

BLACKLINE
CONSULTING

A Higher Standard

AP Process Digitization






Oxford County

Final Report

21 December 2021

PRIVATE AND CONFIDENTIAL

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INTRODUCTION

This report contains our recommendations for digitizing the accounts payable process at the three municipalities

In August 2021, the County of Oxford, Town of Ingersoll and Town of Tillsonburg (the Municipalities) selected Blackline to help them review their accounts payable (AP) processes

Continuing to operate the AP process during the COVID-19 pandemic increased the awareness of the Municipalities to the weaknesses in the continuity of the process.

- ▶ The objective of this project was to develop a more automated business process that could increase efficiency, reduce the need for physical storage and improve access to AP information.
- ▶ Additionally, the Municipalities wanted to have a process that utilized the systems to their fullest capacity and improved access to AP information regardless of physical location.

The diagram to the right highlights the steps we took to complete this work

This report contains a structured summary of the information we gathered, our assessment of the current process, our recommended future process highlighting which systems would be used and a business continuity plan.

1

Discovery

- Gather information
- Agree in-scope processes
- Job shadow staff

2

Analysis

- Lean-based process analysis
- Industry practices
- Cost quantification

3

Insight

- Review findings
- Future process maps
- Business continuity plan

4

Report

- Prepare final report
- Present final report

Our scope covered the accounts payable process from requisition to payment

The diagram to the right summarizes the accounts payable (AP) process that we reviewed

Since there are three municipalities involved in the review, we looked at each of their AP processes.

- ▶ This report contains the outcome of that review. It summarizes the current state, provides recommendations on future processes and future use of technology and finally, it details a business continuity plan.






CURRENT PROCESS

We captured information on the AP processes by job shadowing staff

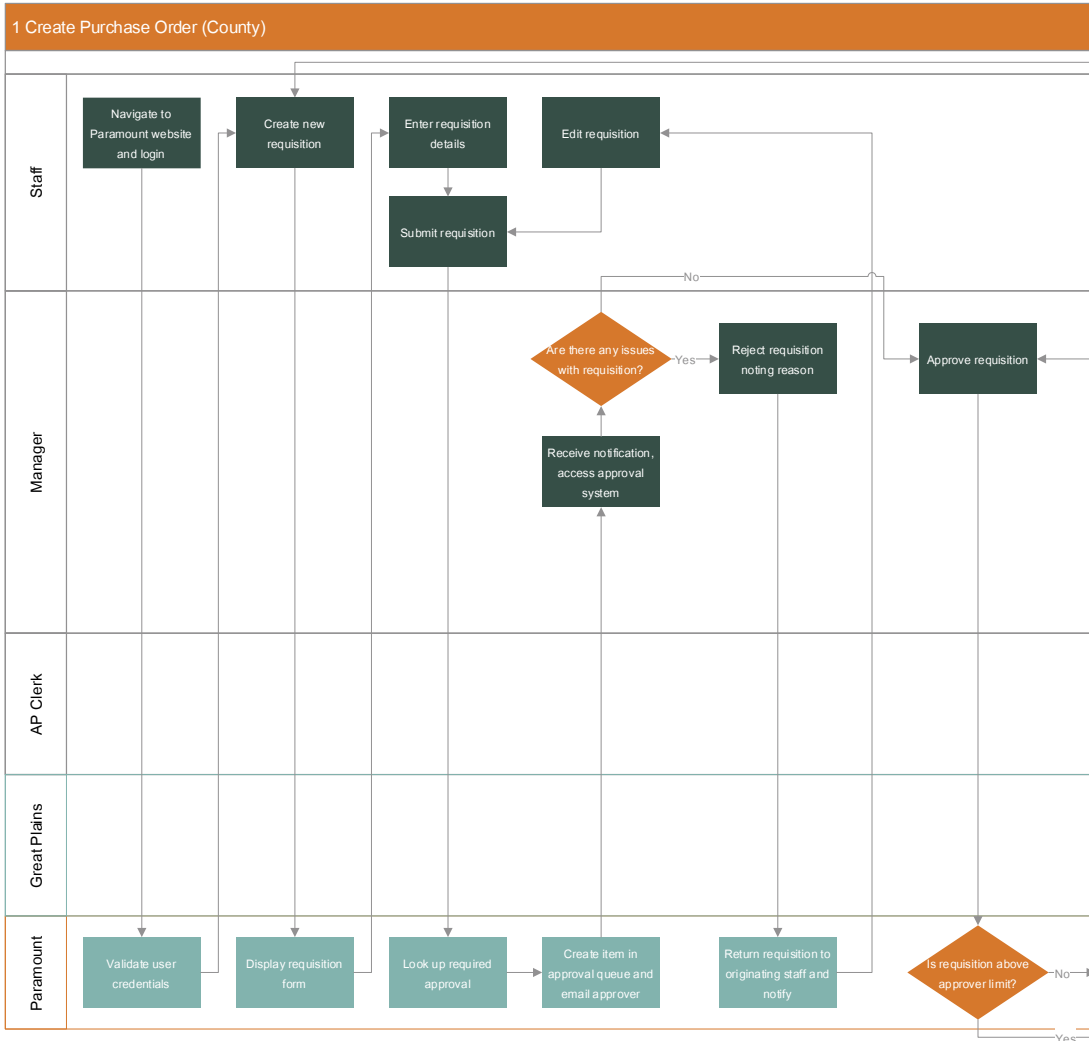
We met with representatives of each of the three municipalities to observe and capture the activities associated with each of the three functions described to the right

For each of the activities, we documented our observations and assessed whether the work was being completed efficiently.

- ▶ We identified areas in the process that were manual, involved waiting, physical movement and/or susceptible to errors.
- ▶ We identified the duration, frequency and volume of each activity. From this, we quantified the total labour. We also made recommendations on how the activity could be improved and then quantified the new suggested labour and the efficiency gap.

Function	Description	Systems Involved
 Purchasing	<p>This function primarily includes creating requisition purchase request for the goods and the services required. It contains details of the product such as its quantity, price, and the name of the requestor along with the department. If everything seems to be in order, the purchasing agent can forward it to further approval (if required) or generate a purchase order.</p>	<p>Paramount (County and Tillsonburg)</p>
 Invoice processing	<p>Invoice processing involves the complete process that an organizations accounts payable function uses to handle/manage vendor invoices. It includes receiving the invoice, approving it , paying the invoice, and then recording it in the general ledger.</p>	<p>Microsoft Great Plains (All Municipalities)</p>
 Storage	<p>This function involves the physical and electronic storage of all AP-related documentation.</p>	<p>Laserfiche (Ingersoll)</p>

Create Purchase Order – County (1/2)



The County has staff create requisitions with the Paramount software

Paramount has workflows that route the requisitions to the required approvers.

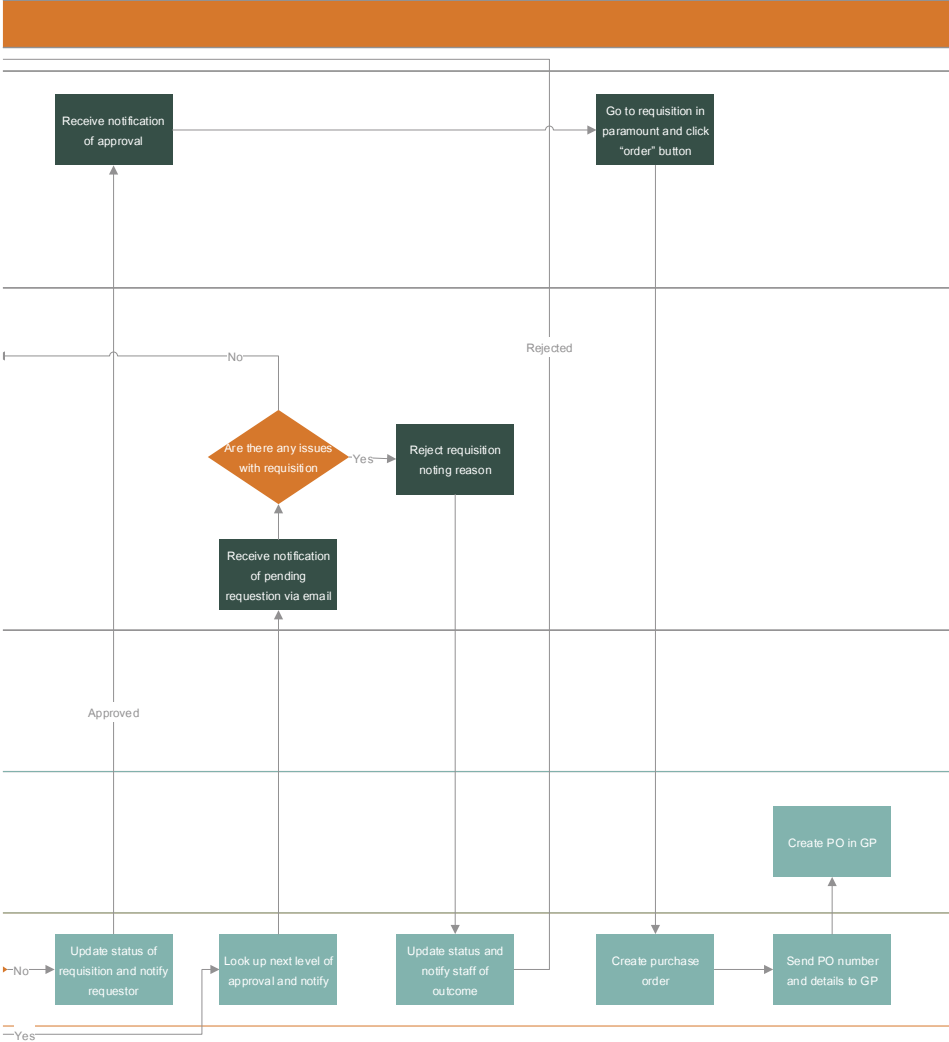
- ▶ This reflects good practice and is largely automated to the extent it can be.

Create Purchase Order – County (2/2)

Once approved, Paramount transfers the information to Great Plains (GP)

GP creates a Purchase Order (PO) based on the information supplied by Paramount.

- ▶ Good practice to integrate the two systems to eliminate re-entering data.

