Operational Impacts and Lifecycle Costs of Open Source RidePilot DRT Scheduling Software

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CAMBRIDGE SYSTEMATICS

UTA

History of RidePilot

PAUL SORENSEN

Early History of RidePilot

- Initially built by RideConnection in Portland
- First deployed in 2011
- Simple scheduling software aimed at smaller providers
- “Multi-tenant” – one deployment can serve many providers
- “Open source” licensing – promote broad adoption at low cost

Recent History of RidePilot

- Adopted by UTA in 2015 to support small providers along the Wasatch Front Range (greater Salt Lake region)
- Phase 1 in 2015-16
  - Funded by VTCLI grant
  - Enhancements aimed at making system work in the UTA context
- Phase 2 in 2017-19
  - Enhancements aimed at making the system easier to use and more capable

UTA

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UTA Phase 2 Advancements to RidePilot

- Drag and drop scheduling
- Scheduling subscription trips and recurring runs
- Vehicle maintenance tracking
- Driver scheduling and driver availability forecast
- Reporting enhancements, including NTD reporting
- CAD/AVL
- Mobile app with driver manifest, mileage tracking, pre-trip inspections, chat, emergency alerts, …

Current RidePilot Architecture

- Single deployment with many providers that could cover any size region/state
- UTA deployment
  - UTA is system administrator
  - 17 current providers
  - FTA 5310 subrecipient oversight

