Case Study

BC Transit

Victoria, British Columbia

Key Facts:

Industry: Government

Problem: Separate, customized information systems made business analysis and innovation difficult

Solutions: FME® Desktop

Results: Interconnected system and automated, repeatable workflows bring efficiency and intelligence to increase ridership and improve service

"FME enabled us to reduce our Google Transit data preparation process from days, sometimes weeks, to less than three minutes. The building block nature of FME's repeatable workflows help to ensure that we can sustain our Google Transit offerings while affording us the time to develop other initiatives as well."

– Michael Grant, Manager of Monitoring and Forecasting, BC Transit

Summary

BC Transit needed to connect disparate transit-related databases and enable personnel to readily visualize the operational relationships of its critical assets, giving them the knowledge to fuel smart service moves that will continually drive more passengers onto its transit system. Using Safe Software's FME® solution, the BC Transit team created a spatial data management system that integrates and streamlines data flows, transforms data into usable information and provides automated, repeatable workflows that reduce data preparation tasks from weeks to minutes. The new-found intelligence and efficiency provided by the integrated solution now offers BC Transit the critically needed time and confidence to innovate, create and implement new initiatives.

Based on the automatic bus stop naming workflow, Grant's department was able to add Victoria's 263 conventional bus' routes and schedules to Google Transit, allowing users to easily plan trips..

The Organization

Based in Victoria, BC Transit was formed in 1982 to manage 13 diverse systems of conventional buses and custom vehicles in operation at that time. Today, BC Transit manages and maintains 81 transit systems in more than 50 communities across the province. It has a fleet of more than 1000 vehicles, and it serves a ridership that is at an all-time high, growing from slightly more than one million passengers in 1989 to 51 million in 2011.

The Situation

BC Transit connects more than 50 communities, however, it has achieved this success, ironically, with a rather disconnected data management environment – its decades-long detail on bus stops, vehicles, schedules, routes and ridership, which all interconnect on the street, have instead been amassed in separate, customized systems. Creating singular systems with singular purposes has not only left BC Transit's central information vulnerable to inaccuracies, it has made it difficult for personnel to work efficiently – acquiring and preparing data for routine tasks were consuming weeks of effort. Most importantly, the lack of a seamless connection among mission-critical data sources was challenging the agency to readily identify and map the operational facets of any given bus or its ridership and use that business intelligence to develop better-targeted services. With its overall mission to provide a competitive, efficient alternative to personal vehicles, BC Transit recognized that its internal data management system needed to interconnect and flow as efficiently as its transit network in order to maintain a high level of service as well as launch new initiatives to continually drive more passengers to transit.

The Challenge

BC Transit wanted to create an integrated, streamlined data management system that would enable it to gain operational efficiencies and create smarter service offerings that are better aligned with passengers' needs. To accomplish this, it needed to develop a solution that would interconnect its critical datasets from three separate systems – enabling personnel to see the value and usefulness of its transit data – and provide automated workflows that would both streamline data processing tasks and transform data in order to create useful, customized views that clearly show the ebb and flow and interaction of its varied system and passengers.

The Solution

Having identified that simplicity, reliability and functionality would be the three critical elements needed to develop their data management solution, the BC Transit team chose FME technology to provide them with the tools to unify, clean and transform such diverse data, as well as the framework to manage future data-interoperability challenges that can hinder innovation and implementation.

To achieve success, the data management solution needed to link the essential business data –bus stops, vehicles, schedules, routes and ridership – from three separate systems and enable the BC Transit team to clear out data inaccuracies, restructure data into business-specific, usable information and build repeatable, automated workflows that would ease cumbersome data preparation tasks.

Using FME, the agency's small team of four was able to create a flexible and reliable solution that routinely accesses and integrates data from varied databases, automatically validates the data accuracy and quality – alerting the team to any issues – and transforms the datasets to enable users to create maps, animations or any type of spatial or temporal view needed. With these new data connections and workflows, the system is driving BC Transit to a new level of understanding about its network and providing the tools to know the who, what, when and where of any given bus at any given time.

Using FME, Grant's team can take individual bus pass information and plot that recorded data to show an individual's usage over time, giving them the ability to better understand the coming-and-going of customers and design service around them.

The Benefits

The efficiency and functionality of their FME-based data management solution has enabled the BC Transit team to transform a host of formerly week-long tasks, such as scheduling, naming bus stops, generating routes and mapping passenger data, into automated, repeatable one-click exercises that are completed in minutes.

FME enabled the BC Transit team to standardize and automate their Bus Stop Management System, a core standalone tool for viewing and managing bus stops online that was prone to errors, inconsistencies and inaccuracies. Quality-control checks now ensure the integrity and accuracy of the bus stop data and a customized workflow integrates the bus stop points and the road network lines to automatically name all bus stops, reducing errors in the system and creating accurate maps of bus stop locations.

The same streamlined processing is used for building transit routes. With each new schedule, a customized workflow automatically integrates the scheduling data and identifies each from stop/to stop pair specific to each pattern along a route, reducing this routine task from days to minutes.

Users can integrate scheduling data with Automatic Passenger Count data and determine the location of each bus' 30-second point record along the road network. With that information, they can then produce color-coded maps or animations of any bus route and immediately see the ebb and flow of passenger traffic on the vehicle. And with information garnered from a swiped bus pass, the team can plot out an individual card's usage and design better service based on customer travel patterns.

As all of this increased efficiency and enhanced knowledge has transferred into improved productivity and better decision-making for BC Transit, the organization plans to continue to use FME to help fuel further innovation.

What They're Saying

"Without spatial data transformation capabilities, we would have to triple the size of our team to produce the same amount of output. The increased productivity and improved efficiency enables us to continue to innovate and create applications to better inform and serve our customers." **Michael Grant, Manager of Monitoring and Forecasting, BC Transit.**

"By transforming our transit data and creating standardized workflows, we can visualize our information both spatially and temporally, and we can readily see the operational relationships of our critical assets." **Michael Grant, Manager of Monitoring and Forecasting, BC Transit.**

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