

# School Finance Payment System

Accelerated Plan



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# 1 Introduction

## 1.1 Document Purpose

In response to the conditional requirement of the Project Investment Justification (PIJ) approved by the Information Technology Authorization Committee (ITAC) at its January 15, 2020 meeting, the Arizona Department of Education (ADE) has completed discovery on how to accelerate the timeline of implementation of the School Finance Payment System. The purpose of this document is to outline the ADE recommendation for an alternate plan to implement the School Finance Payment than what was proposed in the PIJ document. The timeline, budget, pros, cons and risks for recommendation are included.

## 1.2 References

ED19002 Project Investment Justification (PIJ) FINAL

# 2 Overview

The current School Finance Payment System comprises of: School District Payment (APOR), Charter School Payments (CHAR) and the Budget and Expenditure System (Budget/AFR). The data integrity and correctness of the data and calculations are questionable due to the system being composed of duplicated and unorganized logic compounded by years of administration by various IT staff members. The current system technology platform is no longer supported, rendering the APOR & CHAR payment system unmaintainable. Over a period of numerous years, the technology and architecture have amounted to a piece-meal system that is unable to be validated, audited, and is difficult to understand. Due to system inadequacies, there exists a compromised level of manual testing which is imminently necessary to ensure it is operationally sound and properly functional.

The large degree of manual effort necessary to complete daily work by the business users introduces certain probabilities for human error. Manual analysis, miscalculations and ad-hoc data transformation is prevalent. Although processes are constantly being improved, quality assurance checks are minimal and can only look for preliminary deviations from the norm. An extreme amount of manual time and effort is spent to ensure valid results are obtained.

The fragility of the current system results in many operations being interdependent and unable to execute concurrently. System design and implementation is also inefficient incurring a great burden on the infrastructure and staff. The large number of manual processes required to run the system translates to days spent performing tasks that would otherwise require seconds. Simple operations are performed multiple times by staff in order to reduce errors. Due to time constraints, manual calculations are only performed during a few months per year when they should be monthly occurrences. As manual calculations are completed, the districts and charters are brought current, making up for prior month shortages or overages. The result, however, is a manual labor intensive process of problematic data and jumbled reports.

In 2015, ADE implemented an Application Programming Interface (API) that has enabled the School Information System (SIS) vendors to directly send the student enrollment and attendance information to ADE servers. This eliminated redundant data entry for the school districts and charter schools and also increased the auditability and accuracy of the student data. Besides the student enrollment data, APOR

system requires transportation and school district employee data to calculate payments. The Budget/AFR system requires school district and charter school annual budgets and expenditure general ledger entries. This data is currently being uploaded as flat files to ADE which is a cause of concern for accuracy and auditability. Implementing an API and enabling integration by working with the Transportation routing system vendors, Accounting system vendors and Human Resources system vendors will help improve the accuracy and auditability of the transportation, employee, budget and expenditure data.

Automating the entire process will greatly reduce the manual processes for payments and will give School Finance the ability to generate accurate payments to districts and charters each month. The cost and time savings from the proposed automation will reduce process times from weeks or months to days and will reduce manual labor, allowing for increased service to the districts and charters.

### 3 Original Plan

#### 3.1 Synopsis

ITAC reviewed a three-year project schedule to begin in February 2020 and complete in June 2023. The approved PIJ is for Phase I of a three-phased approach as follows:

- Phase I: Implement School Finance Payment System for charters and any common components for school district payments.
- Phase II: Implement the School Finance Payment System for school districts, Department of Corrections, Department of Juvenile Corrections, county jails and county juvenile detention centers.
- Phase III: Implement budget and expenditure (Budget/AFR) system to collect annual budget and expenditure data, validate, process and report on collected data.

#### 3.2 Timeline

- Total 3 years.
- Each phase takes approximately one year to complete.

#### 3.3 Budget

- Total \$ 9,000,000
- Each phase costs approximately \$3,000,000 each.

#### 3.4 Pros

- The timeline was strategically planned to reduce turmoil and pain points for the Local Education Agency users and Vendors.
- All the constraints outside of ADE control have been accounted for in this plan and schedule.

