

STIFT SKOGSBRUKETS FORSKNING SINSTITUT,
SKOGFORSK
Att: daniel.noreland@skogforsk.se

Beslut om stöd

Stödmottagare: STIFT SKOGSBRUKETS FORSKNING SINSTITUT, SKOGFORSK
Org. nr: 817602-9786
Projektnamn: Northern Traffic Lights
ÄrendeID: 20370367
Diarienummer: REGAC - 358 - 2024

Beslut om stöd

Region Västerbotten beviljar STIFT SKOGSBRUKETS FORSKNING SINSTITUT, SKOGFORSK stöd för att genomföra projektet Northern Traffic Lights enligt ansökan inkommen 2024-10-07. Stödet uppgår till 15,00 % av faktiska kostnader och 15,00 % av total finansiering, dock med högst 851 337.

Beslutet har fattats med stöd av förordning (2003:596) om bidrag för projektverksamhet inom den regionala tillväxtpolitiken och i förekommande fall förordning (2015:210) om statligt stöd för att regionalt främja små och medelstora företag. Medel disponeras ur anslaget 1:1.

För stödet gäller allmänna villkor enligt Bilaga 1.

Beslutet kan inte överklagas.

Motivering till beslut

Region Västerbotten beviljar stöd av följande skäl:

Projektet ligger i linje med intensionerna i RUS prioritering 1 Västerbotten - en nytänkande och smart region och delprioritering 1.2 Digitalisering och nya lösningar.

Projektet uppfyller kraven fastställda i Region Västerbottens Agenda för hållbar regional finansiering och bedöms delvis bidra till de prioritetshöjande aspekterna Sammanhållen region och Hållbar regional tillväxt.

Projektperiod

2025-04-01 - 2028-03-31

Projektbeskrivning

Syfte: Titel: Northern Traffic Lights

Projektet bidrar med digitala verktyg för att minska slitaget på Aurora-områdets skogsbilvägar i samband med transporter.

Det enskilda vägnätet, utgörande 3/4 av alla vägar, är oundgängligt för transporter av naturresurser i Aurora-regionen. De flesta av dessa vägar anlades 1960-1990 och börjar visa spår av tidens tand. När vägstandarden försämras över tiden påverkas möjligheten att trafikera vägarna under olika årstids- och väderleksförhållanden. Trafik vid fel tidpunkt leder till snabb nedbrytning av vägen och ibland direkta skador med kostsamma reparationer som följd. I kölvattnet av ett ändrat klimat med upprepade tjällossningar och kraftiga regn ställs ökade krav på det åldrande vägnätet. Samtidigt är skogsbruket beroende av möjligheten att föra ut virke året om.

För att kunna planera transporter av människor och gods behövs tillförlitlig information om vägarnas bärighet. Idag samlas generell information om vägars tillgänglighet i Nationella vägdatabasen i Sverige. Tyvärr är data ofta bristfällig eller oprecis och informationen är statisk så tillvida att den beskriver vägarnas förväntade standard vid olika väderlek, utan hänsyn till det faktiska tillståndet vid en viss tidpunkt. Det behövs därför nya metoder för löpande prognoser av vägarnas tillgänglighet som underlättar intressenternas planering och minskar behovet av underhåll och reparationer. Intressenterna i fråga är väghållare, timmertransportörer, entreprenörer som arbetar med vägunderhåll, lokalboende, lantbrukare, samhällsservice och räddningstjänst.

