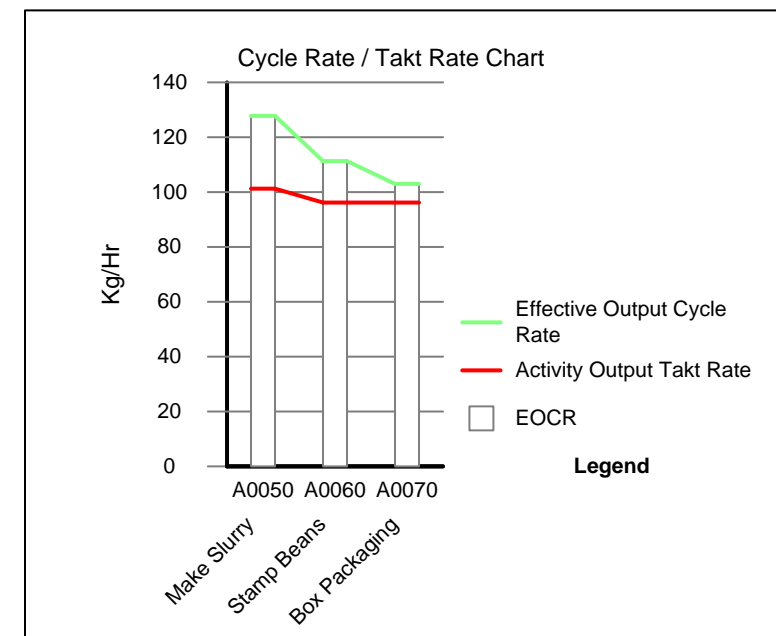
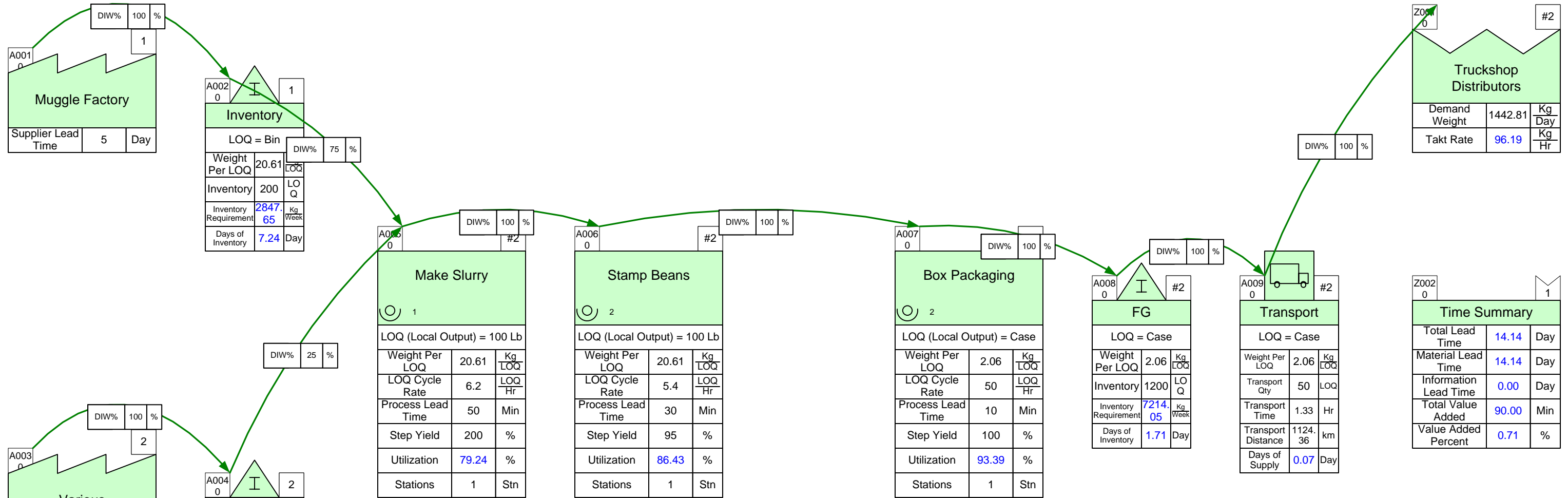


Processing Problem: Increasing Capacity

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?