#### 3.5 Cons

- CHAR legacy system needs to be supported for one year before the CHAR component of the new Payment System goes live.
- APOR legacy system needs to be supported for two years before the APOR component of the new Payment System goes live.
- Budget/AFR legacy system needs to be supported for three years before the AFR/Budget component of the new Payment System goes live.

### 3.6 Risks

- School Finance Business availability in providing time for meetings, acceptance criteria, unit and system testing.
- Timely appropriation from the legislature to continue the build.
- Vendor, school district and charter adoption of the system in the timeframe that the system is being built. Current vendor adoption rate for enhancements is six months and for a new system adoption is eighteen months.
- User Acceptance and Integration Testing (between ADE system and vendor, as well as between vendor system and school district's finance and student information systems) will be extensive due to critical accuracy of the output.
- Adapting to the new system must be done at the beginning of the fiscal year.

## 4 ADE Recommendation

### 4.1 Synopsis

ADE has completed its discovery on how to accelerate the timeline of the original project plan and recommends an amended implementation schedule that prioritizes development and deployment of the “must have” features for the APOR and CHAR portions of the School Finance Payment System in Phase I (FY20 Q3 - FY21 Q4). The amended plan presented will implement the “must have” features for the Budget and AFR system and the payments for Department of Corrections and Department of Juvenile Corrections in the newly scheduled Phase II (FY22 Q1 – Q4) and will postpone development and deployment of the “should have” features for the Payment System and the Budget/AFR system until Phase III (FY23 Q1 – Q4), after the “must have” features are implemented. It is important to note that the proposed amended schedule will complete the development and implementation of the Payment System in July 2023, which is one month after the original approved schedule in PIJ. Although the actual time to complete is not reduced in this proposal, the plan addresses the need to accomplish the essential functions of the Payment Systems within available resources and escalates development and deployment of the most critical portions of the project.

### 4.2 Reasoning

Several circumstances that were unaccounted for in the original implementation schedule have influenced the current state of the project and informed the proposed acceleration plan. Since PIJ approval in January 2020, ADE has conducted multiple requirement gathering and design activities in order to build the new School Finance Payment system. At the same time, the APOR portion of the legacy payment system has become progressively unreliable and experiencing extended periods of failure. Additionally, the unprecedented COVID-19 pandemic resulted in a shortened legislative session and the passing of a fiscal year 2021 “skinny” budget that does not include the second \$3 million installment of the total \$9 million appropriation that had been included in the governor's original budget. Without the prospect of additional funding until July 2021, and under the worsening condition of the APOR portion of the legacy payment system, the proposed accelerated plan has a primary focus on migrating away from the high-risk legacy system (APOR/CHAR) for school districts and charters first and the Budget/AFR system next.

### 4.3 Approach

In the past few months, ADE has conducted multiple requirement gathering and design activities to build the new School Finance Payment system. The detailed requirements pertaining to payment system inputs, core calculations, adjustments and reports were gathered and documented and carefully prioritized. The primary intent of the prioritization was to migrate away from the legacy payment system as soon as possible and also to reduce the manual calculations. The manual calculations have been prioritized for automation based on complexity, fiscal impact and audit risk.

The APOR/CHAR features were prioritized first, so the new payment system can be used to calculate and pay school districts and charters at the beginning of fiscal year 2022. A similar prioritization was performed on the Budget/AFR system and on the miscellaneous payments to state agencies and county agencies. The prioritization focused on “must-have” and “should have” features of the system and the definitions are below:

#### Must Have

Any feature to replace the core capability of the existing APOR, CHAR and Budget/AFR system so it can be implemented on the modern School Finance Payment technology platform, for timely state aid payment to educational entities. Core capability means funding calculations that are legislated by statute, data integration from internal ADE systems to support the funding calculations, file upload or basic data entry screens to facilitate data input from education entities and external agencies, core reports for the education entities and facilitating the disbursement of the payment amounts.

