Item 42: Department of Revenue

Core Systems Replacement

Analyst: John Borden

Request: Acknowledge receipt of a report on the status of the Core Systems Replacement Project and the scheduling of funds.

Analysis: HB 5033 (2019), the Department of Revenue's (DOR) primary budget measure, included $6.5 million General Fund and $564,254 Other Funds for the maintenance and support of the Department's GENTAX application. The package included funding for Level 2 maintenance support from the vendor (FAST Enterprises), which included five vendor augmentation staff for 2019 and four vendor augmentation staff for 2020. The budget report for HB 5033 included the following direction:

> The Department of Administrative Services was directed to unschedule $3.1 million General Fund and $271,497 Other Fund expenditure limitation until DOR reports to the Legislature in 2020, on the status of the outstanding issues related to the GENTAX implementation.

After fully funding the implementation costs of GENTAX, including costs associated with organizational change management, the Legislature has struggled to understand why additional resources are needed beyond routine operations and maintenance costs and funding related to new legislation (see *Report on the Core Systems Replacement Project* during the legislative session in 2018).

Background
The Core Systems Replacement (CSR) information technology project was implemented by DOR using a commercial-off-the-shelf product (GENTAX) to provide integrated system support for statewide tax, revenue collection, and management. GENTAX was to replace approximately 30 discrete tax applications with a single integrated application.

GENTAX was implemented over the course of two biennia, beginning with the 2015-17 biennium. In general terms, the scope of the project was the fulfillment of over 1,200 individual requirements identified by DOR. DOR was able to rely upon the implementation experience of approximately 22 other states that use the GENTAX product. DOR adopted a "no customization" strategy, to the extent possible, thereby allowing DOR to remain fully connected to the GENTAX application as GENTAX goes through successive upgrades and without the need for costly reconnections.

The Legislature spent an estimated $69.7 million on implementing the first four phases of GENTAX, including debt service on the issued bonds. CSR was fully funded by the Legislature for each phase of the project, including funding for: (a) the GENTAX vendor product (FAST Enterprises)($27.5 million); (b) external project manager ($801,492); (c) independent quality assurance vendor ($2.8 million); (d) organizational change leadership vendor ($1.7 million); (e) additional DOR staffing/facilities rental ($16.7 million); (f) hardware/software ($464,846); (g) ongoing operations and maintenance costs ($5.6 million); and Department of Administrative Services - State Data Center charges ($2.9 million). A $3 million contingency fund provided by the Legislature never had to be utilized and was released

back to the project during Phase IV to fund ordinary implementation costs. These figures include $7.3 million in planning funding.

After being implemented, the Legislature in 2017 and then again in 2019, provided funding not only for routine vendor maintenance and operations costs, but for vendor staff augmentation to help DOR gain the GENTAX application knowledge to eventually transition away from vendor support other than for application service pack upgrades. Such costs, however, were never contemplated as part of the original GENTAX business case nor was a plan subsequently presented to the Legislature.

Report Conclusions
The DOR report provides the most complete picture of outstanding GENTAX application issues that the Legislature has received to date. The conclusions of the report are:
1) GENTAX remains to be fully and optimally configured. DOR states that there still is work to do to redesign business processes to fully incorporate GENTAX into the ongoing operations of the agency and that this effort may require additional resources; however, DOR has made the decision that this effort will not be undertaken until the 2021-23 biennium due to a pending upgrade of the GENTAX application (see Item #8 below).
2) While there remains a number of backlogged service requests related to DOR requested changes and enhancements, that backlog has been reduced significantly since 2018. DOR is approaching such requests in a more deliberative and prioritized fashion. Importantly, DOR is able to use internal resources to undertake this work.
3) While DOR has assumed greater operational control of the GENTAX application (+/- 50%), the agency remains dependent upon vendor resources to support the application.
4) The quality and value of FAST Enterprise staff augmentation support has declined as experienced vendor staff have been replaced with less experienced staff.
5) DOR's transition to minimal vendor support will require more state resources at what DOR anticipates will be less of a cost and with more consistent outcome than vendor staff augmentation. DOR is planning to reduce the level of support FAST provides this biennium (five augmentation staff to two the first year and four augmentation staff to two the second year) and discontinue vendor staff augmentation next biennium; however, the vendor will still provide some onsite support as part of its contract with DOR.
6) GENTAX processes tax payments differently than the legacy applications, which has resulted in discrepancies between the way payments were reported pre- and post- GENTAX. (Of note is that since September of 2015 the Legislature has been raising concern about data availability and integrity and has been assured by DOR such issues have been resolved - see Emergency Board Item #68 - May 2016).
7) GENTAX lacks a data analytics capability. If DOR were given additional positions, the agency could add data analytics capability to GENTAX.
8) A major upgrade to the GENTAX software (Version 12) will be released by the vendor in July of 2020. DOR plans to upgrade to this version during the 2021–23 biennium. Due to the significant changes included in this upgrade, DOR will have to undertake an extensive, agency-wide effort to successfully manage the transition to the new GENTAX version.
9) Concurrent with the planned GENTAX software upgrade to Version 12 next biennium, DOR plans to redesign the agency's business processes and procedures using the updated software. DOR believes that if the software upgrade and business process redesign are accomplished at the same time, the agency will be able optimize the GENTAX application.
10) As part of the original Core Systems Replacement project, DOR was to decommission various legacy applications replaced by GENTAX. Such decommissioning has failed to be completed in a

timely fashion resulting in DOR incurring redundant operation and maintenance costs rather than the savings that the agency had originally promised the Legislature.

