

Selective & Dynamic Routing

Operational Efficiencies in Winter Maintenance

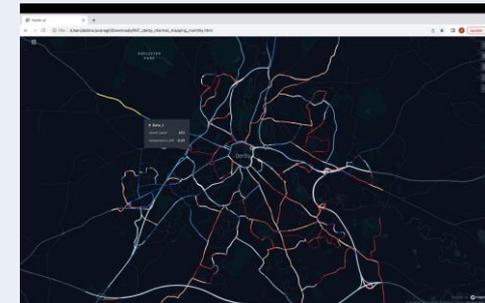
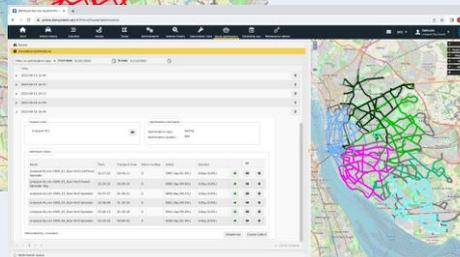
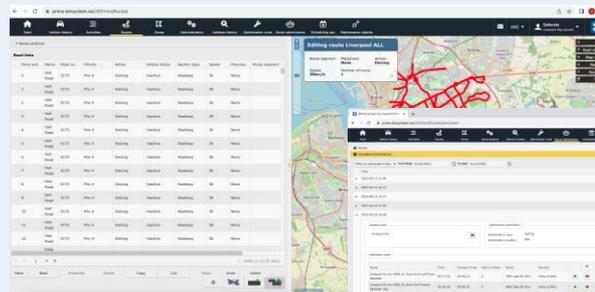
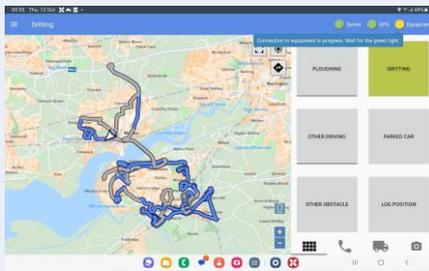
Debbie Cavanagh
UK Sales Manager

Business Progression

25 years of innovative technology

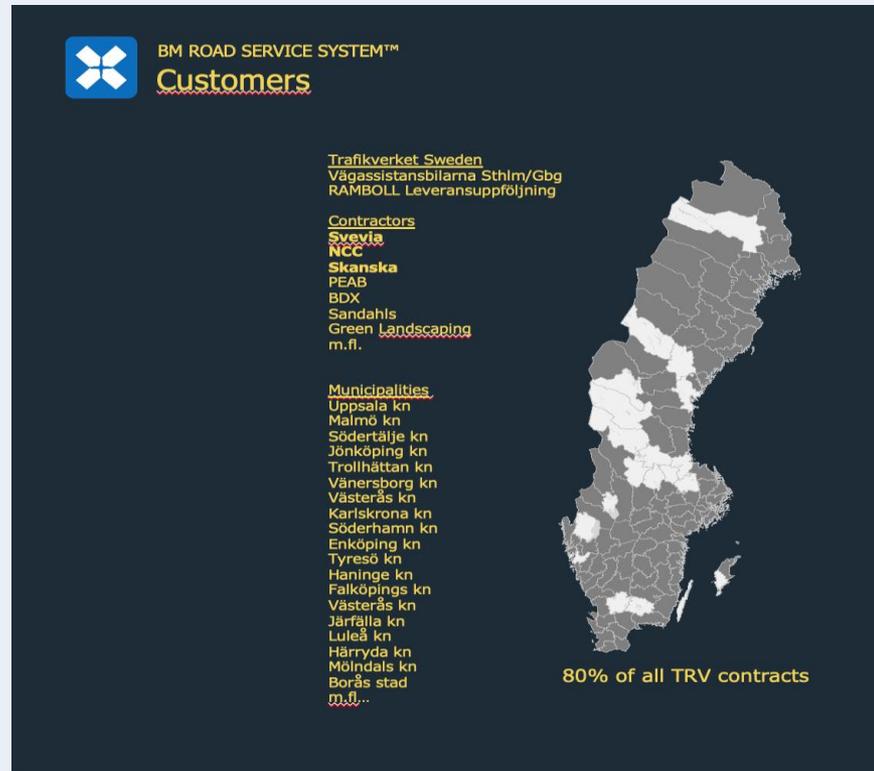
❖ De-icer Additive	1998
❖ De-icer blending system	2007
❖ Anti-frost surface overlay	2008
❖ Liquid anti/de-icers	2009
❖ Back to black plough blades	2011
❖ Wireless weather sensors	2016
❖ Salt cover solution	2017
❖ GPS Tracking	2018
❖ Saturators	2019
❖ Floating car data	2022
❖ Route Optimisation	2023
❖ Timber salt barn	2023
❖ Selective routing	2024

Business Progression



 **BM ROAD SERVICE SYSTEM™**

Intelligent planning and management of highway
maintenance operations





Safecote
making winter safer

2018 – Cold Comfort, England
Presentation by
Andreas Bäckström
Svevia, Sweden

“Millions to be saved on
digitisation of road
maintenance”

“With the exception of reduced costs and reduced negative environmental impact, we can provide higher traffic safety with higher forecast safety. Decision support systems and the increased degree of automation also improves the working environment with reduced stress for operating personal and machine drivers.”

Millions to be saved on digitalisation of road maintenance

SAFECOTE
innovation through understanding

Customised winter road maintenance activities by using IoT system solutions. In a digital innovation project, Svevia is developing a solution that could completely change the conditions for road maintenance and reduce the cost of operation and maintenance of roads by millions of kronor.

Background:

In the project, Svevia investigates how the latest forecast technology with detailed information about temperature, weather conditions and road conditions can answer questions such as; when, how and where actions need to be performed? With answers to the questions, an advanced decision support system can be created for what efforts should be made to make the winter roads safe and accessible.

“Increased availability of data from road sensors, connected vehicles and machinery creates the conditions for high quality roadmap forecasts and optimisation of efforts, which can significantly streamline the road maintenance of the future. At the same time, the harmful environmental impact reduces through reduced transport and reduced salt usage.” Says Andreas Bäckström, Project Manager at Svevia.

According to the calculations made in the project, road maintenance could be streamlined with millions of kronor per year being saved.

The project shows the possibilities of both dynamic route optimisation and automation of salt dosage, i.e. the amount of salt spread on the road for anti-slip.

Dynamic route optimisation means that snow logging and anti-slip logistics are tailored to the specific conditions that the weather creates on a stretch of road. A navigation system included in the software gives the driver driving instructions based on the forecasts that the system makes. In this way, salt operations can be done in a very detailed manner, so that only the roads that have been forecasted as slippery roads need to be addressed.

...around the clock in the snow box.

...illities drivers who, through GPS navigators, do not have the stress to learn salt and plow routes.

To clear snow and snow fighting is an advanced task especially in urban areas. Winter service is a profession that can handle large vehicles in bad weather, take into account surrounding traffic while controlling plows and salt spreaders.

Automated salt spreading simply means not to salt in unnecessary situations, but just where necessary and with the right amount.

...possible to communicate detailed salt dosages for several salt distances every 25 miles, where the need for salt can vary greatly after only a few meters. The consequence is that the amount of salt is distributed according to worst case and not actual need, which gives an overuse of salt.

...decision-making system we can automatically communicate detailed salt solutions for different road distances. The efforts will be more than halved at the same time reduce the amount of salt”, explains Andreas Bäckström.

...vevia, the potential of a dynamic optimisation of winter road maintenance is enormous.

...ion of reduced costs and reduced negative environmental impact, we can provide higher traffic safety with higher forecast safety, and supported by SBUF (Swedish Construction Industry Development Fund), STA - Swedish Transport Administration “Traffikverket” and the programme for research and innovation. Safecote Limited is sole distributor of the MobiWin system in the UK & Ireland.

SVEVIA

Svevia - Andreas Bäckström

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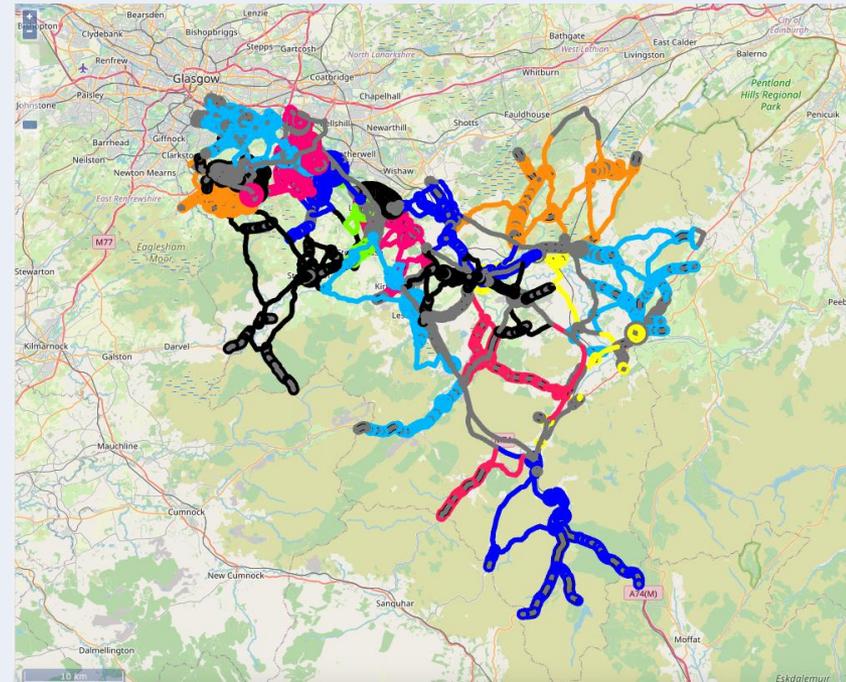
Comprehensive Functionality - Modules

- ❖ GPS Tracking
- ❖ Weather & connected vehicle data (friction)
- ❖ Route Optimisation (static)
- ❖ Selective & Dynamic Route Management
- ❖ Automated Call-out
- ❖ Navigation & Auto-salting

Route Optimisation Module

Cut back on wasted travel time and make £££ & Co2 savings without reducing the service

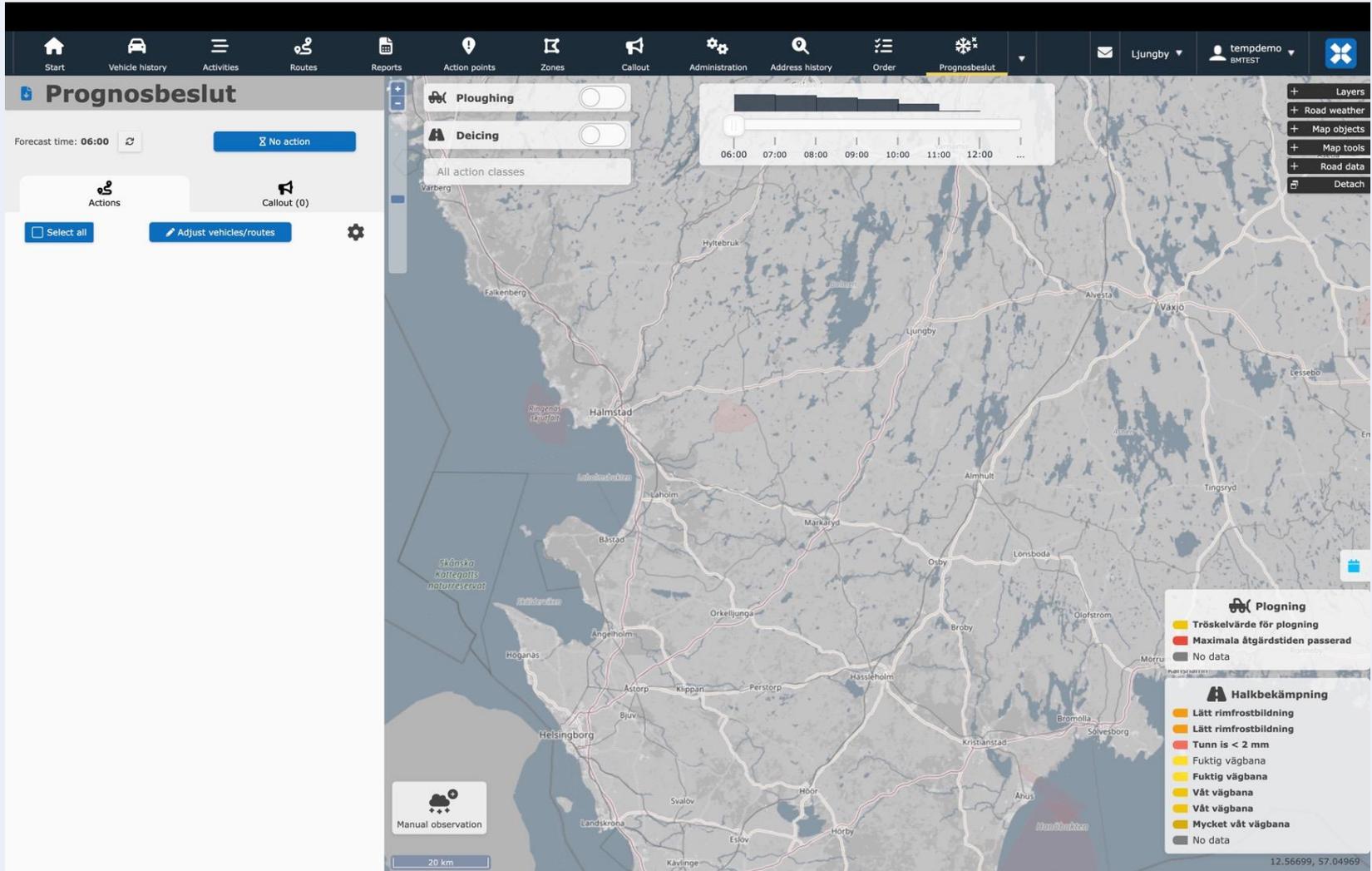
- Routes reduced to 19 (from 23)
- £350,000 saving year on year