#### Should Have - Priority 1

These are features that add significant value to the core capability of the system. These are must-haves in the long run. They may not be needed for the initial rollout of the system but are considered very important to be implemented immediately after the initial rollout. These features will reduce the manual steps significantly for ADE School Finance and enable more timely and accurate payments to the educational entities.

#### Should Have - Priority 2

These are features that enhances the system with capabilities to eliminate redundant data entry or file transfers from educational entities and add analytic capabilities to the payment system to make data driven decisions.

### 4.4 Estimates

The ADE IT team reviewed the detailed requirements of the APOR/CHAR system and created a Work Break-down Structure (WBS) detailing out the tasks necessary to implement the system. From the WBS the IT team estimated the hours to complete each task, considering the hours needed by each type of resource such as Business Analyst, Software Architect, Developer, Quality Assurance Analyst and Project Manager that comprises the IT development team. These estimates accounts for all remaining work from August 2020 to the end of June 2021 that will be performed by the ADE IT development team. The work that was already performed from February 2020 to July 2020 to gather the requirements, design and development work of the new system was not taken into consideration because that money was already expended. The IT team then created estimates for the features of the Budget/AFR system and

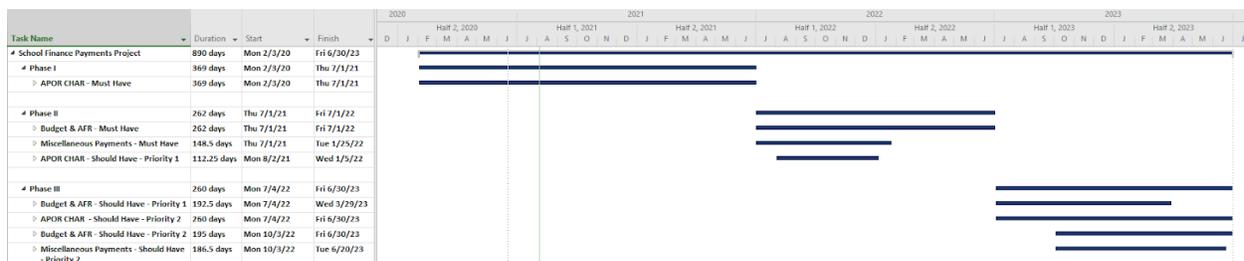
the miscellaneous payments, although these estimates were based on high level requirements. No time for data conversion activity was built into the estimates, as data conversion is not intended.

### 4.5 Timeline

After the prioritization and estimation of the features of the new system, ADE is proposing the following implementation schedule for the new School Finance Payment System. The entire project timeline is attached in the supporting documents section.

#### Overall Timeline

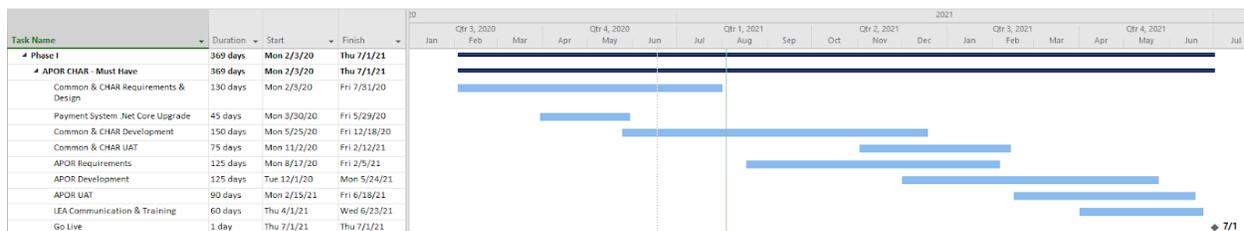
- Total 3 years.
- Each phase takes approximately one year, except for Phase I which is takes approximately a year and half.



#### Phase I (FY20 Q3 - FY21 Q4)

- Implement the “must have” features of School Finance Payment System for school districts and charters (APOR/CHAR). Target to go live FY2021 Q4 and ready to be used by the educational entities for FY2022.
- At the end of this phase, APOR/CHAR legacy system will not be utilized for generating payments. A decommission plan of the legacy APOR/CHAR system will need to be created, reviewed and implemented.

