

# USING FIELD ESCORT

For traffic-management, maintenance and safety staff, and anyone handed the map link. No login is needed for anything except the operator tasks in section 9.

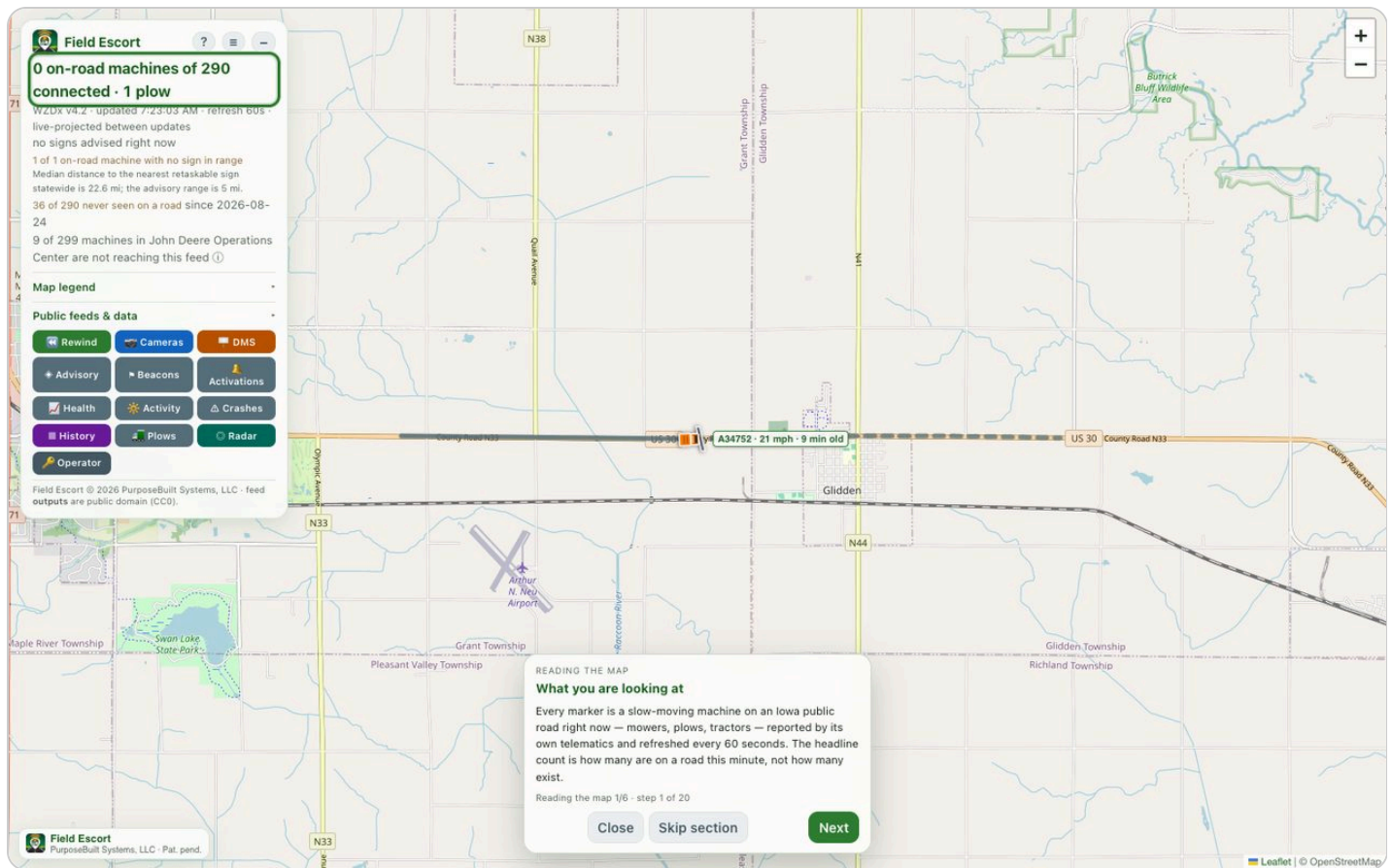
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## 1. GETTING STARTED

