

# The Ultimate Guide to Data Integration for Local Governments

8 Ways to Use Data Integration to Improve Operations



Safe Software Inc. is the maker of FME<sup>™</sup>, the data integration platform with the best support for spatial data worldwide.

With support for 450+ formats and 10,000+ customers across a range of industries, our mission is to help people and organizations maximize the value of their data.



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*Tip: Click the links and customer logos to learn more about each topic or story.* 



### Why Data Integration? Connect disparate sources and turn data into insight

Cities, municipalities, townships, and counties spend a lot of time and money collecting information and building datasets. This data is often stored in disparate systems and managed by different teams, which results in data silos.

Data integration workflows empower local governments to **synchronize** systems across the organization, easily share information, generate insight, and replace manual processes with **automated workflows**. In short, data integration platforms like FME enable data to **flow freely**. With information readily available for analysis, sharing, and innovation, this can offer benefits for a government organization, like:

- Improving citizens' quality of life
- Helping local businesses flourish
- Addressing mandates
- Mitigating risks and liabilities
- Exploring funding opportunities
- Keeping all data up to date





### **Application Integration** Connect systems across the organization

All departments use applications tailored to their needs, whether they're managing assets, work orders, permits, finances, designs, maps, or other data. But although all of these systems serve the same organization, they are often disconnected.

Application integration means connecting systems across the organization and enabling independent systems to work together.

By implementing an application integration workflow and running it in response to an event, like as new data arrives, an organization can **synchronize their workflows across systems** and enable information to flow freely between them.

Learn more: safe.com/what-is/application-integration/



Surrey implemented an application integration workflow using FME to connect their GIS, permitting, and asset management systems. This facilitates stakeholder communication, reduces manual effort, and makes data accessible immediately.



Lévis built an automated system for pothole repair requests. When a pothole is reported, FME keeps the city's systems up to date and delivers actionable insight to crews by triggering reports and notifications.

### **Open Data Portals** Deliver data to the public via the web

Open data portals provide transparency and promote innovation for citizens, businesses, and staff. They're an important, and often mandated, technical consideration for today's government organizations.

To build one, an organization must **gather data from multiple sources** on an ongoing basis, and then **make it available** over the web in a variety of formats and coordinate systems. Data integration workflows can automate this process by gathering up-to-date data and making it available in the user's chosen format.

Here are a few tips for building an informative open data portal:

- Provide data as an RSS feed or API rather than static files.
- Connect the portal to a master database rather than duplicating data across locations.
- Offer multiple formats. Consider delivering data in Shapefile, CSV/Excel, AutoCAD, XML, JSON, GeoJSON, KML, GML, PDF.
- Offer multiple coordinate systems. Consider both global and local projections, like State Plane, Spherical Mercator (EPSG:3857), WGS84 lat/long (EPSG:4326).

Learn more: safe.com/opendata



San Jose uses FME to integrate data and convert it into standard models for their interactive map gallery.



San Francisco uses FME to power their "ETL Job Platform", which transforms and publishes data to their open data portal.

## **One Call**

Generate and share information packages

"Before You Dig" programs provide data to citizens in underground information packages, which improves safety and prevents infrastructure damage. Assembling and delivering this information via an **automated system** saves time and reduces the risk of manual errors that could lead to liability.

Build a data integration workflow to bring together data from multiple layers of GIS, CAD, and other spatial systems, then deliver this information automatically to the resident or contractor who requested it.



Burnaby created a "Call Before You Dig" service to help process high volumes of development applications. FME automatically delivers underground information packages to applicants within three minutes, saving city staff time and reducing the risk of manual errors.



# **Digital Plan Submissions**

Automatically integrate CAD and GIS data



When land developers submit plans to the city, validating the CAD designs and integrating them with the city's GIS traditionally involves tedious, manual processes.

Instead, create a **data upload and validation service** where developers can submit plans. Use a data integration workflow to validate submitted data against municipal standards, return a detailed quality report, and integrate qualifying plans with the city GIS. Automating this process frees up city staff's time, removes the bottleneck of manual effort, and reduces the risk of human error during validation and conversion steps.

#### Watch the demo at fme.ly/plan-submissions



Henderson uses FME to automate CAD-GIS conversions and validation, powering their automated digital plan submission process for new construction projects.

### Multi-Jurisdiction Data Sharing Coordinate data across regions

Sharing data between regions and levels of government is critical for services like **emergency dispatch**. This requires many systems to be kept up to date so they are accurate and complete.

Learn more in this case study of 9-1-1 dispatch in Santa Clara County: fme.ly/santa-clara



Warwickshire County Council uses FME to automate the retrieval of public health data from several online sources. This involves processing and gathering schemas for large data volumes.



Santa Clara County uses FME to aggregate many city datasets for their 9-1-1 emergency dispatch system. Automating the process ensures data stays synchronized, validated, and up to date.



## **Smart Cities** Embrace IoT, Sensors, and AVL

Smart city projects are all about **automating city life**. This can boost a city's productivity and provide access to federal funding opportunities.

Use a data integration workflow to gather data from the Internet of Things (IoT), sensors, Automatic Vehicle Location (AVL), and GPS points from services like Fire, Fleet, and Winter Operations, and combine this real-time data with existing GIS, CAD, basemaps, and more. Then, use **event-driven workflows** to trigger this process on an ongoing basis and make live data available to staff and the public.

Learn more in our webinar (<u>fme.ly/sc-webinar</u>) and podcast episode (<u>fme.ly/sc-podcast</u>) about Smart Cities.



Iowa DOT uses FME to publish useful maps and information about traffic operations by processing data from live sources like XML feeds, cameras, Waze, and AVL.



Grand Lyon provides data to the public in a Smart Data platform, which has fostered profitable innovation by local businesses.



# **Business Intelligence**

Turn data into insight by bringing it into BI software



Leverage business intelligence (BI) systems like Qlik, Power BI, or Tableau. Use a data integration workflow to gather data from wherever it is and **prepare it for analysis** in BI software. Learn tips and tricks for preparing data for BI in our webinar: <u>fme.ly/bi-webinar</u>





### **GIS Data Integration** Manage, analyze, and share spatial data

**GIS departments** often need to manage field data collection, asbuilt drawings, spatial analysis, and various data types like CAD, BIM, raster imagery, and point clouds. Data integration workflows help automate processes that would otherwise require hand-coded solutions and tedious, repetitive tasks.

Watch the demo: fme.ly/gis-integration



Auburn uses FME for daily GIS tasks, like converting text-based crime data to ArcGIS SDE for online mapping applications.



Forsyth County uses FME to automatically keep their published parcel fabric layers up to date and consistent.



Calgary used FME to automate translations from LiDAR to DEM, providing inspectors with critical information for floods.

## **Next Steps**

Enable your city's data to flow freely where, when, and how it's needed

Local governments worldwide are using FME data integration workflows to **connect** data across their organization, **transform** it into insight, and **automate** tasks to free up time and resources.

We hope you're inspired by what's possible and eager to learn more about how to implement data integration workflows in your organization.

We invite you to continue to learn and explore possibilities by accessing these resources:

- Read case studies in our customer gallery at safe.com/customers
- Watch webinars on demand at safe.com/webinar
- Learn how to use FME at knowledge.safe.com



## **Contact Us**

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