*Note: The overall timeline for Phase I is approximately 1 year and 5 months. The timeline below ranges from February 2020 to June 2021. From February 2020 to July 2020, the ADE IT team has conducted multiple requirement gathering and design activities to build the new School Finance Payment system.*



The following activities were completed from February 2020 to July 2020.

Note: Spent to date is through June 30, but these accomplishments include activities in June and July as well.

- Gathered requirements for the common features of APOR/CHAR system and payment calculation requirements for the CHAR system.

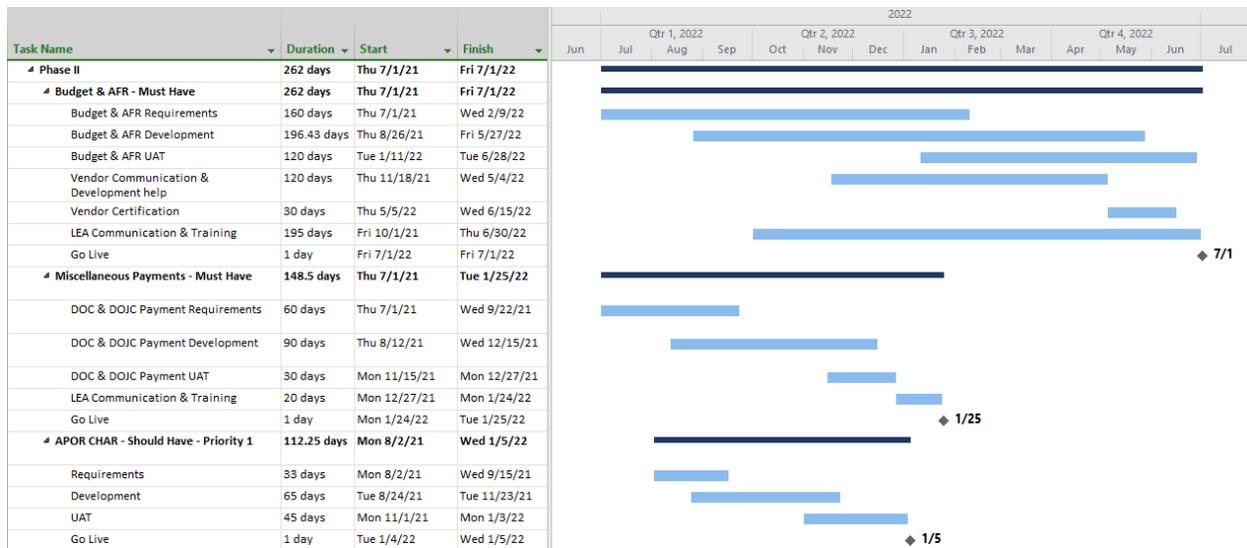
- Established a Documentation and Design Review Committee comprised of technical advisors from ADOA and leaders from school districts and charters.
- Completed a Business Requirements Document and got it approved by the Documentation and Design Review Committee, subject to conditions.
- Created the Functional Requirements Document, which is currently under review with ADOA technical advisors for feedback.
- Completed the Conceptual Data Model and Logical Data Model and reviewed it with ADOA technical advisors.
- Completed the .net core upgrade of the existing Classroom Site Fund and Instructional Improvement Fund payment system upon which the new State Aid payment system will be implemented. The .net core upgrade is necessary in order to get continued support from Microsoft.
- Started the Physical Data Model changes to accommodate the new payment system.
- Started the data input and equalization base calculation development work that is required for both APOR/CHAR payment process.

