

RPS TRACKER SYSTEM

CHANGING THE MODEL FOR MATERIAL TRACKING

Where operators help track and control
site materials, equipment, and progress.

HOW IT WORKS



AN ESTIMATOR'S BEST FRIEND

Traditional construction monitoring systems have been hidden from machine operators. RPS Tracker changes that process by enabling real time interaction between machine operators, site supervisors and back-office administrators. The interactions between these groups are key to keeping a project on schedule and on budget. In many cases projects are awarded to a contractor, but the assumptions that drove the estimate for that project don't get realized. With RPS Tracker, everyone on the platform has access to the data they need for optimizing productivity. Operators can clearly and easily record their load events, material types, and dump events safely and effectively. And when problems or opportunities for improvement arise, modifications can be made, and issues

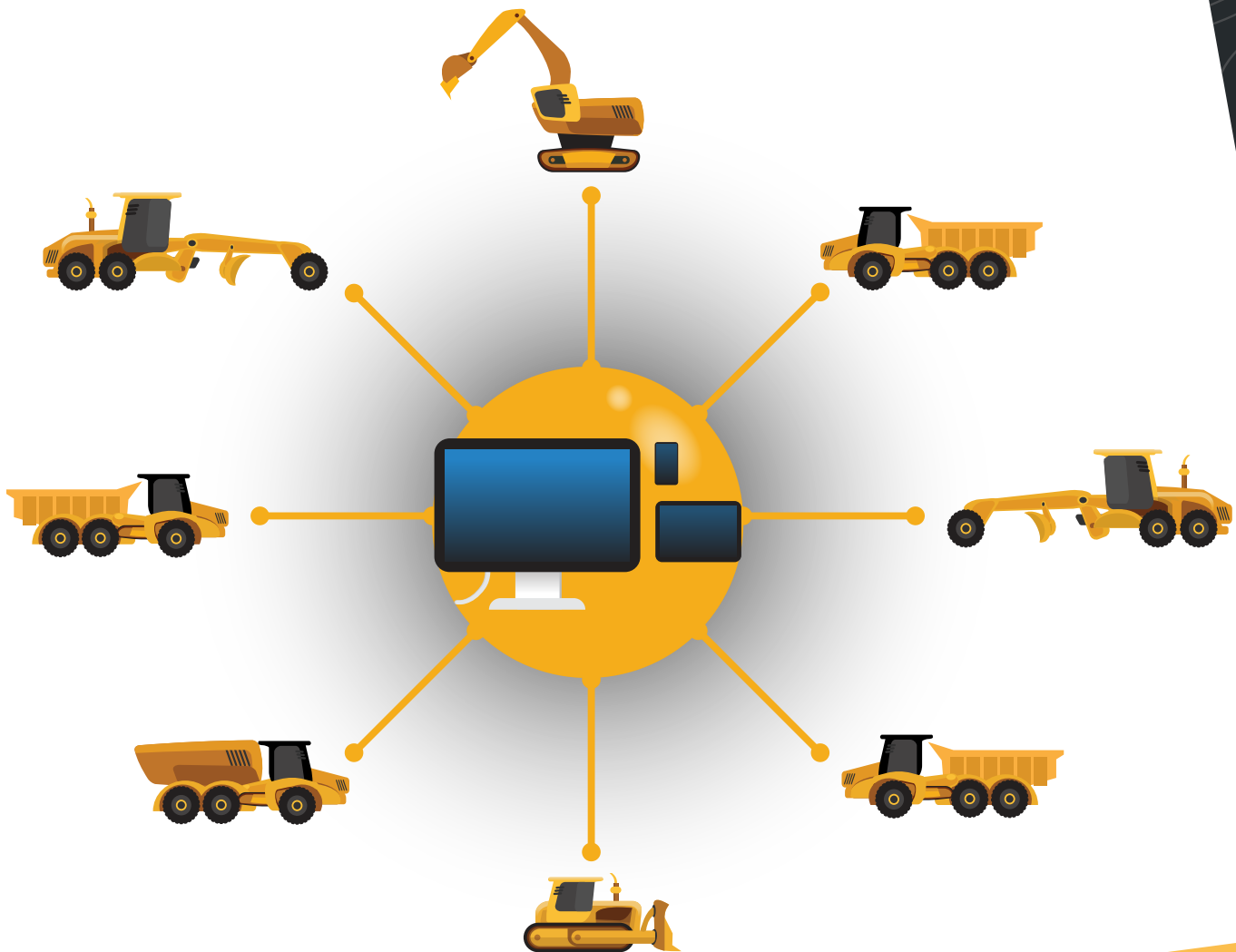
resolved before the project gets severely impacted. Over time, RPS Tracker becomes the estimator's best friend because Tracker helps the operators achieve the expectations that were defined in the bid. The RPS Tracker is a highly customizable materials and equipment tracking system for your earthmoving projects and fleet. The system is quick to learn, easy to implement, fast to deploy and can be used to integrate with your own and your subcontractor's equipment on projects. The system also incorporates the RPS Cycle Planner – an analysis tool that you can use at both bid and construction planning stages of a project to analyze planned haul routes to estimate the optimum equipment mix / types and to evaluate equipment bunch ups and potential production output.



