The Township of Langley:
Becoming a Regional Tech Leader
with FME, One Cart at a Time

Background

Tax paying residents expect a few things from their local government departments.

Public services. Clean water. Maintenance of infrastructure. Fire and police protection.

From an outsider perspective, providing these may seem straightforward. However, coordinating and maintaining daily living standards for hundreds or thousands of people can quickly become a logistical and organizational Gordian knot.

Even one task -- for example, replacing a damaged street sign -- involves multiple communication points, approval processes, and different departments with different data management systems, often operating in silos. Imagine coordinating hundreds of assignments, for thousands of people, every day.

The Township of Langley, the 6th largest municipality in Metro Vancouver (and one of the 50 largest communities in Canada) has more than 121,000 residents -- a figure expected to double by 2040. It found itself facing this very conundrum.

"Long before we talked with Spatial DNA, we knew we needed to do a better job of integrations," said Shane Barnaby, Manager of Applications at the Township of Langley.

"We knew that with all the systems that we had in place, getting them to talk together was important,

and to do it in a standard, sustainable and resilient way, that was the key."

The team had been exposed to other governments using integrations in their systems, but upon investigation, found the cost of other solutions prohibitive. Barnaby's team, however, realized that one of their existing solutions might hold the answer, if it was just used a little differently: Safe Software's FME.

"I was working with our GIS team and I said, 'You know, we really could leverage this to do more. Does anybody else use FME to do more of ESB?'" explained Barnaby.

They didn't know it yet, but that was the very start of the Township's cart project.

Project Scope and Requirements

With a little imagination and expertise, FME is the exact kind of tool a growing government needs.

Traditionally, FME has been used for moving CAD, remotely sensed imagery, GIS, 3D design files, and other complex file and database formats.

However, its capabilities enable it to do much more, and Spatial DNA has experience leveraging it as an enterprise service bus, enabling easy integration of multiple systems and significant amounts of data, quickly.

"If you want various cloud systems to talk to each other, you're going to have to be able to be really good at reading API and transferring that information back and forth," explained Barnaby.

The Spatial DNA Solution
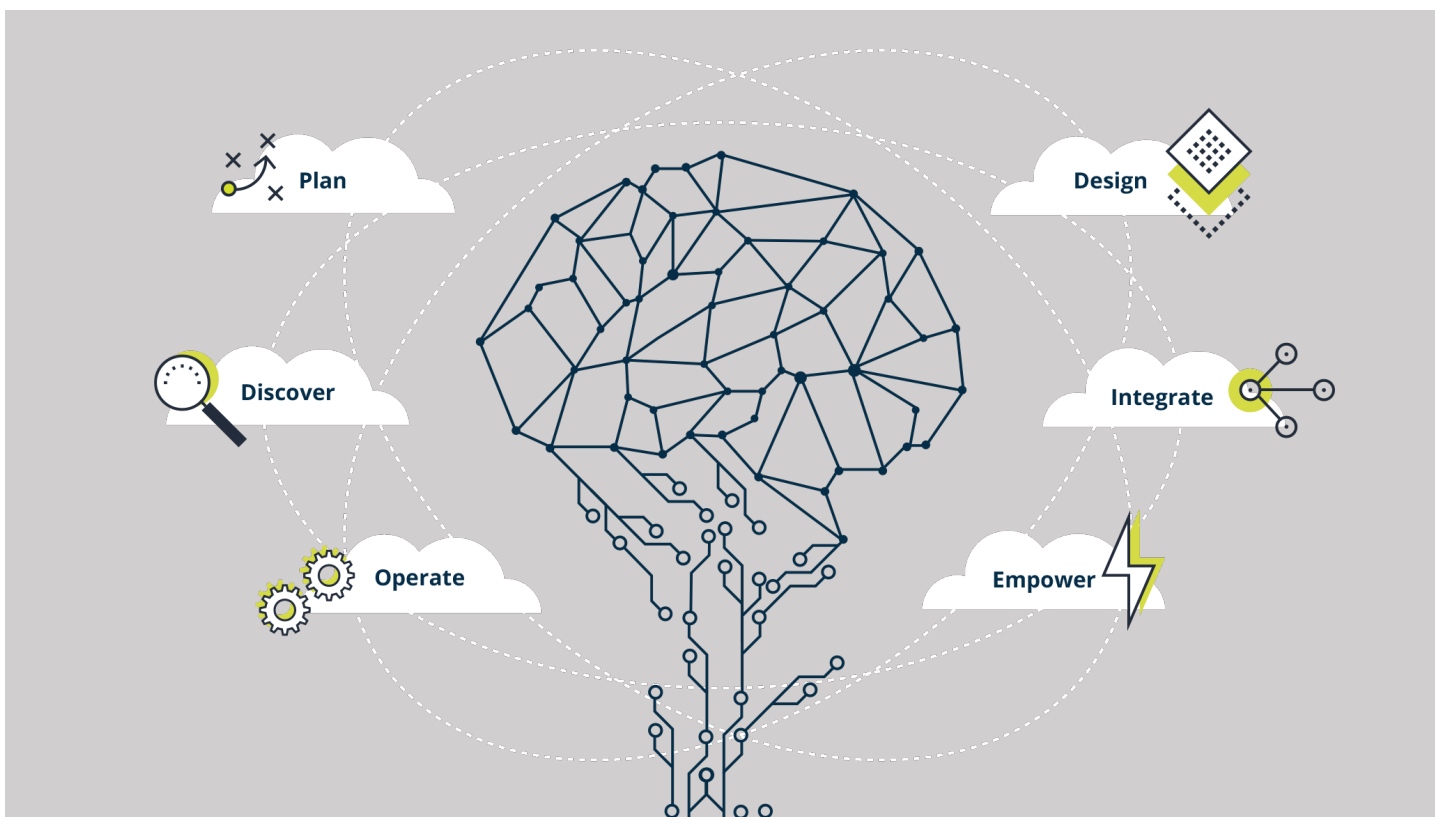
"FME just really excels at that, so to use it as a platform for ESB just made a lot of sense."

