Department of Housing & Urban Development DATA Act Data Quality Plan (DQP)

July 10, 2023

Office of the Chief Financial Officer
DATA Act Program Management Office

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I. Background

In 2006, the Federal Funding Accountability and Transparency Act (FFATA) (Public Law No. 109-282 official text[1]) required that agencies publish data about Federal awards on a publicly accessible website, USAspending.gov (USAspending). The Digital Accountability and Transparency Act of 2014 (DATA Act) (Public Law No. 113-101 official text[2]) amended FFATA to expand the scope of transparency reporting to include summary and detailed financial data, and define linkages between financial and award data submissions. Under the DATA Act, the Office of Management and Budget (OMB) established consistent data standards for budget, financial, financial assistance, and procurement information, and the Department of Treasury (Treasury) published technical schemas and requirements for submitting data to USAspending.gov.

OMB M-18-16, dated June 6, 2018, Appendix A to Office of Management and Budget (OMB) Circular A-123, Management of Reporting and Data Integrity Risk[3], requires DATA Act reporting agencies to develop a Data Quality Plan (DQP) effective, at a minimum, from Fiscal Year (FY) 2019 through FY2021. The DQP is to ensure that management provides reasonable assurance over the data reported through leveraging current controls to address identified risks under DATA Act.

This plan must be reviewed and assessed annually for three years, or until the agency determines that sufficient controls are in place to achieve the DATA Act Reporting Objectives described below (see Section II). Consideration of this plan must be included in agencies' existing annual assurance statement over the internal control over reporting (ICOR) beginning in FY2019, and continuing through the statement covering FY2021 at a minimum, or until agencies determine that they can provide reasonable assurances over the data quality controls that support achievement of the reporting objective in accordance with the DATA Act. Using the structure of the U.S. Government Accountability Office (GAO), *Standards for Internal Control in the Federal Government* (referred to as the Green Book), the Department of Housing and Urban Development (HUD or Department) complies with DATA Act by aligning DATA Act activities at the Functional Organization Level. As HUD's OMB Circular No. A-123 program matures, HUD will revise these objectives accordingly to align with overarching A-123 control and risk management objectives.

The scope of this DQP is limited to HUD's compliance with the DATA Act and OMB's reporting requirements for DATA Act reporting agencies. This document outlines HUD's framework for ensuring that data quality efforts, including externally reported financial data, are aligned with the Department's mission objectives, and informed by its risk assessment and management processes. HUD will use this framework to guide the development and implementation of its DQP, to include a more detailed future Data Quality Project Plan with actionable milestones. This Project Plan will provide a roadmap to address material areas of risks that HUD has identified during the course of DATA Act reporting, as well as a framework for long-term resolution of pervasive data quality issues with FFATA reporting. This DATA Act DQP will link to the Department's larger, future strategies around open data.

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[1] Public Law No. 109-282 OfficialText
[2] Public Law No. 113-101 OfficialText
[3] OMB Circular A-123 Appendix A, Management of Reporting and Data Integrity Risk

II. DATA Act Reporting Objectives and Enterprise Risk Management

HUD describes its DATA Act Reporting Objectives and Enterprise Risk Management (ERM) below.

A. DATA Act Reporting Objectives

In submitting agency-wide data for DATA Act reporting, HUD's objectives are outlined as follows:

- **Completeness**[4] – Transactions that occur in all required accounts. The completeness of a monthly and quarterly submission is strengthened by the controls HUD has in place to ensure the inclusion of all reportable records, as well as attributes necessary to establish linkage between files, where applicable. HUD's raw data is compiled and submitted in their required files. Treasury requires that agencies submit all unexpired and expired Treasury Account Symbols (TAS), with the exception of financing accounts[5], in Files A, B and C; as well as all reportable actions in Files C, D1, and D2.
- **Timeliness** – Data is considered relevant for decision-making purposes when reported in a timely manner. Financial transactions, such as obligations, are subject to the reporting requirements established under OMB Circular A-136, Financial Reporting Requirements[6]. Likewise, procurement actions are subject to the requirements of the Federal Acquisition Regulations (FAR). HUD will continue to submit financial assistance data to the Financial Assistance Broker Submission (FABS) site, at minimum, twice a month[7] in accordance with OMB Management Procedures Memorandum 16-03[8].
- **Accuracy**[9] – Transactions are recorded at the correct amount, in the proper account, in a timely manner throughout each step identified in respective Funds Control Plan Matrices. The data standards set by OMB and Treasury establish the criteria for the authoritative source and statutory requirements of each data element. Accuracy relates to the attributes within a record as opposed to the accuracy of the full record in its entirety. Data on USAspending are considered accurate if the submitted data align with the data in the authoritative source.
- **Compliance**[10] – Spending data are reported in compliance with the objectives of the DATA Act; specifically, the reporting requirements for the data elements standardized in the DATA Act for completeness, accuracy, and timeliness. Please see the most recent DATA Act Informational Model Schema (DAIMS) for these specific elements.

B. Enterprise Risk Management (ERM)

Enterprise Risk Management is an effective agency-wide approach to addressing the full spectrum of the organization's significant risks by considering the combined array of risks as an interrelated portfolio, rather than addressing risks only within silos. ERM provides an enterprise-wide, strategically-aligned portfolio view of organizational challenges that provides improved insight into how to more effectively

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[4] Green Book: GAO-14-704G Standards for Internal Control in the Federal Government
[5] See Appendices B and C on Agency FAQs [11-4-2016]- Digital Accountability And Transparency Act Of 2014
[6] OMB Circular A-136, Financial Reporting Requirements
[7] OMB M-20-21 Implementation Guidance for Supplemental Funding Provided in Response to the Coronavirus Disease 2019 (COVID-19)
[8] OMB M-16-03 Memorandum for Heads of Executive Departments and Agencies
[9] Green Book: GAO-14-704G Standards for Internal Control in the Federal Government
[10] Treasury Data Transparency; link to Treasury's DATA Act page. Definitions of the standardized data elements: Federal Spending Transparency Data Standards

prioritize and manage risks to mission delivery. OMB Circular No. A-123 requires agencies to implement an ERM capability. As HUD matures its ERM capability, its enterprise-wide risk management practices will increasingly guide decision-making throughout the organization, to include balancing consideration of risks, strategic mission priorities, and the focus of internal controls, across all strategic, operational, compliance and reporting objectives, including DATA Act reporting.

HUD will develop its enterprise risk appetite and tolerances, as well as update its risk portfolio, to provide an appropriate balance of data quality risk management activities. This includes balancing cost, performance, and risk considerations related to financial data management activities and non-financial (e.g., performance) data management activities. DATA Act reporting inherits these reporting objectives, strategic considerations, and risk management activities from the enterprise.