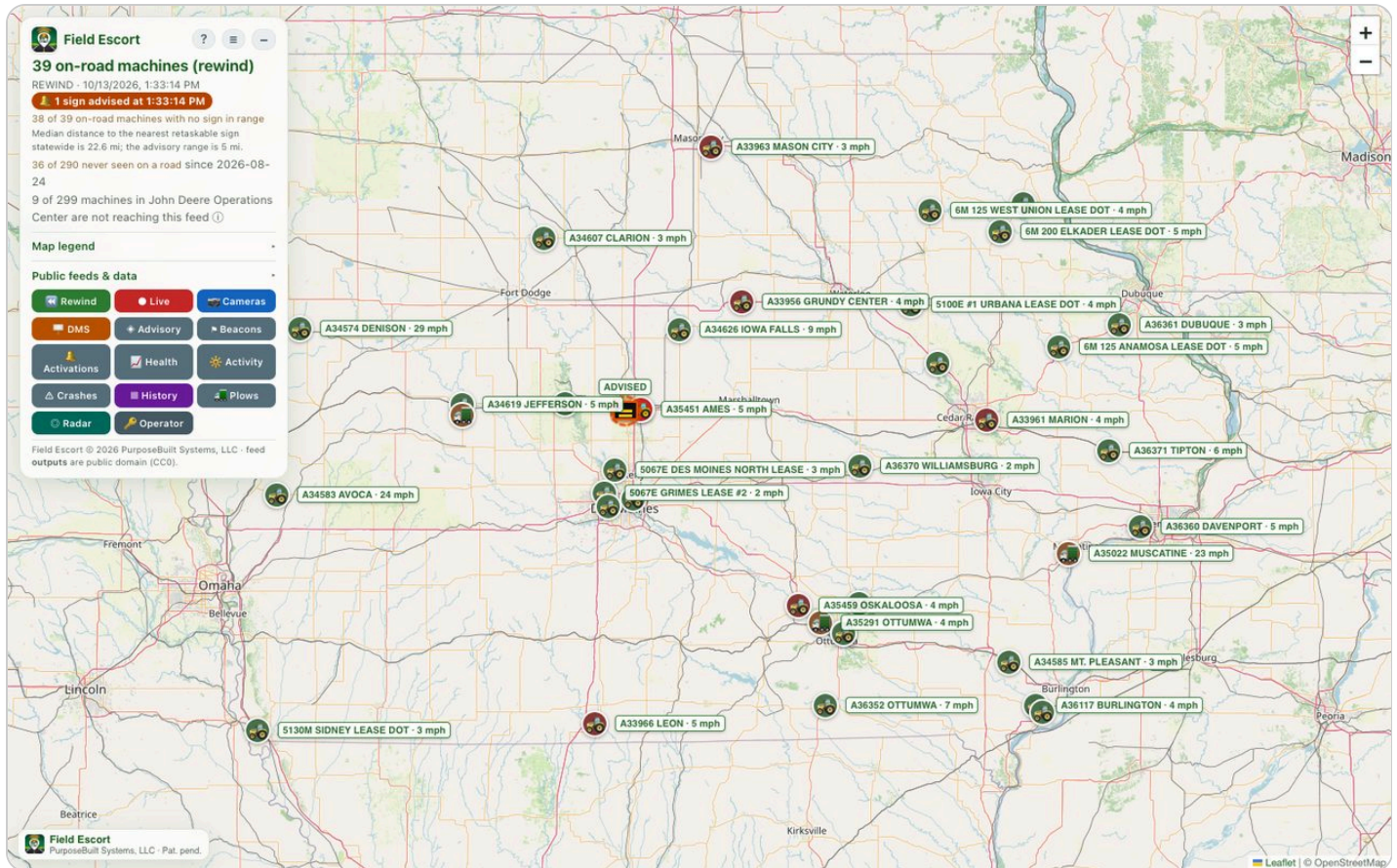
Open [purposebuilt.systems/field-escort/map](https://purposebuilt.systems/field-escort/map) (<https://purposebuilt.systems/field-escort/map>) in any modern browser, on a desktop, tablet or phone. The map refreshes itself every 60 seconds; there is nothing to reload.

- **The panel** on the left carries the headline count, the legend and the layer buttons. The  button tucks it away; on a phone it starts tucked away so the map gets the screen.
- **The guided tour** runs once on your first visit and can be reopened at any time with the  button. It points at each control in turn and can skip a chapter at a time.
- **Operating hours.** The service reads the fleet from 6:00 AM to 5:30 PM Central. Outside those hours the map is empty by design, not by fault.



The guided tour, opened from the ? button.

## 2. READING THE MAP



The live map. Each label reads unit, speed and how old its last report is.

### The headline

"39 on-road machines of 290 connected" is how many machines are on a public road *this minute*, out of the connected fleet. Snowplows are counted separately ("4 plows"), because they come from a different source.

### Markers

- **Equipment** is drawn with its maker's icon. **Snowplows** are orange plow trucks, pointing the way they are heading.
- **The marker is a calculation, not a fix.** It sits where the machine is estimated to be *now*, advanced along the road from its last report by its speed and the time since. A machine working back and forth is advanced less than one in transit.