New CAD/AVL Screen

RidePilot CAD/AVL Map

Logged in to: Demo

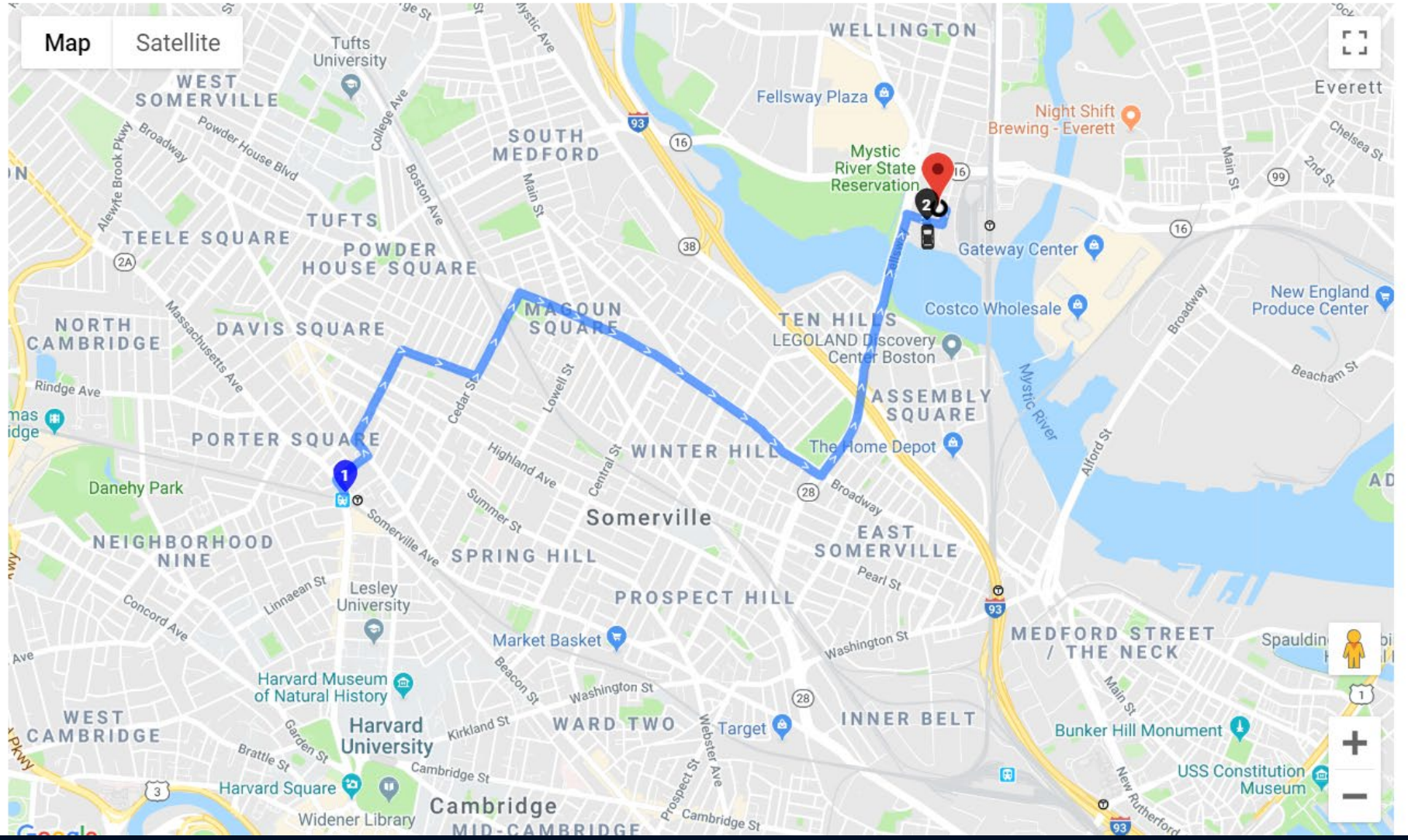
Select Date: Mon Apr 01, 2019

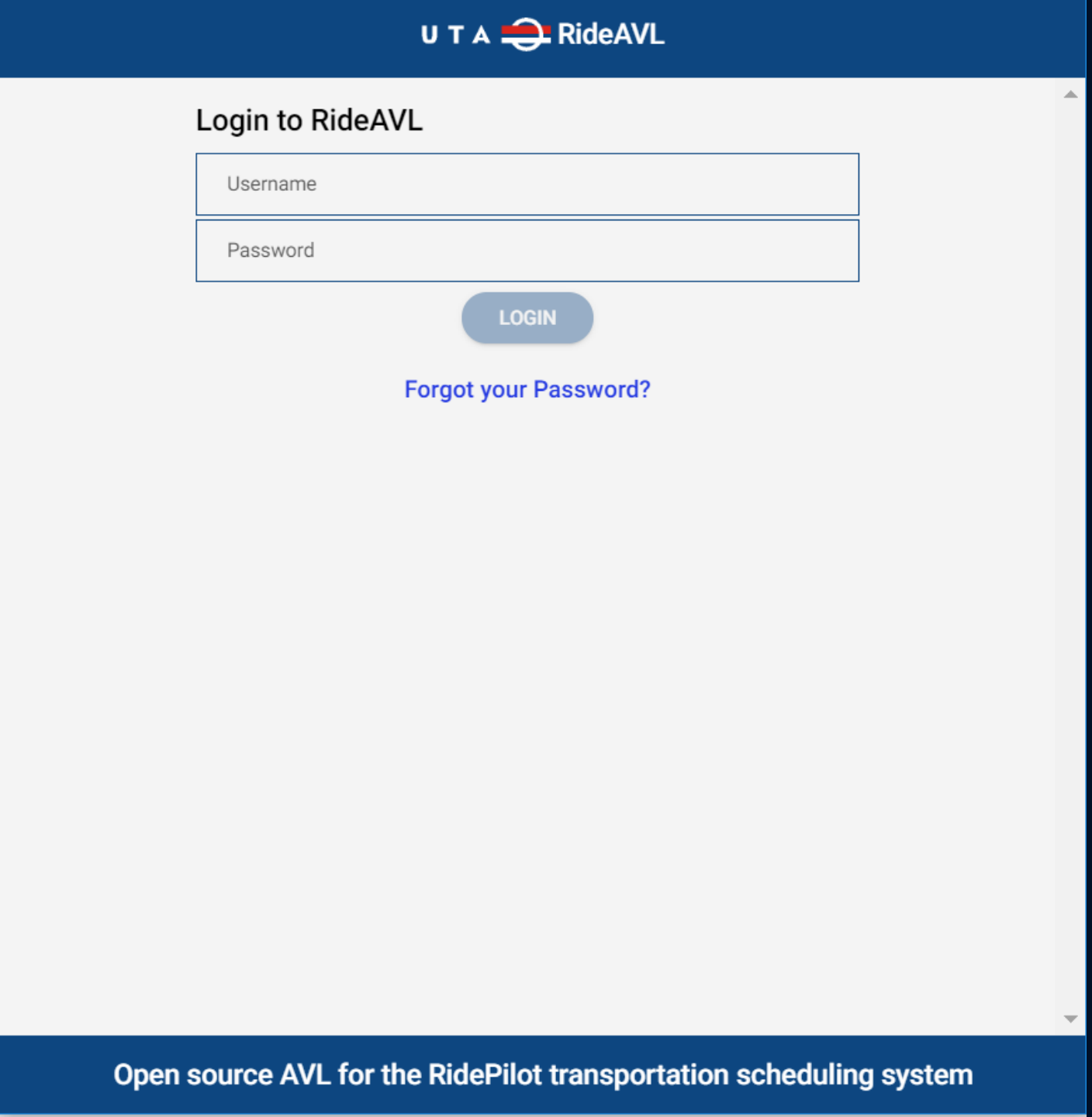
Select Runs to Show: All Runs

- [ ] **Select All**
- [x] **Office AM Run**
  - Start
  - **1. Pick up John Doe**
  - 2. Drop off John Doe
  - End

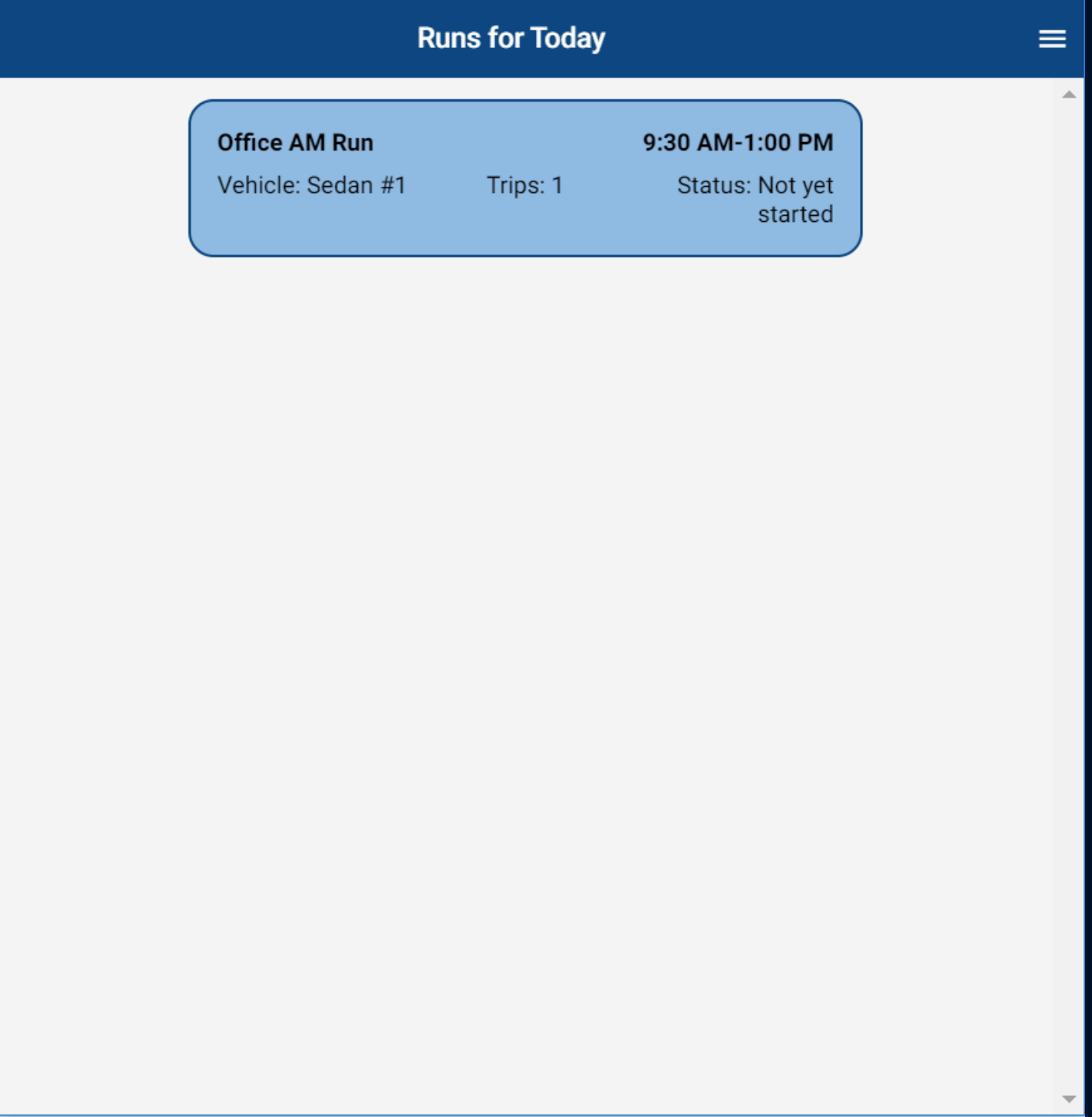
For Selected Runs, Show:

- [x] Upcoming Path
- [ ] Prior Path
- [x] Garage, pickup and dropoff locations

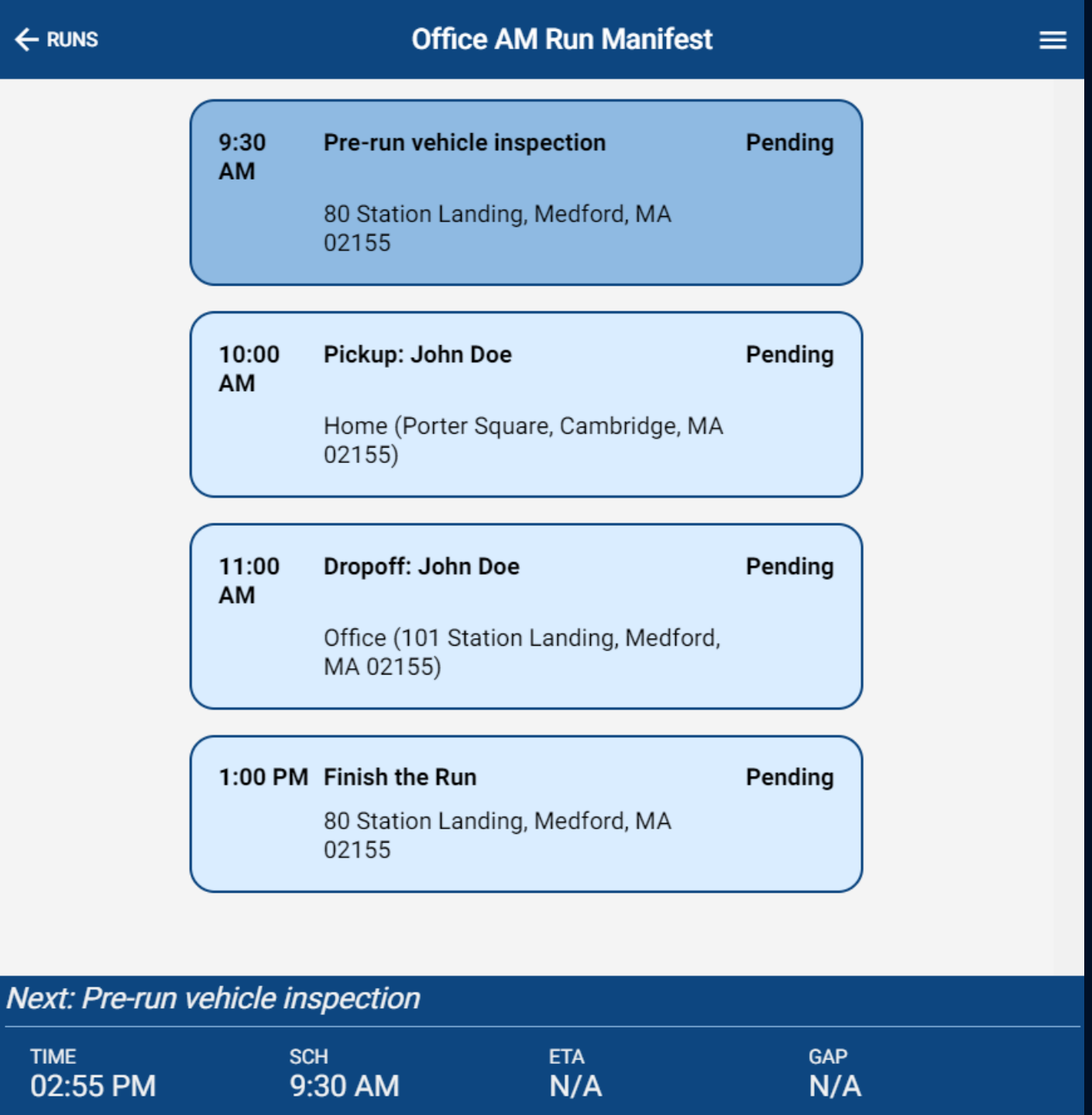




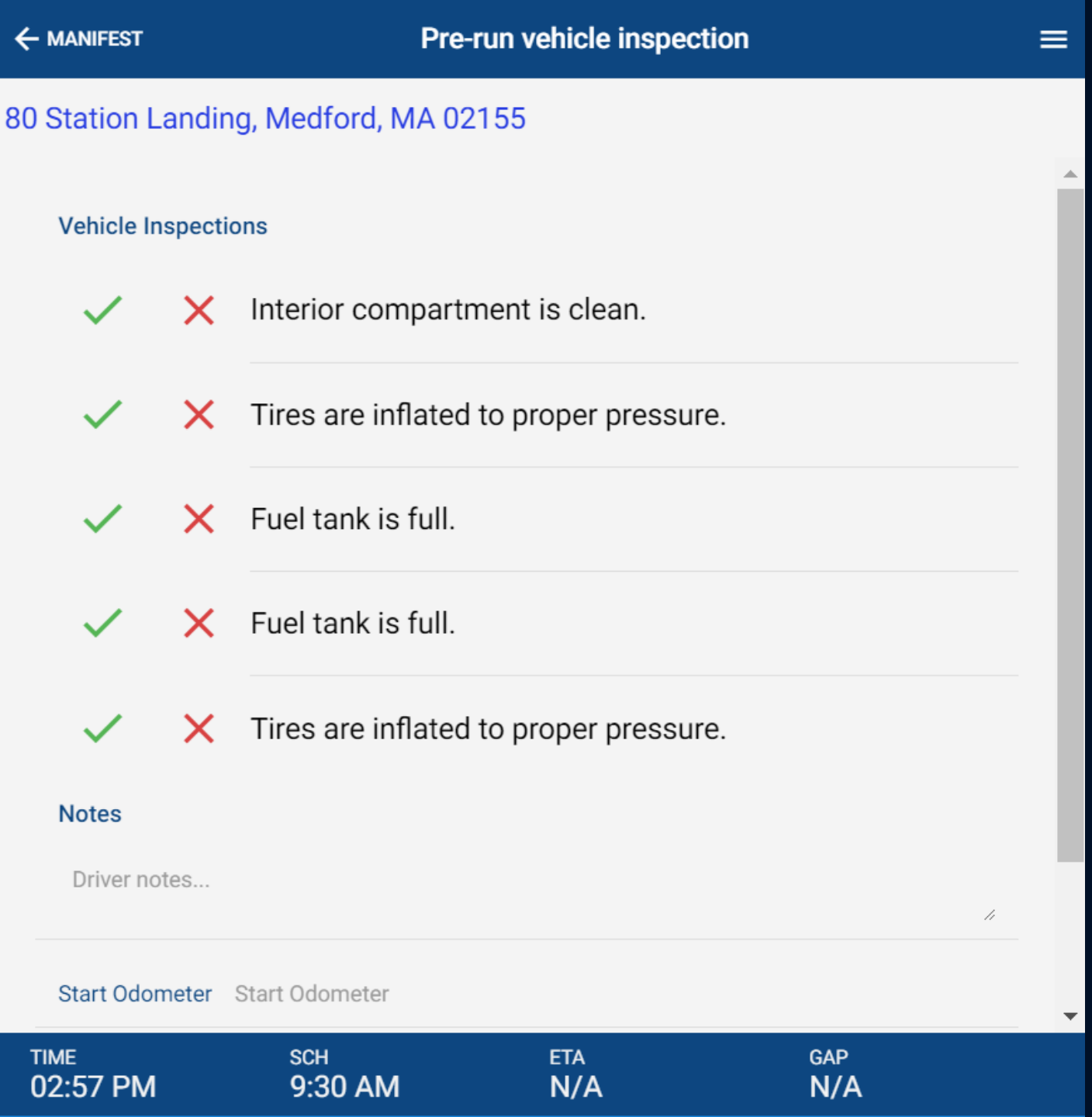
Mobile App
Driver Login Screen



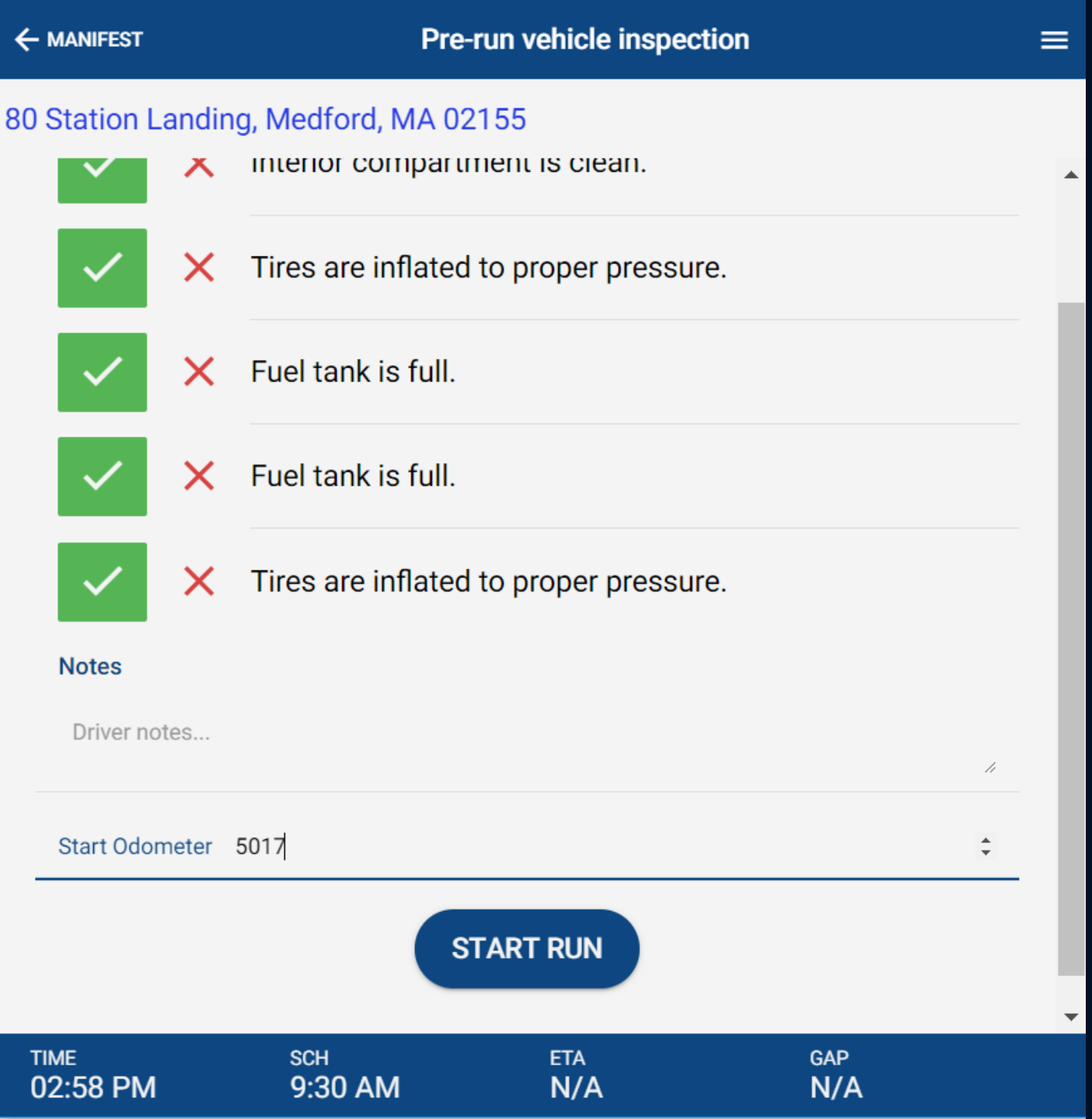
Selecting a Run



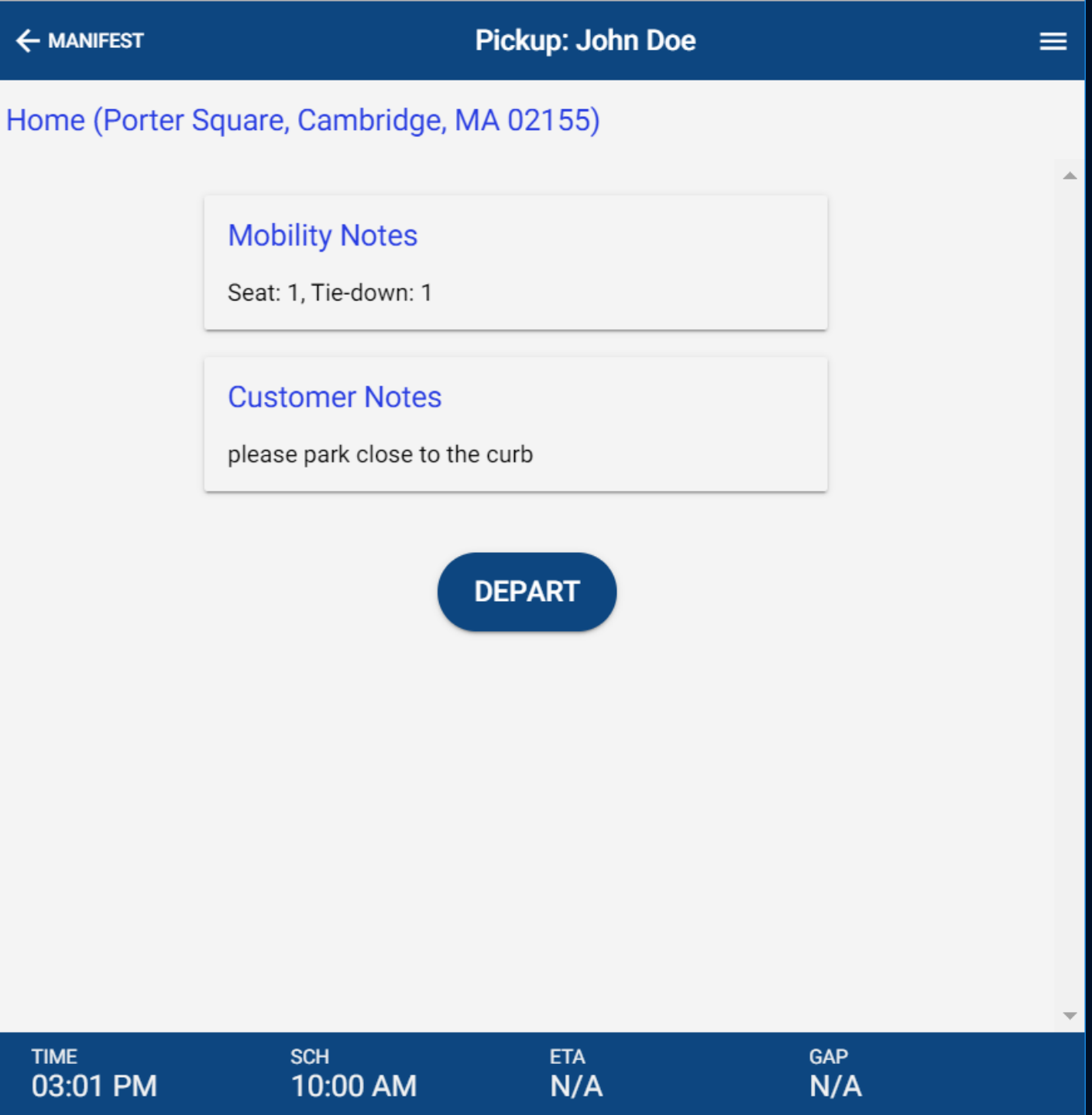
Viewing the Manifest for a Run



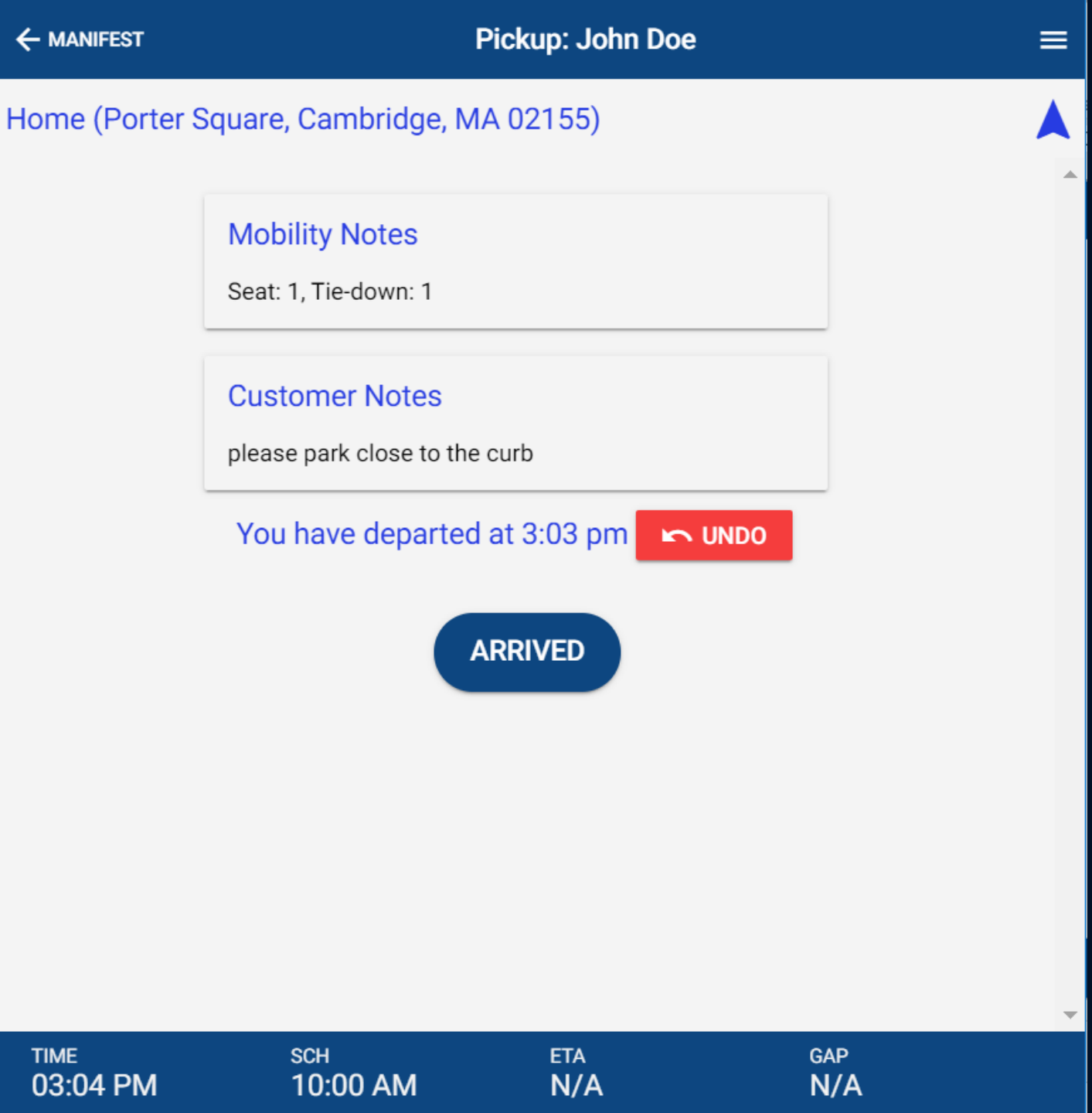
Filling in the Pre-Run Inspection



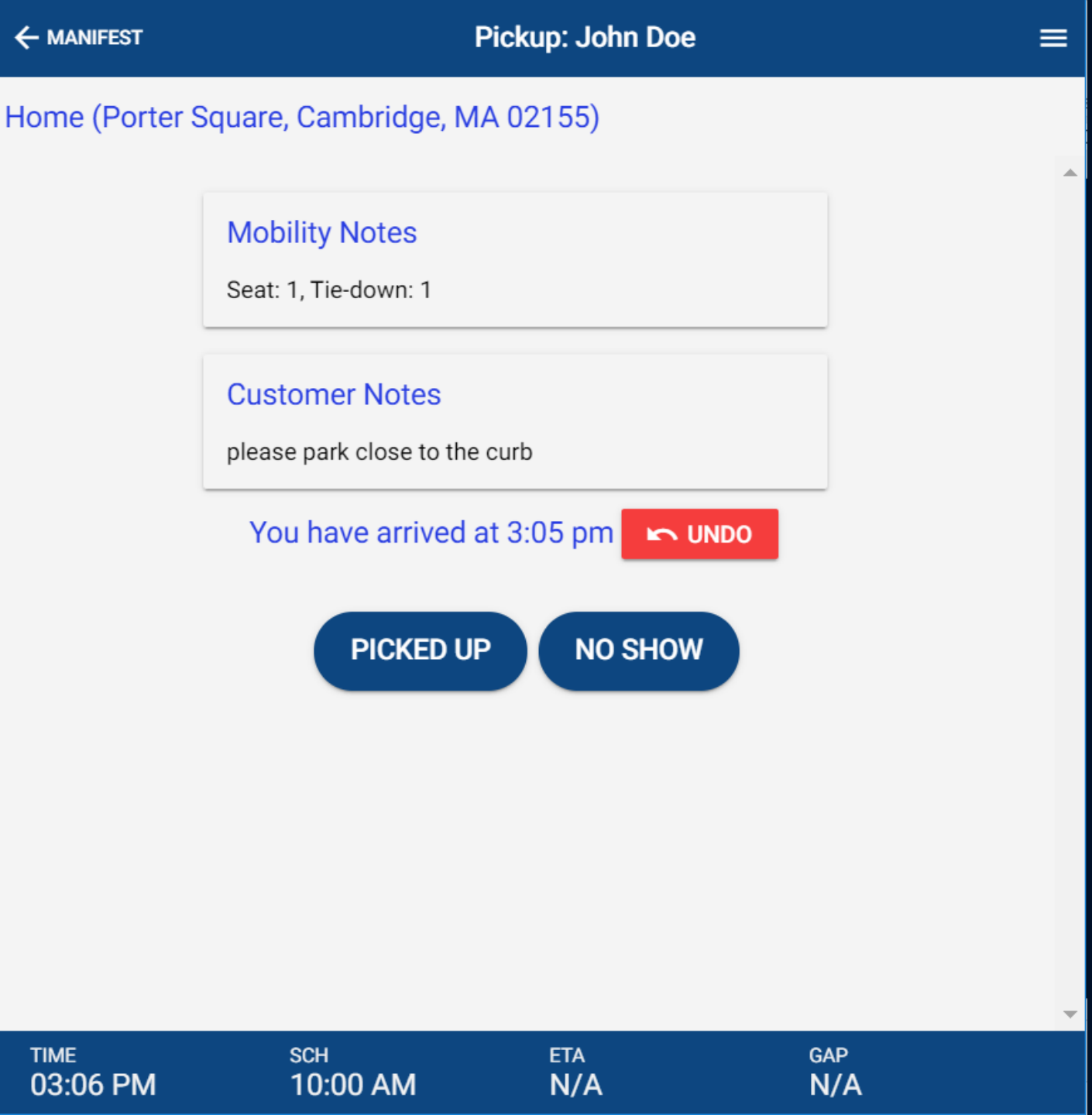
Entering the Odometer At Start of Run



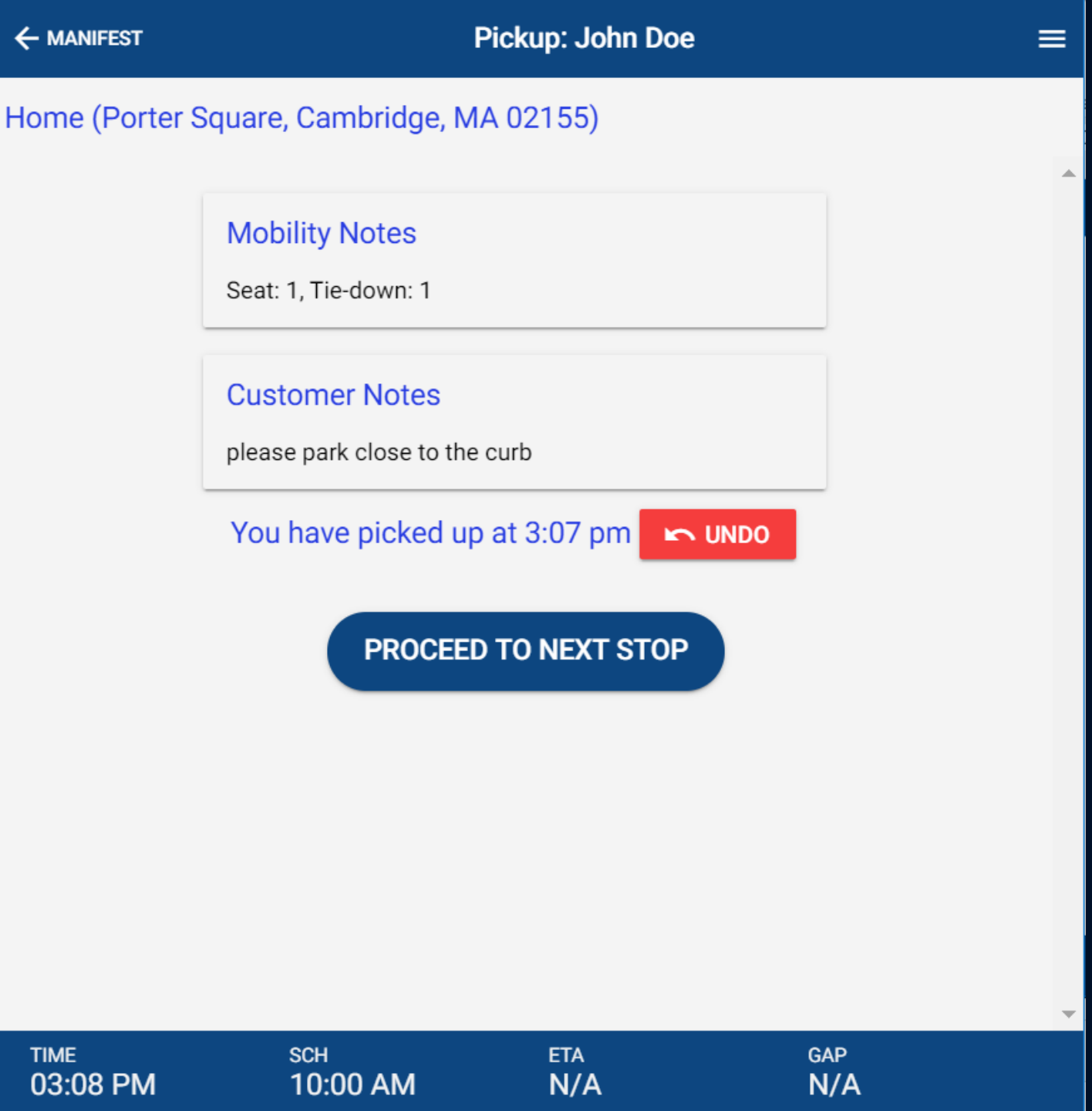
