

Inclusiv

Financial Inclusion Data Analytics Platform

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1 INTRODUCTION

1.1 ABOUT INCLUSIV

Inclusiv is a national network of community development credit unions located around the United States. Inclusiv has nearly 500 members in 46 states, the District of Columbia and Puerto Rico. Our member credit unions serve over 17 million low- and moderate-income residents of urban, rural, and reservation-based communities across the United States and hold nearly \$250 billion in community-controlled assets.

At Inclusiv, we believe that equal access to financial services is a fundamental right. The only network of credit unions with a mission of financial empowerment, we work to close gaps and remove barriers to financial opportunities for people living in distressed and underserved communities nationwide. We provide capital, make connections, build capacity, develop innovative products and services, and advocate for our member community development credit unions (CDCUs).

Inclusiv is the Community Development Financial Institution (CDFI) authority for the credit union industry. With over 300 Inclusiv members certified as CDFIs, our members represent the majority of all CDFI-certified credit unions. Inclusiv advocates for policies that strengthen our CDFI members and the communities they serve and provides vital direct services to our members to help them apply for CDFI certification and file annual recertification reports. Inclusiv also facilitated credit unions' access to CDFI funding opportunities.

Inclusiv is a registered 501(c)(3) nonprofit organization located in New York, NY with a staff of approximately 35 currently operating using a remote/in-person hybrid model.

2 PROJECT SCOPE & GOALS

2.1 OVERVIEW

Inclusiv seeks to contract with a qualified vendor that offers UX/UI and data analytics system development services along with ongoing systems support services to redevelop, implement and support Inclusiv's Financial Inclusion Data Analytics Platform (FIDAP). The vendor will deliver a fully functional, tested and stable platform that can meet the existing needs of Inclusiv's data analytics efforts that is easily scalable to meet additional needs in the future. Inclusiv employs an in-house data analyst who will operate the data platform and develop and implement new data pipelines, reports, dashboards, and other tools that meet future needs. Ideally, the vendor will be retained to provide ongoing support and, potentially, future development services.

2.2 NEW FEATURE DEVELOPMENT

In addition to replicating the existing FIDAP (see Existing Data Analytics Platform Overview) as a more stable and scalable system, the vendor will work with Inclusiv to plan, develop, test and implement significant improvements to the system, including but not limited to:

- **New Front-End Portal**

Where we are now: The existing front end of our current system uses a PowerApp through which our credit union members can upload their loan data, kicking off the data analysis process. The current system relies on users to have or create a new Microsoft 365 (MS365) account.

- While this process works for most users, we have had consistent problems accommodating roughly 10% of our users. Some of these users have existing MS365 accounts and lack the ability, for one reason or another, to use that credential to successfully access our system and others are unable to create new MS365 accounts.

Where we'd like to be: For our new front end, we would like the vendor to utilize a credentialling system for access to the front-end portal where they can find program information, download templates they need for data uploads, upload data and have a dashboard/report area (currently using Power BI) that does not depend on MS365 and uses SSO so that one user credential enables access to multiple tools that our members

will have access to. A successful solution would lead to a significant reduction in manual user creation actions and debugging.

- **New “Anytime” Data Upload & Analysis**

Where we are now: Currently, credit unions upload their data using the appropriate standard templates we supply them once per year for the annual recertification analysis and/or grant reporting analysis. Each of the five current templates is designed to collect data fields for a specific category of loans (e.g., “Consumer”, “Business”, or “Residential Real Estate”). Each completed template may have data from fewer than five to more than 100,000 transactions. The current system is able to recognize which types of templates to expect from each credit union so that when a credit union uploads a template file they should not use, it is not accepted by the system.

- The current system creates a report for system admins identifying loans that, for one reason or another, cannot be analyzed “as is” by the system. Currently, our system admins run this report and communicate additional needs to credit unions manually via email.
- Users are not notified on-screen in-real-time or via email when an upload has been completed successfully or unsuccessfully.
- Users must upload each of the applicable template files one-by-one.

Where we’d like to be: We intend to give credit unions the ability to upload data (multiple files at a time) whenever they want during a reporting period for point-in-time analysis. When credit unions are given the opportunity to measure their performance at any point in time and as often as they would like to during the reporting period, the volume of data entering our system to be validated, cleaned and/or otherwise transformed will grow exponentially. We also foresee the need for additional templates, as needed, to analyze non-lending data, such as data on all credit union members or deposit accounts. A successful solution will include reliable and timely automation and notifications to end users to ensure that credit unions are aware of what required data points are “too messy” and need clarification or are missing, significantly reducing the amount of manual interventions by Inclusiv staff.