ALL YOU NEED IS THE INTERNET.

EVERYONE HAS ACCESS

The system comprises 1) RPS Tracker Tablet - GNSS / cellular enabled tablet computers mounted in production equipment (on / off road trucks, scrapers, excavators and other equipment and vehicles that you wish to track) and 2) RPS Tracker - Web software for administration, setup, configuration, dispatch, equipment journal, detailed analysis, and reporting for your tracked equipment operations.

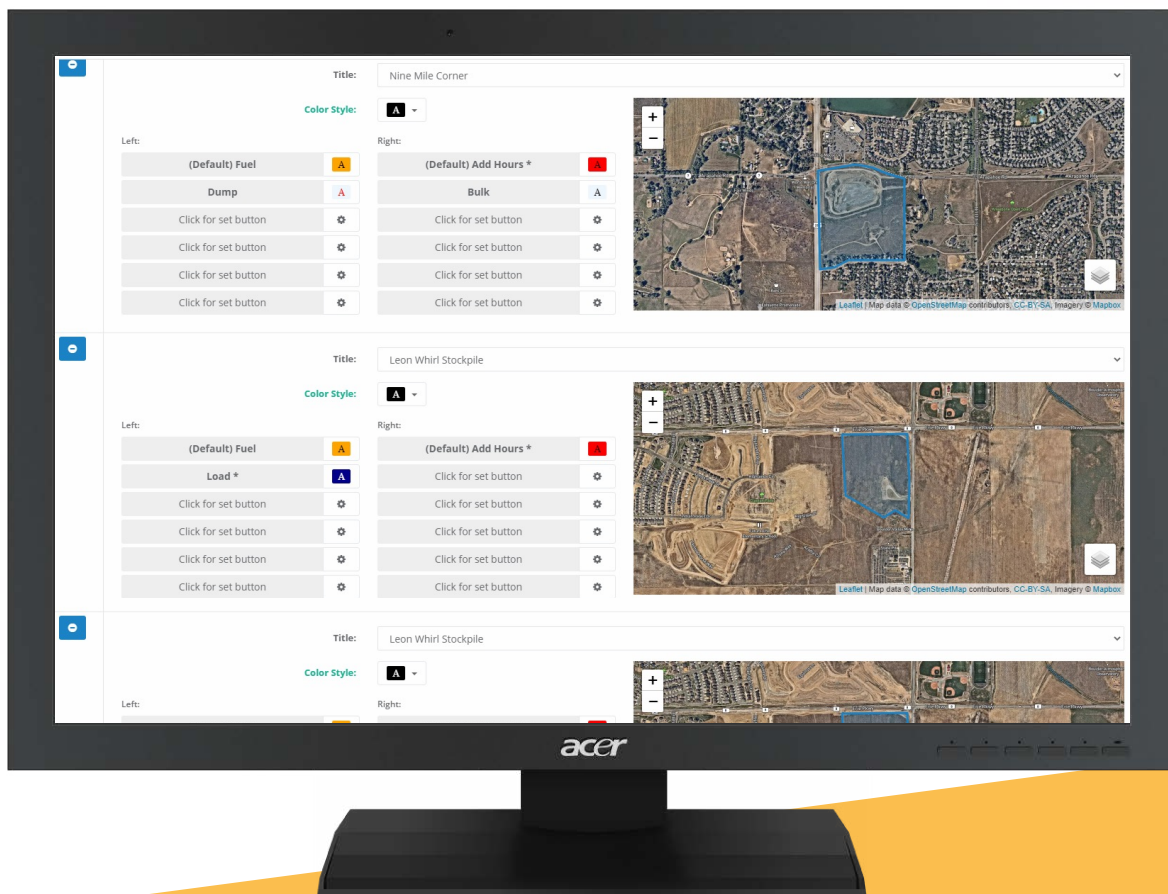




The RPS Tracker system consists of an internet-based setup process where the administrator identifies the projects, the machines (typically haul trucks), drivers, load points, dump points and the material(s) being moved. That's it. Most projects can be set up in minutes. Administrator can customize what the operators see on their tablets, or they can use the traditional "red for loading, blue for dumping" default color schemes provided. For example, they can specify buttons for fuel fills, weigh ticket collection, time clock exceptions, material testing slips and more. Event buttons can be regulated to only take place at specific locations. Events can be manually triggered in the field or automated to occur in the background or with prompted confirmation from the operator or supervisor.

