# Secretary of State
# Oregon Audits Division

## Department of Human Services
## Oregon Health Authority

# Integrated Eligibility Project Has Generally Followed Industry Standards to Help Ensure Data Is Converted Completely and Accurately

October 2019

**Report 2019-37**

Secretary of State Bev Clarno
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Secretary of State
Oregon Audits Division

# Executive Summary

**Department of Human Services, Oregon Health Authority**

## Integrated Eligibility Project Has Generally Followed Industry Standards to Help Ensure Data Is Converted Completely and Accurately

### Why This Audit is Important

» The Integrated Eligibility Project team is implementing a legislative mandate to consolidate applications for public assistance.

» The new system should make seeking public assistance easier.

» The new system will help replace several aging computer systems and will serve one in four Oregonians.

» Over $500 million of state and federal resources will be invested in the Integrated Eligibility Project and other related computer systems used for determining eligibility for public assistance.

» The effort to convert existing data from multiple systems into the new system is critical to the success of the project.

» The new system should help reduce errors, fraud, waste, and abuse and improve the accuracy of eligibility determinations.

This real-time audit was conducted in alignment with the Oregon Audits Division's strategic focus of being timely and responsive. Real-time auditing focuses on evaluating front-end strategic planning, service delivery processes, controls, and performance measurement frameworks before or at the onset of significant projects or public policy implementations by state agencies.

### What We Found

1. The Integrated Eligibility Project team has generally followed industry standards for data conversion. (pg. 7 and pg. 9)
2. Despite sufficient planning efforts, risks remain that could negatively impact the Integrated Eligibility Project.
    a. Limited testing of data extracts creates a risk that data conversion could be relying upon incomplete or erroneous data. (pg. 10)
    b. Unknown staffing needs post-data conversion creates the potential for negative client experience through long wait times. (pg. 11)
    c. Shared accounts weaken security and accountability if misuse of sensitive data occurs. (pg. 13)
    d. Missing contract terms limit the ability to hold contractor accountable in the event of a data breach. (pg. 14)

### What We Recommend

The Department of Human Services and the Oregon Health Authority should remediate a potential testing gap; develop staffing plans for work resulting from data conversion activities; eliminate the use of shared accounts to transmit sensitive information; and update existing contracts to include clauses required under federal law.

Both agencies agreed with all of our recommendations. Their response can be found at the end of the report. Appendix A includes a risk assessment we communicated to the Integrated Eligibility Project team in March 2019.

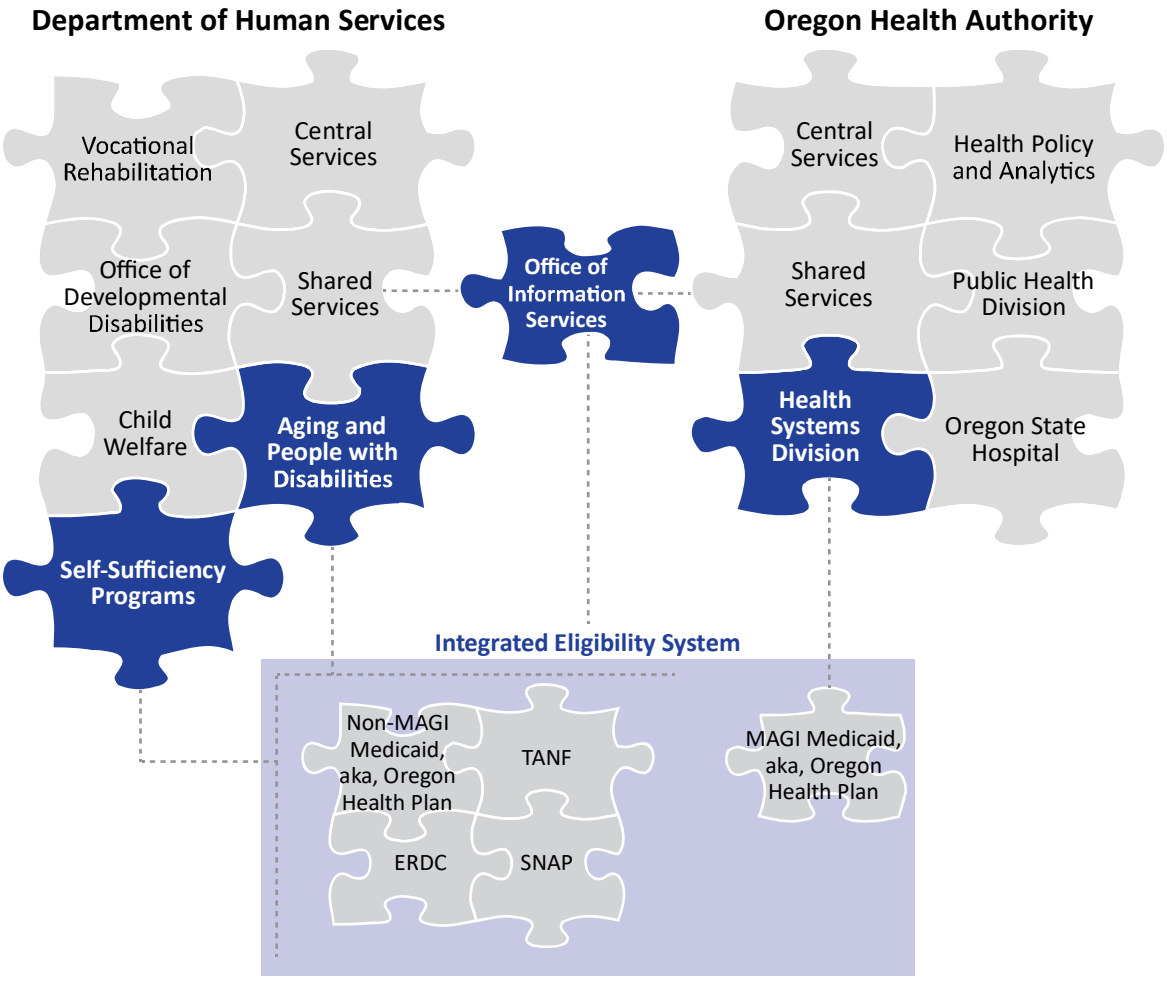
# Introduction

Public assistance programs provide a vital safety net and are funded through a combination of state and federal resources. In fiscal year 2018, Oregon spent approximately $13 billion on public assistance programs, approximately 46% of all state expenditures.[1]

## The Department of Human Services and the Oregon Health Authority work together to provide critical public assistance programs

The Oregon Department of Human Services (DHS) and the Oregon Health Authority (OHA) provide critical services through various public assistance programs. Combined, these two agencies provide services to approximately 1.5 million Oregonians, including:

- Health care provided through Medicaid;[2]
- Subsidized child care provided through the Employment Related Day Care (ERDC) program;
- Food assistance through the Supplemental Nutrition Assistance Program (SNAP);
- Cash assistance and workforce support through the Temporary Assistance to Needy Families (TANF) program; and
- Additional public health and social services through various other programs.




[1] See report no. 2019-26, State of Oregon Financial Condition Report – Fiscal Year 2018.
[2] Oregon's Medicaid program is also known as the Oregon Health Plan, or OHP.

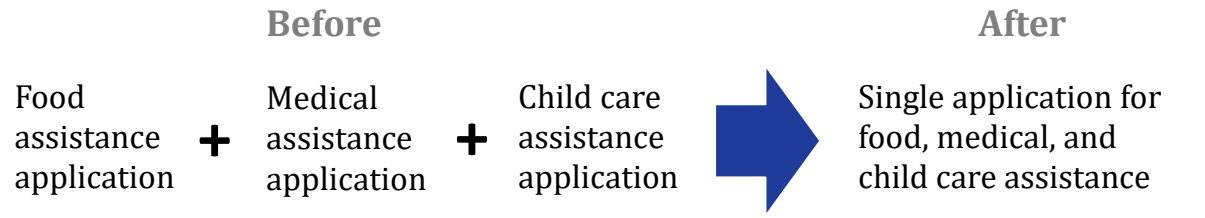
DHS and OHA are working together on a project to develop a new Integrated Eligibility system intended to improve how Oregonians obtain assistance through the various health and human services programs. Governance for the Integrated Eligibility Project includes management of public assistance programs from across DHS and OHA. Key stakeholders for the project include Aging and People with Disabilities, the division which administers Non-MAGI Medicaid programs; Self-Sufficiency Programs, which administers the SNAP, TANF, and ERDC programs; and the Health Systems Division, which administers the MAGI Medicaid program.[3] Given the interrelated nature of DHS and OHA operations, a shared service provides information and technology support for both organizations. This shared Office of Information Services is responsible for project management and managing information technology resources needed for the project.

The director of DHS is the executive sponsor of the Integrated Eligibility Project. The DHS director, along with the OHA director and State of Oregon Chief Information Officer, oversee the Integrated Eligibility Project as the Joint Governance Board. The Legislative Fiscal Office, Office of the State Chief Information Officer, and multiple federal agencies also participate in project oversight. Appendix A, which is our March 2019 management letter that communicated the results of our risk assessment of the project, contains additional information about project governance.

## The goal of the Integrated Eligibility Project is to streamline the experience of applying for and providing public assistance

The Oregon Legislature passed Senate Bill 450 in 2013, which created a taskforce to streamline the process to access public assistance and identify other opportunities for efficiencies and cost savings. One key focal point of the bill was identifying opportunities to reduce unnecessary duplication that results from individuals filling out separate applications for the various public assistance programs. The goal was to move toward a process with a single, integrated application, like the model shown in Figure 1. In 2015, House Bill 2219 directed DHS to convene a work group to study the consolidation of application processes for public assistance. The prior model required clients to contact multiple offices and fill out multiple, duplicative forms. Clients needed to follow the "right door" to access benefits. Under the integrated system's "no wrong door" model, clients can navigate the system with a single application and point of contact.

**Figure 1: The client experience should be streamlined after implementation of the new system**




In 2015, DHS and OHA began to develop a single computer system to determine an applicant's eligibility in compliance with the legislative intent of Senate Bill 450 and House Bill 2219.[4] This effort, known as the Integrated Eligibility Project, would streamline the administration of multiple public assistance programs. The Integrated Eligibility Project builds off past efforts by OHA that resulted in a new Medicaid eligibility system, currently known as the OregONEligibility (ONE) system. The ONE system was originally implemented to determine only eligibility for a

[3] MAGI refers to the Modified Adjusted Gross Income standard established by the Affordable Care Act. MAGI helps low-income people in Oregon with health insurance. Non-MAGI programs generally helps aged, blind, and disabled people in Oregon with health insurance.
[4] These were originally separate efforts, but eventually became integrated.

subset of Medicaid recipients who qualify under the MAGI standard.[5] OHA spent approximately $57 million on design, development, and implementation for the existing ONE system. As of January 2019, an additional $73 million has been spent on maintenance and operations.