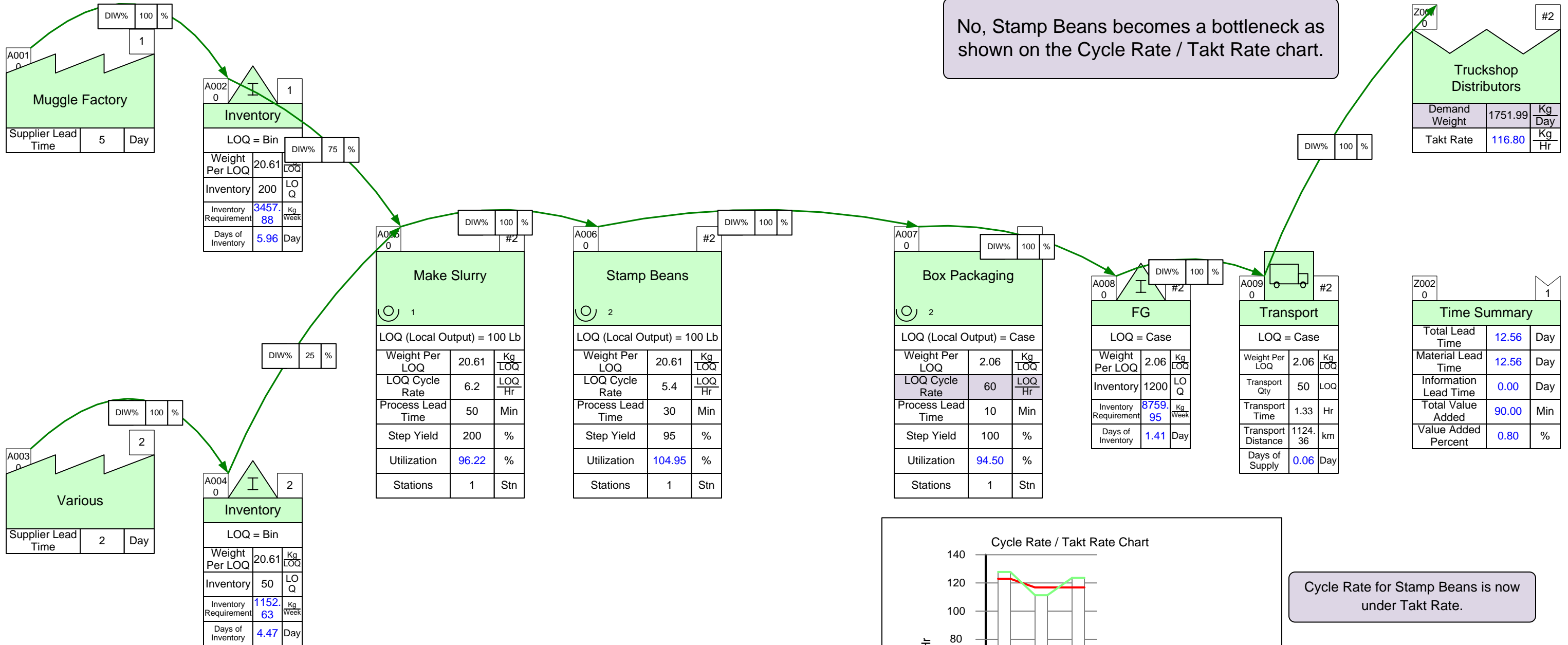
Units	Week	day
	5	15
	day	Hr



Processing Solution: Increasing Capacity

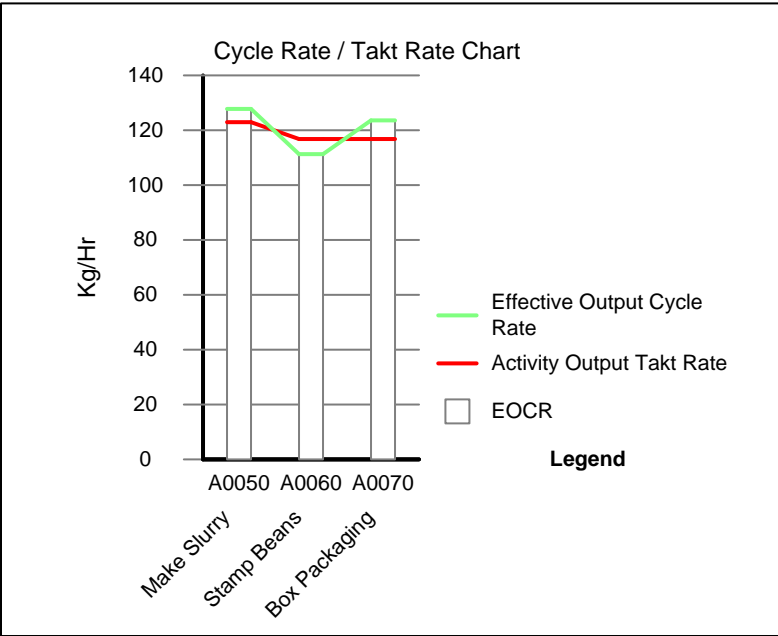
To meet an increase in demand from 7000 to 8500 lbs a day, we can increase the Cycle Rate of Box Packaging to 60 LOQ/Hr with a small capital investment in the machinery. Will we be able to meet the new demand?