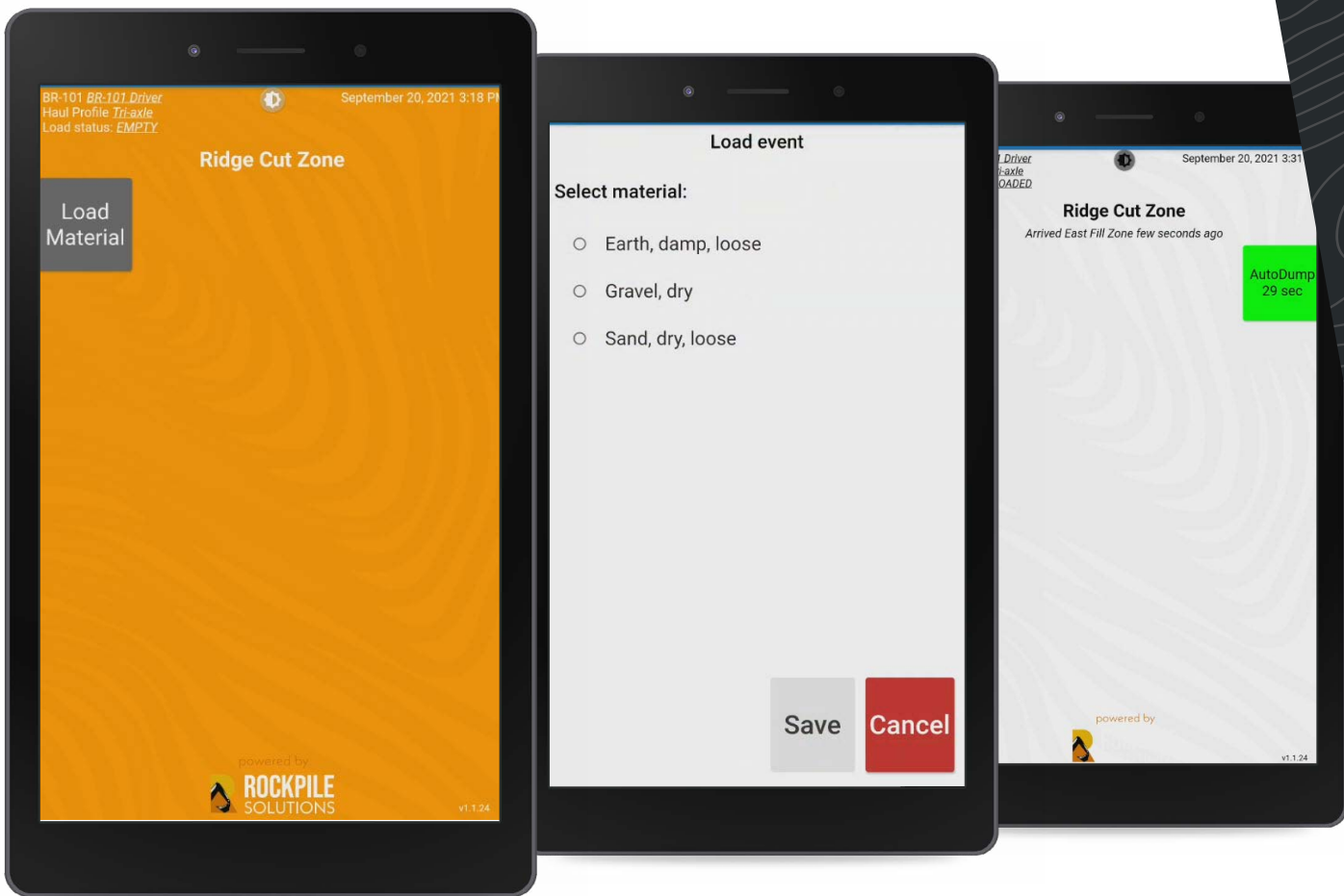
"The web-based portal makes it simple to look at resources on site. The reporting options are as specific or whole site capturing as you would like to see."