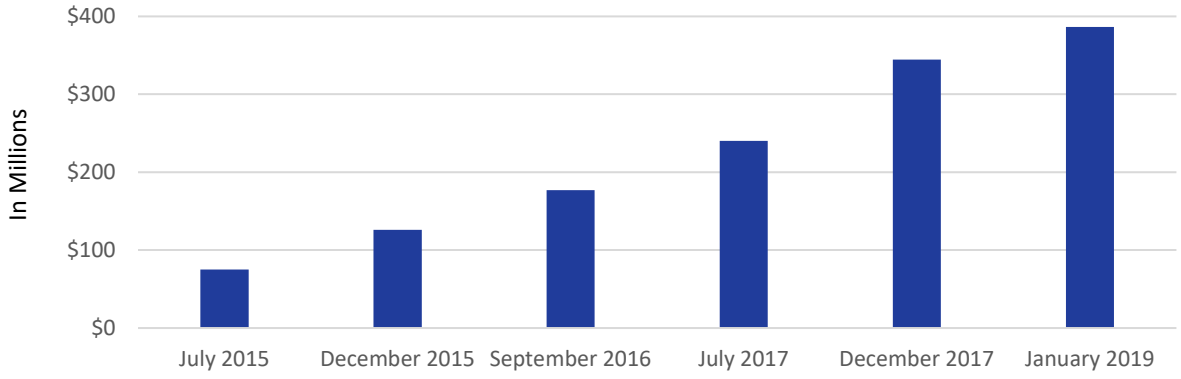
While the Integrated Eligibility Project team performs enhancements to the existing ONE system, it is known as integrated ONE; however, after implementation, it will again be known simply as the ONE system. The integrated ONE system is scheduled to be fully implemented by November 2020 and the Integrated Eligibility Project is scheduled to wrap up in January 2021.

Another motivating factor to develop and implement the integrated ONE system was an opportunity from the federal government where states could obtain a funding match rate of up to 90% for developing integrated eligibility systems. The Integrated Eligibility Project initiation was accelerated in order to maximize enhanced federal funding that was to expire December 31, 2018. DHS and OHA made every effort to take advantage of this funding opportunity. Overall, the project was able to achieve a federal funds matching rate of approximately 77%, with the remaining monies coming from the state General Fund and bond sales.

### *Significant resources have been invested into the new eligibility system*

The integrated ONE system is a major investment of state resources, with a design, development, and implementation budget of over $380 million. Approximately one hundred fifty state employees and three hundred contractors are working to pilot the integrated ONE system in spring of 2020.[6] Figure 2 shows how the integrated ONE system's budget has increased over time. Additional discussion of factors that have impacted the budget is included in our March 2019 risk assessment letter in Appendix A. The state will spend a total of about $510 million to implement an integrated eligibility system, including past spending on the existing ONE system. The integrated ONE system will also incur additional ongoing maintenance and operations costs per year.[7]

**Figure 2: The integrated ONE system's budget for implementation has steadily increased**




Source: Auditor prepared from Integrated Eligibility Project documentation. The July 2015 estimate was solely for a Non-MAGI Medicaid eligibility system. Approximately 77% of system funding is from the federal government.

Computer code for both the existing ONE and integrated ONE systems was acquired at no cost from the state of Kentucky. Although the base code was free, there were costs associated with updating the systems to meet Oregon's needs and to develop various interfaces with existing computer systems. This work was handled in part by the state and in part by a contracted

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[5] As noted in report no. 2017-09 that system is largely functioning as intended. For reporting purposes, this system will be known as the "existing ONE system" to help distinguish it from the Integrated Eligibility Project and the "integrated ONE system."
[6] Staffing levels are as of June 2019. Staffing levels change over time in relation to the project's workload need.
[7] The final cost for continued maintenance and operation of integrated ONE is subject to negotiation, but is likely to be similar to the existing ONE system, which incurred about $73 million in expenses over approximately 4 years.

System Integrator. The System Integrator for both the existing ONE and integrated ONE systems is Deloitte Consulting LLP (Deloitte).

Many external stakeholders are involved or impacted by the Integrated Eligibility Project. This includes citizens, local governments, the federal government, nonprofit organizations, advocacy groups, the Legislature, and other entities. Approximately 1 million recipients will be impacted by the implementation of the integrated ONE system.

The implementation of the integrated ONE system will fundamentally change day-to-day operations for approximately 4,600 workers in over 100 DHS field offices across the state.[8] The project also involves integrating data from multiple existing legacy computer systems. Large, complex projects, such as the Integrated Eligibility Project, always have inherent risks given the size and scope of the work involved. As the Legislative Fiscal Office has noted, agency management has limited control over several of these risks, including the number of staff needed to complete the project, the project's complexity, changing scopes, and the requirement that the project serve the needs of two major state agencies, DHS and OHA, through a shared computer system.

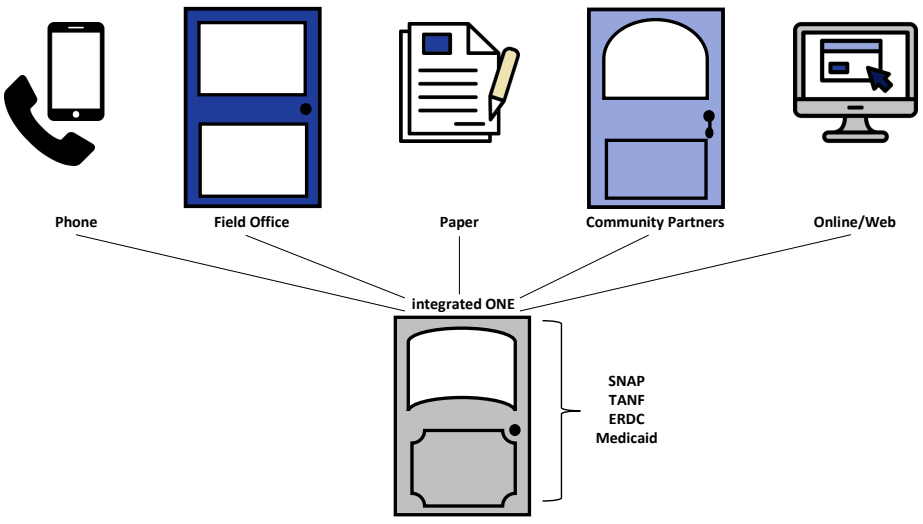
### *The Integrated Eligibility approach will provide a better experience for clients and opportunities for improved efficiency*

If successfully implemented, the integrated ONE system will allow most applicants to fill out a single application for multiple public assistance programs instead of requiring separate applications and visits to multiple offices.[9] Successful implementation of the integrated ONE system should help reduce:

- The amount of time Oregonians spend applying for assistance;
- The wait time between completing an application and receiving benefits; and
- The number of manual processes state staff perform.

DHS and OHA have also adopted a "no wrong door" approach where applicants can apply in person, over the phone, by fax, and through a web portal.

**Figure 3: The no wrong door approach of the integrated ONE system**




[8] A 2017 agreement delegated authority to DHS to perform eligibility determinations and other frontline work on behalf of OHA.
[9] A number of specialized DHS and OHA programs may still require separate applications or multiple contacts with different staff. Examples include: Pre-TANF, Post-TANF, Breast and Cervical Cancer, Older American Act, Oregon Project Independence, and 24-HR Mental Health Residential. Programs offered by other agencies, such as housing or energy assistance, will still require separate applications.

In addition to a potentially better client and caseworker experience, the integrated ONE system should help reduce administrative errors, fraud, waste, and abuse in assistance programs by automating eligibility determinations and creating a more accurate master client index. If the system can reduce errors, fraud, waste, and abuse, it could potentially yield millions of dollars or more in annual savings.

A **master client index** is a centralized database of all client records. Rather than housing client databases in multiple computer systems, a master client index consolidates this information and reduces the risk of duplication and errors in client information.

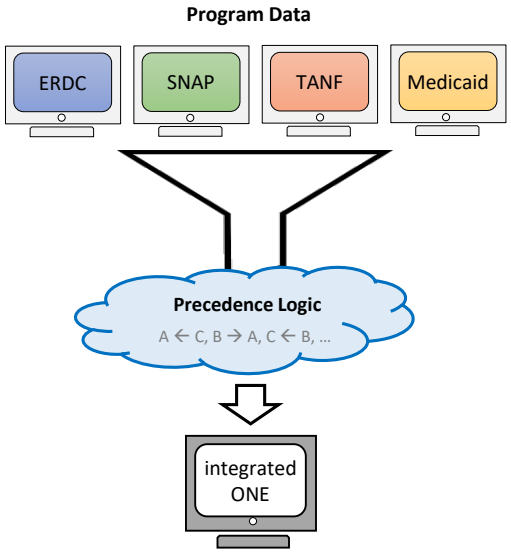
An **eligibility determination** is the formal approval or denial of benefits that occurs after the application materials are reviewed. It is a crucial milestone in the process of applying for public assistance.

## Data conversion is a crucial effort to implementing the integrated ONE system

Data from multiple legacy systems and the existing ONE system will be used to populate data into the new integrated ONE system. By using existing data, the project team can reduce the need to perform extensive and time-consuming manual data entry into the new system.

The Integrated Eligibility Project team developed a process to convert the data from existing legacy systems into the new integrated ONE system, which included developing plans to specify how the data is being converted. The planning documents identify the data that is most accurate and valid for conversion. The planning documents also describe how data from legacy systems map to data in the integrated ONE system. See Figure 4 for a simplified example of the program data being converted and its conversion process.

**Figure 4: Simplified model of data conversion process for the integrated ONE system**




**Data maps** show how data in one system relates to data in another system. They are a key document used in data conversions.

**Precedence logic** is a defined ranking of data elements building off data maps. Rankings are based on the quality of the information. The precedence logic is used during conversion to select which data elements should be converted from each system.

Defining the precedence logic and which data elements are to be converted was important because DHS and OHA may have multiple datasets containing different information. For example, the agencies' have more than one mailing address for many clients and will need to determine which system housed the most accurate and up-to-date information. The project team also needed to develop mapping documents to show how data elements in the legacy systems would relate to data elements in the new integrated ONE system. For example, in the legacy system, something might be formatted numerically, as 1, 2, or 3, but in the integrated ONE system that same data might be formatted alphabetically, as a yes or a no. Lastly, a testing plan was developed to help ensure that the conversion followed the specifications provided by DHS and OHA.

To a large extent, the plan is to rely upon information within the existing ONE system, as that data had a robust collection process in recent years. DHS and OHA program managers and the Integrated Eligibility Project team believe the information within the existing ONE system is sufficiently complete and accurate. When client information does not exist within the existing ONE system, data will be pulled from older legacy systems. The precedence logic contains a ranking for each data element showing which legacy system contains the best information to be converted.

# Audit Results

This real-time audit was conducted in alignment with the Oregon Audits Division's strategic focus of being timely and responsive. Real-time auditing focuses on evaluating front-end strategic planning, service delivery processes, controls, and performance measurement frameworks before or at the onset of significant projects or public policy implementations by state agencies.