The findings of this report are in somewhat contrast to the general impression DOR has given the Legislature as to the success of the GENTAX implementation. This, however, should not diminish the importance of the GENTAX investment to the state. In addition, the Legislative Fiscal Office notes that DOR had little time to institutionalize the GENTAX application given the number of new and complex large tax programs that the agency has had to implement since the completion of the GENTAX project in 2018 (i.e., recreational marijuana tax; transportation taxes; Heavy Equipment Rental Tax; and Corporate Activities Tax).

The challenges and risks facing DOR and the state for the 2021-23 biennium should not be underestimated. DOR's plan to update the GENTAX application software, become less reliant upon vendor support, provide additional functionality (e.g., data analytics), and simultaneously redesign the agency's business processes and procedures for a second time using the updated software will place the agency under continued stress. As such, it is incumbent upon DOR to present to the Legislature a comprehensive strategy and plan to fully optimize the GENTAX application while still fulfilling the other responsibilities that have been assigned to the agency.

Legislative Fiscal Office Recommendation: Acknowledge receipt of the report, with the understanding that the Department of Administrative Services will schedule the remaining funding for the Core Systems Replacement Project based on the cost of the final contract.

Request: Report on outstanding issues related to GenTax implementation.

Recommendation: Acknowledge receipt of the report.

Discussion: The Department of Revenue (DOR) is reporting on the status of its core system project, GenTax. This report is required by the budget report for House Bill 5033 (2019), which requested the Department of Administrative Services to unschedule funding for vendor support until the Legislature receives a status update on outstanding core system issues. The report addresses system change requests (SQRs), vendor support options, and next steps for DOR to operate and maintain the system.

System Change Requests (SQRs)
The core system replacement project used an off-the-shelf software package, which usually results in a need to modify the software to align to the unique legal framework of specific governments. For this project, SQRs numbered in the thousands after initial implementation of the software. The Department reports the number of SQRs outstanding compared to the original SQRs have been reduced by 97 percent, leaving 218 outstanding from the original requests. However, new SQRs have been placed creating a backlog of over 650. The Department is developing a priority system to manage workload and reduce the backlog.

Vendor Support
The Department is moving to less dependence on vendor support. Internal teams have been established for operations, projects, and reports. Adding a data analytics team would allow for predictive analytics. The report includes recommendations for DOR's relationship with the vendor for the remainder of the 2019-21 biennium and the 2021-23 biennium. For the current biennium, DOR now suggests level 3 support with two optional service personnel, rather than the budgeted level 2 support with five optional service personnel. Level 2 provides annual software maintenance, access to service packs and new versions of GenTax, vendor phone support, and on-site vendor employees to fix problems. Level 3 includes the services of Level 2 with additional on-site support for installing service packs, fixes and upgrades. The new recommendation costs the same as the budgeted one. For 2021-23, DOR recommends level 3 without optional personnel.

Next Steps
The Department has concluded its information technology performance measurements are not as refined as needed and intends to make them more useful for managing outcomes. Additionally, the Department is working on decommissioning legacy applications. The decommissioning plan involves identifying all legacy systems, then determining which data needs to be saved and which can be imaged for storage and removed from use. The Department is also studying reporting differences between the old and new system to determine if anything needs to be adjusted for end users. Finally, DOR is considering how it will operate and maintain the system in future biennia, which may include requesting developers, business analysts, and quality assurance and testing talent.
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Oregon
Kate Brown, Governor

December 9, 2019

The Honorable Senator Betsy Johnson, Co-Chair
The Honorable Senator Elizabeth Steiner Hayward, Co-Chair
The Honorable Representative Dan Rayfield, Co-Chair
Joint Interim Committee on Ways and Means
900 Court Street NE
H-178 State Capitol
Salem, OR 97301-4048

Dear Co-Chairpersons:

Nature of the Request

The Department of Revenue's primary budget bill, House Bill 5033A, included package 112 directing the Department of Administrative Services to unschedule $3,122,219 General Fund and $271,497 Other Funds expenditure limitation *"until the Department of Revenue reports to the Legislature on the status of the outstanding issues related to the GenTax implementation."*

The Department of Revenue is presenting the requested report to the Joint Interim Committee on Ways and Means, and requests that the unscheduled funds be re-scheduled for use by the Department of Revenue. An overview of the report is provided below. The full report is provided with this letter.

Agency Action

The Department of Revenue completed the last rollout of the Core System Replacement (CSR) project in December 2017, and the project was officially completed and closed in July of 2018. Since that time, there continues to be a large volume of change requests to improve alignment between the system and core business processes. Change requests include any change to current configuration including enhancements, break/fixes, and requests for changes due to new tax programs or law changes that aren't large enough to constitute a stand-alone project. It is normal to have this period of adaptation and stabilization following a core system replacement project.

Beginning with the 2019–2021 biennium, the department has been working on a new strategic plan for the agency and a related IT management plan. These plans prioritize adopting a new approach to completing change requests for the GenTax application and a plan to complete the transition of the system into the department's standard IT operating model. This new direction includes a new prioritization process for reducing the change request backlog, an analysis of the best option for vendor support services, and a proposed staffing plan to reduce the agency's reliance on the GenTax vendor for ongoing support needs. Finally, the report lays out several focus areas for the department this biennium, including reporting, a proposed upgrade to GenTax in the 2021–2023 biennium, and an initiative to decommission the legacy applications that were replaced by GenTax.
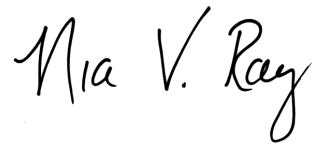
Action Requested

The Department of Revenue is requesting acknowledgement of receipt of the report and that the Department of Administrative Services be directed to reschedule the $3,122,219 General Fund and $271,497 Other Funds expenditure limitation so those funds may be used by the Department of Revenue for GenTax software ongoing maintenance and support.

