RidePilot: Open Source Scheduling for Small Transportation Providers

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Think Forward

U T A

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Overview

➤ Motivations for Computer-Aided DRT Scheduling

➤ Challenges for Smaller Transportation Providers

➤ Overview of RidePilot Open Source Scheduling Software

➤ UTA's Innovative Deployment of RidePilot

➤ Next Steps for RidePilot

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Benefits of Computer-Aided DRT Scheduling

- DRT management is logistically challenging
  - » Computerized tools can help find the most efficient trip schedules, driver assignments, and management and maintenance of vehicles, thereby making the most out of available resources

- DRT services require data-intensive grant reporting
  - » Computerized scheduling tools can track required information and generate reports on demand

- State of the industry:
  - » Most medium and larger DRT providers rely on robust commercial solutions with sophisticated scheduling algorithms
  - » Many small, rural providers rely on manual methods scheduling and data tracking methods: pen-and-paper, whiteboard, Excel, etc.

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Challenges for Smaller Providers

➤ Commercial scheduling packages are unaffordable for many smaller providers (less than 5-to-10 vehicles), including many non-profit organizations

  » Significant licensing fees

  » Feature overkill

➤ Problems with relying on manual tracking methods:

  » Less likely to use resources as efficiently as possible

  » Much more manual labor required

  » Greater chance of human error

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RidePilot Scheduling Software

- Open source

- Initially developed by RideConnection in Portland

- Subsequently enhanced and deployed by UTA as a tool for the use of smaller providers in the Salt Lake region
  - » A single deployment can accommodate multiple providers

- Best suited for smaller providers (< 5-10 vehicles)
  - » Good data entry and reporting capabilities
  - » Screens to assist with manual scheduling and dispatching
  - » NO current support for automated scheduling (although this is envisioned for future upgrades)
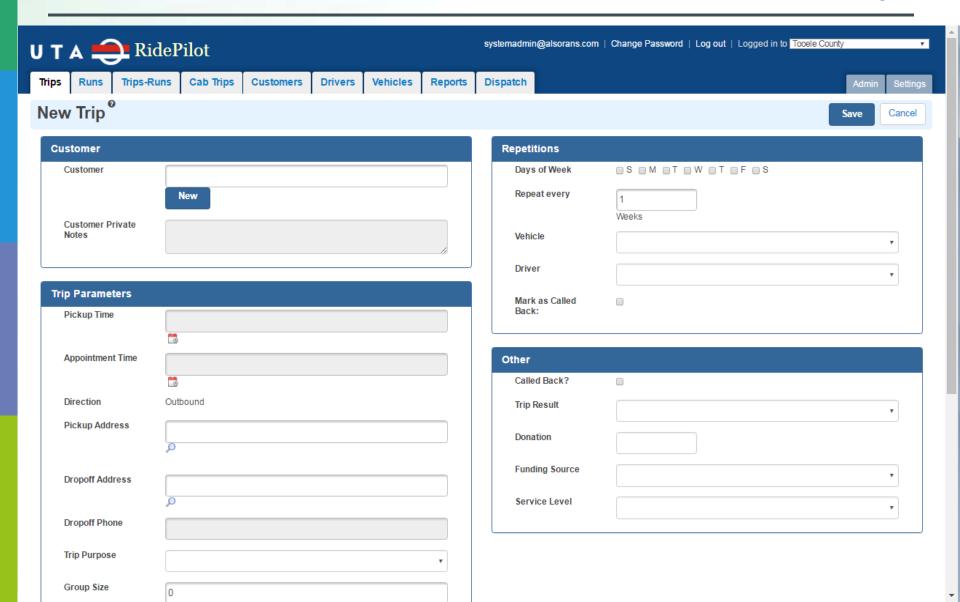
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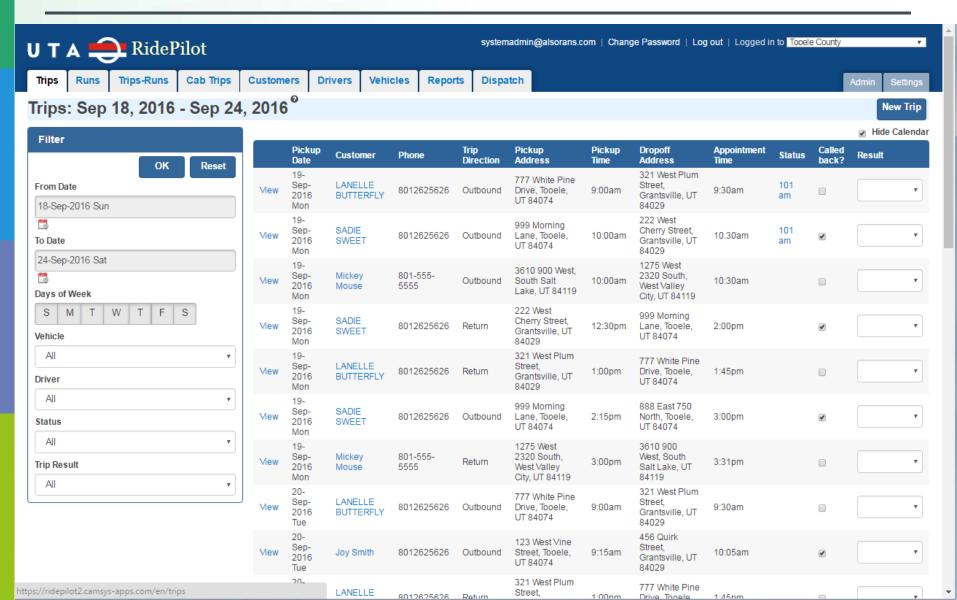
Key RidePilot Features