Units	Week	day
	5	15
	day	Hr



Answer:

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



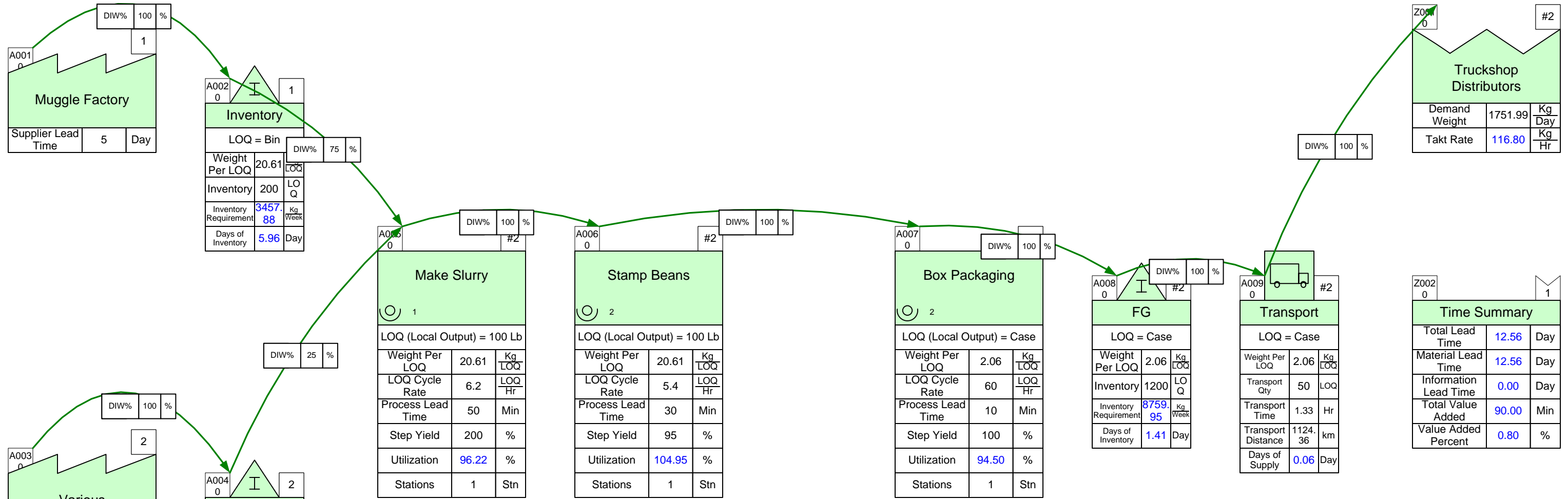
Cycle Rate for Stamp Beans is now under Takt Rate.

Time Summary		
Total Lead Time	12.56	Day
Material Lead Time	12.56	Day
Information Lead Time	0.00	Day
Total Value Added	90.00	Min
Value Added Percent	0.80	%

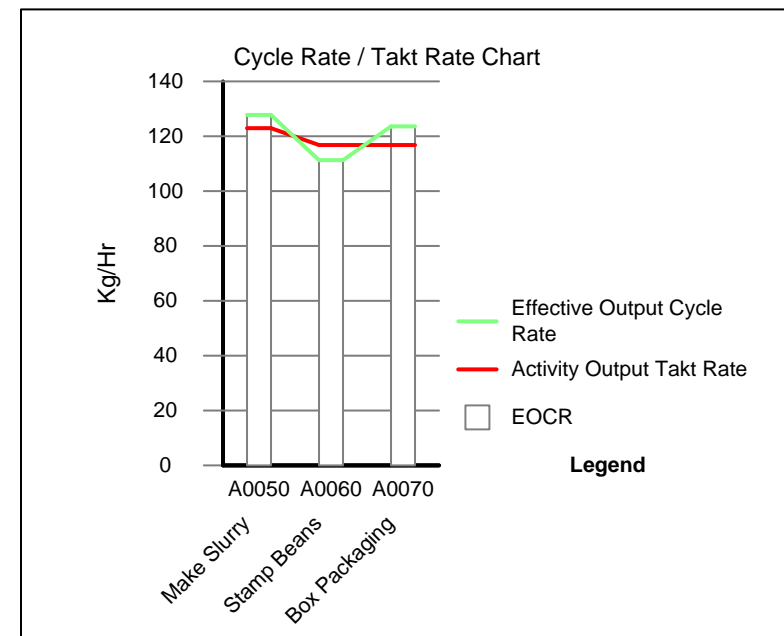
Processing Problem: Relieving Bottlenecks

