Line-Side Inventory and Milk-Run Design

> A replenishment loop works when delivery frequency, line-side capacity, and consumption variability are planned together.

Line-side inventory is a time buffer. Milk-run frequency decides how much of that buffer must physically sit at the line.

Define the decision before comparing options

Start with the operating constraint and the outcome that matters. Put volume, time, cost, and service assumptions in one place so the comparison answers a real decision rather than a vague preference.

Worked example from the live calculator

A line consuming 300 units per hour with a 100-unit milk-run capacity needs three runs per hour, one every 20 minutes. The live planner reports 50 units of average inventory carried, not the full 100-unit run.

Use the linked engines as a decision chain

These engines address different parts of the same choice: milk-run-frequency-planner, line-side-inventory-sizing. Run them in sequence, carrying the measured constraint and stated assumptions forward instead of re-entering convenient defaults.

Turn the result into an operating action

Use the recommended option as a trigger for a manager review. Confirm the input data, identify the condition that would flip the result, assign an owner, and revisit the choice when demand, cost, or capacity changes.

Key takeaway. A trustworthy operating decision is a chain of measured constraints and explicit tradeoffs, not a single isolated calculation.

Assumptions

- Use current local costs, capacities, and operating constraints before acting on a planning result.

Sources

- Platform calculation models and stated operating assumptions

Frequently asked questions

Does this replace local operating judgment?

No. It organizes the tradeoffs and shows which input can change the recommendation.

What inputs deserve the closest review?

The inputs with the largest cost, service, or capacity effect in your actual operation.

How often should this be revisited?

Whenever demand, labor cost, lead time, utilization, or the operating constraint changes materially.

Operations Decisions is a set of transparent decision engines for physical operations, not a guarantee of any outcome. This guide is educational.