— Shane Barnaby, Manager of Applications at The Township of Langley

Spatial DNA

The Township of Langley would be joining other regional leaders in leveraging technology to meet residents' needs, like the City of Coquitlam and Richmond Hill.

With a track record in designing government systems and a Safe Software-Authorized Partner, Spatial DNA was confident they had the expertise to implement it.

"Spatial DNA was the only one that had a defined process around what an ESB would look like on the Safe stack and it was really exactly what we were looking for," said Barnaby of the Township of Langley choice to work with Spatial DNA.

"There's a lot of capable people out there, a lot of companies doing really good things, but

[Spatial DNA] were the only ones at the time focusing on integration as a process."

There were a number of potential processes the team could begin with as their inaugural project and a proof of concept They chose one of the most complex and crucial administrative tasks in any community: solid waste management.

Just one aspect of this is responding to resident requests for containers. A request requires multiple follow-up steps, all of which have to happen in quick succession, in the right order.

"That was a huge problem FOR THE TOWNSHIP," explained Todd Lewis, CEO of Spatial DNA. "It was taking a lot of time and resources and there were a lot of challenges with that paper process," said Lewis.

"We knew that this would be a good test case because of the systems involved. It had citizen request, case management for staff, third-party solid waste vendor requests, inventory, and taxation," expanded Barnaby.

The workflow for a cart replacement request looks something like this:

- A resident requests a new container.
- The request is received, by phone, email, or in person.
- The resident's request is validated.
- Their payment is processed, if necessary, and then the request is approved.
- The service request is entered into the third-party vendor's system.
- The vendor delivers the cart, and updates their system.
- The vendor's system is checked for updates.
- The inventory system is updated and the bill is generated.

It is a straightforward system, but overly reliant on manual processes and prone to error. These problems would multiply exponentially as a population grows and puts more pressure points on a system.

The Township partnered with Spatial DNA to design and implement FME Server as an enterprise integration platform, enabling the bi-directional exchange of data across all systems.

The final solution leveraged FME as a message broker to integrate Microsoft Dynamics CRM (call center), billing and inventory (Tempest), address validation (Esri), and the work management platform for a contracted vendor, who delivered the garbage containers.

