emprata

CLIENT: Rensselaer Polytechnic Institute (RPI)
Center for Infrastructure, Transportation, and the Environment (CITE)
PROJECT: Haiti Supply Chain Congestion Tool

THE CHALLENGE

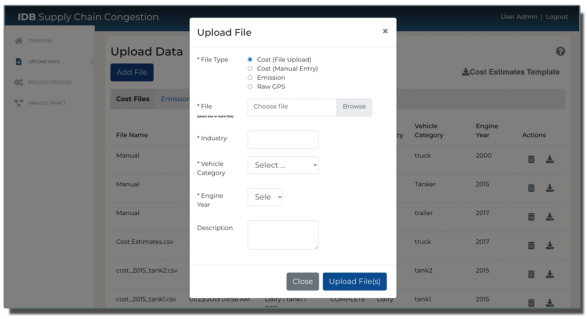
CITE investigates complex transportation, infrastructure, and environmental problems and assists in developing approaches for alleviating these issues. One of CITE's areas of research is supply chain congestion, and CITE has specifically studied the impact that severe traffic has on logistic activities within several Latin-American cities where this is a problem. CITE developed a methodology to quantify the impact that congestion has on those supply chains, and Emprata helped to design and develop software that allows decision makers to efficiently implement CITE's methodology.

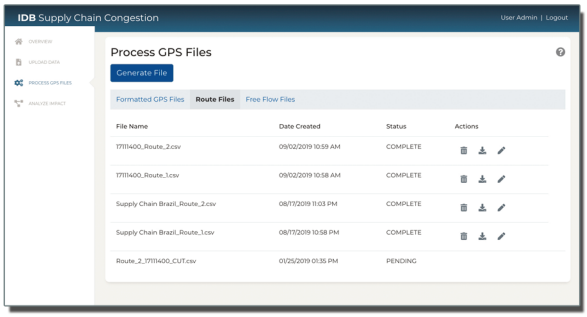
OUR SOLUTION AND RESULTS

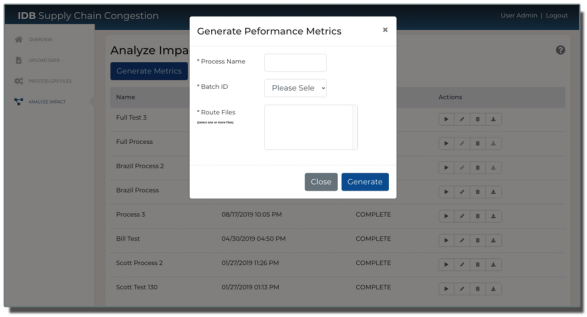
Emprata created a decision support tool that allows users to upload GPS data from truck deliveries, calculate an estimate of the overall costs and emissions, and compare that estimate to what it would have been if the trip had occurred during an off-peak travel time.

The software uses CITE's detailed custom algorithms to perform the calculations, and the interface includes several functionalities:

- *Upload Data* – allows users to upload files containing actual vehicle trip data taken from GPS devices, and files that provide the cost and emissions data for specific vehicle types
- *Process Files* – includes the ability to divide a raw GPS file into separate "Route Files" in order to determine when the vehicle was stopped for long periods of time, as well as the ability to then use these Route Files and the Google Maps API to create "Free Flow Files" that depict the amount of time that the route would take in zero-traffic conditions
- *Analyze Impact* – provides an output of the overall costs/emissions performance metrics for both the Route Files and their associated Free Flow Files, resulting in a comparison of the estimated costs/emissions of the actual trip versus what they would have been during an off-peak travel time







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