We found the Integrated Eligibility Project team generally followed industry standards to help ensure that data is converted completely and accurately. For example, the project team developed plans to map out how information was to flow from existing systems into the integrated ONE solution and has developed testing plans to identify errors that could result from the data conversion process. Although not all of the planned activities are complete at the time of this report, these efforts should help minimize the risk of significant issues arising during system implementation.[10]

The Integrated Eligibility Project team is generally adhering to industry practices for data conversion planning. However, at the time of the audit, we found that staff resource planning was insufficient, especially relating to work requirements that will likely need to be completed after the conversion process. A lack of adequate staffing could negatively impact client experience through long waits. Furthermore, though it did so for other elements of the project, the Integrated Eligibility Project team did not consistently ensure that access to sensitive data going through the conversion process was appropriately restricted and monitored in accordance with industry security standards.

## The project team developed appropriate implementation plans

Industry standards call for detailed plans when new information technology systems are being developed. Plans should include considerations for system and data conversion, acceptance testing criteria, communication, promotion from development to production, early production support, a fallback plan, training, and a post-implementation review. In addition, organizations should involve key technical and business stakeholders and clearly define roles and responsibilities.

The Integrated Eligibility Project team and the contracted System Integrator worked together to develop various plans for the integrated ONE system project. One of the key phases of the Integrated Eligibility Project is data conversion, a process where data from an older legacy system is extracted, transformed, and loaded into the new system. This complex process requires adequate planning to help reduce data errors and implementation problems.

Multiple planning documents were created that cover various elements of the data conversion process. These plans were reviewed by an independent, third-party quality assurance contractor and approved by the project team and the Office of the State Chief Information Officer.

We reviewed over 30 documents related to system implementation, focusing on elements related to data conversion. A selection of reviewed documents is highlighted in Figure 5. We found the Integrated Eligibility team generally followed the broad principles outlined by industry standards. By performing sufficient due diligence in their planning efforts, the Integrated Eligibility Project team has helped to reduce the risk of issues with data conversion. A successful conversion will help minimize staffing needed to perform manual data entry or clean-up activities, freeing up resources to focus on improving the client experience.

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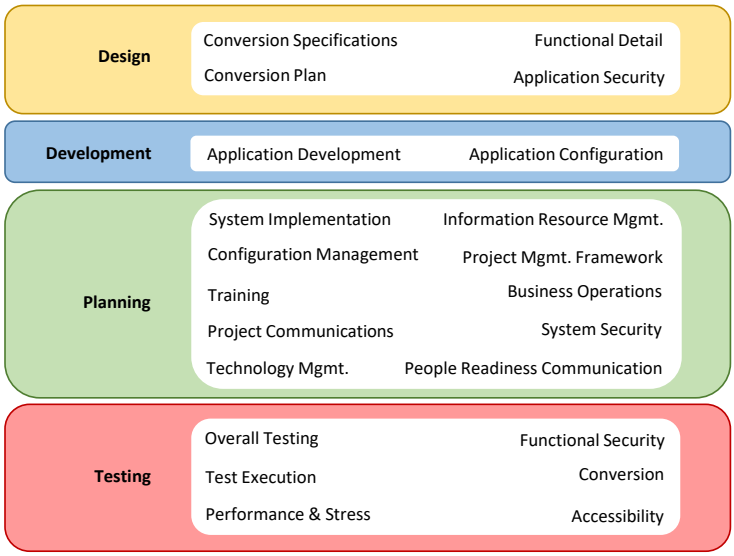
[10] It is normal for work to be in progress during a real-time audit.

The Integrated Eligibility Project team developed testing plans, which contained needed procedures and guidelines for defect management and data validation. These plans are important because defect management includes identifying, logging, and performing triage to manage and close defects that have been discovered during testing. Performing data validation provides metrics for success rates, but also seeks to validate that the data is as expected — converted whole with no data loss. The Integrated Eligibility Project team also developed office simulations and automated testing that help to simulate real-life scenarios and efficiently ensure that data has been appropriately converted from existing legacy systems.

**Figure 5: Reviewed plans included design, development, planning, and testing**




Note: The above list does not contain all documents that were reviewed.

Although the plans generally met industry standards, we did note some elements could be improved. A few testing plans, including the Functional Security test plan dated October 16, 2018, did not always establish clear criteria for measuring the successful completion of each test plan. The Functional Security test plan stated "The entrance and exit criteria only applies to Final SIT [System Integration Testing] as mutually agreed upon by State and Deloitte. There is no exit criteria to functional security test activities defined in this plan." In addition, plans generally did not establish remediation procedures when success criteria is not met. The Integrated Eligibility Project team is continuing to finalize various plans and documents such as the Cutover Plan, Accessibility Test Plan, System Security Plan, Environment De-Provisioning Plan, and Disaster Recovery Plan. These are important planning documents that the Integrated Eligibility Project team has scheduled for completion later in the project, so they were not available for review during the audit.

Throughout the project, the Integrated Eligibility team also generally followed appropriate standards around change management. For example, the team has processes in place to document changes to policy, procedures, or the computer systems when needed. These changes may be needed due to updates in laws or to remediate errors found during testing or to accommodate design changes.

We noted during our review that the Integrated Eligibility Project team did not always update project documentation and plans or ensure key stakeholders had the most up-to-date information. Although substantial documentation issues were not identified during our review, outdated documentation increases the risk of missing critical steps during the final implementation of the project. The Integrated Eligibility team has scheduled a review of critical documents for October 2019.

### *Processes are in place to help ensure appropriate data conversion*

In order to help identify errors and reduce production issues, industry standards call for performing data conversion practice runs, also known as mock runs. The Integrated Eligibility Project team's plans include seven mock runs of the data conversion process. Mock runs simulate converting the data from legacy systems being replaced by the integrated ONE system. After completion of each mock run conversion, the Integrated Eligibility Project team validates and verifies the accuracy of the data through multiple reports. The reports include two key performance indicators: conversion success rate and benefit match success rate.

A **conversion success** occurs when the integrated ONE system receives data through the data conversion process. For example, if the existing computer system lists a client's name as John Smith and any alphanumeric data is converted into the name field in the integrated ONE system, a target conversion success has occurred. This metric only measures if data passes through the conversion process, not the quality of the converted data. Therefore, even if inaccurate data is converted into integrated ONE, it can still achieve a successful metric for target conversion.[11]

A **benefit match** occurs when the integrated ONE system calculates the same level of benefits as identified in existing computer systems. For example, if a family of four is currently receiving $250 per month in food assistance and the integrated ONE system calculates the benefit rate to be $250 per month, a successful benefit match has occurred. If the value is higher or lower than the existing benefits, a benefit mismatch occurs.

The benefit match success rate is important because it helps measure the accuracy of the data being converted. However, there are valid reasons for why a benefit mismatch occurs. In fact, due to the nature of data conversion, benefit mismatch is expected because income data was collected at different times in different systems. A benefit mismatch is not always a negative outcome. DHS and OHA have made policy decisions to delay requesting additional information from existing clients until the integrated ONE system has been fully implemented. Rather than updating information in legacy systems to go through the conversion process, the agency decided it was best to wait until the integrated ONE solution is working to perform the data entry. In these situations, there are known clients in a mismatch state, but as long as those exceptions are tracked and remediated later there is minimal risk associated with the mismatch. The Integrated Eligibility Project director is currently tracking policy decisions, such as those described above, and reported they will be monitored during system implementation. Individuals with benefit mismatch will continue to receive the benefits they currently receive from legacy systems until agency staff can review their case in the integrated ONE system.

The Integrated Eligibility Project team intends to achieve acceptable data quality by performing seven mock conversion runs. After each run, performance metrics are compiled and data issues are identified, triaged, and resolved. For example, during one mock run, employees reported to us that an issue with the precedence logic was identified and corrected for future runs. Some data issues are flagged for immediate remediation by a team of four business analysts, while other items need additional research, and various data issues are being held off until the integrated ONE system is implemented.

Following testing during the mock runs, the project team plans to hold a phased rollout that includes piloting the new integrated ONE system in two Oregon counties: Jackson and Josephine. The pilot is scheduled to run from April 6, 2020, to July 31, 2020. After the pilot there will be two additional waves, as shown in Figure 6. Wave 1 will encompass the Willamette Valley, Southern, and Eastern Oregon as well as most of the coast and is scheduled for August 3, 2020, to

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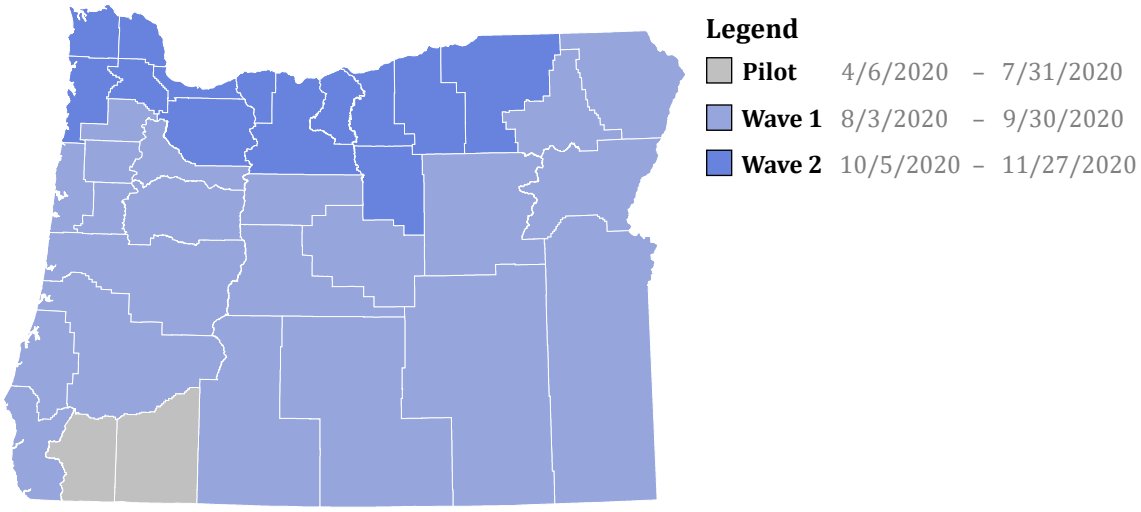
[11] Although the conversion success metric does not review the data content specifically, the IE Project Team has other mitigating controls to validate the quality of the converted data, such as examining benefit match rates and data validation reports. The data conversion test plan also includes the use of computer scripts to validate data mapping and identify data quality issues.

September 30, 2020. Wave 2 will cover the Portland metropolitan region, Columbia Gorge, and Northern coast and is scheduled to run from October 5, 2020, to November 27, 2020. Each wave has its own data conversion and validation procedures. This phased approach deployed by the Integrated Eligibility Project team is in alignment with industry standards.