Selective Routing Overview with Klimator forecasting

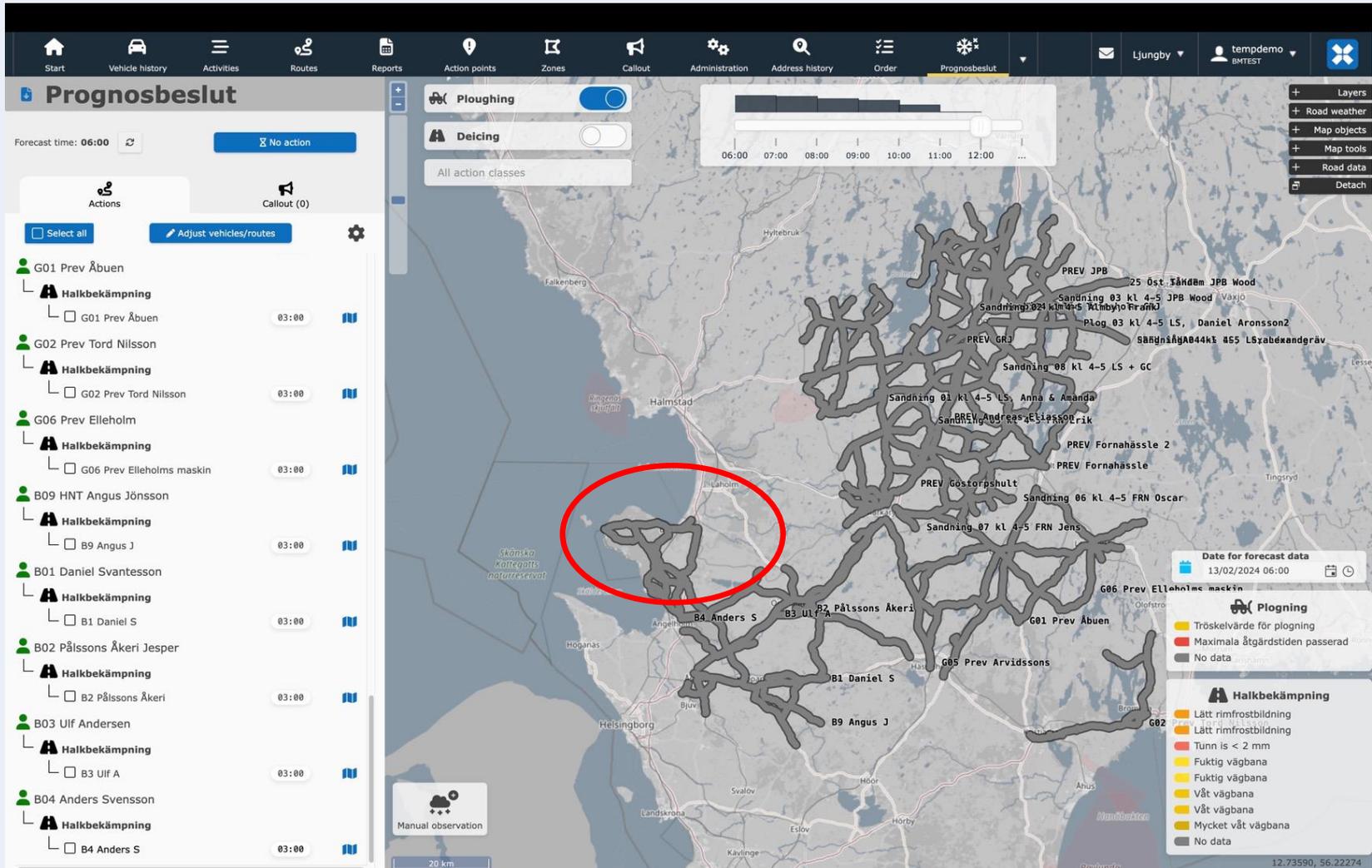


Blank canvas



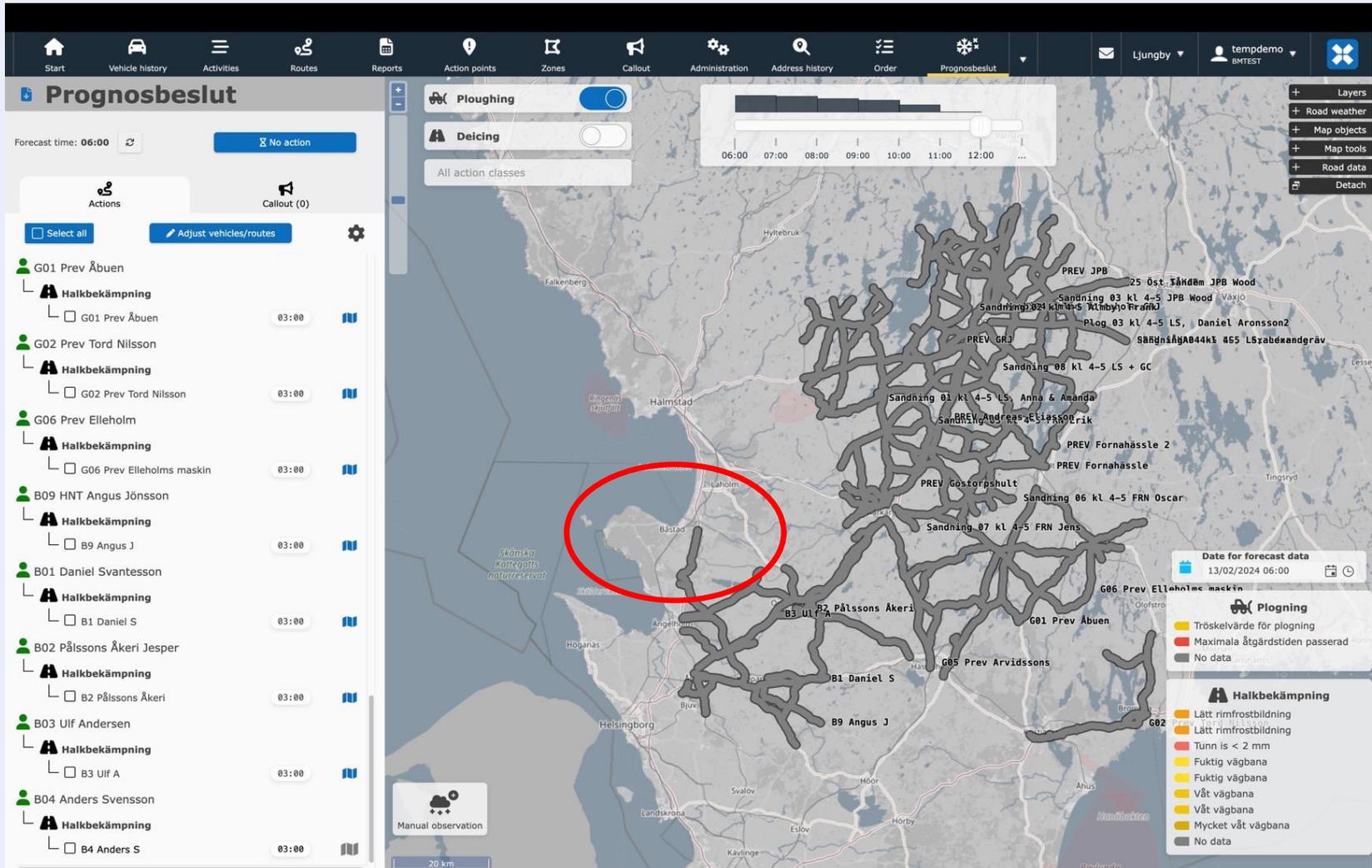
The screenshot displays the Safecote software interface. At the top is a navigation bar with icons for Start, Vehicle history, Activities, Routes, Reports, Action points, Zones, Callout, Administration, Address history, Order, and Prognosbeslut. Below this is a sidebar with the 'Prognosbeslut' (Forecast Decision) section, showing a forecast time of 06:00 and buttons for 'No action', 'Actions', and 'Callout (0)'. The main area is a map of southern Sweden, centered on Halmstad, with various towns and roads visible. Overlaid on the map are several data layers: a 'Ploughing' layer with a bar chart showing activity from 06:00 to 12:00; a 'Deicing' layer; and a 'Halkbekämpning' (Ice prevention) layer with a legend. The legend for 'Halkbekämpning' includes categories like 'Lätt rimfrostbildning', 'Lätt rimfrostbildning', 'Tunn is < 2 mm', 'Fuktig vägbana', 'Våt vägbana', 'Våt vägbana', 'Mycket våt vägbana', and 'No data'. A 'Manual observation' button is located in the bottom left corner of the map area. The bottom right corner shows the coordinates 12.56699, 57.04969.

Routes plotted



The screenshot displays the Safecote software interface. At the top, a navigation bar includes icons for Start, Vehicle history, Activities, Routes, Reports, Action points, Zones, Callout, Administration, Address history, Order, and Prognosbeslut. The main area is titled 'Prognosbeslut' and features a forecast time of 06:00. On the left, a list of actions is shown, including 'G01 Prev Åbuen', 'G02 Prev Tord Nilsson', 'G06 Prev Elleholm', 'B09 HNT Angus Jönsson', 'B01 Daniel Svantesson', 'B02 Pålssons Åkeri Jesper', 'B03 Uif Andersen', and 'B04 Anders Svensson'. Each action is associated with a 'Halkbekämpning' (ice treatment) task and a scheduled time of 03:00. The central map shows a network of plotted routes in grey, with a red circle highlighting a specific area. A legend on the right side of the map provides details for 'Plögnig' (plowing) and 'Halkbekämpning' (ice treatment), including symbols for forecast values, maximum time passed, and various ice treatment types like 'Lätt rimfrostbildning' and 'Tunn is < 2 mm'. A 'Manual observation' button is located at the bottom left of the map area.

Select/de-select



Prognosbeslut

Forecast time: 06:00

Actions

Callout (0)

- G01 Prev Åbuen
 - Halkbekämpning
 - G01 Prev Åbuen 03:00
- G02 Prev Tord Nilsson
 - Halkbekämpning
 - G02 Prev Tord Nilsson 03:00
- G06 Prev Elleholm
 - Halkbekämpning
 - G06 Prev Elleholms maskin 03:00
- B09 HNT Angus Jönsson
 - Halkbekämpning
 - B9 Angus J 03:00
- B01 Daniel Svantesson
 - Halkbekämpning
 - B1 Daniel S 03:00
- B02 Pålssons Åkeri Jesper
 - Halkbekämpning
 - B2 Pålssons Åkeri 03:00
- B03 Ulf Andersen
 - Halkbekämpning
 - B3 Ulf A 03:00
- B04 Anders Svensson
 - Halkbekämpning
 - B4 Anders S 03:00

Ploughing **Deicing**

All action classes

Map Layers: Road weather, Map objects, Map tools, Road data, Detach

Legend:

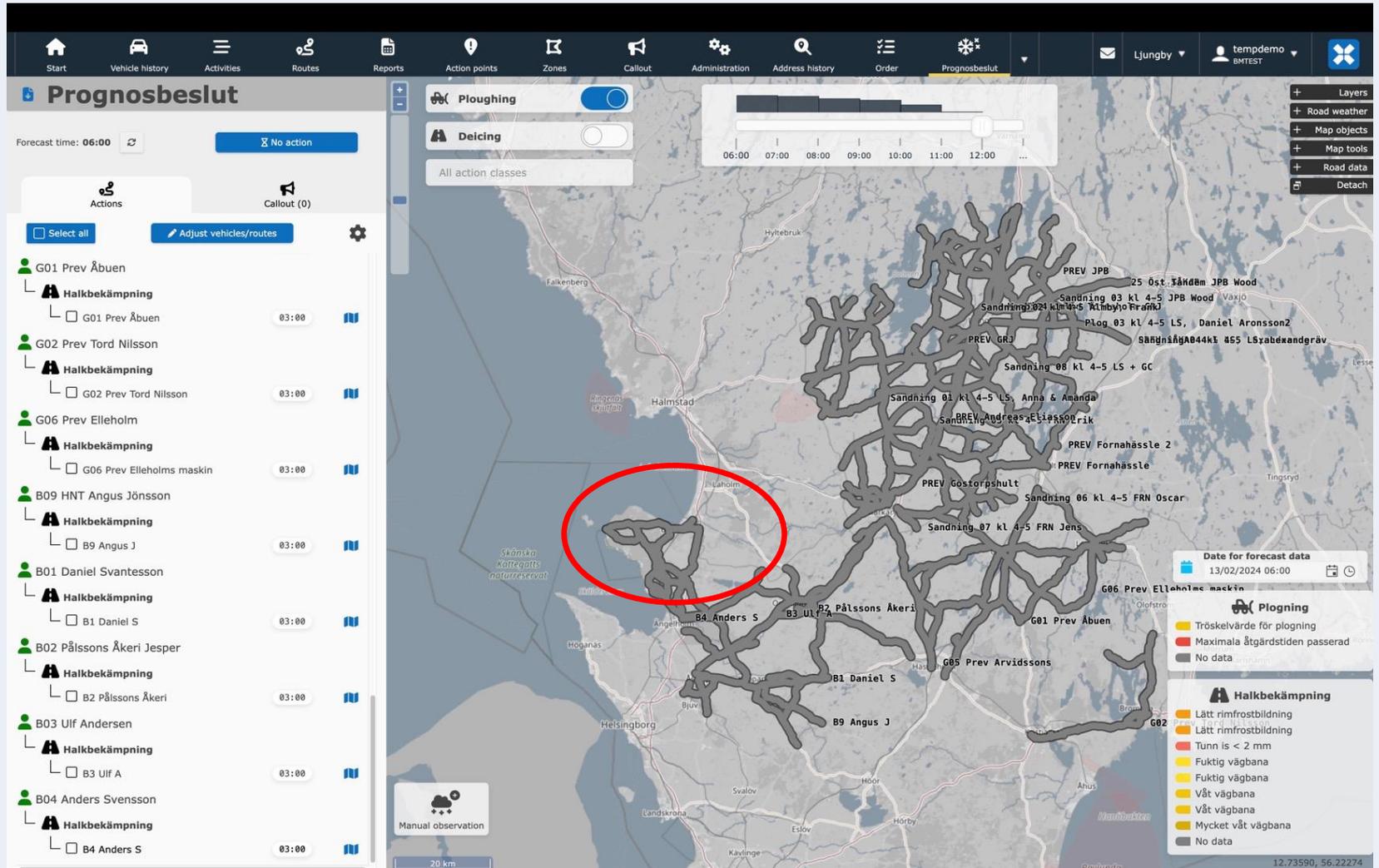
- Tröskelvärde för plogning
- Maximala åtgärdstiden passerad
- No data
- Halkbekämpning
 - Lätt rimfrostbildning
 - Lätt rimfrostbildning
 - Tunn is < 2 mm
 - Fuktig vägban
 - Fuktig vägban
 - Våt vägban
 - Våt vägban
 - Mycket våt vägban
 - No data

Date for forecast data: 13/02/2024 06:00

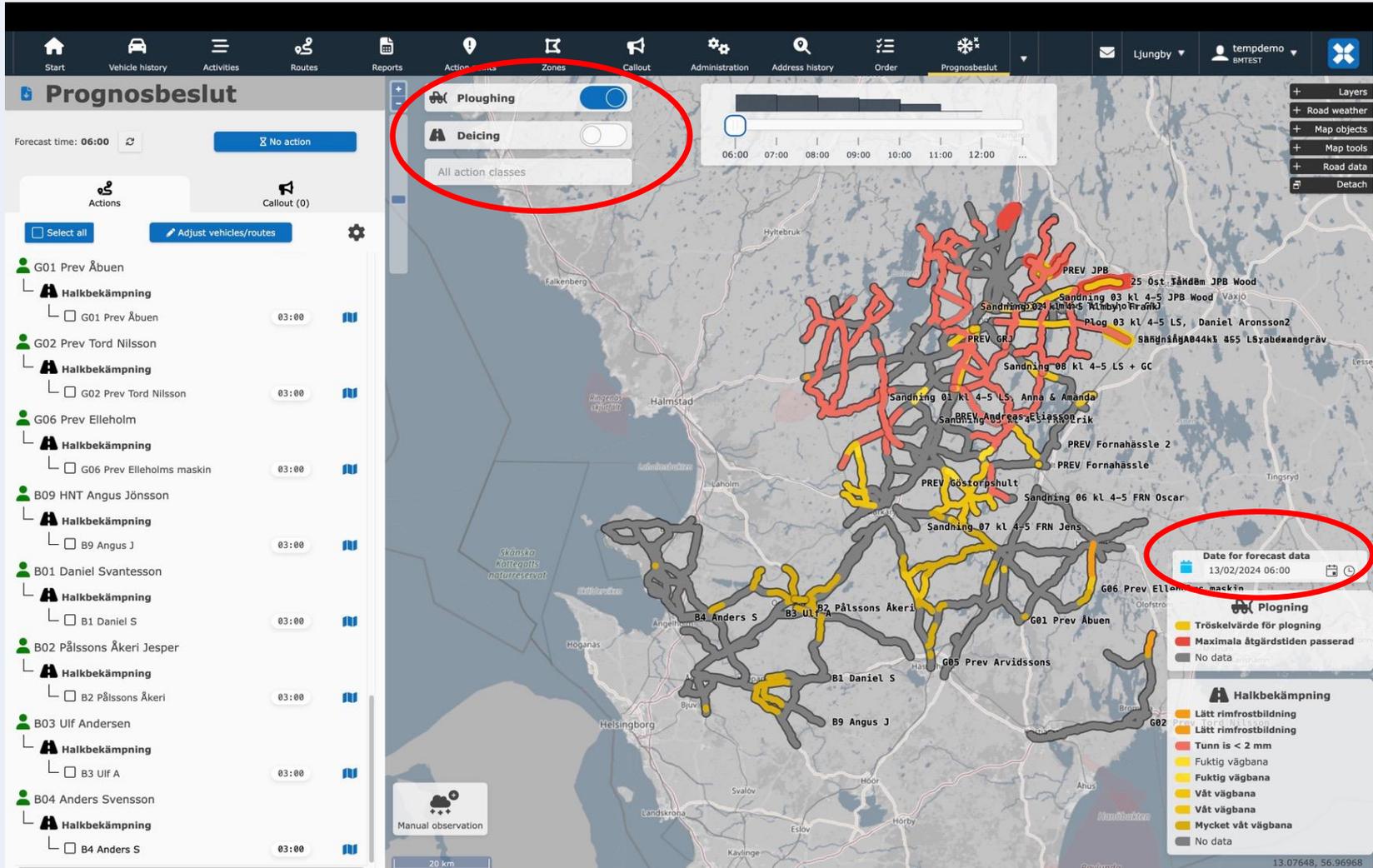
Manual observation

20 km

Routes plotted



The screenshot displays a software interface for winter maintenance planning. The top navigation bar includes icons for Start, Vehicle history, Activities, Routes, Reports, Action points, Zones, Callout, Administration, Address history, Order, and Prognosbeslut. The main area is titled 'Prognosbeslut' and features a forecast time of 06:00. On the left, a list of actions is shown, including 'Halkbekämpning' (ice clearing) for various vehicles and routes, such as G01, G02, G06, B09, B01, B02, B03, and B04. The central map shows a network of plotted routes in grey, with a red circle highlighting a specific area. A legend on the right explains the symbols: yellow for 'Tröskelvärde för plogning' (plowing threshold), red for 'Maximala åtgärdstiden passerad' (maximum action time passed), and grey for 'No data'. It also lists 'Halkbekämpning' (ice clearing) types: orange for 'Lätt rimfrostbildning' (light frost), red for 'Lätt rimfrostbildning' (light frost), yellow for 'Tunn is < 2 mm' (thin ice), light yellow for 'Fuktig vägbana' (wet road), yellow for 'Våt vägbana' (wet road), orange for 'Mycket våt vägbana' (very wet road), and grey for 'No data'. A weather forecast bar at the top shows conditions from 06:00 to 12:00. The bottom right corner shows coordinates 12.73590, 56.22274.



Prognosbeslut

Forecast time: 06:00

Actions: Select all, Adjust vehicles/routes

- G01 Prev Åbuen
 - Halkbekämpning
 - G01 Prev Åbuen 03:00
- G02 Prev Tord Nilsson
 - Halkbekämpning
 - G02 Prev Tord Nilsson 03:00
- G06 Prev Elleholm
 - Halkbekämpning
 - G06 Prev Elleholms maskin 03:00
- B09 HNT Angus Jönsson
 - Halkbekämpning
 - B9 Angus J 03:00
- B01 Daniel Svantesson
 - Halkbekämpning
 - B1 Daniel S 03:00
- B02 Pålssons Åkeri Jesper
 - Halkbekämpning
 - B2 Pålssons Åkeri 03:00
- B03 Uif Andersen
 - Halkbekämpning
 - B3 Uif A 03:00
- B04 Anders Svensson
 - Halkbekämpning
 - B4 Anders S 03:00

Manual observation

20 km

Date for forecast data: 13/02/2024 06:00

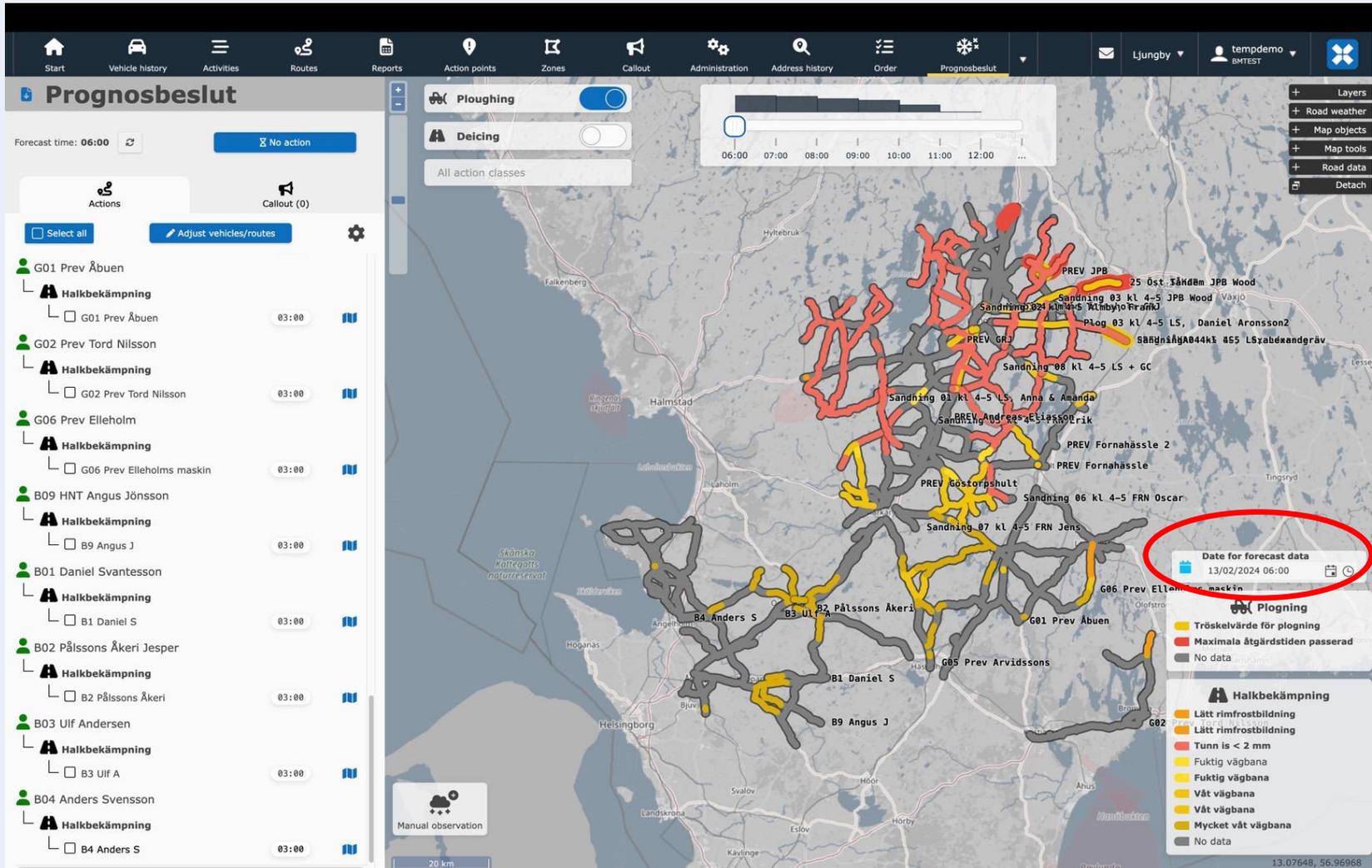
Plöjning

- Tröskelvärde för plöjning
- Maximala åtgärdstiden passerad
- No data

Halkbekämpning

- Lätt rimfrostbildning
- Lätt rimfrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Fuktig vägbana
- Våt vägbana
- Våt vägbana
- Mycket våt vägbana
- No data

