



The World Bank

Brazil Proactive, Safe, And Resilient Road Asset Management Program - State Of Santa Catarina Project - Phase 3 (P504253)

Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 10/01/2024 | Report No: ESRSA03666



I. BASIC INFORMATION

A. Basic Operation Data

Operation ID	Product	Operation Acronym	Approval Fiscal Year
P504253	Investment Project Financing (IPF)	BR Pro-Roads SC	2025
Operation Name	Brazil Proactive, Safe, and Resilient Road Asset Management Program - State of Santa Catarina Project - Phase 3		
Country/Region Code	Beneficiary country/countries (borrower, recipient)	Region	Practice Area (Lead)
Brazil	Brazil	LATIN AMERICA AND CARIBBEAN	Transport
Borrower(s)	Implementing Agency(ies)	Estimated Appraisal Date	Estimated Board Date
State of Santa Catarina	Secretaria de Estado da Infraestrutura e Mobilidade	23-Sep-2024	28-Mar-2025
Estimated Decision Review Date	Total Project Cost		
	475,000,000.00		

Proposed Development Objective

Improve access to sustainable, safe, and resilient transport in the State of Santa Catarina

B. Is the operation being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project Activities

The State of Santa Catarina is strategically located in the South of the Country, being small in area (the size of Portugal), with a population of over 7 million inhabitants, and one of the fastest population and economic growth in the Union. The state has a diverse economy, including strong services (like tourism), manufacturing, agriculture, and food processing, with one of the highest GDP per capita in Brazil, and being an important contributor to the Brazilian economy. However, the State is one of the most prone to climate disasters of the States in Brazil, suffering regularly from high precipitation and flooding, apart from strong winds and potential future hurricanes - so Investing in



preserving its infrastructure, such as roads, bridges, and ports, will help to improve the efficiency and competitiveness of these industries by reducing transportation costs, saving lives, and increasing access to markets. This project will focus on improving the road asset management of interurban roads and promoting connectivity by eliminating dangerous road stretches, preserving the road infrastructure in a safe and resilient manner, and supporting logistical and sustainable planning as part of institutional strengthening. Managing road assets sustainably is important to ensure that transport remains safe and efficient. The state of Santa Catarina has a large network of roads - more than 5000 km of paved roads in the State Network, and maintaining this infrastructure is critical to ensure that people and goods can move in, out, and around the state effectively. The project will have four main components: (i) Proactive maintenance with a long-term (8 to 25 years) CREMA model using performance-based contracts (PBCs) - improving climate resilience and providing better access to schools, markets, and health centers; (ii) Institutional strengthening for road asset management sustainability, road safety, climate resilience and transport decarbonization; (iii) Improvement of selected state transport infrastructure - touristic signaling, urban accessibility along main urban centers, and urban mobility in the Great Florianópolis Region; and (iv) Project Management. Component 1 is the main one, supporting road works and maintenance throughout the State: The first subcomponent will support interurban roads connecting urban and rural communities in Santa Catarina, improving road safety and climate resilience of those roads, and implementing long-term Design-Build-Maintain 10-year contracts for rehabilitating and maintaining two important agro-logistical corridors. The second subcomponent will implement from one to three CREMA-PPP 20-year contracts for rehabilitating and maintaining the roads in the same format as previous PPP experiences in Bahia. Component 2 is the institutional strengthening with multiple studies and consultancies to support the capacity building of the State in the coming decade. It will focus on sustainable, safe and resilient road asset management, but also green mobility and logistics, supporting mobility studies in the Great Florianópolis area - where there are many accessibility challenges related to road congestion, air pollution, and road safety issues of people trying to get into the island - where most jobs are located. Also, gender and inclusion activities, including touristic signaling is included. Component 3 will implement safe and resilient road infrastructure improvements - with a focus on universal accessibility and non-motorized transport in selected urban areas of the State. Component 4 will provide technical support to the Project Management. The project will promote social inclusion by providing better opportunities for the rural population in Santa Catarina, who often face limited access to education, healthcare, and job opportunities, so will have activities to tackle those issues. Also, Gender activities are envisioned to improve access to job markets in the road sector. Finally, the use of Performance-based contracts will provide the State with an effective way to ensure that maintenance and rehabilitation activities are carried out in a timely and effective manner, while also providing incentives for contractors to meet specific performance targets. These contracts can be linked to road safety performance, as well as to other indicators of quality and resilience, such as pavement condition, drainage, and signage. By linking road safety performance to longer-term maintenance and rehabilitation contracts, Santa Catarina will ensure that its road infrastructure is designed and maintained with safety in mind. This can contribute to a reduction in road accidents and fatalities, which are major public health concerns in the region. And, in addition, longer-term contracts that are structured as PPPs - as it is intended, will provide a range of benefits, including access to private sector expertise and resources, as well as greater flexibility in project design and implementation. This can help to ensure that road infrastructure is built and maintained, while also providing opportunities for private-sector investment and job creation.

