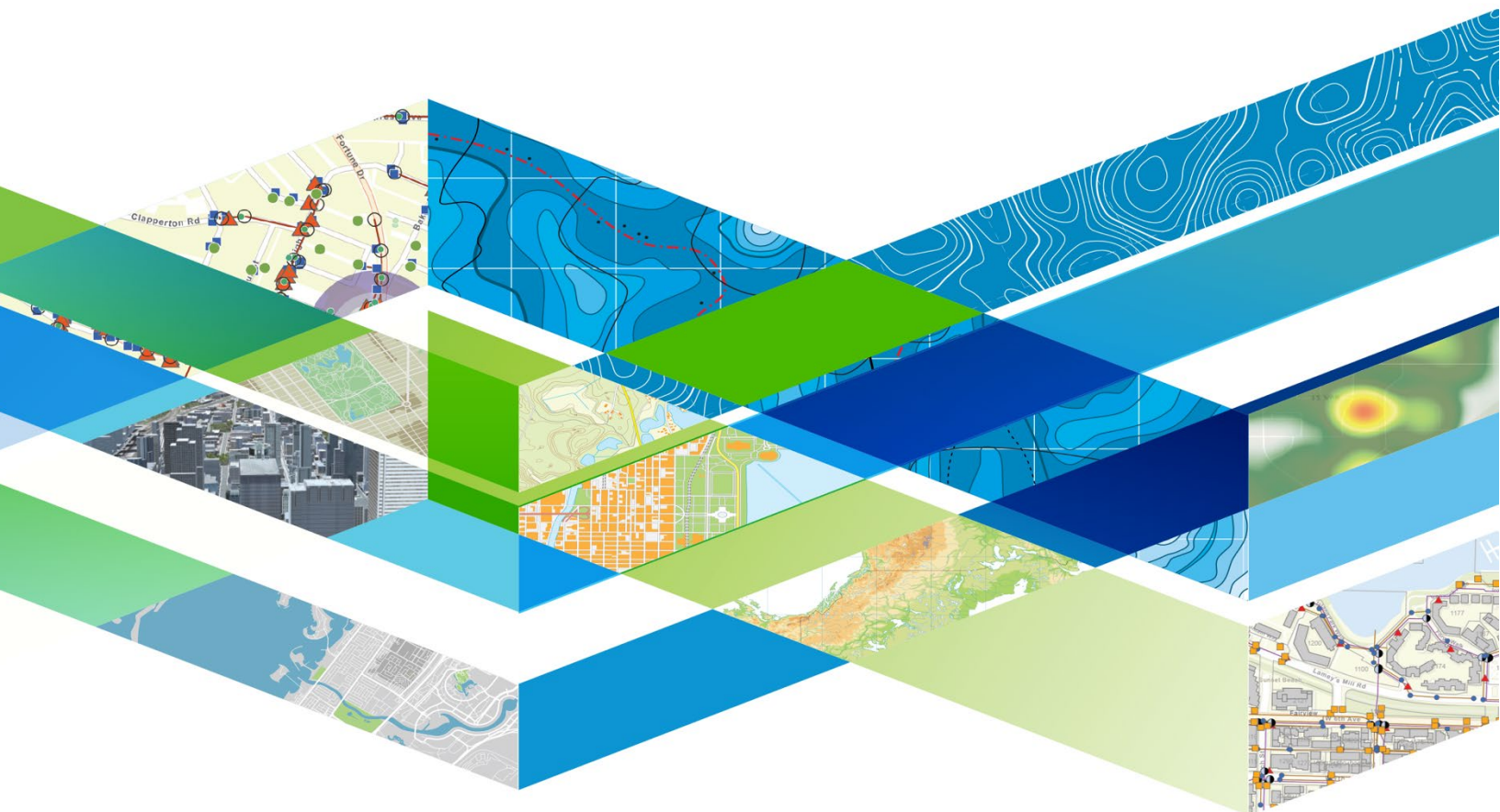


CIPAS Report

Project Status 2023



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1 Background

The Government of Alberta is an established user of the ESRI platform. ESRI Canada (EC) is currently engaged in a contract with the Ministry of Technology and Innovation to implement GAMA for the Ministry of Municipal Affairs, Assessment Services. The contract, 288PA-24681 was executed on April 28th, 2020, at a total fixed price of \$7,955,000.