Residual salt data can be used to forecast suggested treatment



Prognosbeslut

Forecast time: 06:00

Actions Callout (0)

- G01 Prev Åbuen
 - Halkbekämpning
 - G01 Prev Åbuen 03:00
- G02 Prev Tord Nilsson
 - Halkbekämpning
 - G02 Prev Tord Nilsson 03:00
- G06 Prev Elleholm
 - Halkbekämpning
 - G06 Prev Elleholms maskin 03:00
- B09 HNT Angus Jönsson
 - Halkbekämpning
 - B9 Angus J 03:00
- B01 Daniel Svantesson
 - Halkbekämpning
 - B1 Daniel S 03:00
- B02 Pålssons Åkeri Jesper
 - Halkbekämpning
 - B2 Pålssons Åkeri 03:00
- B03 Uif Andersen
 - Halkbekämpning
 - B3 Uif A 03:00
- B04 Anders Svensson
 - Halkbekämpning
 - B4 Anders S 03:00

Ploughing **Deicing**

All action classes

06:00 07:00 08:00 09:00 10:00 11:00 12:00

Date for forecast data
13/02/2024 06:00

Plögning

- Tröskelvärde för plögning
- Maximala åtgärdstiden passerad
- No data

Halkbekämpning

- Lätt rimefrostbildning
- Lätt rimefrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Fuktig vägbana
- Våt vägbana
- Våt vägbana
- Mycket våt vägbana
- No data

13.07648, 56.96968

Start Vehicle history Activities Routes Reports Action points Zones Callout Administration Address history Order Prognosbeslut Ljungby tempdemo

Prognosbeslut

Forecast time: 06:00 ↻ No action

Actions Callout (0)

Select all Adjust vehicles/routes

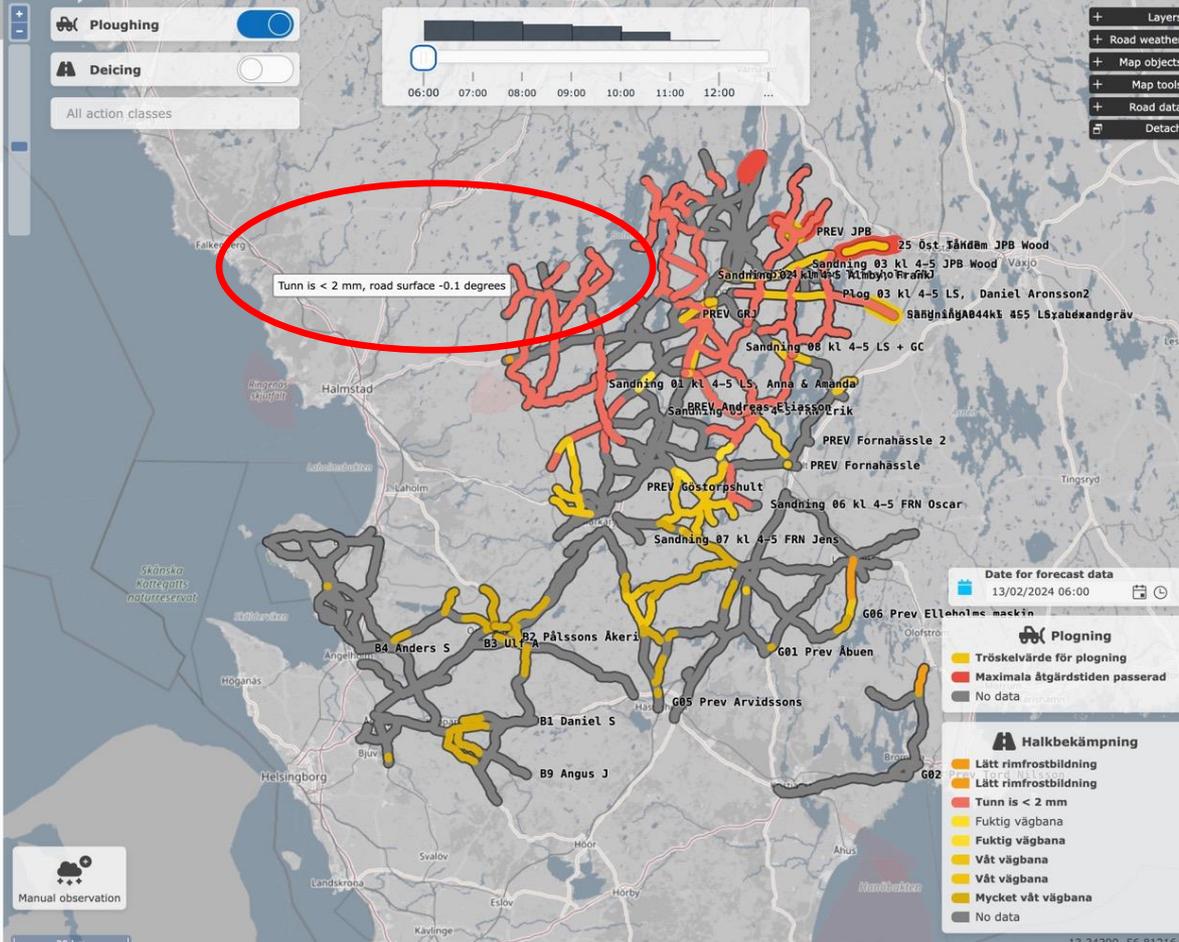
- G01 Prev Åbuen
 - 🚧 Halkbekämpning
 - G01 Prev Åbuen 03:00 📏
- G02 Prev Tord Nilsson
 - 🚧 Halkbekämpning
 - G02 Prev Tord Nilsson 03:00 📏
- G06 Prev Elleholm
 - 🚧 Halkbekämpning
 - G06 Prev Elleholms maskin 03:00 📏
- B09 HNT Angus Jönsson
 - 🚧 Halkbekämpning
 - B9 Angus J 03:00 📏
- B01 Daniel Svantesson
 - 🚧 Halkbekämpning
 - B1 Daniel S 03:00 📏
- B02 Pålssons Åkeri Jesper
 - 🚧 Halkbekämpning
 - B2 Pålssons Åkeri 03:00 📏
- B03 Uif Andersen
 - 🚧 Halkbekämpning
 - B3 Uif A 03:00 📏
- B04 Anders Svensson
 - 🚧 Halkbekämpning
 - B4 Anders S 03:00 📏

Ploughing

Deicing

All action classes

06:00 07:00 08:00 09:00 10:00 11:00 12:00



Layers

- Road weather
- Map objects
- Map tools
- Road data
- Detach

Date for forecast data
13/02/2024 06:00

Ploughing

- Tröskelvärde för ploughing
- Maximala åtgärds tiden passerad
- No data

Halkbekämpning

- Lätt rimfrostbildning
- Lätt rimfrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Våt vägbana
- Våt vägbana
- Mycket våt vägbana
- No data

13.34290, 56.81216

Prognosbeslut

Forecast time: 06:00 No action

Actions Callout (0)

Select all Adjust vehicles/routes

- G01 Prev Åbuen
 - Halkbekämpning
 - G01 Prev Åbuen 03:00
- G02 Prev Tord Nilsson
 - Halkbekämpning
 - G02 Prev Tord Nilsson 03:00
- G06 Prev Elleholm
 - Halkbekämpning
 - G06 Prev Elleholms maskin 03:00
- B09 HNT Angus Jönsson
 - Halkbekämpning
 - B9 Angus J 03:00
- B01 Daniel Svantesson
 - Halkbekämpning
 - B1 Daniel S 03:00
- B02 Pålssons Åkeri Jesper
 - Halkbekämpning
 - B2 Pålssons Åkeri 03:00
- B03 Uif Andersen
 - Halkbekämpning
 - B3 Uif A 03:00
- B04 Anders Svensson
 - Halkbekämpning
 - B4 Anders S 03:00

Ploughing **Deicing**

All action classes

06:00 07:00 08:00 09:00 10:00 11:00 12:00

Vät vägbana, road surface 0 degrees

Layers

- Road weather
- Map objects
- Map tools
- Road data
- Detach

Date for forecast data
13/02/2024 06:00

Plögnig

- Tröskelvärde för plögnig
- Maximala åtgårdstiden passerad
- No data

Halkbekämpning

- Lätt rimfrostbildning
- Lätt rimfrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Fuktig vägbana
- Vät vägbana
- Vät vägbana
- Mycket vät vägbana
- No data

Manual observation

20 km

13.47198, 56.49055

Prognosbeslut

Forecast time: 06:00 No action

Actions Callout (0)

Select all Adjust vehicles/routes

- G01 Prev Åbuen
 - Halkbekämpning
 - G01 Prev Åbuen 03:00
- G02 Prev Tord Nilsson
 - Halkbekämpning
 - G02 Prev Tord Nilsson 03:00
- G06 Prev Elleholm
 - Halkbekämpning
 - G06 Prev Elleholms maskin 03:00
- B09 HNT Angus Jönsson
 - Halkbekämpning
 - B9 Angus J 03:00
- B01 Daniel Svantesson
 - Halkbekämpning
 - B1 Daniel S 03:00
- B02 Pålssons Åkeri Jesper
 - Halkbekämpning
 - B2 Pålssons Åkeri 03:00
- B03 Uif Andersen
 - Halkbekämpning
 - B3 Uif A 03:00
- B04 Anders Svensson
 - Halkbekämpning
 - B4 Anders S 03:00

Manual observation

20 km

Ploughing Deicing

All action classes

06:00 07:00 08:00 09:00 10:00 11:00 12:00

Layers: Road weather, Map objects, Map tools, Road data, Detach

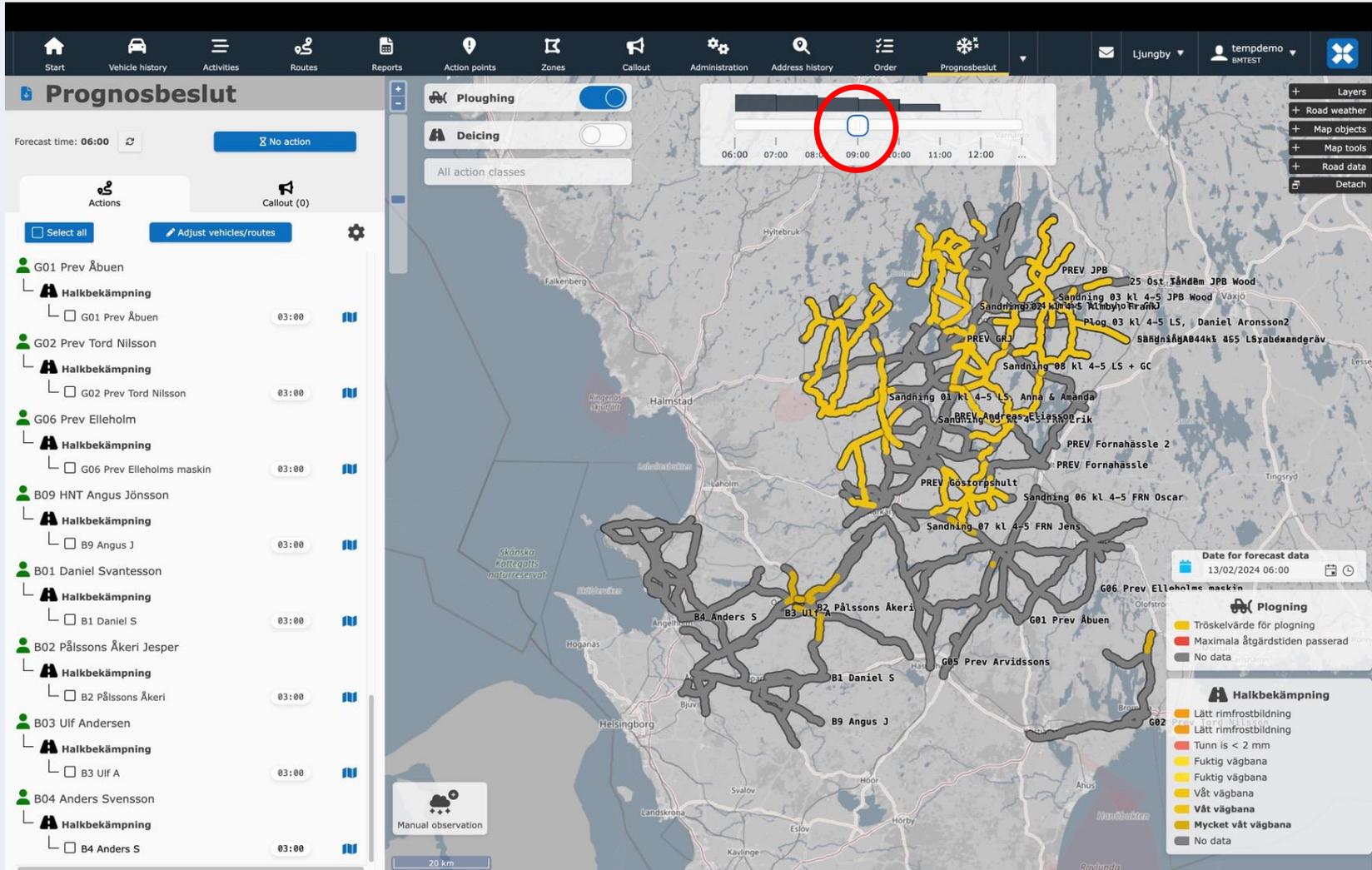
Date for forecast data: 13/02/2024 06:00