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D. Environmental and Social Overview

D.1 Overview of Environmental and Social Project Settings



The State of Santa Catarina in the Brazilian south region has a territorial area of 95,731 km² and houses a population of over 7.6 million people (demographic density equal to 79.5 inhabitants/km²), living in 2.8 million households across 297 municipalities. The state is known for its diverse socio-environmental landscape and stands out as one of the Brazilian states with the best economic and social indicators.

With a subtropical climate, Santa Catarina enjoys mild temperatures. The overall yearly rainfall is consistently high, but the distribution within the year is irregular. The state possesses diverse landscapes, including beaches, plains, and highlands. Its rich vegetation includes mangroves and the Atlantic Forest. Intending to preserve its remaining vegetation cover, the state has a mosaic of protected areas and parks. This mosaic comprises 16 federal and 10 state protected areas. However, the state's native forest and natural grasslands are under pressure primarily due to past and ongoing changes in land use associated with conversion to agriculture, forestry, livestock, and urbanization. According to MapBiomass, between 2019 and 2022, the number of deforestation events in the state jumped from 130 to 958 and the deforested area increased from 487 ha to 2,320 ha. This trend slowed down in 2023, when 734 hectares were deforested (less than 1/3 of what occurred in the previous year). Only 23% of the original forest area remains and the Atlantic Forest is considered one of the world's most endangered rainforests. Santa Catarina faces other environmental challenges such as poor solid waste management practices, land degradation, and pollution caused by runoff water and inadequate disposal of animal wastes, which adversely affected agricultural productivity and rural living conditions.

The state has a diverse economy, including strong services (like tourism), manufacturing, agriculture, and food processing. The state ranks fifth in terms of per capita household income and shows the best occupancy rate among the economically active population (78.2%). The Gini Index reaches 0.419. With a HDI equal to 0.792, Santa Catarina ranks third among the Brazilian states. Poverty (up to US\$ 5.5 per capita per day) and extreme poverty rates (up to US\$ 1.9 per capita per day) are low – at 12.8% and 1.8%, respectively.

Approximately 20% of the state poor population reside in rural areas and consisted of small family farmers, landless rural workers, and Indigenous Peoples, quilombola and other traditional communities. In August 2024, 676,998 Catarinense families (a total of 1,718,168 people) are registered in the unified federal government social protection system (CadÚnico), of which 220,722 families (571,128 people) under poverty. Among these poor families, 1,210 are from quilombola communities, 3,773 from indigenous peoples and 8,752 from family farmers.

Three Indigenous Peoples are present in the state: the Guarani (which are divided between the Guarani Mbyá and Guarani Ñandeva or Chiripá), the Kaingang, and the Xokleng. They comprise just 0.29% of the state population (21,541 people) and mostly live in 26 indigenous lands in different stages of regularization by the Brazilian state (a total area of nearly 80,000 hectares). According to the 2022 Demographic Census, 4,449 quilombolas also live in the state (0.06% of the population) in 51 communities (of which 19 are officially recognized and nine are in the process of being recognized) located in 28 municipalities. Most of them (87 percent) live outside officially recognized territories, primarily from subsistence agriculture and fishing, and in poverty.

Santa Catarina also faces a range of challenges related to climate change and natural hazards. It is one of the Brazilian states more susceptible to natural disasters driven by climate change. It faces both low-impact/high-recurrence disaster events and high-impact/low-frequency disaster events including droughts in the western plateau, floods in the coastal region, flash floods, hail, mass movements, windstorms, tornadoes, and coastal erosions. From 1995 to 2014, disasters



impacted about 13.5 million people, leaving almost 750,000 homeless and causing losses of around BRL 17.6 billion. In 2022 alone, the state experienced 874 natural phenomena (predominantly from flash floods which have become increasingly frequent), resulting in 13 fatalities, impacting 25 percent of the population, and causing around R\$ 3.5 billion in damages to public infrastructures and private assets. In 2024 El Niño event is being worst on record until now.

