



Western Regional Storage Trust

AGUA Development Phase 5

Final Report

Summary

Every other year, when not conducting the biennial collections analysis, WEST undertakes systems development on AGUA, the WEST collection analysis and decision support tool. Planning for the fifth AGUA Development Phase began in the summer of 2020, with project ideas submitted by the WEST project team, the AGUA technical team, WEST Operations and Collections Council, and WEST membership. From the long list of possible enhancements, the OCC identified a short list of development priorities. The project team crafted a development plan based on OCC priorities and AGUA technical team capacity. The final development list and project plan were endorsed by the WEST Executive Committee in October 2020. The start date for AGUA Development Phase 5 was shifted to begin slightly later than past Development Phases to accommodate the work the AGUA technical team engaged in to support the [CDL, CRL, HathiTrust Shared Print Collaboration](#) to overlay an [open collection comparison tool](#) on the CRL-hosted [Print Archives Preservation Registry \(PAPR\)](#). Development work for Phase 5 began in late January 2021, after the launch of the [PAPR comparison tool](#), and was completed in mid-September 2021.

This report provides an overview of the work completed in Phase 5, reflections on process changes implemented in Phase 5 by the AGUA team to be more responsive and agile during development, and a discussion of the benefits this work provides to members and the WEST program and how the work fits into the larger contexts of the shared print and library communities. Detailed information about each development, including development activities and outcomes, are included in [Appendix 1](#).

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Overview of Phase 5 development activities

Planning for the fifth AGUA development phase (Phase 5) began in April 2020 and concluded in October 2020. Ideas for enhancement projects originated from a number of sources: the WEST project team, the AGUA technical team, the WEST Operations and Collections Council (OCC), and WEST members, who were invited to participate by submitting suggestions for enhancements that would help support local collection management workflows and decision making. Based on member and program priorities, the OCC identified 10 projects to develop in Phase 5, including a mix of user-facing and back-end technical enhancements, supporting foundational aspects of the WEST program and innovating the AGUA environment to extend WEST's ability to achieve its goals and provide benefits to members. The priority list of projects and development schedule were finalized in October 2020 by the WEST Executive Committee.

In past development phases, work typically begins in October and runs through September of the following year. For Phase 5, the WEST Executive Committee approved a recommendation to shift the development timeline to provide the AGUA technical team time to support the development of the CDL, CRL, and HathiTrust Shared Print Collaboration's first 'quick win' project. This project, to create a tool based on AGUA's On-Demand Collection Comparison, allows any user to quickly compare their local serial and journal holdings against the shared print journal retention commitments recorded in CRL's Print Archives Preservation Registry (PAPR). This development benefits WEST members by providing direct comparison access to the most complete and up to date registry of shared print journal and serial data from across North America as well as select trusted digital repositories, including Portico, CLOCKSS, and the HathiTrust Digital Library. The PAPR Collection Comparison Tool was launched in late January 2021, and development on the prioritized AGUA Development Phase 5 projects began in earnest soon after.

While Phase 5 development was ongoing, the AGUA technical team also undertook a major project to update the AGUA database in response to the WEST governance committees' endorsement of the recommendation to migrate shared print commitments from Archivers' shared print second symbols to their primary OCLC symbols.¹ This recommendation came after the OCC and WEST Executive Committee finalized the list of projects for Phase 5, and therefore was not included in initial planning or scheduling. The AGUA team nevertheless planned and executed this project in a timely and efficient manner, completing the upgrades ahead of the Cycle 10 Disclosure period (beginning in April 2021).

Work on Phase 5 projects concluded in September 2021. Of the ten projects originally prioritized for development, eight were successfully completed. These eight projects provide significant value to the WEST program as well as WEST members and their users by strengthening AGUA's analytical capabilities to better target archiving priorities, synthesizing collections data and make it available for local use, and supporting and streamlining local archiving workflows to make WEST work more impactful. The remaining two projects were intentionally deprioritized by the OCC. A project to expand archiving of high-risk titles ([Ref 15](#)) was deprioritized early in the development phase after the OCC reviewed findings from a project earlier in the development phase. Additionally, a project to build out infrastructure to provide more support for voluntary archiving ([Ref 16](#)) was deprioritized to both give OCC additional opportunity to discuss policy impacts surfaced during initial drafting of functional requirements and to provide development time to new priorities for analysis and archiving for Cycles 12 & 13.