**Figure 6: The integrated ONE system will have three phases before the system is fully implemented**




## Despite sufficient planning efforts, risks remain that could negatively impact the Integrated Eligibility Project

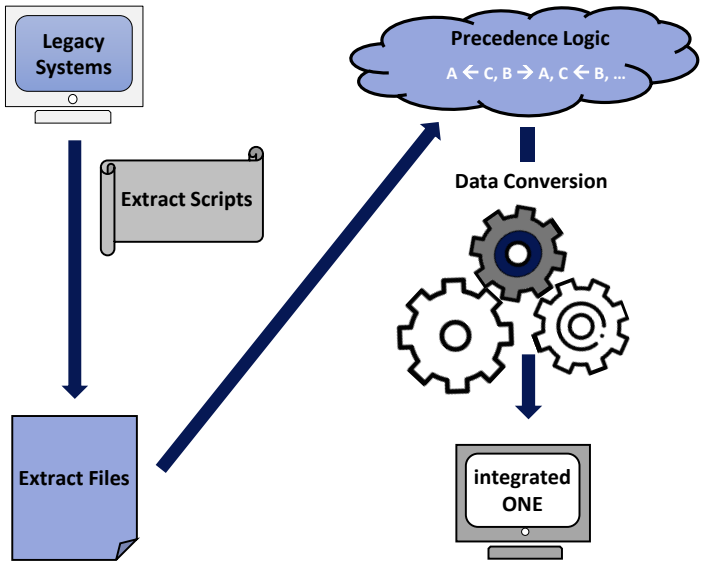
Strong planning helps to minimize, but not eliminate risks. During the audit, we identified a number of risks that could negatively impact the Integrated Eligibility Project. First, testing of data being used for data conversion is still on-going so it is not yet known if all datasets are complete and accurate. Second, staff plans have not yet been developed to handle the amount of work that will remain after data conversion. Third, the Integrated Eligibility Project team did not consistently ensure that access to sensitive data going through the conversion process was appropriately restricted and monitored. Lastly, some missing contract language limits the ability of the state to hold contractors accountable should a data breach occur.

### *Limited testing of data extracts creates a risk that data conversion could be relying upon incomplete or erroneous data*

Data conversion testing should include assurance that all data intended to be converted, was accurately and completely converted, based on system design documents, into the new system. The integrated ONE system will use data converted from multiple legacy systems.[12] An extraction process was used to obtain legacy data and place it in a file format that could go through the data conversion process, as shown in Figure 7. During the extraction process, some limited testing was performed, but full testing and documentation of the results was never completed. Although competent staff extracted this data and some of the extracts have been in production for years, without comprehensive testing and documented results, the Integrated Eligibility Project team lacks assurance that the extract files are complete and free of errors.

[12] The following legacy systems are involved in data conversion: Client Maintenance, Food Stamp Management Information system, Oregon Automated Computer Capture and Storage system, Client Index system, Service Eligibility system, Automated Jobs system, and the existing ONE system. Appendix B contains a legacy system to integrated ONE system context diagram with additional information.

**Figure 7: Simplified model of data extraction and data conversion process**




The original data conversion testing plan focused on screen-by-screen testing between legacy systems and the integrated ONE system. Screen-by-screen testing helped provide assurance that converted information in integrated ONE matched the records maintained in existing legacy systems. The Integrated ONE Project team recently identified a more efficient testing approach using scripts to test the extract files against converted files maintained in the integrated ONE system. Scripts automate the testing process and allow the Integrated Eligibility Project team to analyze more data than the manual screen-by-screen approach. However, data conversion documentation also notes an important caveat: "Assumption: Legacy Data is Extracted Correctly." If extraction errors did occur, the current testing plan may not identify those issues. Further, if issues with the extracts do exist, it is possible that system implementation could be impacted after the final data conversion. After we identified this risk, the Integrated Eligibility Project director reported they planned for additional side-by-side data conversion testing in response.

### *Unknown staffing needs post-data conversion creates the potential for negative client experience through long wait times*

When organizations perform data conversion, the goal is to successfully convert as much data as possible from existing legacy systems. Any data that cannot be successfully converted requires staffing resources dedicated to manual data entry or clean-up work. To help ensure a smooth implementation, sufficient workforce planning should occur to ensure that existing business processes can be completed along with any work that remains to input or clean-up data that could not be successfully converted. At the time of the audit, the project team had not yet determined the level of effort needed to resolve cases that are not converted successfully. If this work is not done promptly, the client experience could be negatively impacted through long wait times.

The project team reports completing various activities to help remediate risks with data conversion. Examples include centralized tracking of data conversion issues, developing data cleanup plans, and engaging their independent quality assurance vendor to perform a review of data conversion testing.

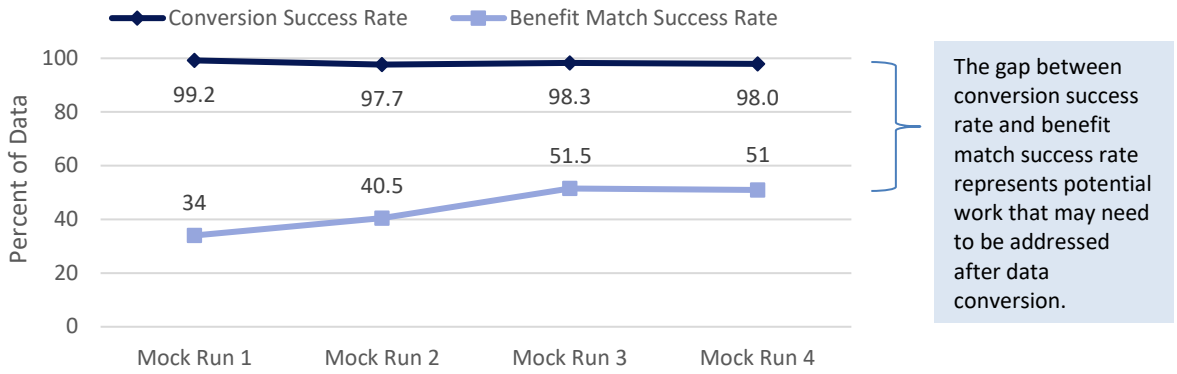
As noted, the project team has defined two key metrics to measure the success of data conversion. Even if both metrics show successful conversion and benefit match, missing information or data errors could exist in the converted data. This is in part because the

integrated ONE system does not consider every data element being converted to calculate benefits. In addition, a data element counts as successfully converted if data is present, not necessarily because data is correct. For example, it is hypothetically possible that mailing addresses could have significant errors during the data conversion process, but would not have impacted either conversion metric. Mailing notices to clients is an important business process and those addresses would require clean-up work despite the case being identified as a successful conversion with benefit match. As such, having both metrics showing positive results does not eliminate the potential for manual clean-up workload after implementation of the integrated ONE system.

Inaccurately converted data requires a manual intervention from a caseworker. Some manual interventions are small clean-up activities where one field needs to be corrected in the system. For example, we observed staff cleaning-up social security disability income records in the existing ONE system. Those clean-up activities typically took a few minutes each to complete.

Other clean-up activities could include a more extensive manual data entry effort. For a new application, this could entail filling out hundreds of data fields across dozens of different screens within the integrated ONE system. Manual data entry is time consuming and could potentially take over an hour per case. Time studies are scheduled to estimate staffing resource needs, but were not completed for review during the audit.

**Figure 8: Mock run conversion metrics over time show potential workload gap remains with legacy data**




Source: Created by Oregon Audits Division based on Integrated Eligibility Project documentation, for detailed counts see footnotes 13 and 14.

We estimated that a range of between 11 and 191 Full Time Equivalent positions (FTE) would be needed to perform some type of clean-up work.

As shown in Figure 8, the Integrated Eligibility Project team has been able to achieve a successful conversion metric for approximately 98% of existing data, as of Mock Run 4 of the data conversion process.[13] The project team also has a benefit match on approximately 51% of all converted cases from legacy systems.[14] As of June 2019, around 180,000 cases were in a mismatch state. The extent of the clean-up workload will depend upon a number of factors, including whether minor data clean-up or more labor intensive manual data entry is needed. We estimated that a range of between 11 and 191 Full Time Equivalent positions (FTE) would be needed to perform some type of clean-up work. This estimate is based on a standard staff planning model. Since this model relies upon various assumptions, we provided a copy to the

[13] In Mock Run 4, a total of 504,297 cases were successfully converted out of 514,701 considered for conversion from legacy systems, plus 1,088,225 cases successfully converted from the existing ONE system.
[14] In Mock Run 4, a total of 166,105 cases were in a benefit match status out of 323,953 cases considered for benefit match from legacy systems, plus 399,974 cases with a benefit match out of 422,511 considered for benefit match from the existing ONE system.

Integrated Eligibility Project team to update with more accurate figures as they become available.

Dating back at least as far as December 2017, Medicaid eligibility processing suffered from various backlogs that were not completely cleared until May 2019. The upcoming Open Enrollment period and the implementation of the integrated ONE system could result in further backlogs that should be managed, in part, through staff resource planning. If appropriate staff resources are not deployed it could have a negative impact on the improved client experience that the integrated ONE system promises to deliver.

Although we noted some planned efforts to gain a better understanding of workloads, sufficient planning for staffing needs during system implementation has not yet been performed. The Integrated Eligibility Project team and agency management need to gain a better understanding of existing workloads, time needed to retrain their workforce, and the time needed to perform new processes that may result from other agency initiatives. Insufficient staff planning could result in implementation challenges such as an application processing backlog or excessive wait times for clients.

Some cases will likely not be able to be successfully converted from existing legacy systems. As a result, a subset of cases will potentially require time-intensive manual data entry. For example, when the existing ONE system was implemented, workers had to manually enter all information. At the time, up to about 500 staff processed applications into the existing ONE system and were able to complete Medicaid renewals for an average of about 49,200 individuals per month. Since the integrated ONE system includes multiple programs instead of only the Medicaid program, each manual data entry case will likely take longer for staff to process. As of June 2019, the project team had not estimated staffing needs to perform the manual data entry.

The audit team observed one simulated case being processed in the integrated ONE system. This case included the full intake process for a single household and took almost three hours to complete most, but not all, of the required tasks.[15] This single case may not be representative of all cases needing manual data entry, but it demonstrates the potential for a significant time commitment from agency staff. Once time studies are complete, the project team should have a better understanding of how long various tasks will take within the integrated ONE system.

When calculating actual staffing needs, agency management should factor in the processing capability of staff within the integrated ONE system. As staff will likely gain more proficiency in the system over time, the model should consider both short-term and long-term processing capacities.

### *Shared accounts weaken security and accountability if misuse of sensitive data occurred*

Organizations rely on individual user accounts in order to track actions being performed on their computer systems. Individual user accounts help protect the organization by controlling access to ensure only authorized users perform actions in a given computer system. Individual accounts also provide the organization with a mechanism to hold users accountable for any unauthorized actions.

Shared accounts are occasionally used within computer systems to help perform business processes more efficiently. However, using shared accounts also creates risk. Users of shared accounts cannot be held accountable for their actions because multiple people have access to the same account. Shared accounts also pose the risk of losing control over the username and password of the account given the information is often shared widely among users or not protected to the same degree as an individual's username and password. As a result,

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[15] After accounting for breaks and other stoppages, this one simulated case took approximately 164 minutes to complete five of the six key tasks. The remaining task could not be completed due to a technical issue.

unauthorized users can gain access to credentials from individuals who were authorized, but did not protect the credentials appropriately.

Passwords for shared accounts are sometimes set to never expire, unlike traditional individual accounts whose passwords typically expire every few months. This can create further risk, as an authorized user could be terminated from an organization, but still potentially maintain access through shared accounts for years after their termination.