There have been 4 Change Requests to the original contract:

- The first (1) Change Request was executed on September 2nd, 2020. There was no monetary change. The dates were adjusted splitting up the project into two releases: Release 1 (Non-Linear) and Release 2 (Linear).
- Change Request two (2) was executed on May 11th, 2021. There was no monetary change. Dates were changed, and RDC was determined to be delivered with Release 2 (Linear)
- Change Request three (3) was executed on February 23rd, 2022. There was a monetary change of \$191,268 (inclusive of a 40% discount). There was also a timeline change to account for the following scope changes:
 - Unit/Subunit changes
 - Bulk Insert Operations
- Change Request four (4) was executed on June 13th, 2023. There was a monetary change of \$473,760 (inclusive of a ~18% discount). There was a timeline change to account for the following scope changes:
 - Land Valuation
 - Cascading from Value Source Refactoring
 - Manual Rate Updates
 - New Roll Generation
 - Unit/Subunit Description
 - Unit/Subunit Adjustments & Reporting
 - Attachments Restructuring
 - Additional Data Loads

Currently, the Nov 11th Production Ready Deployment for R01 outlined in CR04 has been missed. It is ESRI Canada's position that this missed target was the direct result of substantial delays in testing. This delay has had a compounding effect on ESRI's and GoA's ability to meet the prescribed timelines outlined in Change Request 4. Specifically, the following were affected:

1. **Defects:** ESRI's ability to solution defects as they were reported. As the defects were reported later than expected EC's ability to solution these defects within the timeframe was also delayed.
2. **Data Validation:** There were delays in data validation from GoA. This was caused by delays in testing, defect resolution, delays in receiving information, and technical issues within GoA.
3. **Reports:** reports are dependent on functionality, bug resolution, and data as they pull this information from within the system. Reports are solutioned last after all relevant functionality has been solutioned (Data & Functionality). The delay in testing, bug resolution and data validation effected ESRI Canada's ability to solution the reports within the CR04 timeframe.

- 4. **Training:** Training needs to be developed on a system that has been thoroughly tested. Delays in testing, data, and functionality affected the delivery of training.
- 5. **Non-Functional items:** Non-Functional items were slated to be tested in a trial deployment of the Go-Live environment after UAT testing was completed. There was a 1 sprint window to resolve Non-Functional items, conduct training, and perform the final data cutover. The compounded delays as a result of delayed testing affected this period.
- 6. **Final Data Loading:** The final data load was not conducted as the extract was not delivered to ESRI Canada. This was likely affected by the delay in functional and data-related testing.

1.1 Purpose

The aim of this project status report is to gauge our current position and outline the essential steps needed to align both the client and the vendor toward project completion, with a particular focus on R01. While this report does not provide an exhaustive examination of the path that led us to our current state, it does highlight some valuable lessons learned throughout the course of the project.

2 Percent Complete Analysis

The percentage completion analysis presented below demonstrates the progress of the work accomplished by EC up to the current date. It’s important to note that the percentage complete does not imply validation by GoA of the work completed by EC.

2.1 R1

2.1.1 User Story Percent Complete: 99.75%

There are currently 394 User Stories in R1. An extract of the 393 completed User Stories is appended to this report in *Appendix C: R01 CIPAS Done User Stories-20231118*.