Detta projekt involverar ett antal nordiska experter och forskare med spetskompetens, erfarenhet och verktyg på vägområdet. Vi vill ta fram ett verktyg för dynamisk tillgänglighetsbedömning i Aurora-området. De senaste åren har vi utvecklat och testat nya digitala modeller som kan hantera stora kartdatamängder. I projektet vill vi föra detta vidare genom att kombinera data från LIDAR (laserskanning), satellitfoton och andra fjärranalytiska metoder med data från lokala sensorer, som mäter väder och vind samt vägpåverkan. En ny webb-portal för presentation av prognoserna ska göra resultaten tillgängliga för användarna, med förenklad planering och minskade kostnader för väghållning som följd. Dessa kostnader räknas inte uteslutande i ekonomiska termer, utan har också en direkt koppling till miljöpåverkan, eftersom framställning och utförelse av det grus som vägunderhållet kräver är en energiintensiv verksamhet.

Huvudprojektet utförs i ett konsortium bestående av en rad nordiska parter från Aurora-området med olika ansvarsområden. Huvudfinansieringen söks från programmet Interreg-Aurora. Konsortiets huvudansökan finns bifogad. Innevarande ansökan om nationell medfinansiering avser de parter som är aktiva inom Region Västerbotten (Skogforsk och Sveriges lantbruksuniversitet) eller bidrar med nationell spetskompetens (Linnéuniversitetet).

De svenska projektpartnerna har en mångårig bakgrund av samarbete inom varierande projekt, både på organisations- och på individnivå. Kontakterna med intressenterna är också etablerade sedan gammalt. Vad beträffar huvudprojektets internationella samarbetspartner har vi sedan flera år tillbaka regelbundna kontakter inom olika samverkansgrupper.

Skogforsk kommer att ansvara för upphandling av väderstationer, sensorer och mätsystem samt tjänsten laserskanning av vägtyta. Detta utgör huvuddelen av den utrustning och de tjänster som är aktuella för projektdeltagarna omfattade av innevarande ansökan. SLU kommer att köpa in en fallviktsdeflektometer. LNU kommer att upphandla datahantering. För en detaljerad beskrivning av respektive parts behov av utrustning och tjänster, se bifogad budgetdokument, som beskriver varje parts insatser i huvudprojektet.

Vid omräkning från huvudansökans (Interreg Aurora) budget har en växelkurs mot Euron på 11,35 använts.

Vad projektets aktiviteter ska leda till för målgruppen på kort sikt:

On the short run the first step of the collaboration is a common information framework and shared research infrastructure for private gravel roads between Sweden and Finland. This initiates the transfer of knowledge and experience on northern gravel road conditions and management practices between Swedish and Finnish partners and stakeholders. This facilitates the second step; collaborative development of robust trafficability models for changing northern weather patterns across the wide gradient of operating conditions. Implementation of robust prediction models in the visual NTL-interface enables the stakeholder SMEs to evaluate their validity in practice and consider how new management practices can meet the climate challenge.

In principle, the project enables a transition from a legacy perspective of seasonal forest road classification, to a more agile weatherbased approach. The transition builds on the improvements enabled by exploiting both available terrestrial/road network knowledge with new combinations of weekly and daily weather, satellite data and real-time truck sensor data across diverse geographies. The project work also lays the ground for new teaching materials and laboratory exercises for forest engineering courses in Sweden and Finland.

Vilka effekter ska projektet uppnå på lång sikt:

After validation, the concept will be applicable across the weather gradient of the Aurora region. As part of the exit strategy, the project develop a roadmap for a Fenno-Scandian gravel road trafficability service. This project establishes a pilot version of such a service, however in the long term there will be a need for an operational service which is available for all actors using gravel roads.

Over the long term a scaled-up version of the NTL -platform for logistics management will make it possible to match scheduling of supply operations to the most suitable site, given the expected and current weather conditions. Integration of truck sensor data in real-time will also make it possible to detect changing or deviating conditions in time for re-scheduling. In practice, thjs means higher operational efficiency (reduced diesel consumption and emissions), reduced idle time for transport capacity and reduced road maintenance (gravel usage) from ill-timed operations. Impacts for individual SMEs are indirect stakeholders are noted below.

