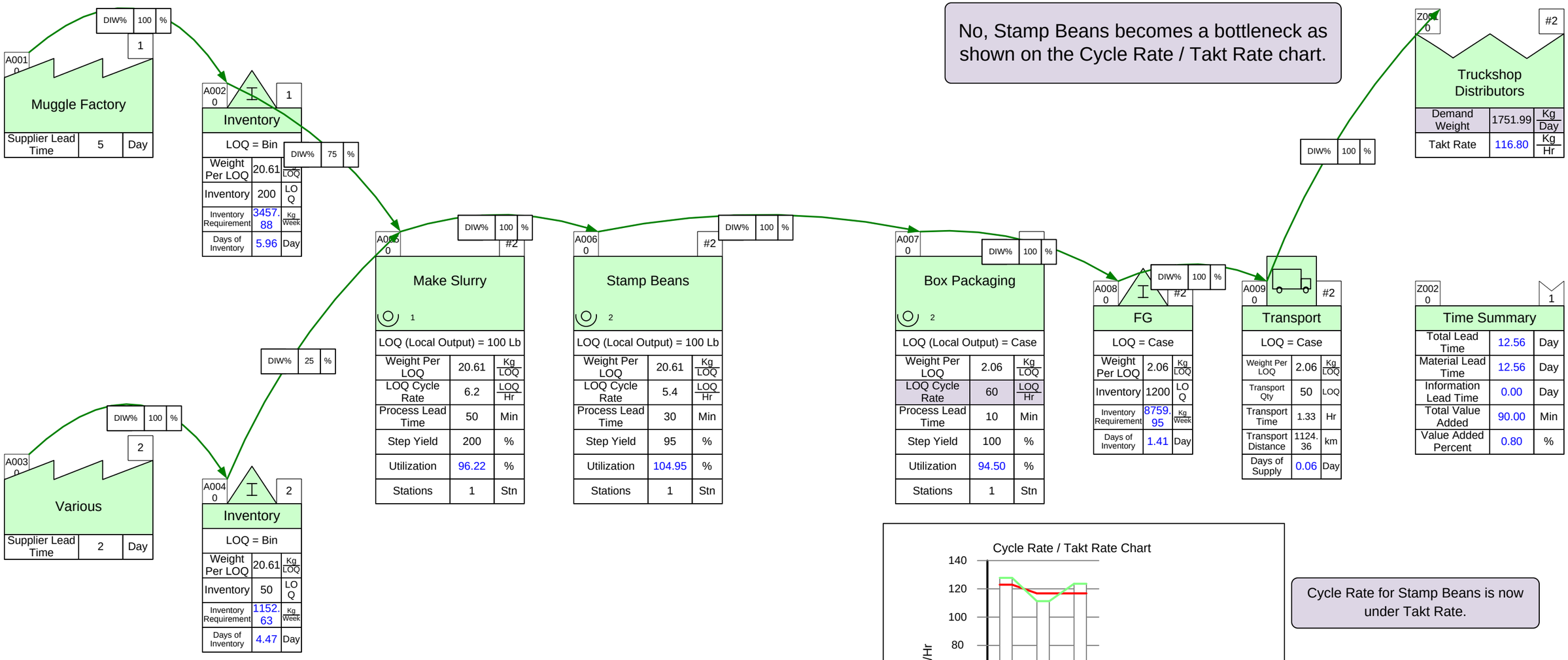
Processing Solution: Increasing Capacity

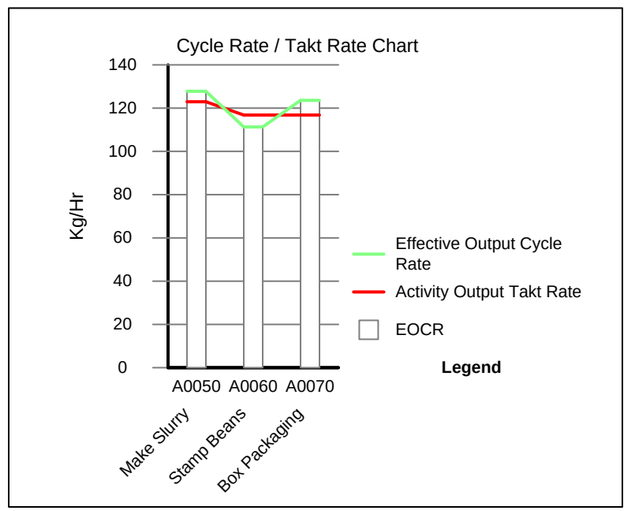
To meet an increase in demand from 7000 to 8500 lbs a day, we can increase the Cycle Rate of Box Packaging to 60 LOQ/Hr with a small capital investment in the machinery. Will we be able to meet the new demand?