JOHN WEST
SUPPORT SPECIALIST, SITECH Allegheny



MORE THAN A BLACK BOX

THE BENEFITS ARE HUGE

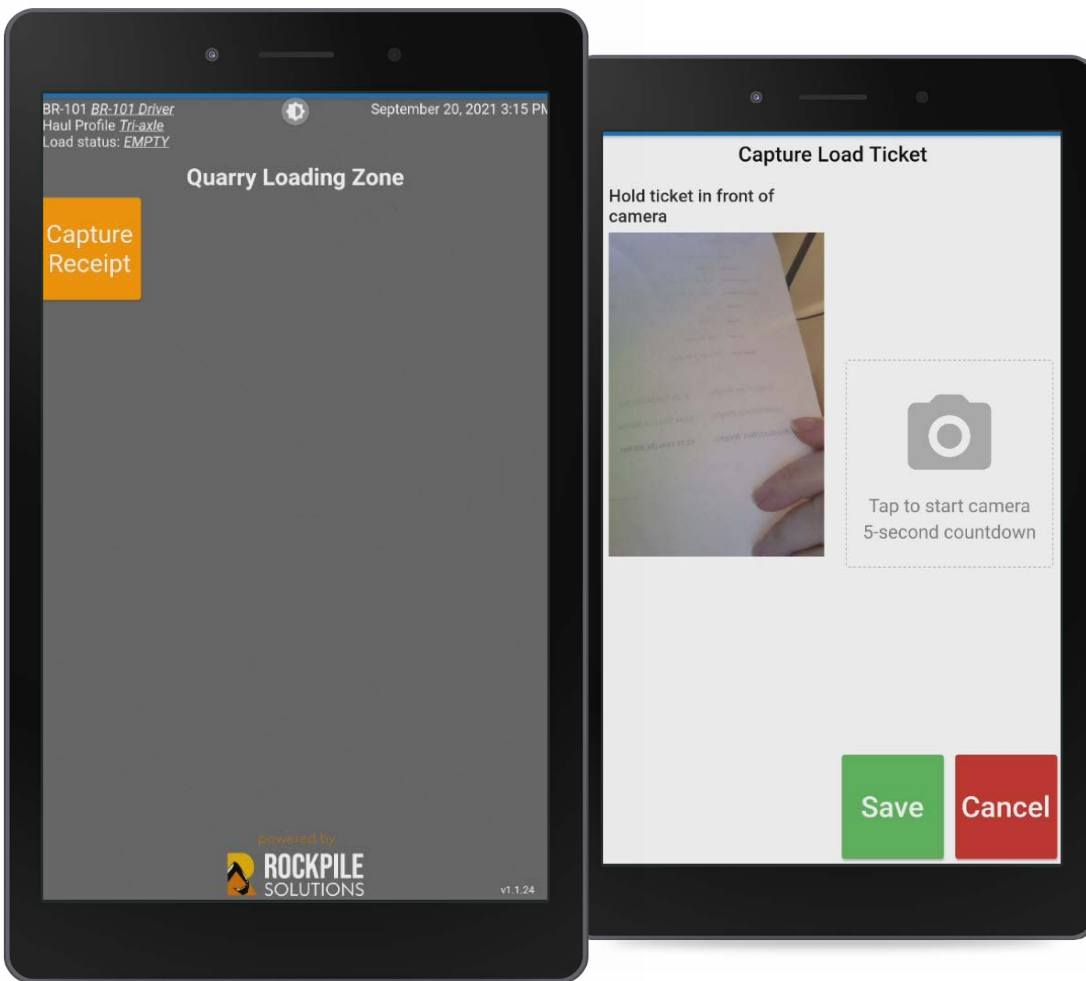


Moving material at the jobsite



“RPS Tracker is easy to install, simple to operate and allows operators to give accurate analytics to the office without burdening them with lost time in the field. The tablets not being machine specific makes it wonderful for mobile fleet that moves equipment to and from jobsites daily.”

JOHN WEST
SUPPORT SPECIALIST, SITECH Allegheny



Moving material from quarry or 3rd party location



Zero install. Simply plug in to the lighter of the truck and you're ready to rock. RPS Tracker uses a rugged Android-OS based 8" tablet computer with high resolution screen. Dash or windshield mounting options are recommended, but not required. The tablet comes with a charger and USB cable for continuous power and will run for up to 8 hours with the internal battery. The tablet's camera is used for recording purchased fuel receipts, bulk fuel and load / delivery / dump tickets that are transferred in the data stream to the back office for record keeping purposes.

Quick / Easy Installation

- Power from cigarette lighter or ignition
- Clamp to post, dashboard mount or windshield
- Assign machine and operator
- Start work

Manual and Automated Data Capture

- Position / Geofence based auto-load and auto-dump events
- Manual button-based load and dump events
- Purchased and bulk fuel entry with automated ticket capture
- Maintenance hours captured
- Project or region based routing (multi-project) for flexible operations with geofence triggers and manual overrides
- Geofence in geofence for multi-material type stockyard or quarry locations

Safe and Easy for Operators

- Operator interaction suspended while moving
- Large easy to read screens and buttons to press / lists to select / prompts to choose
- Color coded buttons and displays for easy recognition of button, routes and geofence locations (red = cut/load, blue = fill/dump, etc.)
- Tablet is locked down to stop misuse and keep it focused on the job in hand
- If removed from machines at night, tablet displays vehicle name and ID on screen when rotated for fast / easy pick up the next morning

Easy to manage and maintain system

- All software updates are loaded and managed remotely
- RPS SIM cards and cellular plans use an accumulated data pool for low-cost monthly service provision. Provide your own if preferred.