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



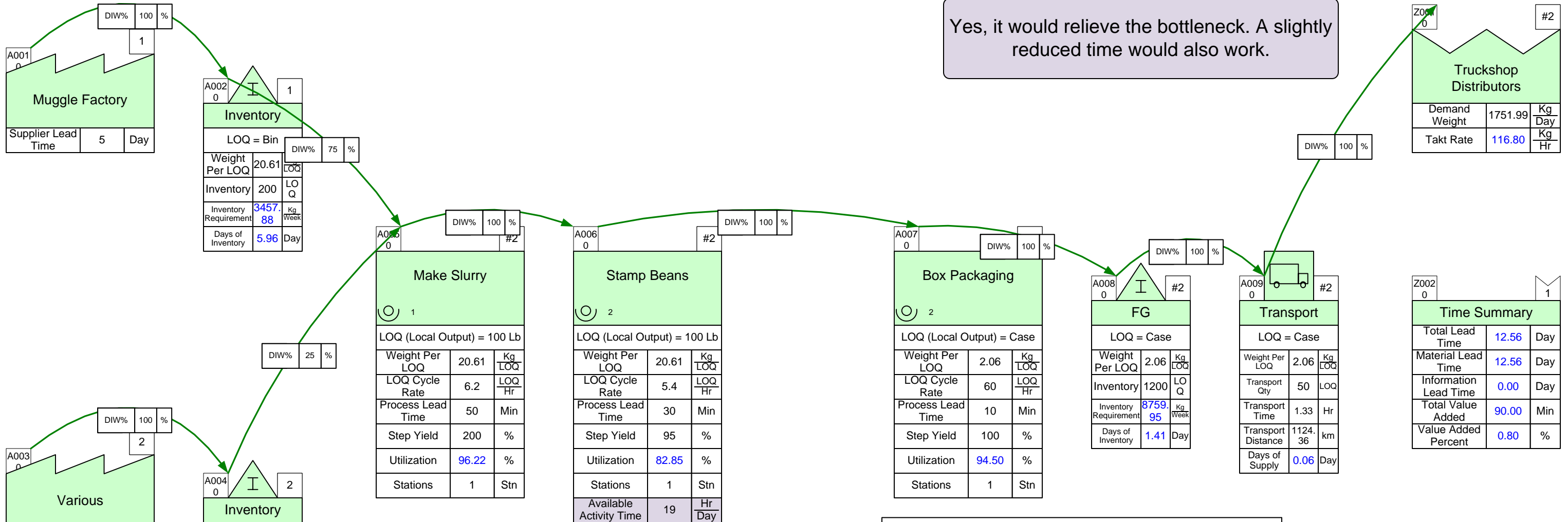
Time Summary		
Total Lead Time	12.56	Day
Material Lead Time	12.56	Day
Information Lead Time	0.00	Day
Total Value Added	90.00	Min
Value Added Percent	0.80	%



Processing Solution: Relieving Bottlenecks

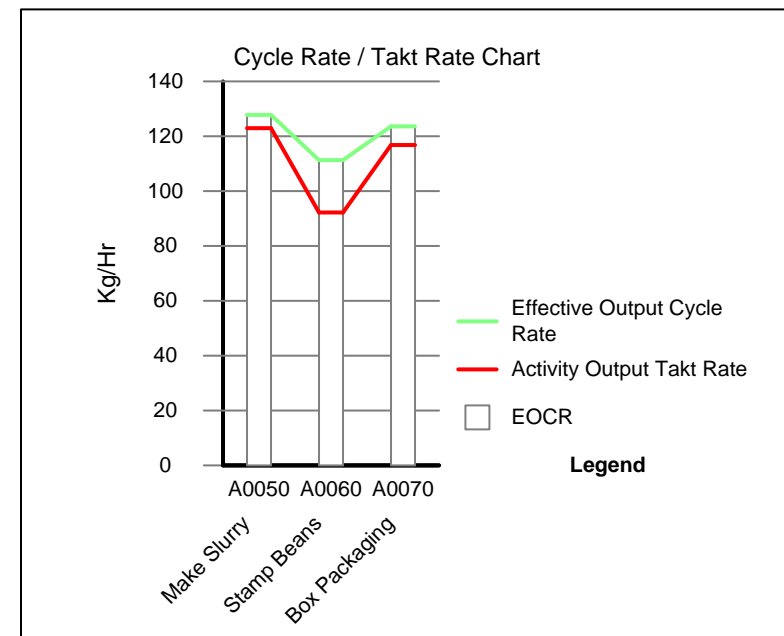
Can we relieve the bottleneck at Stamp Beans if we can run the station an extra 4 hours per day?