Pløgning

- Tröskelvärde för pløgning
- Maximala åtgärdstiden passerad
- No data

Halkbekämpning

- Lätt rimefrostbildning
- Lätt rimefrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Fuktig vägbana
- Våt vägbana
- Våt vägbana
- Mycket våt vägbana
- No data



Prognosbeslut

Forecast time: 06:00

Actions Callout (0)

- G01 Prev Åbuen
 - Halkbekämpning
 - G01 Prev Åbuen 03:00
- G02 Prev Tord Nilsson
 - Halkbekämpning
 - G02 Prev Tord Nilsson 03:00
- G06 Prev Elleholm
 - Halkbekämpning
 - G06 Prev Elleholms maskin 03:00
- B09 HNT Angus Jönsson
 - Halkbekämpning
 - B9 Angus J 03:00
- B01 Daniel Svantesson
 - Halkbekämpning
 - B1 Daniel S 03:00
- B02 Pålssons Åkeri Jesper
 - Halkbekämpning
 - B2 Pålssons Åkeri 03:00
- B03 Ulf Andersen
 - Halkbekämpning
 - B3 Ulf A 03:00
- B04 Anders Svensson
 - Halkbekämpning
 - B4 Anders S 03:00

Ploughing **Deicing**

All action classes

06:00 07:00 08:00 09:00 10:00 11:00 12:00

Layers

- + Road weather
- + Map objects
- + Map tools
- + Road data
- + Detach

Date for forecast data
13/02/2024 06:00

Plögn

- Tröskelvärde för plögn
- Maximala åtgärdstiden passerad
- No data

Halkbekämpning

- Lätt rimefrostbildning
- Lätt rimefrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Fuktig vägbana
- Våt vägbana
- Våt vägbana
- Mycket våt vägbana
- No data

Manual observation

20 km



Prognosbeslut

Forecast time: 06:00 ↻ No action

Actions Callout (0)

Select all Adjust vehicles/routes

- L05 Fornhässle 2
 - Halkbekämpning
 - PREV Fornhässle 2 03:00
- L02 Fornhässle 1
 - Halkbekämpning
 - PREV Fornhässle 03:00
- L06 SÅkab
 - Halkbekämpning
 - PREV SÅKAB 03:00
- L03 GRJ
 - Halkbekämpning
 - PREV GRJ 03:00
- L04 JPB Wood
 - Halkbekämpning
 - PREV JPB 03:00
- Sand03 JPB Wood
 - Halkbekämpning
 - Sandning 03 kl 4-5 JPB Wood 03:00
- Sand02 Ålmyby Frank
 - Halkbekämpning
 - Sandning 02 kl 4-5 Ålmyby, Frank 03:00
- Plog07/Sand01 Anna Kristensson
 - Halkbekämpning
 - Sandning 01 kl 4-5 LS, Anna & A... 03:00
- Plog06/Sand06 Fornhässle Oscar

Ploughing **Deicing**

All action classes

06:00 07:00 08:00 09:00 10:00 11:00 12:00

Fuktig vägbanor, road surface 0 degrees

Layers

- Road weather
- Map objects
- Map tools
- Road data
- Detach

Date for forecast data
13/02/2024 06:00

Plögn

- Tröskelvärde för plögn
- Maximala åtgärdstiden passerad
- No data

Halkbekämpning

- Lätt rimgrostbildning
- Lätt rimgrostbildning
- Tunn is < 2 mm
- Fuktig vägbanor
- Fuktig vägbanor
- Våt vägbanor
- Mycket våt vägbanor
- No data

13.57086, 56.60713

Prognosbeslut

Forecast time: 06:00 No action

Actions Callout (0)

- Select all Adjust vehicles/routes
- L05 Fornhässle 2
 - Halkbekämpning
 - PREV Fornhässle 2 03:00
- L02 Fornhässle 1
 - Halkbekämpning
 - PREV Fornhässle 03:00
- L06 SÅkab
 - Halkbekämpning
 - PREV SÅKAB 03:00
- L03 GRJ
 - Halkbekämpning
 - PREV GRJ 03:00
- L04 JPB Wood
 - Halkbekämpning
 - PREV JPB 03:00
- Sand03 JPB Wood
 - Halkbekämpning
 - Sandning 03 kl 4-5 JPB Wood 03:00
- Sand02 Ålby Frank
 - Halkbekämpning
 - Sandning 02 kl 4-5 Ålby, Frank 03:00
- Plog07/Sand01 Anna Kristensson
 - Halkbekämpning
 - Sandning 01 kl 4-5 LS, Anna & A... 03:00
- Plog06/Sand06 Fornhässle Oscar

Ploughing **Deicing**

All action classes

Våt vägbana, road surface 0 degrees

Map layers: Layers, Road weather, Map objects, Map tools, Road data, Detach

Date for forecast data: 13/02/2024 06:00

Plögn

- Tröskelvärde för plögn
- Maximala åtgärdstiden passerad
- No data

Halkbekämpning

- Lätt rimgrostbildning
- Lätt rimgrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Våt vägbana
- Mycket våt vägbana
- No data

Manual observation

20 km

13.47748, 56.86624



Prognosbeslut

Forecast time: 06:00 ↻ No action

Actions Callout (0)

Select all Adjust vehicles/routes

- L05 Fornhässle 2
 - Halkbekämpning
 - PREV Fornhässle 2 03:00
- L02 Fornhässle 1
 - Halkbekämpning
 - PREV Fornhässle 03:00
- L06 SÅkab
 - Halkbekämpning
 - PREV SÅKAB 03:00
- L03 GRJ
 - Halkbekämpning
 - PREV GRJ 03:00
- L04 JPB Wood
 - Halkbekämpning
 - PREV JPB 03:00
- Sand03 JPB Wood
 - Halkbekämpning
 - Sandning 03 kl 4-5 JPB Wood 03:00
- Sand02 Ålmy Frank
 - Halkbekämpning
 - Sandning 02 kl 4-5 Ålmy, Frank 03:00
- Plog07/Sand01 Anna Kristensson
 - Halkbekämpning
 - Sandning 01 kl 4-5 LS, Anna & A... 03:00
- Plog06/Sand06 Fornhässle Oscar

Ploughing **Deicing**

All action classes

06:00 07:00 08:00 09:00 10:00 11:00 12:00

Layers: Road weather, Map objects, Map tools, Road data, Detach

Date for forecast data: 13/02/2024 06:00

Plogning

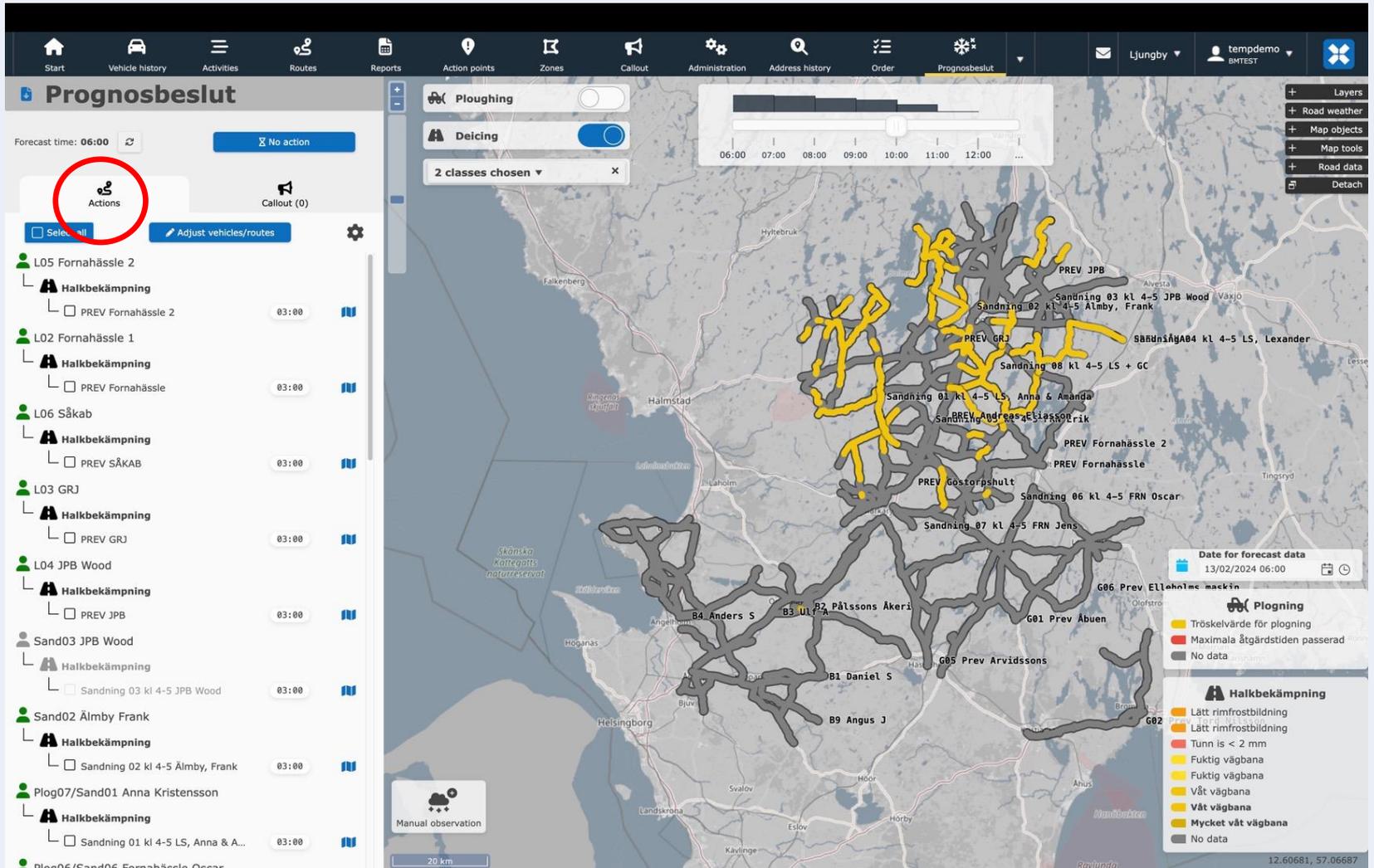
- Tröskelvärde för plogning
- Maximala åtgärdstiden passerad
- No data

Halkbekämpning

- Lätt rimefrostbildning
- Lätt rimefrostbildning
- Tunn is < 2 mm
- Fuktig vägban
- Fuktig vägban
- Våt vägban
- Våt vägban
- Mycket våt vägban
- No data

Manual observation

20 km



Prognosbeslut

Forecast time: 06:00 ↻ No action

Actions Callout (0)

Select all Adjust vehicles/routes

- L05 Fornhässle 2
 - Halkbekämpning
 - PREV Fornhässle 2 03:00
- L02 Fornhässle 1
 - Halkbekämpning
 - PREV Fornhässle 03:00
- L06 SÅkab
 - Halkbekämpning
 - PREV SÅKAB 03:00
- L03 GRJ
 - Halkbekämpning
 - PREV GRJ 03:00
- L04 JPB Wood
 - Halkbekämpning
 - PREV JPB 03:00
- Sand03 JPB Wood
 - Halkbekämpning
 - Sandning 03 kl 4-5 JPB Wood 03:00
- Sand02 Ålby Frank
 - Halkbekämpning
 - Sandning 02 kl 4-5 Ålby, Frank 03:00
- Plog07/Sand01 Anna Kristensson
 - Halkbekämpning
 - Sandning 01 kl 4-5 LS, Anna & A... 03:00
- Plog06/Sand06 Fornhässle Oscar

Ploughing

Deicing

2 classes chosen

Layers

- Road weather
- Map objects
- Map tools
- Road data
- Detach

Date for forecast data
13/02/2024 06:00

Plöjning

- Tröskelvärdet för plöjning
- Maximala åtgärdstiden passerad
- No data

Halkbekämpning

- Lätt rimefrostbildning
- Lätt rimefrostbildning
- Tunn is < 2 mm
- Fuktig vägban
- Fuktig vägban
- Våt vägban
- Våt vägban
- Mycket våt vägban
- No data

12.60681, 57.06687



Callout

Callout group: Ljungby
Diary: Ljungby

The Callout group field is required.