## The line is a warning zone, not a trail

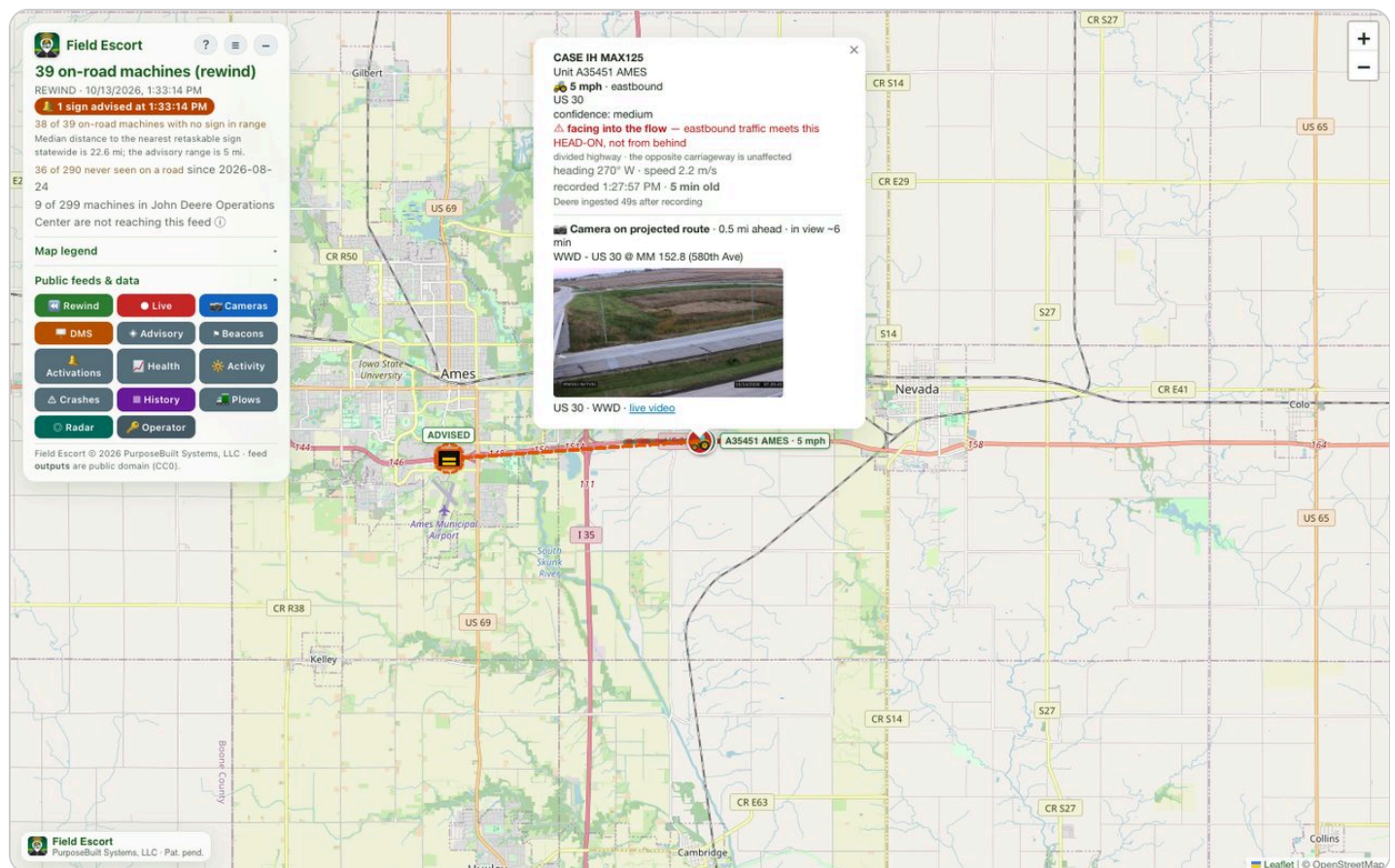
**Solid** marks the road just *behind* the machine: the stretch that matters to a driver closing on it. **Dashed** is the road ahead. Neither is where the machine has been.

When the road cannot be traced, or the machine is working back and forth, it is drawn as a **dashed circle**: "somewhere in here", with no direction claimed. Its description says so in plain words: *slow-moving vehicle near US 30, or equipment working on IA 141*.

## Why most of the fleet is missing

Only a fraction of connected machines appear at once. The rest are held back on purpose: working in a field, in a yard or at a home, parked (under about 2 mph), travelling over 40 mph, or carrying a report more than 45 minutes old. Hiding field work is the privacy promise the service is built on.

## 3. THE MACHINE POPUP



A tractor on US 30 near Ames, working against the flow of its carriageway, with the nearest camera and the sign advised for it.

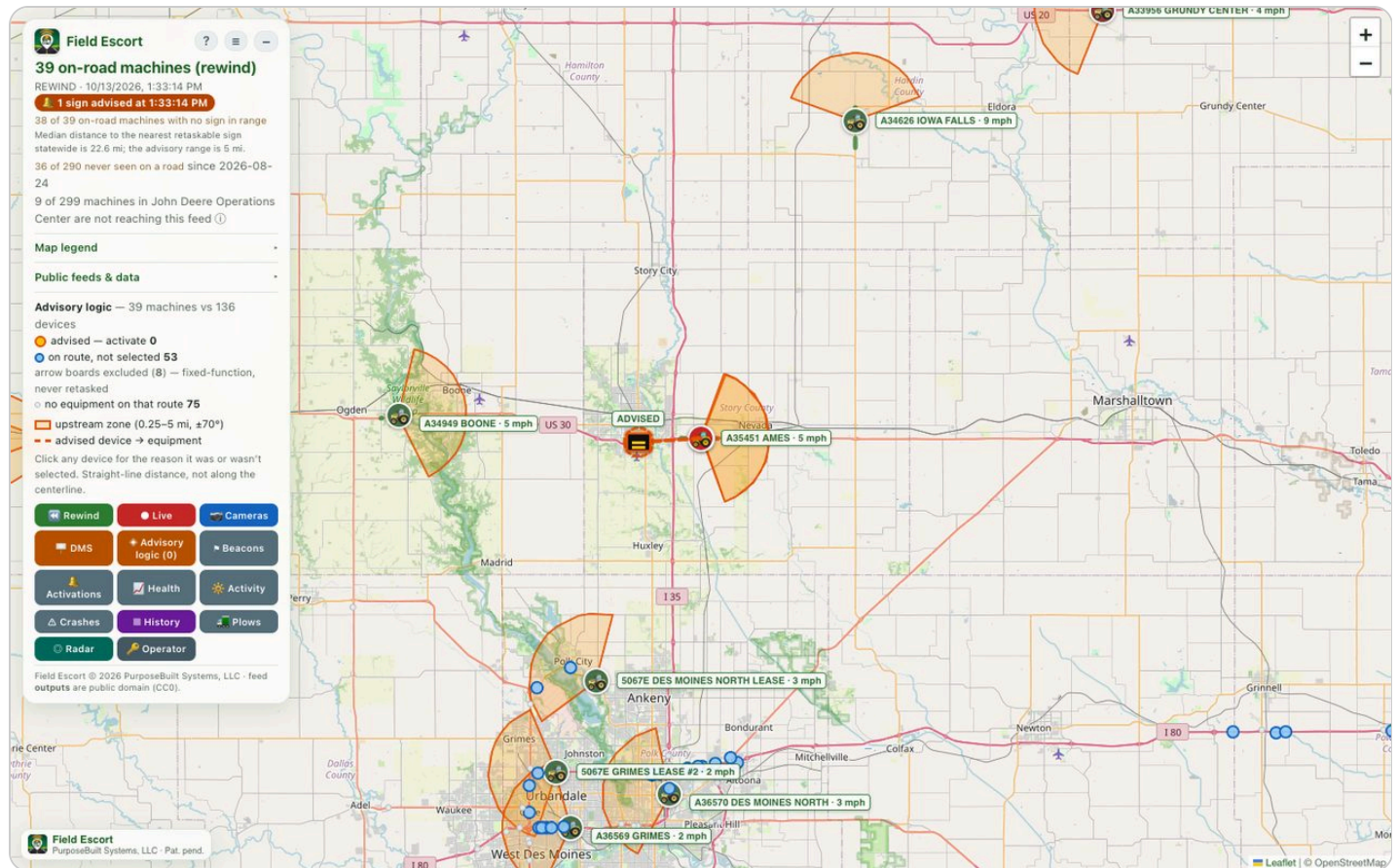
Click any machine. The popup shows:

- **What and where:** make and model, unit, speed, the direction of the *traffic affected*, and the road.
- **Confidence:** high, medium or low, from how old the last report is.
- **Side of the road**, once several reports agree, with the agreement, report count and distance off the centre line so you can weigh it. Where there is a lane to move into it adds what traffic should do: a machine on the right side means *keep left*. On a road with one lane each way no instruction is given, because "left" there is the oncoming lane.
- **Head-on warning** in red when the machine works against the flow of its carriageway (mowing a median, a shoulder pass). Closing speed is then the sum of both vehicles, not the difference.
- **Report age** and when it was recorded, and the **nearest camera** with a live still and a video link.

## 4. SIGNS, ADVISORIES AND ACTIVATIONS

Field Escort **recommends**; it does not control signs. Its advisories are published for a traffic-management system ([advisories.json](#), and a TMDD feed) which applies its own rules and operator confirmation.

## How a sign is chosen



The Advisory layer draws each machine's wedge, so the selection can be checked by eye.

A sign is advised for a machine when all of these hold:

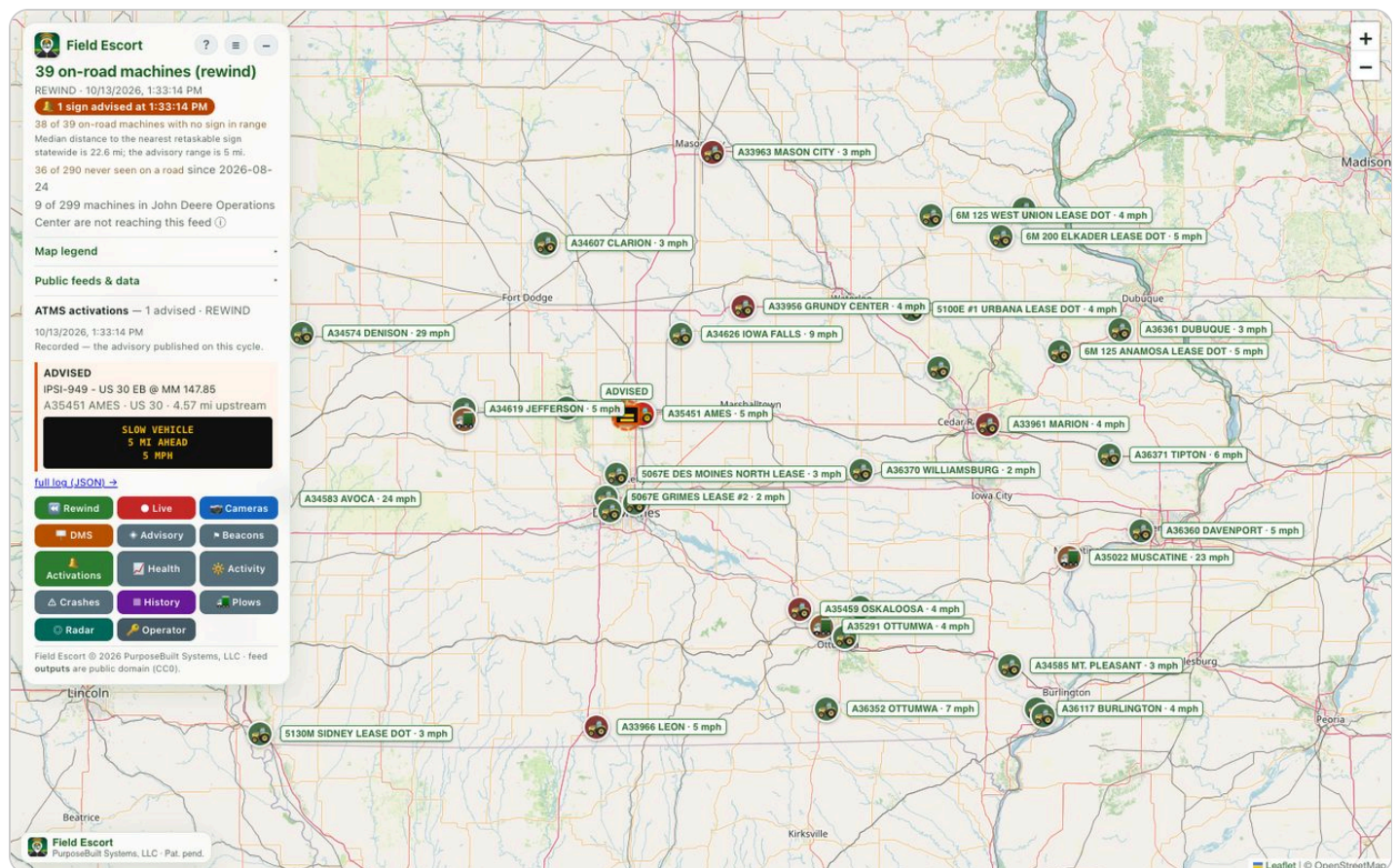
- it sits **behind** the machine, inside a wedge from 0.25 to 5 miles back and within  $\pm 70^\circ$  of the reverse of its heading;
- it is on the **same route** and serves the **same direction** of traffic;
- it can show text (arrow boards are excluded: they are a contractor's own work-zone device).