To meet initial compliance, HUD reviewed an initial list of the 57 key data elements as defined by the DAIMS and any related linkages that demonstrate quality for presentation to the taxpayer, provided in **Appendix A**. HUD revises this inventory to identify additional key data elements based on the results of subsequent data quality risk assessments and requirements from OMB. HUD Components include reporting entities that are required to consolidate data into a single Departmental submission and include:

- Federal Housing Administration (FHA)
- Non-FHA program offices (e.g., Public and Indian Housing, Community Planning and Development) and Office of the Inspector General (HUD OIG); collectively referred to as "HUD Proper"
- Government National Mortgage Association (Ginnie Mae)

Where necessary, HUD will perform component-specific risk assessments, monitor and test their controls, and implement corrective actions for any identified deficiencies in data quality. For example, starting FY22, HUD established monthly risk assessment of new data element requirements from OMB.

HUD's approach to identifying and managing risks related to the DATA Act will include the following steps:

- HUD will develop an integrated portfolio view of the significant risks that may affect external and internal, financial and non-financial data. Materiality as well as other quantitative and qualitative factors will be used to evaluate the likelihood and potential impact of significant risks.
- HUD will determine if mitigating control procedures are in place over the processes and determine what level of reliance can be placed on existing processes based on their current results.
- HUD will formulate an action plan to address significant risks if no mitigating processes exist. The plan will include the proposed solutions for addressing gaps identified in the risk assessment.
- Based on the action plan, the Senior Accountable Official (SAO) or the SAO's designee will develop corrective action plans to address the identified gaps. Components will set timelines for executing these plans.
- Each component will also identify and conduct an assessment of the most significant risks to achieving its unique data quality objectives. Materiality as well as other quantitative and qualitative factors will be used to evaluate the likelihood and potential impact of risks.

- Each component will monitor and test the key internal controls related to their identified risks.
- Components will implement corrective action plans to remediate data quality internal control deficiencies and their progress will be monitored.
- HUD's progress will be reflected in the DATA Act monthly SAO publication statement and quarterly SAO certification statement.
- HUD's annual assurance statement process will be supported by the DQP and the monthly SAO publication and quarterly SAO certification process.

III. DATA Act Operating Environment

This section describes HUD's DATA Act operating environment and its composition. There are three functional elements that each contribute equally to upholding the reporting objectives of the DATA Act. The first element is the governance structure. The second element is information process flow which encompasses the lifecycle of the information and transactions behind the records reported for publication (processes and procedures). The final element is data management, as agencies have the responsibility to ensure the reliability of systems that collect and report data; and compliance with the statutory and regulatory frameworks for managing the awards reported under FFATA and the DATA Act.

A. Governance Structure

The key HUD stakeholders responsible or accountable for collaboratively reporting and publishing quality data constitute the governance structure to meet DATA Act reporting requirements. **Figure 1: DATA Act Governance Structure** shows the oversight body consisting of stakeholders that are responsible for key aspects of DATA Act submissions. HUD will begin to integrate data quality into its ERM and internal control governance discussions to promote strategic, coordinated decisions on data management activities, including risk treatments, internal controls, and control monitoring.

Figure 1: DATA Act Governance Structure
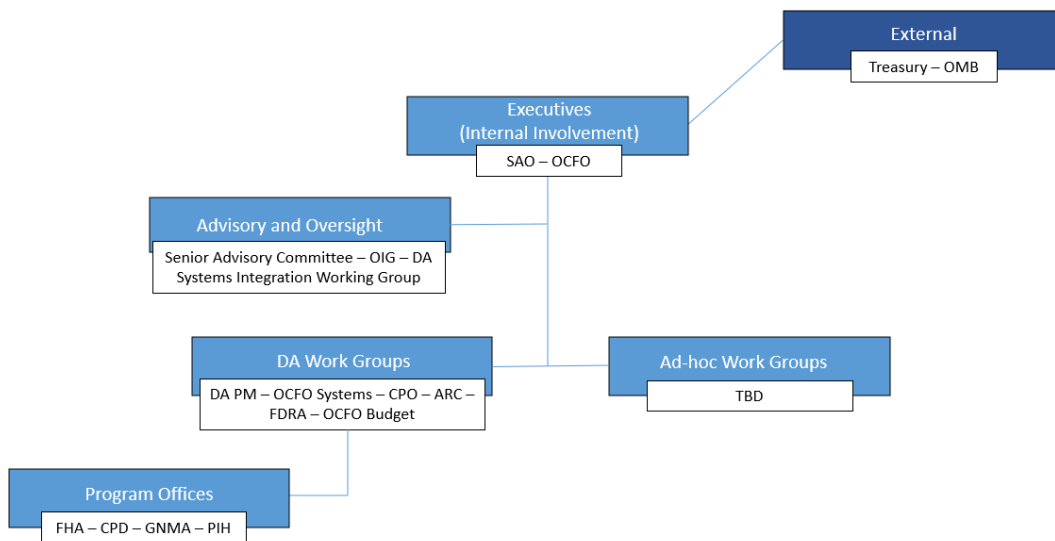
Executives

Senior Accountable Official (SAO), Office of the Chief Financial Officer (OCFO) - Accountable for the development of the attestation statement, final approval of consolidated submissions, and final submission to the Treasury Broker. The SAO provides, on a monthly and quarterly basis, reasonable assurance that HUD's internal controls support the reliability and validity of the agency account-level and award-level data reported to USAspending.gov, as required by OMB M-17-04.

Advisory and Oversight

Senior Advisory Committee - A committee composed of select HUD senior leaders responsible for making resourcing decisions to address the larger HUD stakeholder impacts on publicly released data through the DATA Act.

Office of Inspector General (OIG) - Responsible for performing audits, evaluations, and strengthening oversight of DATA Act compliance in accordance with congressional mandates as well as government-wide DATA Act requirements.

DATA Act System Integration Working Group - An intra-departmental working group responsible for identifying, documenting, and resolving issues regarding the implementation and operations of FFATA and DATA Act reporting.

Ad-hoc Work Groups

Ad-hoc Work Groups - HUD will stand up work groups as needed to meet future DATA Act reporting requirements.

DA Work Groups

DATA Act Program Manager, OCFO, Assistant Chief Financial Officer for Systems (ACFO), Financial Data Reporting and Analysis Division (FDRA) - Accountable for daily DATA Act operations, in addition to overseeing technology implementations related to transparency reporting. The DATA Act Program Manager is the principal Point of Contact (POC) for all components and for all DATA Act-related audit activities. The DATA Act Program Management Office (PMO) supports the DATA Act Program Manager with managing the DATA Act quarterly and monthly reporting process. The DATA Act PMO also consolidates data from all reporting components to perform the consolidated submission to the Broker, which is approved by the SAO or designee.