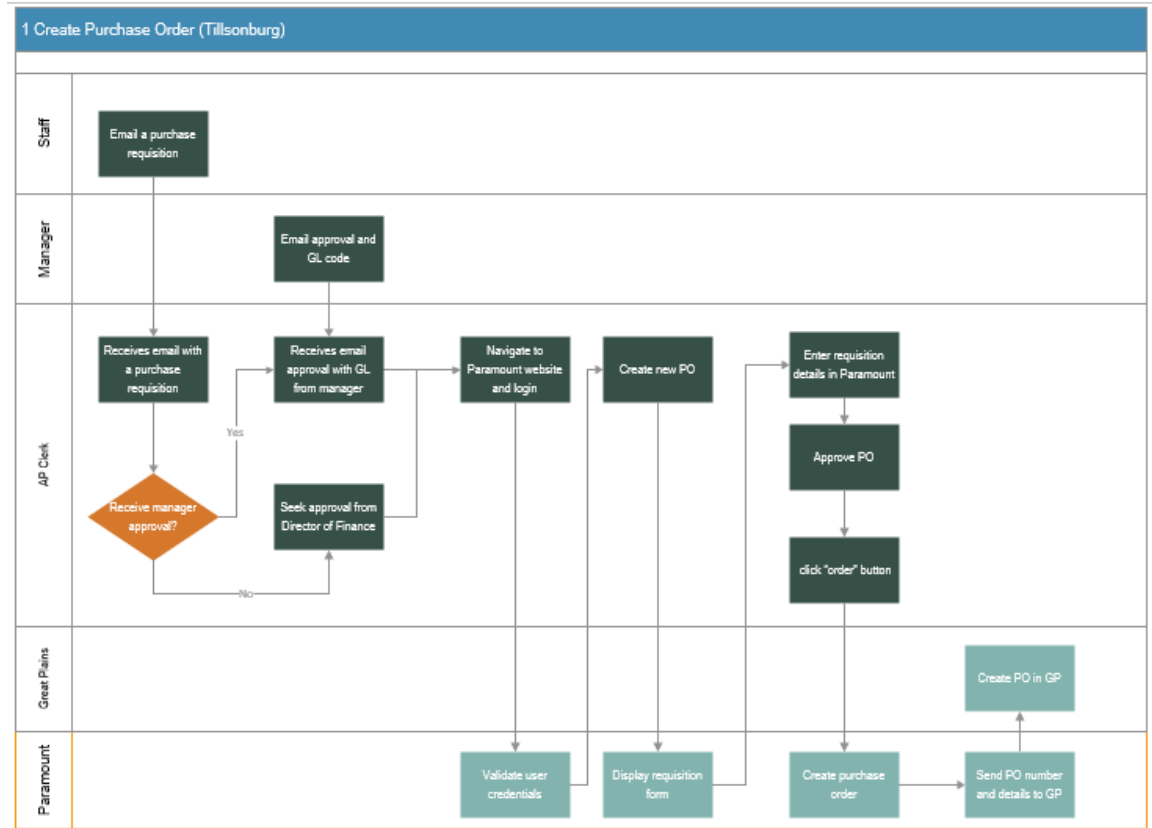


Create Purchase Order – Tillsonburg

Similar to the County, Tillsonburg uses Paramount to create Pos

At this time, the functionality has not been made available to all staff.

- ▶ This creates some rework as requests are emailed to AP staff who key them into Paramount.
- ▶ Approvals similarly occur via email rather than using workflow.
- ▶ We understand that the ability for staff to create requisitions and the approval workflows have been configured but have not been rolled out yet.

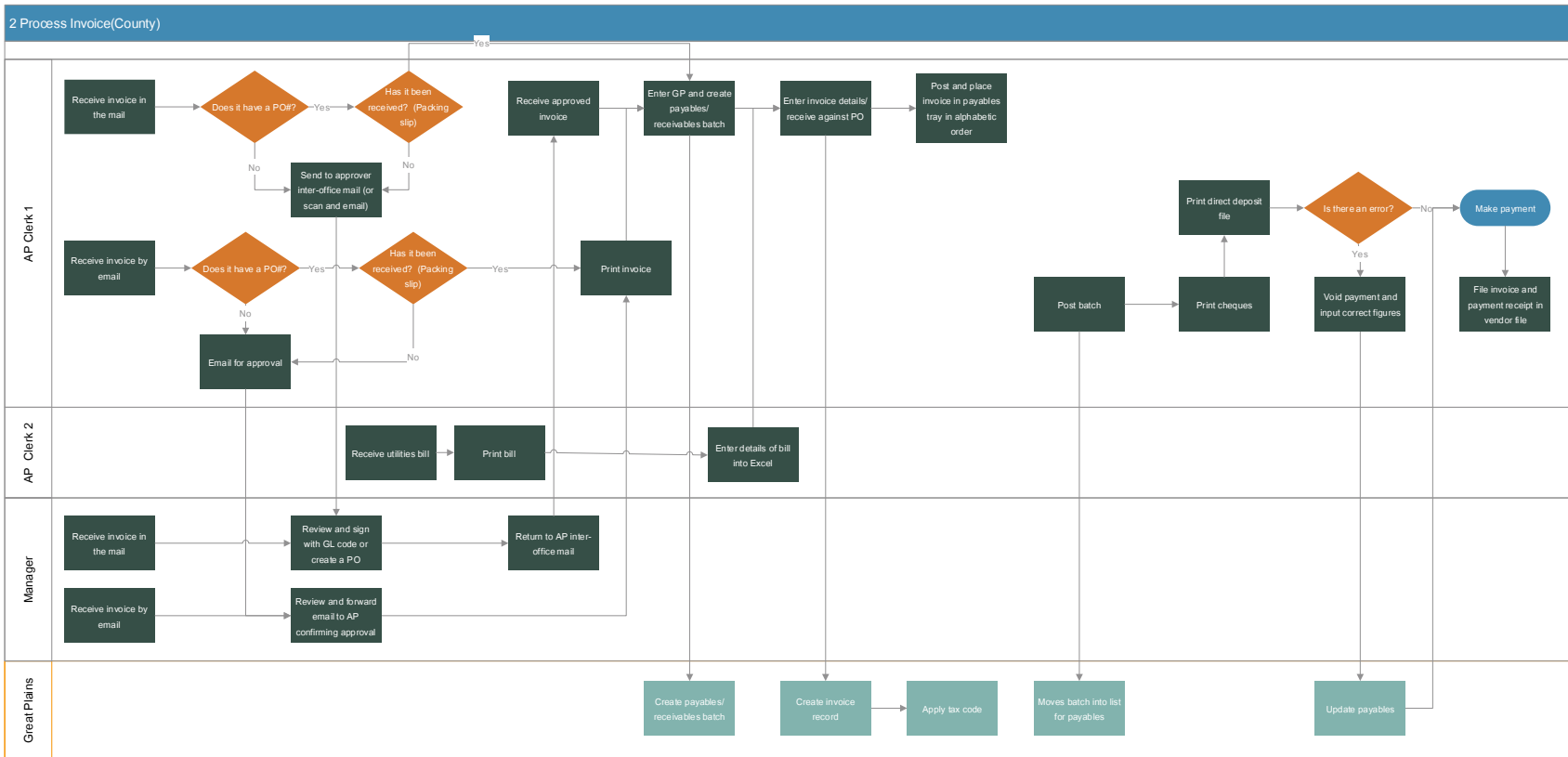


Process Invoice – County

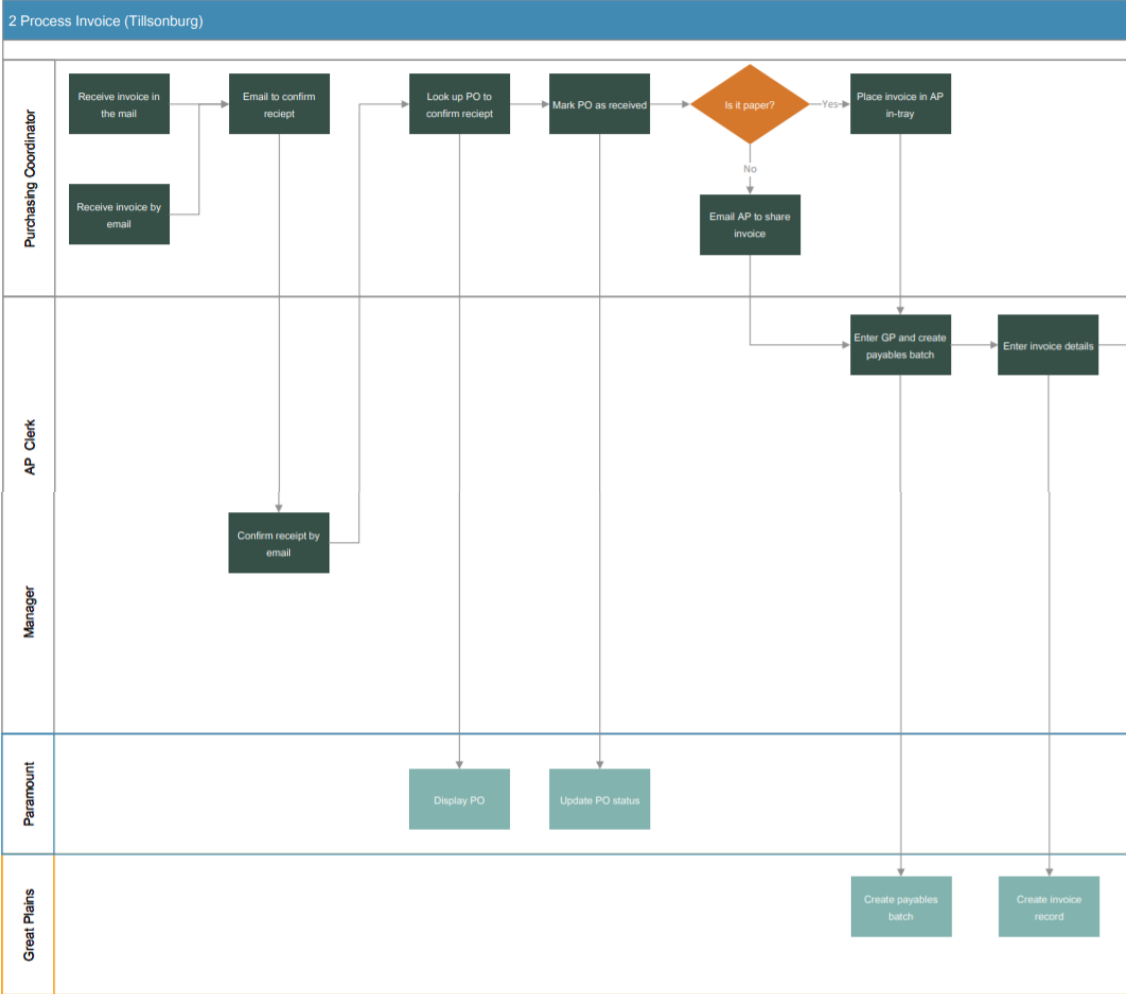
Processing invoices is manual and largely paper-based today

Received as either paper mail or PDF attached to emails, the invoice must be approved by the purchaser to confirm receipt.