OPERATOR ENGAGEMENT OFFERS ENDLESS POSSIBILITIES

In operation, the tablet computers provide data capture automation through use of the integrated technologies of the devices – GNSS – Inertial – Cellular – Camera – Microphone – Speaker – Touch Screen allowing your equipment operators to value add the data provided to the back office.

GNSS positioning for

- Tracking equipment locations
- Tracking equipment haul paths
- Monitoring equipment motion and speed
- Tracking geofence location entry and exit events (cuts, fills, waste, borrow, load, dump)
- Tracking equipment working / idling / not working
- Determining equipment cycle and load counts, cycle times cycle distances and volumes moved by operator, equipment asset, route, geofence location, material and date/time range

IMU sensors for

- Monitoring equipment On/Off status
- Tracking equipment hours

Tablet feature advantages. With an emphasis on safety and usability, RPS Tracker is focused on helping the operator take advantage of the Tablet's ability to capture data on the site. In addition to GPS location and machine status, RPS Tracker can use the machine's camera, IMU (movement detector), and communication features to add more and more capabilities to the system. Whether your focus is on fuel consumption, dust levels, road conditions or material contamination, RPS Tracker has the framework in place to accommodate your crew and project requirements.

Camera for

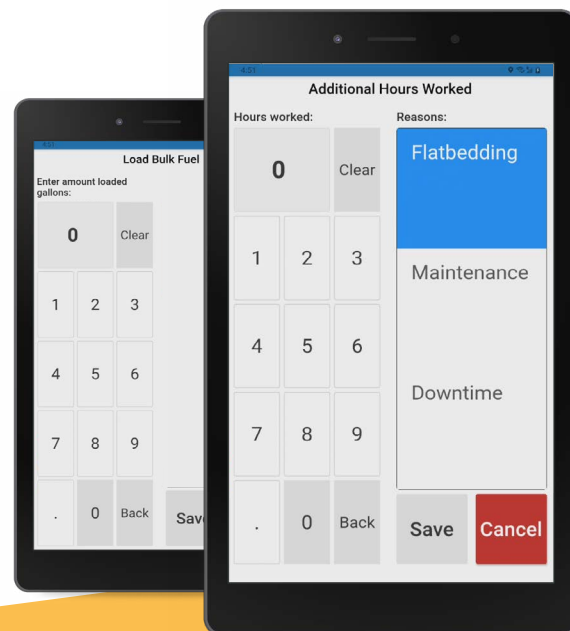
- Capturing load, dump, waste and fuel tickets
- Other activities where a photo for support is helpful

Cellular for

- Communication with the operator
- Sending and receiving captured information
- Sending route changes and acknowledgments
- Managing system software updates

Touch Screen for

- Manual trigger of events
- Operator notifications
- Entering or selecting responses to capture additional information at event times
- Visual feedback of operational transactions





MATERIAL FLOW OPTIMIZATION AT YOUR FINGERTIPS.

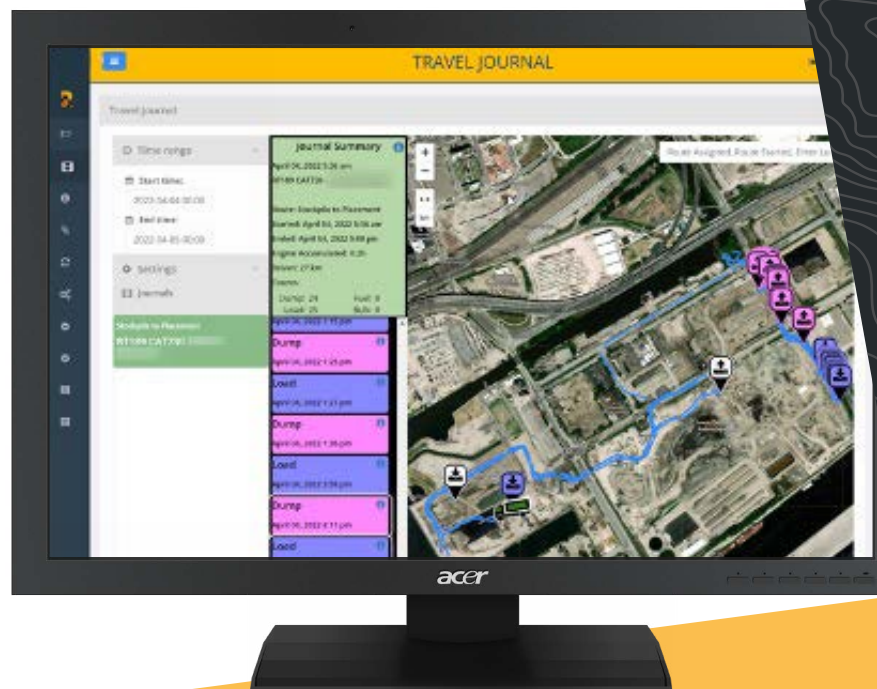
MATERIAL MOVEMENT MADE EASY

Capturing material movement is critical for applications where material is reused or material testing is required. RPS Tracker can follow material to and from the site as well as within the site itself (borrow pits, stockpiles and other on-site cut/fill workflows). Administrators can create separate workflows for rough grade and fine grade phases of a project. Custom consulting and development features can be added for material testing and disposal activities.