The Project is conceived as a factor of socioeconomic development, as its actions will benefit several sectors of the Santa Catarina economy, reducing logistical bottlenecks and the cost related to transportation in general. This conception is justified based on four striking characteristics of the state economy: a) the diversity of economic activities and the large participation of micro and small business; b) the regionalization of different productive arrangements; c) the dispersion of production chains across the state territory; and d) the dependence on the state highway system as the main mode of transporting cargo (allowing access to markets) and passengers (allowing access to services and job opportunities).

D.2 Overview of Borrower’s Institutional Capacity for Managing Environmental and Social Risks and Impacts

The State of Santa Catarina will implement the Project through its State Secretariat for Infrastructure and Mobility (SIE). Created by Complementary Law 741/2019, SIE succeeded the former State Department of Infrastructure (DEINFRA), which was subordinate to the State Secretariat for Infrastructure and created from the merger of the Department of Highways of the State of Santa Catarina (DER-SC) with the Department of Buildings and Hydraulic Works (DEOH).

SIE/SC is in charge of implementing, regulating, and supervising the State Policy on Transport and Public Works; managing the indirect execution of engineering works, transport infrastructure solutions, and services of any nature; and managing and regulating the infrastructure of the State Highway System, including its operation, maintenance and conservation, restoration, capacity adjustment, expansion, and construction of new roads and terminals.

The legal attributions of SIE/SC include inter alia: a) the planning of policies, programs, projects and actions related to the State Road, Cycle and Pedestrian Transport System; b) the management and implementation of projects of construction, reconstruction, restoration, improvement, conservation, operation, maintenance, capacity adjustment and expansion related to road, cycle and pedestrian transport infrastructure; c) the definition of standards, norms, guidelines and technical specifications for the execution of studies, projects, civil works and operation of road, cycling and pedestrian transport infrastructure; d) the control of the rights of way of these state transport infrastructures; and e) the expropriation of the areas needed for the implementation of roads and cycle paths of interest to the State.

SIE/SC will host the Project Management Unit (PMU) responsible for the implementation of the project activities. The PMU will be responsible for bidding, contracting, and monitoring the execution of the Project, including with regards to the management of environmental and social risks. The organizational structure includes five units with large experience on dealing with aspects that are relevant for the management of environmental and social risks of the Project: a) The Environmental Advisory (ASMAM/SIE), which is oversees E&S management related to all phases of the state road networks (from design to operations); b) the Expropriation Advisory (ASDES/SIE), which is directly subordinated to the Deputy Secretary's office and responsible for all actions related to land acquisition and its effects; c) the Rights of Way Managerial Unit (GEFAD), subordinate to the Operations Directorate and the Superintendency of Infrastructure (SIN), which is responsible for monitoring and managing the rights of way of the state road network; d)

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the Communication Advisor (ASCOM), which is directly subordinated to the Secretary's office; and e) the Ombudsman Office.

SIE/SC's daily operations are ruled by a robust and well-enforced state and federal regulatory framework for licensing the installation and operation of roads. Environmental licenses for road construction, operation and maintenance are granted by the State Institute of the Environment (IMA). Following the country's regulation on the environmental licensing for the construction, operation, rehabilitation and maintenance of road systems (Ministry of Environment Ordinance 289/2013) as well as Resolution 98/2017 from the Santa Catarina Environmental State Council, IMA has issued Normative Instruction 63/2018 Road Developments, which aims to define the documentation necessary for licensing and to establish criteria for the presentation of plans, programs and environmental projects for a) the pioneering implementation of public roads. or b) the operation of highways (except local roads), with or without paving, or c) the implementation, duplication or paving of highways, or the restoration and improvements of paved highways, including the treatment of liquid waste, treatment and disposal of solid waste, noise, vibrations, and other environmental liabilities.