- 1) Road owner unions of private landowners: The system would help in the activation of road unions to maintain and reconstruct their road infrastructure.
- 2) Funding bodies offering road upgrading funds: The system would help to allocate funds to the most critical road sites, would help in the mapping of renovation needs and cost calculation
- 3) Road and traffic organizations with sector-wide mandates in forestry (Biometria in Sweden): National authorities are most active in developing systems to present new road information for public paved roads. This project would bring new approaches from private gravel roads which could also be applied to public gravel roads.

Indikatorer

Namn	Värde	Måttenhet	Kommentar
Antal deltagande företag		Företag	

Tid- och aktivitetsplan

Aktivitet	Beskrivning	Startdatum - Slutdatum	Kostnad
WP1 - Information systems for private gravel roads	<p>The main objective of WP1 is to develop a common framework for the classification of (static) forest gravel road characteristics. The data is of interest for tactical transportation planning and forms the base for continuous updating of road status and maintenance needs over time. WP1 will provide static trafficability estimates for selected test sites in each partner country within the pilot Aurora areas. These estimates will provide an overview of trafficability and highlight critical locations.</p> <p>The work in WP1 will be coordinated with i) WP2 for road network location, ii) WP3 for their need for data to develop dynamic trafficability models and iii) WP4 for demonstration of the on-line trafficability platform.</p> <p>The main beneficiaries of WP1 are forest operations planners, hauling companies, road maintenance contractors and IT companies. Results will be disseminated through 1) a project webinar, 2) workshops, 3) trade journals, 4) technical reports and 5) peer-reviewed scientific journals. For 1) and 2), Skogforsk and Luke will make use of their established stakeholder networks.</p>	2025-04-01 - 2028-03-31	
1.1 - Information framework for private gravel roads	<p>1.1 - Information framework for private gravel roads Partners: Skogforsk, Luke, UEF, FFC, SLU, LNU</p> <p>This task aims to develop a common FIN-SWE database for classification of gravel road characteristics. This includes nomenclature and definitions for the minimum of data necessary both for describing static road construction parameters and their effect on trafficability. The data will be central components for the development of WP3.</p> <p>Output: A common database structure for classification of private gravel roads in FIN/SWE.</p>	2025-04-01 - 2028-03-31	363 200
1.2 - Evaluation of static trafficability prediction models on pilot areas	<p>Partners: Skogforsk, Luke, UEF, FFC, SLU, LNU</p> <p>This task establishes the geographic distribution of FIN-SWE pilot areas for operations within the remaining WPs. The location of the pilot areas will also guide the stakeholders from forest operations SMEs.</p> <p>In the pilot areas, the framework from 1.1 will be used together with data/modelling in WP2/3 for static prediction of trafficability. The methods will be developed based on periodic trafficability sampling with light-weight deflectometers and observed rutting after full scale stress testing with trucks.</p> <p>Output: Validated static trafficability models</p>	2025-04-01 - 2028-03-31	385 900
1.3 - Information quality service for private gravel roads	<p>Partners: Skogforsk, Luke, UEF, FFC, SLU, LNU</p> <p>This task targets the demand for continuous cost-efficient updating of road information. This includes semi-automated methods for road data collection and data quality assessment. Data will also be sourced from the NTL-platform prototype in WP4.</p> <p>Output: Suggested data flows and procedures for updating the characteristics in the gravel road database.</p>	2025-04-01 - 2028-03-31	499 400
WP2 - Extension of road weather station network	<p>WP leader: Skogforsk</p> <p>The main objective of WP2 is to extend the existing Finnish road weather station network to Northern Sweden and Northern Finland. This provides a trans-Aurora shared research infrastructure to integrate data flows for modelling trafficability (WP1, WP3) and prototyping the online trafficability platform (WP4). The network design will exploit the climatic gradient from</p>	2025-04-01 - 2028-03-31	