Distance is measured along the road where the state's road reference allows, and straight-line otherwise; each advisory says which.

## What the sign says

| LINE | COPY                                                                                                                                    |
|------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 1    | <b>SLOW VEHICLE</b> ; in winter conditions <b>SNOW PLOW</b> for a plow, <b>SNOW REMOVAL</b> for other equipment                         |
| 2    | Distance: <b>AHEAD</b> or <b>3 MI AHEAD</b>                                                                                             |
| 3    | Speed, <b>6 MPH</b> , or <b>KEEP LEFT</b> / <b>KEEP RIGHT</b> where the side is known <i>and</i> two or more lanes run the driver's way |

## Activations



The Activations panel: each advisory raised and cleared, newest first, grouped by day.

The **Activations** button opens the log of advisories raised and cleared. This is what to reconcile a radio call or a complaint against. The full history is kept for every day, at [advisory-log.json](#).

**Expect few activations.** Message signs sit on interstates and urban corridors; farm equipment works rural highways. In Iowa the median distance from a working machine to the nearest sign is about 22.6 miles, against a 5-mile range. A quiet log is normal.

## 5. WINTER OPERATIONS AND PLOWS

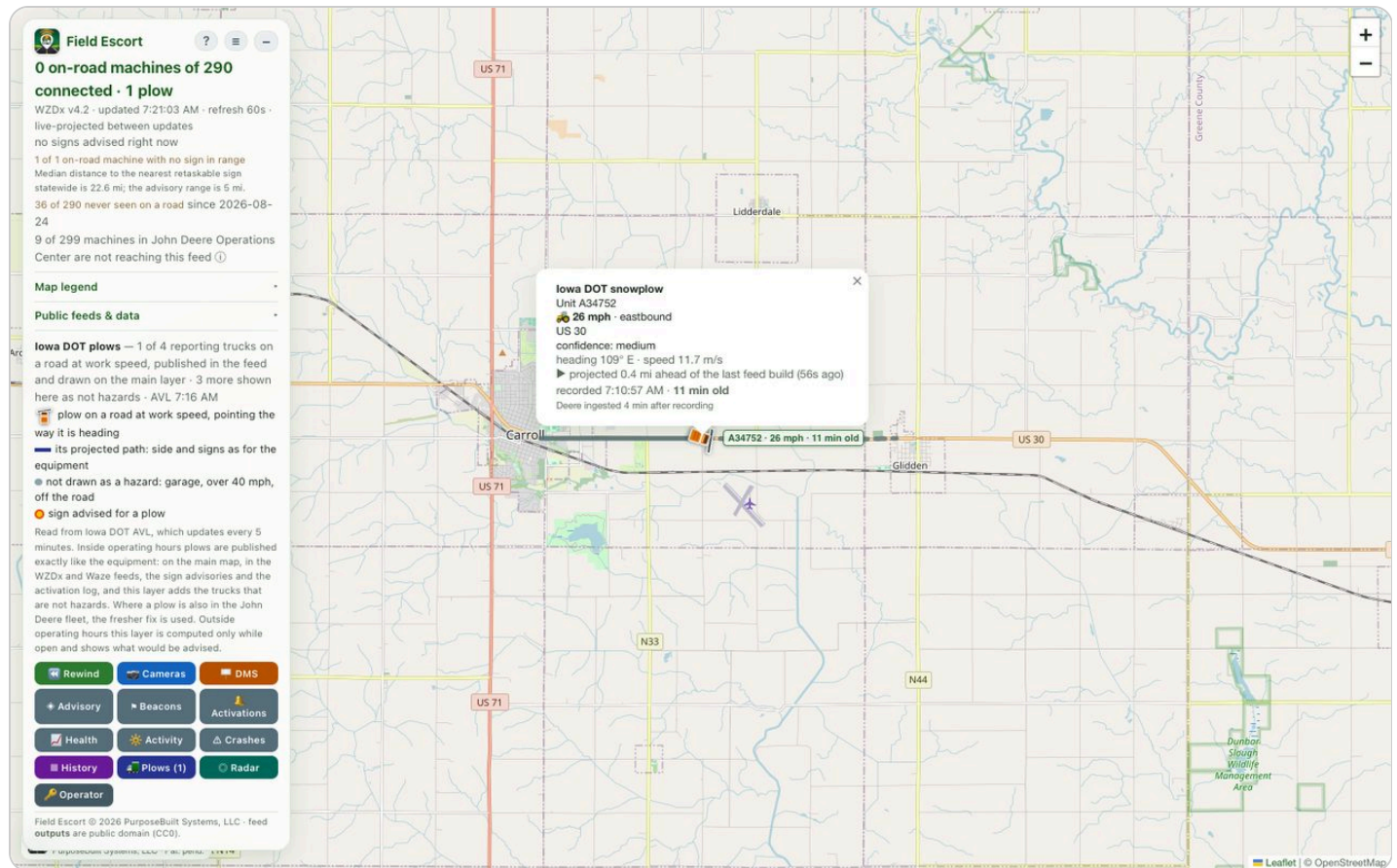
### When signs switch to winter copy

Automatically, from the weather actually **observed** at the nearest National Weather Service station, never a forecast. A machine is in winter conditions when that station reports snow, sleet, ice or freezing precipitation, or any precipitation at 1 °C (33.8 °F) or colder.