During data conversions, it is an industry standard to secure and monitor sensitive data, such as data containing Personally Identifiable Information (PII) and Protected Health Information (PHI). Various laws protect these types of information, including the Privacy Act of 1974 and the Health Insurance Portability and Accountability Act (HIPAA). We found that shared accounts were being used to transfer files containing PII and PHI from the state to Deloitte, the contractor hired to implement the integrated ONE system.

**Personally Identifiable Information (PII)** is data that contains attributes such as name, date of birth, or Social Security Number, which could be used to identify an individual.

**Protected Health Information (PHI)** is data that relates to an individual's past, present, or future medical condition, or health care services received, or payments associated with the delivery of health care.

Furthermore, these shared accounts were set to never expire and the system used to transfer the files did not have a standard report to monitor who downloaded data from the system. The username and password to these accounts were not adequately protected, as they were clearly visible during an online meeting with the audit team. Although we saw no indication that unauthorized individuals used shared accounts, the use of shared accounts with non-expiring passwords and limited monitoring poses a substantial security risk for this highly sensitive data. As a result, access to the personal records of approximately 700,000 Oregonians was not appropriately restricted and monitored in accordance with industry security standards. If a data breach were to occur using the shared account, it would be difficult or impossible to hold any individual or organization responsible, as it could be unclear who caused the data breach.

Upon learning of this security risk, the Integrated Eligibility Project director reported that the project will no longer use shared accounts to transfer sensitive data.

### *Missing contractual terms limits the ability to hold contractor accountable*

HIPAA requires that contractors, referred to as Business Associates, follow certain requirements to help ensure that PHI is appropriately handled by contractors. Examples of required terms in Business Associate Agreements include, but are not limited to, following HIPAA requirements for the use or disclosure of PHI and provisions to safeguard PHI and limit access to sensitive information.

We reviewed the Business Associate Agreement between the state and Deloitte and compared it to a HIPAA contract compliance template we obtained from the U.S. Department of Health and Human Services. Although Deloitte's Business Associate Agreement included most required terms, we discovered that two of the fourteen terms required in the template were not included in Deloitte's Business Associate Agreement. The first missing term was an immediate termination clause if Deloitte were to cause a significant data breach (the existing contract did contain a clause for 30-day termination). The second missing term was a promise from Deloitte to cure any harm that would result from a material data breach caused by their organization. Although the contract contained a general indemnification clause, it was unclear whether a data breach would fall under this provision given indemnification was limited to "bodily injury, including death, sexual harassment, or for damage to real property and damage to tangible

property." Without these terms, it is difficult to hold Deloitte accountable for any data breaches it may be responsible for creating.

The Integrated Eligibility Project director reported that the DHS and OHA Chief Information Officer, upon learning of this compliance risk, are working to update existing Business Associate Agreement templates for future contracts.

### *Undetected issues could still impact data conversion and system implementation*

Although the project team has performed reasonable due diligence, undetected risks could present themselves before the integrated ONE system is implemented. The data conversion effort is a considerable undertaking over many months and includes converting hundreds of thousands of records of data from aging legacy systems and merging the datasets together into a new system – integrated ONE.

One additional complicating factor relates to a process used in the phased implementation to select cases for conversion, known as other related case logic. This process intends to ensure that all data relating to individuals within a given household are converted at the same time so that some family members' data are not in an older legacy system while the rest of the family is being served by the integrated ONE system. Furthermore, risks that have already been identified could pose larger problems than originally anticipated and undetected issues could impact data conversion and system implementation. Therefore, even though sufficient planning occurred, it does not guarantee successful data conversion.

# Recommendations

To help ensure appropriate controls are in place during data conversion and implementation of the integrated ONE system, DHS and OHA should, prior to final system implementation:

1. Compare data extracts to legacy systems to ensure completeness and accuracy, and document the results.

2. Develop a staffing plan that reflects the potential volume of work that will need to be completed after data conversion along with existing eligibility processing workloads and staff availability.

3. Eliminate the use of shared accounts to transmit PII and PHI.

4. Improve monitoring of the transmission of PII and PHI.

5. Update existing Business Associate Agreements to include clauses required under HIPAA.

# Objective, Scope, and Methodology

This real-time audit was conducted in alignment with the Oregon Audits Division's strategic focus of being timely and responsive. Real-time auditing focuses on evaluating front-end strategic planning, service delivery processes, controls, and performance measurement frameworks before or at the onset of significant projects or public policy implementations by state agencies. Given that the Integrated Eligibility Project is still underway, our findings and conclusions were based, in part, on planned activities and draft documents. However, we believe reporting at this state of the project is timely and provides management with the opportunity to make corrections before potential problems become more serious.

## Objective

Our audit objective was to:

> Determine if the Integrated Eligibility Project team has appropriate controls in place to help ensure data from five existing systems is converted accurately and completely for use in the integrated ONE system.

## Scope

The audit focused on the Integrated Eligibility Project, integrated ONE system, and related agency efforts. Specific focus was given to Integrated Eligibility Project data conversion efforts, data conversion testing, data being converted, and operational activities related to data conversion efforts, including, but not limited to, the Eligibility Transformation Project, data clean-up, manual data entry, and eligibility processing.

The following internal control principles were relevant to our audit objective:[16]

- Risk Assessment
  - We considered the agency's activities to identify, analyze, and respond to risks related to the development of the integrated ONE system.
- Control Activities
  - We considered the agency's design activities of the integrated ONE system.
  - We considered the agency's implementation of control activities for the Integrated Eligibility Project.
- Information and Communication
  - We considered the agency's use of quality information for the integrated ONE system as it relates to data conversion.

Deficiencies with these internal controls were documented in the audit results section of this report.

## Methodology

We reviewed:

- Policies and procedures;
- Project meeting documentation;
- Legislative hearings and related documentation;
- Project documentation and deliverables;
- Risks identified by the team and contractor;

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[16] Auditors relied upon standards for internal controls obtained from the U.S. Government Accountability Office, report GAO-17-704G.

- Conversion planning documentation;
- External project quality assessments and reports;
- Integrated Eligibility Project controls;
- State and federal laws and regulations;
- Raw data being converted;
- Conversion reports;
- Precedence logic; and,
- Other states' audit reports around integrated eligibility system implementations.

We observed:

- Internal meetings, including the Joint Governance Board;
- Testing methods;
- Data clean-up efforts;
- Office simulation; and,
- The statewide Eligibility Processing Center.

We interviewed:

- Integrated Eligibility Project staff;
- Eligibility Transformation Project staff;
- Program staff and managers within the divisions of Self-Sufficiency, Office of Information Services, Health Systems Division, and Aging and People with Disabilities,
- Key external stakeholders such as the Oregon State Chief Information Officer, Enterprise Security Office, Office of the State Chief Information Officer staff and independent Quality Assurance teams, System Integrator (Deloitte) staff; and,
- Staff from another state implementing a similar integrated eligibility system.

To identify generally accepted control objectives and practices for information systems, we used ISACA's "COBIT" publications. We also reviewed relevant state and federal laws and regulations.

Some icon graphics used in this report were obtained from Flaticon.com from authors Zurb (phone), Vectors Market (paper), Prettycons (computer), and Freepik (cogs and cell phone).

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusion based on our audit objectives.

We sincerely appreciate the courtesies and cooperation extended by officials and employees of DHS, OHA, and the Integrated Eligibility Project team during the course of this audit.

Oregon
Kate Brown, Governor

**Department of Human Services**
***ONE IE/ME Project***
550 Capitol St NE
Salem, OR 97301
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TTY: 503-945-5896

DHS
Oregon Department of Human Services

October 15, 2019

Kip Memmott, Director
Secretary of State, Audits Division
255 Capitol St. NE, Suite 500
Salem, OR 97310

Dear Mr. Memmott,

This letter provides a written response to the Audits Division's final draft audit report titled *Integrated Eligibility Project Has Generally Followed Industry Standards to Help Ensure Data Is Converted Completely and Accurately.*

The objective of this audit was to determine if the IE Project team has appropriate controls in place to help ensure data from five existing systems is converted accurately and completely for use in the integrated ONE system. Leading up to this audit, a risk assessment was performed to provide information about the current implementation status of this Project and to provide suggestions to help ensure successful deployment of this critical system. The Audit Team reviewed Project documentation, observed the execution of business processes and meetings, and held interviews with DHS and OHA staff to assess the implementation status such that the Agencies could address any risks or issues prior to the completion of the Project.

Below is our response to each recommendation in the audit.

**RECOMMENDATION 1**

Compare data extracts to legacy systems to ensure completeness and accuracy, and document the results.

| Agree or Disagree with Recommendation | Target date to complete implementation activities | Name and phone number of specific point of contact for implementation |
|---|---|---|
| Agree | December 13, 2019 | Tony Black<br>503-934-5087 |

**Narrative for Recommendation 1**

Data from multiple Legacy systems is needed to populate the new database structure in IE. Data is extracted from each of these systems and is subsequently transformed using conversion logic that is based on precedence rules that capture the priority of Legacy systems to determine which

source systems will provide data and in what order. The output of this transformation is then loaded into the IE system.

Accurate and timely issuance of benefits to Oregonians is largely dependent on the accuracy of the data housed in the new system. Given the importance of the data conversion processes, the Project Team is expending a significant amount of resource to ensure the data is as complete and accurate as possible, given it is being compiled from multiple source systems of record. Additional testing conducted by the Project Team and System Integrator (SI) to ensure the extraction, transformation, and load processes are sound and reliable include:

- Increased the number of data conversion mock runs from four to seven.
- Contracted for a Data Conversion Manager to oversee the integration of multiple legacy systems data into the integrated ONE system.
- Developed a Data Conversion & Data Cleanup plan to document the State's approach to managing the data conversion and cleanup processes.
- Centralized the tracking of all data validation and benefit mismatch remediation into a single document.
- Conducted collaborative sessions with the system integrator (SI) and State business analysts to review data validation and benefit mismatch issues.
- Analyzed profiles of data validation issues, which resulted in recommendations to leadership on conversion code changes, clean up options, or cases that should be left in mismatch.
- Engaged Public Knowledge to provide an in-depth review of the SI's data conversion testing processes to ensure gaps were identified and addressed.
- Created and executed 150 additional data conversion test cases to provide additional test case coverage.
- Contracted with two testing resources to conduct side-by-side testing of the data mapping and precedence logic.
- Performed additional side-by-side testing of Legacy systems screens against corresponding IE screens containing converted data to validate data fields match.

While data extraction from Legacy systems is not a new or immature process, based on the auditor's recommendation that additional testing be conducted between the Legacy systems and the data extract to ensure the extraction process is sound, the data conversion team and Legacy teams have been instructed to validate the extraction processes by comparing the source systems data to the extracted data.

**RECOMMENDATION 2**

Develop a staffing plan that reflects the potential volume of work that will need to be completed after data conversion along with existing eligibility processing workloads, and staff availability.

| Agree or Disagree with Recommendation | Target date to complete implementation activities | Name and phone number of specific point of contact for implementation |
|---|---|---|
| Agree | December 31, 2019 | Kim Fredlund<br>503-932-7394 |

**Narrative for Recommendation 2**

Converted client cases that result in a "mismatch" between the source systems and target system will require worker intervention to resolve the mismatched state. Additionally, workers will now be able to assist applicants in applying for multiple programs in a single visit with one source of data. As such, time studies related to the application processes are needed to estimate the time to complete an application in a variety of scenarios in order to project staffing needs upon system go-live.

