

Solutions for Oil & Gas Companies



Oil and gas companies face unique challenges. Customers require reliable and safe access to products and services. Shareholders expect a solid return on investment. Regulators and governments demand compliance with multiple tax, notification and environmental requirements—complicated by overlapping jurisdictions.

Today, managing information requires the complex integration of multiple software applications and databases. For most companies, complete, seamless integration exists only as a future IT goal. Furthermore, the need for precise geospatial data is spread through almost all departments throughout the company. However, geospatial data often remains housed in silos focused on individual departments and applications. The result is that no single, consolidated geospatial solution exists at the enterprise-level for applications that demand consistent geographic accuracy.

Geospatial technology from CoreLogic® can help oil and gas companies meet the many challenges they face in this area. Precise, current and specialized geospatial data allow companies to make smarter financial decisions, effectively manage their numerous assets and better prepare for and respond to emergencies. Oil and gas enterprises quickly benefit from our:

- ▶ Parcel (cadastre) boundary data set
- ▶ Natural hazard layers
- ▶ Tax jurisdiction data layers
- ▶ Property characteristics
- ▶ Land lease data

All data layers can be integrated into a company’s existing Geographic Information System (GIS) or implemented through CoreLogic applications to provide robust spatial analytics. Data plus analytics allow a company to more readily analyze, plan, and control their operational, financial, preparedness and regulatory challenges. Customized geospatial solutions are available to serve natural gas distributors, pipeline providers and/or exploration and extraction operations.

¹ Geospatial data or geospatial databases refer to geographic data in a digital format that can be accessed, visualized, analyzed, and manipulated by Geographic Information Systems (GIS) software.

² Spatial Analytics: Oil and gas companies must understand geographic relationships near or surrounding each of their physical assets. Spatial analytics answers questions such as:

- What assets (compression station, well, pipeline segment) falls in which tax jurisdiction?
- What pipeline segments cross this area and what boundaries do they overlap?
- What is the risk of flooding, fire, or earthquake for this compression station?

CoreLogic Solutions Provide Key Business Components for Oil & Gas

This document focuses on three key business components that are essential for the oil and gas industry. Oil and gas companies have a need for products that provide the following for all parts of the organization:

- ▶ Increased speed and accuracy
- ▶ Lowered costs
- ▶ Streamlined operations and improved efficiency

The chart below outlines the benefits our geospatial data provides within the context of GIS-based spatial analytics.

	Parcels Geospatial Data Layers			Hazard Risk Layers			Tax Data Layers		
	Increase speed & accuracy	Lower costs	Streamline operations/efficiency	Increase speed & accuracy	Lower costs	Streamline operations/efficiency	Increase speed & accuracy	Lower costs	Streamline operations/efficiency
Surface Ownership	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engineering	✓	✓	✓	✓	✓	✓	✓	✓	✓
Geology/Exploration	✓	✓	✓	✓	✓	✓	✓	✓	✓
Right of Way	✓	✓	✓	✓	✓	✓	✓	✓	✓
Land Acquisition	✓	✓	✓	✓	✓	✓	✓	✓	✓
Real Estate	✓	✓	✓	✓	✓	✓	✓	✓	✓
Compliance	✓	✓	✓	✓	✓	✓	✓	✓	✓
GIS	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tax	✓	✓	✓	✓	✓	✓	✓	✓	✓
Public Outreach	✓	✓	✓	✓	✓	✓	✓	✓	✓
Risk Assessment	✓	✓	✓	✓	✓	✓	✓	✓	✓
Emergency Response & Preparedness	✓	✓	✓	✓	✓	✓	✓	✓	✓
Data Integrity	✓	✓	✓	✓	✓	✓	✓	✓	✓
Surveying/Construction	✓	✓	✓	✓	✓	✓	✓	✓	✓
Project Management	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operations	✓	✓	✓	✓	✓	✓	✓	✓	✓
Business Continuity	✓	✓	✓	✓	✓	✓	✓	✓	✓
Contingency Planning	✓	✓	✓	✓	✓	✓	✓	✓	✓
Finance	✓	✓	✓	✓	✓	✓	✓	✓	✓

■ Mission Critical
■ Decisive
■ Significant

Parcel Boundary & Property Characteristics

Parcels are the standard building blocks for spatial granularity, providing a new dimension of location awareness for a host of applications. The CoreLogic parcel data set, ParcelPoint® is by far the largest collection in the U.S.—and we are adding new parcels to the database every day.

