Vägverket

Products and Services Catalogue

Ask us at Road Data.
We know.

Right now there are 47 774 metres of pedestrian street in Sweden

Road Data – a prerequisite for correct decisions

Data on the cover is what applied on August 18, 2007

Road data from the Swedish Road Administration

Sometimes for support, sometimes a pure necessity

At the Swedish Road Administration (SRA) there is a vast amount of knowledge about roads in the country. Most of this information is found within the area of Road Data operations. We are the ones who collect, operate, and administer the databases that store digital road information.

We know how many 50 km/h road stretches exist in Sweden, which road a lorry weighing ten tonnes can take, and the region with the most central barriers (expressed in meters). Our operations started back in the 1970's and are located throughout the country, from north to south.

To help us collect and update the data, we receive valuable assistance from our co-partners: Swedish local authorities, the National Land Survey of Sweden, and the forestry industry.

ROAD DATA – A PREREQUISITE FOR CORRECT DECISIONS

For many, road data is important input when making decisions, while for others it is a basic necessity to be able to carry out their operations.

Under the Road Data umbrella organisation is the NVDB (National road database), along with other general data related to the entire road network. Also found here are subject databases such as regional features, traffic features, bridge features, and road surfacing.

On the following pages you can see the products and services we offer and what to do to get access to them. We also give some brief examples of how our co-partners and other players use road data.

WOULD YOU LIKE TO KNOW MORE ABOUT ROAD DATA?

Visit www.vv.se/nvdb or the SRA's intranet. All address details are given on the back cover of this pamphlet. We welcome any questions you might have.

Our products

Road Data has primarily two types of products: the NVDB Road network and features associated with it. Both of these are based on information in SRA databases and source systems. All input data comes directly from the SRA or from our co-partners.

NVDB ROAD NETWORK

NVDB Road network describes the roads in Sweden both in geometrical terms (where the road is located in reality) as well as in terms of topology (how the road network hangs together). NVDB Road network includes all roads in the country where motor vehicles are permitted to drive, with the exception of tractor roads. Cycle paths will also be gradually included as local authorities and other road managers continue to provide this data.

FEATURES

A feature is road or traffic data that is related to the road network along a stretch of road or at a specific point. The feature can be a physical object or a property – for example a road closure barrier or the maximum speed permitted.

Features are divided into:
• **NVDB features** – which all road managers are obliged to collect.
• **SRA features** – which the SRA is obliged to collect. Applies only to the state road network.
• **Other types of features** – features collected from other source systems within the SRA. The NVDB is also designed so that it is able to accept further types of features.

If you would like to find out more about the various options, contact our Customer Services.

The list on the next few pages shows the attributes we have today. More detailed information can be found at www.vv.se/nvdb, which is where you will also find information about the status of the different features and their coverage.

State road network	Municipal road network	Private road network
	NVDB Road network	
	NVDB features	
SRA features		
Bridge and tunnel data		
Traffic data		

NVDB Road network includes all categories of road manager: national, municipal and private. The table shows the road network covered by these features.

NVDB features

A set of basic road data, which all data suppliers are obliged to report, listed here in accordance with the NVDB Specifications on Content document 5.0. Further information is available at www.vv.se/nvdb.

Types of administration features

Operations and maintenance subsidy	Road for which an operations and maintenance subsidy is received from the SRA in accordance with the Ordinance on State Subsidies for Private Road Management (SFS 1989:891), or from a municipality
Street name	Official uniquely identifiable street name.
Road manager	Person or organization responsible for road management.
Road number	Road number for public roads.
Other road name	Non-official identification of a road.

Types of traffic regulation features

Limited gross weight	Traffic regulation concerning the limitation of gross weight published as general directions, or other official decisions.
Limited vehicle width	Traffic regulation concerning the limitation of vehicle width published as general directions or other official decisions.
Limited vehicle length	Traffic regulation concerning the limitation of vehicle length published as general directions, or other official decisions.
Limited axle/tandem load	Traffic regulation concerning vehicles with a high axle load and/or double-axle load and/or triple-axle load published as general directions, or other official decisions.
Bearing capacity	Permitted bearing capacity class, normally applied to roads according to a county's compiled regulations for public roads.
Roundabout	Traffic regulation concerning roundabouts published as general directions.
Prohibited direction of travel	Information about a prohibited direction of travel on a road stretch issued via general directions or as a result of a physical road design.
Prohibited turn	Traffic regulation concerning a prohibited turn at an intersection.
Traffic prohibited	Traffic regulation concerning prohibited traffic.
Pedestrian street	Traffic regulation concerning pedestrian street.
Residential area	Traffic regulation concerning a residential area.
Speed limit	Traffic regulation concerning the highest permitted speed of travel for motor vehicles.