Units	Week	day
	5	15
	day	Hr

Answer:

No, Stamp Beans becomes a bottleneck as shown on the Cycle Rate / Takt Rate chart.



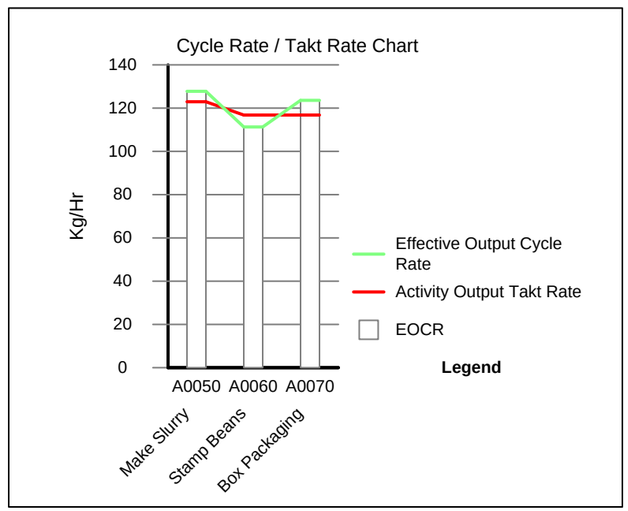


Cycle Rate for Stamp Beans is now under Takt Rate.

Processing Problem: Relieving Bottlenecks

Can we relieve the bottleneck at Stamp Beans if we can run the station an extra 4 hours per day?

Units	Week	day
	5	15
	day	Hr



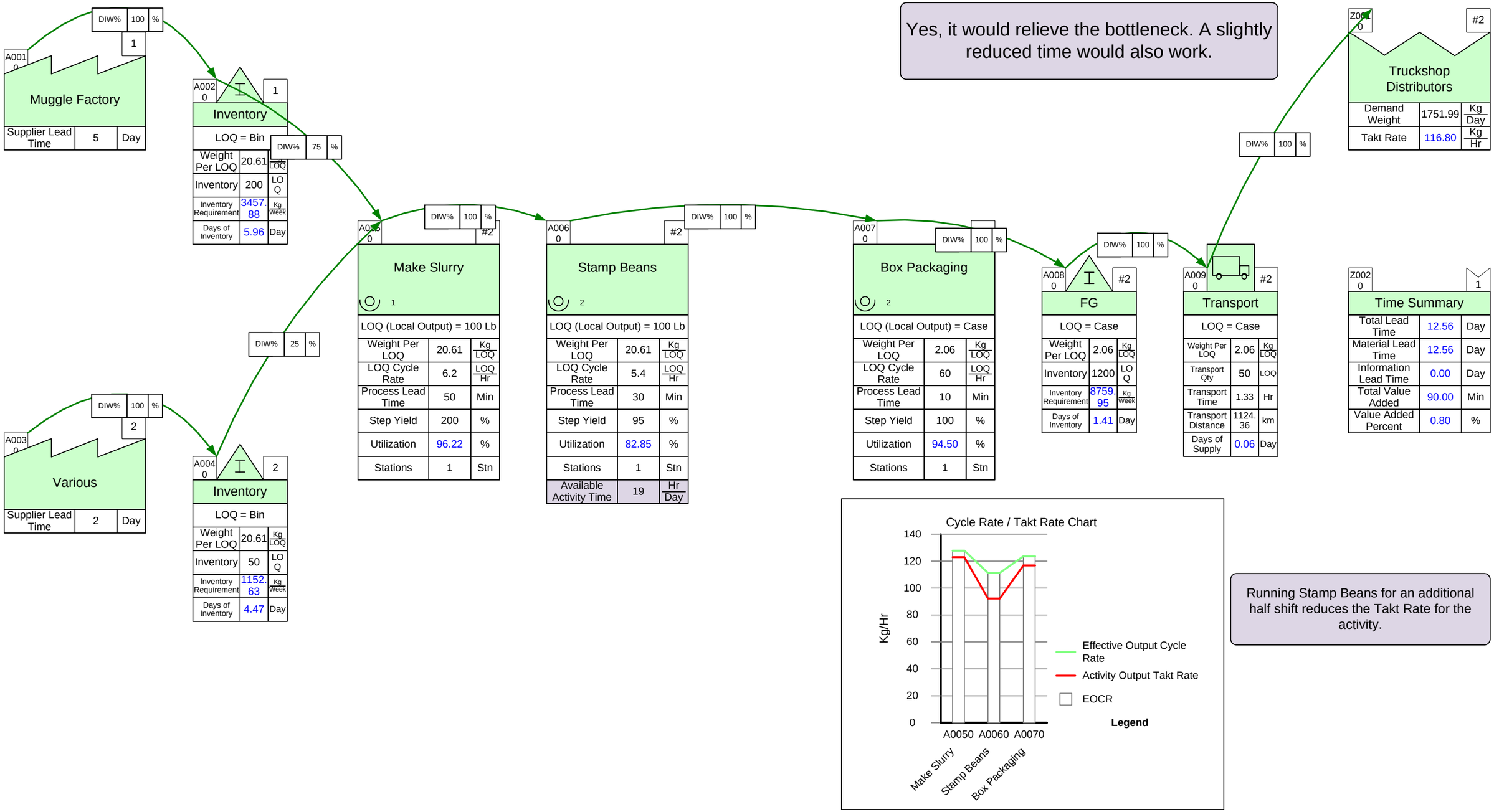
Processing Solution: Relieving Bottlenecks