At the time of this audit, data analysis and cleanup were still underway such that estimating the number of cases that were either unable to be converted, or that would be converted but would remain in a mismatch state, was unknown. As the Project continues toward the April 2020 Pilot phase, data anomalies that will exist at Pilot and in the subsequent wave conversions are becoming more clear.

The Project Team is commencing preliminary time studies to ascertain the estimated time required to complete applications in a variety of scenarios, which include processing a new application for multiple program benefits, editing a case to correct benefit mismatches, and locating/correcting a case that failed the data conversion process. Results from these studies will be compared to the baseline staffing levels that exists in field offices today to draw a conclusion as to the number of eligibility workers needed to serve the customers expeditiously with the IE system.

| **RECOMMENDATION 3**<br><br>Eliminate the use of shared accounts to transmit PII and PHI. | | |
|---|---|---|
| **Agree or Disagree with Recommendation** | **Target date to complete implementation activities** | **Name and phone number of specific point of contact for implementation** |
| Agree | Complete | Tony Black<br>503-934-5087 |

**Narrative for Recommendation 3**

The Audit Team observed server administrators using a shared account to manage file transfer of sensitive data. This practice was stopped upon notification to Project leadership and did not expose sensitive data outside of the system boundaries. Additionally, the server in question is being replaced and decommissioned.

| **RECOMMENDATION 4**<br><br>Improve monitoring of the transmission of PII and PHI. | | |
|---|---|---|
| **Agree or Disagree with Recommendation** | **Target date to complete implementation activities** | **Name and phone number of specific point of contact for implementation** |
| Agree | Actions Complete / Monitoring Ongoing | Tony Black<br>503-934-5087 |

**Narrative for Recommendation 4**

While the Audit Team did not assess specific security risks for the IE system, there was recognition by the Project Team that controls were needed to address Project-identified risks related to the protection of PII and PHI during UAT. A team called the Security Controls Workgroup was formed to identify and put into place controls necessary to protect this data. This workgroup was made up of security professionals from the Project Team, SI, Enterprise Security Office (ESO), Enterprise Technology Services (ETS), Office of Information Services (OIS), Public Knowledge, and oversight agency representatives. These controls included:

- Ensuring there was no mechanism to allow off-shore resources to access the UAT environment.
- Ensuring processes were in place to validate no PII or PHI was copied into Team Foundation Server or other environments in which off-shore personnel had access.
- Requiring all testers to use test ID's during testing.
- In the mainframe environment, specifically placing "deniers" into access scripts to ensure testers could not access production environments and, conversely, production users could not access the test environment.
- User profiles for testers were created to change the background color of screens such that it was easy for users to differentiate between production and test environments.
- Ensuring processes were in place to quickly provide testing credentials (authentication and access) to new testers.

In addition to the above controls, security-related plans are followed and are regularly updated and reviewed by the ESO and federal partners. These plans include:

- System Security Plan (SSP)
- Information Security Risk Assessment (ISRA)
- Privacy Impact Assessment (PIA)
- Plan of Action and Milestones (POAM)

| **RECOMMENDATION 5**<br><br>Update existing Business Associate Agreements to include clauses required under HIPAA. | | |
|---|---|---|
| **Agree or Disagree with Recommendation** | **Target date to complete implementation activities** | **Name and phone number of specific point of contact for implementation** |
| Agree | November 21, 2019 | Kristen Duus<br>503-947-2594 |

**Narrative for Recommendation 5**
As corrective action, the HIPAA Business Associate Agreement (BAA) template used by the Office of Information Services (OIS) is being updated to include the missing information identified by the Audit Team.

In closing, I would like to thank the Audit Team for their risk assessment and subsequent audit. We will continue to manage Project risk and to improve our processes to ensure Oregonians benefit from these efforts and to ensure a successful system deployment.

Please contact Tony Black at 503-934-5087 with any questions.

Sincerely,
Tony Black
Integrated Eligibility Project Director

cc: Fariborz Pakseresht, DHS Director
Patrick Allen, OHA Director
Terrence Woods, State CIO

# Appendix A: March 2019 Management Letter Regarding Integrated Eligibility Project Risk Assessment

The following letter was sent to management of the Integrated Eligibility Project in March 2019. The intent of the letter was to highlight potential risks to the Integrated Eligibility Project and provide suggestions to mitigate those risks. Interim reporting to management is a crucial component of the Oregon Audits Division's real-time auditing strategy. Interim reporting also allows management to address risks on a timelier basis. The letter was also used to develop potential audit objectives related to the Integrated Eligibility Project.

Large, complex projects, like Integrated Eligibility, are bound to face numerous risks. As such, the risks we identified should not be construed as abnormal given the size, scope, and complexity of the project.

The letter went through our standard quality assurance process and was based on several months of audit work performed under Generally Accepted Government Auditing Standards. However, the letter has not been updated to reflect additional information obtained by the audit team since it was issued. As such, information in this audit report should be relied upon rather than the March 2019 management letter in cases when the subject matter is the same. In addition, the letter reflected conditions auditors observed as of March 2019. Agency management reported they have taken action to resolve some of the risks we reported in the letter; therefore, the risks described in the letter may no longer be applicable.

**Office of the Secretary of State**

Leslie Cummings, Ph.D.
Acting Secretary of State

**Audits Division**

Kip R. Memmott, MA, CGAP, CRMA
Director

255 Capitol St. NE, Suite 500
Salem, OR 97310

(503) 986-2255

March 15, 2019

Fariborz Pakseresht, Director & Executive Sponsor
Oregon Department of Human Services
500 Summer St NE
Salem, OR 97301-2555

Patrick Allen, Director
Oregon Health Authority
500 Summer St NE
Salem, OR 97301

Dear Directors Pakseresht and Allen:

The Oregon Secretary of State Audits Division has completed our risk assessment of the Integrated Eligibility and Medicaid Eligibility System (IE) project. This review is intended to provide information about the current implementation status of this project and suggestions to help ensure successful deployment of this critical system. As noted during our meeting on January 29, our office is proceeding to the planning phase for an audit of the IE project. We anticipate issuing that audit report later in 2019. In alignment with the intent of our real-time audit approach, we are providing this interim letter to summarize key information relating to the implementation of the IE system so that, where appropriate, your agencies can take action to address risks and issues prior to completion of the project.

## Background

Oregon is developing a new integrated eligibility system intended to improve how Oregonians obtain assistance through the various health and human services programs offered by the Department of Human Services (DHS) and the Oregon Health Authority (OHA). Once implemented, this system will allow most applicants to fill out only one application instead of separate applications requiring visits to multiple offices.[1] The agencies are adopting a "no wrong door" philosophy with avenues to apply for assistance in person, through the web, or by mail, phone, or fax.

**Figure 1: The client experience should be streamlined after IE implementation**


Required contact with multiple offices and filling out multiple, duplicative forms. Clients must go through "right door" to access benefits.

IE's "no wrong door" allows customers to navigate the system with a single application and point of contact.

[1] A number of specialized DHS|OHA programs may still require separate applications or multiple contacts with different staff. Examples include: Pre-TANF, Post-TANF, Breast and Cervical Cancer, Older American Act, Oregon Project Independence, and 24-hr Mental Health Residential. Programs offered by other agencies, such as housing or energy assistance, will still require separate applications.

The integrated eligibility system should help reduce administrative errors as well as fraud, waste, and abuse in assistance programs by creating a master client index and computerized eligibility determinations. If the system can reduce fraud, waste, and abuse, it could yield millions of dollars or more in annual savings.

This system will fundamentally change day-to-day operations in field offices and involves integrating a number of existing information technology (IT) systems. Large, complex projects, such as the IE project, always have inherent risks given the size and scope of the work involved. The Legislative Fiscal Office noted several risks agency management has limited control over, including the number of staff needed to complete the project, the project's complexity, changing scopes, and the requirement that the project serve the needs of two major state agencies through a shared IT system.

DHS began the IE project in April 2015, using funds available from an extension of enhanced federal Medicaid funding for integrated eligibility systems. The project expanded on OHA's earlier efforts in 2014 to develop an income-based Medicaid eligibility system — referred to as ONE — as part of the Affordable Care Act.[2] Computer code for both the IE and ONE systems was acquired at no cost from the State of Kentucky, after successful implementation in that state. The System Integrator for both systems was Deloitte Consulting LLP (Deloitte), who is also customizing the core software application to meet Oregon's needs. Since inception, DHS and OHA have established aggressive project timelines in an effort to maximize an enhanced 90% federal funding match on certain elements of the system's development.

Forecasting budgets has been a challenge, with early estimates needing upward revisions. As shown in Figure 2, the project budget has grown since inception. Several factors have impacted the project's budget, including underestimating the amount of work needed to complete the complex project and expansion of its scope from solely determining Non-MAGI Medicaid eligibility to determining eligibility for multiple public assistance programs, including MAGI and Non-MAGI Medicaid, TANF, SNAP, ERDC, Refugee, and Summer Meals.[3]

In May 2015, the Legislative Fiscal Office noted that DHS estimated the Non-MAGI Medicaid implementation cost to be between $50 and $75 million, which was similar to the ONE system's budget. However, that estimate did not include eligibility for other programs later added to the IE system scope, such as food assistance, cash assistance, and childcare subsidies. This expansion was in alignment with House Bill 2219, which was signed into law in June 2015. In December 2015, the agency's business case estimated the implementation cost for the broader scoped eligibility system to be $126 million. By July 2017, the project had a budget of approximately $240 million and an estimated implementation date of June 2019.

As the project progressed, it became apparent that critical items were missing from the initial plan. For example, interfaces with existing systems and legacy system development had not been included in the initial project plan or budget. In early 2018, the legislature approved a new baseline budget, extending the schedule to July 2020 and increasing the budget to approximately $340 million, with federal funds covering approximately 75% of the total cost.

Gartner Inc. independently reviewed the revised scope, schedule, and budget and noted in February 2018 that it appeared reasonable.[4] Gartner also noted that Oregon's budget was on the low end of

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[2] OHA spent approximately $57 million on design, development, and implementation for the ONE system. As noted in report 2017-09, that system is largely functioning as intended. As of January 2019, an additional $73 million has been spent on maintenance and operations of this system.