¹ More information on this decision can be found on the WESTInfo blog: <https://cdlib.org/cdlibinfo/2021/01/25/west-will-migrate-away-from-using-the-oclc-shared-print-second-symbol/>

AGUA team process changes

The AGUA team made significant changes to their internal processes for Phase 5, in particular by fully embracing agile principles of software development and project management.² Agile software development is characterized by adaptiveness and responsiveness to change, expressed through open communication, flexibility, and iterative software development to help manage uncertainty and find solutions that work for the current needs of the user and reality of the environment. This approach was ideal for the projects prioritized for Phase 5, as the majority were very large and complex, and many of them were dependent on the successful completion of other projects. As the team finished earlier projects, functional requirements for later projects were updated to reflect the changes to the AGUA environment. Lessons learned were incorporated into the group's processes on an ongoing basis.

During the initial planning phase, a number of questions arose related to the team's process, and how adopting agile methods would affect the team's established practices. After completing initial planning but before beginning development work for Phase 5, the AGUA team took time to review the team's software development process and define team member roles within that process. This series of discussions helped expose pain points and areas of miscommunication, and presented an opportunity for the team to clarify assumptions, create a shared vocabulary for and shared understanding of each step, and to collaboratively identify and document solutions to common problems present in previous development phases. This early investment was highly valuable: by addressing issues early, the team was able to save time in the long run, returning to the process documentation when questions arose. This also positively impacted team dynamics: conducting these in-depth and solutions-oriented conversations and collaboratively developing solutions strengthened trust and created an environment where all members were comfortable bringing ideas and concerns to the group for discussion.

During development, the team adopted a more iterative approach to each project than had been used in previous Phases. This iterative approach creates flexibility in the development process, and creates space for projects to change and evolve as needed to meet the needs of the AGUA system, the program, and WEST members. Using agile principles and methods, the team used the functional requirements for each project as a guide rather than a finite set of instructions, producing an initial version of each development and then refining it based on feedback from the project team and other stakeholder groups until it achieved the desired outcome. The final products were ultimately much stronger from having gone through this process, as the team was able to respond to member feedback and assess the impacts of changes and modifications as they were implemented and make adjustments as needed. The initial functional requirements provided a clear vision of the final products while not limiting the team's ability to innovate and improve on them.

Impacts of Phase 5 development activities

Each AGUA development phase seeks to prioritize projects that will bring benefits to the WEST membership, either directly through improved tools and feature enhancements or indirectly through backend systems updates. Phase 5 was similar to previous Phases in this regard, setting an ambitious agenda of projects to transform the backend systems and analytical capabilities of AGUA and to provide new benefits to WEST members by surfacing collections data in new ways and making it more immediately actionable by members.

² An in-depth overview of agile is available from the Agile Alliance: <https://www.agilealliance.org/agile101/>

Benefits to members

During initial planning for Phase 5, the OCC discussed members' immediate and long-term needs and priorities, and how the AGUA development period could be leveraged to help support member operations and strategic goals. Where previous AGUA development phases have focused in large part on refining the analytical capabilities of AGUA, Phase 5 prioritized more user-facing projects largely focused on exposing and sharing AGUA collections data in new and innovative ways.

Four of the projects in Phase 5 provide direct benefits to all members; two additional projects provide direct benefits to the Archive Builders and help support their specific workflows and archiving requirements for high-risk materials. Detailed information about each project is available in [Appendix 1](#).

User-facing enhancements

Two projects offer opportunities for WEST members to support their local end users:

- **[Ref 1](#) - Local discovery of WEST collections**
 - *Question to answer:* How can WEST facilitate and enhance local discovery of the WEST archived collections, to increase access opportunities and support local collection management decisions?
 - *Outcome:* The AGUA team created MARC records for the WEST archived titles and made the file available for download on the AGUA database. Members may ingest this file into their local system to support user discovery of WEST titles or to use in local collections analysis projects.
 - *Benefits:* Local users can find WEST-archived titles in their local library catalogs and discovery layers, reducing the need to search external systems to find titles that support their research and learning and increasing the chances that their searches will successfully lead them to materials they need. These records can be configured to include a link to local ILL request forms, making it easier for users to act on these records as they find them. Adding records for WEST-archived titles to local systems has an added benefit of helping educate users about their institution's participation in the WEST program and the benefits of the collaboration.
- **[Ref 2](#) - Enhanced metadata validation**
 - *Question to answer:* How can WEST support the quality of members' collections data? How can WEST help ease the workload of identifying cataloging cleanup needs?
 - *Outcome:* WEST adopted a new metadata validator tool developed by the Center for Research Libraries (CRL) to quickly and comprehensively validate members' records. The output reports are used by the Metadata Analyst during file ingest, and are shared with the member institution for their information and to support future record cleanup projects as appropriate.
 - *Benefits:* Cleaning up metadata issues helps support WEST's collections analysis and also helps end users find materials they need, supporting their research and learning.