- Enter customers, vehicles, and drivers

- Create customers trips, including subscription (recurring) trips

- Create runs with vehicles and drivers, typically recurring

- Schedule trips to runs and track outcomes

- Create and track recurring compliance events for drivers (e.g. license renewal) and vehicles (e.g. periodic maintenance, annual registration)

- Generate a range of reports

- Enable automated scheduling requests from trip planners (e.g. 1-Click) via application programming interface (API)
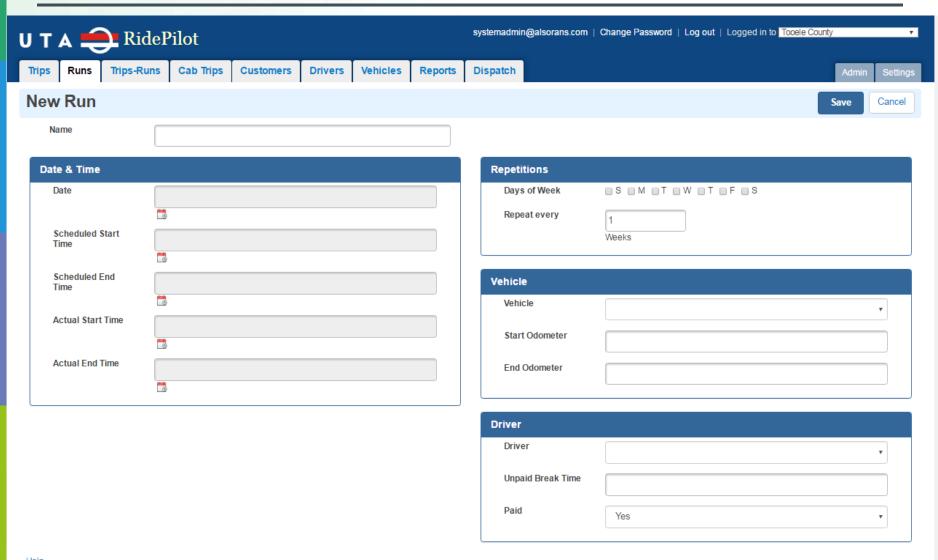
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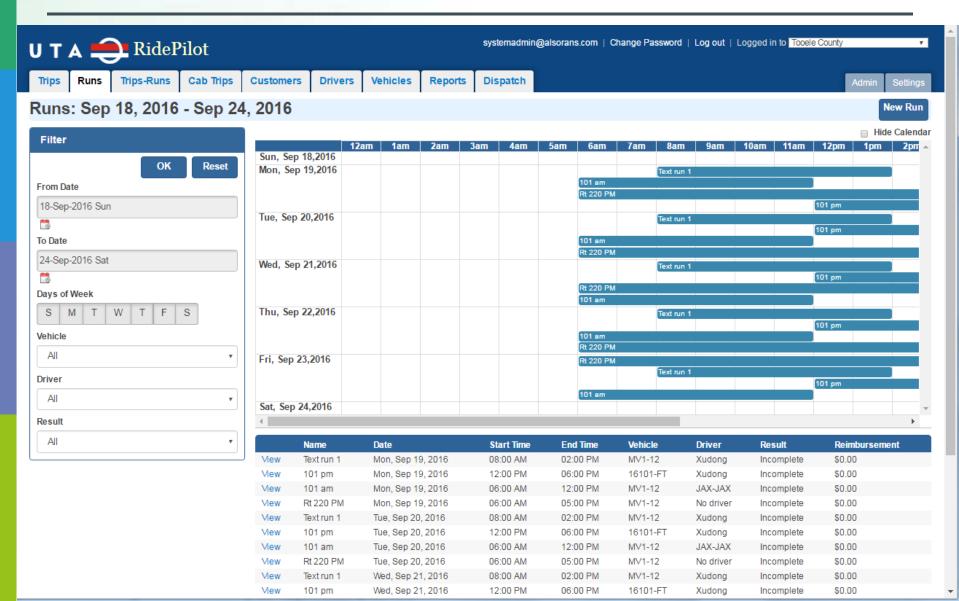# *RidePilot: Enter a New Trip*

RidePilot: Manage Trips

RidePilot: Enter a New Run
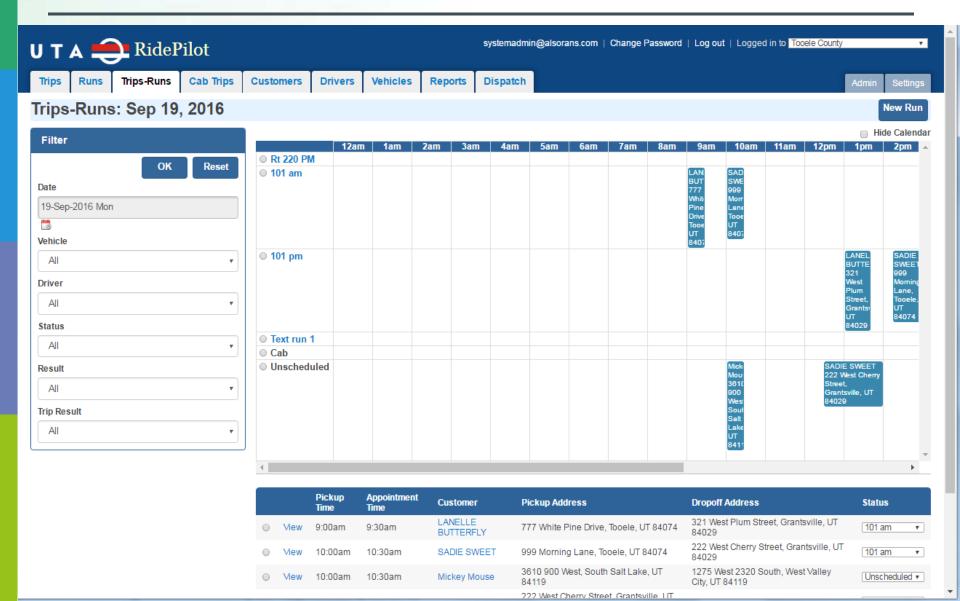
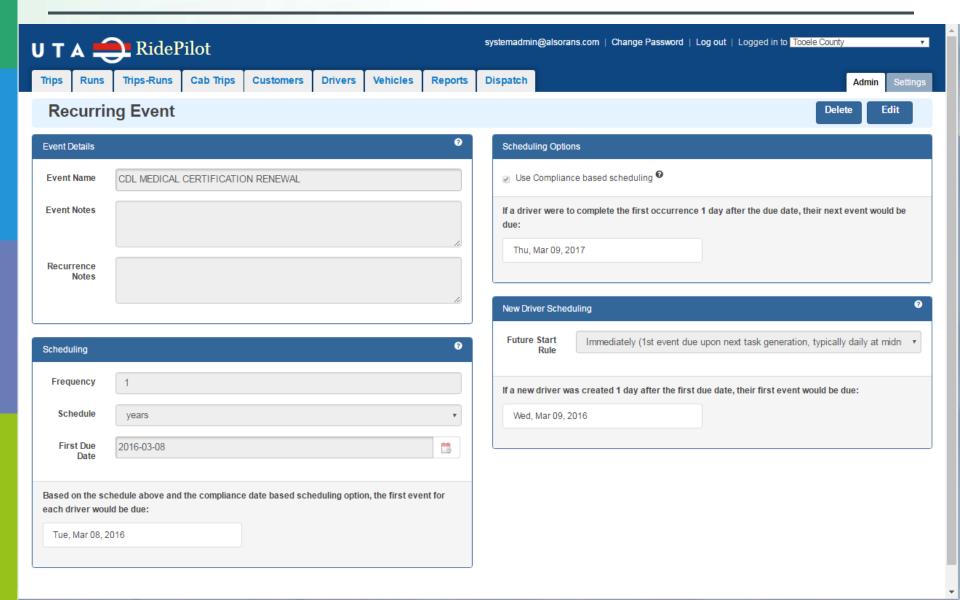# RidePilot: Manage Runs