Legislation Affected

No legislation is affected.

Respectfully submitted,

Nia Ray, Director
Oregon Department of Revenue

OREGON
DEPARTMENT
OF REVENUE

2019

House Bill 5033A

Report on the Status of Outstanding Issues Related to the GenTax Implementation

December 9, 2019

Introduction

The Department of Revenue recently completed a core systems replacement project that replaced approximately 30 discrete business systems with an integrated tax administration system called GenTax by Fast Enterprises LLC (Fast). The project was implemented through four rollouts, one each year for four years. The resulting system is a state-of-the-art revenue management system that was a needed and important investment for Oregon.

While the last rollout of the CSR project was implemented in December of 2017 and the project was officially completed and closed in July of 2018, some confusion has arisen as to whether the project was actually finished. Some of the confusion appears to stem from the existing backlog of change requests. Concern has also been expressed about the speed with which Revenue IT personnel are able to learn the new system and take over support from the vendor.

This report provides an update on the status of the outstanding issues related to the GenTax implementation requested in response to package 112 of House Bill 5033A.

Solution Request (SQR) Backlog (aka Change Requests)

Any change that is made or requested in GenTax is documented in a Solution Request, or SQR. An SQR can be a small request that takes 10 minutes to perform or a large request taking several months. Revenue uses the SQR process to track all changes to the application for auditing purposes as well as to make it easier to diagnose errors that happen within the system. When an SQR is entered into the system, the team provides a rough estimate of the amount of time it will take to complete the request and it is categorized as either a small, medium, or large change. The agency then prioritizes the work and IT completes the work in priority order.

As of January 2018, after the last rollout of GenTax was placed into production, there had been 6,300 requests logged into the SQR system. Revenue has completed thousands of project requests since rollout 1, and reduced the count to 218 SQRs that remain from the original project. Of those 218, 37 are corrections, meaning that the system is not working as designed, and 67 are changes, meaning that the system is functioning as designed but the business areas of the agency want to revise the way the system is working. The remaining 114 requests ask for new functionality; however, 36 of those requests were requirements from the original system that were dropped in order to meet the pre-defined rollout schedule. The remaining 78 requests are new functionality not in the original design of the system. Therefore, analyzing the remaining requests from the scope of the project as it was defined during the requirements phase, of the original 6,300 project-related SQRs, 73 remain unfinished, or roughly one percent.

Even though Revenue IT has significantly reduced the number of SQRs from the project, more change requests have been generated. As of October 10, 2019, there are 687 requests in the backlog. Of those 687, 67 are in acceptance testing (meaning they are complete but waiting for the business area to test and accept the change). Another 53 requests are in progress. There are various reasons for new requests, including: new requirements; changes to business processes; break/fixes and other issues due to changes that were configured but not thoroughly tested and which broke other functionality; and odd data configurations that the system is unable to handle. Revenue IT knows that there will always be a backlog of SQRs, because the demand for changes will always be more than the agency's capacity to perform those changes. Revenue IT would like the backlog to be around 200 requests, but it does not know if this is a realistic number. The agency will need to reach steady state with the application to determine a realistic estimate for the backlog.

Given that there are approximately 600 requests in the backlog as of early October 2019, the question arises as to how Revenue IT is going to perform this work. Prior to this biennium, change requests were prioritized in a somewhat ad hoc manner. Revenue IT is currently revising the way requests are prioritized to separate purely operational requests that must be performed in order to preserve the health and functioning of the system from requests that are more discretionary in nature. Operational work will be prioritized and worked by the Operations Team and discretionary work will be prioritized to focus on the requests that will provide the most value to the agency. These high-value requests will be prioritized into the Agency "Top 20" SQRs, so that Revenue IT works the requests that have the highest value across the entire agency. As Revenue IT is doing discretionary work, it will look at what other requests are in the backlog for that section of the system. If there are other requests that can be added without a significant delay, Revenue IT will incorporate that work along with the prioritized request. At the same time, IT will be piloting a new work intake process that will request additional information from the person submitting the request to ensure it has all the information needed to analyze the request. The plan is to schedule out work for two quarters so that the agency program areas can see where their SQRs are in the pipeline. Revenue IT believes this method will help streamline the work process, allow the development staff to be more productive by focusing on high-priority work, and improve the SQR estimation process to make it more accurate. Revenue IT is committed to continuous improvement in this area; after each quarter lessons learned will be identified and processes will be modified with any needed adjustments. See Appendices A and B for more information.

Current-state Assessment of GenTax Support

Below is an assessment of Revenue's support of the GenTax product.

Software maintenance and Fast base support

Whenever an organization purchases a commercially available, off-the-shelf product like GenTax, the organization also commits to the ongoing licensing and maintenance of the software product for as long as the organization uses the software. With GenTax, the customer selects one of three support levels. Each support level includes a base maintenance agreement that licenses the product for use by the customer. In addition, each level provides for software updates and may provide vendor personnel to perform the upgrades. Finally, there is an option for the customer to augment its staff with vendor resources to perform tasks that are determined by the customer.

