

D&A SOLUTIONS OVERVIEW

Meaningful residential real estate valuations, insights, and trends

RPS' data and analytics solutions enable you to leverage detailed local market housing data to generate informed real estate decisions and effectively drive more business. Our powerful, proprietary property database represents one of the largest single-sources of national residential real estate data in Canada. Together with our significant investments in sophisticated tools and data scientists, our extensive valuation experience and collaborative approach to working with our clients, we are able to create unique and best-in-class solutions. RPS has successfully leveraged this competitive differentiator to find solutions that create wins for our clients and establish us as an industry leader.



Unique, National Housing Database

RPS' housing database provides a consolidated source of Canadian real estate information, property data, market trends, and advanced analytics. It aggregates inputs to provide rich features including:

- **Coast-to-coast coverage** in both urban and rural areas
- **8 million transactions**, including 5+ million records with detailed property
- **Continuously refreshed** and populated, amounting to hundreds of thousands of records being added on an annual basis
- **Over 10,000 defined geographies**, from provincial regions to local neighborhoods
- **Historical coverage from 2004 to present**, updated every month
- **Standardized, geocoded and aggregated data** for optimal use
- **Supporting data sets available**, Statistic Canada census data, points of interest, and neighborhood characteristic data such as high risk property information

Powerful Analytics and Experienced Data Experts

RPS has invested significantly in several breakthrough areas as a means of creating products and services that provide a competitive differentiation for our valued clients:

- **Staffed with experienced data scientists** who understand the real estate industry
- **Utilize various industry-leading tools such as machine learning, AI**, visualization software and geographic information systems (GIS)
- **Experienced in creating, delivering, and operating** Application Programming Interfaces (APIs) and custom integrations
- **Make the experience easy** by leveraging tools such as Tableau software, as well as customized reporting systems, that enable our clients to easily view, digest, and interpret data

Solutions

Appraisal Quality	Automated Tools	Flags and Outliers
<ul style="list-style-type: none"> • Collateral assessment • Appraised value assurance 	<ul style="list-style-type: none"> • Automated values • Rental AVM • House price indices • Portfolio valuation • Forecasts 	<ul style="list-style-type: none"> • Home value tracking • Mapping layers and API • Segmentations and scores (resiliency, homogeneity, etc.) • Custom market intelligence

As part of our solutions, our data and analytics clients also receive consulting support from our analytics team, both in getting started and on an ongoing basis.

Solutions Overview

Appraisal Management Quality Control Solutions

Our appraisal management solutions enable you to mitigate risk, generate efficiencies, and empower your staff to have better supported discussions with your customers, regulators, and others:

- **Collateral Assessments:** The RPS Collateral Assessment Review (CAR) is a fully automated, comprehensive, and sophisticated collateral assessment solution. It applies a powerful rules engine to assess the underlying collateral, based on the appraisal report. The report summarizes the review and flags any potential risks. It can be fully customized and/or used with our 350+ rules 'out-of-the-box'.
- **Appraised Value Assurance:** Unique to RPS, our Automated Valuation Assurance (AVA) solution leverages big data, machine learning software, and intelligently applies 120 complex rules to over 500 appraisal report fields to score the appraisal value and quality of an appraisal report. When applied across your portfolio, it delivers 100% compliance with internal quality controls.

Automated Valuation Tools and Market Trend Analytics

Our comprehensive set of valuation and market trends solutions enable you to understand market values past, present, and future. They can be used for underwriting, strategic planning purposes, stress testing portfolios, calculating capital allocations, validating internal models, and accounting purposes (IFRS 9):

- **Automated Valuations:** RPS has developed a commercial grade Automated Valuation Model (AVM) that delivers accurate and cost effective property value estimates. Using machine learning, our AVM provides a national accuracy rate of +/-10% of actual value 78% of the time.
- **Rental AVMs:** Rental AVM provides instant, cost-effective estimates of monthly rental incomes on homes.
- **House Price Indices:** The RPS House Price Index (HPI) is the most comprehensive data set of the Canadian residential real estate market available. It provides breadth (2,500+ geographies), depth (6 property styles), and detail (helpful supplemental information is included).
- **Portfolio Valuation:** RPS provides Portfolio Valuation Services whereby we determine the value of the underlying collateral of a portfolio of mortgages. RPS has coverage across Canada, delivers a one-stop-shop with consistently high hit rates, and can accommodate any portfolio size. We deliver a quick, cost-effective, comprehensive, and supported assessment of a portfolio.
- **Forecasts:** In addition to the historical views, RPS partnered with Moody's Analytics to develop Canada's first econometric-driven house price forecast model. Our forecasts simulate the path of Canadian house prices under a range of economic conditions and scenarios, are updated monthly, and provide a 10-year forward-time horizon.

Client-Facing Applications

RPS also has tools and applications that can be used for more client-facing applications and portals:

- **Home Value Tracking:** A lead generation and customer retention tool, the RPS House Price Tracker (HPT) provides your clients and contacts with regular updated reports on the value of their property. It also delivers rolled up, monthly analytics on how your campaigns are performing and portfolio stats. It is available out-of-the-box, can be white-labeled and customized, and is also available via API.
- **Mapping Layers and APIs:** RPS has various mapping layers that can allow for interesting visualizations of the data and analytics. Examples include:
 - **Real Estate Segmentation Clusters:** Classifies neighbourhoods into groups of similar types so users can quickly understand the stock of a neighbourhood and find matching neighbourhoods
 - **Proximity Scores:** While metrics such as a Walk Score can be informational at a high level, our Proximity Scores dig deeper to provide customized, Canadian-centric, and appealing content
 - **Homogeneity Index:** Our Homogeneity Index is useful to know how much variability exists in the current housing stock and to quickly discover areas where diversity either exists or is lacking
 - **Other Data Sets:** Examples include neighbourhood property information (average home size, number of bedrooms), demographics, points of interest, and other information for real estate portals and insights
- **Custom Market Intelligence Reports:** RPS' comprehensive database allows us to deliver other custom reports, APIs, and analytics to meet your unique needs and requirements. Examples include property tax reports, condo fee reports, and property value decile segmentation reporting.