- **New Dashboards & Reports Available to Member Credit Unions**

Where we are now: Based on the loan data that our members upload into our system, Inclusiv currently produces annual reports (see “Credit Union Loan Profile” in Appendix) for our members that show them how they are performing using a variety of metrics that rely on publicly available and proprietary data sets that Inclusiv has access to.

Currently we use a combination of PowerBI, Microsoft Excel and Microsoft Word to develop these reports.

Where we'd like to be: The vendor will work with our data analytics team to develop a standard dashboard that credit union users will have access to through the new front-end portal. We do not envision a scenario where credit union users are allowed to create their own unique reports or that we are creating customized reports specific to a credit union, but we do foresee a need to enable these users to run reports using filters, for example, by loan type or date range for loan origination dates. Credit union users will use their front-end credentials to access their dashboard and reports. In addition to replicating the existing reports we have created in PowerBI, we require the creation of new reports and dashboards for both staff and external (credit union) users. The vendor will work with our data analytics team to create systems that enable the creation of this report to be an automated process.

- **Cross-platform Flexibility & Futureproofing**

Where we are now: As can be seen in our **Existing System Architecture** diagram in the Appendix below, our current FIDAP infrastructure consists mainly of Azure-based tools and environments, such as PowerApps, Azure Data Factory, Azure Storage and Power BI.

Where we'd like to be: An important goal of this project is that the system delivered by the vendor utilizes tools that can relatively easily be used in a variety of environments, giving us the flexibility to adapt our system as new technologies, analysis methods and tools emerge and/or change in the future. Specifically, the vendor is not required to use the Azure environment and Azure-based tools that our system currently uses. We are seeking to utilize alternatives that, at minimum, match the standard capabilities of these tools but enable our system to be much more flexible. Open-source tools that meet our security needs (see **Security Requirement**) and are proven to be easy for system administrators with a data science/analysis background to use are preferred.

- **Spanish Language Option**

Where we are now: All aspects of our current system are only available in English.

Where we'd like to be: We expect that Puerto Rico-based cooperativas, which account for more than 20% of our membership, will use the FIDAP. Therefore, all credit union user-facing areas, reports, dashboards, etc. will need to be accessible in both English and Spanish with each user seeing the appropriate language version based on how each user's account is configured.

2.3 PROJECT TIMELINE

Inclusiv desires have a fully tested system with new features available for use no later than November 18, 2023.

3 VENDOR REQUIREMENTS & PROPOSAL GUIDANCE

3.1 CONFIDENTIALITY

The contents of this Proposal Request, including all accompanying documents, is confidential.

3.2 TECHNICAL SUPPORT REQUIREMENT

Vendors must provide technical support by phone and email on-demand during business hours.

3.3 SECURITY REQUIREMENT

Vendors are required to have SOC 2 certification with a strong preference for those that have FedRamp authorization for their solutions. Please indicate if your company creates products and services that are compliant with the Gramm-Leach-Bliley Act (GLBA).

3.4 DATA USE PROHIBITION REQUIREMENT

Vendors may not use any of the data provided by Inclusiv, our members, or our affiliates for any purposes other than for the validation, testing and maintenance of the systems and components created by the vendor for Inclusiv.

3.5 PILOT USER GROUP

Inclusiv will work with selected vendor to assemble a small group of credit union users for the purpose of testing the system and providing feedback on new front-end component's usability.

4 PROPOSAL SUBMISSION INFORMATION & SELECTION PROCESS

4.1 PROPOSALS SHOULD INCLUDE:

- A narrative with Project Goals and Scope of Services: Within the narrative, please specify the activities, format, and time frame required to complete the project. Provide a timeline that includes each phase of the project. Include a description of expected time commitments of Inclusiv staff.
- Timeline and costs: Provide number of hours and hourly rates for each member of the project team assigned and specify their respective duties. Include the cost for each phase (phase examples: development, implementation, support), as well as the maximum fee for this project. Identify personnel and non-personnel items separately within the total budget.
- Qualifications of the vendor:
 - Please provide a summary of your firm's experience on projects similar to this project. Please also highlight experience working with credit unions, mission-driven organizations and/or CDFIs.
 - Discuss opportunities and challenges encountered on similar projects and process for raising and addressing with client.
- Project team bios, roles and responsibilities:
 - Please identify team members and provide a description of their background and expertise.
 - Provide a breakdown of team members' roles and responsibilities.
- 3 references from clients with similar projects.
- Additional supporting documentation demonstrating the firm's financial health, background and technical qualifications. See attached Vendor Survey.