The three support levels for the GenTax product are listed below:

Level 1 Maintenance and Support—this level provides annual software maintenance. This level includes items such as access to service packs and new versions of GenTax. It provides phone support from 8 a.m. to 5 p.m. Pacific Standard Time and the vendor will fix bugs in the core GenTax code at no additional cost to the organization.

Level 2 Maintenance and Support—In addition to the service that is included in Level 1, this level provides on-site vendor personnel to ensure that defects in site code, extensions, and configurations are resolved.

Level 3 Maintenance and Support—In addition to the service that is included in Levels 1 and 2, this level provides additional on-site vendor personnel to ensure that service packs, hot fixes, and upgrades are installed.

Revenue has purchased Level 3 support through November 2019; at which point the legislature has authorized Revenue funding to drop to Level 2 support with additional vendor resources to augment Revenue IT staff. The first year of the biennium, the legislature provided funding for five additional vendor resources. The second year of the biennium, this support drops to four additional vendor resources. Over time, the plan is for Revenue IT to need fewer and fewer vendor resources as Revenue IT becomes more knowledgeable about the system and is able to support the product in house.

Application Support

Revenue IT has been supporting the GenTax system for almost two years. The agency initially proposed a five-year transition period for Revenue IT to become fully knowledgeable with the application and to minimize vendor support needs. Revenue currently uses a combination of Revenue IT resources and vendor resources to support the application. There are areas of support where Revenue IT has completely taken over from Fast and there are areas where Revenue IT still depends on vendor resources, because either we do not have the staff to support the application completely or we need to develop more expertise in a given area. Please see Appendix C for additional information on the state of transition between Revenue IT and Fast Enterprises.

Summary

Revenue IT has made good strides in learning GenTax and being able to support the application without help from the vendor. Revenue IT still has more work to do, and will need additional resources to take over completely the ongoing, regular, work of supporting the system.

Support Options Moving Forward

Over the last six months, Revenue IT has restructured the GenTax support group into three teams: an Operations Team, a Projects Team, and a Reports Team. Each of these teams contain Revenue IT business analysts and developers as well as Fast developers.

- The Operations Team consists of eight Revenue developers and three business analysts, and focuses on operational support of the application, operational change requests, and the *Agency "Top 20" SQRs* estimated at fewer than 400 hours to complete.
- The Projects Team consists of four Revenue developers and two business analysts, and handles small projects, the *Agency "Top 20" SQRs* estimated at more than 400 hours, and large tax initiatives that have been outsourced to Fast.
- The Reports Team has four Revenue developers and one business analyst, and focuses on reporting—both from an operations point of view as well as projects.

Looking towards the future, Revenue IT would like to create a fourth team for data analytics. This team would provide data governance and data analytics for the agency, allowing the agency to measure new key performance metrics and also use predictive analytics to better fulfill its mission. See Appendix D for more information.

From the perspective of Fast support, there are six options moving forward:

1. Level 1 without optional services.
2. Level 1 with optional services.
3. Level 2 without optional services.
4. Level 2 with optional services.

5. Level 3 without optional services.
6. Level 3 with optional services.

A Note About Optional Services (aka vendor resources or vendor augmentation)

As Revenue operationalizes GenTax and moves its support structure to a more sustainable long-term model, so too is Fast moving to a different support model in its ongoing operations. During the CSR project, Fast brought in highly experienced resources to ensure the project was a success. As Fast has transitioned the Oregon Revenue account to long-term maintenance, it has changed its support model. The personnel that Fast plans to bring in under the optional services category are for the most part less experienced, many right out of college. They will come to Revenue and stay between one and one-and-a-half years, and then they will move on to other accounts or projects. While Revenue will receive a lot of productivity from these resources, there will also be costs associated with training these resources and having a high attrition rate. Revenue feels that Oregon will receive better value if Revenue increases the knowledge and number of its own developer resources, so that the state retains the knowledge of the application and gets a greater return on the training it provides.

This consideration eliminates options 2, 4, and 6 from the above list. Below is an analysis of the remaining options and whether they are viable for Revenue.

Option 1: Level 1 support without optional services

This option is the leanest option in terms of Fast support. It licenses an organization to use the GenTax product and provides telephone support during working hours only. It does not provide emergency support off hours and assumes an organization will support the application with only minimal vendor support. No state is on this service level without optional services, which fills in the support gap left by this lower level of service. Revenue IT does not believe this is a viable option for the agency.

Option 3: Level 2 support without optional services

This option provides all the services of Level 1 support, as well as providing on-site vendor personnel to ensure defects in site code, extensions, and configurations are resolved. It is, in effect, an extension of the warranty period that Revenue had for one year after each of the four project rollouts. The disadvantage of this option is that at this support level, Fast will only correct site code defects that Fast developers put into production. As Revenue IT takes over more and more of the system programming, this option loses its value. In addition, this option assumes the agency will install service packs and upgrades itself, without relying on the vendor. It will be difficult to keep up with service packs and version upgrades without a significant increase in both Revenue IT staff as well as Fast staff when the department upgrades to a new version of GenTax. Option 3 is a viable option for Revenue only if the agency contracts for additional Fast resources through the optional services feature (see note above about the value to the state when considering additional Fast resources versus additional Revenue developers).

Option 5: Level 3 support without optional services

This option provides all services provided in Levels 1 and 2; it also includes additional on-site vendor personnel to ensure that service packs and upgrades are installed. Although it is possible to add optional services vendor resources at this level, this option chooses not to provide any such additional resources.