Preparing to Depart for the First Pickup



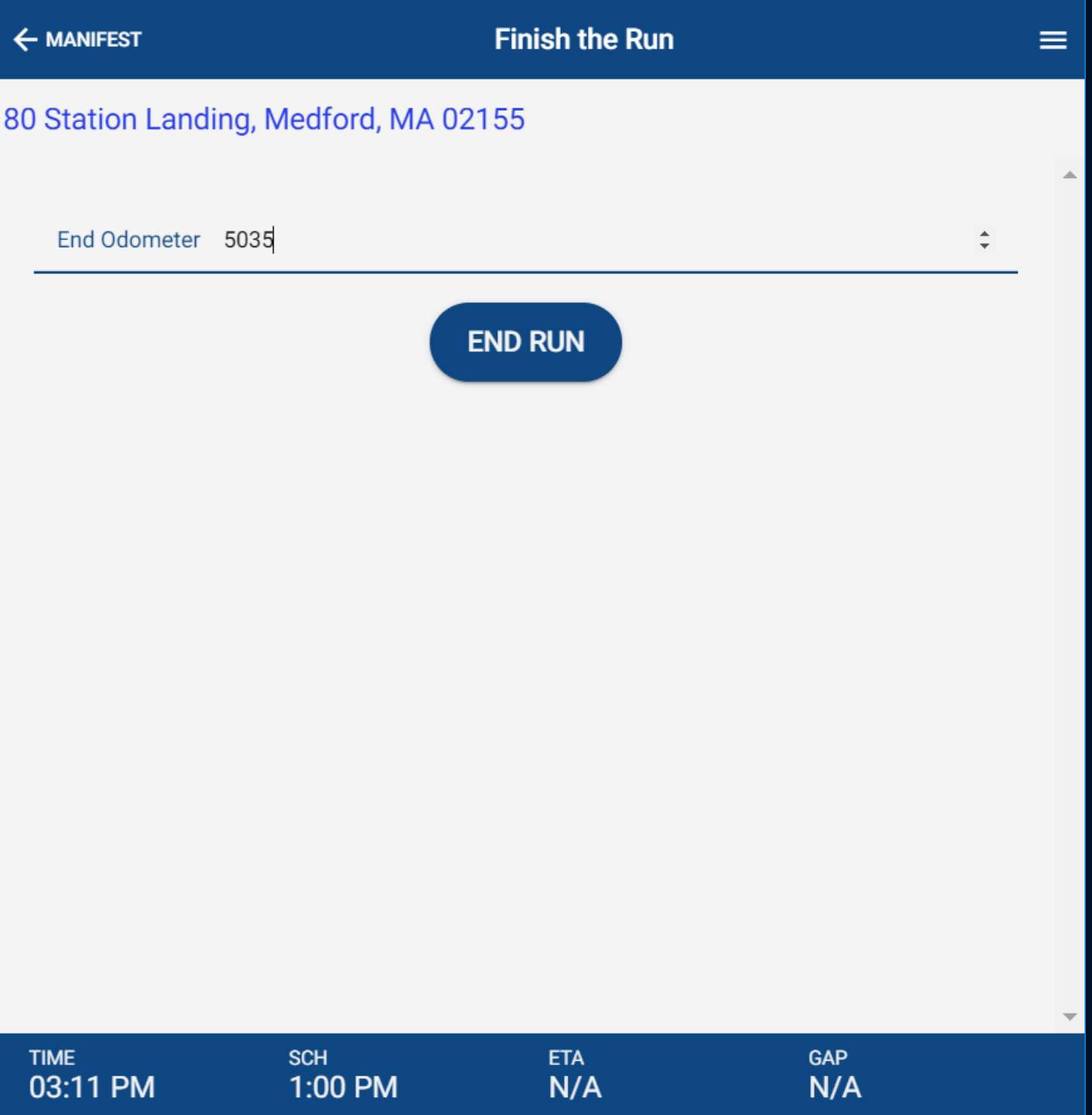
Traveling to the First Pickup



Arriving for the First Pickup



Picked Up the First Passenger



Skip over several steps, then...

Completing Run

What does it cost?

RYAN TAYLOR

What does it cost?

Open Source…is it really free?

What does it cost?

Yes…it is free like a kitten is free.

(Kevin Chambers)

RidePilot Costs

Total costs for UTA including, Initial Start Up and Enhancements

	Total Cost	UTA Investment	Per Agency Cost (17 Agencies) Total/UTA Investment
Phase 1	$217K	$0, PM Time	$13K / $0
Phase 2	$850K	$350K, PM Time	$50K / $21K
Total	$1.067M	$350K, PM Time	$63K / $21K

Cost of Starting a New Deployment

Starting a New Deployment	O&M (Optional)	Hosting Fees	AVL/Google Fees	Total for first Year	Total per Year Ongoing	Total per Month
$25K*	$35k / Year*	$350 / Month*	$1K / Month*	$51,200	$26,200	$2,183
Per Agency Cost (17 Agencies)						
$1,470	$2060 / Year	$21 / Month	$60 / Month	$3,032	$1,540	$129

* Est. 3rd Party Costs

Cost of Starting a New Deployment

Starting up a new deployment:

- Includes starting up RidePilot plus configuring/deploying Android driver app
- Includes some training for System Admin and Provider Admins

O&M

- Includes updating system software components, addressing any defects that arise
- Includes secondary support

Hosting Fees

- Would include multiple servers for testing and redundancy

AVL / Google Fees

- This includes costs for ETA calculation in both RidePilot and the Android driver app