Currently, the socio-environmental risks associated with the state road network in operation are mitigated through adherence to environmental conditions and programs specified in their respective Environmental Operating Licenses (Licença Ambiental de Operação - LAO) issued by IMA to SIE. Additionally, companies responsible for executing conservation and maintenance contracts, as well as any roadwork, sign an environmental responsibility agreement as part of the contract. The LAO authorize the operation and maintenance of the highways, which are characterized by a systematic correction process through routine and emergency activities, including those relevant to Civil Defense.

The programs planned by the LAO and executed by SIE and its subcontractors are: (i) Road Network Management Program; (ii) Operation Environmental Management Program; (iii) Survey and Management of Environmental Liabilities, (iv) Hazardous Materials Transport Management Program, (v) Support Program for Municipal Land Use Planning, (vi) Wildlife Monitoring Program, (vii) Vegetation Maintenance Program within the Right-of-Way and (viii) Traffic Monitoring and Accident Statistics Program. It's important to highlight that the LAO does not permit the cutting or removal of trees, forests, or any type of vegetation in the Atlantic Forest. To undertake such activities, a cutting authorization (Autorização de Corte - AuC) from the IMA is mandatory. This authorization process involves a survey of the area to be cleared and the identification of appropriate compensation measures. Annually, ASMAM/SIE submits an Environmental Programs Execution Report for the Environmental Operating Licenses. This report aims to demonstrate the activities carried out in relation to the environmental programs of the operating licenses.

SIE/SC enforces the regulatory framework through clearly and widely disseminated processes and procedures for environmental and social risk management of construction, rehabilitation, maintenance, and operation of the state road network in all its stages (from planning to operation). These processes and procedures have been consolidated in two instruments – DER/SC 2023 Service Instruction IS-05 Environmental Study and Design (IS-05) and 2015 DEINFRA Environmental Works Manual for Contractors (2015 Manual). The latter is still in force and its guidelines and requirements are part of the bidding documents for all road works.

SIE/SC has also a long experience with land expropriation processes and involuntary resettlement. ASDES/SIE adopts procedures and principles ensuring either a) compensation of affected land and assets at replacement cost (market



value without as established through independent and competent real state valuation, without depreciation plus all transaction costs and moving allowances), or, when dealing with disadvantaged and vulnerable social groups, b) compensation at a value sufficient to acquire a house that meets acceptable minimum community standards of quality and safety. SIE Service Instruction MA-20 Procedures for Involuntary Resettlement of Low-Income Populations (IS MA-20) addresses involuntary resettlement following two fundamental principles: to avoid or reduce as much as possible the need for population displacement and, whenever it is imperative to relocate families, to ensure: i) equitable treatment for the affected social groups, according to their degree of vulnerability; ii) the participation of affected communities and families in decision-making; iii) compensation alternatives include the social and economic rehabilitation of affected families; and iv) independent mediation and arbitration mechanisms are operational and available (IS MA-20 will be further considered in the ESS 5 section).

Nonetheless, the institutional capacity of SIE/SC for environmental and social risk management needs to be enhance as it is the first time SIE/SC will implement a Bank-financed project under the ESF and ASMAM is operating with a small team that currently lacks a social specialist. Thus, one of the material measures of the Project’s Environmental and Social Commitment Plan requires the designation of an Environmental and Social Risk Management team as part of the PMU. This team must be comprised, at a minimum, of one environmental specialist and one social development specialist with previous experience in community communication/awareness raising and stakeholder engagement. This team must be designated within 30 days after Effectiveness, prior to the beginning of any Project-supported activities and shall be full-time dedicated to Project implementation. This team must work in coordination with ASMAM/SIE, ASDES/SIE, GEFAD, ASCOM and SIE’s Ombudsman Office.