Recommendation

The agency recommends that for the 2019–2021 biennium, Revenue contracts for Level 3 support from Fast with two optional services personnel. This recommendation is different from the current legislatively approved funding at Level 2 with five optional services resources, going down to four in the second year of the biennium. However, the dollar amount of the request for 2019–2021 remains the same. In the 2021–2023 biennium, Revenue recommends contracting with Fast at Level 3 without optional services. This gives Revenue a transition biennium to continue to build GenTax knowledge and to establish templates for easier tax program implementations and changes. In subsequent biennia, this recommendation fulfills the agency's goals of keeping the software up-to-date so that the software doesn't age and so that Revenue can take advantage of new functionality as it is released by Fast. This plan minimizes long-term cost by not contracting for optional services when Revenue IT resources are more cost effective.

Roadmap for Getting to Ideal Support Model

At this point in Revenue IT's support of GenTax, Revenue IT believes that it can perform any SQR requested with the knowledge it has of the application. To test this belief, in early 2019 Revenue IT ran a two-week pilot where it selected a sample of change requests pulled from the total request population through the use of a random number generator. The requests were then worked in the order selected. Revenue IT was able to complete all requests that were presented to them, and in that two-week period was able to complete 17 SQRs. Feedback from the pilot indicated that the developers increased their knowledge of the application as they were presented with requests in areas of the system with which they were not familiar.

However, just because the developers were able to complete the 17 SQRs, it does not mean that they were able to complete them as quickly as a highly-experienced resource from Fast. Revenue IT is currently developing a plan to rotate developers through the Operations Team to give them a broad understanding of the entire application, while each developer will also have individual areas of expertise. For the business analysts, Revenue IT is also assigning each business analyst change requests that will broaden each individual's understanding of the system. The goal is that after the 2019–2021 biennium, each developer and business analyst will have a working knowledge of all areas of the application in addition to their individual areas of expertise.

Previously, Revenue has measured relative productivity between Fast and Revenue resources by the number of migrations performed by each type of resource and the relative cost per migration. Upon review, this does not appear to be an adequate performance measure. It is easily subject to manipulation; for instance, a party could perform one migration of a hundred objects or one hundred migrations each with one object. Currently Revenue IT is consulting with Internal Audit to determine a better measure of change request through-put. Revenue IT will continue to refine its internal performance measures over the 2019–2021 biennium to accurately assess its productivity and to identify improvement areas.

For Revenue IT to transition to supporting the system with minimal vendor support, it will require not only learning the application more thoroughly, it will also require more resources than Revenue IT has currently. Revenue currently depends on Fast personnel to augment Revenue IT staff to perform all the work that is needed to ensure the agency can fulfill its mission. The shortfall in terms of staff resources is primarily in the Projects Team, where Revenue IT lacks the resources to do all of the legislatively mandated work that is currently

outsourced to Fast, as well as the change requests requiring greater than 400 hours. Currently, the Projects Team has four developers and two business analysts; right-sizing this team will require four additional developers (one ISS7 and three ISS6s) and two additional business analysts (OPA3s). In terms of technical support, Revenue IT has one FTE spread across two people performing system administration and database support. Revenue IT relies heavily on the Fast technical team for day to day operations. Revenue IT needs one more additional technical resource (ISS6) to accomplish this workload itself.

Quality Assurance (QA) and testing

Revenue IT lacks a professional QA and testing team. Testing is performed in an ad hoc manner, and often is not comprehensive. This can lead to errors as code is moved into production which may break other areas of code. The impact of this cycle is more change requests, which drive up the backlog and lead to user frustration and a poor taxpayer experience. To date, Revenue IT has not adequately addressed this deficiency due to a lack of resources.

A professional QA Team will first work to create detailed regression test scenarios for GenTax. IT will pull together test scripts from existing sources and then supplement with additional test scripts so that before a GenTax release goes into production, all areas of the system will be tested to ensure the release does not break any existing code. Ultimately, this testing will be automated so that a complete regression test can run with minimal human intervention. As changes are incorporated into GenTax, Revenue IT will need to update the scripts to reflect the new state of the application. This function will need continual work, but will repay the investment by reducing errors that drive dissatisfaction with the product.

Revenue currently has one tester devoted to GenTax. Developing a testing strategy for GenTax, setting up the templates, and creating the test scripts and test cases, and later automation, will require one test lead at an ISS7 level. To run the tests for each release will require an additional tester at an ISS5 level.

Summary

Revenue IT is looking forward to the challenge of transitioning support of GenTax from its vendor to agency personnel. In order to so, Revenue IT will need to increase staffing levels. This investment in additional staff will be well worth the time, effort, and cost.

Version 12 Upgrade and Business Process Redesign

This report so far has focused on the Information Technology aspects of operationalizing GenTax. However, the agency acknowledges that there is still work to do in program areas to redesign business processes to fully incorporate GenTax into the ongoing operations of the agency. This is a large effort, and may require additional resources to fully review each area's business processes and redesign those processes to streamline work and make each area more efficient. Revenue proposes that it does this work in conjunction with the GenTax version 12 upgrade.

Version 12 is Fast's newest version of the GenTax software and is available beginning July of 2020. Revenue plans to upgrade to version 12 in the 2021–2023 biennium. Upgrading to version 12 will give Revenue additional capabilities, including responsive design, favorites, SQR manager and service manager enhancements, and e-services enhancements. These new capabilities will improve the taxpayer user experience as well as making GenTax internal users

more productive. However, version 12 has a significantly different look and feel than previous versions of GenTax. There will need to be an extensive effort to provide training and organizational change management. Since any business process redesign work will also need additional training and organizational change management, it seems a logical move to incorporate all these changes into one program. This will allow the agency to redesign its processes using the latest release of the software, rather than redesign its processes now and then have to modify those processes when the new version of the software is installed. It will also be easier for staff to absorb the changes together rather than going through two separate major change efforts. If the two change programs are accomplished at the same time, Revenue will be able to staff the program correctly to optimize its change effort.