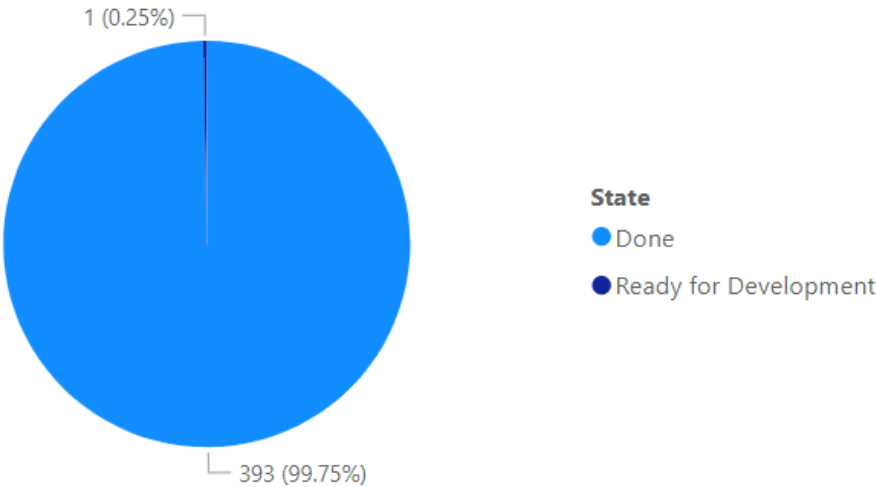


Figure 1: Extract from Target Process showing the state of R1 User Stories as of Nov 17th, 2023

2.1.2 Sev 1 & 2 Bug Resolution Percent Complete: 89.85%

There are 345 Sev 1 and 2 defects reported by GoA. 310 of these defects have been resolved by ESRI Canada (51 of these are still to be tested by GoA). 33 remain for EC to solution. 2 are data related for GoA to cleanse.

Total SEV1 & SEV2 defects raised	345
Closed	259
GoA to Retest	51
Rejected	3
COTS - By Design - Please Close	0
EC logged bug	2
EC to provide training	0
Functionality currently being developed	7
GoA to cleanse data and re-send	2
Needs further discussion	0
New Functionality	0
User Story no longer valid	0
Report-Hold	16
Deferred by GoA - Provide Comment	0
Blanks	5

The defects in the table above that are reported by GoA have many duplicates. The number of Bugs in EC's work tracking system (Target Process) that have been created from these defects is 136.

- 93% (125) of these Bugs have been solutioned.
- 7% (10) Bugs remain outstanding.

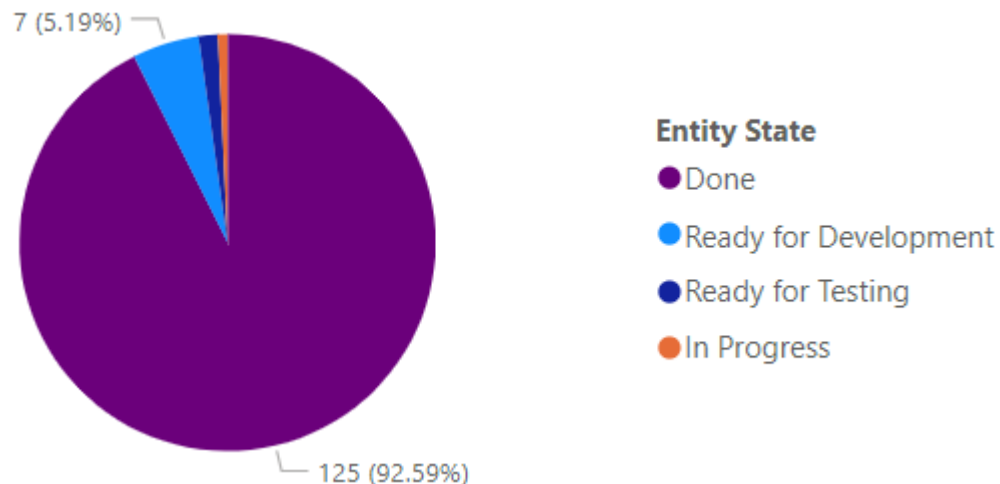


Figure 2: Extract from Target Process showing the status of bugs for R1 as of Nov 17th, 2023

2.2 RDC

2.2.1 RDC is approximately 75% complete.

- PoC was developed and approved.
- MVP was developed and approved.
- Final solution:
 - The Survey 123 application has been architected with a Sync to CIPAS.
 - The management structure (permissions, etc.) of RDC have been architected.
 - The first iteration of the final survey form has been configured.
 - The first round of gap analysis has been conducted by GoA.