OCFO Systems - Responsible for submitting monthly financial assistance data from HUD's Financial Data Mart (FDM), analyzing and resolving critical errors prior to submission, and submitting monthly data to the Financial Assistance Broker Submission (FABS), which is the submission portal for FFATA. FABS data constitute the File D2 extract in the DATA Act Broker Submission, or DABS, process. Additionally, OCFO-Systems input may be required for researching File C and D2 cross-validation Warnings.

Chief Acquisition Officer, Office of the Chief Procurement Officer (OCPO) - Accountable for internal control documents regarding the creation, capture, storage, and movement of financial data for procurement. OCPO administers contract actions that are the reportable daily procurement actions under FFATA and the DATA Act.

Administrative Resource Center (ARC), Treasury Federal Shared Service Provider (FSSP) - ARC maintains Oracle Federal Financials (OFF), which is HUD's core financial system of record and supports the HUD proper (i.e., non-FHA and Ginnie Mae) general ledger. ARC is responsible for generating File A for all components; File B for HUD Proper; and File C for HUD Proper, FHA (administrative contracts), and Ginnie Mae.

Office of the Chief Financial Officer (OCFO), Budget - Responsible for Program Activity Codes (PACs) and performing the Budget Data Request (BDR) exercise with OMB.

Program Offices

Federal Housing Administration (FHA) - Responsible for reviewing FHA account data in File A, which is produced by ARC. FHA is also responsible for producing partial data extracts for Files B and File C under the DATA Act, and producing monthly loan extracts for FFATA reporting to FABS.

Office of Block Grant Assistance, Community Planning and Development (CPD) - Responsible for Section 108 Loan Guarantee data produced by ARC for DATA Act submission for Files C and FABS under FFATA and the DATA Act.

Government National Mortgage Association (Ginnie Mae) - Responsible for reviewing Ginnie Mae account data in File A, which is produced by ARC. Ginnie Mae is also responsible for producing data reports for Files B, part of File C, and D1 under FFATA and the DATA Act.

Office of Native American Programs, Public and Indian Housing (PIH) - Responsible for Section 184, 184A, and Title VI loan guarantee data produced by ARC for DATA Act submission for Files C and FABS under FFATA and the DATA Act.

B. Information Process Flow

The DATA Act reporting process is a result of an existing HUD data information flow. HUD has a Standard Operating Procedure (SOP) for both quarterly and monthly DATA Act reporting to ensure that all transactions are reported appropriately. All required transactions are subjected to the appropriate level of controls to provide assurance that approvals, validations, reconciliations, and reporting processes are completed.

C. Data Management

HUD's DATA Act System Landscape is depicted in **Figure 2**, which delineates how HUD source systems relate to the specific data extracts required for monthly and quarterly reporting to USAspending.gov and inform the flex-fields leveraged in HUD's DATA Act reporting submissions. Source systems are color-coded as Shared Service Provider Systems or HUD Systems.

Figure 2: HUD DATA Act System Landscape
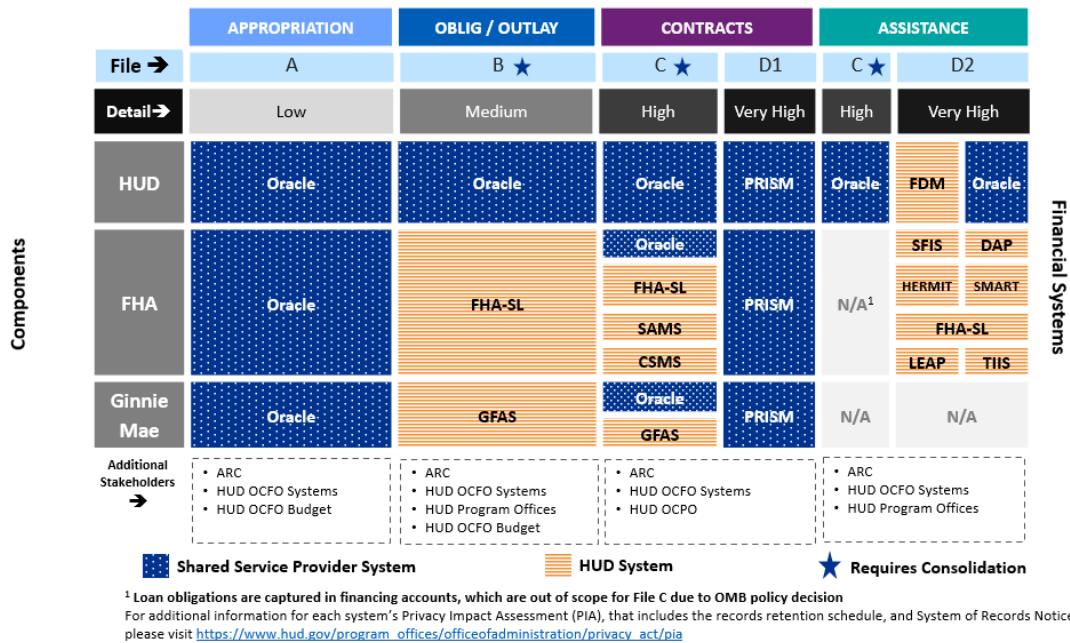
Files A and B contain summary-level financial data pertaining to appropriations (File A), and object class and program activity (File B).

- Data for File A for the Department is sourced from Administrative Resource Center - Oracle Federal Financials (ARC OFF) and the DATA Act Broker.
- FHA and Ginnie Mae are component entities to HUD that use their own internal financial systems, Federal Housing Administration Subsidiary Ledger (FHA-SL) and Ginnie Mae Financial Accounting System (GFAS), to generate DATA Act File B. HUD Proper uses ARC OFF for File B.
- Per OMB Memo M-20-21, to enhance transparency for supplemental funding, File B must also include the appropriate Disaster Emergency Fund Code (DEFC) for all accounts. Specific information related to DEFC can be found in OMB Memo M-18-08 and M-21-20[11].
- Intragovernmental transfers and allocation transfers can be identified by the *AllocationTransferAgencyIdentifier* (ATAI) and *AgencyIdentifier* (AI) fields within both files, if applicable. Specifically, the ATAI identifies the department or agency that is receiving funds through an allocation transfer.

File C contains financial data at the award level for financial assistance and procurement transactions. The DATA Act requires that data within File C are linked to Files D1 and D2 using a common Award ID, that shows traceability from award management to financial systems.