Restriction for transport of hazardous material	Traffic regulation concerning restrictions on the transport of hazardous goods.
Environmental zone	Traffic regulation concerning environmental zone published as general directions.
Motorway without a central reserve	Traffic regulation concerning motorways without a central reserve.
Motorway	Traffic regulation concerning motorways.
Built-up area	Traffic regulation concerning populated areas published as general directions.

Types of road technical features

Bridge and tunnel	Structures that permit traffic over or under waterways, valleys, roads, buildings, railways and cycle paths, or through mountains.
Ferry route	Road connection across water by means of a drive-on ferry. Can be public (free of charge) or private.
Height restriction less than 4.5 metres	Height obstruction in the form of a structure or other construction that reduces free clearance to a distance less than 4.5 metres.
Grade-separated intersection	Grade-separated intersection between two roads in the NVDB's road network.
Wearing course	Road wearing course. (Information concerning whether the road is paved or gravel.)
Boom	Road boom, gate or other moveable obstruction whose purpose is to prohibit traffic on a road.
Road width	Width of the roadway. For a paved road this refers to the distance between the edges of the paved surface or edge supports. Otherwise, this refers to the bearing capacity width, that is to say the part of the road that fulfils the specified bearing capacity.

Special types of features for transportation on forestry road network

Accessibility for certain vehicle combinations	A road's alignment classified according to the system drawn up by the forest industry in Sweden.
Turn possibility	The possibilities that different types of vehicle combinations have, resulting from the intersections design.
Accessibility	A road's accessibility for different types of vehicle during different times of the year.
Turnround possibility	Presence of a loop, space, or turning bay which makes it possible for a vehicle to turn around.

Other NVDB features

Functional road class	A classification based on how important a road is with respect to facilitating connections within the entire road network.
Recommended road for hazardous goods	Indicates if a road is recommended for the transport of hazardous goods by a local county administrative board
Feaure lineage	A description of the process that generated and handled feaure data.
Reference line lineage	A description of the process that generated and handled reference line data (road geometry).
Reference line representation	Description of the part of the carriageway that the reference line is intended to depict.
Qualitative requirement class	The sub-division of the road network to enable differentiated qualitative requirements for different parts of the road network.

SRA features – compulsory road data for the state road network

Maintenance class	Targeted standard in compliance with the "Rules for maintenance and operations", Publication 1993:29.
Operations and Maintenance area	Geographical area used in connection with the procurement of maintenance and operations services.
Feature lineage	The process that generated and handled the data for a feature.
Level (railway) crossing	Level crossing. Both the tracks for regular scheduled train traffic and industrial zone tracks are registered.
Municipality	Municipal administration area with number and name according to Statistics Sweden's classification.
Intersection	All intersections between state roads and their nodes.
Official name	Official name of intersections according to the current "List of roads" for each county, published by the County Administrative Board.
Median barrier	Median barrier that prevents vehicles from entering the opposite lane or carriageway with oncoming traffic.
Central reserve	Road marking that separates carriageways for traffic travelling in opposite directions.
NRLnetwork	Road network where areas of national interest as regards communications can arise in connection with new road construction and the re-construction of roads.