Temperature alone does not count: a truck on dry pavement at −1 °C is usually hauling, not plowing.

**Cleanup outlasts the snowfall.** The winter label holds for 6 hours after the last frozen observation, and then for up to a day more while the station stays at or below freezing, because snow does not melt off a cold road. A plow spreading salt or sand is labelled from its own sensors whatever the weather.

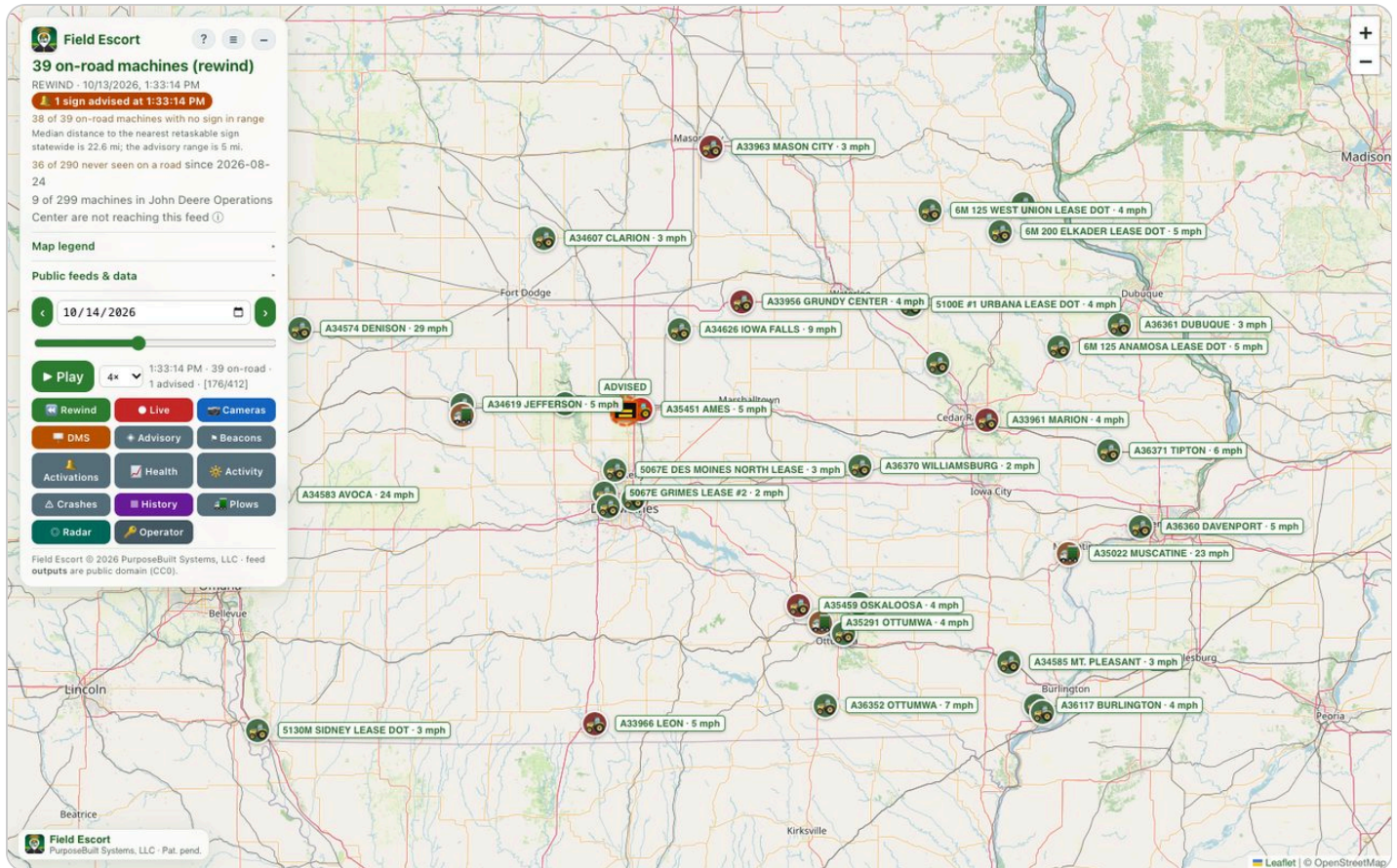
# Snowplows



A plow on US 30 from the state's AVL. Inside operating hours plows are published exactly like the equipment.

Plows come from the department's own AVL and go through the same rules as the equipment. Inside operating hours they are on the main map and in every feed. Some plows are also in the John Deere fleet under the same unit number; the map uses whichever report is newer, so a truck is never drawn twice. The **Plows** button adds the trucks that are not hazards (parked, in a garage, or travelling over 40 mph) and their blade and spreader readings. Outside operating hours it shows, on request, what would be advised.