Remaining Opportunities in Operationalizing GenTax

There are a few remaining areas that pose some challenges to Revenue over the next two biennia:

Reporting

GenTax processes tax payments differently from the legacy applications that the department used prior to GenTax. As a result, Revenue has found some discrepancies between the way payments were reported pre- and post-GenTax. Revenue has formed a cross-functional team to evaluate GenTax reporting to see if these differences merit concern. Given that GenTax is an off-the-shelf product that has its own built-in data model, Revenue may not be able to change the way reporting is structured. However, there is value in understanding how reporting is structured in GenTax and if there are any changes Revenue feels it wants to make.

Data governance and data analytics

Currently Revenue lacks the resources to build a data analytics capability in GenTax and overall for the organization. This limits the agency's ability to implement predictive analytics and other newer technologies, such as artificial intelligence and machine learning, to enhance the agency's ability to fulfill its mission.

Decommissioning the legacy applications

After GenTax was implemented, the state passed six new tax programs that the agency was tasked with implementing in GenTax. This work prevented the organization from decommissioning the legacy applications that GenTax replaced. As part of the ongoing work to operationalize GenTax, Revenue has analyzed the application portfolio to determine which applications can be decommissioned. Revenue IT is currently working with program areas to determine where Revenue may need to save an application's data before the application can be shut down and decommissioned. The department is creating a roadmap to decommission the applications replaced by GenTax and to rewrite any remaining application on the iSeries mid-range computer. Revenue's long term goal is to terminate the department's use of this computer platform. This is part of the agency's modernization plan for its computer hardware and software. Please see Appendix E for more information.

Conclusion

Revenue is ahead of many state agencies in modernizing its application portfolio; the agency has already completed its main core systems replacement project and is well on its way to operationalizing support for GenTax and transitioning it into Revenue IT's standard operating

model. While Revenue IT has substantially reduced the number of SQRs remaining from the CSR project, the backlog of change requests is still higher than ideal. Revenue IT plans to increase its knowledge of the application and is consulting with Internal Audit to determine more appropriate performance measures to measure through-put of work. To minimize its dependency on Fast, Revenue IT recommends that the 2019–2021 biennium be a transition biennium to continue to increase its knowledge of the system. Given additional resources, Revenue IT recommends moving to Level 3 of Fast support with no optional services starting in the 2021–2023 biennium.

Appendix A – SQR Governance Process

October 7, 2019

1. Any work effort over 400 hours will be treated as a project.
2. All projects will be included in the DOR project portfolio.
3. Current SQRs that are project size (over 400 hours) will be included in the project portfolio.
4. The GenTax Business Analyst and Development teams will be officially moving to the new structure (Projects vs. Data/Reporting vs. Operations [including Quarterly SQR Plans]) effective 1/1/20.
5. In order to move to the new work structure, we must clear out the pipeline of projects in progress.
6. No new medium, large, or extra-large SQRs will be worked on, unless they are urgent, break fixes, or newly legislatively mandated.
7. Once an SQR has been approved to be worked, GenTax Business Analyst and Development teams will be working the effort until the work is completed.
8. Due to the number of efforts in progress and associated timelines, there are **constraints**, mainly with Business Analysts.
    i. Testing constraint. *Request: we need program testers to be involved in developing test scripts and testing*.
    ii. Kicking off work. Because of constraints, we have sequenced the projects based on due dates. Those projects that have 7/1/20 (or later) due dates will be kicked off in January, as part of the SQR Plan Q1 2020.

Based on the size of the work efforts and the due dates, we will be focusing on projects and Operational work efforts already in progress.

SQRs in progress that are NOT project sized will be aggregated into a new plan, SQR Plan In Progress. The SQR Plan In Progress will include the Agency 20 SQRs.

Any SQR work not completed by 12/31/19 will be included as first work to be undertaken in the SQR Plan Q1 2020.