Overtaking prohibited	Road stretch where overtaking is prohibited, where "overtaking prohibited" road signs are set up until the point where an "end of overtaking prohibited" road sign is erected.
Reference object	Reference object where co-ordinates are used to specify the position.
Region	Geographical area to which the road belongs. The SRA has divided the country into 7 regions.
Climbing lane	Road stretches where the width is increased at steeper grades to facilitate access and mobility.
Corridor	Division of the road network used for economic planning and monitoring purposes.
Wildlife fence	High woven wire fence intended to make it difficult for wildlife animals to enter the road.
Winter Specifications 2003	Classification of the winter maintenance standard in contracts negotiated for this purpose from 2003 onwards in accordance with the "WINTER 2003" specifications.
SRA - One-way	Information concerning the permitted direction of travel on a road stretch if there are prohibitory / mandatory regulatory road signs set up to indicate the direction of travel.
RWiS	Road Weather Information System (RWiS) field stations along the roadside.
SRA - wearing course	The type of wearing course (surfacing) on the road.
Road strengthening	The year works were carried out on a stretch to strengthen or upgrade an existing road.
Road category	The "status" of a road. The road category is divided into European and national roads, primary, secondary and tertiary county roads.
Year of construction	The year new construction was carried out on the road, i.e., when the road stretch was built.
Road type	The road type as specified in a decision by the Director-General dated June 20, 2001, registration number 16783, concerning types of road at the SRA and adapted somewhat to data already included in the road databank.

Other types of features – from other source systems at the SRA

Traffic data features

Traffic	Traffic volume (AADT – Average Annual Daily Traffic) in reference to motor vehicles. The AADT presented is the traffic volume for the entire stretch based on 2 to 6 surveys conducted on weekdays and weekends at a randomly selected point on the stretch.

Bridge and tunnel features

Structure	A structure that can be compared to and almost placed on an equal footing with a building. A structure could, for example be a bridge or a tunnel. It can have one or several passages which can consist of an overpass, underpass, through passage or adjacent passage.
Overpass	The overpass describes the passage over/on a structure.
Underpass	The underpass describes the passage under a structure (under an overpass).
Through passage	The through passage describes the passage through the structure.
Adjacent passage	The adjacent passage describes the passage next to or alongside a structure.

Would you like to use road data?

This is what to do

There are two ways to access road data: have it delivered via www.vv.se/lastkajen or view the data free of charge via NVDB on the Internet. In order to be able to obtain data via "Lastkajen" you must have signed a contract, and to be able to view the data you need a user name. Whatever option you choose, contact our Customer Services for assistance.

Obtain road data

DELIVERY

"Lastkajen" is an Internet based application that makes it possible to order and obtain road data from the NVDB and other SRA databases. All deliveries presuppose a contract.

"Lastkajen" is accessed at www.vv.se/lastkajen. This is where you can either obtain pre-packaged standard products or customised products to suit your own needs. The products are delivered in four different file formats:

*.nvd – an in-house format that requires "Slussen" (a NVDB technical platform application) to be able to be used

*.xml – Swedish standard SS637004, which requires import functionality based on the standard's xml schema

*.shp – shape, a file format that can be used when working in an ESRI environment. This is an exchange format that most GIS applications can read. The format is simple for those who, for example, need snapshots for producing maps.

*.mdb – personal geodatabase, a database that can be used when working in an ESRI environment, and which makes it possible to work with complex relationships.

HOW IT FUNCTIONS

There are pre-packaged standard products for the kind of data mostly in demand. These are placed in the "Lastkajen's" file stock at regular pre-defined intervals.

You choose a file format, geographical area (county or municipality) and receive NVDB Road network and all attributes. This is where all the municipalities and counties in Sweden and their road networks and attributes are stored, ready for collection, along with ISA speeds and all the speed limits on the entire road network. "Lastkajen's" file stocks are available in four file formats (see previous page)

and the stock is updated every month.

If you want a special product, we use a selector function to make a choice based on your request, for example in reference to geographical area, data, coordinate system, history or changes. The options can vary somewhat depending on the different file formats.

At the "Lastkajen" home page a detailed description is given of all the attributes, available for anyone to view. Road Data can also in certain cases deliver processed data in different file formats for you to collect at "Lastkajen".

View road data

DELIVERY

NVDB on the Internet is a free of charge service that makes it possible to look at road data in a map view. The address is www.vv.se/nvdb. Presented here is the NVDB attributes and the compulsory SRA attributes. A user name and password is required to view this data. Contact Customer Services for assistance.

HOW IT FUNCTIONS

You choose an area and zoom in to enlarge it to an appropriate size. After this you can choose to look at such things as road name, street name and some forty odd attributes, one at a time.

You will see details related to every NVDB attribute, for example, how widespread it is or the features that apply at a specific place. This is particularly useful if you are unaccustomed to GIS tools, but are looking for a simple way to see the road network and different attributes in an area. NVDB on the Internet will give you a good visual idea about what it looks like.