Units	Week	day
	5	15
	day	Hr



Answer

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

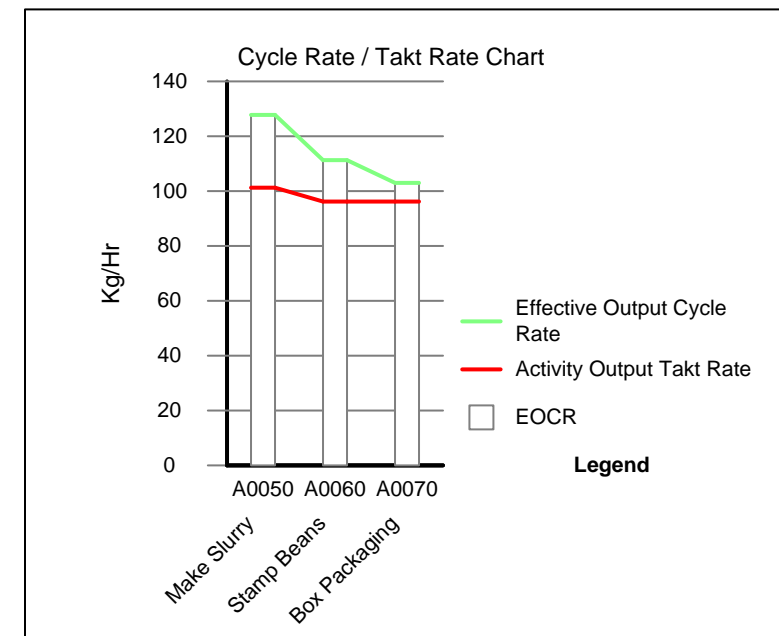
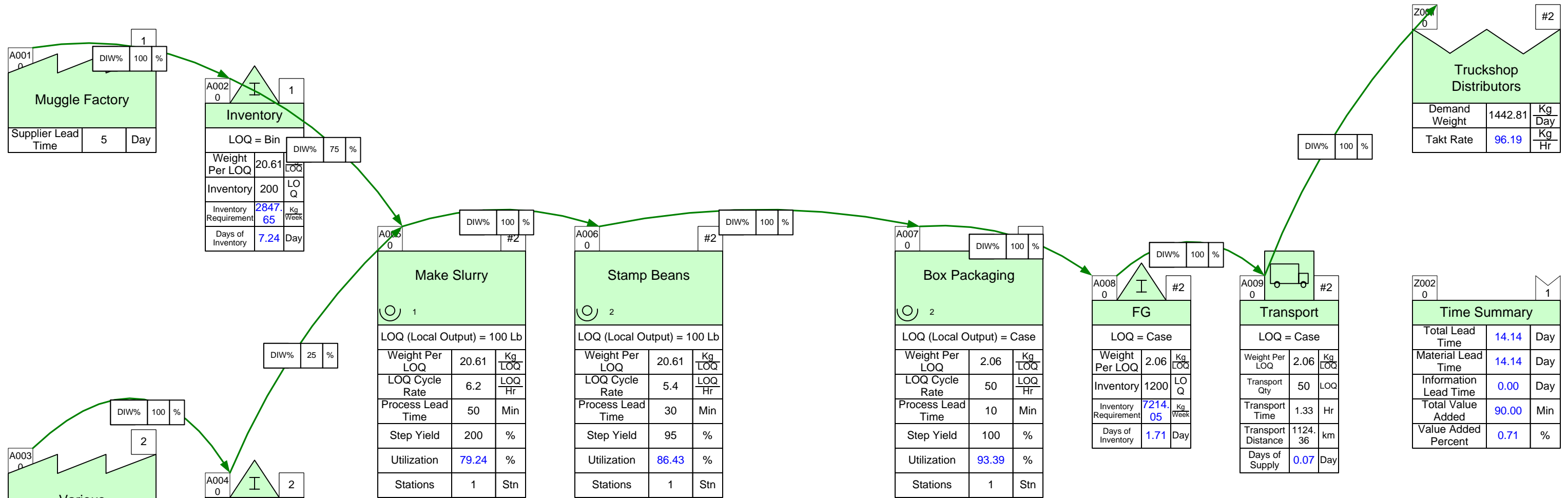


Running Stamp Beans for an additional half shift reduces the Takt Rate for the activity.

Processing Problem: Setup Time

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?