Can we relieve the bottleneck at Stamp Beans if we can run the station an extra 4 hours per day?

Units	Week	day
	5	15
	day	Hr

Answer

Yes, it would relieve the bottleneck. A slightly reduced time would also work.

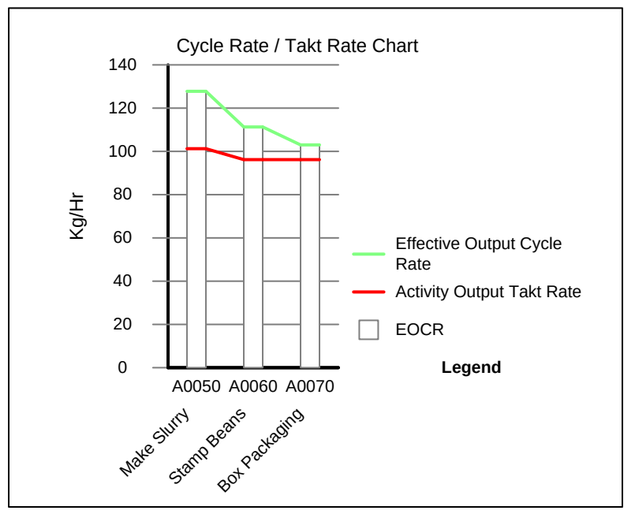


Running Stamp Beans for an additional half shift reduces the Takt Rate for the activity.