Appendix B - Agency Top 20 as of 10/16/19

Priority	SQR #	Title	Narrative	Status	Status
1	7872	OTC Form	Add Statewide Transit to the payment coupon.	Change	Acceptance Test
2	7966	Do Not Suspend WRs (less than $24.99)	Do not suspend Withholding Reconciliations when the difference is less than $24.99	Correction	Acceptance Test
3	7041	Auto Info Only Form OQ	Do not suspend payroll returns when the tax difference is less than or equal to $1.00	Change	Accepted
4	7040	Criminal Fines Payment Attribute Missing	Allow Criminal Fines to be directed to more than one period. Currently they can only be directed to one period.	Change	Assigned
5	7973	Garnishment Period Payment Unavailable	Configure the Garnishment Period Payment voucher to allow for addition account types.	Change	Complete
6	7174	Garnishment Vouchers Overpayment	Garnishment vouchers are not posting correctly when the payment amount is more that what is listed as owning on the garnishment.	Correction	Complete
7	5203	Display Current Forecasted Balance for Garnishee	Forecast the CAP fee and add that to the balance were applicable so the garnishee can payoff the garnishment in full.	Correction	Complete
8	3138	Transactions Needed for Period Transfer	Need to be able to transfer transactions from one place to another.	Change	Assigned
9	7622	Aging of Receivables Transit	Update to Transit report to properly account for a same day reversal.	Correction	Complete
10	4518	Update When Return Processing Notices	Ensure that when processing original or amended returns, processing adjustments resulting in changes to the return or financials are communicated to the taxpayer.	Change	Information Needed
11	7932	Update Deferral Payoff – ROL	Update Revenue Online language for deferral website payoff information.	Change	Complete
12	4234	Collections Warrant Bill Stage	Logic needs to be updated to issue a letter when a true return is filed over an estimated return.	Change	In Progress
13	7835	Stop Auto Reversing Offsets to OAA	Stop auto reversing offsets to OAA intercepts.	Change	Submitted
14	7767	Small Tract Forestlands Notifications and Accounts	Identify which Notification of Operations match up to accounts listed on the applications (cases) for the Small Tract Forestland programs.	Correction	Acceptance Test
15	5206	OAA Replace Record	OAA replace record needs to exclude transactions on bill item not associated with client agency revenue.		Information Needed
16	6484	Add WFHDC Case to PIT	Create a new case to impose penalty.	Enhancement	Submitted
17	6128	GIS Hours and Rate	Separate GIS billings from regular map maintenance billings.	Change	Accepted
18	8134	Invalid Routing Number	Revalidate routing numbers to ensure that they are still valid.	Change	Intake Analysis
19	7804	Deferral payments leaving credit balances	Disallow account payments through cashiering for deferral accounts.	Correction	Complete
20	7878	Change Statement of Account Frequency	When certain criteria are met, do not send statement of accounts.	Change	Acceptance Test

Appendix C – Fast/DOR Work Division as of October 2019

Operating Model

The operating model for an application defines the overall structure of how the organization will support the system. It includes the support hours, the shift schedule, the roles and responsibilities of each group, and the escalation path for issues and concerns. Currently the operating model includes a mixture of DOR IT and Fast resources.

Operational Work and Enhancements

Ongoing operations of the product and changes to GenTax are made by a combination of DOR IT and Fast resources. Except for changes that need a deep knowledge of the proprietary architecture of the Fast product and how it was implemented during the CSR project, DOR IT resources are capable of making all site-specific changes to the application. DOR IT does not, however, currently have enough resources to keep up with the workload as it stands and it relies on Fast support to augment its development capabilities. In addition, DOR IT's goal is to have all support personnel understand the application as a whole, and be able to work on any part of the application while having their own areas of specialization. DOR will always need to have Fast involvement with the proprietary code base of the product, however, since that is part of the core product that it bought from Fast and is owned by the company.

Season Up

Preparing for the new tax season each year is called 'Season Up,' and the agency runs a project each year to make all the changes that are needed to be ready to process the new tax year's returns. These Season Up changes encompass both the software changes needed as well as any processing changes on the program side. Over the last several years, DOR IT has taken over this activity from Fast. As of the 2018 tax season, DOR IT is performing all Season Up activities without assistance from Fast.

Service Packs/Version Upgrades/Large Projects

Service packs, version upgrades, and large projects require a significant resource commitment to perform successfully, and DOR IT does not have the resources to be able to take on this work at this time. In addition, service packs and version upgrades require a detailed knowledge of what changes are contained

in the service pack or version upgrade, and such knowledge can only be known to Fast employees due to the propriety nature of the product. DOR IT contributes to the success of these initiatives in many ways: we are currently documenting the process for installing service packs; we put one or more DOR IT resources on the effort in order to facilitate the transmission of knowledge; and we hold design reviews and knowledge transfer sessions to ensure that we understand how the product is changing and to ensure that DOR IT standards are being followed.

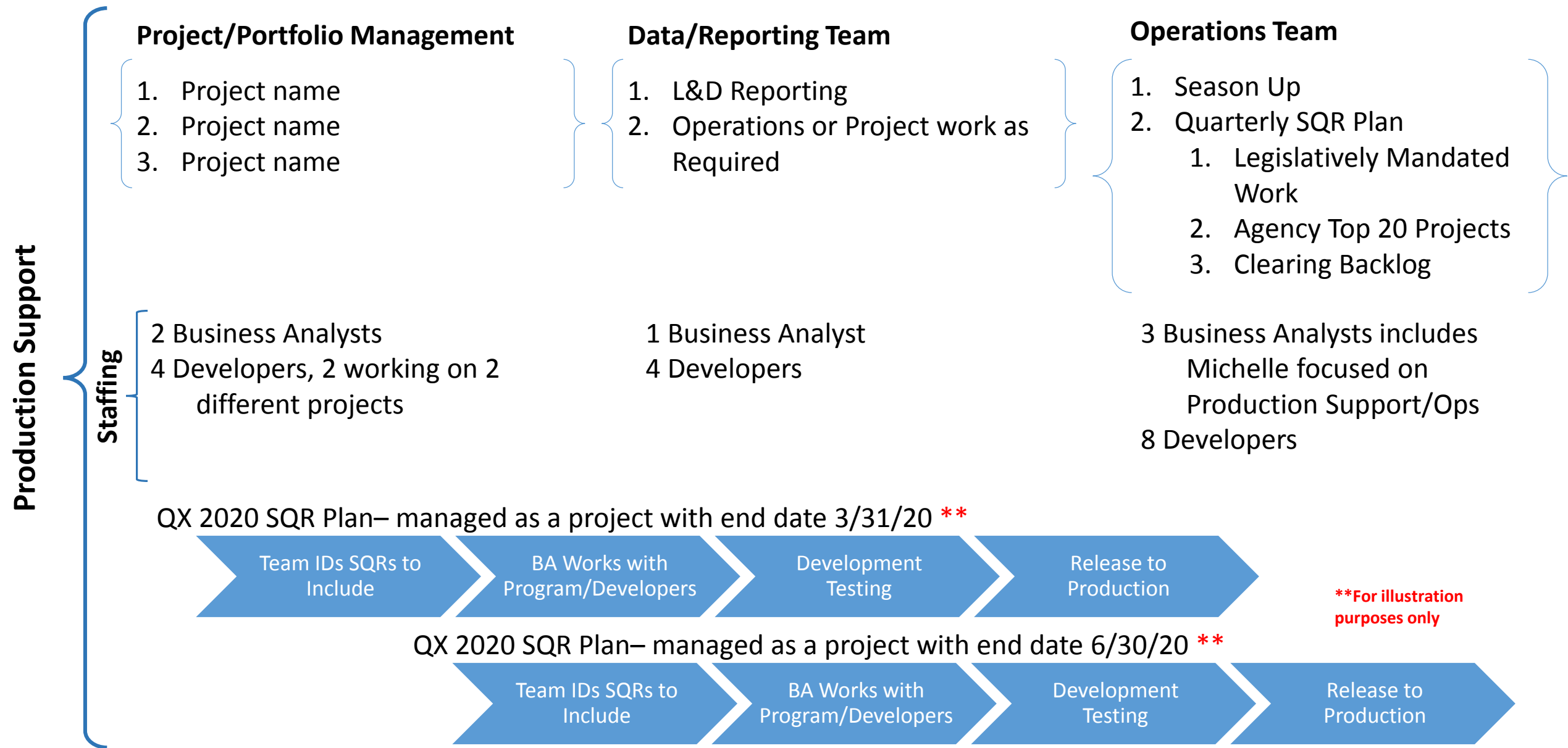## Technical support and System Administration

