MicroSource Building B Expansion - Shakopee, MN

Expanding Capacity Through Integrated Project Delivery

To support increasing customer demand and long-term growth, MicroSource developed a new liquid storage and processing facility in Shakopee, Minnesota. Interstates delivered an integrated project delivery (IPD) solution, providing engineering, automation, operational technology, and construction services from concept through commissioning. The project expanded operational capacity, modernized control systems, and embedded infrastructure for future expansion. The facility was brought online ahead of schedule, enabling MicroSource to meet immediate production requirements while establishing a scalable foundation to support continued growth. Kipp Smallwood, President at MicroSource, explains that the effort was driven by the need to execute quickly without sacrificing performance. “We had a big contract with a lot riding on it,” he says. “With Interstates’ help, we ended up four and a half months ahead of our worst-case timeline.”

Scalable Automation & Infrastructure Design

For MicroSource, the coordinated IPD approach enabled rapid execution while maintaining design flexibility and operational continuity. Interstates designed and built the 75,000-square-foot facility with automated systems to move product across tanks, mixers, and batch totes. Although MicroSource is currently utilizing approximately 40% of the facility, the electrical, controls, and physical infrastructure were designed to support future capacity additions without major rework, positioning the company for incremental expansion as demand increases.

Outcomes:

Because of Interstates’ integrated approach, MicroSource achieved immediate operational readiness while establishing a strong foundation for future growth.

- Expanded facility space and capacity to support new customer demand.
- Reduced project risk through a coordinated IPD approach across engineering, automation, and construction.
- Achieved early operational readiness with minimal disruption to existing operations.
- Embedded new infrastructure and controls capacity intended to support future expansion without significant rework.

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Challenges

1. **Compressed timeline:** MicroSource needed to design, build, and commission a new facility quickly to meet customer deadlines. “From the time we started cutting down trees to the time we were running was roughly one year,” says Adam Theis, Operations Manager at MicroSource.

2. **Capacity limitations:** The existing facility had reached its practical limits. As the team at MicroSource described it, they were “at max capacity” and needed additional space and infrastructure to meet demand.

3. **Operational continuity during integration:** The new facility had to be brought online without interrupting ongoing operations. It was essential to coordinate the work around planned shutdowns and tie-ins.

4. **Complex integration and network design:** The system required significant integration planning for communication across I/O, Smart MCCs, Ethernet devices, and wireless instrumentation. The Interstates controls team had to strategically place manifold and remote I/O panel locations and design a network topology that incorporated automation communications.

5. **Designing for future expansion:** MicroSource required a facility that could support future growth without repeating past constraints.

Solution

Interstates delivered a complete IPD solution encompassing engineering, programming, operational technology, and construction services. The scope included new electrical gear, site lighting, cameras, and the installation and integration of motors and instruments required to bring the facility online. Jesse Bates, Senior Project Manager of Construction at Interstates, described the delivery model as a differentiator for the project’s pace and coordination. “It’s a package deal where we get the programming right alongside the electrical group,” he says, adding that the approach reduced the amount of day-to-day coordination required on the MicroSource side.

From an automation and controls standpoint, Interstates implemented a modern Rockwell Automation architecture to support scalability and operational reliability. The project leveraged PlantPAx® 5.2 Distributed Control System and FactoryTalk® Batch to support process control and batch execution. Hardware included the 1756 ControlLogix platform, 5094 FLEX I/O platform, and IntelliCENTER® Smart MCCs.

Peter Banschbach, Lead Control Systems Analyst at Interstates, summarizes the controls scope: “Interstates delivered a comprehensive controls system consisting of electrical design, drawings, panel builds, programming, testing, and on-site commissioning.” Controls functionality supports both automated and manual operations, with safeguards built into the system. “The system allows fully automatic recipes and transfer sequences as well as manual control of each piece of equipment,” says Banschbach. “Equipment interlocks prevent cross-contamination and overflow.”

To streamline installation and support future changes, Interstates prioritized constructability and long-term flexibility. One of the most impactful design decisions was moving the conduit underground. The change reduced installation complexity, accelerated schedule performance, and created a cleaner pathway for future additions. Smallwood says the decision was an absolute game changer and it was most impactful decision on the entire project. “Putting all of our future conduit under the floor… did speed things up and gave us a boost for future growth,” he says.

During commissioning, Interstates reduced start-up risk through verification and validation before equipment even reached the site. “Panels were tested and verified in-house before being shipped to site,” says Banschbach. “The programming was run in simulation, then tested and verified by the plant personnel during development.”

Results

Interstates delivered the Shakopee expansion project on time and under budget. MicroSource and Interstates have identified several early outcomes that demonstrate project value, including:

Schedule and budget performance
MicroSource cited strong cost control and execution certainty. “We didn’t spend one dime of our contingency,” says Smallwood. He noted that the corporate team carried an additional 5% contingency on top of the estimate, and “we never used one dime of that 5%.”

Expanded capacity and growth potential
The expansion capacity within the new footprint was meaningful. “We’ve got one and a half times more tank spots,” says Theis, noting that the remaining space supports modular expansion over time. Additionally, the distributed panel approach with centralized control supports scalability and flexibility, particularly as MicroSource expands within the building.

Operational reliability and consistency
The expanded facility incorporated proven design elements consistent with MicroSource’s existing operations, while also improving constructability and future readiness. Upgraded servers and networks modernized operations and integrated with existing systems.

Going Forward

MicroSource is now positioned to scale production within Building B as demand increases. With electrical infrastructure and controls capacity designed for expansion, the facility is prepared to add equipment and integrate additional customers with less disruption than a traditional retrofit approach. Smallwood emphasizes the long-term value of building with expansion in mind. “Two-thirds of the building is still open for process equipment and tanks,” he says. “That’s the first time we’ve ever had this kind of future growth built into a project.”