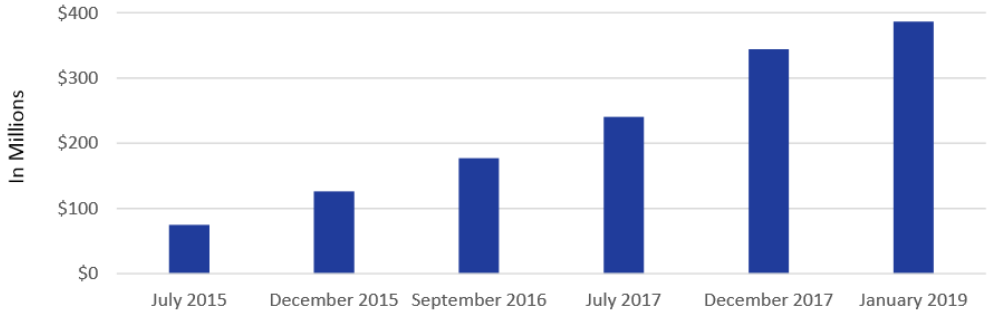
[3] MAGI stands for Modified Adjusted Gross Income, an eligibility criteria established by the Affordable Care Act. Non-MAGI refers to other Medicaid programs that may use different eligibility criteria than MAGI. TANF is Temporary Assistance for Needy Families, a cash support program; SNAP is Supplemental Nutrition Assistance Program, commonly known as food stamps; and ERDC is Employment Related Day Care, a workforce support program. Refugee programs provides support to qualified refugees and Summer Meals provides nutritional support to kids during the summer when school lunch programs are not operating.

[4] Gartner Inc. is a global research and advisory firm specializing in Information Technology. Oregon's Office of State Chief Information Officer hired Gartner for an independent assessment of the IE project schedule and budget.

similar projects they have assessed in other states. Gartner's assessment included a 15% margin of error, but did not include some legacy system-related work because the design work was not complete until after Gartner had provided its report.

In December 2018, the project schedule was extended to December 2020. That same month, agency leadership was in the process of preparing an additional budget request of approximately $21 million, for a total project budget of approximately $387 million. The additional time and resources requested fall within the margin of error of Gartner's assessment. Millions more will also be needed for expenses related to ongoing maintenance and operations of the system once the system is implemented.

**Figure 2: The IE System's budget for implementation has increased steadily**




Source: Auditor prepared from IE project documentation. The July 2015 estimate was solely for a Non-MAGI Medicaid eligibility system.

## Risk Assessment Results

***The governance structure and risk management approach are appropriate***

Organizations should adopt management practices to identify, analyze, and respond to known and emerging risks. They should also establish governance structures around IT projects to manage those efforts. Our assessment determined that the existing governance structure for managing and implementing the IE project and general approach to mitigating risks appears appropriate.

In 2016, OHA joined DHS on the IE project. However, by fall 2016, a difference of opinion over how eligibility determinations would be made, and which agency would be responsible for that work, caused a delay in the project. The two agencies had previously adopted different service delivery models and the IE system required a single approach.[5] Until the agencies reached consensus, the project was unable to effectively use available resources and was temporarily delayed. In 2017, OHA agreed to delegate its eligibility determination processes to DHS and both agencies adopted a decentralized model — the concept of "no wrong door."

In April 2017, a new governance structure was formed for the project comprised of the two agency directors and the State of Oregon Chief Information Officer (State CIO). This change addressed the previous challenges the project had faced with project governance and provided a mechanism to resolve differences between the two agencies. The new governance structure also allows the State CIO to step in as the tiebreaker between the two agency directors.

This governance structure appears appropriate. Based on our observation and review of documentation, there appears to be an appropriate risk-based approach employed for decision-making. For example, in December 2018, we observed the project's governance bodies assessing

[5] OHA centralized eligibility processing through a call center in Salem while DHS was decentralized with field offices located throughout the state.

the risks of delayed legacy development and its impact on existing testing cycles. The project's governing bodies ultimately decided to extend the schedule and delay the implementation date.

Furthermore, the project team meets weekly to discuss mitigation strategies for known and emerging risks. In January 2019, a risk arose around the federal government shutdown that impacted the issuance of food assistance. Given the potentially significant impact on approximately 1 in 7 Oregonians, a decision was made to temporarily prioritize work on food assistance above the IE project, in order to meet federal deadlines to issue food assistance benefits.

While we conclude that the existing governance structure and general approach to mitigating risks appears appropriate, we believe several risks have the potential to negatively impact the implementation of the IE system. Below is our assessment of five remaining areas of high risk.

***Legacy systems are a significant risk now and in the future***

Recent project delays are due, in large part, to incomplete legacy system development. The Office of Information Services (OIS), a shared service of DHS and OHA, is responsible for this work. OIS faces many challenges, including the number and complexity of aging systems, the limited number of staff capable of developing software for existing legacy systems, and aggressive timelines for completion. Another major contributing factor to the delays was that the IE project team did not include legacy systems in the original project scope and IE core design work was not completed until July 2018. Some legacy development was contingent upon the completion of the core IE system design.

The delays prevented the project team from performing complete end-to-end on time. By June 2018, there were strong signs that some legacy system development was not going to be finished by October 2018, as scheduled. The IE project director reported he has recently become more involved with legacy development by attending various meetings and overseeing legacy developers in person several hours each week.

IT organizations should effectively communicate the work they are performing to key stakeholders. Multiple staff reported that OIS does not always effectively communicate to program management the project work they are performing or significant issues that could delay the project as they arise. During multiple interviews with auditors, both state and Deloitte staff spoke of communication challenges over progress of legacy system development. Even after a key testing phase began in January 2019, concerns were still being raised around the communication of legacy development progress. OIS acknowledged that conversations about schedule extensions due to legacy development should have occurred earlier than December 2018.

We also noted that when the IE project began, many legacy systems lacked foundational documentation, such as data dictionaries and functional design documents. The lack of these documents had the potential to impact efforts related to legacy design and development. OIS reported that recent efforts to mature system development life-cycle processes helped in the development of these documents.

The appendix to this letter highlights the complex interrelations between the IE system and other existing IT systems. The IE system is only replacing four existing legacy systems operated by DHS and OHA. OIS will need to continue to operate 32 legacy systems post-implementation. Currently, only a few staff at OIS know how to make changes to legacy systems. Due to the age of these systems, it is difficult to find developers to develop software in older computer languages like COBOL. Staff reported that hiring contractors has not been an effective tool for mitigating this risk because it takes many months to bring these contractors up to speed on agency systems. Additionally, once they are familiar enough to produce quality code, these contractors often move on to other opportunities.

Operations staff also need to rely on both the IE and legacy systems for management reports until those reports can be developed for the IE system. This poses a risk of using the wrong information when making policy decisions.

State developers are also enhancing a mainframe payment application (JV) for the IE System. This work is currently months behind schedule and is crucial to performing end-to-end system testing. Two other legacy systems (SP and PP) are also months behind schedule. OIS management indicated that development times for these delayed systems were shortened to accommodate changes to the IE project scope, such as completing additional design work earlier than originally scheduled. These delays pose a significant risk if the systems are not functioning as intended or finished in time for IE system implementation.

**We suggest DHS and OHA develop plans to replace aging legacy systems**. We suggest OIS continue to improve system development life-cycle processes and develop contingency plans in case critical developers retire. We also suggest that OIS improve communication around the development progress of legacy systems and report to operations management significant risks and delays in a timely manner.

***Data conversion poses two key risks***

During this risk assessment, we analyzed preliminary data conversion reports and data files and identified a discrepancy between data being converted and existing caseloads. These discrepancies were not large; however, they do highlight a risk that individuals' data may only reside on legacy systems without any process in place to monitor these clients and re-determine their eligibility. As a result, there is a potential that some individuals may receive benefits in programs for which they are no longer eligible. This potential issue should be fully analyzed and resolved prior to final data conversion, as it has the potential to result in improper payments.

Initial data conversion reports also show error rates that indicate the potential for a significant amount of manual data entry and data cleanup work. Deloitte has committed to delivering a successful data conversion; however, even if most of the data is successfully converted, there is the potential for a large amount of manual data entry needed. Furthermore, substantial data cleanup work needs to be performed over the next year given that information in legacy systems was not always kept up to date or maintained in the same manner across the various legacy systems. OIS reported the MAGI Medicaid system that is being converted has higher quality data, which should help support a successful data conversion despite the challenges with legacy systems.

In addition, DHS already has an existing backlog in Medicaid eligibility processing. Although management is in the process of increasing staffing to address it, if that backlog still exists when the project is completed, it is unclear how DHS will address the added workload related to both data entry and cleanup during the initial implementation.

Data conversion is a critical step that is taken during implementation of some replacement IT systems. When data is converted from an older system to a newer system, it is critical that the data is tested to ensure that it is accurate in the new system to avoid processing and payment errors. If eligibility determinations continue to reside in any of the legacy systems, a reconciliation process should take place to ensure all eligibility remains appropriate.

The project team is currently mitigating some of these risks by hiring a Quality Assurance vendor to perform additional validation procedures on the data conversion. IE project staff will also perform parallel system testing to ensure the data in legacy systems matches the converted data in the IE system. Finally, the IE project is increasing the number of data conversion mock runs from five to seven in an effort to reduce the amount of data conversion errors.

**We suggest DHS develop contingency plans for data entry and cleanup**. We suggest DHS reconcile legacy system caseloads with the IE system throughout conversion and deployment to

ensure that all individuals continue to be subject to appropriate eligibility re-determinations regardless of which system houses their data. We also suggest the project team ensure that Deloitte fulfills contractual terms for data conversion.

***System testing is crucial to deploying a working IT system***

The IE project has faced a general lack of readiness to move into testing phases. For example, the project lacked a comprehensive plan on how testing will be performed. Individual test cases, step-by-step instructions intended to validate the function of specific system requirements, were at various levels of completion, but an overarching plan did not exist when testing began. Staff also reported that Deloitte's initial test cases were not sufficient to provide the state assurance that the system was functioning as intended.

When implementing new IT systems, industry best practices call for a clearly defined overall test plan with delineated testing phases. Each phase should have entry and exit criteria to ensure the phase has accomplished the primary testing goals.

Failing to complete necessary legacy system developments on schedule also severely impacted testing readiness. As a result, some tests are not being performed as scheduled and other elements are not being addressed until later testing phases, which are typically more expensive and increase risk. Although the state has identified exit and entry criteria, staff reported that those criteria have not always been followed in order to meet timelines for the project.

**We suggest the project team follow established entry and exit criteria before deploying the IE system.** Deviations from established criteria should be documented, including mitigating controls, and an acceptance of risk.

***Clear roles and responsibilities could help improve project coordination***

When new systems are deployed, it is a best practice to develop a change management process to help ensure the new system can be effectively used by field staff. A critical element is communicating information about the change that is occurring, as well as providing sufficient training. Additionally, when an organization has multiple interrelated initiatives, it is important to clearly define the roles and responsibilities of each team.

Work that will be performed in DHS field offices will change dramatically from how that work is performed today. DHS has an effort underway, known as Eligibility Transformation (ET), to redesign and integrate business processes and train staff to use those new processes. There is also a separate effort to provide training on how to use the IE system. Approximately 3,000 employees need training on both the new IT system as well as the new business processes. Staff reported training materials are being finalized and significant planning efforts are underway to roll out the training statewide.

Initially, ET was not aligned with the IE project and there were some issues, such as duplicating efforts by reworking process maps. According to the IE and ET project teams, the two efforts are now communicating and coordinating more effectively in recent months. Some efforts have been made to better define roles and responsibilities; however, this work is not complete. Without clearly defined scopes of work, these separate projects could continue to duplicate efforts or face coordination issues.