## 6. REWIND AND HISTORY

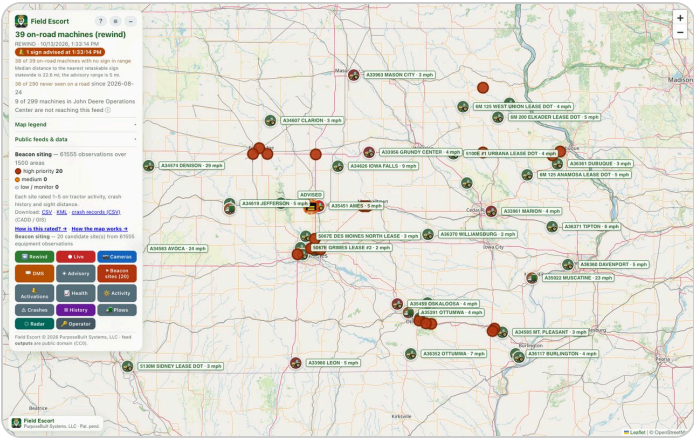


Rewind: pick a day, drag the slider or press Play; 4× or 8× walks a working day in minutes.

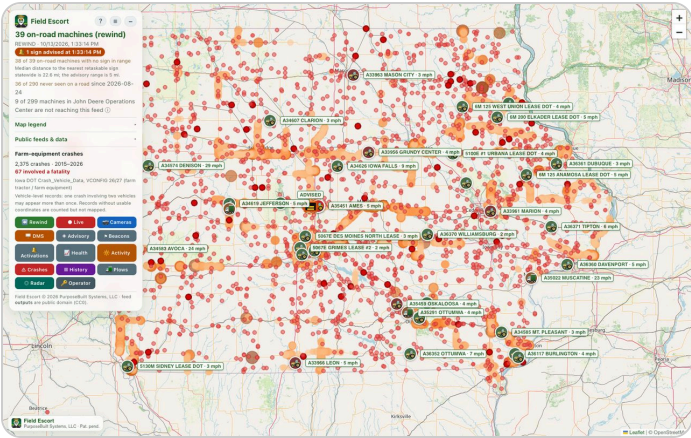
- **Rewind** replays any archived day a minute at a time, with the machines and the signs advised exactly as they were. Pick the day, drag the slider or press **Play**; the speed selector runs from 0.5× to 8×. **Live** returns to now.
- Advisories in a frame are marked **recorded** (what was published at the time) or **reconstructed** (rebuilt for days before advisories were archived, against today's sign inventory).
- **History** draws every published position from the last few hours as points.

# 7. THE OTHER LAYERS

| BUTTON   | WHAT IT SHOWS                                                                                                                                  |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Cameras  | Public traffic cameras with a live still and video link. A machine popup always names the nearest one.                                         |
| DMS      | Every message sign, with the message it is displaying right now.                                                                               |
| Advisory | Each machine's wedge and why every sign was or was not chosen (section 4).                                                                     |
| Beacons  | Candidate sites for a permanent warning beacon, each carrying the evidence behind its score. CSV, KML and crash-record downloads in the panel. |
| Activity | Where equipment works, from all recorded history. History answers where they went today; Activity, which roads carry this traffic at all.      |
| Crashes  | The farm-equipment crash record, fatal crashes larger and darker. Best viewed under Activity.                                                  |
| Health   | The service scoring itself: position freshness and corridor accuracy (section 8).                                                              |
| Radar    | Roadside radar sites recording what physically passes, independently of the equipment's telematics.                                            |