Aktivitet	Beskrivning	Startdatum - Slutdatum	Kostnad
	<p>the moister Scandinavian mountain range in the west to the drier areas of eastern Finland, ensuring robust prediction for the later modelling and prototyping.</p> <p>The WP consists of three tasks: 2.1 Common data standards, 2.2 Road station establishment and 2.3 Data flows and trafficability sampling. These ensure a seamless integration of data across the climatic gradient.</p> <p>The main beneficiaries of WP2 are WP1, WP3 and WP4 who use the data for static and dynamic trafficability modelling and NTL-prototyping. However, since establishment of the digital infrastructure itself represents a long-awaited step in trans-national cooperation it will be communicated in national and international journals as well as the joint project website.</p>		
2.1 - Common data standards for integration platform and trafficability sampling	<p>Partners: SLU, Skogforsk, LTU, LUKE</p> <p>The data from road weather stations sensors will flow to the Forest Road Hub for integration with other data sources (WP3). A pilot version of the Forest Road Hub has been developed by Luke (https://countryroads.luke.fi). The first step is therefore development of common standards and specification for sensors, placement, installation, and data transmission routines (autumn 2024).</p> <p>Output: The output of the activity is the common data standards for the extension of the road station network, platform integration as well as trafficability sampling.</p>	2025-04-01 - 2028-03-31	170 250
2.2 - Road weather station establishment	<p>Partners: SLU, Skogforsk, Luke, UO, FMI</p> <p>The complete network builds on the existing Finnish road weather station network in Finland (4 stations connected to 10 road segments). The Finnish network will be extended with 3 new road stations within WP1s pilot areas.</p> <p>The Swedish network will include 4 main stations, within the pilot areas (Norrbotten, Västerbotten, Västernorrland, Jämtland), each with their own weather station. Each weather station is connected to 3 road segments. Station and segment location will cover the key construction standards and sub-grade deposits (coordinated with the Finnish network conditions). The stations will be distributed across the coastal and interior areas to provide a complete capture of the variation in temperatures and precipitation. The stations will be established in 2025.</p>	2025-04-01 - 2028-03-31	794 500
2.3 - Data flows and trafficability sampling	<p>Partners: SLU, Skogforsk, LUKE, UO, FMI</p> <p>Activity 2.3 includes the i) continuous transmission of data flows from the road weather stations, ii) periodic trafficability (e-module) sampling with light-weight deflectometers (i.e., measurement of bearing capacity) and iii) trafficability stress-testing with fully loaded logging trucks. The stress testing validates the relationship between the measured e-module, road deformation and maintenance needs.</p> <p>The periodic e-module measurements with deflectometers (10 kg Zorn light-weight falling weight deflectometer) will be done 10 times per field season (2025-2026). These measurements will be done on both the road weather station segments (WP2) and the surrounding pilot areas (WP1). Timing of the measurements is determined by changing temperature/moisture conditions as triggered by the weather stations and segment sensor values.</p> <p>The trafficability stress-testing with logging trucks will be done according to the joint project instructions/protocol (2.1). These will be done during dry and moist conditions on the key</p>	2025-04-01 - 2028-03-31	624 250

