



Illinois Heartland Library System

TO: IHLS Board of Directors
 FROM: Leslie Bednar
 DATE: January 23, 2026
 RE: Automated Materials Handling System (AMHS) Updates

Overall, the implementation of the Automated Materials Handling System (AMHS) project has gone well. Staff are adjusting to the new processes, and operations are becoming smoother over time. However, as with any project of this size, there have been challenges that have emerged.

Key Obstacles:

1. Non-Uniform Barcode Placement

The biggest challenge with this project is that items arrive with barcodes in different locations, which slows down the sorting process and impacts efficiency. In addition, transit labels sometimes cover the barcodes, further increasing the time it takes to scan each item. Because there's no standard for barcode placement, this creates a bottleneck at the induction station. Establishing clearer guidelines or working with libraries to standardize barcode placement and avoid covering barcodes with transit labels would help reduce scan time and increase the number of items sorted per hour. In the longer term, exploring alternatives like RFID could further maximize efficiency by reducing the reliance on manual barcode scanning.

2. Incomplete Outside Barcodes by Libraries

Sixty-two libraries opted to complete their own duplication. More than 20% of these libraries send items for delivery without external barcodes, creating additional bottlenecks and slowing efficient sorting. Currently, there is no accountability when items are sent with inside-only barcodes. Ongoing communication with library members can help encourage consistent use of external barcodes to improve sorting efficiency.

3. Staff Turnover

Big changes in processes affect staff differently, and we anticipated that some team members would find the transition challenging. At the Edwardsville hub, the majority of staff experienced difficulty adapting, and we now have an almost entirely new sorting crew compared to the project's inception, with only one original staff member remaining. As the first hub to implement this process, Edwardsville went through multiple iterations of the sorting system and overall workflow. While some factors could not be fully planned for before rollout, we were prepared to adjust post-installation.

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As expected, this level of turnover allowed us to capture lessons learned and make the transition at the Champaign and Carbondale hubs much smoother. The Champaign hub is currently experiencing a similar wave of turnover, which illustrates that each hub may go through a period of higher turnover as staff adjust to the new processes. This level of turnover was anticipated as part of the project design, particularly when roles undergo significant changes. By planning for these transitional periods, we are able to provide support, training, and adjustments to ensure staff adapt effectively and operations remain stable over the long term.

4. Design Changes

Initially, the Edwardsville and Champaign machine designs included a plan for two staff inductions. However, during a site visit before ordering the machines, the Lyngsoe team suggested that one staff induction might suffice, leading to the decision to order and pay for just one induction. Shortly after implementing the system in Edwardsville, we quickly realized that we needed two staff inductions at both Edwardsville and Champaign.

The Lyngsoe staff worked diligently with IHLS to develop a solution for the two staff inductions and incurred no additional costs for this adjustment. We greatly appreciate the support we have received from Lyngsoe, which has included site visits from various Lyngsoe North America team members over the past eight months, including the President, Service Director, Account Manager, and Sales Director.

5. Facility/Budgetary Constraints

The layout of the Edwardsville hub, particularly the loading dock, complicates machine setup and workflow. While a more efficient layout is possible, implementing it would require significant changes to the facility, such as removing walls and relocating machinery, which would incur additional costs. We have also considered that adding more destination chutes could improve efficiency. Unlike other hubs, which do not face the constraints of a loading dock and can leave tubs in place at the end of the day, the Edwardsville hub requires us to bring all tubs to the loading dock. If we do not move these tubs, the drivers may be further delayed in starting their routes in the morning. In Edwardsville, adding more destinations would reduce time spent on secondary configurations and allow ample time to move tubs.

Impact on Performance:

- The primary bottleneck for efficiency is barcode identification and transit labels blocking barcodes at induction. The time spent locating or duplicating barcodes has slowed our overall sorting speed by approximately 30% compared to initial estimates.

- This slowdown is not due to staff performance, but rather to the limitations of the current workflow and item readiness.
- While there has been a small reduction in total sorting hours, we were still completing the barcode duplication project until December 31, 2025, which further limited our cost savings in our personnel budget.

Staffing Considerations:

- At a previous board meeting, there was a question about hiring sorters. The current workflow has not yet demonstrated sufficient efficiency gains to offset the need for further staffing reductions. Overall, sorting hours and the number of full-time sorting staff have decreased, but we are not yet at the levels we anticipated at project inception. The total number of sorting hours has been reduced by approximately 15% since project inception, which includes hours contributed to the barcode duplication project. While the barcoding project is paused for review, we anticipate that needed sorting hours will further decrease.
- For turnover, a project of this scope naturally involves some staff changes. As barcode and transit label issues are resolved and the workflow becomes more refined, we anticipate reevaluating staffing needs in future years to better align with operational efficiency. However, some level of improvement in these workflows will be necessary to fully realize the benefits of our investment.

Benefits Realized:

Despite the challenges, several important benefits have already been realized through the new system:

1. 100% Sorting Accuracy

The machine has achieved perfect accuracy, addressing the most frequent complaint from previous delivery surveys.

2. Reduced Double/Triple Handling

1. Items that previously changed status during transit now update automatically upon scanning, reducing the need for repeated handling, saving days of delay to the patron, and saving staff time.
2. All items were previously handled twice in the manual sorting method, whereas about 80% of items are only handled once with the AMHS.

3. Increased Daily Capacity During Absences

When staff call off, the AMHS still allows us to sort more items per day than was possible with manual sorting.

4. Improved Weekend & Closures Recovery

Turnaround on backlogged weekends or during holiday and weather-related closures is

now faster and significantly less stressful for staff compared to the previous manual sorting method. What previously could have caused delays of a week or more for patrons to receive their materials can now be addressed in just a few days when the sorting team is fully staffed.

5. Simplified Training Process

The sorting workflow is now more streamlined and easier to teach, which improves onboarding efficiency, reduces training time, and shortens the adjustment period for new staff.

Barcode Duplication Project Updates:

The barcode duplication project ended on December 31, 2025, at the IHLS hubs. During that period, over 150,744 barcodes were duplicated for 140 member libraries. The plan is to pause to evaluate the workflow without transit labels required for SHARE member to SHARE member items, to determine if further action would be needed at the system hubs. This decision will be made by June 2026.

Thank you, and please let me know if you have any comments or questions.