- For HUD Proper, ARC OFF is the source for File C.
- For FHA, ARC OFF is also the source for administrative contracts; other FHA contracts are maintained in the FHA Subsidiary Ledger (FHA-SL), Comprehensive Servicing and

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[11] Per OMB Memo M-21-20, to accommodate future supplemental funding, OMB has established new DEFC codes.

Monitoring System (CSMS) and Single Family Acquired Asset Management System (SAMS).

- For Ginnie Mae, Salaries and Expense contracts for Ginnie Mae are sourced from ARC OFF; GFAS is the source for other Ginnie Mae contracts.
- Per OMB Memo M-20-21, to enhance transparency for supplemental funding, File C must also include the Disaster Emergency Fund Code (DEFC) for all awards. Specific information related to DEFC can be found in OMB Memo M-18-08, M-21-20, and M-22-12.[12]
- Per OMB Memo M-20-21, HUD reports a running total of outlays for each award in File C for all awards reported within the fiscal year.
- Per OMB Memo M-20-21, to better achieve the objective of both the DATA Act and the COVID-19 relief legislation, for all spending and activities related to Covid-19 relief and non-Covid-19 relief, agencies must include Program Activity in File C.
- Intragovernmental transfers and allocation transfers can be identified by the *AllocationTransferAgencyIdentifier* (ATAI) and *AgencyIdentifier* (AI) fields within File C, if applicable. Specifically, the ATAI identifies the department or agency that is receiving funds through an allocation transfer.

File D1 (Contracts) contains the required data for awards and awardee attributes regarding procurement. ARC uses PRISM to interface HUD procurement data to both Oracle Federal Financials and Federal Procurement Data System – Next Generation (FPDS-NG) on a nightly cadence. The subsequent interface to USAspending.gov is also refreshed on a nightly cadence. This information flow is the basis for File D1 in the monthly and quarterly reporting process.

File D2 (Financial Assistance) contains the required data for initial awards and modifications for grants, loans, loan guarantees, and subsidies[13.]

- For HUD Proper, HUD uses the Financial Data Mart (FDM) as a centralized repository to collect financial assistance data, namely grants and subsidies, from program grants management offices for FABS reporting. The primary source systems that feed into FDM include Line of Credit Control System (LOCCS), Program Accounting System (PAS), and HUD Central Accounting and Program System (HUDCAPS). Note that HUD is targeting for PAS to be replaced by LOCCS in the near future.
- CPD and PIH loans are sourced from ARC OFF for monthly FABS reporting.
- Per the requirements of FFATA, later expanded by DATA Act and 2 CFR Part 25, HUD reports Awardee, Awardee Unique Entity Identifier (UEI), and Primary Place of Performance at the time of award in records for loans and loan guarantees. HUD made determinations for these data elements based on definitions provided by 2 CFR, DAIMS Reporting Submission Specification (RSS), as well as considerations to protect PII and improve access to affordable loans.
- FHA acquires data for monthly loan reporting from seven unique systems, including the Single Family Insurance System (SFIS), Development Application Processing (DAP) System, Home Equity Reverse Mortgage Information Technology (HERMIT) System,

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[12] HUD did not receive Infrastructure Investment and Jobs Act (IIJA) funding.
[13] Per OMB Memo M-22-02, HUD reports the Assistance Listings (or "CFDA_Number") and the associated funding for each Federal Financial Assistance award reported to USAspending.gov effective in FY2022 for all new awards.

Lender Electronic Assessment Portal (LEAP), Title I Insurance System (TIIS), Single Family Mortgage Asset Recovery Technology (SMART) and FHA-SL.

- Per OMB Memo M-20-21 and M-22-02, agencies must report non-loan/non-loan guarantee financial assistance within two weeks of issuance and subsequent modifications to the period of performance end date, as needed.
- HUD does not include PII in financial assistance awards reported to USAspending.
- Per OMB Memo M-22-02, agencies must report Funding Opportunity Number and Funding Opportunity Goals Text for competitive discretionary grants and cooperative agreements, effective October 1, 2023. HUD acknowledges this requirement and continues to make progress toward achieving compliance.
- HUD acknowledges an opportunity for improvement with Indirect Cost Federal Share Amount. Currently, HUD has prioritized timeliness, completeness, and accuracy of the DABS reporting, as a whole, to be of greater importance than the Indirect Cost Federal Share Amount as outlined in M-22-02; HUD has elected to report $0 for grants and cooperative agreements as the agency continues to make progress toward achieving compliance.
- Per the DAIMS Practices and Procedures v2.2, Section 2.5.3, USAspending recognizes potential variance of data within agency source systems and data derived by USAspending from third-party systems (SAM, USPS Postal Explorer, House.gov)[14]. To mitigate potential variances of the data from third party systems, HUD analyzes specific scenarios and determines if implementation of contingency processes is required in order to report better quality data.

IV. Data Quality Approach and Plan

HUD plans to develop a more detailed Data Quality Plan Implementation project plan, or DQPI, in the future to segment quality objectives into measurable phases to help fully resolve pervasive data quality issues by addressing root causes. This plan will take into consideration HUD's identified DATA Act risks, known issues identified in HUD's DATA Act certification statement, and GAO and OIG audit findings.

Objectives of this DQPI are outlined below:

- Engage stakeholders and collaborate across program offices to identify and prioritize DATA Act reporting deficiencies using data definitions, validation rules, and audit findings. Furthermore, as Treasury proposes changes to the DAIMS, HUD will assess impact and address appropriately.
- Develop an iterative process to assess DATA Act reporting deficiencies, incorporate significant milestones and detail major decisions.
- Determine appropriate materiality thresholds for deficiencies within DATA Act submissions, and develop procedures to measure, assess, and improve the materiality of deficiencies over time.

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[14] DAIMS Practice and Procedures v2.2 par. 2.5.3 "…The second occurs if the data submitted in FABS is correct but the source data powering the derivation is inaccurate; this case is unique as it results from information contained in third-party systems (some of which, but not all, is also under the control of the submitting agency."

- Implement the automation of Control Activities wherever possible to minimize burden on federal staff.
- Track and communicate material deficiencies to resolution[15] by analyzing root cause and communicating deficiencies to authoritative parties.
- Determine whether the existing data quality processes and criteria are applicable to the agency's loan and loan guarantee portfolio.
- Expand the Award Description data quality improvement initiative. In FY22, HUD explored potential solutions to further enhance the Award Description data that satisfies "plain English" requirements, PII responsibilities, validation of descriptions to specificity about award purpose, activities, deliverables, expected outcomes, intended beneficiaries, and subrecipient activity (if known at the time of obligation) for American Rescue Plan-related financial assistance as well as established processes to monitor compliance with completeness and timeliness of reported data.

HUD's detailed Data Quality approach follows the multi-step process outlined below.