4.2 PROPOSAL SUBMISSION INSTRUCTIONS

Proposals should be sent via email to Inclusiv's VP of Technology, Innovation & Analytics, Peter Rubenstein at prubenstein@inclusiv.org and using "FIDAP Project Proposal" as the subject of the email. Inclusiv will continue to accept proposals through June 16, 2023.

4.3 SELECTION PROCESS

Inclusiv's VP of Technology, Innovation & Analytics, in consultation with Inclusiv's Senior Management Team and other appropriate individuals and parties, will select a vendor for this project that best meets the needs of our organization and our members.

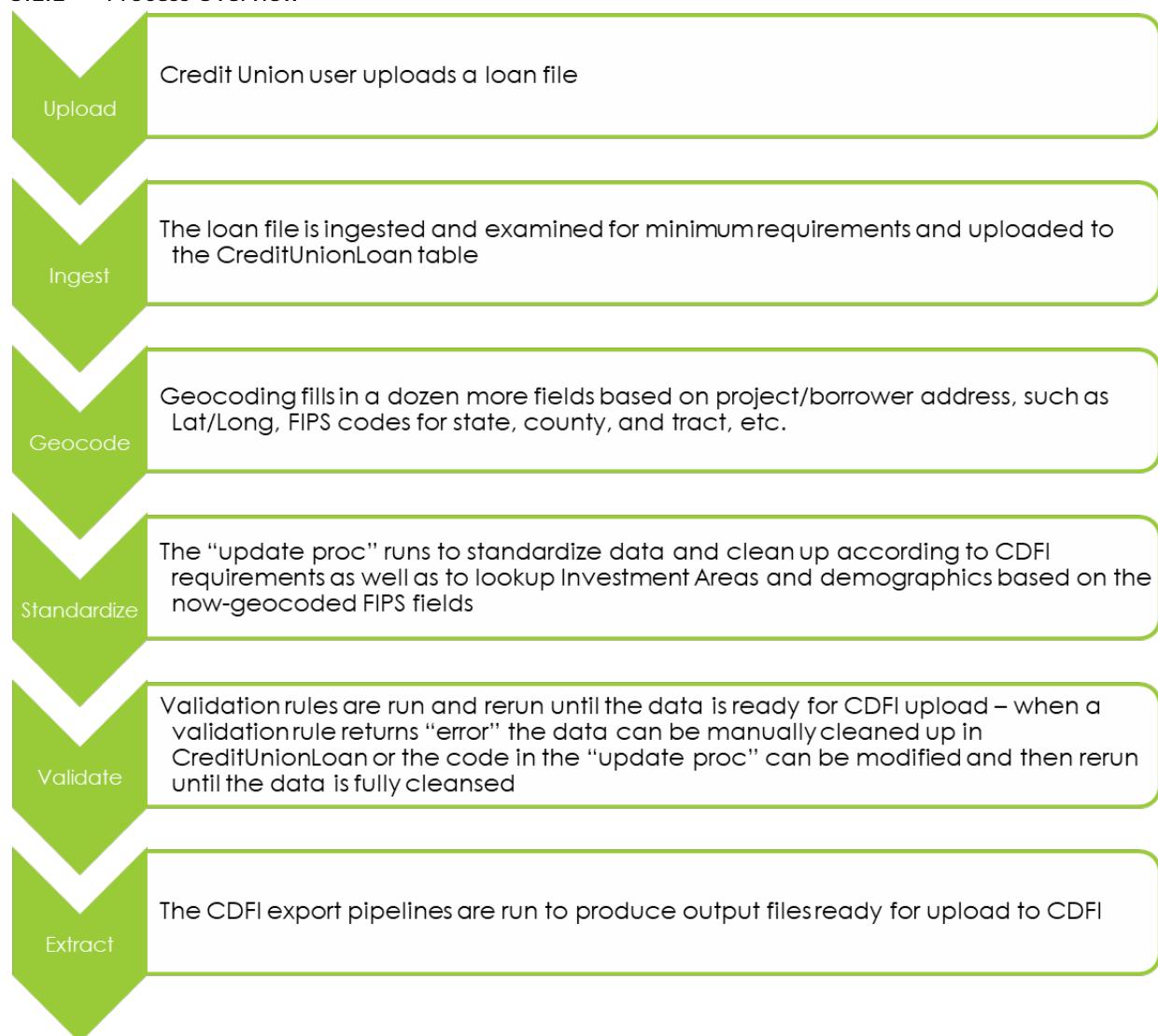
Inclusiv will seek to select a vendor for this project within 30 days of the proposal submission deadline.