Processing Problem: Setup Time

Units	Week	day
	5	15
	day	Hr

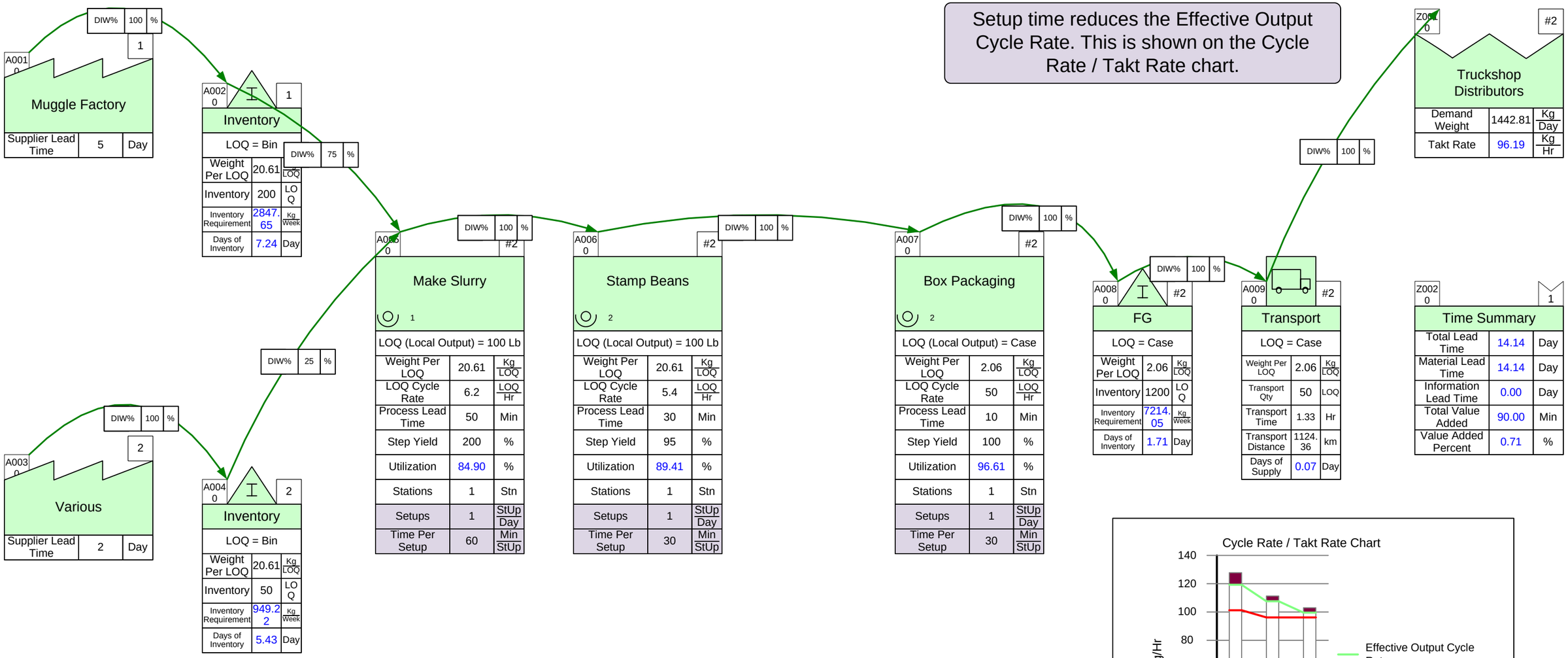
At the beginning of each production day, each process step undergoes a certain amount of Setup Time (consisting of cleaning, sanitization, preventive maintenance, etc.). The setup times are as follows: Make Slurry = 1 hour, Stamp Beans = 30 min., Box Packaging = 30 min. How does this affect Capacity?



Processing Solution: Setup Time

Units		
	Week	day
	5	15
	day	Hr

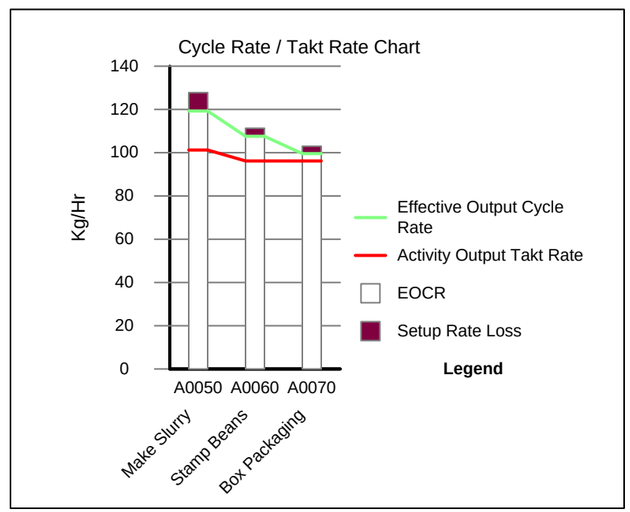
At the beginning of each production day, each process step undergoes a certain amount of Setup Time (consisting of cleaning, sanitization, preventive maintenance, etc.). The setup times are as follows: Make Slurry = 1 hour, Stamp Beans = 30 min., Box Packaging = 30 min. How does this affect Capacity?



Answer

Setup time reduces the Effective Output Cycle Rate. This is shown on the Cycle Rate / Takt Rate chart.