There is also a function here that makes it possible to report any errors. Every month Road Data receives hundreds of deviation reports that are handled quickly.

Information on how to contact our Customer Services is printed on the back cover of this pamphlet. You can also find our opening hours there.

WHAT OTHERS DO

Examples of what road data can be used for

Road data can be put to a large number of uses. Here are some examples
of how digital information is used in practice by different players.

Show the best cycle route

CUSTOMER: City of Gothenburg

SERVICE/PROJECT/USE:
Travel planner for cyclists

SHORT DESCRIPTION: The travel planner is soon to be launched at the trafiken.nu website. The cyclist enters the starting point and destination into the planner and indicates a few choices, such as choosing between the fastest or most suitable route. The planner then displays a recommended travel route with the aid of a map and text. The planner bases its recommendation on the same Gothenburg road network that formed the basis for the data supplied by the City for the NVDB. This road network is linked to a cycle path network through creating nodes at the intersecting points.

One attribute that the planner uses is functional road class. This enables the planner to steer cyclists over to calmer streets in places where there is no cycle path.

MORE INFORMATION: www.trafiken.nu

MISCELLANEOUS:
This service has aroused widespread interest, both in Gothenburg and in neighbouring municipalities.

More efficient school transportation planning

CUSTOMER: Luleå Municipality

SERVICE/PROJECT/USE:
School transportation planning

SHORT DESCRIPTION: Luleå is one of many municipal authorities that use road data from the SRA for planning school transportation. Features of interest in this context include speed limit, road manager, different traffic restrictions, and bearing capacity. A special planning tool provides a good overview of the road network in the form of a map or satellite image.

This enables local authorities to analyse whether a child is entitled to school transportation, decide on the location of bus stops, as well as plan routes. The municipality can also use road data to measure the distance each pupil has to the closest bus stop – not just as the crow flies but also based on cycle paths or "calm" streets.

MORE INFORMATION: www.lulea.se

MISCELLANEOUS: Luleå Municipality is one of our co-partners that supplies us with input data.

Facilitate planning of emergency response

CUSTOMER: Räddningstjänsten i Dalarna

SERVICE/PROJECT/USE:
Strategic planning

SHORT DESCRIPTION: Räddningstjänsten i Dalarna [Emergency Services in Dalarna] uses SRA road data in its strategic work – both for planning purposes and for compiling statistics. Using digital information makes it possible, among other things, to calculate the time it takes different vehicle types to drive specific distances. This is important not least of all when it comes to being prepared to fight forest fires, the placement of equipment and emergency routes. Räddningstjänsten i Dalarna uses NVDB Road network and features such as speed limit, road width, built-up area, recommended route for hazardous goods, surfacing, bearing capacity class, etc and is planning to add its own features as well.

MORE INFORMATION: www.dalamitt.se

MISCELLANEOUS: Coordinates are set for all the deployments carried out by Räddningstjänsten which are also checked against response times and population density.

The map shall correspond with reality

CUSTOMER:
National Land Survey of Sweden

SERVICE/PROJECT/USE: Input for maps

SHORT DESCRIPTION: The National Land Survey of Sweden is one of our co-partners and suppliers of input data. Through the basic data supplied by the National Land Survey, the NVDB receives updated information about the private road network. Any changes in the state and municipal road networks are then retrieved from the NVDB along with certain features (for example, road manager, road width, reference line origin, road number and bearing capacity).

The data is processed before being stored again in the National Land Survey's basic data. It is essential that this basic data is current, not least of all because the National Land Survey has been contracted to produce up-to-date general printed maps and Geografiska SverigeData (GSD) (geographical Swedish databases).

MORE INFORMATION:
www.lantmateriet.se

MISCELLANEOUS: GSD-Property Map, GSD-Terrain Map and GSD-Road Maps are a few of the maps produced by the National Land Survey of Sweden.

Best road for timber transports

CUSTOMER: Forestry industry

SERVICE/PROJECT/USE:
The crowning choice

SHORT DESCRIPTION: An important part of the forestry industry's timber provision is correct transport distances. These are required both for planning and managing transports as well as to be able to calculate payments to the transport carrier. In order to make the work on calculating distances more efficient, the forestry industry is in the process of producing "the crowning choice", a standard for how to choose the best road from the forest to the factory. Timber transports are heavy and there are many factors to be taken into consideration when choosing a route. A special tool is used to divide the road network into homogeneous segments that are assigned a "resistance" factor which is based on road width, functional road class or bearing capacity. The best road is the one with the lowest "resistance".