- ▶ Without an electronic approval policy or tools, the approval is often communicated with the invoice being physically signed. Invoices can be emailed to approvers and when they arrive physically, scanned and emailed.
- ▶ The approved invoice is then keyed into GP.



Process Invoice – Tillsonburg (1/2)



Similar to the County, Tillsonburg receives both paper and PDF invoices

Confirmation of receipt and approval of the invoice is done via email.

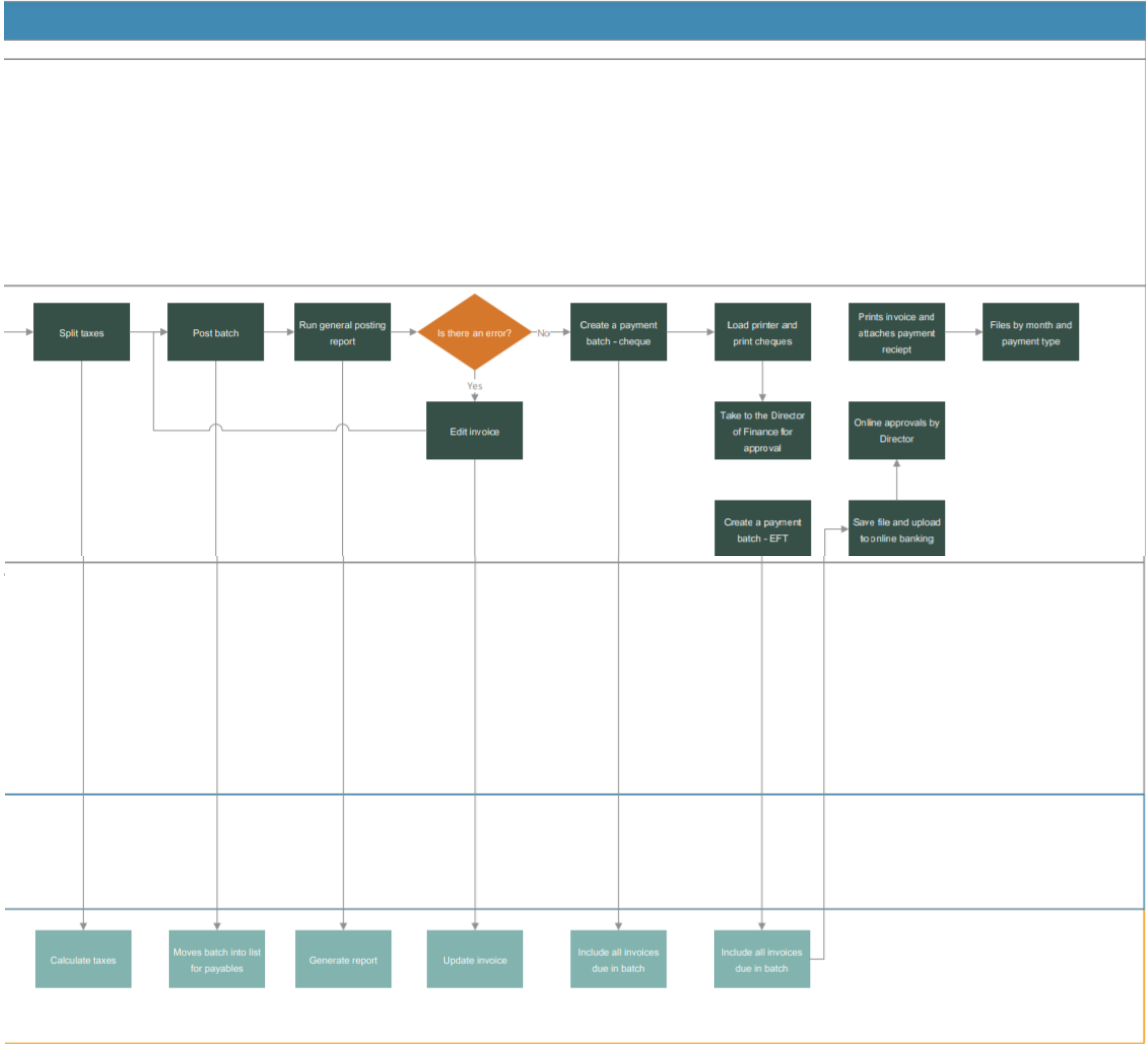
- ▶ The PO is then received in Paramount and the invoice keyed into GP.

Process Invoice – Tillsonburg (2/2)

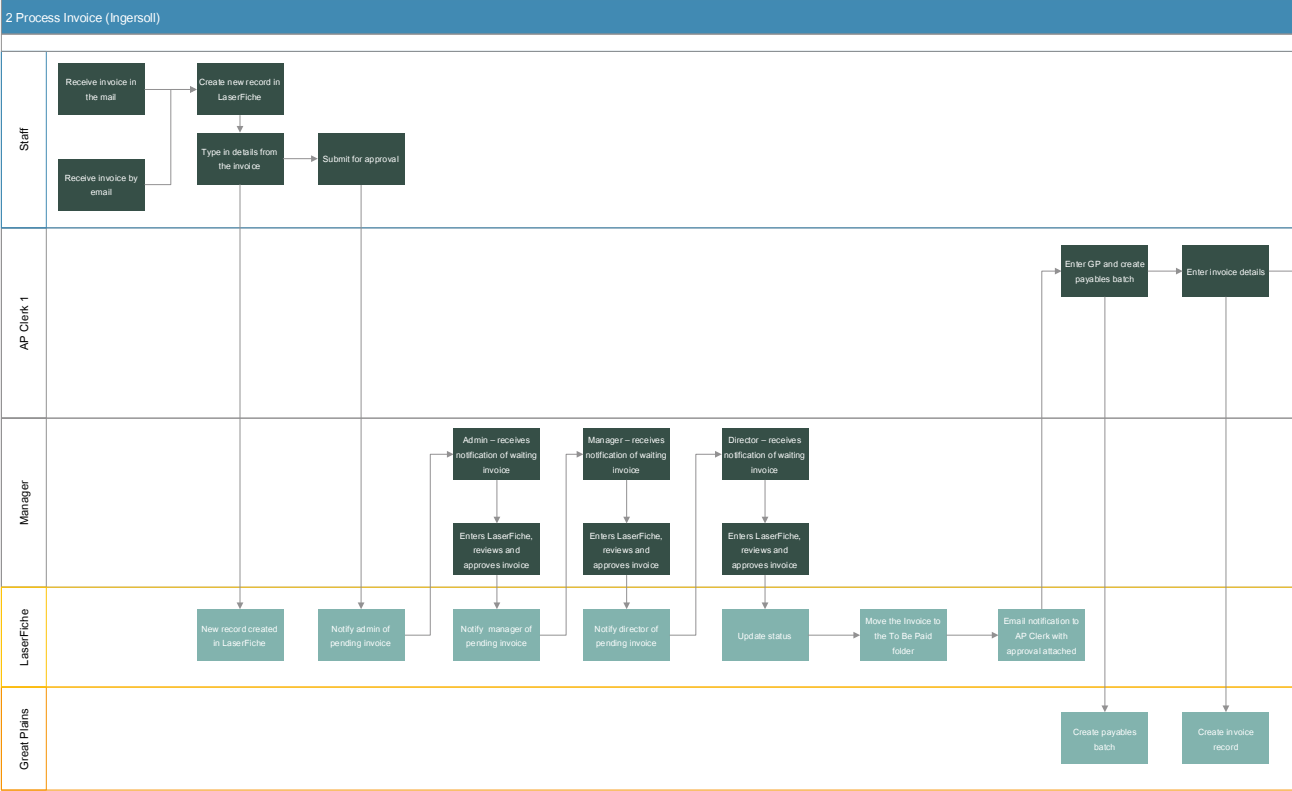
Reports are generated from GP to check that the payables batch matches the invoices

The Town supports payments by either cheque or EFT.

- ▶ The payment process is fairly standard and similar to how most organizations function.