5 APPENDIX

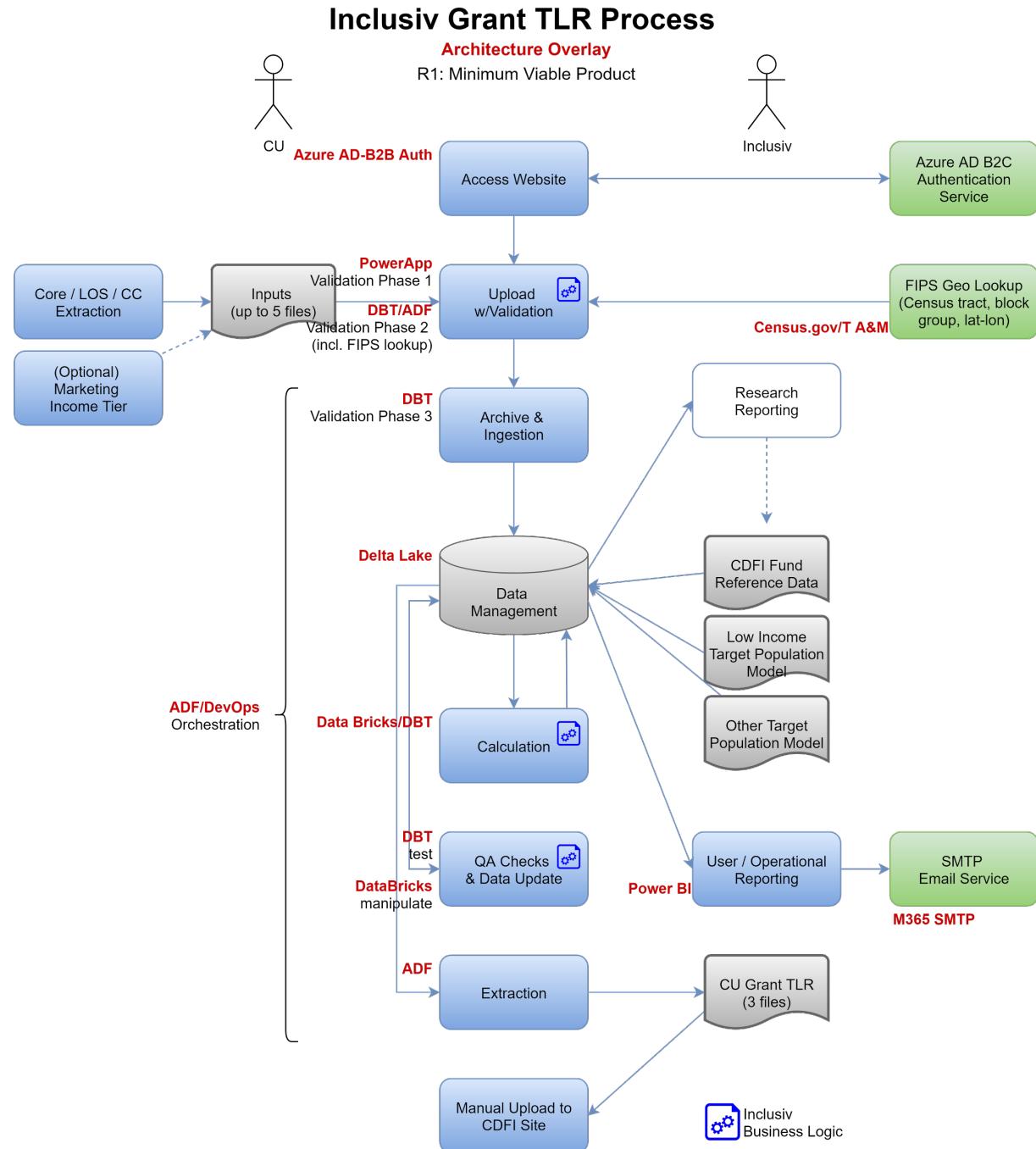
5.1 EXISTING DATA ANALYTICS PLATFORM OVERVIEW

