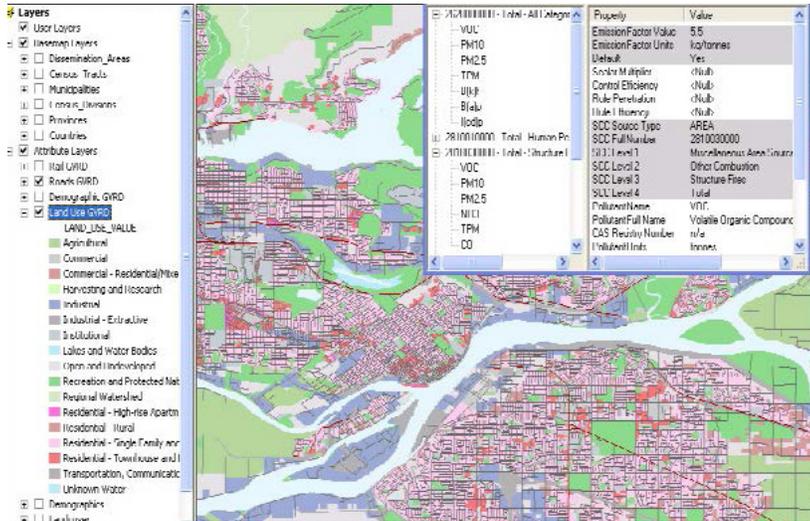


CUSTOM SOFTWARE SOLUTIONS

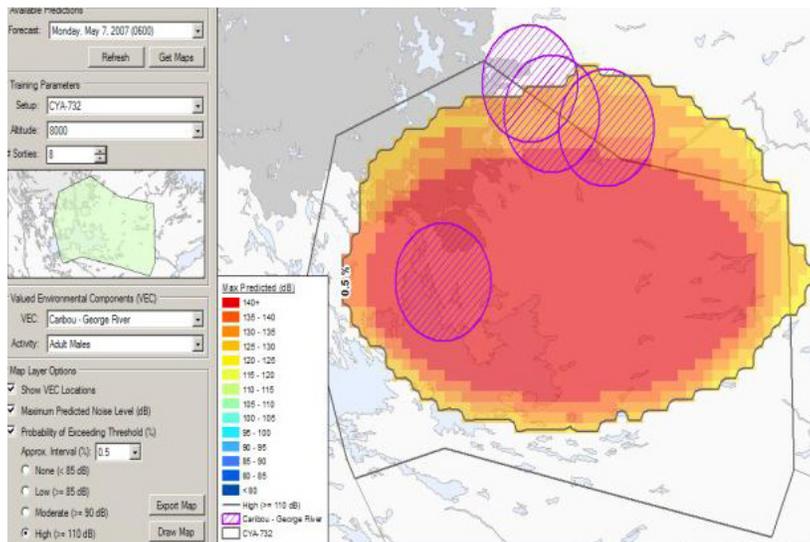


Unique solutions to meet complex environmental and engineering challenges



Our Service

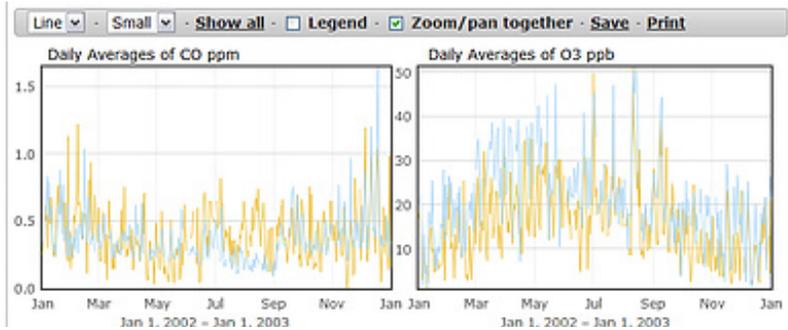
RWDI's custom software, coupled with our in-depth science and engineering knowledge, can help our clients replicate and predict complex conditions more accurately and cost-effectively than ever before. Backed by RWDI's team of engineers, scientists, meteorologists and GIS experts, our software team can modify and make improvements to existing models and software applications, as well as design and develop custom software solutions for our clients' most complicated engineering and environmental challenges. Our collaborative culture means we work closely with you to understand your questions, and develop a software solution that meets your needs in every respect – from data inputs to end user interface and notifications.



Complex challenges, powerful solutions

Capabilities

- Custom Windows and Linux application development, automation, and scripting
- Software/hardware system development, integration, installation, maintenance, and training
- Scoping/discovery and requirements documentation
- High-performance computing
- GIS analysis and software development under ArcGIS
 - EDN, SDE, ArcInfo, ArcObjects, etc.
 - registered ESRI business partner
- Database design and development
 - SQL Server, MSAccess, MYSQL, etc.
- Numerous programming languages (including C#/C++/C, VB.NET, and others)



Sample Projects

Industry, institutions, and governments turn to RWDI for a range of innovative solutions – from complex, stand-alone and hosted software tools to products that leverage existing hardware to port, recompile and parallelize advanced scientific and engineering models.