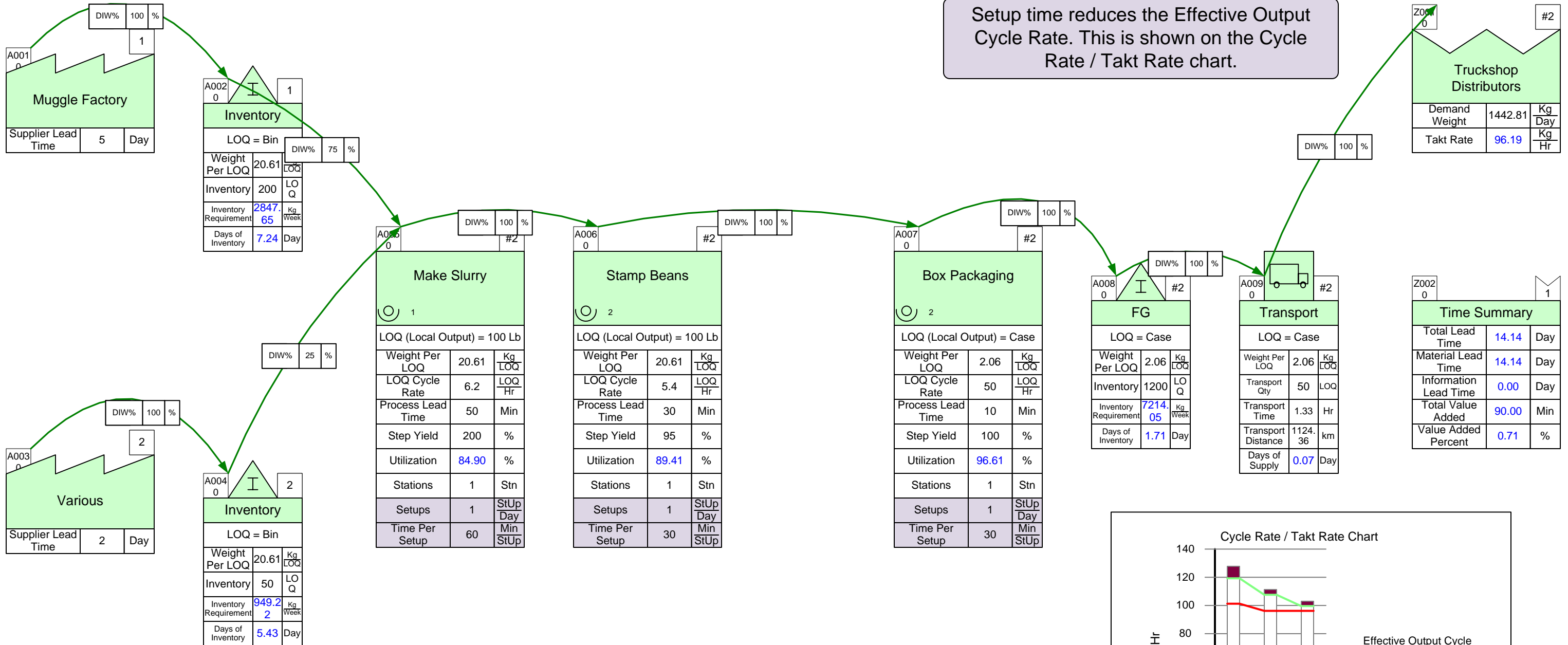
Units	Week	day
	5	15
	day	Hr



Processing Solution: Setup Time

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?

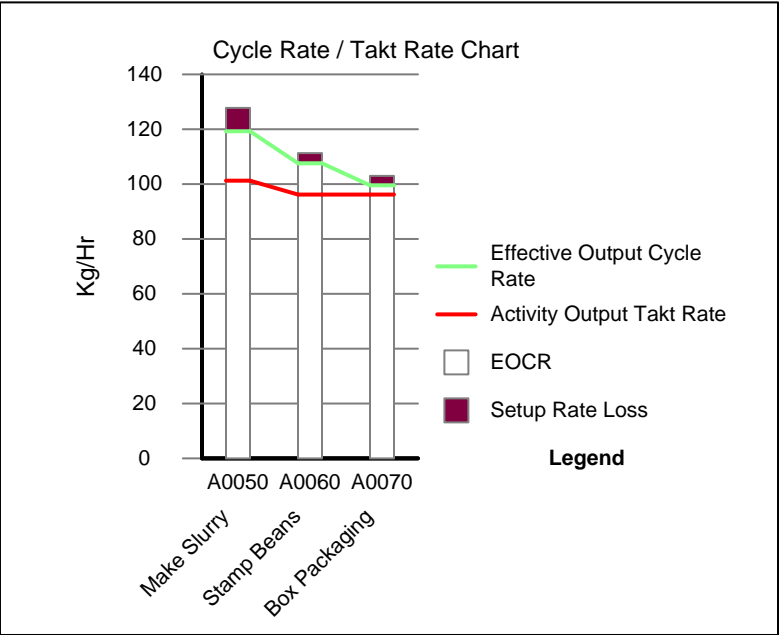
Units	Week	day
	5	15
	day	Hr



Answer

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

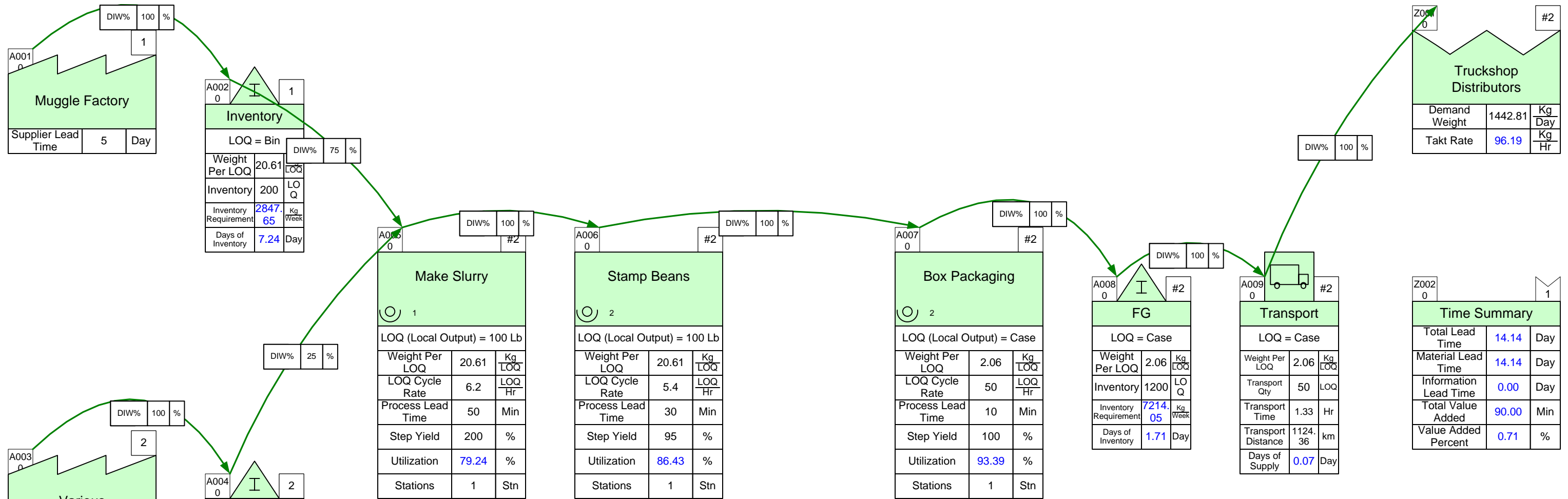
$$\text{Setup Rate Loss} = (\text{Setup Time} / \text{Available Time}) * \text{Cycle Rate}$$