Operational Impacts

CLINT WILKINSON

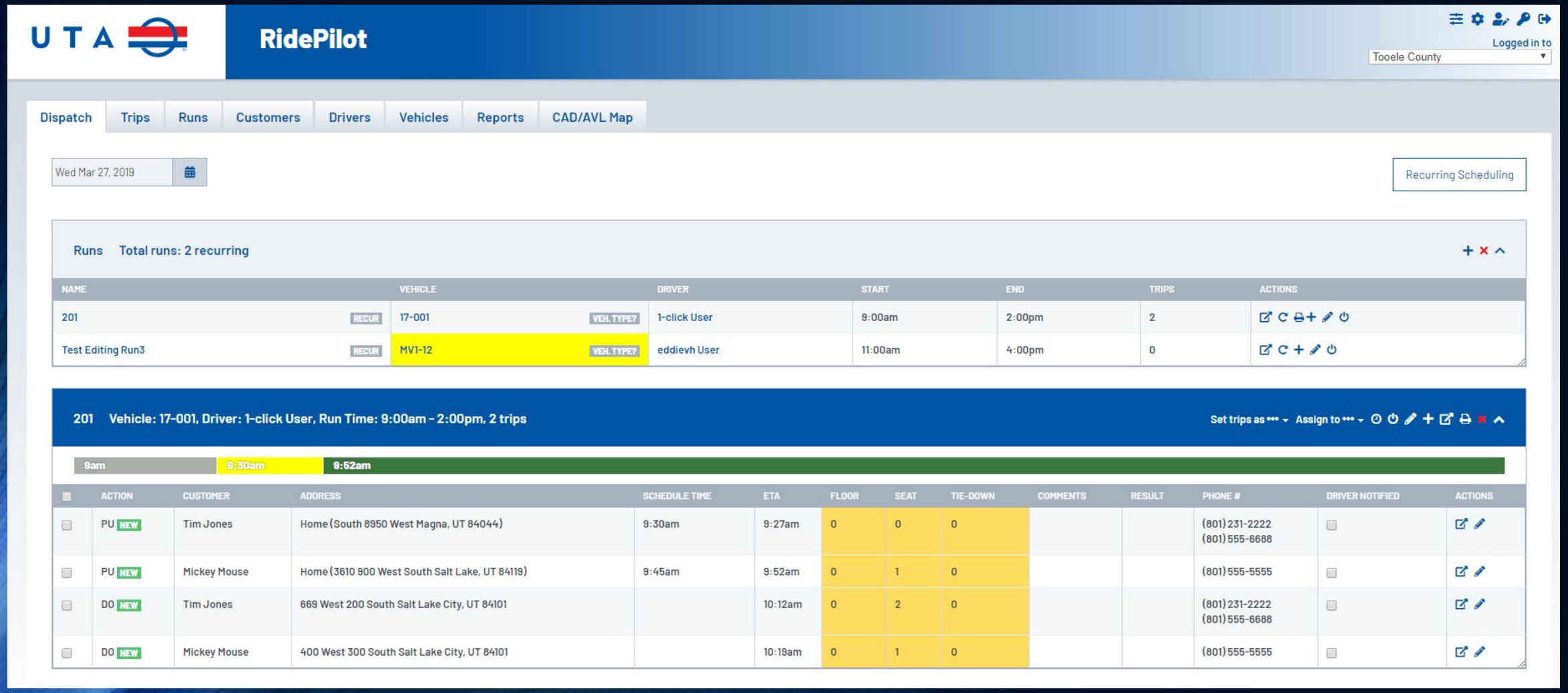
Operational Challenges

- Change is HARD
- Use of other means of tracking trips
  - Excel
  - 3x5 Note Cards
  - In house programs
- No tool to manage their drivers
- No tool to manage vehicles and maintenance

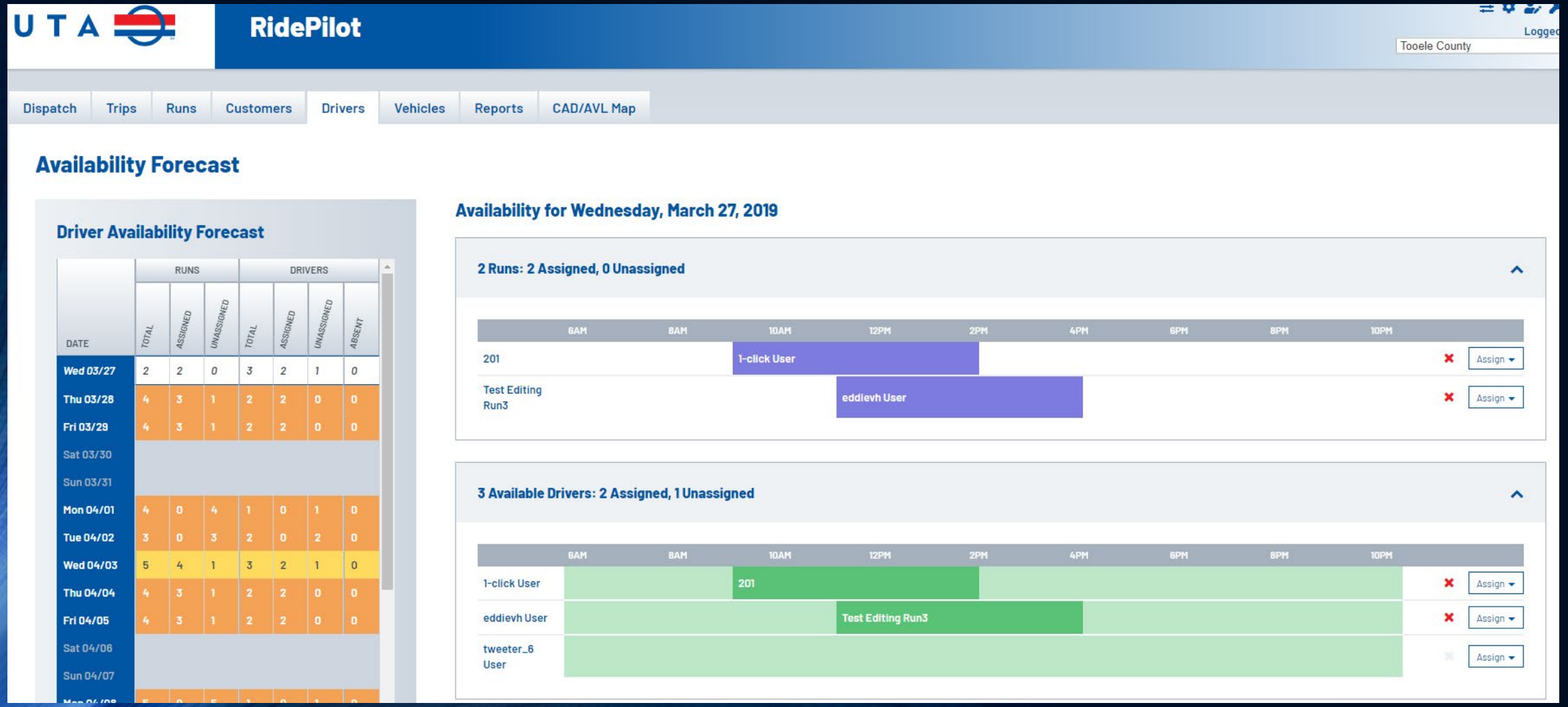
One Tool Box To Rule Them All

- A way to schedule and manage daily trips and runs
- A way to manage drivers
- A way to manage vehicles and maintenance