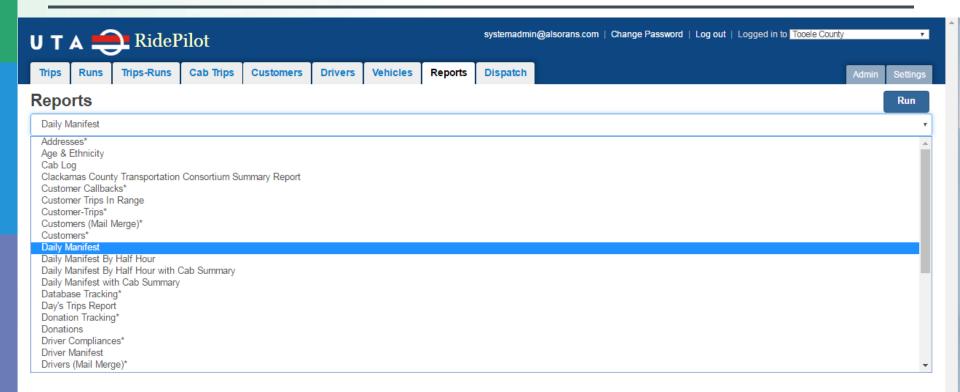# *RidePilot: Assign (Schedule) Trips to Runs*

RidePilot: Managing Drivers

RidePilot: Setting Up Driver Compliance Events

RidePilot: Selecting Reports to Run

UTA, Serving the Greater Salt Lake Region

- Serves 1.1 million residents, 75% of Utah's population

- Largest fixed-route transit provider in state

- Provides commuter rail, light rail, street cars, bus service, paratransit, and over 500 vanpools