Staff-facing enhancements

Staff at WEST member institutions will benefit from other developments that synthesize and expose additional collections data:

- **[Ref 12](#) - Comparing volumes held against published run ("completeness calculation")**
 - *Questions to answer:* How can WEST more effectively target archiving proposals? How can WEST provide information to members about the completeness of their holdings, other archived holdings, and other members' unarchived holdings?

- *Outcome:* The AGUA team developed a formula for AGUA to compare the calculated depth of members' holdings against the calculated depth of the published run (as recorded in bibliographic data) to create an estimated completeness calculation for the holdings. This information is included in WEST's internal collection analysis reports as well as member-facing archiving and collection comparison reports.
- *Benefits:* This new data point can help support members' local collection management decisions and help staff identify which titles are retained in their entirety (or nearly so) and which have significant gaps that need filling. WEST members can decide to locally deselect in favor of the retained copy, or contribute local materials to complete the retained copy, or may decide to hold their copy until a more complete copy is retained.
- **Ref 8 - Add unarchived holdings to On Demand Collection Comparison report**
 - *Questions to answer:* How can WEST give members a more complete picture of how their local collections compare to the full collections of the WEST membership? How can WEST help members identify scarcely-held titles that are not yet archived for WEST so they are not inadvertently deselected?
 - *Outcome:* The AGUA team created a new 'unarchived comparison' report to include in the On Demand Comparison output. This report lists matches in WEST members' unarchived holdings to entries in the input file, and includes information about the completeness of those unarchived holdings, duplication in WEST, and the number of holdings reported in OCLC for those titles.
 - *Benefits:* WEST members will see a more complete picture of how their collections compare to the collections of the wider WEST membership, including journal and serial holdings that have not been archived for WEST. With this information staff can identify local titles that are scarcely held across WEST regardless of their archiving status.

Enhancements supporting archiving high-risk materials

The following projects provide direct benefits to Archive Builders, streamlining their workflows and supporting their effectiveness archiving high-risk material for WEST:

- **Ref 17 - Support for Builder 'Calls for Holdings'**
 - *Questions to answer:* How can WEST help Builders streamline their workflows for filling gaps in Silver and Gold titles? How can WEST facilitate holdings comparison, support request tracking, and reduce the amount of time Builders spend on paperwork and data entry so Builders can focus their resources completing these high-risk titles?
 - *Outcome:* The AGUA team built a new interface in AGUA that supports holdings comparison as well as recording materials requested and received from other WEST members. Builders no longer need to create and maintain spreadsheets to track requests and receipts, but instead can manage these workflows directly in AGUA and generate necessary reports on an as-needed basis. Builders have access to all holdings information about all Silver and Gold archiving commitments they have made in any Archive Cycle, making legacy gap-filling projects more achievable.
 - *Benefits:* The 'calls for holdings' process requires significant time from Builders to review holdings, communicate with potential contributors, and manage receipt of materials. This interface supports holdings comparison so Builders can more easily identify potential contributors, provides a mechanism for Builders to track the status of each request, and a functionality to generate reports on-demand to send to contributors or use for internal record keeping. This interface decreases the amount of administrative work Builders must perform during their calls for holdings, increasing the amount of time

they can dedicate to reviewing, requesting, and processing materials. This also creates a standard workflow for this task, making it easier for new Builders to integrate it into their archiving work.

- **Ref 6 - Add countdown of Builder budget to Review Proposed Journals page**
 - *Question to answer:* How can WEST streamline archiving proposal review for Archive Builders and help expose archive creation subsidy information at the point of need?
 - *Outcome:* The AGUA team brought budget information into the Review Proposed Journals page in AGUA. Budget information updates dynamically as Builders make their archiving commitment selections, supporting decision making and reducing the need to navigate between multiple AGUA screens to review budget information while making commitment selections.
 - *Benefits:* Bringing the budget information into the Review Proposed Journals page makes it actionable at the point of need, eliminating guesswork from Builders' review and commitment selection process. This also saves Builders time as they do not need to navigate between different pages to check their progress drawing down their archive creation subsidy.