In order to accommodate the new priorities and timeline for Phase I of the accelerated plan, some of the CHAR and Common features that were in the original plan had to be postponed to another phase in the new plan, and they were prioritized as “Should Have - Priority 1” or “Should Have - Priority 2”. The following is the list of such features that were postponed:

- AzEDS Average Daily Membership (ADM) selection user interface for Local Education Agency (LEA) users.
- LEA ADM & payment variance analysis dashboard
- School Finance payment variance analysis dashboard
- LEA payment history user interface
- School Finance payment history user interface
- ADE Accounting system General Ledger account balance data integration
- Payment workflow screens to show General Ledger account balance
- Payment workflow screens to review and approve adjustments
- Automated data extract for JLBC & OSPB
- Automated data extract for LEA
- API requirements, design and engagement with vendors for transportation data
- API requirements, design and engagement with vendors for teacher employment and salary data
- Requirements and design and engagement with external agencies such as ADOR, GPLET and SRP to get assessed property value data

Phase II (FY22 Q1 – Q4)

- Implement the “must have” features for Budget/AFR system to collect annual budget and expenditure data, validate, process and report on collected data. Target to go live FY 2022 Q4 and ready to be used by educational entities for FY2023.
- Implement the “must have” features of the School Finance Payment System for Department of Corrections (DOC) and Department of Juvenile Corrections (DOJC). Target to go live FY2022 Q4.
- Implement the “should have – priority 1” features of School Finance Payment System for school districts and charters (APOR/CHAR). Target to go live FY2022 Q2.
- At the end of this phase, Budget/AFR legacy system will not be utilized and manual payment calculation for DOC and DOJC will be automated. A decommission plan of the legacy Budget/AFR system will need to be created, reviewed and implemented.



Phase III (FY23 Q1 – Q4)

- Implement the “should have – priority 1 & 2” features of the Budget/AFR system. Target to go live FY2023 Q4.
- Implement the “should have – priority 2” features of the Payment System for school districts, charters, county jails and county detention centers.
- At the end of this phase, all the manual payments to county jails and county juvenile detention centers and other miscellaneous payments will be automated. All the federal reporting processes for Budget/AFR system will be automated.



	Phase I	Phase II	Phase III	Total
Development Cost	\$1,480,785	\$2,072,130	\$2,108,085	\$5,661,000
Actual Expense from Feb to Jun 2020	\$608,039			\$608,039
Projected Expense for Jul 2020	\$331,933			\$331,933
Addnl. ADE Personal Services	\$200,000	\$235,000	\$235,000	\$670,000
Addnl. ADE Personal ERE	\$75,000	\$100,000	\$100,000	\$275,000
Hardware – desktop		\$25,000	\$25,000	\$50,000
Software Licenses		\$50,000	\$50,000	\$100,000
Azure Costs	\$60,000	\$60,000	\$60,000	\$180,000
Contingency Build Cost		\$250,000	\$250,000	\$500,000
IV & V	\$120,000	\$120,000	\$120,000	\$360,000
Info - Tech Documentation Review	\$25,000	\$25,000	\$25,000	\$75,000
<b>Total</b>	<b>\$2,900,757</b>	<b>\$2,937,130</b>	<b>\$2,973,085</b>	<b>\$8,810,972</b>

#### 4.7 Plan

In order to achieve the timeline outlined in the proposed Accelerated Plan, ADE proposes the following:

- Implement a flexible team that runs two development teams in parallel for a portion of time to tackle the implementation of various modules of the system.
- Each team will have five to seven Developers, two to four Quality Assurance Analysts. In addition, each team will share two to three Business Analysts, a Software Architect and a Project Manager. There will be a portion of time that the teams will overlap during the development phase. The overlap is not for the entire duration of the project but for a short period.
- Implement the “must have” features first and address the “should have - priority 1” features next and the “should have - priority 2” features after that.
- Business Analysts and Architects will be up in the forefront of the development stream gathering detailed requirements and the design for the features that are prioritized in each of the phases and get it ready for the development team to implement.
- Release completed features for User Acceptance Testing as soon as possible so the business users will have adequate time to test and provide feedback.
- Engage with the Transportation system vendors, Accounting system vendors, LEAs and external agencies at the beginning of the phase that requires the integration, giving them enough time to change their software and processes. There is no vendor integration needed for Phase I. Phase II and III requires vendor integration.
- Implement a Technical Support Team to help vendors test and certify their software changes against ADE Application Programming Interface (API) changes. Deploy a robust ADE API sandbox environment for vendor development team to test their software changes.
- The critical items identified for Phase I are shown in the “Dev Priority” column in the included AP Estimates spreadsheet, with priority number 1 being the highest. Items marked with Dev priority 1 through 7 must be implemented to remove dependency on the legacy APOR/CHAR system. Even though Dev priority items 8 through 10 are earmarked for Phase I, these items could be

moved to a future phase if there is an unanticipated slippage in schedule, thereby prioritizing completion and delivery of a significant portion of the critical functionality.