Travel Journal Details Machine History

Through the smart use of information, RPS Tracker answers daily questions on your projects, haul routes, borrow / quarry site locations, waste locations and subcontractors work such as:

- Where is the equipment?
- Is it working or available?
- What is it doing?
- What route is it running?
- What path is it taking?
- Where is it stopping?
- How many loads today?
- How much of Material X have we imported or wasted or moved?
- Where did the material come from or get placed?
- Where is that load, dump or fuel ticket?





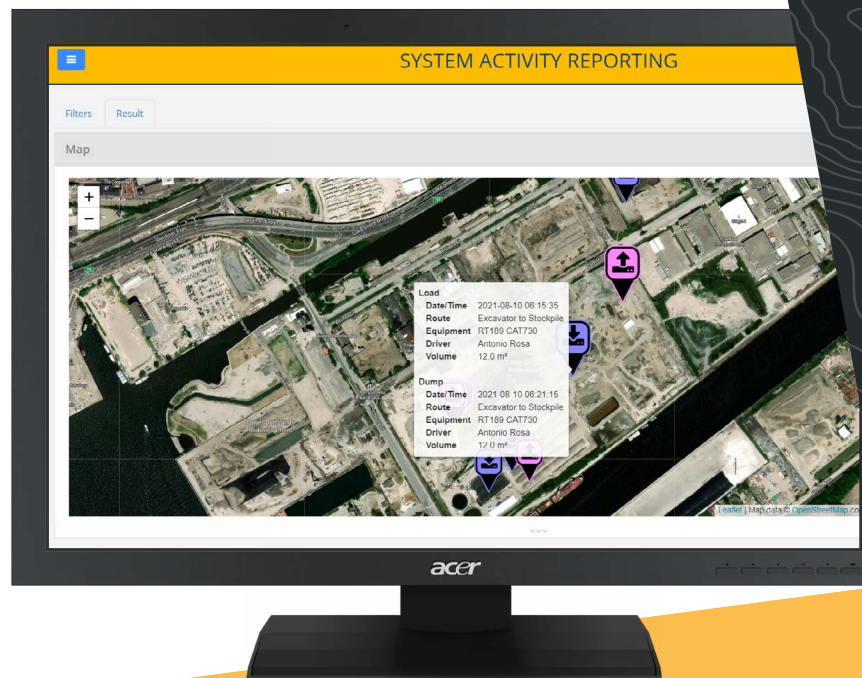
LOAD AND FLOW CORRELATION

Load events can be defined to use a specified material or can prompt the operator to select the material from a predefined list if it is likely to change over time.

Materials being loaded can also be derived by proximity to a specific loading machine that has been associated with a specific material. Daily material statistics reporting includes load/dump counts, material type, volume/weight of material moved, idle time vs. working time, time in load/dump zones, distance traveled and other key metrics. Material reports can be filtered to look at any time period. Material volumes can be viewed at a summary level, by machine, by driver or material. Reports are broken up by project to make cost accounting easier.

Defining System Activity

Within each location you can define what events and materials get captured – load/auto load, dump/auto dump, load fuel, maintenance, cut/fill, etc. You can also define events and materials to capture outside of designated locations. This is especially useful when taking waste material offsite to locations that are not defined with a geofence. Having event and material options for undefined locations ensures that no events get overlooked. This way all materials being loaded, dumped, processed, borrowed, or wasted will get tracked with accurate volumes. Routes can be used to connect geofence locations with automated events or freeform paths with manual operator controls. When entering a geofence location, the RPS Tracker Tablet screen changes to a color indicating the type of location and provides the buttons assigned to that location for the operator to use. If the autoload / auto dump control is applied to the location, the trigger is initiated, and the event is automatically captured.





CHANGE IS EASY WHEN MANAGING EQUIPMENT.