Benefits to the WEST program

The Phase 5 development projects provide the WEST program with a number of tangible and conceptual benefits. The following projects provide direct support for WEST's preservation goals by improving and enhancing our ability to analyze members' collections and identify archiving priorities:

- **Ref 9 - Surface historically unanalyzed collections**
 - *Question to answer:* How can WEST identify high-risk journals that are only held by non-Builder members who do not archive high-risk journals?
 - *Outcome:* The AGUA team created a new database query that identifies these high-risk titles and produced a report for analysis. The findings from this analysis highlighted the need to identify and secure retention commitments for these materials, and served as the basis for the WEST Executive Committee's decision to prioritize these at-risk materials for archiving proposal in Cycle 12.
 - *Benefits:* WEST will be able to identify and target for archiving proposal high-risk titles that have been overlooked in previous analyses. Protecting these high-risk titles is a high priority for WEST in order to preserve the print record.
- **Ref 4 - Improvements to disclosure-to-bibliographic data matching and storage**
 - *Question to answer:* How can WEST improve AGUA's data matching capabilities to capture the largest and highest-quality dataset for collections analysis?
 - *Outcome:* The AGUA team overhauled the AGUA database to support new matching schemes and incorporated OCLC API data to capture high-quality bibliographic information for use in the analysis in conjunction with members' holdings data.
 - *Benefits:* With better matching capabilities, WEST can gain a more complete picture of members' collections. This will improve the quality of the collections analysis and help the OCC make informed decisions about what to archive.
- **Ref 12 - Comparing volumes held against published run ("completeness calculation")**
 - *Question to answer:* How can WEST better target titles for archiving to best ensure the completeness of the collective collection?
 - *Outcome:* The AGUA team developed a formula for AGUA to compare the calculated depth of members' holdings against the calculated depth of the published run (as recorded in bibliographic data) to create an estimated completeness calculation for the member's holdings. This information will help WEST

target titles with complete holdings, making each archiving commitment more impactful for the preservation of the print record.

- *Benefits:* This new data point allows WEST to target complete or nearly complete titles for archiving, increasing the impactfulness of each archiving proposal.

AGUA development in the national context

One of the defining features of the WEST program has been its commitment to regular systems enhancement to respond to evolving program and member needs. In Phase 5, the projects prioritized for development also responded to emerging shared print priorities and needs at the national level. Developing these projects enables WEST to:

- **Participate in the Rosemont Alliance’s Last Known Copy Initiative and deploy a parallel regional effort** by exposing scarcely held high-risk materials held by non-Builder members.
- **Highlight the importance of discovery to the ongoing value of collective collections and shared print partnerships**, and provide an early example of how local discovery of shared collections can be achieved. In collaboration with peer programs, WEST is also encouraging library service providers to prioritize discovery of shared collections for member institutions.
- **Share data more fully with members for local use and action.** WEST ingests collections data from a number of sources, and WEST members contribute significant data to WEST to support the collections analysis and fulfill disclosure requirements. Bringing together data from different silos and repackaging it in digestible and actionable forms creates new opportunities for members to analyze and evaluate their collections. These efforts implement the vision of other national collaborations, such as the CDL, CRL & HathiTrust Shared Print Collaboration, by embedding shared print into the everyday operations of member libraries and in the lifecycle of collections.

By investing in in-house systems development, WEST is not only able to respond to members’ evolving needs but also provides valuable leadership nationally for the shared print community.

Looking ahead: AGUA Development Phase 6

As the Phase 5 projects were built and implemented, a number of ideas for new projects and additional enhancements to existing tools were generated. These ideas came from the development team as they identified potential database improvements to make the AGUA system more efficient and effective, from the project team as features were prioritized and scheduled, and from members as they tested the tools and features developed in Phase 5 and provided feedback to the team. These ideas for new features and enhancements to existing tools will be discussed with the OCC as the team begins planning for Phase 6 in 2022.

After Phase 5 was concluded, the AGUA team conducted a retrospective of the new development process implemented in Phase 5. These discussions provided space for the team to reflect on each aspect of the process and make adjustments as needed to continue refining and improving how development is conducted to ensure AGUA systems development continues to be effective and valuable for WEST members. The team also welcomes any feedback or reflections from WEST members on how WEST can continue improving AGUA’s ability to support local and program needs.

Appendix 1: Phase 5 project development activities and outcomes

Phase 5 projects are listed in the order in which they were prioritized for development.