Inclusiv currently uses the Financial Inclusion Data Analytics Platform to analyze loan data annually for our members that are Community Development Financial Institutions (CDFIs). The purpose of this analysis is to provide our members with the analysis needed to meet their initial certification, annual recertification and grant reporting requirements for the US Treasury Department's CDFI Fund unit. On an annual basis, Inclusiv analyzes millions of our member's loan originations representing tens of billions of dollars in loans.

5.1.1 Process Overview



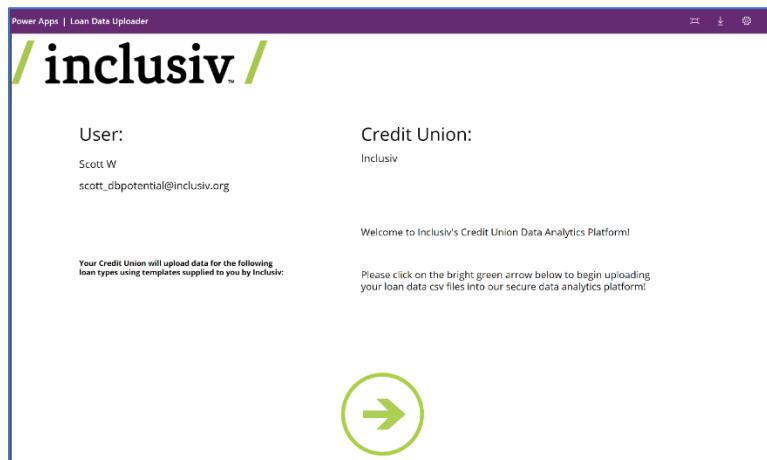
5.1.2 Existing System Architecture



5.2 DETAILED CURRENT PROCESS

5.2.1 Credit Union Upload

- Credit union users are given access to a screen which allows them to upload loans based on loan types available for their CU.
- The user selects a csv file from their local machine and clicks the “Upload” button.
- The file the user selected is given a unique name and saved to cloud storage, and a loading process is begun which ingests their file.
- The import code interprets the loan types included in the file based on the column header of the file (returning an error to the user if no matching template is found)
- If fields within the file are marked as “required” then the importer flags any rows which are blank in those fields. These data gaps can be viewed in the Loads and Missing Data Report that can be shared with the CU
- Power BI Daily Alerts Dashboard has daily alerts that a file has been uploaded. These alerts must be manually checked by users.



Power Apps | Loan Data Uploader

/inclusiv/

Scott W
Inclusiv

CU 1

Drag and drop your csv file or CLICK HERE

ATTENTION CREDIT UNION USERS

Your Credit Union will upload data for the following loan types using templates supplied to you by Inclusiv:

- Business
- Commercial Real Estate
- Consumer Loans Master
- Healthy Food
- Residential Real Estate

In order for your file to be fully uploaded, your completed Loan Data Template(s) **1) MUST BE A VALID CSV FILE and 2) MUST HAVE ALL COLUMN HEADERS THAT HAVE NOT BEEN ALTERED IN ANY WAY.**

In addition, your CSV file must include, at minimum, data for all loans for these required fields:

- Borrower Address
- Borrower City
- Borrower State
- Borrower Zip
- Date of Loan
- Amount of Loan

Failure to include this data for any loan will cause that loan not to upload and will require you to resubmit your entire data set for that loan type again, when you have the all required fields populated.

/inclusiv/

Lydia Ho
Inclusiv

Load Status
PROCESSING DATA!

Please do not refresh or leave this page until this message has been replaced by a summary of your uploaded data.

LoadId: 314

What's happening to your data right now?

File Data: CU-CDFI loan data uploaded.
 Checkpoint: Data is checked for formatting and completion.
 Cleaning: Data is cleaned, geocoded, and prepared for analysis.
 Storage: Clean data resides in secure data storage.
 Output: Reports and analyses are generated as needed.

/inclusiv/

Lydia Ho
Inclusiv

Upload another file

If you have additional Loan Data Templates to upload, please do so now.