Step 1: Identify Materiality Threshold over Key Data

HUD has identified data elements across agency Files B, C, D1 and D2 as key data as outlined in Appendix A. HUD performs periodic reconciliations of this data to the authoritative source(s), where such sources are clearly defined by OMB and Treasury. Any variances identified are subject to the materiality threshold described below.

Materiality Threshold Calculation

As provided by Appendix A to OMB Circular No. A-123, *Management of Reporting and Data Integrity Risk*; materiality for controls over reporting is defined as the risk of error or misstatement that could occur in a report that would impact management's or users' decisions, or conclusions based on the report. As part of its data quality approach to DATA Act reporting, HUD plans to leverage the materiality concepts described below in determining the materiality of DATA Act control deficiencies identified by HUD. HUD will accumulate deficiencies identified during management's assessment process and evaluate misstatements individually and in aggregate, in both quantitative and qualitative terms, at the entity level. Based on HUD's materiality calculation, DATA Act inaccuracies material to a single DATA Act file are considered also material to DATA Act reporting.

As an expenditure-intensive agency, HUD will determine quantitative materiality annually based on gross expenses.[16] Under this concept, HUD uses Gross Expenses (net of adjustments for intragovernmental balances and offsetting balances) as the materiality base. HUD will set materiality at 3 percent of the materiality base. Performance materiality will then be determined for the maximum amount of error in the DATA Act reporting which HUD could accept and still provide reasonable assurance for the reporting process. HUD will set Performance materiality at one-third of materiality, or 1 percent.

As applied to DATA Act reporting, HUD will use performance materiality to assess reasonable assurance over the completeness, accuracy and timeliness of DATA Act submissions for quarterly and monthly

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[15] Resolution is defined as assigning a Risk Response Option; valid choices include: accept, avoid, reduce, or share
[16] GAO FAM Section 230.11 and 230.12

DABS submissions. That is, the aggregate of all identified deficiencies within a single submission should not exceed the materiality threshold of 1 percent of the materiality base. Where the aggregate of deficiencies exceeds this performance materiality, HUD may exercise the right to republish a monthly DABS submission or recertify a quarterly DABS certification, or escalate the resolution of unreported data comprising a FABS submission.

HUD's qualitative materiality considerations include the following:

- Is the activity or information considered sensitive to USAspending.gov users, that is, the Congress, the public, influential special interest or stakeholder groups, and interested foreign governments?
- How does the issue affect overall compliance with FFATA and the DATA Act?
- What is the issue's relative impact on transparency to the public? For example, a reported record with an inaccurate attribute is less impactful than a record that is omitted entirely from reporting.
- Does the issue heighten the sensitivity of the circumstances surrounding the misstatement (for example, the implications of misstatements involving fraud and possible instances of noncompliance with laws, regulations, or contracts conflicts of interest)?

Step 2: Identify and Categorize Fatal Errors and Warnings

Current internal controls over DATA Act reporting are in accordance with OMB A-123 and M-17-04. HUD is committed to executing a robust data validation and reconciliation program, including the establishment of root cause analysis and management thresholds for known data quality issues, along with periodic review of financial and award data outside of routine reporting cycles.

HUD leverages Treasury's DATA Act Broker (Broker) to identify Warnings and Fatal Errors as well as conduct other summary level validations on DATA Act submissions. By identifying Warnings and Fatal Errors prior to Department-wide submission of the seven files to USAspending, responsible parties are able to address the variances or misalignments in a timely manner. The current HUD DATA Act Reporting Process involves multiple phases, which includes data quality procedures and exit criteria at each phase gate. HUD discloses the results of its data quality analysis and resolution in the attestation statement submitted to Treasury at the time of submission. HUD attests to the quality of the data on a monthly and quarterly basis.

Step 3: Resolve Fatal Errors

The DATA Act PMO produced scripts to validate and identify fatal errors in conjunction with the DATA Act Broker. Fatal Errors prevent submission and must be corrected before the impacted records can be submitted. Fatal Error resolution is an iterative process and must continue until the files no longer trigger Fatal Errors through the Broker validations. HUD encounters two persistent fatal errors, as shown in **Table 1,** for which it has identified workarounds to ensure complete reporting. These errors are due to normal business scenarios that trigger false positive errors in the Treasury Broker (A30.1) or system mapping gaps that require long-term system changes (B20).

Table 1: Fatal Errors

Broker Rule	Description	Current Mitigation
A30.1	All TAS values in File A (appropriations) should exist in File B (object class program activity), and vice versa, for the same reporting period.	HUD OCFO inserts zero-dollar balance records into File B for the offending TAS, using the Broker error output and ARC Files A and B as inputs, and notes changes in an Audit Log, which is approved by the HUD DATA Act PM.
B20	All combinations of TAS/program activity code/object class in File C (award financial) should exist in File B (object class program activity). Since not all object classes will have award activity, it is acceptable for combinations of TAS/program activity code/object class in File C to be a subset of those provided in File B.	HUD OCFO inserts zero-dollar balance records into File B for the offending TAS, using the Broker error output and ARC Files B and C as inputs, and notes changes in an Audit Log, which is approved by the HUD DATA Act PM.

Step 4: Categorize Warnings by Risk and Variance Threshold Level

Warnings are issues that do not prevent submission. As such, Warnings do not need to be corrected for the files to be certified; resolution of Warnings are considered a lower priority than Fatal Error resolution. To facilitate Warning resolution and analysis of issues, the DATA Act PMO grouped Warnings into six distinct Warning Categories detailed in **Table 2**.

Table 2: Warning Categories

Warning Category	Quality Objective
Authoritative Sources	Verify alignment of financial balances and data elements of Files A and B against SF 133
Financial Cross-Validation	Verify alignment of financial balances across Files A and B and Files B and C
Intra-File Calculation	Verify financial balances captured within Files B and C conform to prescribed calculations within the DAIMS
Invalid Attribute	Verify validity of specific data elements within Files B and C
Procurement Cross-Validation	Verify alignment of financial balances and data elements across Files C and D1
Financial Assistance Cross-Validation	Verify alignment of financial balances and data elements across Files C and D2

Additionally, HUD established variance thresholds to help prioritize the investigation of Warning variances. These variance thresholds, which are at the record level, help to prioritize issues that most impact

transparency of reported data to the public. For certain categories, the DATA Act PMO recommends investigating all occurrences of the issue, regardless of dollar amount, to facilitate root cause analysis and process improvements. **Table 3** presents HUD's Warning variance threshold, with descriptions for each tier.