"Multiple systems, multiple touchpoints; if we could get the system working on this particular process, then we could get it to work with our others"

— Shane Barnaby, Manager of Applications at The Township of Langley
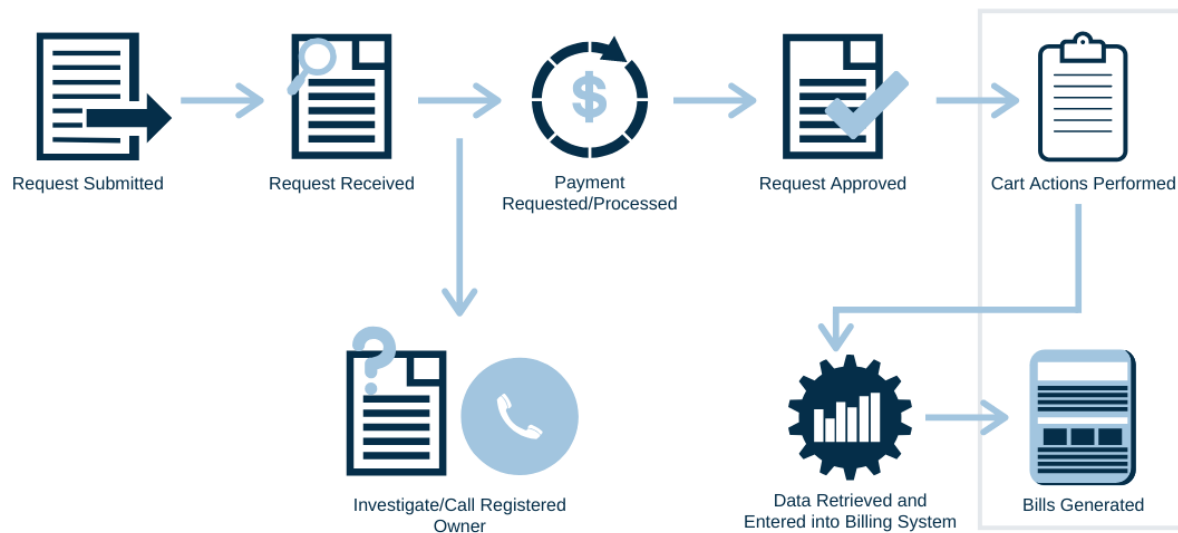
Designing the Solution

Of course, with multiple systems, all have to be involved in creating a solution.

Neil Hellas, Director of Solution Delivery at Spatial DNA and the Project Lead with the Township of Langley, outlined the process Spatial DNA undertakes with clients to ensure a productive and smooth partnership.

"The first [phase] is planning, where we get to understand what the client wants to achieve, what their big-picture issues are; next, we do a design phase, so we come up with the possibilities that make sense given their timelines, their budget, achieving their goals. Then we go through an implementation and integration phase and that's where we're doing the development work."

After completing a phase, the team would actively seek the client's input and refine their work based on feedback, ensuring a fully collaborative approach.

Benefits & Next Steps

Equipped with FME, Township staff was able to completely eliminate a number of tedious manual processes. The new system gave end-users more flexibility and transparency and freed workers of unnecessary data to wrangle by leveraging existing databases and systems.

On the administrative side, staffs no longer have to scan through emails and manually enter names and addresses - the system captures what residents enter and validates it then and there.

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Request Submitted → Request Received → Payment Requested/Processed → Request Approved → Cart Actions Performed

Investigate/Call Registered Owner

Data Retrieved and Entered into Billing System → Bills Generated

Additionally, the departments are working in tandem rather than frantically swapping data.

Hellas explained, "We have an automated process that captures when somebody has gotten a new garbage cart or changed size, now their tax bill is going to be slightly different based on that. So we've automatically integrated, as soon as that [garbage container] gets delivered to their house and the person in the field closes that particular service request, we're now able to update the tax billing system."

Steve Scheepmaker, Director of Corporate Administration at Langley, also considered the shift an important part of the government's growth. "A cornerstone of our eGovernment strategy involves the integration of systems and information to meet the Township's evolving business requirements. We wanted an open, supported, and extendable way to achieve this – no expensive black-box integrations!" he said.

The system was such a resounding success that Langley is expanding the use of this platform to Parks department, for similar requests like responding to fallen trees.

"The way that it's designed, it can handle a handful or it's very simple to make it scalable to many more departments or types of requests that are coming in," said Hellas.

"The solution that we have developed with Spatial DNA is now an important core platform technology in our environment that is enabling the delivery of services to our community."

— Steve Scheepmaker, Director of Corporate Administration at the Township of Langley

Spatial DNA

And that's not the end of the Township's tech innovation.

Lewis also spoke to additional work Spatial DNA will be undertaking with the township to further level up the organization's capabilities. Currently, both Spatial DNA and the Township are gearing up for work on the Township's work management system by improving their ERP integration.

By removing what has traditionally been a black box custom-coded integrations, substituting the no-code FME platform, and optimizing the processes between systems, the Township will free up staff and simplify the future integration.