Process Invoice – Ingersoll (1/2)

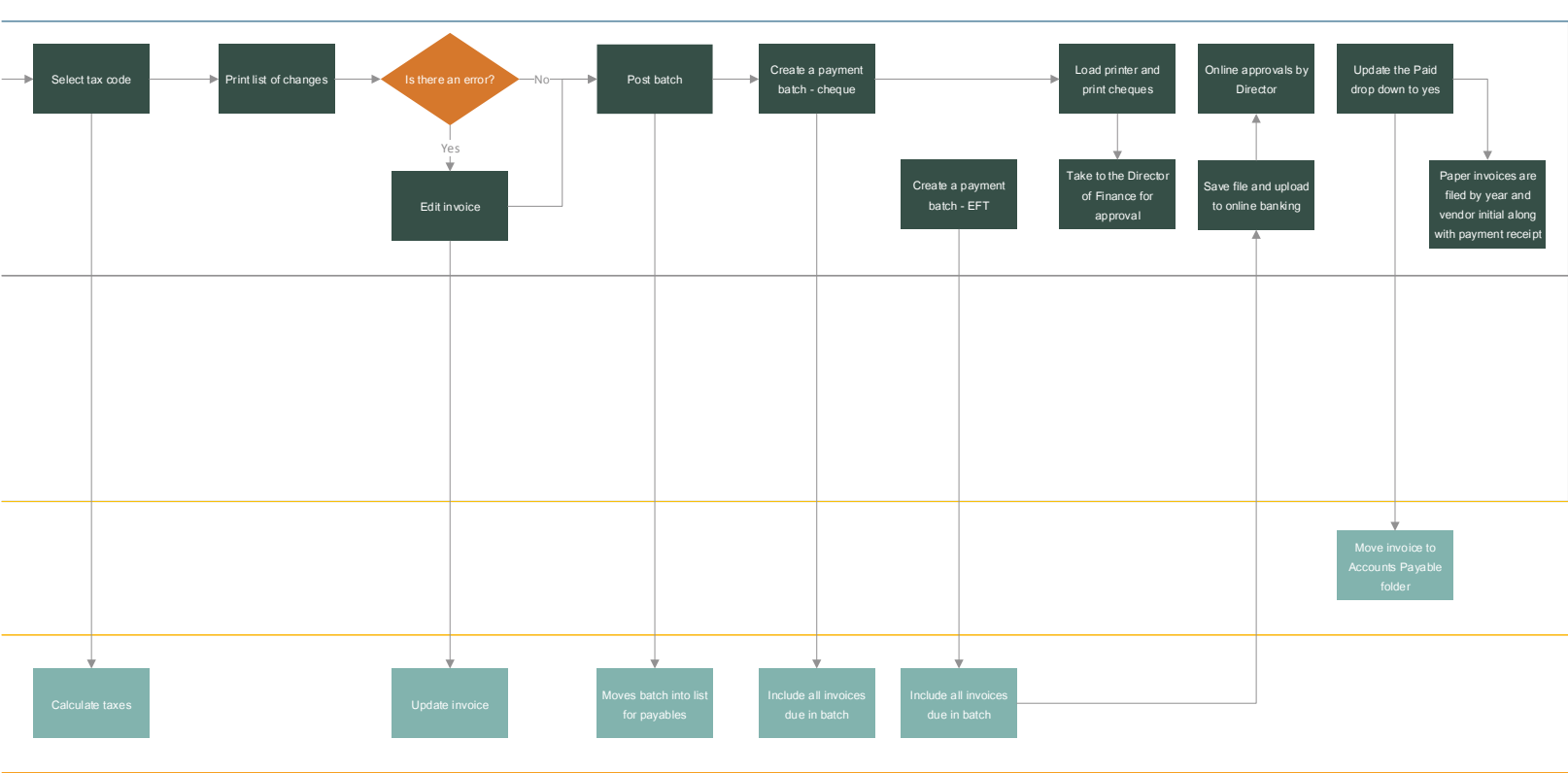


Ingersoll does not follow a requisition process today, so the AP flow begins when an invoice is received

Similar to the County and Tillsonburg, Ingersoll handles paper and PDF.

- ▶ Whichever format it arrives in, the invoice is rekeyed into LaserFiche. The Town has created workflows in this tool so that purchasers can review and approve the invoices electronically.

Process Invoice – Ingersoll (2/2)



Prior to posting, a list of changes is printed and checked for errors

As with the other municipalities, after approval, the invoice is rekeyed into GP for payment.

- ▶ LaserFiche keeps a record of the invoice in the Accounts Payable folder, but the Town also files paper invoices.

RECOMMENDATIONS

Adopt the current County requisition and PO workflow process

Recommendation

The key steps in the process are having staff generate requisitions, using workflow to document the approvals and transferring the PO data into the finance system.

- ▶ Using workflows removes the manual activities of distributing the requisition and recording its approval. Additionally, it enables true electronic approval.
- ▶ Since Ingersoll does not have a requisition system today, it has the choice of implementing the process in either GP or Paramount. Both technologies have similar capabilities, thus all three municipalities can follow the same process.
- ▶ The organizations may need to update policies to accept electronic approvals such as this.

Use Paramount's requisition, workflows and approval process and integrate with GP

- ▶ All three municipalities can adopt the Paramount process and use the workflow process in the system to do approvals. This will eliminate the emails between AP staff and managers. Review the existing integration between the two solutions to confirm all PO information is transferred to GP.

Implement requisition, workflows and approvals in GP

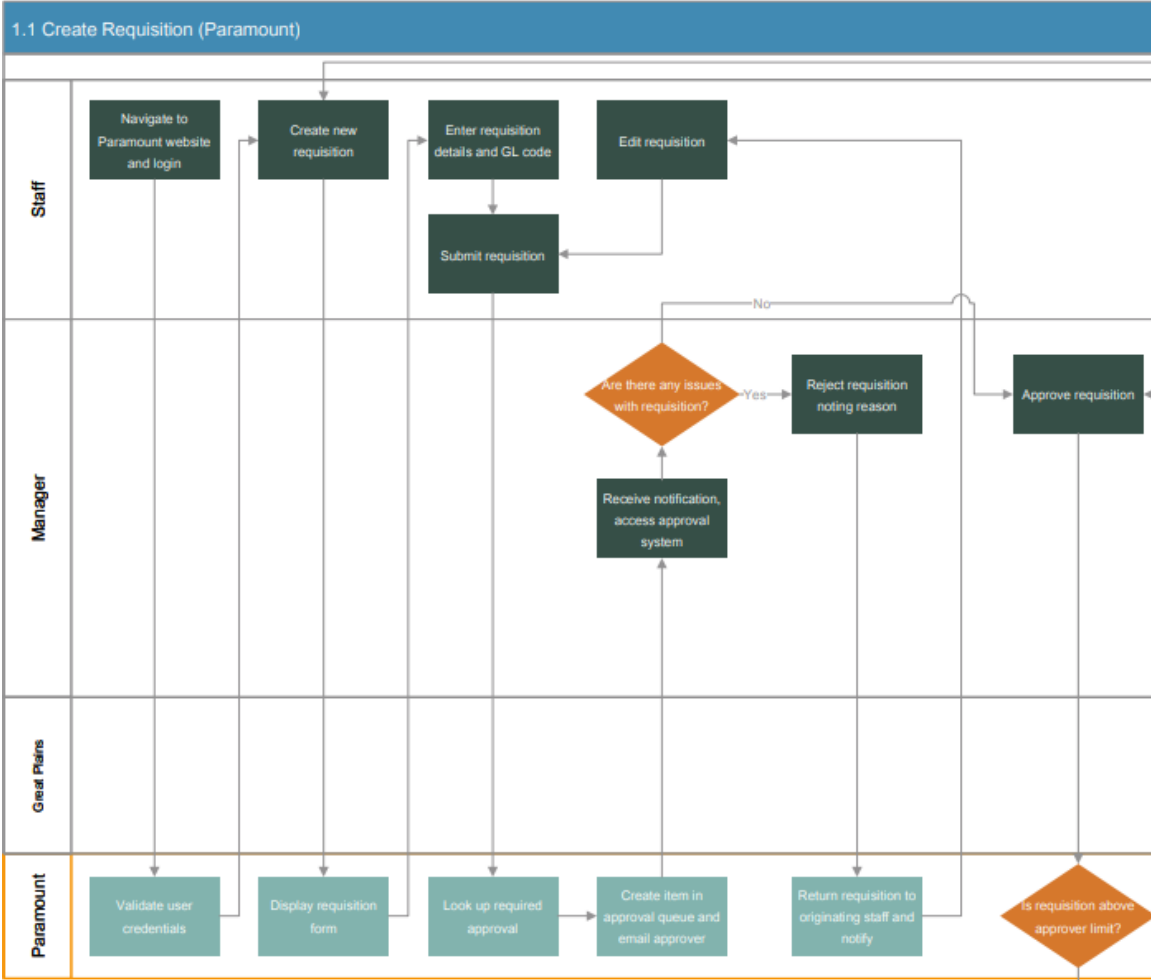
- ▶ Another option is to use the workflow capability in GP. We understand that historically the municipalities have found the workflow process in GP to be slightly less user-friendly than that of Paramount. However, the process would be very similar and no integration would be required.
- ▶ This option might be less appealing to the County and Tillsong, who have already invested in Paramount. However, if Ingersoll has an affinity to work in a singular system for requisition and approvals, this option might be more appealing. It may also be less expensive as you would not have to pay for additional Paramount licenses.
- ▶ It is important to consider that all three municipalities are expected to perform a GP update relatively soon. Thus, it may be convenient to plan to perform these concurrently.

Create Requisition Paramount (1/2)

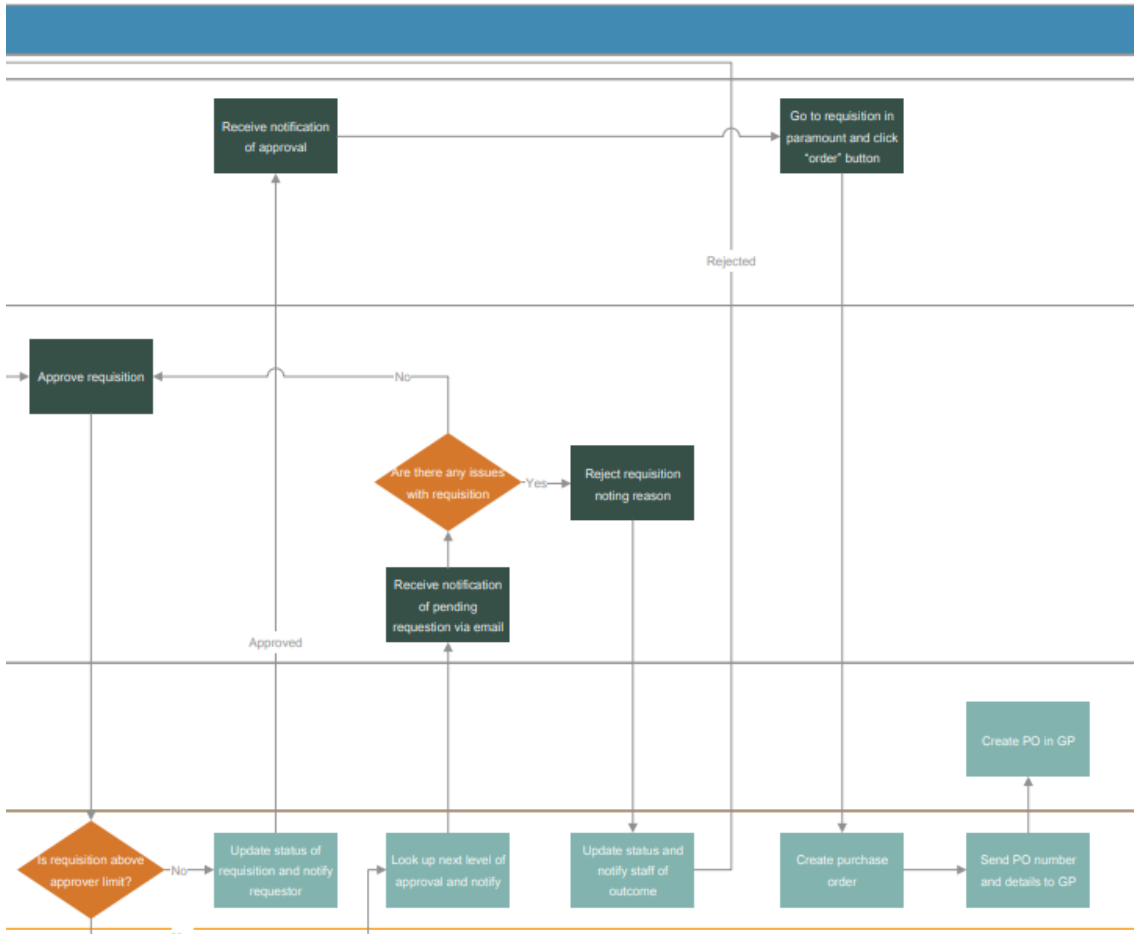
The process map to the right shows the future requisition process using Paramount

This is essentially the process adopted by the County today.