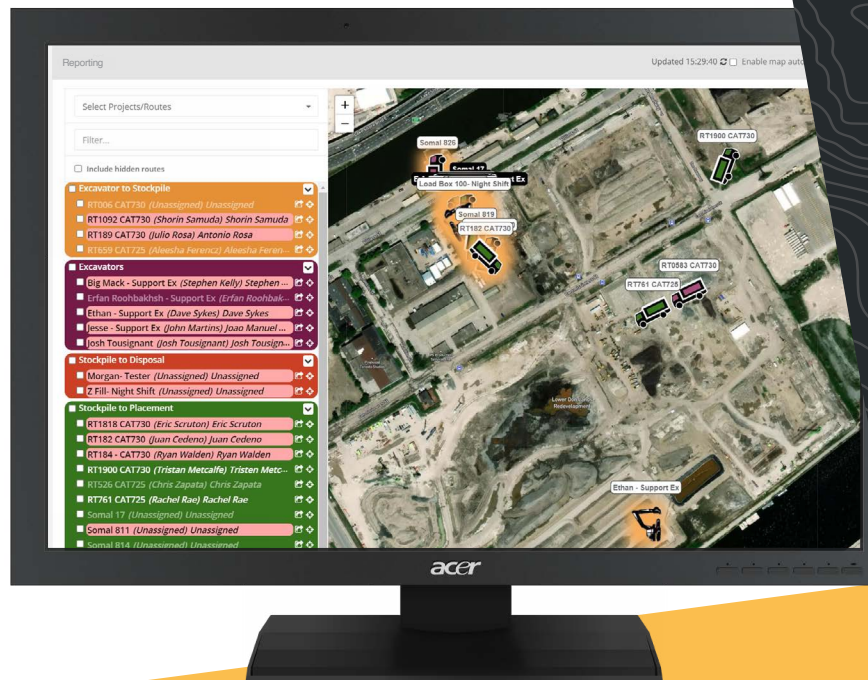
FLEXIBILITY OF USE WITH THE DISPATCH FEATURE

Making changes to the tablet setup is extremely easy when using RPS Tracker. Within seconds a tablet can be seamlessly moved from one truck to another while retaining the integrity of the reporting engine. Drivers, route locations and materials can all be updated with no vehicle stops or wait times required. Trucks can work across multiple projects simultaneously. Should a haul truck become disabled for any reason, the tablet can be moved to a replacement truck without disruption. Load/dump locations can be changed on the fly. Multiple load/dump zones can be applied to any route. Drivers are not restricted to specific route directions so accidents or road closures can be avoided without any setup changes.

Maintain Project Control

RPS Tracker combines Administration (setup and configuration), Dispatch (equipment and route management) Travel Journals (equipment tracking and event monitoring), and Reporting (operational metrics and detailed project reporting) into a solution that is comprehensive yet easy to use.

The tagging (assigning) of locations (geofences) to operators, machines and projects is key to getting desired reports. Geofences can be tagged to one or more projects. The number of geofences associated to a project can range from one to hundreds. Geofences can even be created and tagged inside of other geofences (nested geofences). Reports are defined and filtered by the method of tagging geofence locations and defining which activities to capture inside of those perimeters.





EASY ANALYSIS WITH THE TRAVEL JOURNAL FEATURE

Users are provided a detailed map-based analysis of a selected machine or vehicles activity showing the path traveled during the selected time frame along with all of the event activities documented as on map icons as well as journal entries. Simply click a journal entry to highlight the icon for the entry on the map or vice versa to find the journal entry from the icon on the map. The journal screen also provides a detailed analysis of moving vs. stationary operation of the selected machine or vehicle in a timeline, and allows users to identify stop locations in the map using the playback controls. The journal also shows a summary of engine hours accumulated as well as a count of all load, dump, fuel and bulk fuel events.





SIMULATE MATERIAL MOVEMENT

Route planning and estimating. When bidding for mass haul jobs, having the ability to simulate the operation before providing an estimate can avoid underbidding or overbidding scenarios. RPS Tracker's Cycle Planner feature makes that process a reality. In minutes, the Cycle Planner can specify routes, load and dump locations, loading and haulage asset mix and operational parameters (haulage speed, load times, dump times, etc.) and then run full day simulations in seconds.

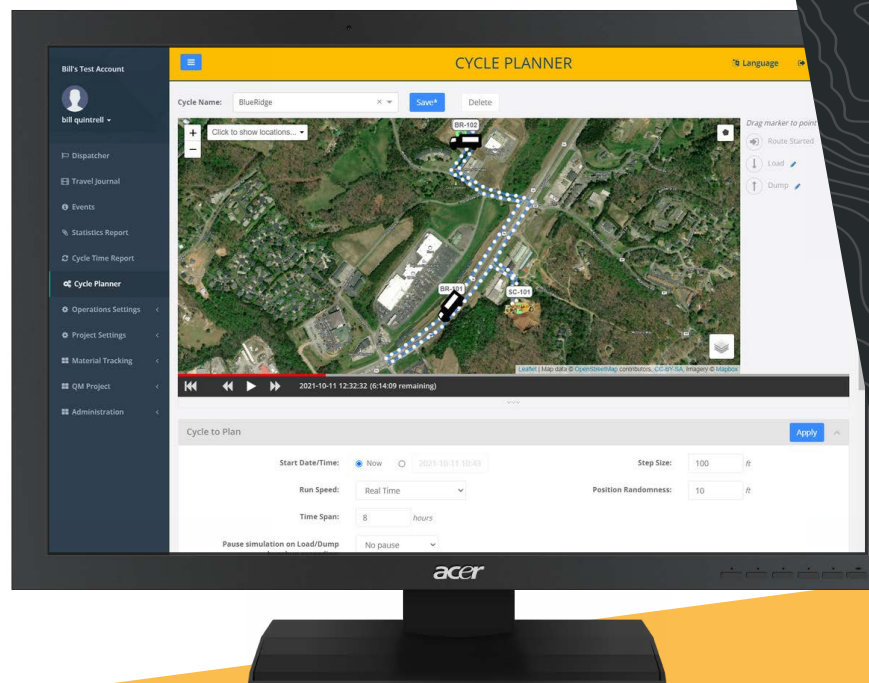
Simulation will highlight haul issues including incorrect loader / haulage unit mix, bunch up / delay times at the load or dump locations, likely cycle times and load counts / volumes moved that are achievable etc. Planner can rapidly adjust operating parameters and run alternate simulations for "What If" scenario analysis.