A System to Monitor Accidental Atmospheric Release Events

RWDI was awarded a contract to develop an Emergency Air Monitoring and Assessment System (EAMAS) for the Alberta Ministry of Environment and Sustainable Resource Development. EAMAS is a joint government/industry initiative that links real-time environmental information with weather forecast and atmospheric dispersion models in order to provide ground-level predictions on the magnitude and extent of accidental atmospheric release events. The system includes four daily runs of the operational weather forecast model WRF; real-time dispersion modeling; and integration with a local air monitoring network (15 monitoring stations). EAMAS presents modeling results on a web-based/GIS system for emergency planners.

An Innovative Approach to Computing Emissions Inventories

RWDI has worked with Environment Canada and other stakeholders to develop EIGIS, a unique software system represents a new conceptual paradigm for computing emissions inventories. EIGIS follows a bottom-up approach by computing emissions using spatially resolved activity data, obtained and stored as high-resolution GIS layers. Sample GIS-based activity layers include: road networks and traffic volumes, population statistics and land use. EIGIS has been used for pilot projects in Canada and the U.S. to compute and analyze emissions estimates, generate reports and prepare SMOKE model input files. [Redefining possible.](#)

RWDI is a valuable partner to clients seeking to...

Explore Innovations

- Make better use of your data, and empower your team to do the same
- Integrate multiple data sources into a single tool to streamline operational decision-making

Create Opportunities

- Solve challenges unique to your business or work site with a custom tool
- Boost your team's efficiency by helping them make sound decisions faster

Meet Challenges

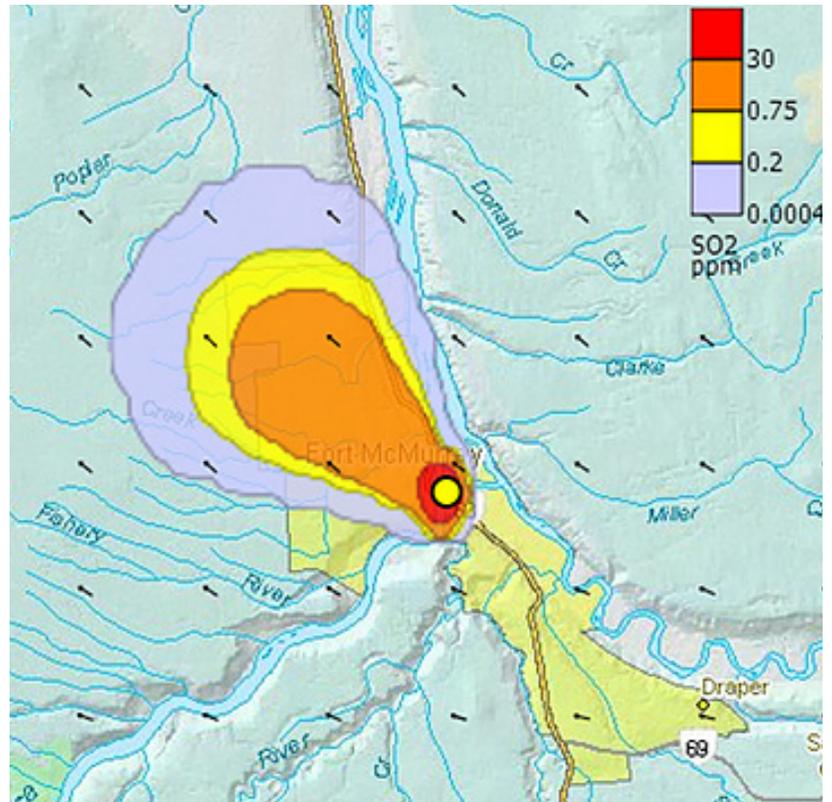
- Respond to concerns with high-quality data and easy-to-understand reports
- React to accidental releases and unforeseen events quickly and effectively

Fulfill Expectations

- Ensure the safety of your team and community with accurate, timely measurements and alerts
- Ground your operating procedures in a rich understanding of your environment and your impact

A Visualization Prototype Linked to an Important Air Quality Database

RWDI worked with Environment Canada and their stakeholders to develop a web-based prototype that lets end-users to select, explore, visualize and extract data in an air quality database used nation-wide: the National Air Pollution Surveillance (NAPS) database. Recognizing that NAPS held invaluable data but could be cumbersome to use, we reviewed leading approaches to for displaying comparable data (notably historical air quality measurement data) and developed a prototype application for the dissemination of data from the NAPS database. In close conjunction with Environment Canada, RWDI developed the web-based prototype using the ArcGIS application platform, and delivered the final product under an extremely tight schedule.



A Sonic Boom Forecast System

In cooperation with scientists at Wyle Laboratories Inc., we developed a one-of-a-kind software system for predicting, up to 48 hours into the future, the probability and magnitude of sonic booms associated with military aircraft training over a 45,000 km² area of northwest Labrador, Canada. The BoomCast system integrates real-time weather forecasts and Wyle’s PCBoom model with a custom GIS interface to allow planners to select training activities that minimize environmental impacts.