Processing Problem: Scrap and Giveaway

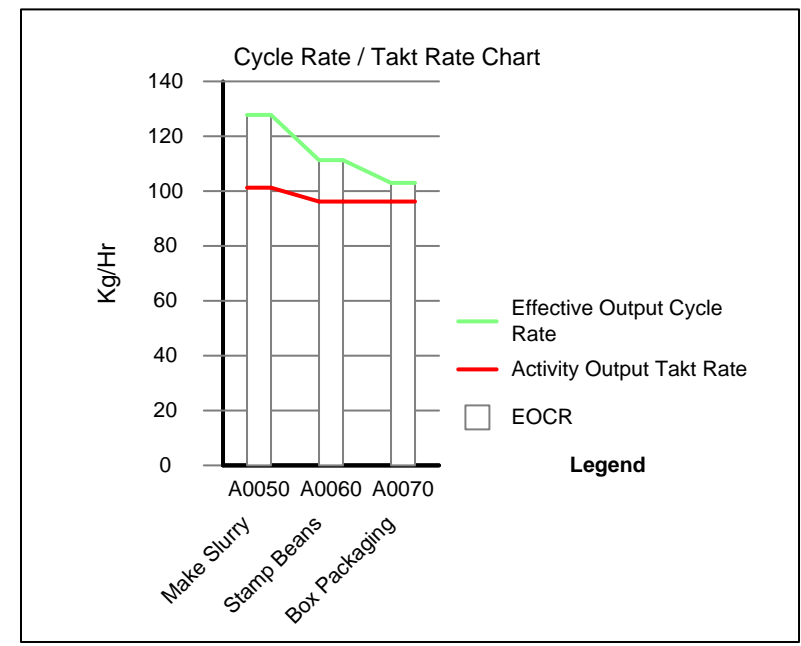
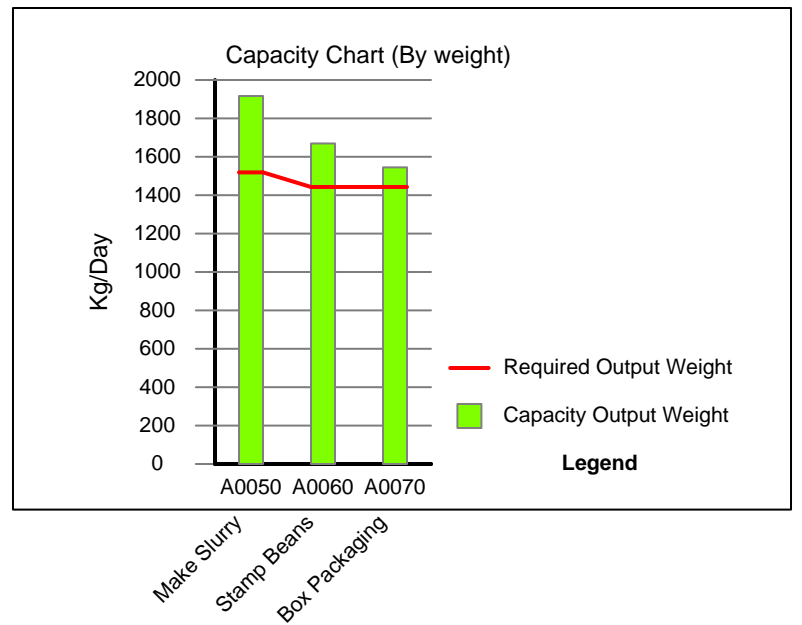
Stamp Beans has a Scrap Rate of 10% and Box Packaging has a Giveaway Rate of 3%. Is the process still capable of meeting demand? How much additional Slurry will be needed per day?

Units	Week	day
	5	15
	day	Hr



Time Summary		
Total Lead Time	14.14	Day
Material Lead Time	14.14	Day
Information Lead Time	0.00	Day
Total Value Added	90.00	Min
Value Added Percent	0.71	%