Aktivitet	Beskrivning	Startdatum - Slutdatum	Kostnad
	<p>combinations of sub-grade and road construction standards. Stress testing on both road weather station segments and the surrounding pilot areas includes surface deformation measurements by a standard transect laser beam after 5 passes. Stress testing on the road station segments will provide matching measurements of sub-surface pressure at three depths. This will provide the necessary quantification of the effect of traffic intensity on road conditions and maintenance needs.</p> <p>Output: The output of the activity is data delivery to WP3 on i) ambient weather, bearing layer and sub-grade conditions, together with matching ii) measured trafficability and iii) road deformation according to common data protocols.</p>		
WP3 - Dynamic trafficability modelling	<p>WP leader: Luke</p> <p>The main objective is to develop dynamic trafficability models for gravel roads for near real-time predictions. Separate models will be developed for non-frozen periods and freeze/thawing cycles. The ultimate model will use a combination of the sub-models to provide full seasonal coverage. The modelling will require synergies between expertise of the partners and by fusion of diverse data sources.</p> <p>The predictions of the models can be converted to trafficability estimate of a heavy vehicle, i.e., a fully loaded timber truck. A tentative trafficability classification includes three classes: 1) Trafficable (the road segment is trafficable with a fully loaded log truck), 2) Risk for rutting (the road segment can be driven with a fully loaded log truck, but maintenance may be needed afterwards), and 3) Not trafficable (driving with a fully loaded log truck may cause break-down of the road structure). The classes will be illustrated in the online trafficability platform in WP4.</p> <p>The performance of the models will be evaluated both 1) objectively by comparing predicted values of bearing capacity to measured ones in WP3 and 2) subjectively by stakeholder validation in WP4.</p> <p>The main beneficiaries of the WP, i.e., trucking and forest companies, road maintenance companies and IT companies will be informed about the WP outputs via multiple channels: The results will be presented 1) in a project webinar, 2) in relevant national workshops, 3) in relevant national professional magazines, 4) on project websites, and 5) in peer-reviewed scientific articles. The first four channels will provide contact with the stakeholders, whereas the fifth channel will guarantee the quality of the results.</p>	2025-04-01 - 2028-03-31	
3.1 - Running data delivery	<p>Partners: Luke, SLU, LNU, Skogforsk, LTU, UEF, UO, FMI</p> <p>All data sources, which may have explanatory potential for trafficability models, will be mapped and evaluated. This will take into consideration the availability, accuracy and validity of each data source. These data include static information of road conditions from WP1, measurement data of road bearing capacity in WP2, road temperature and moisture as well as weather data from the local road weather stations established in WP2, national grid-level weather data, national soil sub-grade data and additional remote sensing and vehicle data.</p> <p>In order to use weather data as explanatory variables in the prediction models, the data should have wide geographical coverage and high temporal resolution. The meteorological institutes both in Finland and Sweden provide wall-to-wall maps of weather parameters at high spatial and temporal resolution. In</p>	2025-04-01 - 2028-03-31	567 500

Aktivitet	Beskrivning	Startdatum - Slutdatum	Kostnad
	<p>addition to the road structural variables based on airborne lidar data, there are national datasets on soil sub-grades.</p> <p>There are multiple remote sensing systems equipped with radar sensors that can estimate soil moisture and detect its change. Using a satellite platform offers the advantage of providing timely estimates (with several acquisitions per week) over large supply areas.</p> <p>Depth-to-water (DTW) index is based on digital elevation model and calculates least elevation difference between surface flow channels and nearby landscape areas.</p> <p>Data from the CAN bus of vehicles are recorded and uploaded using the mobile phone network. Signals extracted from CAN bus can be used to explain trafficability parameters. Using other vehicle data, e.g., from intelligent tyres, is also possible. The data will be delivered into Forest Road Hub, where they will be available for all the partners for modeling, and the causal relationships between variables can be displayed and evaluated.</p> <p>Output: The data for modeling collected in Forest Road Hub.</p>		
<p>3.2 - Data integration, analysis for monitoring, prediction</p>	<p>Partners: Luke, LNU, Skogforsk, LTU, UEF, UO, FMI, Creative</p> <p>The data collected in the Forest Road Hub will be used to create prediction models for trafficability. Altogether, the six following model types will be developed:</p> <p>Model 1) Based on static and dynamic data collected from the road stations a statistical prediction model for road bearing capacity during non-frozen periods will be developed.</p> <p>Model 2) Based on satellite radar data, soil type data and DTW maps a statistical prediction model for road bearing capacity will be developed. The model will enable monitoring of road trafficability over large supply areas on a weekly level.</p> <p>Model 3) The predicted values of bearing capacity will be converted to estimates of trafficability based on the stress test data from WP2. Threshold values of bearing capacity for trafficability classes will be determined based on the stress tests.</p> <p>Model 4) CAN bus data from vehicles will be exploited for monitoring of road top layer condition and can reveal changing trafficability during operation (linked with weather data).</p> <p>Model 5) To include the thawing period, the position of the frost front and the freezing and thawing stage will be calculated using weather data and knowledge of local conditions. A critical parameter is the thawing depth that is used to determine load restrictions during the thawing period. Thereby, the data from the road stations from WP2 including automatic frost depth measurements and measurements with ground penetrating radar are a base for detailed modeling.</p> <p>Model 6) The road weather model will be tailored for gravel roads. The existing FMI road weather model predicts the road surface temperature and road conditions (i.e., whether the surface is dry, wet, icy or covered by snow or frost).</p> <p>Output: Initial models to predict gravel road trafficability on different time scales (daily, weekly, monthly).</p>	<p>2025-04-01 - 2028-03-31</p>	<p>681 000</p>
<p>3.3 - Testing and refining models</p>	<p>Partners: Luke, LNU, Skogforsk, LTU, UEF, UO, FMI, Creative</p> <p>The outcomes of the model development will be tested and validated according to both objective and subjective criteria. The reliability of the prediction models will be evaluated and refined based on additional measurements of bearing capacity on the pilot areas (WP2). The data from the road weather stations will be used to continuously calibrate the frost depth models.</p>	<p>2025-04-01 - 2028-03-31</p>	<p>454 000</p>