- ▶ Each of the municipalities will need to develop guidelines as to what purchases need a requisition and approval.
- ▶ The workflow should be configured so that the system knows who to send the requisition to for approval and what their approval limits are.



Create Requisition Paramount (2/2)



Once the requisition is approved in the workflow, the system creates a PO and assigns a PO number

Paramount then transfers the PO data to GP to create the PO in the finance system.

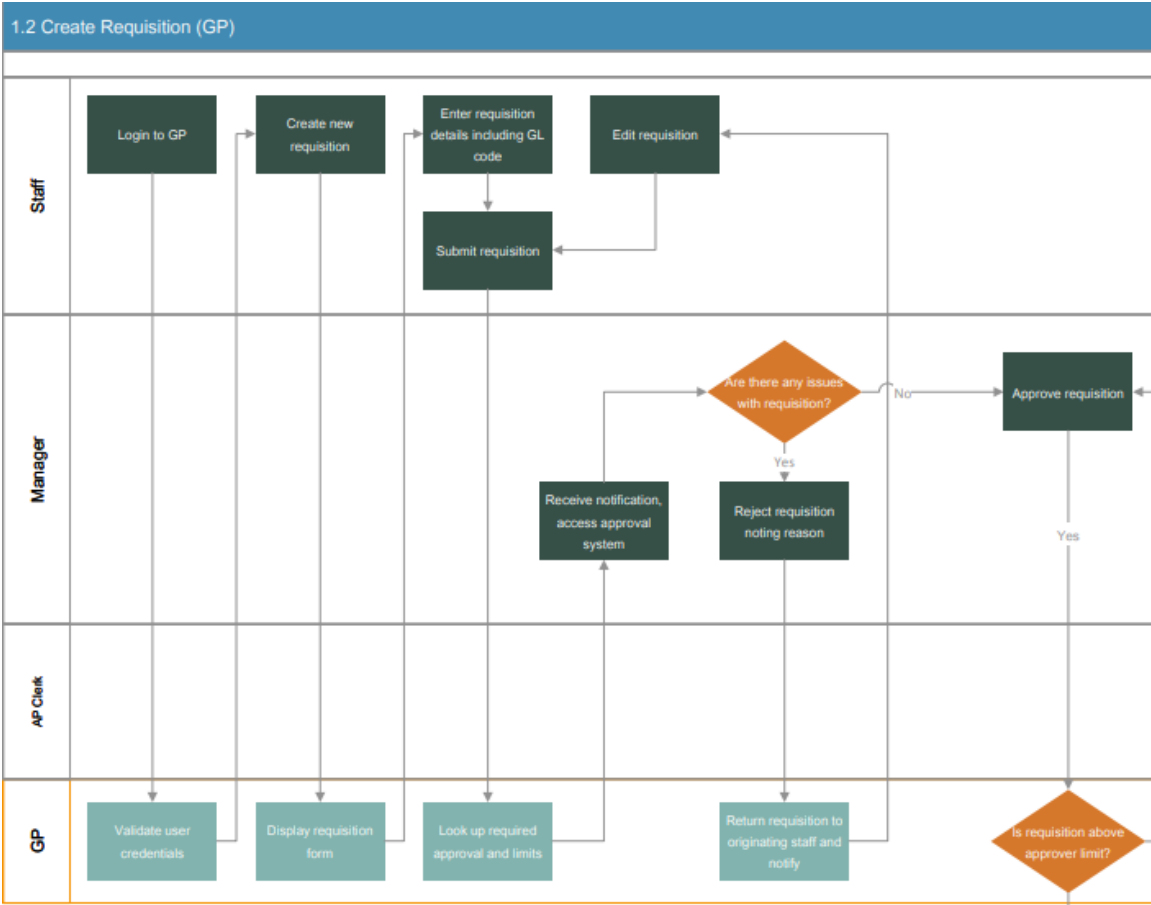
- ▶ Care should be taken to decide which record will be the master record. When two systems share the same data, incidents can occur when the data in one system is changed and the two records that should be the same are now different.
- ▶ Its common practice to identify one system as the source of truth. If the two records ever got out of synchronization – this system would be considered the correct record.

Create Requisition in GP (1/2)

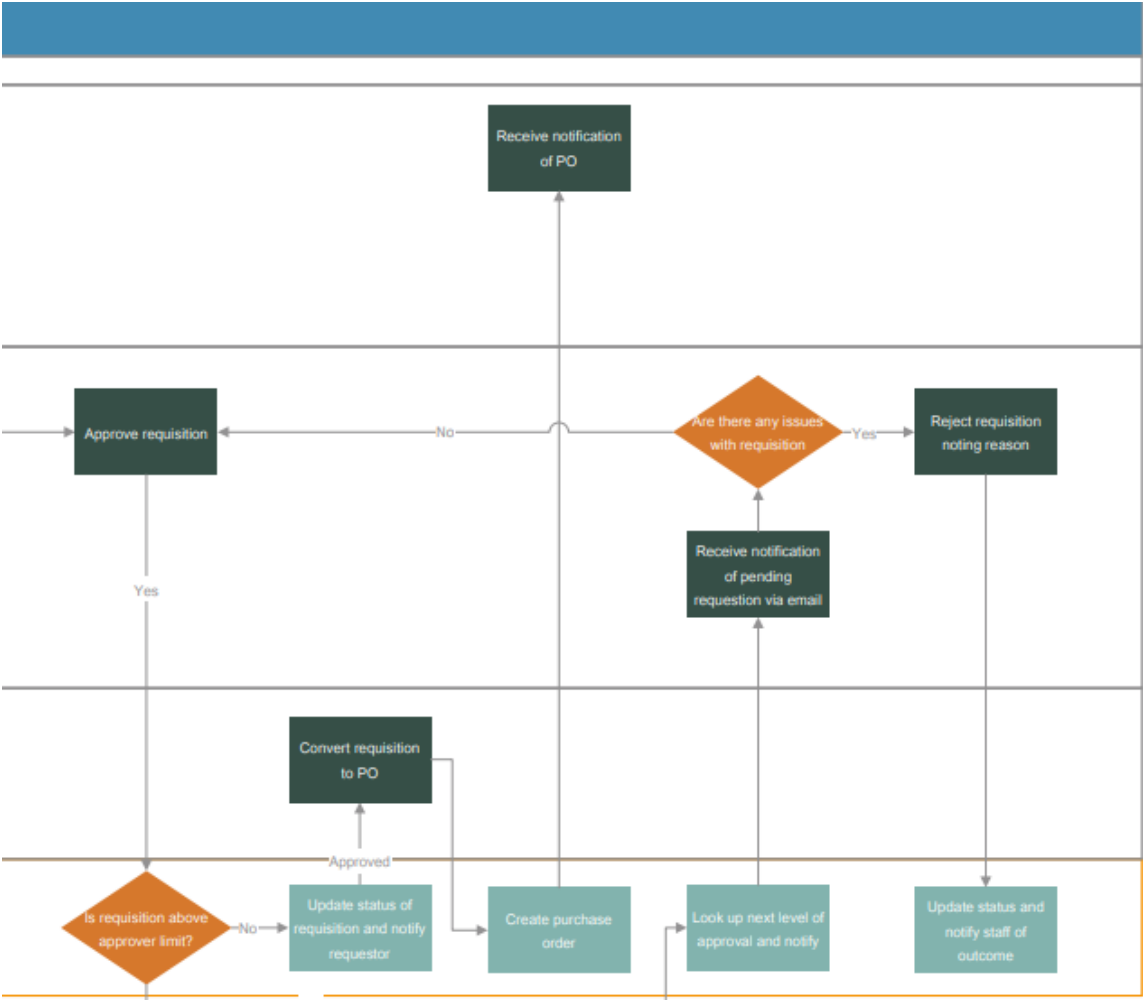
Alternatively, the same process can be implemented within GP

GP has offered workflows since 2016 and even without GP workflows, it can use SharePoint workflows.

- ▶ Approving managers would receive an email that would allow them to approve or reject the requisition.



Create Requisition in GP (2/2)



Since all of the work is completed in GP, there is no integration required

It also means there is only one PO record.

Implement RPA to capture invoices

Recommendation

- ▶ The municipalities can implement RPA software to capture invoices at receipt. RPA software robots can automate data input, error reconciliation and some of the decision-making required by finance staff when creating invoices in a system. At the same time, automation can limit errors in such processes and reduce the need for manual exception handling.
- ▶ When compared to manual invoice creation, automated invoice creation:
 - Moves through the AP process much faster. It also speeds up the approval process and reduces processing times
 - Cuts down on error rates. Less manual entry means less room for mistakes
 - Reduces labour. Staff can work on more business-critical tasks. It also reduces the cost of manually processing invoices (postage, paper, etc.)
 - Reduces duplicate invoices and payments

RPA software can read invoices and create electronic versions

- ▶ RPA vendors indicate that, when trained, their software can accurately read 80 percent or more invoices correctly. These applications can be configured to report the confidence it has of having captured the invoice correctly. This allows AP clerks to review invoices with a lower confidence score.
- ▶ There will also be instances where the software cannot read the invoice properly for a variety of reasons. In this instance, staff should revert to the regular process of inputting invoices manually.
- ▶ In order to maximize the benefit, the municipalities should encourage vendors to send invoices electronically via email, as this will also reduce the time needed for staff to scan paper invoices into the RPA folder.