Table 3: Warning Variance Thresholds

Threshold	Color	Description
≥ $600K	Red	High risk threshold, which includes variances that equal or exceed $600,000 in the aggregate. HUD OCFO strongly recommends documentation and thorough investigation of the variances that exceed this range due to high dollar impact to the agency. Variances that exceed this threshold are typically a result of internal logic errors within the DATA Act Broker or significant data quality issues that must be investigated prior to submission.
$100K - $599,999	Yellow	Medium risk threshold, which includes variances that equal or exceed $100,000 and are less than or equal to $599,999 in the aggregate. HUD OCFO recommends documentation and investigation of the variances that exceed this range due to higher dollar impact. These variances represent potential internal logic error within the DATA Act Broker or data quality issues and typically do not include rounding errors.
$0 - $99,999	Green	Low risk threshold, which includes variances less than or equal to $99,999. These variances typically do not require investigation due to low dollar impact, a result of insignificant impact to the agency.

Step 5: Provide Warnings to Points of Contact for Resolution

Table 4 details the responsible parties that are involved in the Warning resolution process. These responsible parties play a critical role in data quality analysis and resolution as described in the action plans for resolution.

Table 4: Warning Resolution Roles & Responsibilities

Responsible Party	Description
ARC	ARC plays a key role in HUD Warning resolution as it facilitates determining root causes for Warnings and makes necessary updates to file generation processes. These root cause analyses assist in determining whether Warnings have a valid business process or whether these Warnings are indicative of an underlying issue in reporting. If the Warnings do not have a valid business process, HUD would need to develop an action plan. ARC's analyses focus resources on only material data quality issues.

Responsible Party	Description
OCFO	HUD OCFO is the program office responsible for the reporting operations and management of the DATA Act. The DATA Act PMO within OCFO is responsible for analyzing HUD Departmental Warnings and data quality issues, performing Error resolution activities, validating data produced by ARC, and supporting the attestation of consolidated DATA Act submissions.
OCFO-Systems	HUD OCFO-Systems is responsible for pulling monthly financial assistance data from HUD's Financial Data Mart (FDM), analyzing and resolving critical errors prior to submission, and submitting monthly data to FABS, which is the submission portal for FFATA. FABS data are key to populating the File D2 process in the Broker. Additionally, OCFO-Systems input may be required for researching File C and D2 cross-validation Warnings.
OCPO	OCPO is involved in the research and troubleshooting of procurement issues (File C and File D1 cross-validation Warnings).
Components	The HUD Components required for department-wide reporting include FHA, Ginnie Mae, PIH/ONAP, and CPD. Component input may be required for instances where specific Warnings are triggered due to conditions within their specific DATA Act source systems.

Step 6: Monitor Warning Resolution

For each responsible party, the DATA Act PMO will provide suggestions for Warning remediation and resolution, if known, and will monitor progress against the respective timelines, where applicable. Revisions to existing internal controls or development of new controls will be dependent on the root causes.

Step 7: Develop and Implement a Test Plan to Make Sure Data are Reliable, Valid and Linked across Files, where appropriate

HUD designs and conducts testing based on a risk assessment to determine whether data reported to the Broker meets the completeness, accuracy, and timeliness objectives. HUD will follow sampling and testing methodology leveraged by previous DATA Act audits and assess this sample against the authoritative source or system of record to validate accuracy. HUD's testing approach will carefully weigh the cost and benefits of testing against enterprise risks over transparency reporting. For any material deficiency identified, HUD will implement new or enhance existing controls; develop and monitor corrective action plans to remediate any deficiencies and improve the overall control environment; and use continuous monitoring to identify new issues and controls that do not continue to operate effectively. In FY22, HUD developed and deployed a pilot version of an automated process to assess agency's completeness and accuracy of the summary-level and award-level data based on the

methodology in *Council of the Inspectors General on Integrity and Efficiency Guide to Compliance under the DATA Act*. When sampling prior submissions, HUD will expand the automated process to include more key data elements as defined in the DAIMS.

V. Reporting on Monthly SAO Publication and Quarterly SAO Certification Statement

At the end of every reporting period, HUD attests to the quality of the data reported via a monthly Publication Statement or quarterly Certification Statement and discloses data quality exceptions by file. A summary of categories of issues used in the attestation is presented in **Table 5** below. HUD uses the control activities outlined in this table to quantify the dollar impact of issues identified in order to prioritize data quality activities for subsequent quarters.

Table 5: Monthly Publication/ Quarterly Certification Statement Summary of Issues

Categories	File	Warning Categories	Control Activities
Intra-File Validation	A	• Authoritative Sources	Validate calculations between fields as defined by the DAIMS within File A.
Intra-File Validation	B	• Intra-File Calculation • Invalid Attribute	Validate calculations between fields as defined by the DAIMS within File B as well as the accuracy of Program Activity Name/Codes and Budget Object Class codes reported for the reporting period.
Intra-File Validation	C	• Intra-File Calculation • Invalid Attribute	Validate calculations between fields as defined by the DAIMS within File C as well as the accuracy of Program Activity Name/Codes and Budget Object Class codes reported for the reporting period.
Cross-File Validations	A, B	• Authoritative Sources • Financial Cross Validation	Reconcile against the SF 133 as the authoritative source for DATA Act File A and B completeness and accuracy. Reconcile File A to File B to verify alignment of data across both files.

Categories	File	Warning Categories	Control Activities
Cross-File Validations	**B, C**	• Financial Cross Validation	File C is a subset of File B data, as not all obligation and outlay data in File B is associated with an individual award ID, such as payroll obligations, travel obligations, accruals, and other journal entries. The DATA Act PMO perform analysis on all Warnings related to cross validations between the consolidated File B and C and works with components where needed to identify root causes.
Cross-File Validations	**C, D1**	• Procurement Cross Validation	HUD verifies the alignment of financial balances and data elements across File C and D1. The DATA Act PMO documents any variances and discrepancies in preparation for quarterly submission and future resolution.
Cross-File Validations	**C, D2**	• Financial Assistance Cross Validations	The DATA Act PMO performs a Warning analysis specifically reviewing financial assistance cross-validation verifying alignment of financial balances and data elements across File C and D2. Some misalignments may be due to records that could not be submitted in the monthly FABS process.

VI. Publish the Data on USAspending.gov

The HUD SAO or designee will certify the quality of the data published on USAspending.gov based on HUD's data quality approach described in this Data Quality Plan for monthly publications and quarterly certifications as required by OMB Memo M-20-21. HUD will review this Data Quality Plan annually until the agency determines that sufficient controls are in place to achieve reporting objectives, for appropriateness and potential updates.

VII. Signature Page

As the HUD SAO, I have reviewed the Data Quality Plan and have determined that it is designed effectively to assess data quality and establishes a methodology for continuous improvement of the quality of data published by HUD on USAspending.gov.