Aktivitet	Beskrivning	Startdatum - Slutdatum	Kostnad
	<p>The subjective validation of trafficability estimates will be done in WP4 by the stakeholders. After the validation the models will be refined to better match better the needs of practical usage. A detailed analysis on when/where models are functioning satisfactory or not, are of interest and important information for further data acquisition and model finalization.</p> <p>Output: Validated and refined models to predict gravel road trafficability.</p>		
WP4 - On-line trafficability platform (Northern Traffic Lights)	<p>WP leader: FMI</p> <p>The main objective of WP4 is to develop a prototype online platform (Northern Traffic Lights) for effective communication of current and predicted gravel road trafficability to the relevant stakeholder groups. The data and models to be used in the platform are collected and refined in WPs 1-3. The platform offers a web-based map interface where segment-specific road trafficability is presented according to typical traffic light visualization. The results for selected pilot areas and periods will be validated with decision-makers. The impact of such a solution will be evaluated for a larger Aurora test case from a wood supply perspective.</p> <p>Test user groups for the prototype validation will be chosen from the selected pilot areas. They will consist of personnel working in timber harvesting, transport and road maintenance operations.</p> <p>Stakeholder validation in pilot areas will provide feedback on both the prediction accuracy and usability, as well as the format and structure of map-presentations. The selection of pilot areas and test periods will capture the variation in key road types and their conditions. The output of the work package, the developed prototype platform, will serve as the test bench for evaluation of dynamic trafficability modelling.</p> <p>The main target groups for WP4 include forest companies, operations managers, haulers and road maintenance companies. WP outputs will be communicated via multiple channels: 1) project webinars, 2) national/regional workshops, 3) relevant national professional magazines, and 4) on project websites.</p>	2025-04-01 - 2028-03-31	
4.1 - Managing data and models for the platform	<p>Partners: Luke, FMI, LNU</p> <p>This task considers managing data flows from the pilot area (WPs 1-3), and trafficability models (WP3) to the platform . The preprocessed input data from the selected pilot areas will be stored in the Forest road hub, from where it will flow to the models in the platform. This task will handle and pretest the data acquired from each data source interface. Some of the input data may also flow directly from open-source interfaces.</p> <p>The trafficability models (WP3) will be pretested and compiled for different temporal scales (monthly, weekly, daily) using both historical and forecasted weather. The model outputs are edited to provide the most valid information for subsequent user-friendly presentation to stakeholders within a common FIN-SWE format (activity 4.2).</p> <p>Output: Input data flows and trafficability models tailored to NTL platform use and presentation.</p>	2025-04-01 - 2028-03-31	113 500
4.2 - NTL-Platform development	<p>Partners: Skogforsk, FMI, UEF, UO</p> <p>The main objective of this task is to develop and create the web-based NTL-prototype for presenting the gravel road trafficability via map-based interfaces. The platform builds on tailored data flows and models from activity 4.1. Both model results and</p>	2025-04-01 - 2028-03-31	113 500