Ref 9: Surface historically unanalyzed collections

- **Brief summary of project:** Identify high-risk (limited electronic availability) journals in WEST member collections that are not held by Archive Builders and so would not be eligible for archiving proposal under the normal collection model. Analyze findings and assess the value of building out processes in AGUA to detect and propose these journals as part of the regular biennial collections analysis.
- **Development activities:** The AGUA tech team generated a report that identified unarchived holdings that meet criteria for Title Categories 3, 4, or 5 (Silver and Gold) but are *not* held by any of the Builder or Builder-affiliated institutions.
- **Outcomes:** The report identified 4,065 journal families that, based on electronic availability, should be categorized as Title Category 3, 4, or 5, (moderate and high risk) but are ineligible for archiving proposal under the current collections model because they are not held by any of the Archive Builders. These journal families had very low average duplication across the group, indicating that these are scarce titles that would not provide significant opportunities for space reclamation. The project team does not recommend pursuing development of processes in AGUA to regularly identify and propose these titles in the course of the regular collections analysis ([Ref 15](#)), but instead to re-generate this report after the Cycles 12/13 unarchived holdings files have been ingested and conduct a one-time project to secure retention commitments for these scarce and at-risk materials.
- **Development time:** Initial estimate - 2-4 weeks; real time - 3 weeks total.

Ref 2: Enhanced Metadata Validation

- **Brief summary of project:** Enhance metadata validation practices to align more closely with CRL practices and to include more points in the archiving cycle where validation is performed and reported. This enhancement offers members support for ongoing metadata cleanup efforts and intercepts certain metadata issues early in order to correct and improve ahead of disclosure to outside organizations, streamlining those workflows.
- **Development activities:** CRL generously provided the code for their updated validation script to support aligning metadata validation practices between the two organizations and to help identify metadata errors earlier in the collection analysis/disclosure process. The AGUA technical team worked to review the code and analyze the output files and concluded that this is a very robust tool that achieves all of the validation requirements WEST had been considering, plus a few that had not been under consideration. The Metadata Analyst has provided feedback to CRL based on her analysis of the tool and its output reports. The tech team is not able to modify the code locally, but sees an opportunity to partner with CRL on future development work and implementation of their code.
- **Outcomes:** WEST will use the CRL validator on both unarchived holdings and disclosure records, which will help streamline analysis of member records. WEST will provide reports to members about specific problems categories:
 - Holdings out of range
 - OCLC number change
 - ISSN mismatch

This information will be provided in addition to the automated reports developed in Phase 4 and automatically sent to members by AGUA during file ingest.

- **Development time:** Initial estimate - more than 4 weeks; real time - 7 weeks (mostly analysis).

Ref 4: Backend enhancements - Improvements to Disclosure-to-Bibliographic Data Matching and Storage

- **Brief summary of project:** Update AGUA processing of MARC disclosure records and related bibliographic title data to improve database workflows and data that haven't been enhanced or improved since our initial implementation in 2011.
- **Development activities:** The AGUA technical team undertook development work to support several interdependent enhancements to the AGUA database:
 - Remove duplicate title records from AGUA's internal "warehouse" of bibliographic data
 - Merge holdings from duplicative titles
 - Update the match process to use OCLC number as the primary search key in OCLC where needed
 - Link disclosure and matching bibliographic entries to AGUA's OCLC cross-reference table, so that the full "set" of OCLC numbers (primary and cross-reference) are associated with each unique title
 - Fully refresh bibliographic title data in AGUA's bibliographic data warehouse
 - Create a script that can be run yearly to re-refresh bibliographic title data
 - Capture additional bibliographic data points to support other development projects for this, and future development cycles
- **Outcomes:** This project made a significant improvement to internal WEST processes and data that haven't been enhanced or improved since our initial implementation in 2011, and has laid the groundwork for future, potential development projects. This development work supports a number of enhancements that will impact AGUA's analytical and matching abilities and improve internal practices. This work was undertaken with an eye to the future as well as current needs, and WEST has the option to continue leveraging this development work in future projects. Specific outcomes of this project include:
 - One-to-one matching on OCLC number rather than ISSN ensures that the constituent's disclosure data is matching with the correct title data, that is, the same as what is reflected by their local catalog
 - Bibliographic title, publisher, control number data that is mapped to reports will be fresh and correct, and data will be refreshed every year prior to disclosure ingest
 - Duplicate title entries in reports will be eliminated
 - Diacritics will display correctly
 - Internal processing of disclosure and bibliographic will be more correct and efficient, building a strong foundation for other, current and future development processes
 - Data has been captured to support other projects in the current development phase, and in anticipation of future, possible development projects
- **Development time:** Initial estimate - more than 4 weeks; real time - 9 weeks.