II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC)

Moderate

A.1 Environmental Risk Rating

Moderate

The Project's environmental impacts are primarily associated with Component 1, which includes the recovery and maintenance of paved highways, capacity adjustments, and the enhancement of access and road safety features. Additionally, Component 3 focuses on mobility interventions in selected municipalities, aiming to develop pedestrian streets, accessible sidewalks, and safe cycleways. Components 2 and 4 will present minimal direct environmental impacts, as they primarily involve technical assistance activities (consultancy, studies and training) and administrative and managerial activities. Both positive and negative environmental impacts are expected for routine maintenance, road recovery works (Component 1 – CREMA works) and mobility interventions (Component 3). The anticipated negative impacts, typical of linear construction within the right-of-way, can be summarized as follows: (i) noise and air quality, due to the increase in vehicle traffic and heavy machinery, which raises the generation of noise and dust; (ii) solid and hazardous waste generation, as an expected result of any construction activity; (iii) soil erosion and compaction, due to the removal and movement of soil and movement of heavy machinery; (iv) soil and water pollution, due to inadequate management of dangerous products and solid waste and (v) construction work sites and traffic risks to workers and communities; and occupational health and safety in construction workplaces. Additionally, on a smaller scale and in specific, localized areas, the expansion of rights-of-way may be necessary to enhance road safety, climate resilience or mobility adaptations. This could involve the removal of vegetation, leading to habitat loss.



Another potential environmental negative impact commonly associated with road works is the need for deposits, borrow areas, and asphalt plants. Nevertheless, due to the scale of the planned works, priority will be given to utilizing commercial quarries and sand deposits, as well as asphalt, concrete, and crushing plants. This approach not only reduces costs and offers logistical advantages but also incorporates a sustainability factor. The use of these commercial facilities is governed by stringent national regulations and environmental licensing requirements, ensuring their operation and subsequent rehabilitation comply with environmental standards. On the other hand, periodic maintenance and rehabilitation activities have the potential to generate positive impacts on the environment, such as: (i) improvement of drainage and erosion control and (ii) reduction and rehabilitation of existing environmental liabilities and degraded areas. In short, the potential adverse environmental impacts are site specific, temporary, reversible and could be mitigated by the adoption of SIE 2023 Service Instruction (IS-05) and 2015 DEINFRA Manual requirements. As a matter of fact, SIE's environmental instruments outline best practices and mitigation measures for the identified impacts. Furthermore, the highways included in the Project already has an environmental operating license (LAO) issued by IMA, with ongoing environmental programs. A due licensing process is expected to be followed to allow necessary suppression of fragments of Atlantic Forest Biome for an eventual expansion of rights-of-way.

Moderate

A.2 Social Risk Rating

The risks and impacts on human populations brought by works that will be supported by Component 1 – recovery and maintenance of paved highways, adjustments to highway capacity, improvement of access and road safety devices – are predictable, temporary and reversible. They tend to be of small magnitude and site-specific. They refer to the health and safety of workers and neighboring communities, road safety conditions, disturbances on neighborhoods during the construction phase (dust, noise, obstacles to the movement of people and vehicles, temporary interruption of services and accesses) and the unexpected and unlikely need of removing irregular invasions and occupations in the right-of-way. Routine and widely known operational and road safety measures, worker's Occupational Health and Safety, signage of working sites and communication with neighboring communities will be sufficient to prevent and avoid accidents and incidents. The Borrower has extensive experience in carrying out similar works and well-established protocols to ensure the safety and health of workers and neighboring communities, as well as to deal with irregular invasions and occupations in the rights-of-way. The roads included in the programs for proactive and preventative maintenance do not cut through or intersect indigenous lands and quilombola territories, but there are five stretches of these roads that are less than 10 km from indigenous and quilombola communities. The downstream effects of the technical assistance activities provided for in Components 2 and 3 are expected to be negligible or largely positive for society. To deal with these moderate social risks, the Project Management Unit will combine the use of procedures routinely adopted by the Borrower when conducting similar works with additional requirements established in the Project's Environmental and Social Commitments Plan. Hence, the Project will rely on the Borrower's routine requirements of a) analyzing social impacts of the works as part of the preparation of the Simplified Environmental Studies or Previous Environmental Reports required by the environmental licensing legislation, b) implementing Environmental Management Plans, c) carrying out of Environmental Audits of works and periodic inspections to assess aspects related to the safety of users and the quality of life in the area of direct influence focusing on the comfort of the populations living nearby or in the rights-of-way and checking indicators of air, water and soil quality, noise levels, safety at crossings, illegal occupations in the right-of-way and d) completing an Environmental Control Report that attests to compliance with the conditions of the licensing by contractors. In addition, the Project's Environmental and Social Commitment Plan includes, inter alia, material measures related to:

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a) the constitution of a team of socio-environmental specialists dedicated exclusively to the project, meeting the Borrowers need for institutional strengthening, b) compliance with guidelines and requirements for acquiring land or vacating rights of way that may be necessary to carry out the planned works, c) carrying out information dissemination and consultation activities with stakeholders defined in the Project's Stakeholder Engagement Plan, and d).