_____

Vinay V. Singh, Chief Financial Officer, HUD (signature and date)

Appendix A: List of Key 58 DATA Act Standardized Data Elements

The chart below contains the data elements considered key to meeting the DATA Act reporting objectives in accordance with the original requirements of the DATA Act and updated guidance. Additional elements may be added dependent on the results of the risk analysis. These fields are considered accurate within the reported record when the value provided for DATA Act submissions matches to the authoritative source.

✓ – Identifies elements included in existing quality procedures (e.g., Government-wide Treasury Account Symbol Adjusted Trial Balance System [GTAS], FAR validations or annual verification and validation [V&V] assessment) and indicates that duplicative and/or additional testing for the sole purpose of DATA Act reporting is not necessary based on OMB M-17-04 or "the financing memo".

X – Identifies elements not currently included in a government-wide or agency-specific data quality requirement and as a result, the element may be at higher risk for not addressing data quality standards.

"Blank" – Identifies an element that is not applicable or is not included in the specific file.

= – Identifies elements serving as a primary link between Files that shall be assessed based on effectiveness in linking the files.

Data Element Labels	File A	File B	File C	File D1	File D2	File E	File F	Link
Allocation Transfer Agency Identifier	✓	✓	✓					=
Agency Identifier	✓	✓	✓					=
Beginning Period Of Availability	✓	✓	✓					=
Ending Period Of Availability	✓	✓	✓					=
Availability Type Code	✓	✓	✓					=
Main Account Code	✓	✓	✓					=
Sub Account Code	✓	✓	✓					=
Budget Authority Unobligated Balance Brought Forward FYB	✓							
Adjustments To Unobligated Balance Brought Forward CPE	✓							
Budget Authority Appropriated Amount CPE	✓							
Borrowing Authority Amount Total CPE	✓							
Contract Authority Amount Total CPE	✓							
Spending Authority From Offsetting Collections Amount Total CPE	✓							
Other Budgetary Resources Amount CPE	✓							
Total Budgetary Resources CPE	✓							
Gross Outlay Amount By TAS CPE	✓							
Obligations Incurred Total By TAS CPE	✓							
Deobligations Recoveries Refunds By TAS CPE	✓							
Unobligated Balance CPE	✓							

Data Element Labels	File A	File B	File C	File D1	File D2	File E	File F	Link
Status Of Budgetary Resources Total CPE	✓							
Program Activity Name		✓	✓					=
Program Activity Code		✓	✓					=
Object Class		✓	✓					=
By Direct Reimbursable Funding Source		✓	✓					=
Disaster Emergency Fund Code		✓	✓					=
Obligations Undelivered Orders Unpaid Total CPE		✓	✓					
USSGL 480100 Undelivered Orders Obligations Unpaid CPE		✓	✓					
USSGL 480100 Undelivered Orders Obligations Transferred Unpaid CPE		✓	✓					
Obligations Delivered Orders Unpaid Total CPE		✓	✓					
USSGL 490100 Delivered Orders Obligations Unpaid CPE		✓	✓					
USSGL 490100 Delivered Orders Obligations Transferred Unpaid CPE		✓	✓					
Gross Outlay Amount By Program Object Class CPE		✓						
Gross Outlays Undelivered Orders Prepaid Total CPE		✓	✓					
USSGL 480200 Undelivered Orders Obligations Prepaid Advanced CPE		✓	✓					
USSGL 480200 Undelivered Orders Obligations Transferred Prepaid Advanced CPE		✓	✓					
Gross Outlays Delivered Orders Paid Total CPE		✓	✓					
USSGL 490200 Delivered Orders Obligations Paid CPE		✓	✓					
USSGL 490800 Authority Outlayed Not Yet Disbursed FYB		✓	✓					
Deobligations Recoveries Refunds Of Prior Year By Program Object Class CPE		✓						
USSGL 497100 Downward Adjustments Of Prior Year Unpaid Delivered Orders Obligations Recoveries CPE		✓	✓					
USSGL 497200 Downward Adjustments Of Prior Year Paid Delivered Orders Obligations Refunds Collected CPE		✓	✓					
Obligations Incurred By Program Object Class CPE		✓						
Obligations Undelivered Orders Unpaid Total FYB		✓	✓					
USSGL 480100 Undelivered Orders Obligations Unpaid FYB		✓	✓					
USSGL 488100 Upward Adjustments Of Prior Year Undelivered Orders Obligations Unpaid CPE		✓	✓					
Obligations Delivered Orders Unpaid Total FYB		✓	✓					
USSGL 490100 Delivered Orders Obligations Unpaid FYB		✓	✓					
USSGL 498100 Upward Adjustments Of Prior Year Delivered Orders Obligations Unpaid CPE		✓	✓					
Gross Outlay Amount By Program Object Class FYB		✓						
Gross Outlays Undelivered Orders Prepaid Total FYB		✓	✓					
USSGL 480200 Undelivered Orders Obligations Prepaid Advanced FYB		✓	✓					
USSGL 488200 Upward Adjustments Of Prior Year Undelivered Orders Obligations Prepaid Advanced CPE		✓	✓					
Gross Outlays Delivered Orders Paid Total FYB		✓	✓					

Data Element Labels	File A	File B	File C	File D1	File D2	File E	File F	Link
USSGL 490800 Authority Outlayed Not Yet Disbursed CPE		✓	✓					
USSGL 498200 Upward Adjustments Of Prior Year Delivered Orders Obligations Paid CPE		✓	✓					
USSGL 487100 Downward Adjustments Of Prior Year Unpaid Undelivered Orders Obligations Recoveries CPE		✓	✓					
USSGL 487200 Downward Adjustments Of Prior Year Prepaid Advanced Undelivered Orders Obligations Refunds Collected CPE		✓	✓					
Procurement Instrument Identifier (PIID)			X	✓				=
Parent Award Id (Referenced PIID or IDVID)			X	✓				=
Federal Award Identification Number (FAIN)			X		X			=
Unique Record Indicator (URI)			✓		✓			=
Action Date				✓	X			
Transaction Obligated Amount			X	✓	✓			
Face Value Of Direct Loan Or Loan Guarantee					✓			
Original Loan Subsidy Cost					✓			
Award Modification Amendment Number				✓	X			
Action Type				✓	X			
Assistance Type					X			
Award Description (Description of Requirement)				X	X			
North American Industry Classification System (NAICS)				✓				
Catalog of Federal Domestic Assistance (CFDA) Number					✓			
Awardee Or Recipient Unique Identifier (UEI)					✓			
Awarding Agency Code (Contracting Agency Code/ID)				✓	✓			
Funding Office Code				✓	X			
Funding Agency Code				✓	✓			
Primary Place Of Performance Country Code				✓	X			
Primary Place Of Performance ZIP+4				✓	X			

Appendix B: Reporting Federal Credit Programs under FFATA and the DATA Act

The Office of Management and Budget (OMB) and the Department of the Treasury (Treasury) received a number of inquiries from agencies regarding reporting Federal credit programs under the Federal Funding Accountability and Transparency Act of 2006 (FFATA), Public Law No. 109-282, as amended by the Digital Accountability and Transparency Act of 2014 ("DATA Act"), Public Law No. 113-101, 31 U.S.C. § 6101 note.