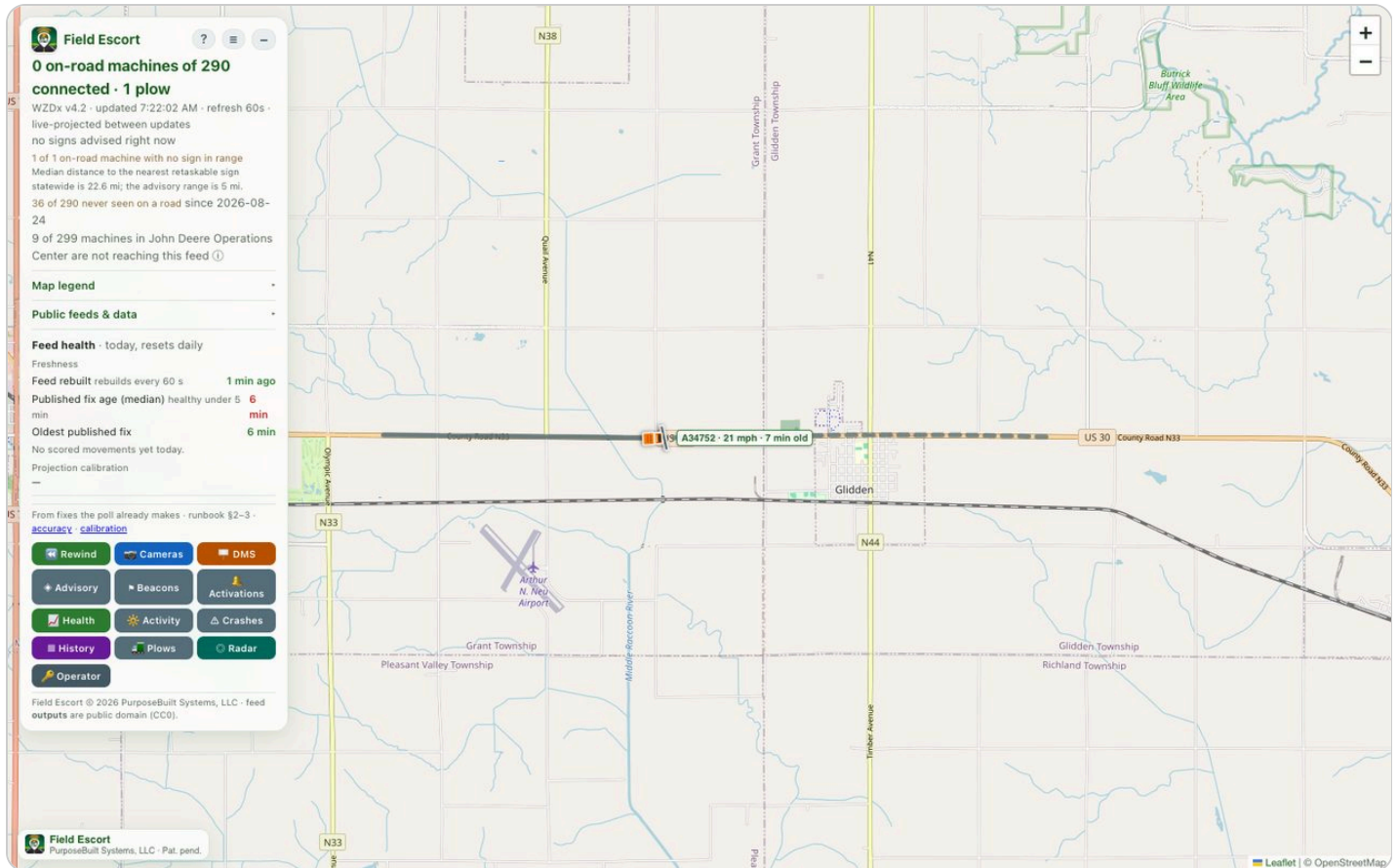


Beacons: candidate sites, high priority in dark red.



Activity (orange) under Crashes (red).

## 8. IS IT WORKING?



Feed health: freshness and accuracy against their thresholds, red when below.

- **Health** shows how old published positions are and how often the drawn corridor contained the machine at its next report. If position ages are old *and* bunched together (29, 30, 30, 31 minutes), the service has stopped updating: call support.
- **Feed availability** shows how often the fleet read succeeded and how often a failure reached consumers as a blank feed. A brief upstream failure republishes the last good positions for up to five minutes rather than blanking the feed.
- **Empty outside 6:00 AM-5:30 PM Central**, or on a day the fleet is not working, is normal.
- **No advisories** is normal (section 4). To tell quiet from broken, open [advisories.json](#): a non-zero `devices_in_inventory` means the sign list loaded and nothing is near enough to advise.

## 9. OPERATOR TASKS

These need the **operator token**. Keep it out of email and chat.

### Diagnostic

Under **Operator**, paste the token and press **Diagnostic** to plot the whole fleet, including machines the privacy gate hides, coloured by why each was held back. It shows equipment in fields and yards: do not share screenshots of it.

### Emergency stop

Stops all publishing within about a minute, without touching anything else. Set **disabled=0** to resume.

```
curl -X POST -H "Authorization: Bearer <TOKEN>" \
  "https://purposebuilt.systems/field-escort/control?disabled=1"
```

### Winter mode overrides

Automatic is the default and needs no action. Overrides expire on their own so they cannot be forgotten:

| MODE    | USE IT TO                                                                                                          | LASTS        |
|---------|--------------------------------------------------------------------------------------------------------------------|--------------|
| snow    | Declare a snow event the stations have not caught, optionally within an area ( <b>bbox=west,south,east,north</b> ) | up to 72 h   |
| normal  | Silence winter copy, for example when a station is misreporting                                                    | up to 7 days |
| default | Return to automatic                                                                                                | —            |

```
curl -X POST -H "Authorization: Bearer <TOKEN>" \
  "https://purposebuilt.systems/field-escort/ops-mode?mode=snow&hours=12"
```

## 10. WHEN SOMETHING LOOKS WRONG

| YOU SEE                               | MOST LIKELY                                                              | WHAT TO DO                                                                                               |
|---------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Map empty, equipment is working       | The road-check service is down and the feed is failing closed on purpose | Call support. The availability page can still read 100%: it measures the fleet read, not the road check. |
| Map empty early, late or on a weekend | Outside operating hours, or the fleet is not out                         | Nothing.                                                                                                 |
| A machine drawn as a dashed circle    | Road not traced, or the machine is working back and forth                | Nothing: no direction is claimed on purpose.                                                             |
| Ages old and bunched together         | The service stopped updating                                             | Call support.                                                                                            |
| A sign advised that looks wrong       | Open the Advisory layer and click the sign: it states why it was chosen  | Report the sign and the time; Rewind shows the exact frame.                                              |
| Winter copy on a dry road             | Cleanup hold after a storm, or a station misreporting                    | Set <b>normal</b> (section 9) if it is the station.                                                      |

## 11. GLOSSARY

|                         |                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Advisory</b>         | A recommendation that a sign should warn about a machine. Not a command.                                  |
| <b>Activation</b>       | An advisory being raised; a clearance is it ending.                                                       |
| <b>AVL</b>              | Automatic vehicle location: the plow trucks' own position reporting.                                      |
| <b>Corridor</b>         | The warning zone drawn along the road around a machine.                                                   |
| <b>DMS</b>              | Dynamic message sign: a roadside board that can show text.                                                |
| <b>Operating window</b> | 6:00 AM–5:30 PM Central, when the fleet is read and published.                                            |
| <b>WZDx</b>             | Work Zone Data Exchange, the US standard feed format for work zones.                                      |
| <b>Waze CIFS</b>        | The format Waze ingests incidents in.                                                                     |
| <b>Cleanup hold</b>     | Winter copy kept on after the snow stops: 6 hours, then while it stays at or below freezing, up to a day. |

Field Escort · PurposeBuilt Systems, LLC · Patent pending (US provisional 63/901,544).  
Screenshots from the public map, October 2026. Feed outputs are public domain (CC0).