2.3 R2

2.3.1 R2 is approximately 35% complete.

- The Business Analysis Plan has been revised from lessons learned on R1.
 - a. A significant amount of Business Analysis has been completed for R2; however, using the new methodology, revisions and validation need to occur.
 - b. The property specific meeting for BR02.03 Components of Property have been completed.
- Configuration has occurred that is impactful for both R1 and R2.
- The Data Migration Plan has been revised from lessons learned on R1.
 - a. The first round of data migration has been performed by mapping/migrating the ALPAS tables into GAMA.

3 Work Outstanding for ESRI Canada

3.1 R1:

3.1.1 BR's & Related User Stories

- BR17.04 - Marshall and Swift & External Valuation Guidelines
 - US 41963: M&S Business Rule: One Assessment Code per Section ID

3.1.2 Defects

The following bugs are still to be delivered. In most cases this is either because they were reported late, or they are related to reports.

TP	Bug	Severity	State
35734	log-out issue after using the secured map	Sev 1	Ready for Development
40197	Datamart Job: Multiple issues	Sev 1	Ready for Testing
42087	Muni Tax Passoff: ANN_Cama and DIP_Owner files issues	Sev 1	Ready for Development

42110	Rating is not being pulled in the Land Component calculation	Sev 1	Ready for Development
42134	Owner Roll Detail Report/RFI: multiple issues	Sev 1	Ready for Development
41953	Revisions Audit Report: Values don't pull correctly	Sev 2	In Progress
42052	Asset and Muni Tax PassOff: failed after processing 145 munis	Sev 2	Ready for Development
42070	DI Report: Fix Record count	Sev 2	Ready for Testing
42078	Metal Building manual components using incorrect life expectancy	Sev 2	Ready for Development
42092	Job Export Reports: Alberta logo highly pixelated	Sev 2	Ready for Development

3.1.3 Data Migration:

- 2021 AY, A1, A2, A3, A4, SUP:
 - Data has been loaded.
 - The data has been loaded as Folio Level Overrides; this was a new requirement discovered after CR04 was signed.
- 2022 AY:
 - Data has been loaded:
 - There are outstanding issues with this load that require further efforts from both EC and GoA
 - Coded Additions (Identified after CR04)
 - MSVPO Mapping (Identified after CR04)
 - Assessor Notes (Identified after CR04)
 - Load NonStdDesc (Identified after CR04)
- 2023 Working Trial:
 - Was not provided/performed as the project was behind schedule due to delayed client testing.
- 2023 Working Production:
 - Was not provided/performed as the project was behind schedule due to delayed client testing.

Non-Functional:

ESRI Canada has completed all related US & BRs associated with Non-Functional Requirements. ESRI Canada continues to work with GoA to provide documents and reports supporting non-functional business requirements.

Training:

ESRI Canada has updated the User and Admin Manuals. The training course content needs to be revised to incorporate the work that has occurred since CR04 was executed. EC will also need to amend the Lab Exercises provided by GoA if there have been changes to those steps.

Cutover Activities:

ESRI Canada needs to compile the artifacts present on the GoA/EC project SharePoint site for delivery at Cutover. ESRI Canada needs to setup GoA with our support services.

3.2 RDC

Continued GAP analysis and configuration revisions need to occur.

ESRI Canada needs to support GoA throughout UAT.

3.3 R2

ESRI Canada has so far logged 154 User Stories associated with R2. These User Stories and new User Stories discovered through continued Business Analysis will need to be solutioned. Esri Canada will work with MA on importing AER/RFI source data into GAMA.

4 Work Outstanding for GoA

4.1 R1

4.1.1 Testing

- Complete Incremental User Acceptance Testing
 - Incremental UAT: This is acceptance testing performed throughout the Solution installation iterations to verify the functionality being constructed.