Assignment	Latest callout	Action	Vehicle	Method	Base density salt (g/m2)	Base density solution (g...)
Route: PREV Fornhässle	2022-12-27 12:00	Salting	Prev2 Fornhässle Lastbil	App	8	0
Route: PREV JPB	2022-12-27 12:00	Salting	Prev4 JPB WOOD	App	8	0

Stakeholders

Name	Email
<input type="checkbox"/> Jacob	jacob.olson@skanska.se
<input type="checkbox"/> Emma	emma.ohlsson@skanska.se
<input type="checkbox"/> Do Ljungby	doljungby@skanska.se
<input type="checkbox"/> Morgan Trafikverket	morgan.olofsson@trafikverket.se

Comment:

Common message:

OK Cancel

Total: 10 000,00 kr
0.00 kg CO₂

Start callouts

Prognosbeslut

Forecast time: 06:00

Callout (23) 6.412,00 kr

Item	Cost (kr)	Status
PREV Fornhässle 2	6.412,00	Callout
L02 Fornhässle 1		Callout
PREV Fornhässle	5.737,00	Callout
L06 Såkab		Callout
PREV SÅKAB	6.615,00	Callout
L03 GRJ		Callout
PREV GRJ	6.750,00	Callout
L04 JPB Wood		Callout
PREV JPB	6.750,00	Callout
Sand02 Älmy Frank		Callout
Sandning 02 kl 4-5 Älmy, Frank		Callout
Plog07/Sand01 Anna Kristensson		Callout
Sandning 01 kl 4-5 LS, Anna & A...		Callout
Plog06/Sand06 Fornhässle Oscar		Callout
Sandning 06 kl 4-5 FRN Oscar		Callout
Plog10/Sand05 Fornhässle Erik		Callout
Sandning 05 kl 4-5 FRN Erik		Callout
Sand04 Lexanders gräv		Callout
Sandning 04 kl 4-5 LS, Lexander		Callout
Plog11/Sand07 Fornhässle Jens	9.200,00	Callout
Sandning 07 kl 4-5 FRN Jens		Callout
Plog04/Sand08 Ljungby Schakt	9.200,00	Callout
Sandning 08 kl 4-5 LS + GC		Callout

Total: 64 164,00 kr
626.76 kg CO₂

Ploughing (toggle off)
Deicing (toggle on)

All action classes

Map layers: Vehicle, Route, Drawn map objects, Map tools, Road data, Detach

Date for forecast data: 13/02/2024 06:00

Halkbekämpning

- Lätt rimfrostbildning
- Lätt rimfrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Fuktig vägbana
- Våt vägbana
- Våt vägbana
- Mycket våt vägbana
- No data

Prognosbeslut

Forecast time: 06:00

Callout (23) 6.412,00 kr

Total: 64 164,00 kr
626.76 kg CO₂

Ploughing (toggle off)

Deicing (toggle on)

Layers

- Vehicle: All vehicles
- Route: Plog 03 kl 4-5 LS, Daniel Aronsson2
- Route: Plog 05 kl 4-5 LS, Lexanders gräv
- Route: 25 Ost SÅKAB
- Route: PREV Fornhässe 2
- Route: PREV Fornhässe

Map tools

- Road data
- Detach

Date for forecast data
13/02/2024 06:00

Plogning

- Tröskelvärde för plogning
- Maximala åtgärds tiden passerad
- No data

Halkbekämpning

- Lätt rimfrostbildning
- Lätt rimfrostbildning
- Tunn is < 2 mm
- Fuktig vägbana
- Fuktig vägbana
- Våt vägbana
- Våt vägbana
- Mycket våt vägbana
- No data

Start
Vehicle history
Activities
Routes
Reports
Action points
Zones
Callout
Administration
Address history
Order
Order Invoicing
Ljungby
tempdemo
BMTST

Callouts Maintenance packages

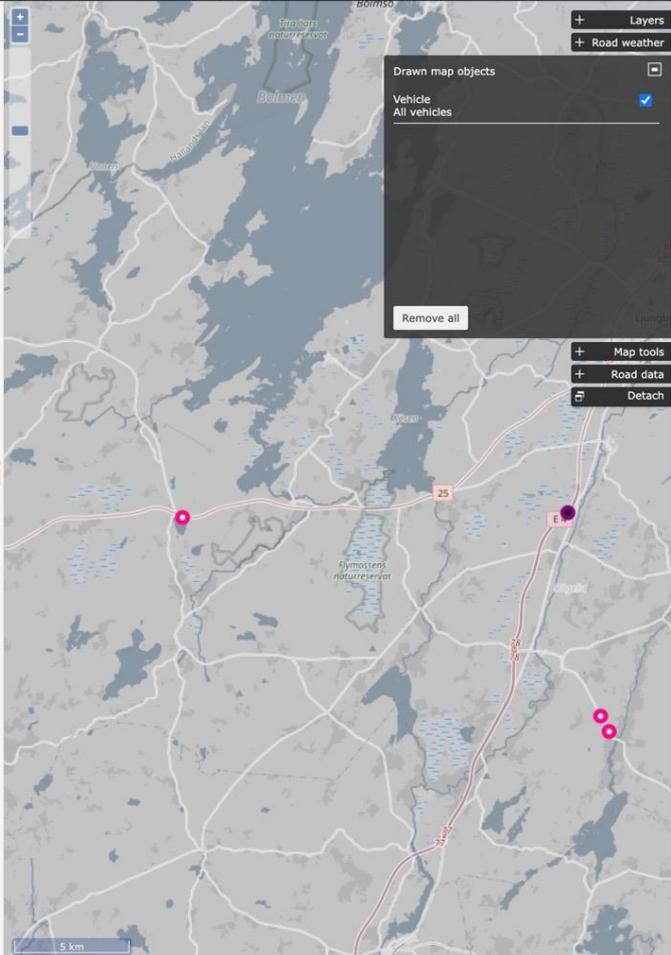
- Scenarios
- Current callouts
- Coming callouts
- Search

From: 13/02/2024 00:00

To: 14/02/2024 00:00

Search

Name	Action	Started	Deviations	Comment	
Sandning 05 kl 4-5 FRN Erik	Saltning	Plog10/Sand05 Fornahässe Erik	2024-02-12 16:14:16	Done 8 ▲	
Sandning 07 kl 4-5 FRN Jens	Saltning	Plog11/Sand07 Fornahässe Jens	2024-02-12 16:15:33	Done 12 ▲	
Sandning 02 kl 4-5 Älmby, Frank	Saltning	Sand02 Älmby Frank	2024-02-12 14:38:33	Done 5 ▲	
Sandning 04 kl 4-5 LS, Lexander	Saltning	Sand04 Lexanders grav	2024-02-12 17:20:41	Done 7 ▲	
Prognosbeslut - 2024-02-12 16:12:47		Snöröjning	2024-02-11 23:00:00	104 ▲ salta plogrundan	
Route	Action	Vehicle	Changed	Status	Deviations
Kombi04 omlid Toftaholm GRJ	Snöröjning	Kombi GRJ 3	00:25	Done	21 ▲
E403 Markaryd Vidigsson	Snöröjning	L01 Vidigsson	2024-02-13 01:03:33	Done	18 ▲
Kombi01 v120+omledning mitten Fornahässe1	Snöröjning	L02 Fornahässe 1	2024-02-13 05:25:13	Done	2 ▲
25 väst GRJ	Snöröjning	L03 GRJ	2024-02-13 06:38:58	Done	15 ▲
E401 Norr JPB WOOD	Snöröjning	L04 JPB Wood	2024-02-13 02:25:14	Done	13 ▲
Kombi02 Ljatorp Fornahässe2	Snöröjning	L05 Fornahässe 2	2024-02-13 05:53:55	Done	11 ▲



Layers

Road weather

Drawn map objects

Vehicle All vehicles

Remove all

Map tools

Road data

Detach

<https://primo.bmsystem.se/Skanska/Callout#>

APSE Highways, Street Lighting & Winter Maintenance Seminar 2024

Route:
10g Salting MG_2 UPDATED

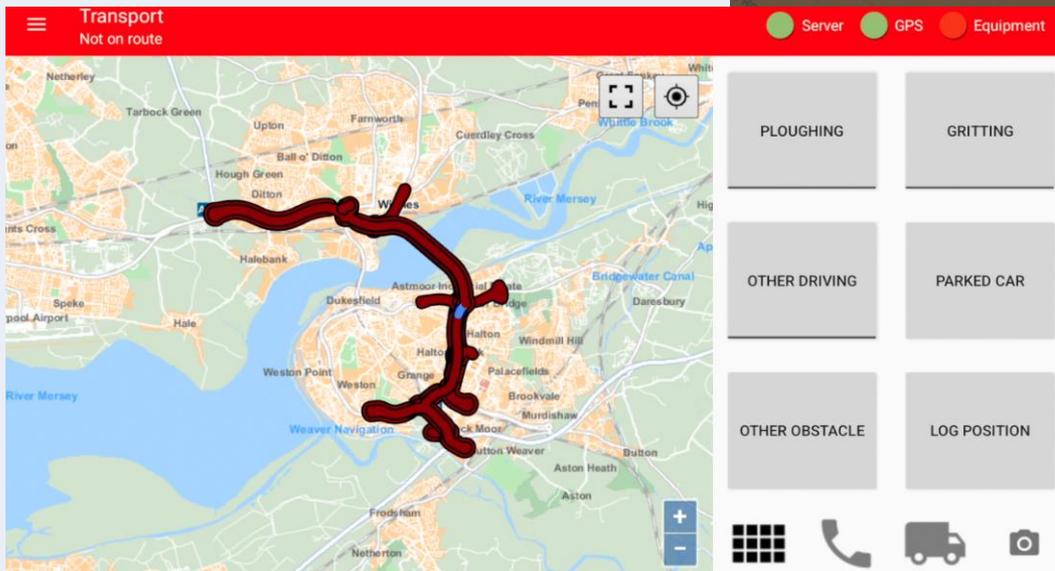
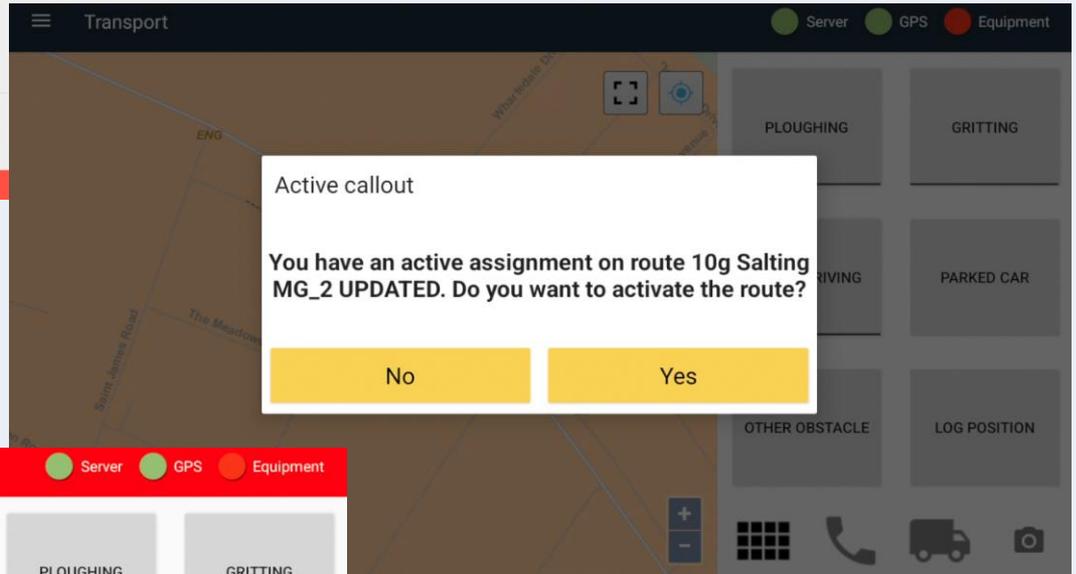
Received:
2024-03-11 15:09:44

Status:
New

Action:
Salting

ACCEPT DECLINE

On duty



Start Vehicle history Activities Routes Reports Action points Zones Callout Administration Address history Order Order Invoicing Ljungby tempdemo