Federal credit program costs are reflected differently than other financial assistance awards. In contrast to other forms of Federal financial assistance, for loans and guarantees, the awardee is required to pay back the debt over time or in some cases within specific program guidelines for debt forgiveness may be allowed to forego repayment of the debt. To more accurately account for the cost of credit assistance, credit program costs are reflected as the *net present value* of cash flows to and from the Government over the life of the loans, i.e., the lifetime cost to Government. Therefore, the cost of the credit award is different than the face value, or amount of assistance provided.

The document attachment provided here, *Agency FAQs [11-4-2016] - Digital Accountability And Transparency Act Of 2014*, represents guidance on the treatment of Federal credit program costs and financing accounts in DATA Act reporting. Financing accounts are non-budgetary accounts which record the means of financing for direct loan and loan guarantee obligations. A non-budgetary account is an account whose transactions are excluded from the budget totals. All financing accounts are non-budgetary.

Appendix: C Agency FAQs [11-4-2016]-Digital Accountability And Transparency Act Of 2014

The Office of Management and Budget (OMB) and the Department of the Treasury (Treasury) have received a number of inquiries from agencies regarding reporting Federal credit programs under the Federal Funding Accountability and Transparency Act of 2006 (FFATA), Public Law No. 109-282, as amended by the Digital Accountability and Transparency Act of 2014 ("DATA Act"), Public Law No. 113-101, 31 U.S.C. § 6101 note.

General Background Information: DATA Act

On May 9, 2014, the DATA Act was enacted into law. The DATA Act amended FFATA and, among other things, added the Federal funds reporting requirements. See DATA Act § 3. The DATA Act also requires OMB and Treasury to jointly develop government-wide financial data standards and to issue guidance to Federal agencies. See DATA Act § 4. Additionally, the DATA Act requires Federal agencies to report financial and payment information using the data standards no later than May 8, 2017. See DATA Act § 4(c).

Information about the specific DATA Act files (Files A-F) discussed below can be found at https://community.max.gov/x/CIbyL.

General Background Information: Federal Credit

Federal credit program costs are reflected differently than other financial assistance awards. The costs of grants and procurements are reflected on a cash basis, with the full amount of the award reflected as an obligation and an outlay—so the cost of the award, or award amount, is the same as the amount of assistance provided by the Government.

In contrast to other forms of Federal financial assistance, for loans and guarantees, the awardee is required to pay back the debt over time or in some cases within specific program guidelines for debt forgiveness may be allowed to forego repayment of the debt. To more accurately account for the cost of credit assistance, credit program costs are reflected as the *net present value* of cash flows to and from the Government over the life of the loans, i.e., the lifetime cost to Government. Therefore, the cost of the credit award is different than the face value, or amount of assistance provided.

As noted in OMB Circular A-11 Section 185.2:

> The Federal Credit Reform Act of 1990, as amended (FCRA) changed the budgetary measurement of cost for direct loans and loan guarantees from the cash flows into or out of the Treasury at the time such cash flows occurred, to the estimated long-term cost to the Government on a net present value basis...

> By focusing on the long-term costs of the program, credit budgeting meets the most fundamental goal of budgetary cost measurement: it provides decision makers with the

information and the incentive to allocate resources efficiently. Unlike most budgetary transactions, the cash disbursements for a credit program are a poor measure of cost. Counting outlays for loan disbursements without taking into account probable repayments overstates the cost of direct loans. Loan guarantees appear costless initially because payments of guarantee claims generally occur several years after the decision to extend credit has been made. Credit budgeting places the cost of credit programs on a budgetary basis equivalent to other forms of Federal spending, allowing for better comparison of cost between direct loan and loan guarantee programs, and between credit and other programs. This improves the incentive to make good budgetary decisions.

Accordingly, Federal credit reporting should meet two primary objectives: (1) provide insight into the funds the Federal government spends to make a loan or loan guarantee (e.g., subsidy cost) as required by the DATA Act; and, (2) give the public insight into the extent of the assistance provided by the Federal government by maintaining current levels of transparency for award-level information.

Frequently Asked Questions: Loans

1. **For DATA Act Files A, B, and C, should financing accounts be reported?**
   Financing accounts are non-budgetary accounts[17] which record the means of financing for direct loan and loan guarantee obligations. Financing accounts should not be reported in DATA Act Files A, B, and C.

   For loans reporting, agencies should report financial information from the program account only. This will provide the public with insight into the funds the Federal government spent to make the loan (i.e., the up-front obligated subsidy cost). As discussed in questions 2-4 some information from the financing account will be reported in File D2.

2. **What should be reported in File D2 for loans?**
   Agencies should continue reporting award-level data (Original Subsidy Cost and Face Value) to USAspending.gov through the Award Submission Portal in the way that they currently do. There may be opportunities to further refine these definitions through the Data Standards Committee.

3. **How should a zero subsidy loan or loan guarantee or negative subsidy loan or loan guarantee be reported?**
   Some Federal credit awards do not require budget authority for the subsidy cost; while they require appropriation authority like loan limitations, the expected collections on such awards exceed losses on a present value basis. These are considered zero, or negative subsidy loan guarantee awards.
   As noted above, where a loan or loan guarantee is zero subsidy or negative subsidy, agencies should report the net present value of the subsidy as zero or as a negative value in the Original Subsidy Cost field on File D2.

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[17] Non-budgetary accounts are accounts whose transactions are excluded from the budget totals. All financing accounts are non-budgetary.

4. **Will the information in the financial files (DATA Act Files A-C) match the information in the award-level file (DATA Act file D2)?**
    Because Files A-C have to do with budgetary transactions and will only reflect the positive subsidy costs of new credit assistance, Federal credit awards will have more detail in File D2 than in Files A-C. In other words, more cost and award data will be reported with the D2 file information. This level of detail will provide the public transparency into the total amount of assistance provided through credit in File D2, and insight into obligations and outlays of budget authority in Files A-C. To make this distinction clear to the public, there will be explanatory language on USAspending.gov to clarify the information as displayed.

5. **Are files E and F required to be reported for loans?**
    There is no existing requirement for loan recipients to register in SAM or for loans subaward data to be reported. Accordingly, DATA Act Files E and F are not required to be reported for loans.