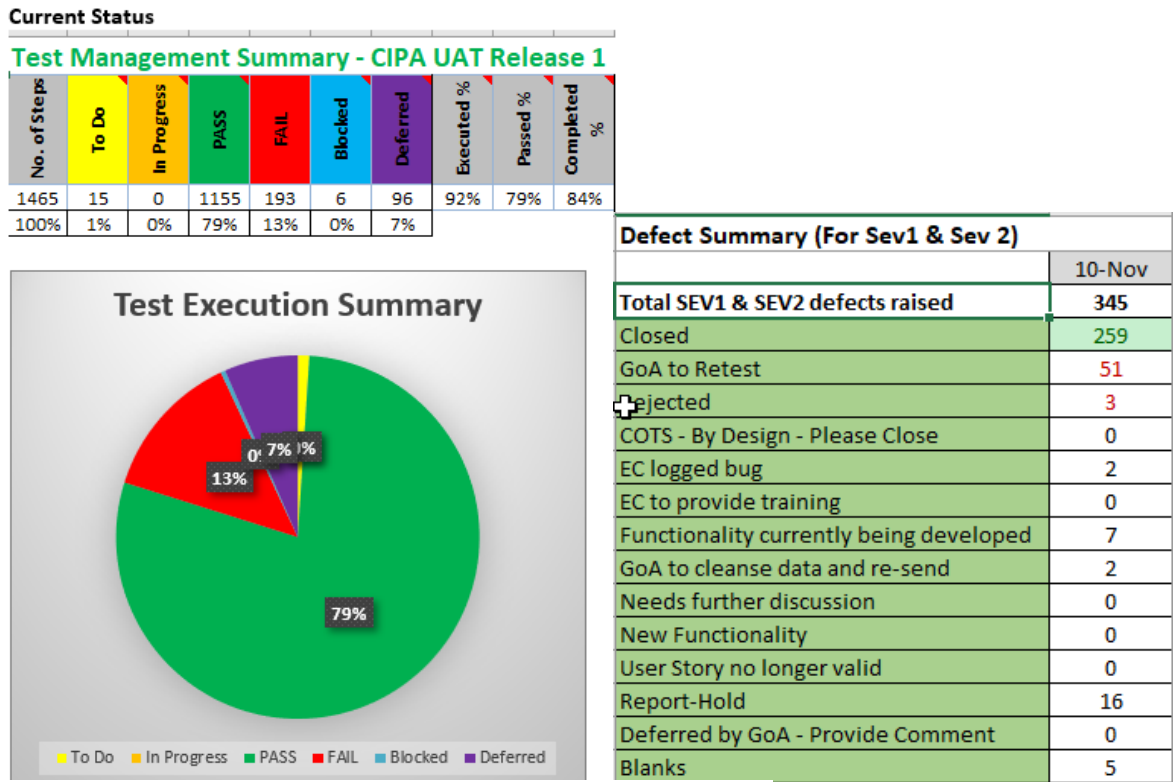


Figure 3: Incremental UAT Report provided by GoA on Nov 10th for R1

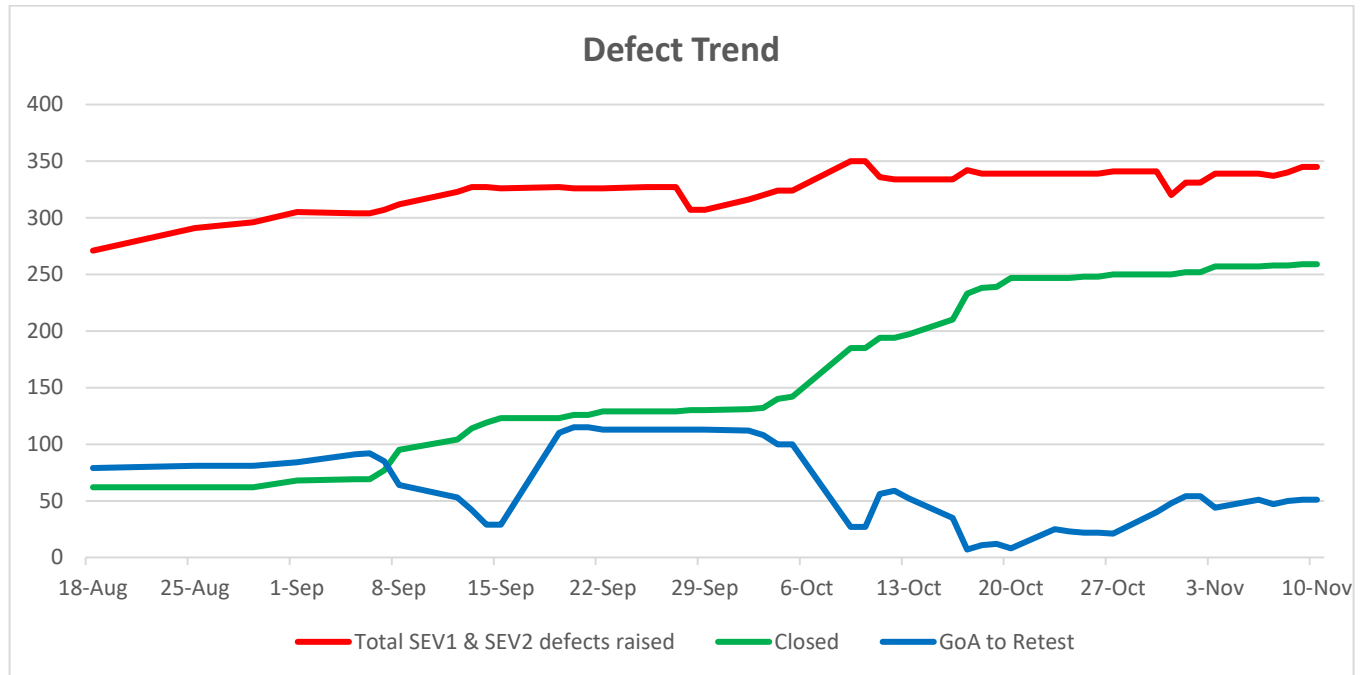


Figure 4: Graph showing the incremental UAT Sev 1 & 2 defect trends since Aug 18th for R1

- Perform Final User Acceptance Testing
 - Final UAT: This is acceptance testing that occurs once Solution development is complete and a final Solution for the Release is available. In final UAT, a full regression test is performed that encompasses all UAT tests performed during incremental UAT.

4.1.2 Data Validation

- Validation of Data Accuracy:
 - Ensure that EC has migrated data with acceptable values.
- Validation of Valuation Deltas:
 - GoA has not analyzed the values produced by CIPAS vs the values produced by CAMA lot:
 - GoA needs to run Bulk Validation/Valuation and compare the values produced by CIPAS vs CAMA lot.
 - Deltas greater than a certain percentage should be investigated.
 - Explanations or further data cleansing may be needed to justify/align values.

4.1.3 Data Cleansing/Delivery

- Cleanse 2023 working data within CAMA lot.
- Deliver 2023 working extract for a trial Go-Live data load.
- Deliver 2023 working extract for a cutover data load.

4.1.4 Non-Functional

- Conduct testing and provide acceptance on all Non-Functional items.

- Currently GoA has provided acceptance for 20/32 Non-Functional BRs

4.1.5 Training

- Provide EC with updated Lab Exercises that reflect business processes.
- Attend Train-the-Trainer training.
- Provide training to end users.

4.2 RDC

- Continue to investigate gaps with ESRI Canada.
- Conduct User Acceptance Testing.

4.3 R2

- Continue to work with ESRI Canada on Business Analysis, Testing, Data Loading and Data Validation.

5 Project Timeline

5.1 R1

Per *Appendix A: R01 CIPA Project Plan-20231118*, EC has hit every timeline outlined in CR04 that was not dependent on an item from GoA except for 1 deployment; Release 31 Sprint 6, which was delivered a day late.

Appendix A illustrates the task dependencies, responsible party, and shows where there has been slippage in the project schedule. The Gantt chart has been color-coded to indicate which Items were achieved on time, late, missed, or at risk.