Technical support and system administration consists of technical tasks such as tuning the database, monitoring storage and CPU usage, and authorizing new users to the system. DOR IT is fully capable of doing all the tasks within this category of work, but it does not have the resources for the volume of work needed and relies on Fast to augment its resources.

Innovation

This year, DOR IT is embarking on making a series of innovative changes to GenTax that it believes will set the agency up for success. These changes are not part of the base GenTax product, but are agency value-added changes that will allow the organization to bring up new tax programs in an expedited manner. As the DOR IT GenTax support team builds the High Hazard Oil Train Fee, they are building a small tax-program template so that it will be easier and faster in the future to bring up new smaller tax programs. In addition, the team is also looking at creating a similar template for new municipal tax programs so that as long as municipalities adhere to the assumptions that underlie the template, DOR will be able to more efficiently bring up those programs in a cost effective manner.

Appendix D - ITS Demand and Capacity Management Proposal

Production Support

Project/Portfolio Management

1. Project name
2. Project name
3. Project name

Data/Reporting Team

1. L&D Reporting
2. Operations or Project work as Required

Operations Team

1. Season Up
2. Quarterly SQR Plan
   1. Legislatively Mandated Work
   2. Agency Top 20 Projects
   3. Clearing Backlog

Staffing

2 Business Analysts
4 Developers, 2 working on 2 different projects

1 Business Analyst
4 Developers

3 Business Analysts includes Michelle focused on Production Support/Ops
8 Developers

QX 2020 SQR Plan– managed as a project with end date 3/31/20 **

| Team IDs SQRs to Include | BA Works with Program/Developers | Development Testing | Release to Production |

**For illustration purposes only

QX 2020 SQR Plan– managed as a project with end date 6/30/20 **

| Team IDs SQRs to Include | BA Works with Program/Developers | Development Testing | Release to Production |

Appendix E

Legacy Application Decommissioning Analysis

June 19, 2019

Decommission After Turning off Access for 180 days First	Replaced by GenTax May Need Data Retention
Partnership Return Storage System	ELF
PC Daily	Transit Self-Employment Tax (TSE)
Agency Search Database (OAA)	NETS
CAFFA	Corp ACES
Database Change Request - can decom now; no wait	PIT ACES
Event Registration	Roller
System Support Analyst Queries (SSA)	Partnership/Partnership View
Cash Journal	Settlement Offer Tracking System (SOTA)
Mail Machine Service	Tobacco Programs
Dashboard	Corporation Automated Tax System (CAT)
Accountable Mail Database	Jenkins Database
Mail Processing Production	Senior & Disabled Citizens Property
Comsite	Tax Deferral System (SCD)
	Automated Collections and Tracking (ACT)
	Integrated Tax Accounting (ITA)
	Personal Information Processing (PIP)
	State Lodging Tax (SLT)
	Cigarette Tax Stamp Inventory
	JETTS
	Electronic Bankruptcy Notice (EBN)
	Individual Income Tax System (ITX)

Research More	Already Decommissioned
FITS & FITScan	FedQuery
Cost Allocation System (CAS)	Open Billings and Delinquents
Cost Allocation System Reports	Personal Income Tax Information (PITI)
Tracking System Activity (TSA)	CAFFA Letters
Appeals Tracking System (ATS)	ReturnVu
Magistrate Appeals Tracking System (MATS)	PC Market
Co-op database	iCapture 4.0
Amortcalc	
Car Reservation System (CRS)	
Group Date Track Work	
MACH_SVC	
Timber Compliance System (TCS)	
iWire	
MeFAdmin	
MeFReports	
iEditor 3.0	
Query400	
WageVu	
CoStar	