Your upload is completed

Inclusiv will contact you if we need any additional data. If you have any questions, please reach out to Inclusiv's CDFI Director, Chrisselle Martinez, at cmartinez@inclusive.org.

Load Status

File Uploaded: 5.20211221205.csv

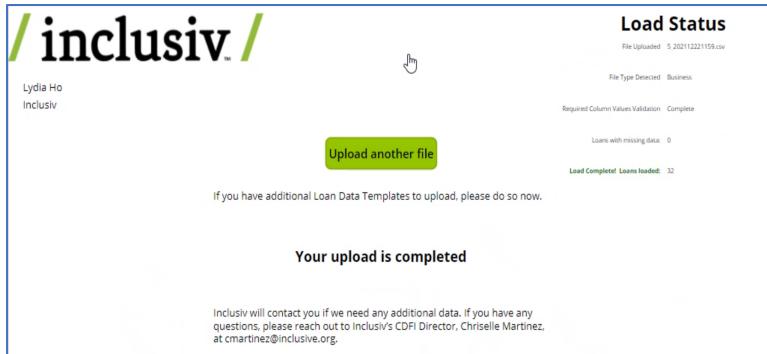
File Type Detected: ResidentialCDE

Columns Missing Data: AmountOfLoan, BorrowerAddress, BorrowerCity, BorrowerState, BorrowerZip, DateOfLoan

Required Column Value Validation: Complete

Loans with missing data: 5

Load Complete! Loans loaded: 207



5.2.2 Ingestion

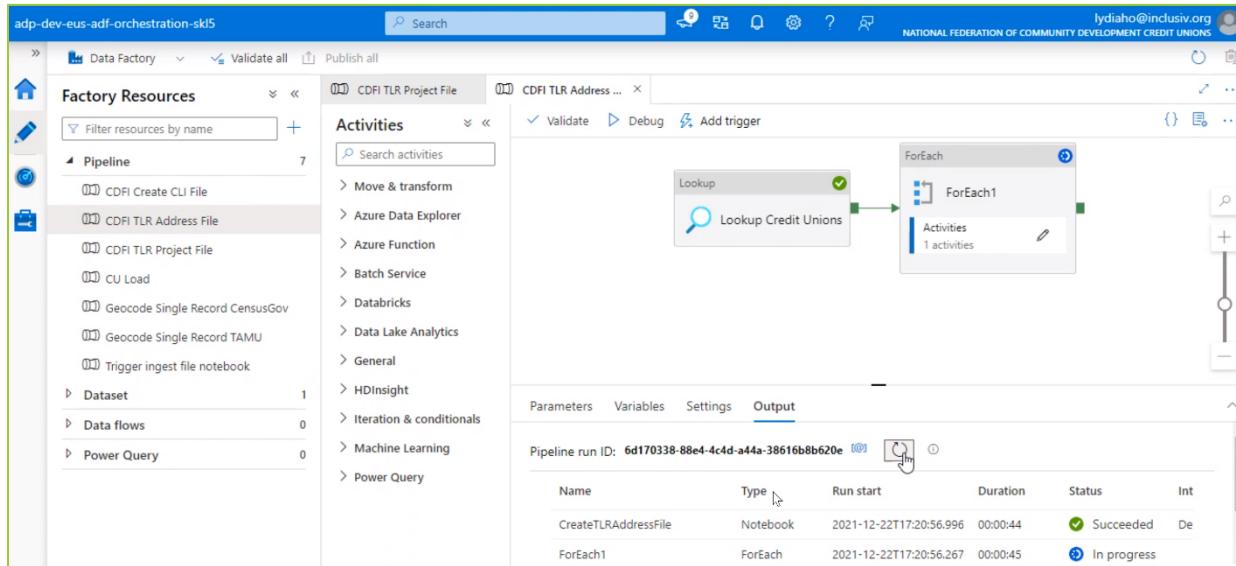
- The complete raw data (even those loans flagged as having blank values in required fields) are loaded to a staging table in the database; however, only those loans with complete data are loaded to the CreditUnionLoan table. These can be viewed in the Loads and Missing Data Report.
- At this point the load is complete from a user perspective. Power BI Daily Alerts Dashboard has daily alerts that must be checked manually that the load is complete.
 - Note: The contents of the upload file completely replace any prior loans of that type for that credit union. This allows the CU (or Inclusiv) to correct their own data, even if they need to effectively delete loans loaded previously or correct duplicate entries, etc. Essentially, the “last load wins” for a given loan type for a given credit union.*