Aktivitet	Beskrivning	Startdatum - Slutdatum	Kostnad
	<p>presentation will be subject to Stakeholder validation and evaluation.</p> <p>Schematic modeling of the prototype will start by benchmarking against harvesterSeasons.com, the dynamic trafficability platform developed for timber harvesting planning by FMI. Prototyping may build on some existing features and development will focus on new elements tailored for the NTL-stakeholder group.</p> <p>Output: Prototype of a digital map-based NTL-platform</p>		
4.3 - Tests with stakeholders and impact assessment	<p>Partners: UO, UEF, Luke, Creative, LTU, Skogforsk, SLU</p> <p>In this task, trafficability models and the prototype platform will be tested and validated by selected stakeholders within the project pilot areas. The potential impact of the NTL-platform in a wood supply context will also be quantified.</p> <p>The selection of stakeholder entrepreneurs will secure variation in the field of business within the validation group. Some of these candidates have already accepted their respective roles (see attachment).</p> <p>The validation of the accuracy of trafficability models will cover two dimensions; i) the prediction accuracy of the road segment of interest compared to the users' evaluation of the current trafficability and road condition, and ii) the positioning accuracy of the prediction in terms of segment dimensions. The subsequent evaluation of prototype presentation will cover the selection of information presented as well as its visualization, including layout and map interfaces.</p> <p>UO, Luke and UEF will arrange the test periods in Finland. SLU, Skogforsk and Sveaskog will do the platform tests with stakeholders in Sweden.</p> <p>The impact of improved trafficability modelling, as enabled by the NTL-platform, will focus on the context of industrial wood supply where wood is delivered over large supply areas with diverse geographies. The assessment is based on integrating dynamic trafficability information in simulated transport planning. The impact assessment concerns wood transportation and delivery planning. Different variants of trafficability information are tested in various weather scenarios, showcasing the impacts in terms of both economic efficiency and mill service levels. The scenarios will be run by Creative Optimization in Woodflow, which is their own transport optimization software. The scenarios will be built on real data from forest companies.</p>	2025-04-01 - 2028-03-31	170 250
WP5 - Networking and dissemination	<p>WP leader: Skogforsk</p> <p>WP5s objective is to facilitate internal and external networking for effective collaboration in development and dissemination of outputs. This includes both the current project as well as continuation to future collaborations.</p> <p>Skogforsk (Sweden) as WP5 leader will cooperate with Luke (Finland) to guide networking and dissemination.</p> <p>The networking objective is to secure collaboration towards seamless integration between WPs as well as synergies between specialist expertise and stakeholder experience. The dissemination objective is to maximize Northern Traffic Lights impact among targeted external stakeholders in the Aurora area.</p> <p>WP5 ensures that project outputs achieve the ambitions for learning outcomes for stakeholder groups.</p>	2025-04-01 - 2028-03-31	
5.1 - Networking	Partners: All partners	2025-04-01 - 2028-03-31	368 875