By combining parcels with property characteristics, CoreLogic simplifies land record management. SpatialRecord removes any ambiguity about the location and extents of the property allowing oil and gas companies to significantly improve efficiencies across the entire organization including:

- ▶ More efficiently analyze and plan pipeline routes and exploration areas to minimize the number of leases
- ▶ Better manage critical assets within the spatial context of natural hazard risk parameters
- ▶ Accurately determine tax jurisdictions
- ▶ Significantly reduce time to market, maintain business continuity and improve operations

Land Lease Data Suite

CoreLogic and Western Land Services have collaborated to provide those companies in the mineral exploration business with all the information needed to accelerate lease procurement. This data suite includes parcel boundaries, ownership information, spatial mineral lease layers and lease attributes such as lease expiration dates and royalty percentages of lease agreements.

Hazard Risk Models

Although generic hazard risk data is available, the degree of accuracy and usability of this information is suspect, at best. The Ph.D.-level geo-scientists at CoreLogic have developed comprehensive data models that enable companies to better analyze and manage risk and plan for emergency response.

CoreLogic hazard risk models are derived at the most detailed level possible and risk levels are determined by the proximity to a hazard as well as by the hazard attributes. All models integrate into our geospatial solutions and into a company’s own GIS applications, providing pinpoint accuracy down to the parcel level.

Hazard Analytics	Brief Description
Brushfire Risk Model	Includes the risk value for a location, as well as the distance to the nearest high-risk area and to the urban-wild land interface. Available for locations in AK, AZ, CA, CO, FL, ID, MT, NM, NV, OR, UT, WA, and WY.
Flood Risk Model	Outputs the flood plain information for a location.
Coastal Storm Surge Model	Outputs the storm surge risk values for Gulf and Atlantic states. Rated from low to extreme risk. Currently available for AL, CT, DC, DE, FL, GA, LA, MA, MD, ME, MS, NC, NH, NJ, NY, PA, RI, SC, TX, and VA.
Damaging Winds & Hail Model	Outputs the risk of wind and/or hail damage for a location. Includes risks for straight-line winds, tornadoes and hurricanes.
Earthquake Risk Model	Outputs PGA (%g) and MMI (I-XII) estimates. Includes SSI (very low – very high) values that rank soil conditions in terms of its ability to exacerbate shaking during an earthquake. All are based on a 50-year return period and available for the entire U.S.
Fire Protection Class Model	Outputs the features of, and distance to, a location’s nearest fire station.

Tax Data Layers

The accurate determination of taxes is burdensome for oil and gas companies. Taxes must be correctly assessed and properly remitted to avoid negative publicity, as well as costly penalties and other liabilities. CoreLogic tax jurisdiction layers provide access to municipality data, as well as enhanced tax data. Local school district information is provided in a special tax district file for states such as Kentucky and New York that have specific oil and gas taxation at that level. Data provided in this layer can also identify whether or not the Special Tax District (SpTDS) tax applies to oil and gas industry-specific services. CoreLogic has a staff dedicated to the collection and maintenance of its tax layers, helping companies meet their tax obligations.

There has been continued growth in the area of special tax districts in the U.S., as many local municipalities look for more ways to increase waning revenue. Today, SpTDS exist in 33 states and the District of Columbia, 663 counties and 2,528 municipalities. In the state of Texas alone, there are about 596 special districts, up from 164 in 2010.