MORE INFORMATION: www.sdc.se

MISCELLANEOUS: All forest roads are included in NVDB Road network.

Maintenance and operation of forest roads

CUSTOMER: Several forestry companies

SERVICE/PROJECT/USE:
Planning system for maintenance and operations

SHORT DESCRIPTION: The large forestry companies in Sweden are also major road managers. These companies use different data systems for an overview of existing roads and be able to efficiently plan maintenance and operations. Many have modern systems that are based on information obtained from SRA Road Data operations.

The systems are used for both long and short-term planning. When it is time to upgrade a road, a description, map and total road length can be obtained quickly and easily as basic input for the procurement. Sveaskog is one company that took advantage of the possibility to add its own attributes to the system; for example, "remedial road measures", which shows what has been done and the maintenance that will be required.

MORE INFORMATION: www.skogforsk.se

MISCELLANEOUS: For the forestry companies that supply the NVDB with data, their own systems also function as updating tools – the companies update NVDB data in their own system and then transfer the changes to the NVDB.

ISA requires correct road data

CUSTOMER: Sepab

SERVICE/PROJECT/USE: ISA (Intelligent Speed Adaptation) equipment

SHORT DESCRIPTION: Sepab has developed an ISA system called ExyLimit. At present, this has been installed in about a thousand vehicles in Sweden. Most of these are buses, taxis, courier service vehicles, lorries and refuse collection trucks – vehicles used at work and driven by a variety of drivers.

Sepab collects NVDB Road network speed limit attributes every three months. The system is GPS based and registers the speed of the vehicle as well as the posted speed limit where the vehicle is being driven. The speed limit is shown on a display inside the car, and if the vehicle exceeds this, sound or light signals are used to warn the driver.

MORE INFORMATION: www.sepab.se

MISCELLANEOUS: ISA systems have been shown to reduce fuel costs while entailing less wear and tear on cars and less stress for drivers. Other examples of ISA systems based on NVDB data are SecureTraffic (www.securetraffic.se) and IMITA (www.imita.se).

Intermodal travel made easy

CUSTOMER: Samtrafiken in Sweden

SERVICE/PROJECT/USE: Travel planners ResPlus and ResRobot, two tools that make it easy to plan a journey using different public and private modes of transport.

SHORT DESCRIPTION: Samtrafiken co-ordinates public transport in the country with the objective of making it easier to use train, bus, ferry, subway and tram public transport services. An important part of Samtrafiken's work is to facilitate transfers between different modes of transport and transport companies.

Up-do-date timetables and descriptions of stops/stations for all transport modes are a prerequisite for being able to plan travel by public transport. It is thanks to SRA road data that Samtrafiken will be able to give exact information about the location of bus stops along the road network.

MORE INFORMATION: www.resplus.se or www.resrobot.se

MISCELLANEOUS: ResRobot can also be accessed via the SRA service "Läget på vägarna" [Situation out on the road].

Intelligent driver support increases road safety

CUSTOMER: Navteq, Scania, Volvo, Michael L Sena Consulting, Triona, Appello and the SRA.

SERVICE/PROJECT/USE: SOLVI – Safe Operation for Large Vehicles Initiative – a research and development project that is run within the framework of the IVSS (Intelligent Vehicle Safety Systems) programme.

SHORT DESCRIPTION: SOLVI concerns different kinds of driver support, for example, for navigating through bends in the road at the right speed, for optimal driving on hills and for choosing the right road. The overall objective is to increase road safety. The SOLVI project focuses on the quality assurance of both static and dynamic road data – from when the data is initially collected until when the driver has access to up-to-date information in the vehicle.

The project will integrate SRA road data and data from other private sources in a detailed database with attributes aimed at heavy vehicles. Examples of attributes include vertical profile, road curvature and different types of restrictions that apply to heavy vehicles.

MORE INFORMATION: www.ivss.se

MISCELLANEOUS: The project was started in 2005 and will end in 2008.