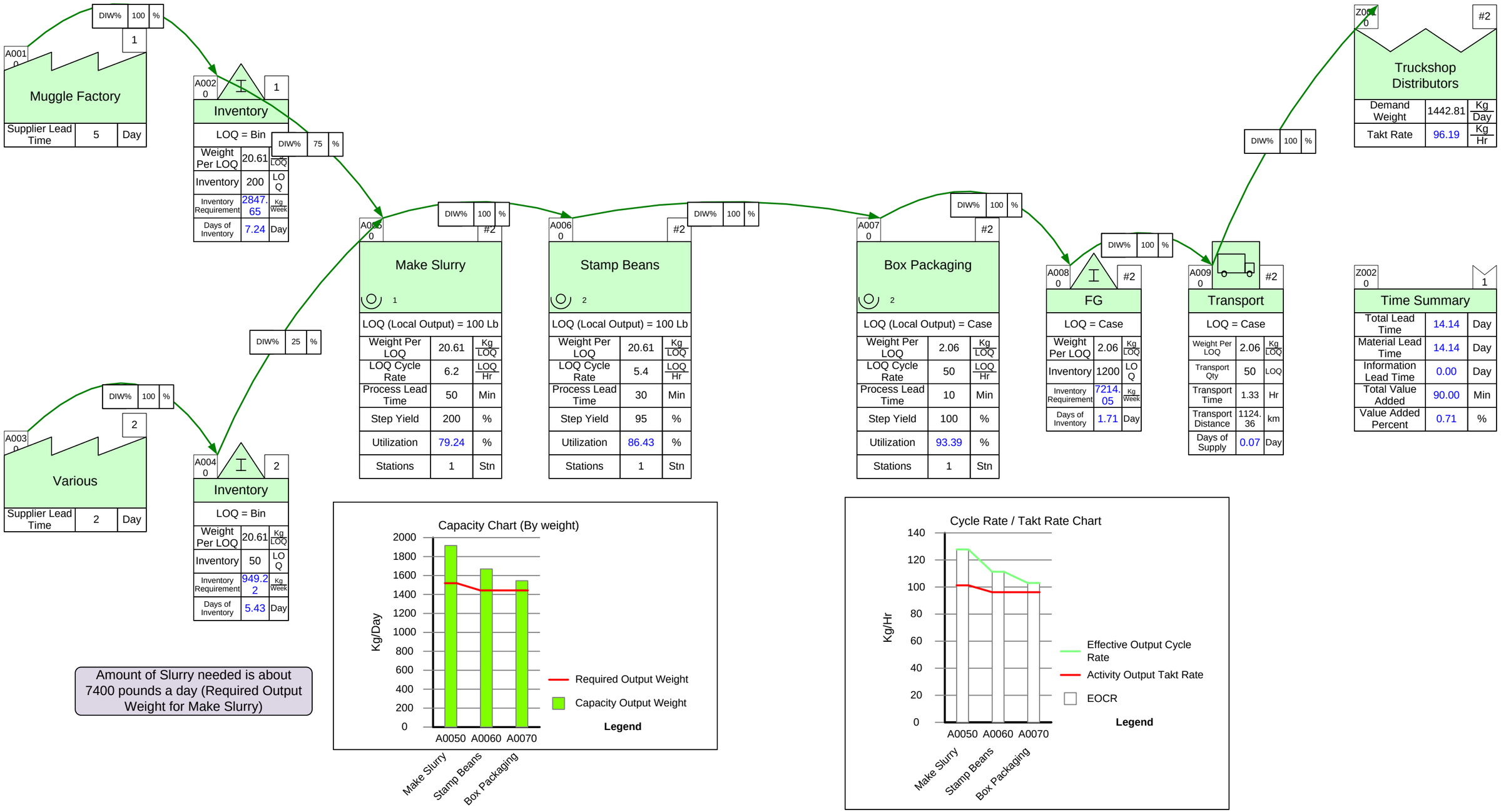
Setup Rate Loss = (Setup Time / Available Time) * Cycle Rate



Processing Problem: Scrap and Giveaway

Stamp Beans has a Scrap Rate of 10% and Box Packaging has a Giveaway Rate of 3%. Is the process still capable of meeting demand? How much additional Slurry will be needed per day?

Units	Week	day
	5	15
	day	Hr



Amount of Slurry needed is about 7400 pounds a day (Required Output Weight for Make Slurry)