Callouts Maintenance packages

Scenarios

Current callouts

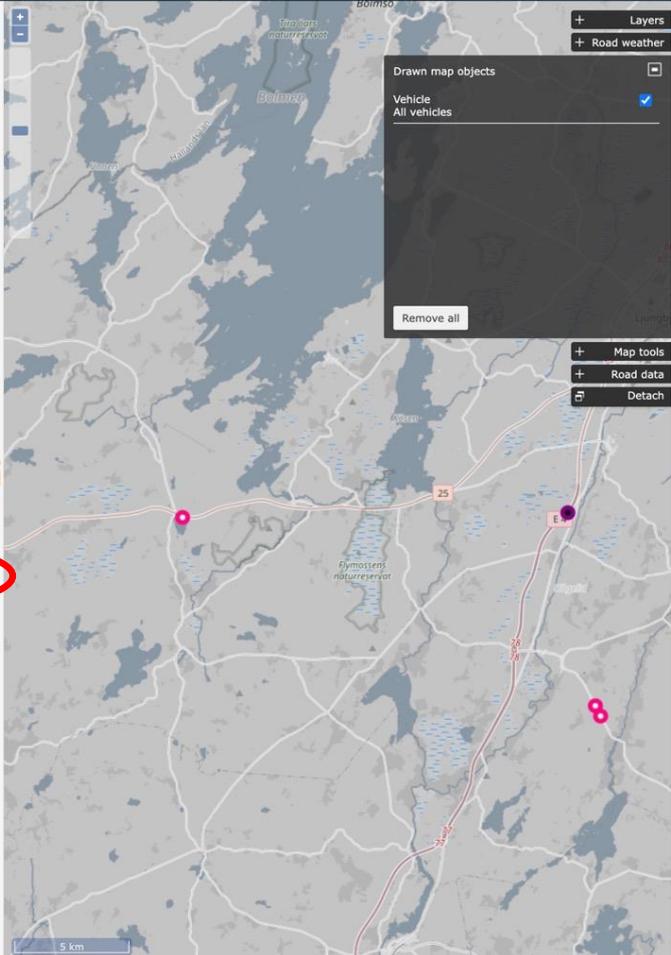
Coming callouts

Search

From: 13/02/2024 00:00

To: 14/02/2024 00:00

Name	Action	Started	Deviations	Comment	
Sandning 05 kl 4-5 FRN Erik	Saltning	Plog10/Sand05 Fornahässe Erik	2024-02-12 16:14:16	Done 8 ▲	
Sandning 07 kl 4-5 FRN Jens	Saltning	Plog11/Sand07 Fornahässe Jens	2024-02-12 16:15:33	Done 12 ▲	
Sandning 02 kl 4-5 Älmby, Frank	Saltning	Sand02 Älmby Frank	2024-02-12 14:38:33	Done 5 ▲	
Sandning 04 kl 4-5 LS, Lexander	Saltning	Sand04 Lexanders grav	2024-02-12 17:20:41	Done 7 ▲	
Prognosbeslut - 2024-02-12 16:12:47	Snöröjning	2024-02-11 23:00:00	104 ▲	salta plogrundan	
Route	Action	Vehicle	Changed	Status	Deviations
Kombi04 omlid Toftaholm GRJ	Snöröjning	Kombi GRJ 3	2024-02-13 06:00:25	Done	21 ▲
E403 Markaryd Vidigsson	Snöröjning	L01 Vidigsson	2024-02-13 01:03:33	Done	18 ▲
Kombi01 v120+omledning mitten Fornahässe1	Snöröjning	L02 Fornahässe 1	2024-02-13 05:25:13	Done	2 ▲
25 väst GRJ	Snöröjning	L03 GRJ	2024-02-13 06:38:58	Done	15 ▲
E401 Norr JPB WOOD	Snöröjning	L04 JPB Wood	2024-02-13 02:25:14	Done	13 ▲
Kombi02 Ljatorp Fornahässe2	Snöröjning	L05 Fornahässe 2	2024-02-13 05:53:55	Done	11 ▲



Layers

Road weather

Drawn map objects

Vehicle All vehicles

Remove all

Map tools

Road data

Detach

5 km

<https://primo.bmsystem.se/Skanska/Callout#>

Start Vehicle history Activities Routes Reports Action points Zones Callout Administration Address history Order Order Invoicing
Ljungby tempdemo BMTST

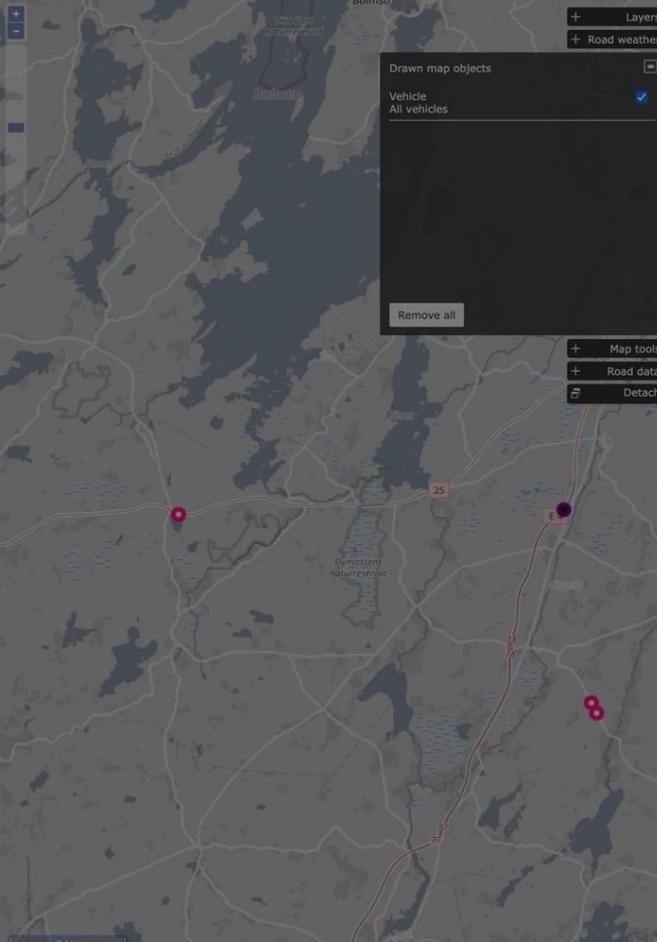
Callouts Maintenance packages

- Scenarios
- Current callouts
- Coming callouts
- Search

From: 13/02/2024 00:00

To: 14/02/2024 00:00

Name	Action	Started	Deviations	Comment		
Sandning 05 kl 4-5 FRN Erik	Saltning	Plog10/Sand05 Fornahässe Erik	2024-02-12 16:14:16	Done		
Sandning 07 kl 4-5 FRN Jens	Saltning	Plog11/Sand07 Fornahässe Jens	2024-02-12 16:15:33	Done		
Sandning 02 kl 4-5 Älmy, Frank	Saltning	Sand02 Älmy Frank	2024-02-12 14:38:33	Done		
Sandning 04 kl 4-5 LS, Lexander	Saltning	Sand04 Lexanders grav	2024-02-12 17:20:41	Done		
Prognosbeslut - 2024-02-12 16:12:47						
Route		Action	Vehicle	Changed	Status	Deviations
Kombi04 omlid Toftaholm GRJ		Snöröjning	Kombi GRJ 3	2024-02-13 06:00:25	Done	21 ▲
E403 Markaryd Vidigsson		Snöröjning	L01 Vidigsson	2024-02-13 01:03:33	Done	18 ▲
Kombi01 v120+omledning mitten Fornahässe1		Snöröjning	L02 Fornahässe 1	2024-02-13 05:25:13	Done	2 ▲
25 väst GRJ		Snöröjning	L03 GRJ	2024-02-13 06:38:58	Done	15 ▲
E401 Norr JPB WOOD		Snöröjning	L04 JPB Wood	2024-02-13 02:25:14	Done	13 ▲
Kombi02 Liatorp Fornahässe2		Snöröjning	L05 Fornahässe 2	2024-02-13 05:53:55	Done	11 ▲



Layers

Road weather

Drawn map objects

Vehicle

All vehicles

Map tools

Road data

Detach

Loading

Generating report...
Wait here to receive the report once it is finished, or close this dialogue and download it later from the report view



AutoSave Callout_deviation_report_15095.xls - Compatibility Mode

Home Insert Draw Page Layout Formulas Data Review View Tell me

Verdana 7 A⁺ A⁻ Wrap Text Merge & Centre

Normal Bad Good Neutral

Insert Delete Format

Auto-sum Fill Clear Sort & Filter Find & Select Analyse Data

C16 Alexander

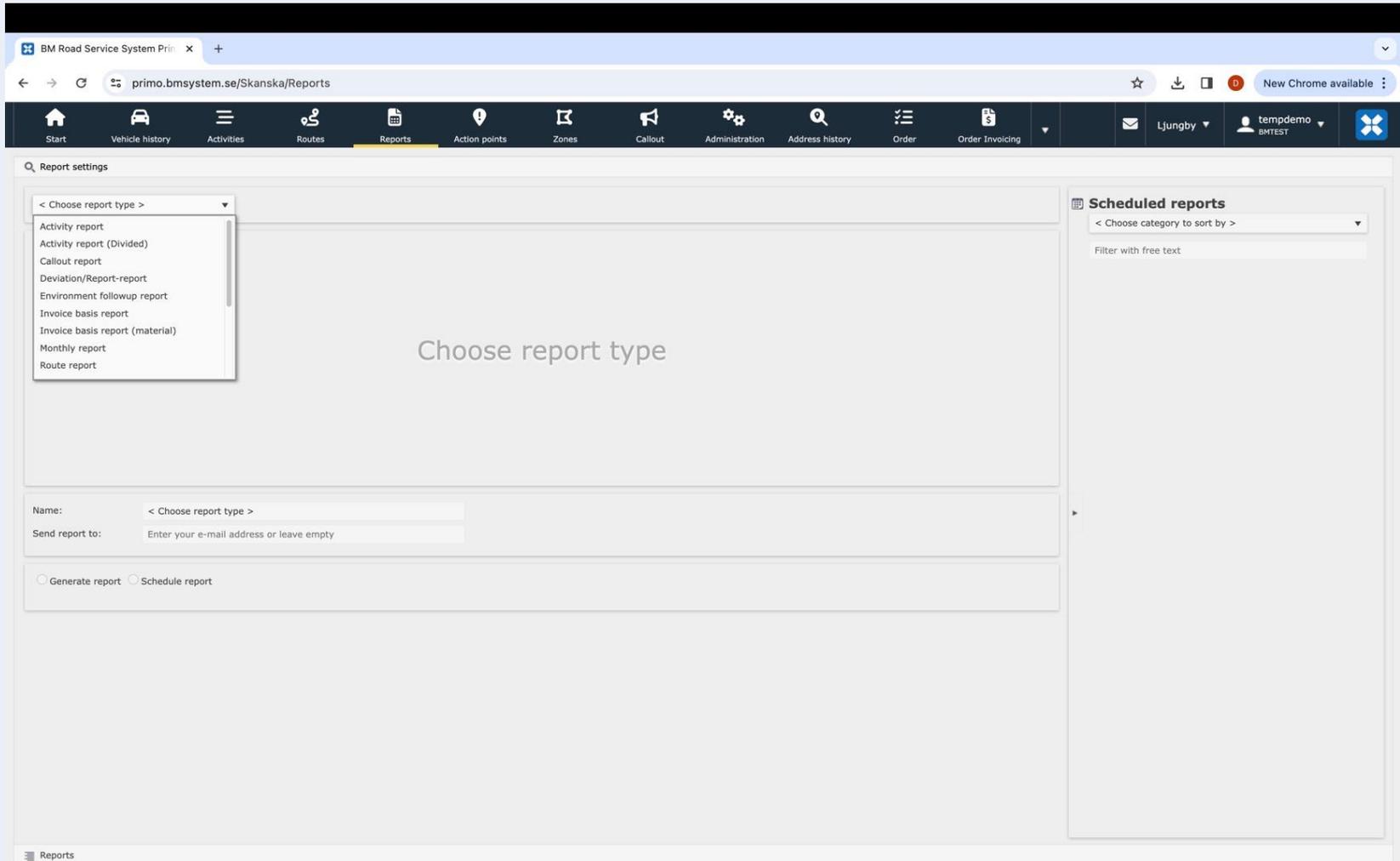
1					
2					
3					
4					
5					
6					
7	Översikt				
8	Datum	Scenario	Meddelande		
9	2024-02-12 00:00:00	Prognosbeslut - 2024-0	salta piogrundan		
10	Utkallningar				
11					
12	Fordon	Förare	Rutt	Uppringd	Accepterad
13	Kombi GRJ 3	John Eriksson	Kombi04 omlad Toftahc	2024-02-12 16:12:47	2024-02-12 16:13
14	L01 Vidigsson	Alexander	E403 Markaryd Vidigssc	2024-02-12 16:12:47	2024-02-12 16:13
15	L02 Fornhässele 1	Oscar	Kombi01 v120+omledn	2024-02-12 16:14:49	2024-02-12 16:15
16	L03 GRJ	Lennart andersson	25 väst GRJ	2024-02-12 16:12:48	2024-02-12 16:13
17	L03 GRJ	Niclas Holmqvist	25 väst GRJ	-	-
18	L04 JPB Wood	Peter	E401 Norr JPB WOOD	2024-02-12 16:12:48	2024-02-12 16:13
19	L05 Fornhässele 2	Ebba	Kombi02 Liatorp Fornah	2024-02-12 16:16:49	2024-02-12 16:16
20	L06 Säkab	Sten-Åke	25 Öst SÄKAB	-	-
21	L06 Säkab	säkab	25 Öst SÄKAB	2024-02-12 16:12:48	2024-02-12 16:13
22	L08 Andreas Eliasson	Andreas Eliasson	E402 Mitt Andreas Elias	2024-02-12 16:12:48	2024-02-12 16:13

Upprättat av: tempdemo



Översikt Kombi GRJ 3 L01 Vidigsson L02 Fornhässele 1 L03 GRJ L04 JPB Wood L05 Fornhässele 2 L06 Säkab L08 Andreas Eliasson

Ready Circular References Accessibility: Unavailable 100%



The screenshot shows a web browser window with the URL `primo.bmsystem.se/Skanska/Reports`. The browser's address bar and navigation icons are visible at the top. Below the browser, a dark navigation bar contains icons for various system functions: Start, Vehicle history, Activities, Routes, Reports (highlighted), Action points, Zones, Callout, Administration, Address history, Order, and Order Invoicing. On the right side of this bar, there are user-related elements: an envelope icon, the name 'Ljungby', a user profile icon for 'tempdemo', and the role 'BMTTEST'. The main content area is titled 'Report settings' and features a large central text prompt 'Choose report type'. To the left of this prompt is a dropdown menu with the following options: Activity report, Activity report (Divided), Callout report, Deviation/Report-report, Environment followup report, Invoice basis report, Invoice basis report (material), Monthly report, and Route report. Below the main area, there are input fields for 'Name:' (with a dropdown) and 'Send report to:' (with a text input). At the bottom, there are radio buttons for 'Generate report' and 'Schedule report'. On the right side of the main area, there is a 'Scheduled reports' section with a dropdown for 'Choose category to sort by' and a text input for 'Filter with free text'. A 'Reports' tab is visible at the bottom left of the page.