Ref 12: Comparing volumes held against published run

- **Brief summary of project:** Compare the number of held volumes at an institution against the depth of the published backfile and calculate the estimated 'completeness' of the held run.

- **Development activities:** The tech team developed methods for calculating the estimated depth of a publication run both at the journal family level and at the title (primary OCLC number) level, and then compares this against the holding institution’s calculated “depth of backfile” to generate an estimated completeness of the local holdings compared to the published run of the journal. This development leveraged enhancements made to 008 date normalization and storage developed in the [Ref 4](#) backend enhancements.
- **Outcomes:** This project was originally conceived to support the collections analysis and making archiving proposals, the development to calculate the depth of the published backfile at the title level has applications beyond the project team analysis. The project team determined that this information would be of value to all members in the All Archived Titles report and the On Demand Collection Comparison report, as this provides valuable information about the relative completeness of the archived copy when making local collection management and deselection decisions. Additionally, the project team solicited feedback from the Archive Builders on the value of seeing the relative completeness of their local holdings for journals WEST is proposing they commit to retain, which was found to have significant support from both new and continuing Builders. The new data points were added to the following AGUA reports:
 - Include journal family-level calculation in Summary report to support prioritizing ‘complete’ backfiles for archiving proposal
 - Include title-level (primary OCLC number) calculation in reports for Archivers’ local holdings for proposed journals to facilitate identifying ‘complete’ backfiles when making commitment selections (also included in reports for Archivers’ local holdings for committed journals)
 - Include title-level (primary OCLC number) calculation in the All Archive Titles report and the On Demand Comparison report to facilitate members’ identification of complete archived backfiles to support local collection management decisions
- **Potential future development:** The project team identified a number of additional AGUA reports where this information could be useful, but did not develop as they were determined to be out of scope for the project requirements. The team has identified the following opportunities for future enhancements:
 - Add title-level calculation to “WEST Holdings for Proposed/Committed Journals” reports (so-called “others” reports) to support Builders’ ability to identify potential contributors for Silver/Gold archive building
 - Add 008 date_1/date_2 information to All Archived Titles and On Demand Comparison reports to support transparency and data sharing
 - Add title-level calculation to yearly Collection Comparison reports to support local deselection decisions
- **Development time:** Initial estimate - more than 4 weeks; real time - 6 weeks.

Ref 6: Add countdown of Builder budget to Review Proposed Journals page

- **Brief summary of project:** Include a dynamic Archive Builder Budget display on the Review Proposed Journals pages for Title Categories 3, 4, and 5 to help facilitate Builder workflows selecting archiving commitments while staying within their allotted Builder budgets without having to switch between screens in AGUA.
- **Development activities:** AGUA calculates Builders’ archive creation subsidy encumbrance to help Builders track how much of their archiving subsidy their commitments will use and make adjustments as necessary ahead of submitting retention commitment selections (tracked on the Archive Builder Budget Review page in AGUA). The tech team brought this information onto the Review Proposed Journals page to support Builder subsidy tracking and to improve visibility of the impacts of retention commitment selections on the Builder budget. Additionally, the Archive Builder Budget Review page now calculates Builder Subsidies using proposed journals and saved

commitment selections, improving the transparency of the initial archiving proposals and the impacts on the Builder budget to support Builder workflows identifying where they have been ‘overproposed.’

- **Additional activities:** The new budget tracking feature on Review Proposed Journals pages and Archive Builder Budget page were presented to Archive Builders at the July 2021 Archive Builders Forum meeting. Builders were invited to provide feedback to the project team as they use these pages in the next round of archiving proposal review, anticipated to take place in the fall of 2022. The project team also created a new [AGUA User Manual - Archive Builder Supplement](#) with detailed information about the new features.
- **Outcomes:** This development brings this information onto the Review Proposed Journals pages for Title Categories 3, 4, and 5, listing the following information
 - *Archive Creation Subsidy:* Calculated using the estimated volumes committed for the Title Category currently being viewed, multiplied by the per-volume payment amount set by WEST (\$4 for Silver volumes, \$7 for Gold volumes), e.g.,
 - Title Category: 4
 - Estimated Volumes Committed: 7,447 (updated dynamically [previous development])
 - Archive Creation Subsidy: \$52,129 (updated dynamically)
 - *Archive Builder Budget Remaining:* Calculates the total subsidy for all proposed and committed TC3, 4, and 5 journals and compares against the total budget set for the Archive Builder, e.g.,
 - Archive Builder Budget Remaining: \$xx,xxx (updated dynamically) / \$100,000.00 total budgetAdditionally, the Archive Builder Budget Review page has been updated to display the subsidy calculation based on archiving proposals as well as saved and submitted commitment selections. Previously, this page only displayed the subsidy calculation for saved and submitted commitment selections, requiring Builders to begin the selection process before knowing the extent to which their budgets were overproposed (it is WEST’s usual practice to over-proposed so Builders have some flexibility in selecting which journals to commit to retain). This enhancement will improve Builders’ understanding of how WEST is proposing these journals and the impacts on their archive creation budgets ahead of any journal review and selection.
- **Development time:** Initial estimate - 1-2 weeks; real time - 2 weeks.