5.2.3 Processing & Validation

- Geocoding runs against all the loans involved in that most recent load – this can take over an hour for loads involving tens of thousands of loans. Geocoding status can be viewed in Power BI.
- A cleanup process is run against the now-geocoded loan records. This elaborate cleanup script standardizes each loan record so that it is complete and correct according to CDFI standards, ready for the creation of an extract file which can be successfully uploaded into CDFI’s system.
- A set of validation rules will be run by manually running a verification procedure to verify that the loans in CreditUnionLoan meet all of CDFI’s requirements.
- Inclusiv can provide CU a report of data validation errors, as a download of the Power BI CU Load / CDFI Validations Report. This report does not call out fields that are in error but, instead, indicates how many records violate a rule. To trace the exact record that is problematic, Inclusiv must run manual SQL queries and communicate findings to the CU.

5.2.4 Extraction

- The actual file extracts are created for a given CDFI file type – all CU’s files are created automatically with a single run.
- Run the pipeline in Azure Data Factory to create the files by clicking on the triangular “Debug” button.
- Review the output files in Azure Storage Explorer, download and ‘show in folder’ to view



Microsoft Azure Storage Explorer

EXPLORER

output

Name	Access Tier	Access Tier Last Modified	Last Modified	Block Blob	Content Type	Size	Status	Deleted
5_TLRProject_20211221171813.csv	Hot (inferred)		12/22/2021 12:18 PM	Block Blob	application/octet-stream	128.0 KB	Active	
3_CU_20211220145415.csv	Hot (inferred)		12/20/2021 9:54 AM	Block Blob	application/octet-stream	13.1 KB	Active	
2_CU_20211220144806.csv	Hot (inferred)		12/20/2021 9:48 AM	Block Blob	application/octet-stream	2.2 KB	Active	
5_CU_20211220144803.csv	Hot (inferred)		12/20/2021 9:48 AM	Block Blob	application/octet-stream	2.5 KB	Active	
3_CU_20211220144754.csv	Hot (inferred)		12/20/2021 9:47 AM	Block Blob	application/octet-stream	11.9 KB	Active	
4_CU_20211220144754.csv	Hot (inferred)		12/20/2021 9:47 AM	Block Blob	application/octet-stream	3.4 KB	Active	
1_CU_20211220144749.csv	Hot (inferred)		12/20/2021 9:47 AM	Block Blob	application/octet-stream	4.1 KB	Active	
1_TLRAddress_20211220143852.csv	Hot (inferred)		12/20/2021 9:38 AM	Block Blob	application/octet-stream	42.4 KB	Active	
2_TLRAddress_20211220143852.csv	Hot (inferred)		12/20/2021 9:38 AM	Block Blob	application/octet-stream	91.8 KB	Active	
3_TLRAddress_20211220143853.csv	Hot (inferred)		12/20/2021 9:38 AM	Block Blob	application/octet-stream	5.2 KB	Active	

Showing 1 to 45 of 45 cached items

Actions Properties Activities

URL https://adpdev-eus-adf-orchestration-sk15.blob.core.windows.net/output/5_TLRProject_20211221171813.csv

Custom Domain

Type Blob Container

HNS Enabled true

DFS Endpoint https://adpdev-eus-adf-orchestration-sk15.azuredatalakestorage.net

Lease State available

Lease Status unlocked

Public Read Access off

Clear completed Clear successful

Transfer of 'output/5_TLRProject_20211221171813.csv' to 'C:\Users\lydiah\Downloads' complete: 1 item transferred (used SAS, discovery completed) Started at: 12/22/2021 12:19 PM. Duration: 3 seconds

Copy AzCopy Command to Clipboard Show in Folder

5.3 SAMPLE INPUTS AND OUTPUTS (SEE ATTACHED)

Please note: The attached “output” workbook {Sample CDFI Data Outputs.xlsx} has three tabs that correspond to the three grant report files:

- Consumer Loans and Investments Originated (aggregated at the census tract level)
- Transaction Level Report – Project (loan level information for Residential Real Estate, Commercial Real Estate, Business and Healthy Food Financing loans)
- Transaction Level Report – Address (location information for TLR loans, with only FIPS codes provided for Residential RE loans)