The Rockpile Solutions team takes product deployment and configuration, user and operator training seriously. We meet with our users regularly to answer questions, assist with configuration improvement recommendations, and to capture user / operator feedback for product enhancement. Our goal is to provide you with a solution that provides you with 100% of what you want either through our standard product configuration or through consulting engagement to customize the system components to better meet your needs.

We look forward to working with you.

ALAN SHARP
MANAGING PARTNER, Rockpile Solutions

The cycle planner analyzes the defined route in a few seconds for a day or days of operation and displays the results in terms of equipment bunch ups at load or dump locations and the resulting equipment wait times along with all load and dump event details. Then, depending on congestion or other issues, additional scenarios can be simulated to improve operational efficiency.



ROBUST CUSTOMIZATION CAPABILITIES



ONLY FROM RPS TRACKER

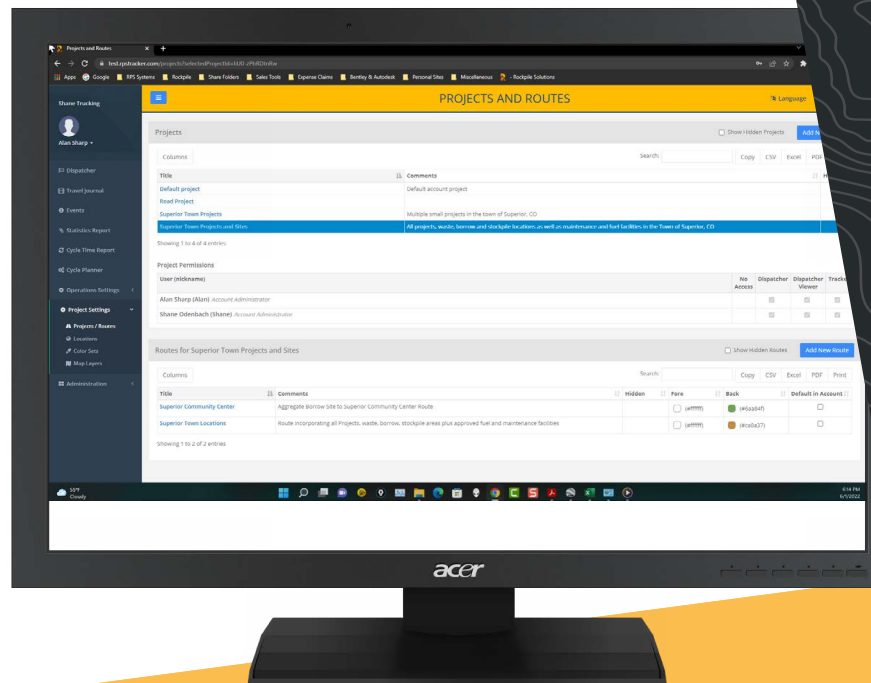
One of the best features of RPS Tracker is the level of customization the system supports. Data can be stored and managed in the cloud or on a local server. Customization to support proximity features, standard and non-standard sensors, contamination testing/results, and custom reports are all realistic possibilities with RPS Tracker. If your requirements don't fit existing project tracking solutions, then RPS Tracker is your complete tracking solution.

Customization can be applied to the RPS Tracker Tablet to add functionality required for operator controls or additional data collection such as:

- Add automated weigh bridge integration
- Select the loader / excavator feeding the truck for back-office data correlation
- Add new buttons or custom data entry fields for specific data collection
- Provide specific additional information on screen for the operators
- Leverage the inbuilt sensors of the tablet for new applications or to connect third party devices and sensors

RPS Tracker in the back office can be customized through:

- Additional / custom reports or outputs
- Database extensions to collect and correlate additional information
- Provide mass digital upload or additional data entry capability
- Integrations with other systems



READY TO TAKE DELIVERY?



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LET'S TALK!

Start the conversation today. Request a quote at quotes@RockpileSolutions.com and learn how we can make you more competitive.

RPS HELP AND ASSISTANCE

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