Ref 1: Local discovery of WEST collections

- **Brief summary of project:** Enhance the visibility and discoverability of WEST retained collections by library staff and end users at member institutions. Close the gap between WEST’s stated policy that all WEST members have access to all WEST-retained materials, and the lack of local discovery options. Users (library staff and patrons alike) must know about and search outside databases in order to find what titles they have access to and what has been retained by partner institutions on behalf of the group. This development project supports the “shared” in shared print by bringing these retained titles into local discovery systems so library staff and end users are able to see what titles are available to them through ILL with minimal requirements for prior knowledge or additional search steps on their part. This project makes this data available to member institutions for display in local systems, which can then connect to local resource sharing systems.
- **Development activities:** Following OCC’s decision to pursue local development of a MARC record file that can be distributed to members, the team wrote detailed technical specifications for building the records using OCLC and member-contributed data ([Ref 4](#) enhancements support creation of bibliographic records) and querying the AGUA database to gather the necessary data. Based on user feedback, the dataset is delivered as a zipped .mrc file.

- **Additional activities:** The project team spent a significant amount of time investigating member needs, capacities, and preferences to help inform development decisions. The project team led a discussion at the January 2021 WEST member meeting to gather initial reactions, and gathered more detailed information from WEST primary contacts regarding members' local discovery and technical needs and preferences. The project team also engaged in conversations with a major library systems vendor to discuss ways shared print can be more fully integrated into their native system architecture, and is currently collaborating with other groups in the shared print community having similar conversations with library vendors.
- **Outcomes:** The team added a link to the AGUA dashboard which allows the user to automatically download a zip file of the full dataset as a .mrc file. This file is created 'on the fly' using the most current disclosure data available in AGUA. Records are structured such that institutions can manipulate them according to local need, for example displaying a generic statement that materials are retained for WEST and are available through interlibrary loan instead of the Archiver's summary holdings statement for the title. This enhancement allows members to display to local users the full extent of the materials available to them through the institution's participation in WEST and is anticipated to facilitate discovery of valuable materials which are available but not held locally.
- **Development time:** Initial estimate - more than 4 weeks; real time - 4 weeks.

Ref 8: Add unarchived holdings to the On Demand Collection Comparison tool

- **Brief summary of project:** Expand the functionality of the On Demand Collection Comparison tool to return results for matches to WEST members' unarchived holdings in addition to archived holdings to help facilitate identification of scarcely held titles and support formal or informal retention of these high-risk materials.
- **Development activities:** The tech team created a new collection comparison report to be generated 'on the fly' via the On Demand Comparison tool that reports matches on input data for titles that are held by WEST members but are not committed for archiving by any WEST member. The new report includes bibliographic, holdings, and institution contact information for each holdings, as well as the following calculated fields:
 - *Estimated Volumes:* The estimated number of volumes held at the institution.
 - *% of Published Run Held at WEST Institution:* The percentage of the full published run of the journal (as recorded in the bibliographic record) that is estimated to be held by the institution. This field was also added to the existing Archived Comparison report.
 - *Duplication in WEST:* A count of the number of WEST institutions that have holdings for the title.
 - *Count of OCLC Institutions:* A count of the number of institutions with holdings for the title in OCLC (global).
- **Outcomes:** The addition of this new report and extra data fields helps WEST members gain a more complete understanding of their collections and how they compare to other WEST members' collections. Users are able to identify titles in their local collections that are retained for WEST and other shared print programs (ArchivedComparison report), titles that are held by other WEST members (and how commonly held they are) but have not yet been archived (UnarchivedComparison), and titles that are not held by any WEST member (NotHeldByWEST).
- **Potential future development:** In addition to reporting back archived holdings and holdings for unarchived titles, another valuable data set is WEST members' unarchived holdings for WEST-archived titles (i.e., unarchived duplicative copies of WEST-archived titles). This information would be valuable for identifying how many copies of archived titles exist within WEST, regardless of retention status.
- **Development time:** Initial estimate - more than 4 weeks; real time - 5 weeks.