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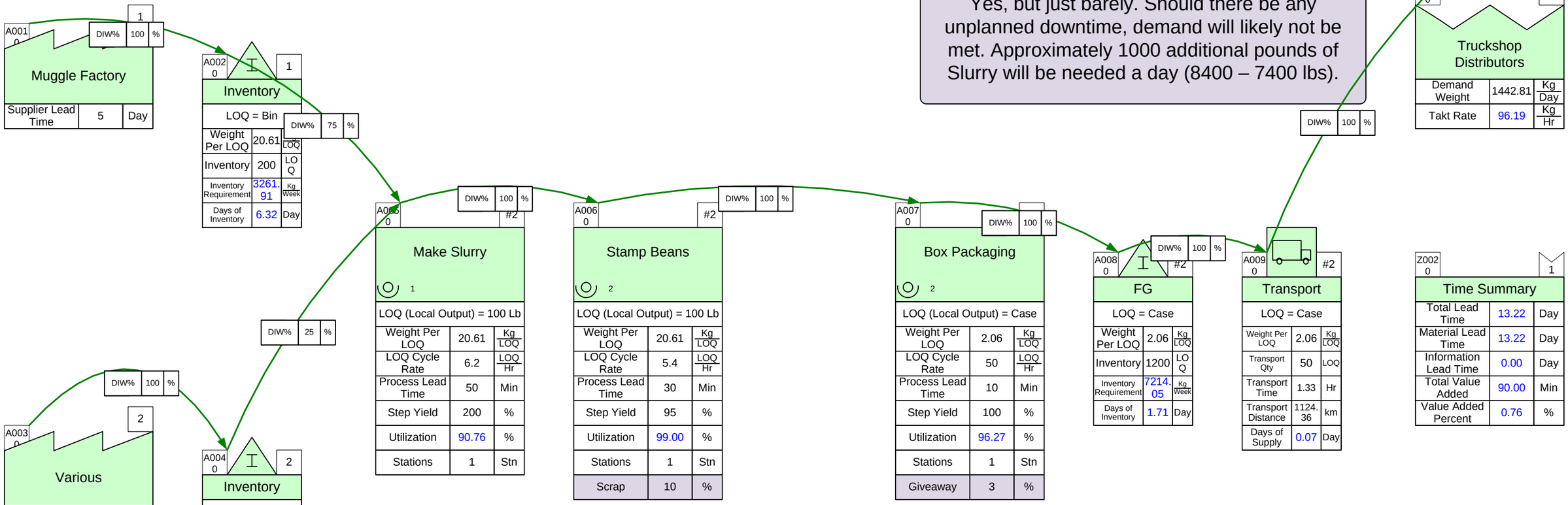
Processing Solution: Scrap and Giveaway

Units	Week	day
	5	15
	day	Hr

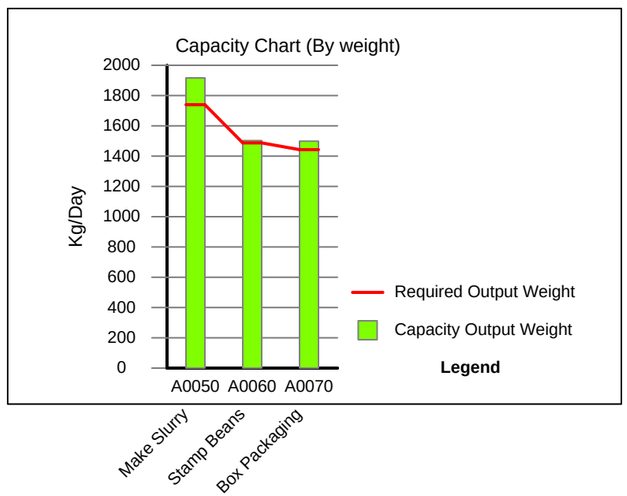
Stamp Beans has a Scrap Rate of 10% and Box Packaging has a Giveaway Rate of 3%. Is the process still capable of meeting demand? How much additional Slurry will be needed per day?

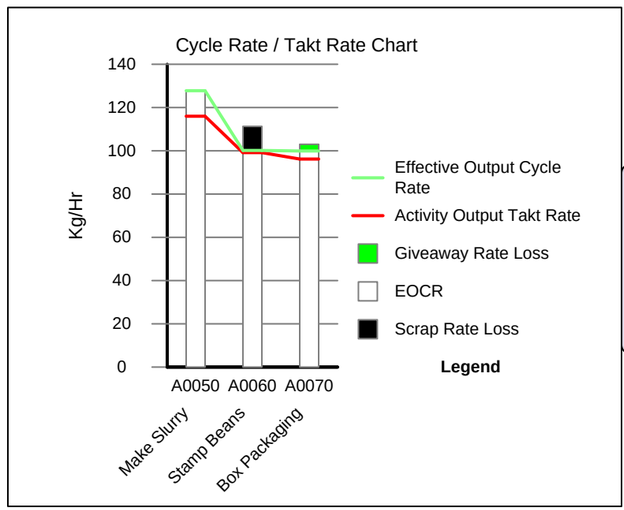
Answer

Yes, but just barely. Should there be any unplanned downtime, demand will likely not be met. Approximately 1000 additional pounds of Slurry will be needed a day (8400 – 7400 lbs).