On time = Green, Late = Orange, Missed = Red, At Risk = Yellow, Original Baseline task = Black

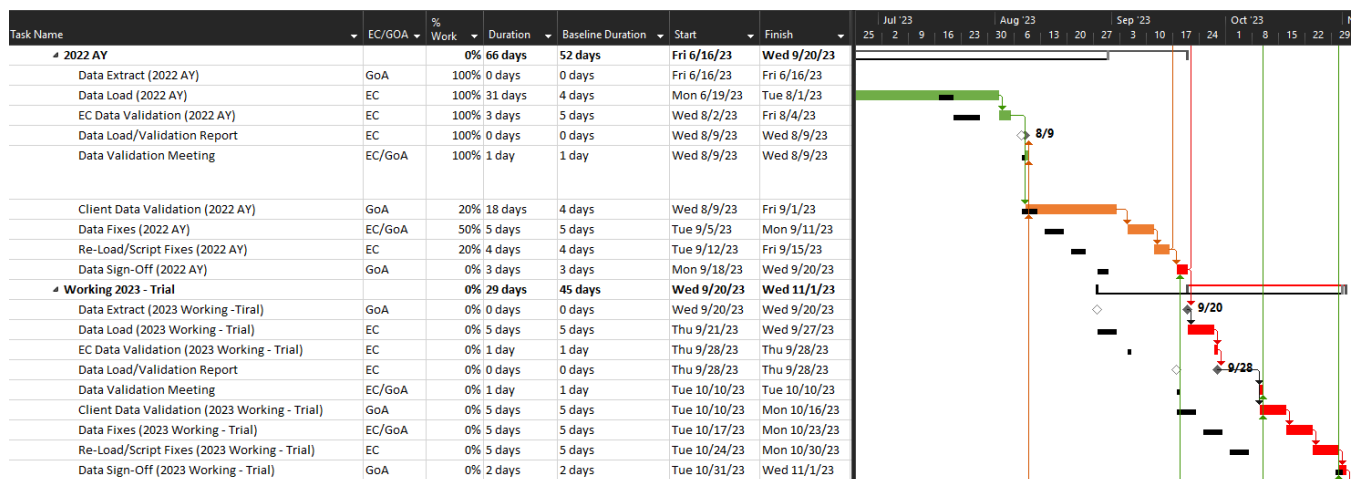


Figure 5: Example of color coding and baseline slippage in the R1 Project Schedule, this shows the 2022AY data load and the 2023 Working Trial data load

The delayed or missed timelines shown in Appendix A have affected EC's ability to deliver reports, defect fixes, data loads, training, and Go-Live activities.

5.2 R2

Per *Appendix B: R02 CIPA Project Plan-20231118*, EC has requested that the R2 timeline be reviewed and confirmed. The original start date in the proposed timeline was August 9th 2023, the proposed Go Live date was September 12th 2024. The timeline needs to be revised to reflect the delay in starting R2.

6 Lessons Learned

6.1 Business Analysis Validation

In our continuous commitment to project improvement, we've identified a opportunity for enhancement in the domain of Business Analysis and Validation. Throughout the contract, ESRI Canada diligently followed the directive to analyze legislated manuals, systemize Business Requirements, and present related extracts for validation by the GoA. CIPAS R1 underwent comprehensive Business Analysis that was meticulously documented in our Target Process work management system. Extracts from this analysis were shared with the client for validation.

In the spirit of collaboration, ESRI Canada maintained a proactive stance on development despite the absence of formal approval. However, as part of our ongoing learning process, we have acknowledged that this methodology had its challenges. This became evident as we discovered variations between GoA data and business processes compared to legislated manuals. Embracing a flexible approach, Change Request 4 prompted a pivot towards GoA creating their own "Valuation Manual Template" which reflected how they have adapted/expanded upon the legislated manuals, to ensure accurate data recording and valuation calculations.

Building on these valuable experiences, we have implemented a robust Business Analysis Validation process for R2. This strategic move is designed to further enhance the upcoming project release, incorporating lessons learned and minimizing risks. Our proactive measures aim to strengthen collaboration, streamline validation processes, and ensure a successful alignment with project objectives.