The alternative is to input invoices into the finance system as soon as they are received

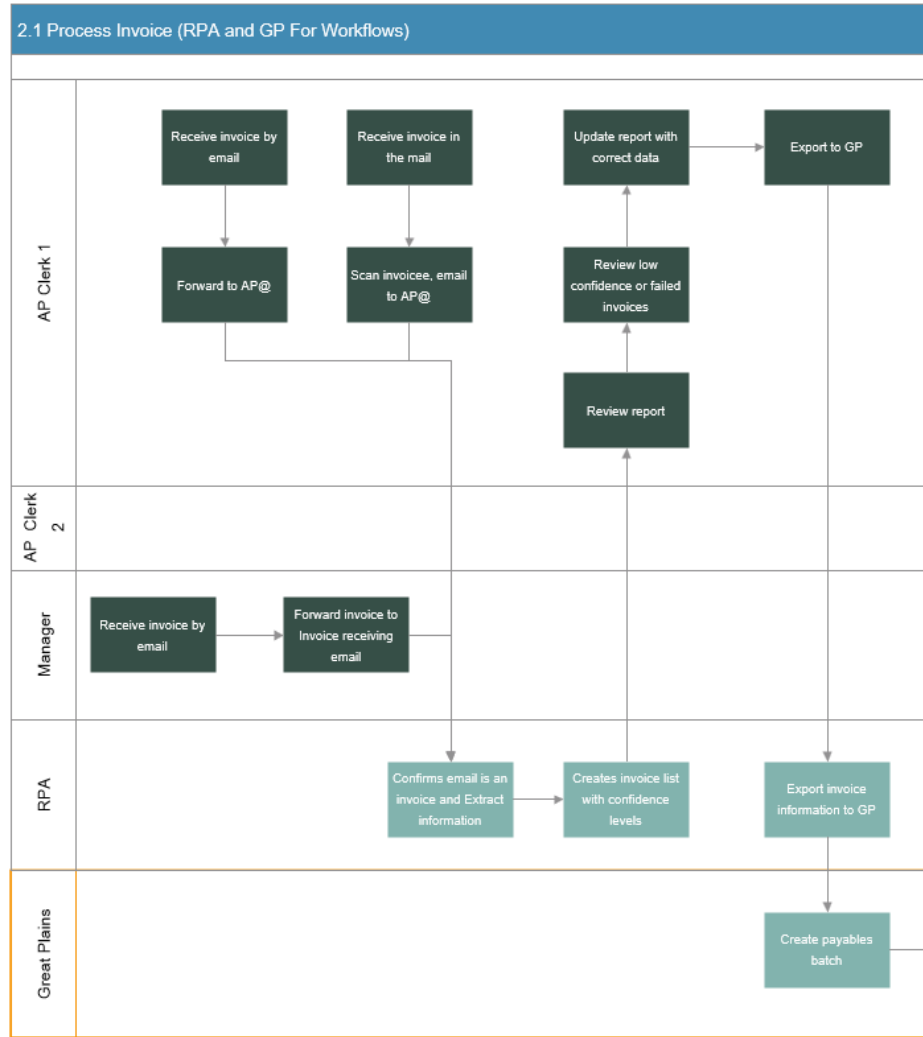
- ▶ If the municipalities decide against procuring the RPA software, they should still ensure that invoices are captured at receipt and designate a person responsible for inputting them.

Capture Invoice

RPA software can monitor an email inbox, such as AP@

When an email is received the software will 'read' an attached invoice, identifying the key elements that are required for the GP invoice record.

- ▶ We have drawn the process map to show a report of all invoices captured by the RPA so that AP staff can check the capture. We expect the municipalities would set a confidence level that, if the RPA reported higher confidence, staff would not check the capture.
- ▶ Integration between the RPA and GP would allow the invoices to be created within GP.

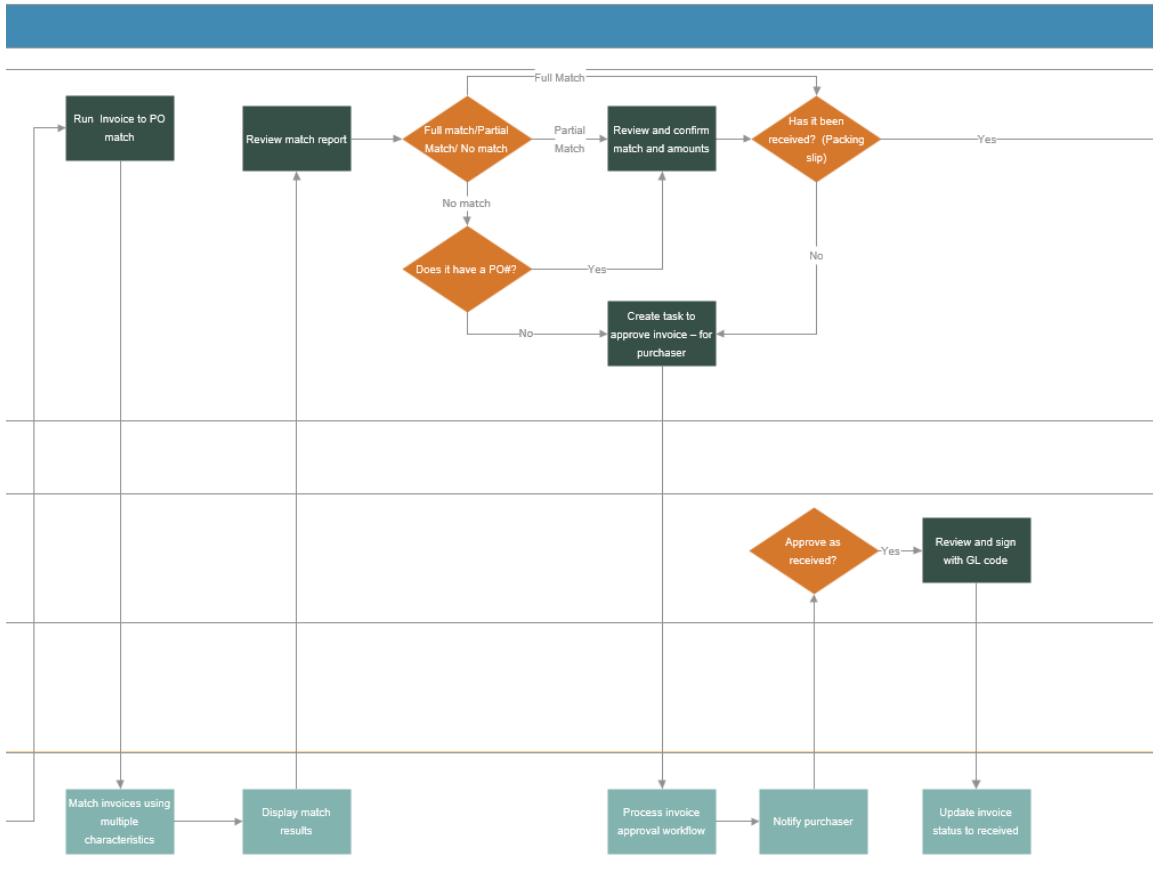


Implement automated matching

Recommendation

- ▶ Since POs are now within GP, the municipalities can use GPs matching capabilities to link invoices to the POs.
- ▶ A 2-way matching system links PO and invoice, a 3-way matching system goes one step further and links receipt at the same. Limited receiving is done today, so a 2-way match is a more likely approach for the municipalities.
- ▶ Implementing automated matching will reduce the need for the AP clerks to manually match the GL codes as invoices will be linked to a PO containing the GL code. Only invoices that cannot be matched or that do not have a PO will require the AP staff to consult with the purchaser.

Match and process invoices



GP can use invoice data to attempt to match to the PO

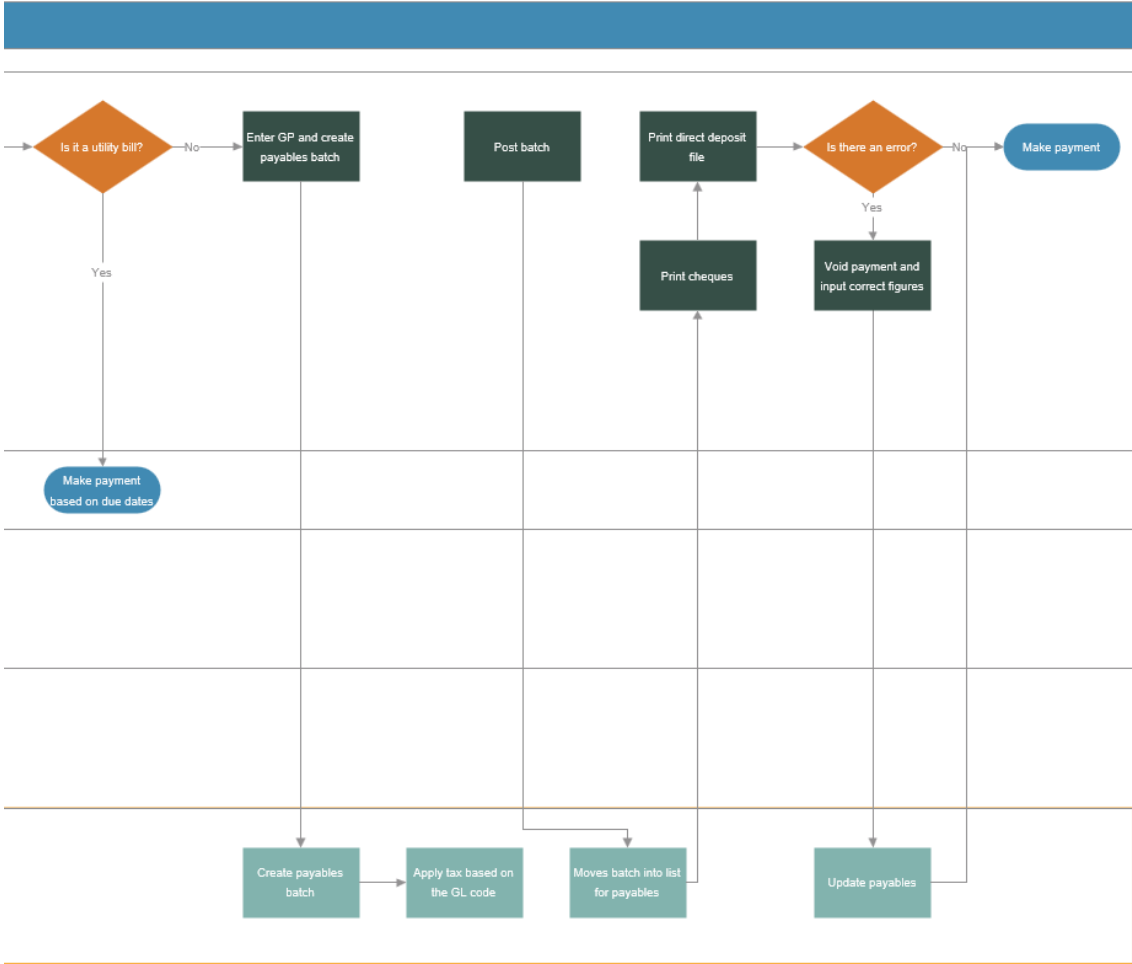
The easiest item would be if the PO number was quoted on the invoice.