Amount of Slurry needed is now about 8400 pounds a day (Required Output Weight for Make Slurry)





The Takt Rate of an activity is increased due to any downstream losses since it will have to produce an additional amount to replenish the losses. The losses themselves will reduce an activity's Effective Cycle Rate.

Quick Processing Stencil

Easy

Fast

Focused

Quick Processing is one of eVSM's Quick Stencils and supports plant level mapping of chemicals or food processing. It combines *speed*, *ease of use*, and *power* as shown below:

4x mapping speed and quantified improvements with a well designed set of icons, variables, macro shapes, equations, and charts.

C/T C/O LT — Standard Variables

Design Macro Shapes

F(x) — Built-in Equations

Built-in Charts

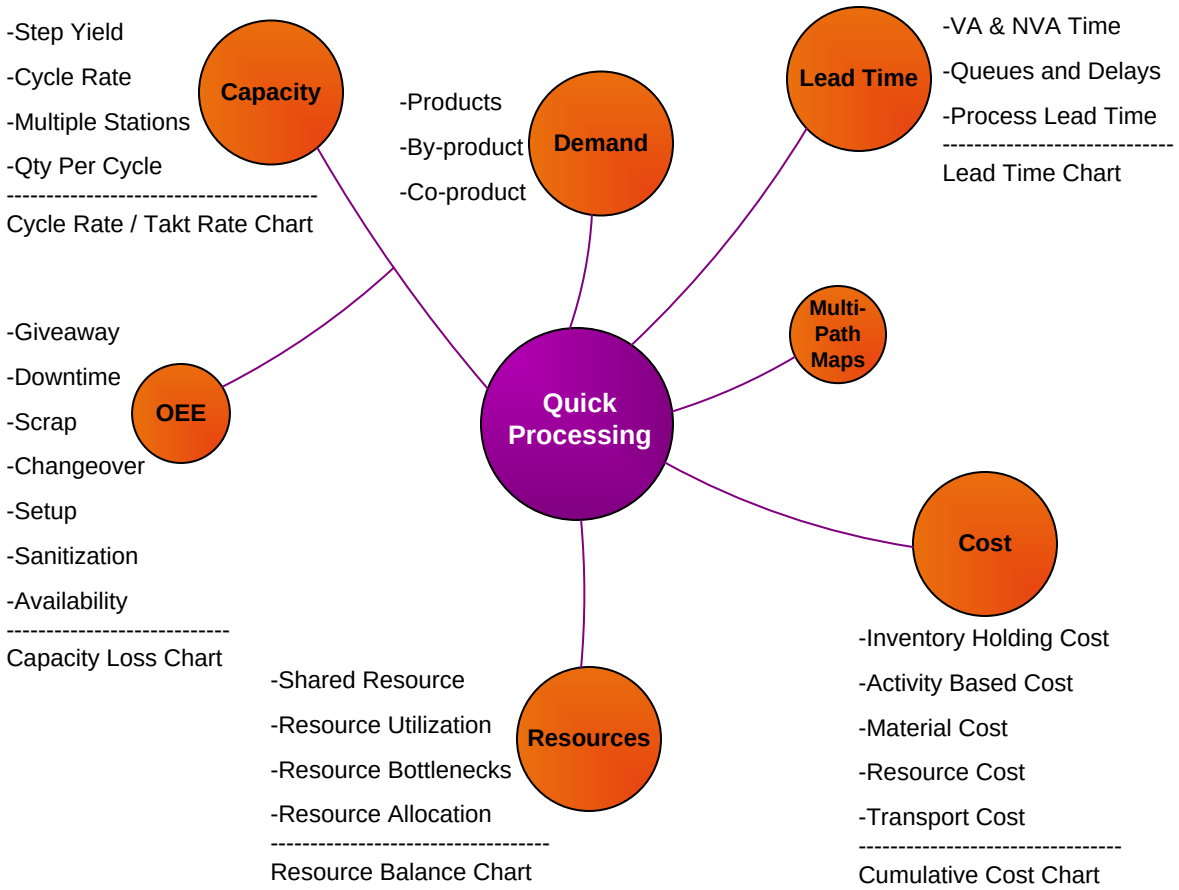
Quick Processing is actually a compatible set of 2 stencils as shown below.

Sketch: Simple sketch shapes, no data blocks

Pro: + data blocks + equations + charts ideal for most maps

Quick stencils are popular because of their capability and also because of the excellent deployment materials available. These include example maps, publications, and learning options.

The technical concepts addressed by the Quick Processing stencil are shown below.