Aktivitet	Beskrivning	Startdatum - Slutdatum	Kostnad
	<p>The overall networking plan is framed within joint bi-annual hybrid-meetings between partners, stakeholders and invited experts, arranged by Skogforsk and Luke.</p> <p>The draft networking plan for facilitating collaboration between WPs and specialists/stakeholders will be presented at the kick-off meeting and developed/finalized as activities, development and outputs progress.</p> <p>Output: Networking plan achieved for facilitated collaboration between i) WPs and ii) specialists/stakeholders.</p>		
5.2 - Dissemination	<p>Partners: All partners</p> <p>External dissemination will be done in national and regional forums considered to be strategic for the reaching the external stakeholder groups. The goals/ambitions will be determined during the first half-year. Plans will be updated during the joint annual hybrid-meeting between partners, stakeholders and invited experts, arranged by Skogforsk and Luke.</p> <p>Output: Presentation of project progress outputs at professional workshops-seminars and research conferences as well as project websites, professional and peer-reviewed journals. A joint webpage and social media accounts with news, activities and publications will be managed by Skogforsk.</p>	2025-04-01 - 2028-03-31	368 875

Budget (Kostnads- och finansieringsplan)

Kostnad

Kostnadsslag	2025	2026	2027	2028						Totalt
Personal	875 111	1 166 814	1 166 814	291 704						3 500 443
Kontor och administration	131 267	175 022	175 022	43 756						525 067
Externa tjänster	113 432	145 465	151 243	37 810						447 950
Resor och logi	131 267	175 022	175 022	43 756						525 067
Investeringar, materiel och lokaler	221 779	227 341	170 505	56 835						676 460
Summa kostnader	1 472 856	1 889 664	1 838 606	473 861						5 674 987
Projektintäkter										
Summa faktiska kostnader	1 472 856	1 889 664	1 838 606	473 861						5 674 987
Bidrag i annat än pengar										
Summa bidrag i annat än pengar										0
Summa totala kostnader	1 472 856	1 889 664	1 838 606	473 861						5 674 987

Finansiering

Finansiär	2025	2026	2027	2028						Totalt
Offentligt bidrag i annat än pengar										
Totalt offentligt bidrag annat än pengar										0

Finansiär	2025	2026	2027	2028							Totalt
Offentlig kontantfinansiering											
SVERIGES LANTBRUKSUNIVERSITET	37 833	49 184	48 238	12 296							147 551
Linnéuniversitetet	56 750	75 666	75 666	18 917							226 999
LÄNSSTYRELSEN I NORRBOTTENS LÄN	960 971	1 224 676	1 195 094	308 009							3 688 750
Total offentlig kontantfinansiering	1 055 554	1 349 526	1 318 998	339 222							4 063 300
Total offentlig finansiering	1 055 554	1 349 526	1 318 998	339 222							4 063 300
Privata bidrag i annat än pengar											
Total privat bidrag annat än pengar											0
Privat kontantfinansiering											
Skogforsk	198 735	254 238	243 817	63 560							760 350
Total privat kontantfinansiering	198 735	254 238	243 817	63 560							760 350
Total privat finansiering	198 735	254 238	243 817	63 560							760 350

Stöd

Finansiering	2025	2026	2027	2028							Totalt
19.1.1 Regionala utvecklingsåtgärder Regionalt projekt	218 567	285 900	275 791	71 079							851 337

Sammanställning (Stödprocent)

Stödandel av faktiska kostnader:	15,00 %
Stödandel av stödgrundande finansiering:	15,00 %
Stödandel av total finansiering:	15,00 %
Andel annan offentlig finansiering:	71,60 %
Andel privat finansiering:	13,40 %

Rapportering och begäran om utbetalning

Rapporteringsperioder synkroniseras med EU-programmet. Stödet utbetalas i efterhand efter redovisning av faktiska utgifter

Sista datum för slutrapport

Synkroniseras med EU-programmet.

Allmänna villkor för stöd

Se bilaga

Särskilda villkor

Region Västerbottens beslut är avhängigt bifallsbeslut från EU-programmet.

Beslutsgång

Beslut i detta ärende har fattats av regional utvecklingsdirektör Patrik Sällström efter föredragning av strateg Mikael Johansson Åberg.

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