



AGV Feasibility Study Checklist for Chemical & Manufacturing Plants and Warehouses

A focused self-assessment tool to determine whether automated guided vehicles are a strong fit for your operation.

What you'll get:

- 7 targeted assessment areas specific to chemical & industrial environments
- Practical questions to evaluate readiness, risk, and ROI potential
- Clear scoring to help prioritize next steps

Prepared by Nexus V — Independent AGV & Industrial Automation Consulting

With deep expertise in designing and implementing AGV systems and automation solutions for chemical manufacturing and hazardous environments, Nexus V has created this checklist to help plant leaders and operations teams quickly and objectively evaluate whether automation is the right strategic investment for their facility.

Why This Checklist Matters

AGV projects in chemical and manufacturing environments involve significant capital investment, safety considerations, and integration complexity. Many projects underperform because organizations skip structured feasibility assessment. This checklist helps you evaluate readiness across the areas that matter most — operations, layout, safety/regulatory, ROI, integration, implementation, and vendor selection.

How to Use It

Go through each section and check the items that currently apply to your facility. Be honest — this is for your internal decision-making. At the end, use the scoring guide to assess overall readiness. If you score in the higher ranges, a professional feasibility study is likely worth pursuing.

Note: This is a free self-assessment tool from Nexus V. It does not replace a full engineering feasibility study.



Section 1: Current Operations Assessment

- ☐ Labor shortages or high turnover in material handling roles are affecting operations
- ☐ Throughput bottlenecks caused by manual material movement regularly impact production or fulfillment
- ☐ Safety incidents, near-misses, or ergonomic concerns have occurred with manual handling
- ☐ Floor space constraints limit storage density or workflow efficiency
- ☐ Annual material handling labor costs are significant and growing
- ☐ Multiple shifts are running and material movement is a constraint between shifts
- ☐ Product damage, contamination risk, or packaging issues occur during internal transport
- ☐ Demand variability frequently creates labor scheduling or overtime challenges

Section 2: Facility & Layout Evaluation

- ☐ Facility floors are level, clean, and in consistently good condition across operating areas
- ☐ Aisle widths are consistent and likely meet minimum requirements for AGV navigation and turning
- ☐ Clear, unobstructed paths exist between key zones (receiving, production, warehouse, shipping)
- ☐ Plant-wide Wi-Fi or navigation infrastructure is reliable or can be upgraded cost-effectively
- ☐ Ceiling heights, doorways, and transitions can accommodate AGV traffic without major modification
- ☐ Dedicated or shared travel lanes can be designated without major disruption to operations
- ☐ Battery charging locations can be added with minimal impact to workflow or safety
- ☐ The facility layout is relatively stable over the next 5-10 years

Section 3: Safety & Regulatory Requirements

- ☐ Hazardous, flammable, or regulated materials are handled in areas where AGVs would operate
- ☐ Explosion-proof or electrically rated equipment may be required in parts of the facility
- ☐ Existing safety standards, certifications, or internal protocols apply to automated equipment
- ☐ Clear plans exist (or can be developed) for emergency stops, human-AGV interaction zones, and LOTO
- ☐ EHS / safety team has been engaged early in automation discussions
- ☐ Regulatory and permitting requirements for automated material handling are understood
- ☐ Advanced safety-rated sensors, speed reduction zones, and collision avoidance are acceptable solutions

Section 4: Throughput & ROI Considerations

- ☐ Clear, measurable targets exist for labor reduction, throughput increase, or error reduction
- ☐ A realistic payback period has been modeled or accepted internally
- ☐ Total cost of ownership (equipment, software, maintenance, training, support) is generally understood
- ☐ Both direct labor savings and indirect benefits (accuracy, safety, uptime, reduced damage) are considered
- ☐ AGVs have been compared against alternative automation options (conveyors, AS/RS, etc.)
- ☐ Baseline performance data (labor hours, travel times, error rates, throughput) is available or can be collected

Section 5: System Integration & Technology

- ☐ WMS, ERP, or MES systems are in use and AGVs would need to integrate with them
- ☐ Real-time visibility and reporting of material movement is important to operations or management
- ☐ Internal IT/OT resources are available to support system integration and ongoing support
- ☐ Vendor-neutral evaluation and recommendations are preferred over single-vendor solutions
- ☐ Different navigation technologies (laser, vision, natural feature, etc.) have been considered
- ☐ Future scalability, flexibility, and potential expansion of the automation system are important



Section 6: Implementation Readiness

- ☐ A target timeline for evaluation, decision, and potential go-live has been discussed internally
- ☐ Internal project management resources exist or external support is acceptable
- ☐ Key stakeholders (Operations, EHS, Finance, IT, Maintenance) are generally aligned on exploring automation
- ☐ A phased rollout approach is acceptable rather than a single large implementation
- ☐ Change management, operator training, and workflow adjustments are recognized as necessary

Section 7: Vendor & Partner Evaluation

- ☐ Vendors with proven experience in chemical or hazardous material environments are being considered
- ☐ Independent, vendor-neutral advice is valued before making major capital decisions
- ☐ References from similar facilities (chemical manufacturing, regulated environments) will be requested
- ☐ A structured feasibility study is desired before committing to equipment selection or purchase
- ☐ There is concern about being oversold or locked into a single vendor's ecosystem or technology

Quick Self-Assessment

Count the total number of items checked across all sections. This gives a rough indication of your facility's readiness for AGV evaluation.

0 – 12 items	Lower readiness. Focus on foundational improvements before heavy AGV evaluation.
13 – 20 items	Moderate to good readiness. A professional feasibility study would likely provide high value.
21+ items	High readiness. Strong candidate for moving forward with a structured feasibility study soon.

Ready to move forward?

Book a 30-minute consultation with Nexus V.

We'll review your checklist results and determine whether a feasibility study makes sense for your facility.

→ <https://calendly.com/jeffrey-bargo-nexusvsolutions/30min>

Independent advice — not affiliated with any equipment vendor.