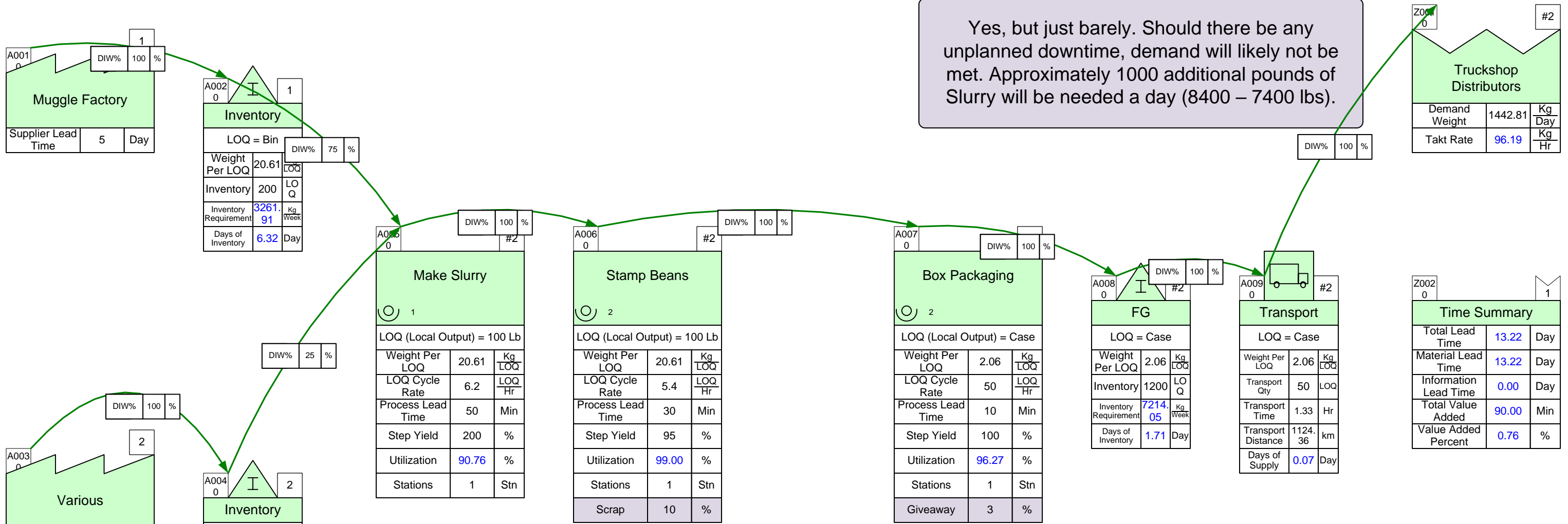
Amount of Slurry needed is about 7400 pounds a day (Required Output Weight for Make Slurry)



Processing Solution: 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?

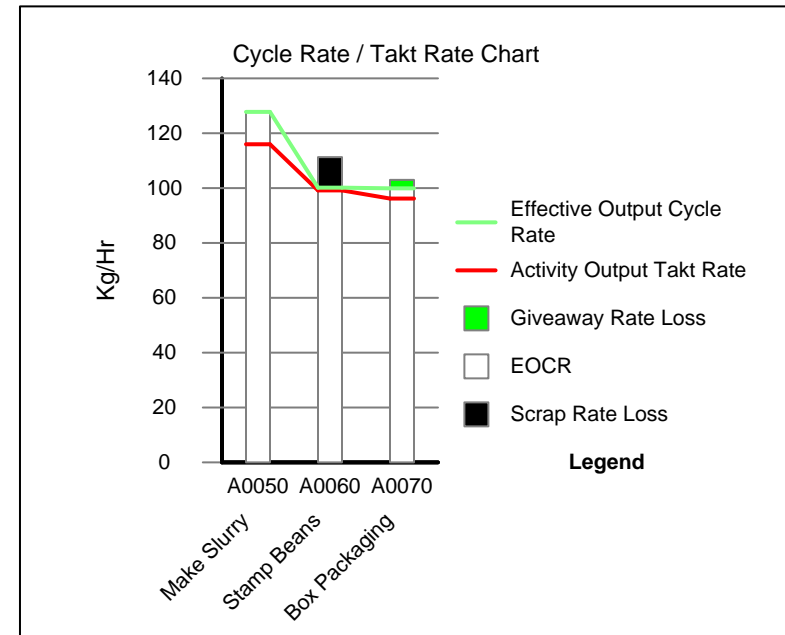
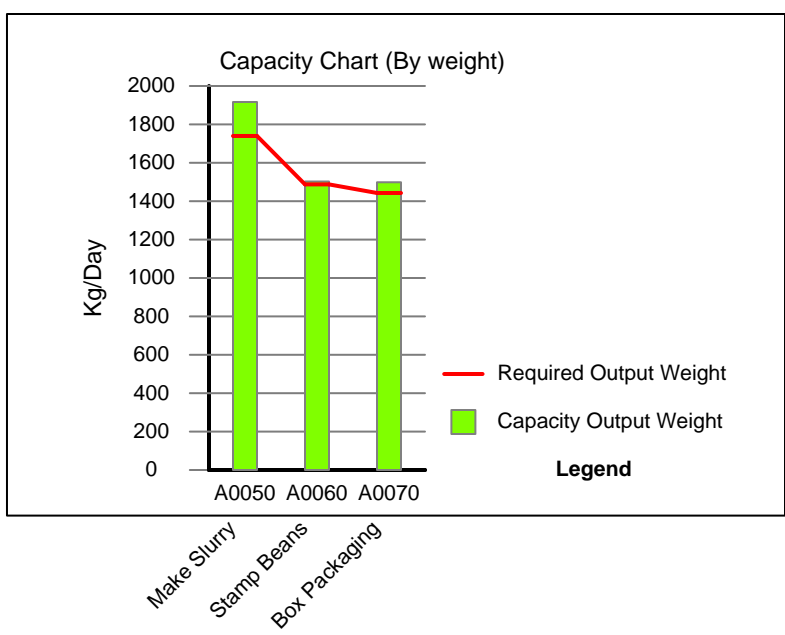
Units	Week	day
	5	15
	day	Hr



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.