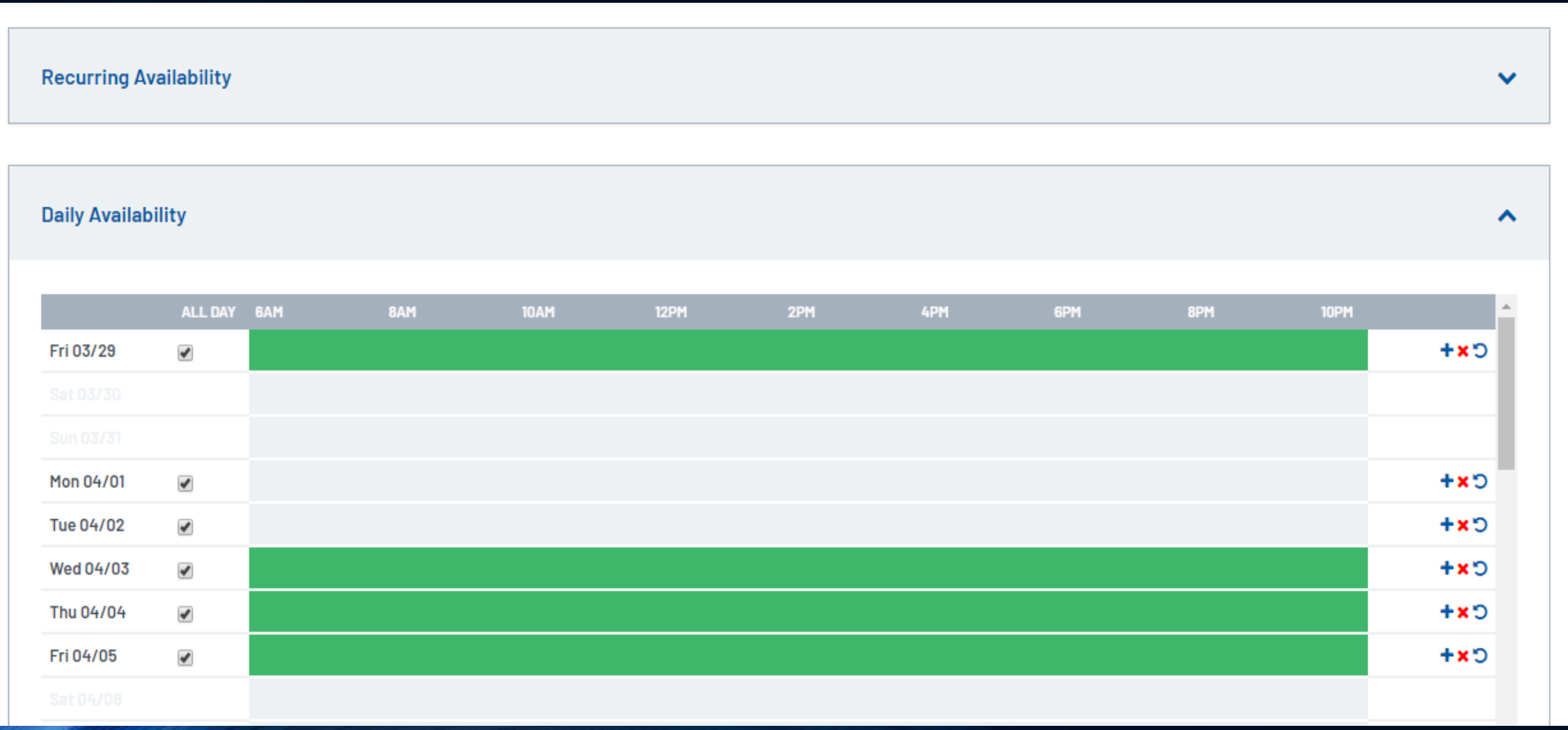
Managing Runs and Trips



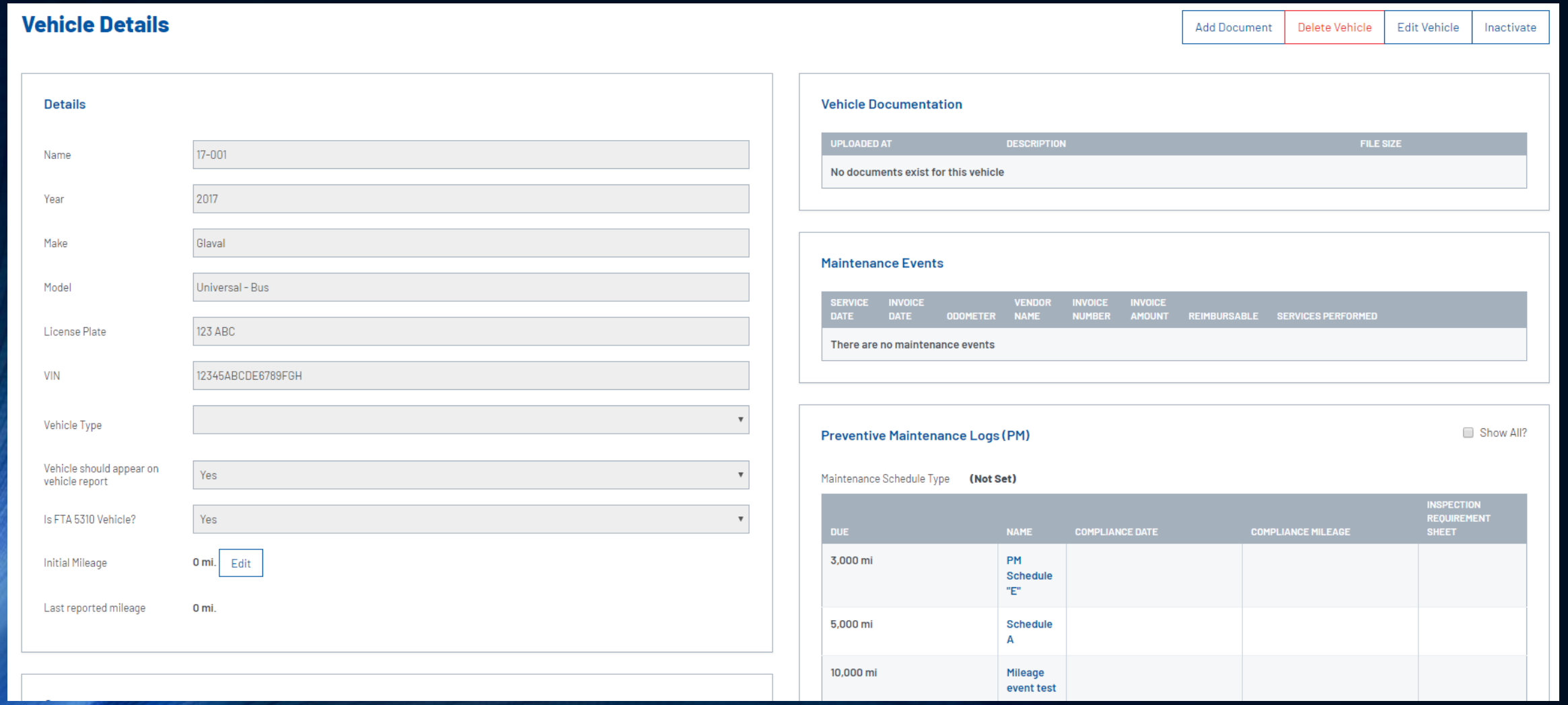
Managing Driver Availability



Managing Driver Schedules



Managing Vehicles



Reporting Features

- NTD
- FTA 5310
- Ridership
- Vehicle Maintenance
- Vehicle Productivity
- Driver Productivity

Future of RidePilot

PAUL SORENSEN

Where is RidePilot Going Next?

A few possibilities…

- Automated (optimized) scheduling & dispatch capabilities
- Brokerage capability to pass trips between providers
- Customer app to book rides, see when vehicle will arrive
- SaaS version for small agencies without an umbrella sponsor

RidePilot is open source, so future directions are significantly influenced by client engagements and grant funding opportunities.

Thank You!