- ▶ Other similarities that GP can use are vendor and value.
- ▶ There can be three outcomes for a match – full match, all items on the invoice match to the PO; partial match, some items match but others are different or missing; no match, GP did not find a PO that fits the invoice, possible because a PO was not created for the purchase.
- ▶ In these circumstances, AP staff would need to communicate with the purchaser typically via email –as they do today – to confirm the purchase, and get the GL code.

Keep the current payment process

Recommendation

- ▶ The current payment process at the municipalities reflects common practice. Each of the municipalities supports cheque and EFT payment.
- ▶ Some innovation is occurring in municipalities when it comes to receiving payments. Even to the extent that some are accepting payments in crypto-currency. However, making payments remains largely cheque and EFT.



IMPACT AND IMPLEMENTATION COSTS

We estimate the County expends approximately 5,800 hours a year on AP process activities

Process	Sub-process	Activities	Staff Time (mins)
Purchasing	Create Requisition	Enter Requisition	4
		Submit requisition	1
	Request Approval for Requisition	Review Requisition	4
		Approve Requisition	1.5
	Create Purchase Order	Create Purchase Order	3
Invoice Processing	Receive Invoice	Print invoice	1
	Validate and Approve	Review, Sign and transport	3
		Input info into GP	3
	Post	Post	1
		Print to check for errors	1
		Potential Errors	8
	Make Payments	Make Payment	6
Records	Store records	File invoice	3
Number of Invoices			20,486*
Estimate annual hrs			5,858

Based on our job shadowing exercise, we were able to estimate the duration of the AP activities

We found that each of the three municipalities has similar AP processes, so we have assumed the same duration for each activity for all three municipalities.

- ▶ The time calculated includes staff time to generate requisitions.
- ▶ Ingersoll currently does not generate requisitions, so we did not include purchasing activities in its process estimate.

	Tillsonburg	Ingersoll
Number of Invoices	7,185	1,244
Hours per year	2,062	711

*Number of invoices is less credit card payments

After implementing RPA technology, we estimate the County will expend approximately 3,300 hours a year on AP process activities

Process	Sub-process	Activities	RPA High confidence	RPA Low confidence	Total
Purchasing	Create Requisition	Enter Requisition	4	4	
		Submit requisition	1	1	
	Request Approval for Requisition	Review Requisition	4	4	
		Approve Requisition	1.5	1.5	
	Create PO	Create Purchase Order	0	0	
Invoice Processing	Receive Invoice	Check RPA confidence	0.5	0.5	
	Validate and Approve	Print invoice	0	1	
		Review, Sign and Transport	0	3	
		Input info into GP	0	3	
	Post	Post	1	1	
		Print to check for errors	0	1	
		Correct Potential Errors	1	1	
	Make Payments	Make Payment	3	3	
Records	Store records	File invoice	0	0	
Number of Invoices			16,390	4,100	20,490
Hours per year			2,290	1,050	3,340

Automation and integration remove a range of steps staff completed today

After implementing our recommendations, there are three main areas we expect to see labour saving

Manual keying of information

- ▶ AP Clerks currently need to manually input information from the invoice to GP. In the future process staff will no longer need to do this due to the RPA implementation.

Reduction in errors and rechecking

- ▶ AP clerks often print inputted information from GP before making completing processing to cross-check that the information is correct. The future process will increase staff confidence in the process.

Transit

- ▶ In the future process, the automated workflow/e-signatures will eliminate transit time, i.e. all the movement required to walk to managers to sign approvals.

Storage

- ▶ Since invoices are stored electronically, there will be less space required for physical storage.

Some error checks will still be required

In the table on the previous page, we included a high confidence and low confidence process. The low confidence includes approximately 25% of invoices and had additional time to fix errors.

- ▶ The table below compares the labour estimate today to the labour estimate in the future with the process changes we recommend.

Municipality	Number of AP Staff	Current Annual Hours	Future Annual Hours
County	2	5,858	3,340
Tillsonburg	1	2,062	1,180
Ingersoll	1	711	709

- ▶ Ingersoll's labour has not changed materially as they are not completing requisitions and POs today. So the time savings in the future process are consumed by completing this new process.

Implementation costs will depend on the complexity of the role of RPA

The table to the right shows an estimate of the cost of implementing the RPA technology

Factors that affect these costs include the number of behaviours the RPA has, the complexity of the processing and the number of systems it has to integrate with.

- ▶ The RPA technology annual licencing cost typically ranges from \$6,500 at the low end to \$19,000 at the high end. Since licensing fees typically make up 25 percent of the total cost of ownership of a software, we estimate the total cost of ownership will range from \$26,000 to \$76,000, depending on the type of RPA technology.
- ▶ The one-time cost makes up the difference between the licensing fee and total cost of ownership. This one-time costs include:
 - Consulting Costs for implementation
 - Infrastructure setup
 - Third-party integration

In addition to the RPA, there will also be costs for configuring additional processes in GP

The labour indicated is for a GP professional at a rate of \$100 per hour.

- ▶ All numbers shown are for one organization. If the municipalities implement the changes separately, they will each incur the costs.

RPA	Licensing Cost	One-time Costs	Total
Low End	\$ 6,500.00	\$ 19,500.00	\$ 26,000.00
High End	\$ 19,000.00	\$ 57,000.00	\$ 76,000.00

GP Implementation	Labour Estimate	Cost
Requirements Gathering	40	\$ 4,000
Design	80	\$ 8,000
Workflow Configuration	120	\$ 12,000
Set-up Data	40	\$ 4,000
Matching Configuration	160	\$ 16,000
Total	440	\$ 44,000

Costs of the RPA will be recovered faster if the three municipalities centralize invoice capturing

The tables to the right show the cost of the RPA technology

These costs would be tripled if each organization implemented its own instance.

- ▶ It may be worth investigating whether a centralized invoice process station can be established. The station could receive the invoices for the three municipalities and have a single RPA instance processing all of them.
- ▶ This would be more complex than having each organization processing its own invoices and so likely closer to the higher end – but still less than three instances.

The prices we have quoted consider an on-premise implementation, however, some vendors offer a Cloud solution

Often, the Cloud solutions are charged per transaction, i.e. cost per invoice processed.

	Reoccurring Costs					
RPA	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Low End	\$ 26,000	\$ 6,500	\$ 6,500	\$ 6,500	\$ 6,500	\$ 52,000
High End	\$ 76,000	\$ 19,000	\$ 19,000	\$ 19,000	\$19,000	\$152,000

*indicates cost recovery for low-end RPA

*indicates cost recovery for high-end RPA

AP BUSINESS CONTINUITY

Moving to a more digital AP process changes the risks to the continuity of paying invoices

This document develops a range of scenarios where the normal execution of the AP process is interrupted and outlines the steps the municipalities should take to continue functioning

The experience of COVID has made the municipalities acutely aware of needing to have actionable plans that can help ensure continuity of operations.

- ▶ As the municipality's AP processes become more digital, continuity of operations will be very different than when the process was heavily paper-based and the key risks to continuity will also be different.
- ▶ The current process is exposed to problems when staff cannot attend the office or cannot access the paper files. In a digital process, the risks relate to accessing the systems.

In order to develop plans for the various situations that could prevent normal AP operations, we have identified six events or scenarios that could interrupt operations

Each of these scenarios creates different impacts to the normal operations that must be mitigated in the business continuity plan (BCP).

- ▶ Pandemic: we know from our current experience that wide-scale infection can firstly lead to not all staff being able to work from illness. Additionally, it can lead to public health measures such as the closing of workplaces.
- ▶ Terrorism: might be targeted directly at the municipality or could affect infrastructure the municipality and its staff rely upon – an attack upon a power facility or transportation hub. In the event it affects the municipality itself, systems may well be affected as well as physical infrastructure.
- ▶ Natural disaster: encompasses weather-related events such as floods, lightning strikes or tornados and other natural events such as earthquakes.
- ▶ Cyberattack: an ever-increasing risk is that of malicious actors infiltrating systems and incapacitating them. This may lead to systems being locked. as is often the case with ransomware, or worse, wiped clean.
- ▶ Blackout: as seen in 2004 and 2013, loss of power can be much more than a localized event and can last many days.
- ▶ Fire: possible the most likely scenario, fire could affect the computer systems directly or the office more broadly

There are a small number of impacts that a continuity plan should address

We have identified six scenarios below that could generate impacts that would affect the normal execution of the AP process

The table below outlines the impacts that could occur from each scenario, generating broadly four impacts that this continuity plan must mitigate.