6.2 Schedule development

Throughout the course of this project, we've encountered several Change Requests, each presenting an opportunity for growth and adaptation. Recently, GoA expressed their interest in establishing a new project timeline, emphasizing the need for ESRI Canada to contribute to this process. Recognizing the importance of aligning with GoA's business cycles, ESRI Canada proactively responded by formulating an ambitious timeline that aimed to meet collective deadlines. This approach, while well-intentioned, revealed two key considerations for refinement:

The estimation and commitment of GoA resourcing and capacity might not have been accurately assessed when agreeing to the timeline.

Continuous additions of new requirements throughout the timeline present a challenge to the feasibility of the set deadlines.

6.3 Testing

The Agile methodology for software development/configuration places a strong emphasis on thorough testing by the client. Identifying defects or overlooked requirements from the initial business analysis as early as possible is crucial for the success of this approach. In the context of CR04, it was observed that GoA consistently faced challenges in meeting scheduled task deadlines for Testing. These instances were transparently documented in the risk log and communicated regularly during our weekly project leadership team meetings.

As we look ahead to the remainder of R1 and R2, we propose a positive enhancement to our approach. To further streamline the testing process and ensure timely delivery, we recommend introducing a threshold for missed testing deadlines that, when reached, triggers a reassessment of the delivery date via a Change Request. This proactive measure aims to enhance the overall effectiveness of the Agile methodology, fostering collaboration and timely identification of potential challenges.

6.4 Data Migration

Data Migration is explicitly covered under the terms of this contract. According to the agreement, Esri Canada was tasked with configuring the solution using a sample geographic area (1 municipality). GoA was to then load all other data into the application. During the course of this process, it became evident that entering the data into the system would pose a significant challenge for GoA. Recognizing this, ESRI Canada proactively stepped in to support GoA by programmatically loading the data. Importantly, as outlined in the contract, data cleansing/conversion remains the responsibility of GoA.

ESRI Canada has taken an active role in facilitating a smooth transition by undertaking substantial data cleansing and transformation activities that are not in scope for EC to complete. This effort is aimed at adapting GoA's current system's data to seamlessly integrate with the CIPAS data model.

Looking ahead, as per the contract, any outstanding R1 data items, and for R2, data cleansing and validation tasks will be carried out by GoA. This collaborative approach ensures that responsibilities are aligned, leveraging the strengths of both parties for a successful project outcome.

6.5 Data Validation

The primary function of the GAMA application is to generate assessment values, a pivotal aspect of our project. According to the CR04 Schedule, the client is responsible for validating the data loaded into CIPAS and subsequently assessing the valuation at the earliest opportunity. The validation process encompasses two key components:

1. **Validation of Data Elements:** This involves confirming the presence of loaded data in CIPAS and ensuring the accuracy of its values.
2. **Validation of Valuation:** GoA is encouraged to verify that the valuation derived from these data elements aligns within an acceptable range compared to the incumbent system.

Esri Canada has consistently advocated for the timely execution of this validation activity. While it was appropriately integrated into the CR04 schedule, these dates were not met by GoA. Moving forward, we would like to highlight that this is a major step in an implementation and performing this activity at the earliest opportunity ensures the success of this project.

6.6 Resourcing

It is evident that the challenges we faced, particularly in terms of missed timelines for testing, data migration, and data validation, as well as the lack of business analysis verification, can be attributed to a limited availability of resources within GoA to handle these tasks. Despite these hurdles, we recognize that resource constraints are a common aspect of large-scale projects and present valuable opportunities for improvement and collaboration.

Understanding that the availability of resources is a critical factor, we view this as an opportunity to engage in constructive dialogue and strategic planning. By identifying specific resource needs and potential bottlenecks, we can work together to explore creative solutions. A positive outcome is achievable through collaborative efforts to optimize resource allocation, streamline processes, and enhance communication channels.

Appendices



Appendix A

- R01 CIPA Project Plan-20231118.pdf

Appendix B

- R02 CIPA Project Plan-20231118.pdf

Appendix C

- R01 CIPAS Done User Stories-20231118.pdf