An example map drawn in Quick Processing is shown overleaf.

eVSM

Co-Products

Value streams can include two or more co-products

Local Quantities

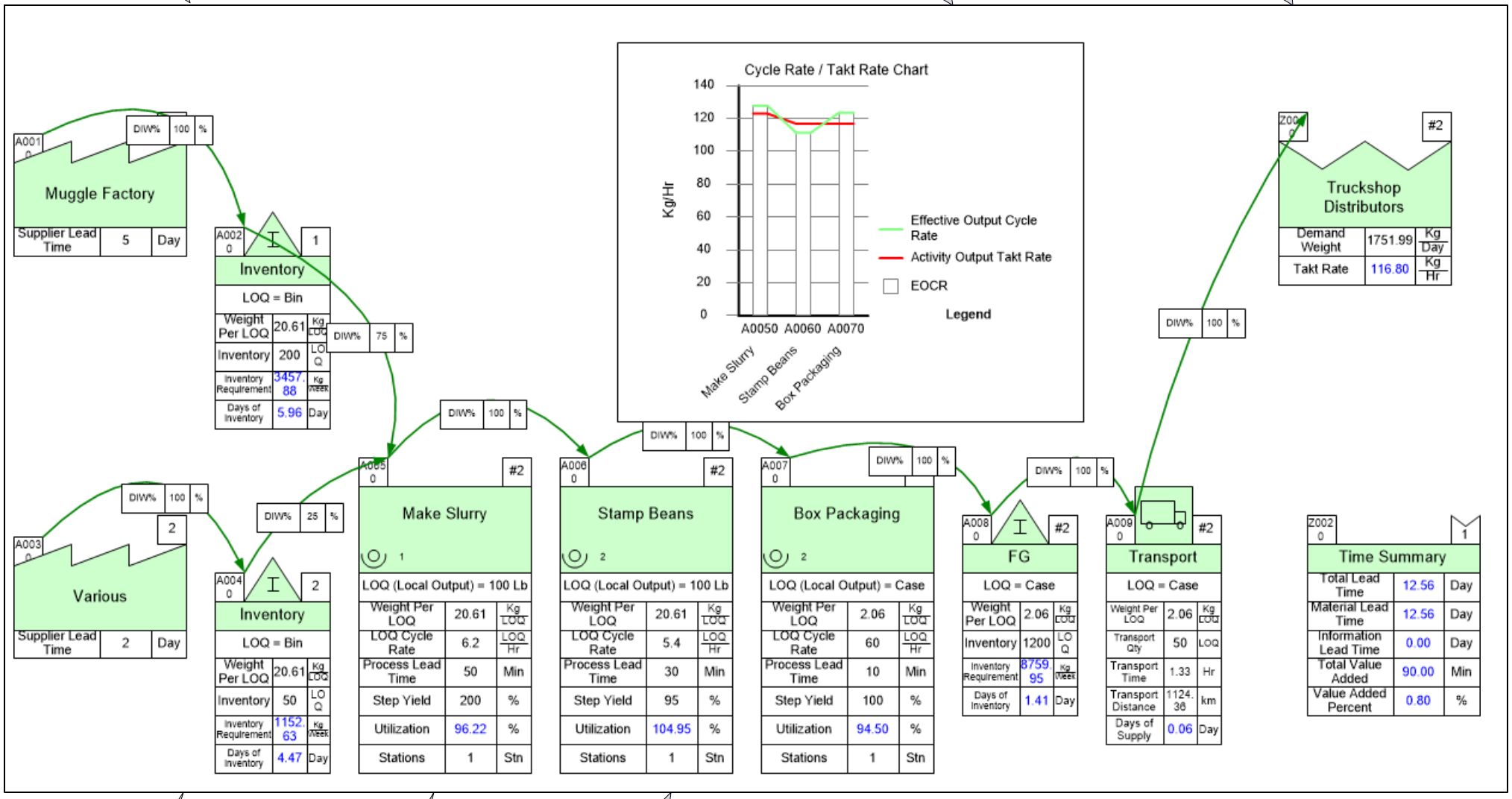
Quantities at each activity can be measured in local units most easily

Separation

Output from an activity can be multiple materials by weight percent

Merge

Ingredients can be merged by weight percent



Step Yield

Activities have a step yield measure to balance input and output weight

Byproducts

Byproducts from the value stream can be mapped in addition

Weight Balance

Sequence arrows and a weight balance calculation connects customer demand(s) to required production in local quantities at any activity

Quick Processing Example Map with Features