CoreLogic has built its Special Tax District data layer for transaction taxes to help oil and gas companies identify taxes imposed by state and local governments, supporting the objectives of local public policy. This data layer, also accessible via Xiance®, provides accurate tax jurisdiction assignment along with the SpTDS ID, Type and Name, if applicable, for the submitted address or latitude/longitude. Oil and gas companies now have access to accurate data about regional transit districts, police jurisdictions, school districts (boards), and other special tax districts that impose transaction tax on industry-specific services.

ADDITIONAL DATA LAYERS:

Municipal Boundary Data Layer: CoreLogic is the only vendor that owns and maintains a complete municipal boundary data layer for the United States. We have a staff dedicated to the ongoing research of tracking changes, so our data is always up-to-date. Oil and gas companies can license this database in ESRI Shapefile format for use within CoreLogic products or their own GIS (Geographic Information System) applications.

Township Data Layer: The CoreLogic township layer contains state, county, and township level information for the entire United States, including Alaska and Hawaii. The database consists of contiguous polygonal townships, with boundaries corresponding to HERE County Boundary data. The township layer can be licensed in ESRI Shapefile format for use within CoreLogic software products or a company's existing GIS applications.

HERE Map Content: HERE is a leading global provider of digital map data for navigation systems and location-based solutions. The company has built a map database of the highest quality and precision, employing one of the industry's most comprehensive development and quality control programs and executed by an extensive team of over 500 field researchers.

CoreLogic – We Are Our Own Best Customer

CoreLogic is a leader in locational intelligence data layers—analytic models that can be used across the enterprise. This leadership has been gained by serving many oil, gas and utility companies, telecoms and cable providers, and a majority of the top twenty insurance companies in the U.S. In fact, we are our best customer, as we use our own internally developed solutions to run our flood zone determination and risk businesses. We have implemented locational intelligence solutions for hundreds of organizations; the CoreLogic team has a recognized history of success. We have pioneered several industry firsts, such as the first national address geocoder—PxPoint™, and a patent for our national cadastre parcel-level data set—ParcelPoint®.

CoreLogic is one of the leading providers of U.S. parcel, tax jurisdiction and hazard risk geospatial data. Combined with robust spatial analytics, companies have access to the spatial insights they need across the enterprise. All activities that require geographic analysis and answers can access this data to achieve maximum efficiency.

CORELOGIC SOLUTIONS PROVIDE THE PLATFORM TO:

- 1. Achieve a Quick Return on Investment:** Because of all of the different integration options, along with the ability to license only the specialized spatial data required, CoreLogic delivers tailored solutions designed for each customer. This allows a company to realize an extremely quick return on investment (ROI), typically 6-9 months. A solution focused on the needs of each individual customer pays for itself very quickly.
- 2. Access Multiple Deployment Options:** CoreLogic provides both licensed and hosted solutions.
 - a. Esri® ArcGIS® Enterprise:** Through our integration with Esri ArcGIS Enterprise, we offer you an on-demand, web-based solution, giving you 24/7 access to your desired content. By enabling both Map and Feature Services to suit your specific needs, you can gain access to our industry-leading parcel boundary products directly into your existing Esri tools such as ArcGIS Pro, Portal for ArcGIS and ArcGIS Online. We give you the same exceptionally accurate results, your way.
 - b. License the geospatial data for use behind the corporate firewall,** where it can also be integrated into other GIS capabilities.
 - c. License the data and associated spatial analytic applications and implement via XML/SOAP.** This flexible technology is user-friendly and quickly integrated, typically providing companies with geospatial intelligence benefits in four to six weeks.
 - d. Combine licensed and hosted options.** Choose the options that best integrate CoreLogic technology into your existing infrastructure.
 - e. Web Mapping Service:** CoreLogic now provides several of its property and hazard data layers via Web Mapping Service (WMS). WMS requests generate a visual response in one or more geo-registered map images (returned as JPEG, PNG, etc.) that can be displayed in a browser application, such as OpenLayers, Bing, or Google Maps API. The interface also allows for the transparency of returned image layers from multiple servers.

Contact CoreLogic today to learn more about our solutions for the oil and gas industry.

For more information, visit corelogic.com/LocationInformationSolutions

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