Provide road users with a picture of the current situation

CUSTOMER:
Swedish Road Administration

SERVICE/PROJECT/USE: "Läget på vägarna" [Situation out on the road]

SHORT DESCRIPTION: "Läget på vägarna" is a free-of-charge Internet service published on the SRA home page. It provides information about the current traffic situation, for example road surface condition, traffic queues, road works, and several other factors that can affect your journey. The information is presented in the form of maps, text, and photo images. The service is based on a number of different support systems and organisations that continuously deliver data to the SRA's seven traffic information centres. In order to be able to place the information at the correct spot, NVDB Road network is used as a reference.

MORE INFORMATION: www.vv.se

MISCELLANEOUS: The use of "Läget på vägarna" has increased ten-fold over the past four years. Many users have found the service through the evening newspapers' web editions. It is most popular in the winter when many drivers want to know what the road surface conditions are.

In-house tool for detailed questions

CUSTOMER: SRA in-house

SERVICE/PROJECT/USE: Cubes

SHORT DESCRIPTION: One tool that uses attribute data only is an SRA cube. Anyone working at the SRA can use this to generate a search in different databases for an answer to detailed questions. This means being able to create your own specific tables or diagrams to quality control data or to obtain statistics about the road network, for example in connection with annual follow-ups. Using a cube allows you to put questions that combine data from different databases. A number of standard cubes have been produced, each of which has pre-selected data extracted from different databases.

MORE INFORMATION: The NVDB cube is aimed at those who work on the quality control of NVDB data. A typical question could be ″How many kilometres of road have a maximum speed of 30 km/h in my municipality?″.

MISCELLANEOUS: The information about roads cube often gets questions like ″How many metres of wildlife fence are there in County X along alternating 2+1lane roads?″. Both cubes can be used for administration and statistics, for example.

Questions and answers

What is the relationship between Road Data and NVDB?
Road Data is an umbrella for all digital road information at the SRA. NVDB (national road database) is part of the Road Data operations.
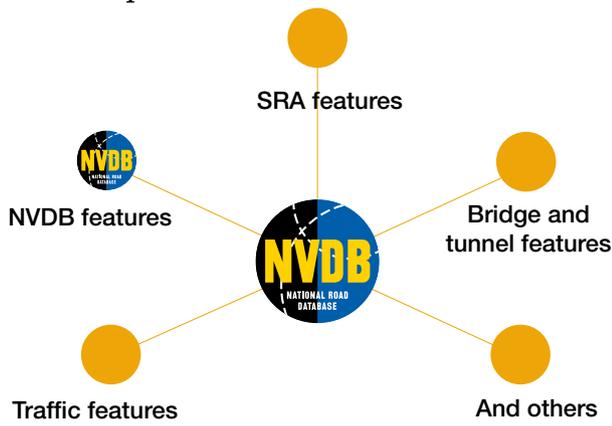
Where can I find all roads with a road number?
Visit www.vv.se. Choose "Road network" in the menu, and then "Surfacing on the map".

Who can tell me what the status of a road works project is? Is there any map to look at?
Visit www.vv.se. Choose "Road projects" and click on a county. This will give you a map with information about works in progress.

Where can I get information about the road surface condition? Visit www.vv.se and choose "Situation out on the road". Here you will find up-to-date information about the road surface condition, traffic queues and much else.

Who can answer questions about accessibility for large, heavy vehicles?
Contact Road Data Customer Services and we will help you. We know the free clearance for tunnels and bridges, where it is permitted to drive with hazardous goods, and much else.

Who knows how many 50 km/h stretches there are in a specific municipality?
We at Road Data know that. We can access information at the municipal, county, or national level about many different things, for example, wildlife fences, surfacing, road types, median barriers, and much more. You'll find more information about this on pages 5-9.

What do I do to get access to the NVDB on the Internet?
NVDB on the Internet is free of charge, but you need a password. Contact Road Data Customer Services, and we will help you.

Why can I not check out or in files from the NVDB web application?
Most often this depends on queues, in other words there are many people using the application at the same time. We recommend that you try later. If the problem still remains, get in touch with Road Data Customer Services.

Details on how to contact Road Data Customer Services are found on the back cover.

Road Data Customer Services
(NVDB is part of Road Data)
Opening hours: 8 a.m. – 4 p.m. Phone: +46 (0)243 759 00 E-mail: nvdb@vv.se
www.vv.se/nvbd
www.vv.se/lastkajen.se E-mail : lastkajen@vv.se

Vägverket