Selective Routing Users – Sweden – 8000 vehicle connections

❖ Skanska 3 areas

❖ Svevia 3 areas - will expand 24/25

“Our calculated and verified reduction potential of salt and emissions (CO₂) are 15-25% throughout the year for salting actions.”

❖ Terranor start 24/25 in Approx. 3-5 areas

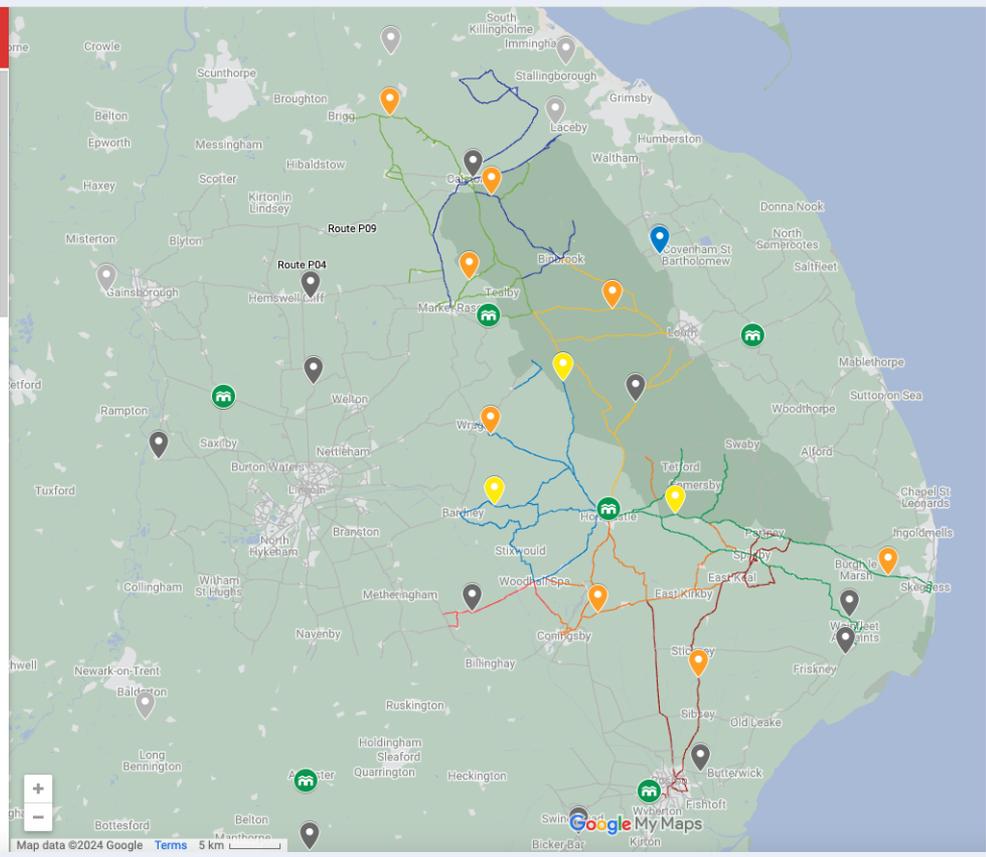
Selective Routing Users – Norway – 2000 vehicle connections

- ❖ Mesta AS 23/24 9 areas
will expand 24/25 to >40 areas

Future Collaborations – Selective Routing Trial 2024/25



Lincolnshire
COUNTY COUNCIL
Working for a better future



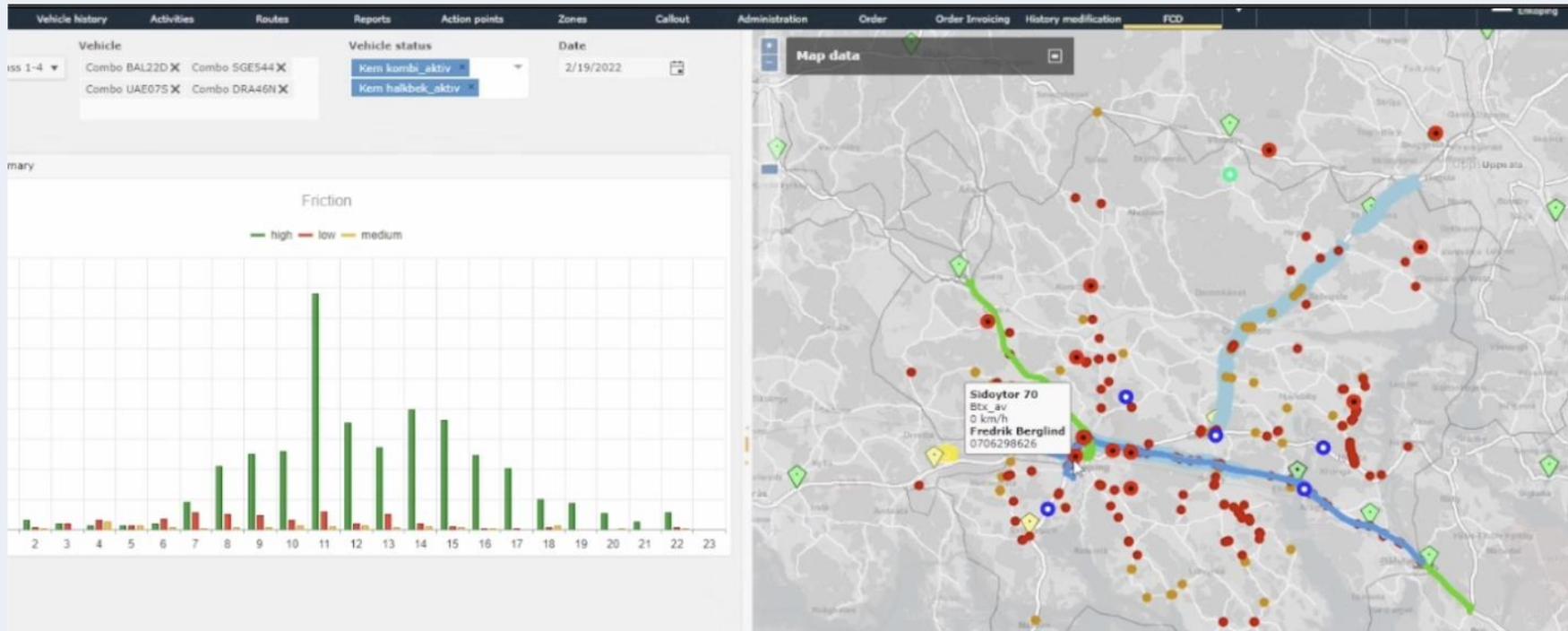
Lincolnshire route net...
Seren Pedersen
127 views

- Route P09
- Route P20
- Route P23
- Route P28
- Route P24
- Route P22
- Route P21
- Route P34

Map data ©2024 Google Terms 5 km

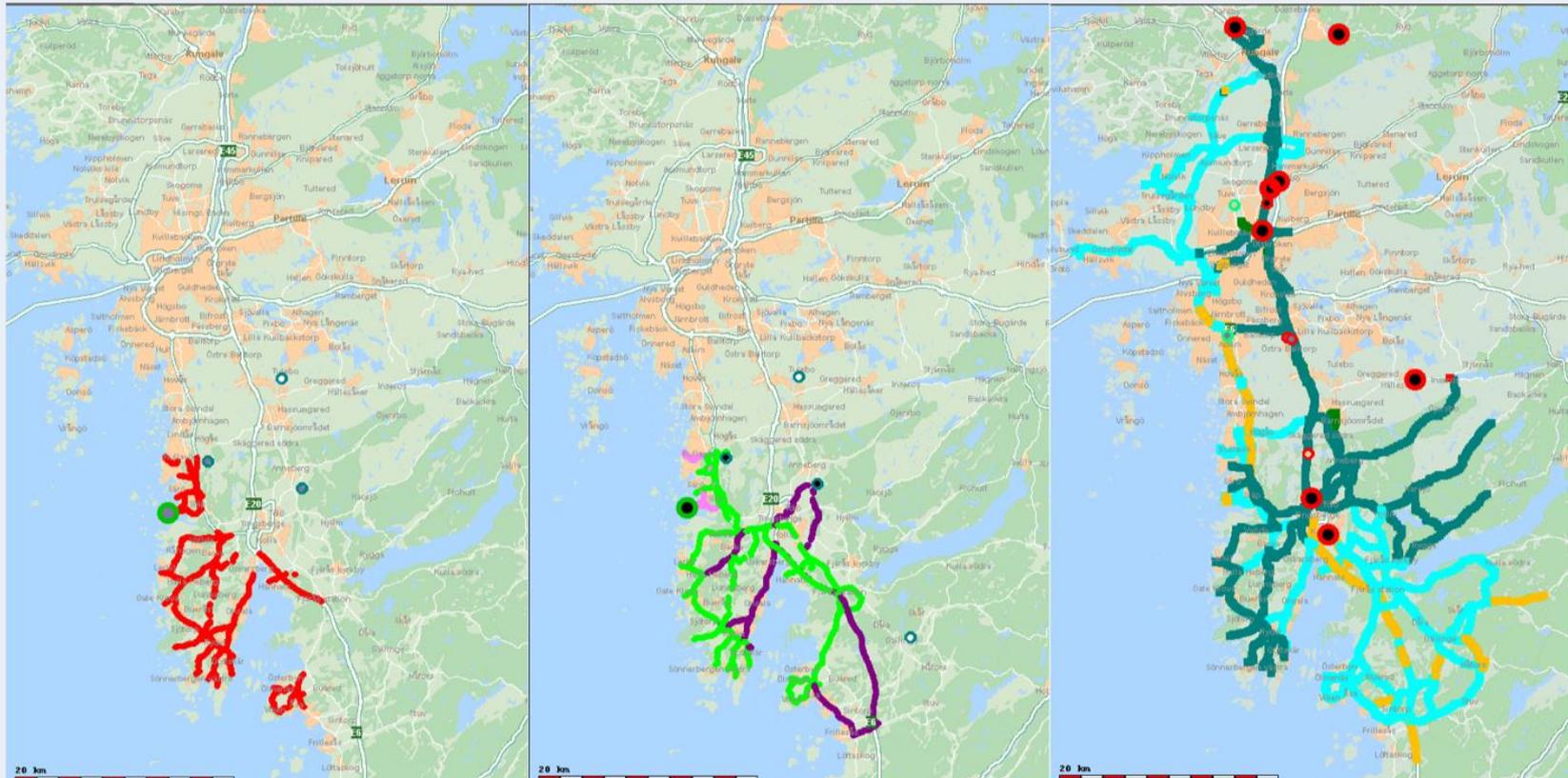
Creating efficiencies whilst improving performance

Full Integration



- Friction
- RWIS
- Mobile sensor
- Forecast
- Live GPS Tracking
- Treatment data
- CCTV

Future Modules – Dynamic Routing



Forecast

Outcome Routes (2)

Original Routes (5)

Intelligent Digitised Decision Management

- Better informed decisions
- Audit trail across all data sets
- Efficient use of labour/vehicles
- Co2 reductions
- Safer roads
- Cost savings
- User friendly
- Salt conservation

Thank you for your attention

Debbie Cavanagh
UK Sales Manager

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07717 212313

WWW.SAFECOTE.COM