Scenario	Potential Impacts			
Pandemic	Not permitted to access the office	Staff become sick		
Terrorism	Can't enter the office as it is damaged	Some staff cannot get to the office	Systems not running	
Natural Disaster	Office is inaccessible	Some staff cannot get to the office		
Cyberattack			One or more systems is locked out	Data is lost and backups corrupted
Blackout			Can't access the systems or the systems are not running	
Fire	Can't enter the office as it is damaged		Systems are not run due to damage	

► This analysis highlights seven underlying events that the continuity plan will prepare for:

- Loss of power
- Loss of internet
- Damaged systems
- Loss of data
- Systems locked
- No access to the office
- Short staffed

► For each of these events, this plan outlines the steps to continue operations.

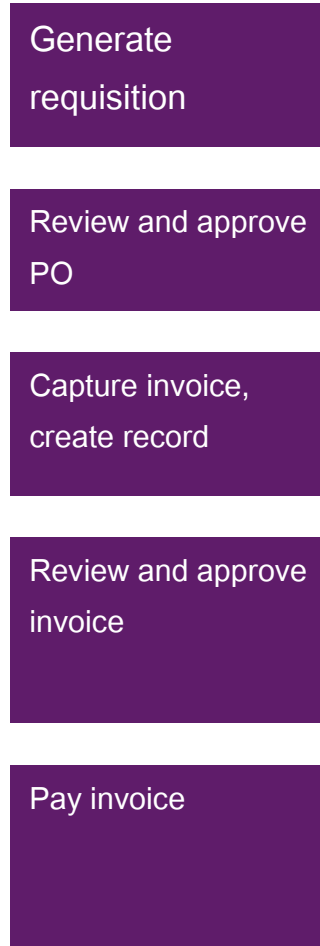
Triggering the continuity plan will depend on the expectation of when normal operations will resume

The IT term for this is recovery time objective (RTO)

We have placed a simplified depiction of the AP process, and alongside each step, we have identified how long until the municipalities need to be able to complete that step again in some form.

- ▶ The times were developed in consultation with the project team at each municipality.

Having identified the RTO for each stage of the process, the continuity plan should be triggered the moment you expect that normal operations will not be resumed within the RTO



RTO	Reasoning
5 days	The municipalities likely have materials on hand to continue operations for at least 5 days without having to raise a requisition.
5 days	Only new requests need to be reviewed.
25 days	The municipalities have a policy of paying invoices net 30 days. 5 days would allow them to catch up on processing.
25 days	Only new invoices need to be reviewed and approved, so this function would not be required until the capture functionality is returned.
5 days	Most vendors would likely accept later payment because of an incident. Late payment would only happen on invoices that had arrived between 25-30 days ago.

A standard set of steps should be followed when continuity is affected

The chart below outlines how the Municipalities should respond to an incident

Over the following pages, we outline each scenario and the specific steps required to maintain continuity.

- ▶ For each scenario, we describe mitigation the Municipalities can take to reduce the likelihood, steps to ensure continuity in the event and preparations to allow the continuity plan to be executed.



1

Incident – Confirm an incident has occurred, the severity and expectation of a return to normal service.



2

Decide – Based on the information available, decide whether to execute the continuity plan. Consider the RTO and whether the continuity plan execution can be delayed or needs to occur immediately.



3

Communicate – Confirm with affected staff on what actions are being taken and what they should do.



4

Execute – Follow the continuity steps outlined in the scenarios that we outline subsequently to enable operations to continue. Depending on the nature of the incident, more than one of the discrete scenarios may need to be enacted.



5

Evaluate – Periodically review the situation to confirm the continuity steps are adequate and assess whether the incident has been resolved to the point that a return to normal operations can occur.



6

Return – When the incident has been fully resolved, the Municipalities can return to normal operations.

Loss of power

Situation

Power has been lost, meaning that the systems are not available. Additionally, staff devices would not be charging.

Mitigations

UPS should power the servers, maintaining power for up to a couple of hours. This would not help staff devices.

If desirable, an onsite generator could keep power running for a number of days.

Continuity

To continue operating, the municipalities would need server systems to exist at another location that does have power. Commonly, this backup location would operate on a separate power grid to the primary location. For staff to continue operating, they would need to access another location that does have power. With a localized outage, that might be their homes.

Preparations

To invoke these continuity steps, ahead of time, the municipalities would need to:

- Supply staff with laptops rather than desktops
- Ensure a remote access solution worked
- Have a secondary site to operate servers from and a method of mirroring the current environment

Loss of Internet access

Situation

Internet connection to the office has been lost. This could come about because of equipment damage, the effects of weather or service provider error.

In this situation, staff in the office can continue to work, staff working remotely will not be able to and no email, specifically with new invoices, would be received.

Mitigations

The common mitigation for this scenario is a second Internet connection, ideally from a different service provider.

Continuity

To continue operating, the municipalities would switch over to the second Internet connection. This can be configured to occur almost seamlessly.

Preparations

To invoke these continuity steps, ahead of time, the municipalities would need to:

- Establish a second Internet connection with an alternate provider
- Configure the network to redirect traffic to the second provider

Systems damaged

Situation

This can occur from fire, natural disaster, flood or other incidents that affect the physical systems so that they are no longer functioning.

Users within the office and remotely would be affected.

Mitigations

The common mitigation for this situation is a backup site that the municipality can fail over to. There are various approaches to this from having a complete set of redundant hardware, having only enough to support critical systems and through to leasing time on shared hardware.

Continuity

To continue operating, redirect users to the secondary site.

Preparations

To invoke these continuity steps, ahead of time, the municipalities would need to:

- Have a secondary site to operate servers from and a method of mirroring the current environment

Loss of data

Situation

Data can be lost by deletion, corruption, hardware failures and other events.

The lost data could be a single invoice, a day's worth of invoices or longer, depending on the severity of the incident.

Mitigations

Primary mitigation is keeping backups on a regular basis. This is commonly something that occurs nightly.

With a nightly schedule, there is still the chance of loss of data from the current day.

Retaining the invoices as submitted by vendors means the RPA can reread them and replace the lost data.

Continuity

To continue operating, restore lost data from backups and resubmit current day invoices for RPA processing.

In the event of a hardware failure, this should be replaced before the restore occurs.

Preparations

To invoke these continuity steps, ahead of time, the municipalities would need to:

- Establish and test a backup process at a suitable frequency

Systems locked

Situation

Most commonly associated with a cybersecurity incident, such as a ransomware attack.

In this situation, hackers deposit code into the target system that locks access to the systems along with the threat that the systems will be wiped unless a payment is made.

Mitigations

The first mitigation is prevention. Putting in place a strong security posture that limits access to the municipal systems.

The municipalities should also agree internally on their policy for this sort of incident – under what conditions would you consider paying the ransom.

Continuity

Depending on the extent of the attack, to continue operating, the Municipalities may be able to failover to a secondary site and redirect staff to this server.

When the attack is more extensive, most municipalities will not have the technical expertise to subvert the locked systems, steps include:

- Confirm the extent of the compromise
- Wipe infected devices
- Revert to backups

Preparations

To invoke these continuity steps, ahead of time, the municipalities would need to:

- Establish a secondary failover site
- Create a ransomware policy
- Establish and test a backup process at a suitable frequency
- Additionally, consider creating periodic immutable or offline backups so that ransomware cannot encrypt those

No office access

Situation

In the past, this situation has often been associated with natural disasters, earthquakes, fires and other events that would make the building unsafe. COVID has highlighted another scenario where bans exist on people entering the workplace. If a similar situation were to occur again, we suspect there would be less tolerance for what is considered essential to be in the office.

Mitigations

With the former situation of damage to the building, a secondary work location is commonly the mitigation.

With the COVID situation, the only possible second work location was at home.

Continuity

To continue operating, staff would move to the alternate work location and remotely access their work.

Preparations

To invoke these continuity steps, ahead of time, the municipalities would need to:

- Supply staff with laptops rather than desktops
- Ensure a remote access solution worked
- Confirm home offices have adequate connectivity to work

Short-staffed

Situation

The COVID-19 pandemic has highlighted this problem, but other absences from illness, injury or even vacation can leave the organization without enough staff to process the workload.

Mitigations

Cross-train staff so that workload can be balanced in the event of absences that would affect meeting deadlines.

For longer absences, additional staff should be hired to meet the workload.

Continuity

To maintain continuity, the Municipalities could look to increase the automation in the process. This can be achieved by reducing the confidence thresholds used in the RPA and GP matching process. This would reduce the workload in checking and manually resolving any mismatches – however, there is an increased possibility of errors occurring.

Another approach to reducing the workload is to strictly enforce electronic-only invoices thereby eliminating any manual scanning.

Preparations

To invoke these continuity steps, ahead of time, the municipalities would need to:

- Cross-train staff in the finance function to support other processes

Test the plan annually

Testing the plan is a vital part of any business continuity strategy

The first test should be conducted soon after the plan is created in order to confirm it works from the outset. Waiting too long to test the plan risks a real continuity incident occurring and then having to try to execute an untested plan.

- ▶ Testing should occur at least annually and is probably best aligned with other emergency preparedness or continuity testing that happens at the municipalities. It is probably advisable that the scenario that is run for the test changes each time.
- ▶ For example, the first test could simulate a fire in the building preventing staff from gaining access but not affecting the IT systems. The tests can be designed to run like a fire drill, occurring during normal business operations and simulating a given scenario.

Establish governance

Governance means defining who gets to make what decisions.

- ▶ In the context of business continuity, some of the decisions you will have to make include:
 - What are our RTOs?
 - Which mitigations are we willing to invest in?
 - Who updates the BCP?
 - Who decides to execute the BCP in the event of an incident?
- ▶ Governance addresses these and potential other questions on decision authority.

Case Studies of RPA

APPENDIX A

There are a range of RPA providers in the market

Some of the more prominent vendors of RPA technology provide case studies of its use

The chart to the right is Gartner's ranking of the best RPA vendors currently. We have provided links below to case studies from these vendors that relate to the situation at the municipalities.

- ▶ [Blue Prism: Equinix Optimizes Accounts Payable](#)
- ▶ [UiPath: The Municipality of Strängnäs](#)
- ▶ [IBM: Five Ways to Use RPA in Finance](#)
- ▶ [Laserfiche: How the City of St. Charles Reduced Invoice Processing Time by 80%](#)
- ▶ [Kofax: Cuts Processing Time from 4 Hours to 2 Minutes for 3 Dutch Municipalities](#)
- ▶ [City of Hamilton: Automated Invoice Processing](#)
- ▶ [CapturePoint: Longos Accounts Payable Automation](#)