Ref 17: Support for Builder ‘Calls for Holdings’

- **Brief summary of project:** Streamline Builders’ ‘calls for holdings’ workflows by providing an interface for holdings comparison, contributor selection, and communication management.
- **Development activities:** AGUA stores information about Builder and other WEST members’ holdings for titles that are committed for archiving in each Title Category for each Archive Cycle. The tech team designed and implemented several new database tables to bring together this information into a new interface to support Builders’ workflows reviewing local holdings and comparing against other WEST members’ holdings, identifying potential contributors, recording which volumes to request and which volumes were received, tracking the status of requests, and generating reports of requested and received materials.
- **Additional activities:** This project, suggested by a WEST member in the call for development ideas distributed in the spring of 2020, was the largest and most complex undertaken in Phase 5. The creation of this interface required significant input from Archive Builders, who generously provided detailed feedback at critical stages of the project, including the development and refinement of broad functional requirements. The project team also created a new [AGUA User Manual - Archive Builder Supplement](#) with detailed instructions for using the interface.
- **Outcomes:** The Request Holdings interface allows Builders to review archiving commitments for each Title Category in each Archiving Cycles and compare local holdings against other WEST members’ holdings, including titles held by WEST members that are part of the committed Journal Family but which the Builder does not have local holdings for. In addition to comparing holdings, the interface provides functionality to track requested and received materials as well as the status of each request and the number of requests made for each OCLC number, and to generate reports of requested and received materials. Requests Reports are delivered in a zip folder, with one file for each contributor OCLC symbol, to facilitate distribution to contributor institutions. Received Reports are delivered as a single compiled report to be used internally by the Builder (for example, to update holdings record field 561 Ownership and Custodial History information in local systems).
- **Potential future development:** The original concept of this project included a companion interface for contributor institutions to eliminate the need for Builders to manage email communications with a number of different institutions. Due to the size and complexity of the Builder interface, the project team decided to defer development of this additional interface in the current phase in order to properly vett the idea with non-Builder members and ensure that implementing this contributor interface would not adversely impact participation in the calls for holdings process.
- **Development time:** Initial estimate - more than 4 weeks; real time - 14 weeks.

Ref 15: Expanding archiving of high-risk journals

- **Brief summary of project:** Develop processes in AGUA to routinely identify and propose for archiving high-risk journals in the WEST unarchived collections that are not held at any of the Archive Builder institutions.
- **Development activities & outcomes:** Based on the findings from [Ref 9](#), this development project was recommended for deprioritization, which OCC endorsed. WEST will not build out functionality in AGUA to routinely identify and propose high-risk journals held only by non-Builder institutions in this development phase. WEST will reuse the code developed for Ref 9 to re-generate this report after the Cycles 12/13 unarchived holdings ingest is complete to identify and secure retention commitments for scarce and high-risk journals at non-Builder members and secure retention as a one-time project.
- **Development time:** None.

- **Project status:** Deprioritized. The analysis of the data from Ref 9 showed that there are high-risk titles in non-Builder members' collections, but not so many that WEST should build out infrastructure to support identifying these titles as a regular part of the collections analysis. The OCC decided to instead develop a special project dedicated to identifying scarce and unique materials for archiving in an upcoming Archive Cycle.

Ref 16: Support for voluntary archiving

- **Brief summary of project:** Integrate the title nominations process into AGUA by providing an interface where member institutions could submit 1) journals they want to contribute to the archive, or 2) journals they cannot contribute but think would be important/valuable retentions to secure.
- **Development activities & outcomes:** No development occurred for this project. The OCC accepted a recommendation from the project team to deprioritize this project during the current development phase. The development time budgeted for this project would instead be used on other projects to support changes in the analysis and archiving priorities for Cycles 12 & 13.
- **Development time:** None.
- **Project status:** Deprioritized. As the project team refined the functional requirements for this project, a number of questions arose related to WEST policies for voluntarily archived materials. The OCC decided to deprioritize this project for development during Phase 5 to provide more time to consider the implications of these policy questions. The additional time was given over to new development priorities that arose during planning for the upcoming Cycles 12 & 13 collection analysis.