#### 4.8 Pros

- Ability to generate payment from the new system beginning of FY2022.
- Eliminates supporting APOR/CHAR legacy system in FY2022.
- Brings the payment system to the latest hardware and software that are supported.
- Eliminates the existing security risks on APOR/CHAR that are in the legacy system.
- ADE possesses the subject matter expertise (both Business and IT) to accelerate the plan.

#### 4.9 Cons

- Some of the current manual operations performed by School Finance and IT team will have to continue in the new system until “Should Have – Priority 1” features are implemented.
- Accelerated schedule will increase the risk for timely adoption by vendors and LEAs.
- Overlapping development of CHAR and APOR may increase development risks (which is why the original plan had the 2 systems developed in different phases).
- The Phase 1 proposed timeline is tight for the amount of work to be accomplished and the criticality of go-live at the beginning of a school year.

#### 4.10 Risks

- School Finance Business availability in providing time for meetings, acceptance criteria, unit and system testing.
- Timely appropriation from the Legislature to build the remaining features.
- Until FY 2022, legacy system failure will increase the risk of availability of School Finance and IT staff to complete any part of the phases on time.
- Vendor and school district adoption of the system in the timeframe that the system is being built. Current vendor adoption rate for enhancements is six months and for a new system adoption is eighteen months.
- User Acceptance and Integration Testing (between ADE system and vendor, as well as between vendor system and school district’s finance and student information systems) will be extensive due to the need for critical accuracy of the output.
- ADE is constrained by accommodating new system rollout on LEAs cutover schedule rather than ADE’s ability for accelerated rollout.
- Adapting to the new system must be done at the beginning of the fiscal year.

#### 4.11 Supporting Documents

The supporting documents that contributed to the prioritization, cost and the timeline are included:

- AP Estimate.xlsx
- AP Timeline.pdf

## 5 Other Options

**\*These options were identified but not vetted as they do not address the current budget and timeline constraints. All of these options require more budget in Phase I than is available.**

### 5.1 Option 1

ADE to implement the School Finance Payment System first. ADE to implement the budget and expenditure (Budget/AFR) system next. This will be a two-phased approach:

- Phase I: Implement School Finance Payment System for charters, school districts, Department of Corrections, Department of Juvenile Corrections, county jails and county juvenile detention centers.
- Phase II: Implement budget and expenditure (Budget/AFR) system to collect annual budget and expenditure data, validate, process and report on collected data.

### 5.2 Option 2

ADE to implement the School Finance Payment System and part of the budget and expenditure system first. ADE to implement the rest of the budget and expenditure system modules next. This will be a two-phased approach:

- Phase I: Implement School Finance Payment System for charters, school districts, Department of Corrections, Department of Juvenile Corrections, county jails and county juvenile detention centers. Implement budget and expenditure system data collection API.
- Phase II: Collect budget and expenditure (Budget/AFR) data from LEAs using the new API in parallel with legacy data collection, compare results and implement any necessary adjustments to the data collection API. Implement the validation, calculation and reporting modules of the budget and expenditure system.

The main difference between this option and option 1 is that the data collection API for budget and expenditure (Budget/AFR) system is implemented in the first phase in Option 2.

### 5.3 Option 3

ADE to implement the School Finance Payment System for charters, school districts, state agencies and county agencies. ADE to issue an RFP and select a vendor to implement the budget and expenditure (Budget/AFR) system.

- ADE to implement School Finance Payment System for charters, school districts, Department of Corrections, Department of Juvenile Corrections, county jails and county juvenile detention centers.
- RFP for Budget/AFR system.