Additionally, a repeated concern we heard from staff was that typical reporting lines were blurred and that staff often reported to multiple managers. When staff work on multiple projects with multiple managers, it can be difficult to manage priorities and workloads. Gartner's 2018 report recommended the creation of a Program Management Office, so these two initiatives would fall under the same span of control.

**We suggest DHS and OHA leadership clearly articulate roles and responsibilities for the IE project and the ET project.**

***Enterprise Security Office efforts to help secure IE system are underway***

The Enterprise Security Office within the Office of the State CIO has engaged with the IE project team to address potential security risks. As this work is in the initial phase, we did not assess specific security risks for the IE system. However, given the significant amount of personally identifiable information that will be housed in the IE system, there are substantial security risks that the agency needs to address prior to implementation. Furthermore, work being performed by contractors outside the country poses additional risks that should be appropriately mitigated. In order to address security risks, a workgroup has been formed in partnership with the Enterprise Security Office.

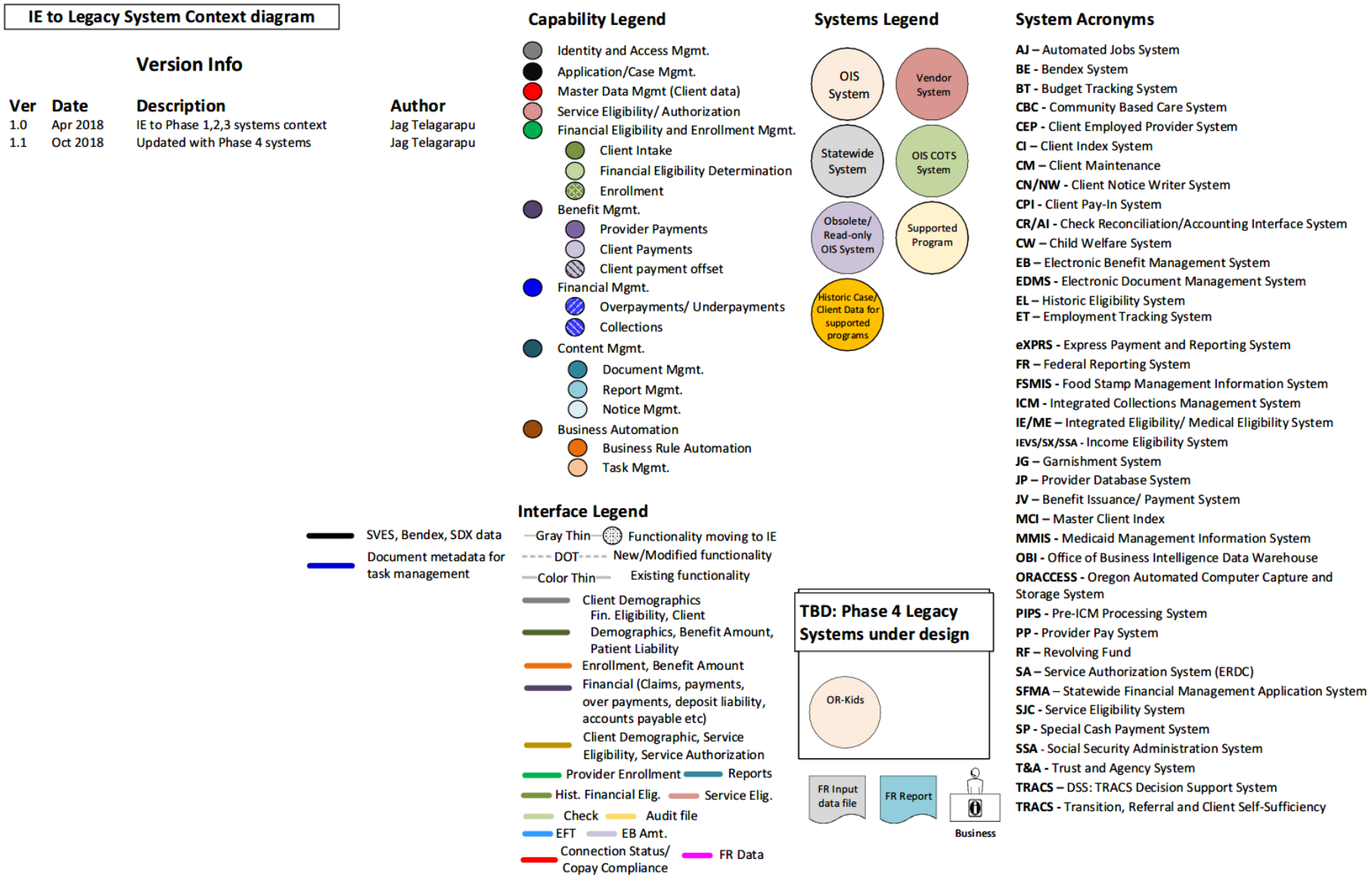
We hope you find value in this interim communication. We appreciate the assistance and cooperation of DHS and OHA staff during this review. We may submit additional interim letters to provide you with real-time assistance and risk identification information. Should you have any questions, please contact Teresa Furnish, Audit Manager, or Ian Green, Principal Auditor at (503) 986-2255.

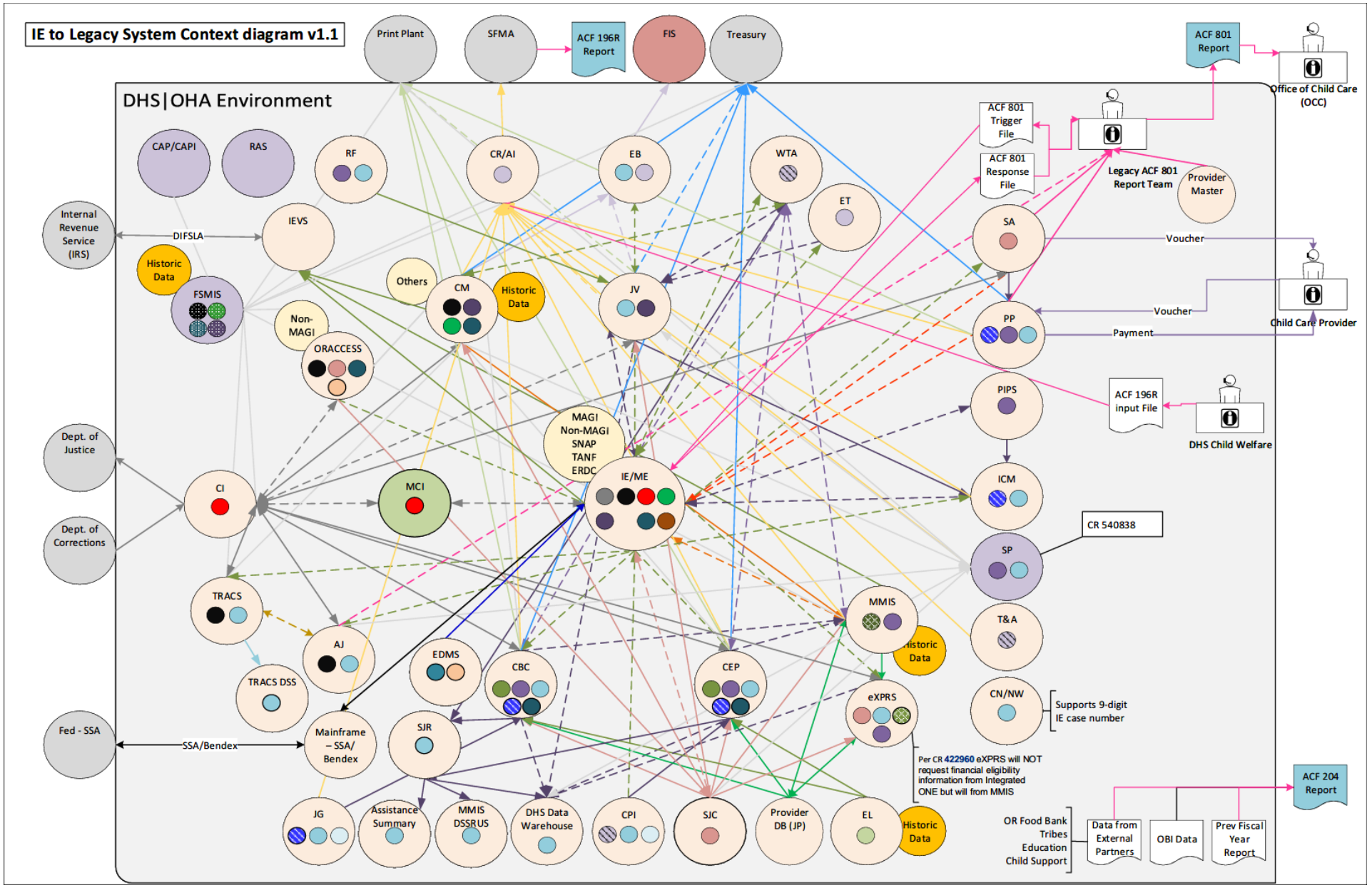
Sincerely,
Oregon Audits Division

William Garber
Deputy Director, Audits Division
Oregon Secretary of State

Cc: Terrence Woods, State CIO
Tony Black, IE Project Director
Sarah Landis, DHS|OHA Chief Auditor
Kim Fredlund, DHS Program Sponsor

# Appendix B: Relationship Between Integrated ONE System (IE/ME) and Other IT Systems




IE to Legacy System Context diagram v1.1
DHS|OHA Environment
Print Plant
SFMA
ACF 196R Report
FIS
Treasury
ACF 801 Report
Office of Child Care (OCC)
CAP/CAPI
RAS
RF
CR/AI
EB
WTA
ET
ACF 801 Trigger File
ACF 801 Response File
Legacy ACF 801 Report Team
Provider Master
Internal Revenue Service (IRS)
DIFSLA
IEVS
SA
Voucher
Historic Data
FSMIS
Others
CM
Historic Data
JV
Non-MAGI
ORACCESS
PP
Voucher
Payment
Child Care Provider
PIPS
ACF 196R input File
DHS Child Welfare
MAGI
Non-MAGI
SNAP
TANF
ERDC
IE/ME
Dept. of Justice
CI
MCI
ICM
Dept. of Corrections
CR 540838
SP
TRACS
MMIS
T&A
AJ
EDMS
CBC
CEP
Historic Data
TRACS DSS
eXPRS
CN/NW
Supports 9-digit IE case number
Fed - SSA
SSA/Bendex
Mainframe – SSA/ Bendex
SJR
Per CR 422960 eXPRS will NOT request financial eligibility information from Integrated ONE but will from MMIS
ACF 204 Report
JG
Assistance Summary
MMIS DSSRUS
DHS Data Warehouse
CPI
SJC
Provider DB (JP)
EL
Historic Data
OR Food Bank
Tribes
Education
Child Support
Data from External Partners
OBI Data
Prev Fiscal Year Report

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## About the Secretary of State Audits Division

The Oregon Constitution provides that the Secretary of State shall be, by virtue of the office, Auditor of Public Accounts. The Audits Division performs this duty. The division reports to the elected Secretary of State and is independent of other agencies within the Executive, Legislative, and Judicial branches of Oregon government. The division has constitutional authority to audit all state officers, agencies, boards and commissions as well as administer municipal audit law.


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