- *Serves as federal grant administrator and regional coordinator for paratransit and other specialized transportation services for disabled and aging populations*
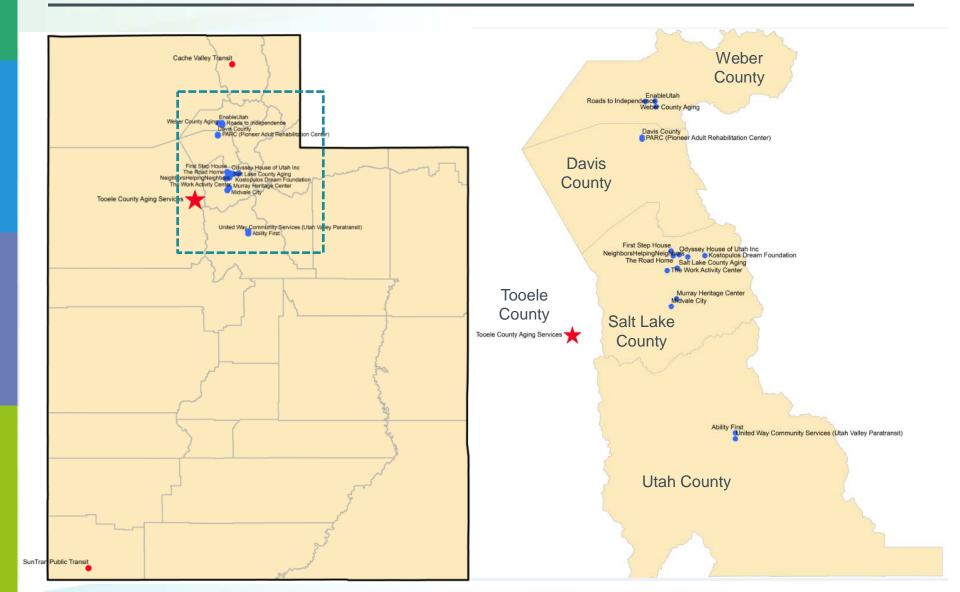
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UTA's Adoption of RidePilot for Region

➤ Tooele County received VTCLI grant for scheduling
  » But lacked matching funds and IT know-how
  » Sought assistance of UTA

➤ UTA agreed to help
  » Secured matching funds from state agency, with proviso that procured scheduling system be made available to all of the region's transportation providers

➤ UTA selected open source RidePilot as best fit for needs
  » Ability to enhance system to meet UTA needs
  » Single deployment of RidePilot handles multiple agencies
  » No ongoing licensing fees
  » No incremental fees for additional agencies

➤ RidePilot currently in use at Tooele County as "pilot" user, will be rolled out to other agencies soon.

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Current and Future UTA RidePilot Agencies

UTA Motivations for Project

"The agencies and nonprofits that serve people with disabilities and the aging population are striving to improve the quality of life for these individuals. It's important to the UTA to play its part in this big engine and help these providers serve their clients."

- Ryan Taylor, UTA Coordinated Mobility Manager

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Preliminary Indications of Success

"In the beginning, all of our dispatch was done by hand or spreadsheets. Now we use RidePilot for all pickups and drop-offs and all driver and trip scheduling. If we were still doing this manually, we wouldn't be able to keep up. RidePilot has made our lives so much nicer and easier."

- Cissy Morton, Tooele County Mobility Manager

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Replicable for Other Regions?

➤ Leverages coordination and IT capabilities of larger provider in region

➤ Offers low cost solution (although not free)
  » Open source, so no ongoing licensing fees
  » Costs associated with enhancements, hosting, maintenance, and support can be shared across multiple agencies

➤ Provides much needed help for smaller agencies
  » More efficient schedules, with less labor and fewer mistakes
  » Standardized processes and data capture to for required reporting

What's Next for RidePilot: UTA Objectives

➤ Near term goal: make this more useful for current set of user agencies

  » Ongoing user interface improvements

  » Modest AVL (via web app for mobile devices)

➤ Longer term goal: expand capabilities to enable most efficient use of resources, expand potential user base

  » Some level of scheduling automation

  » Real time dispatching / ride matching

➤ Interest in building broader community of RidePilot agencies – share funding, accelerate improvements, share benefits

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Thanks! Questions & Comments?