B. Environment and Social Standards (ESS) that Apply to the Activities Being Considered

B.1 Relevance of Environmental and Social Standards

ESS1 - Assessment and Management of Environmental and Social Risks and Impacts Relevant

The project is anticipated to yield beneficial E&S outcomes by enhancing roads via maintenance, rehabilitation, safety measures and urban mobility improvements. No new highways or bypasses are foreseen in the Project and works will be carried out on existing ROW. Some sections might be extended for safety and climate resilience. The Brazilian and state regulatory framework for licensing all types of road works is well-defined and rigorously enforced. As previously mentioned, IMA (the Santa Catarina environmental regulatory agency) has issued IMA IN 63/2018, in compliance with CONSEMA Resolution 98/2017. This resolution defines an environmental licensing process of road developments that takes in consideration and is proportionate to the environmental and social risks of different types of work and the size of the road. In this approach, the works of rehabilitation and improvement of paved roads longer than 100 km require a Simplified Environmental Study. For the same type of works in paved roads with more than 30 and less than 100 km in length, a Previous Environmental Report is needed. Finally, such works in roads with less than 30 km are exempt from environmental studies and licensed through the presentation of an Environmental Authorization provided by the licensing agency. The common scope of the Previous Environmental Report and the Simplified Environmental Study covers the characterization of the project and the intervention area, the identification and analysis of impacts and the definition of mitigation, control, or compensation measures. In addition, the Simplified Environmental Study also covers the justification of the project, the diagnosis of the current conditions of the physical, biological, and socioeconomic environments, and the indication of the environmental monitoring programs necessary for the implementation of mitigation, control, and compensation measures. Both documents must be prepared by qualified and certified professionals. SIE/SC operates an Environmental Management System that has for reference the 2015 DEINFRA Manual. To comply with environmental legislation applicable to different types of road projects, this manual establishes guidelines, processes and procedures to be followed at each stage of the road projects (planning, construction and operation) considering: a) the obtaining of environmental licensing, b) the carrying out of environmental liabilities audit and environmental studies. It sets the specific themes to be dealt with by these studies, which include: i) interference with the Atlantic Forest, forest resources and permanent preservation areas; ii) needed compensation for environmental damage; iii) measures for protection of water resources, air quality and cultural heritage; iv) adverse impacts of mineral extraction and movement of earth; v) noise pollution control; vi) transportation and management of hazardous materials and solid waste; vii) changes in land use and land expropriation needs; viii) communication and consultation with interested parties and an assessment of potential sociopolitical conflicts regarding the project; and ix) workers and community health and safety. Further requirements of the 2015 DEINFRA Manual refer to conducting fieldwork and data collection and proposing measures to control and mitigate socio-environmental risks during the construction and operation phases. Explicit mention is

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made to programs related with: operational and road safety; solid waste, effluents and hazardous waste management; erosion and siltation control; environmental liabilities recovery; vegetation suppression, compensation and forest replacement. The scope of the environmental and social risk assessments and the environmental and social management programs is proportionate to the risks of each type of road work. The Manual also defines the environmental duties and responsibilities contractors and supervisors. Among the responsibilities of the former are included the strict compliance with environmental legislation, the hiring of an environmental professional to monitor the works, the carrying out training for all its employees, collaborators and suppliers on the environmental control procedures applicable to the different activities or functions performed on the construction site or in support areas, and the implementation of temporary and permanent signaling devices in order to guarantee the safety of users, workers and the adjacent population. Among those of the later are included the application of a socioeconomic survey questionnaire of the population affected by resettlement and the resettlement results evaluation questionnaire and the communication to SEI/SC about any events or occurrences whose consequences imply environmental damage or risks during the execution of the works. Finally, SEI/SC holds the power of carrying out inspection surveys to ensure compliance with socio-environmental guidelines and apply penalties in case of non-compliance. The Environmental and Social Commitment Plan of the Project includes material measures and actions related with the recruitment of environmental and social development specialists working full time in the Project Management Unit, the hiring of a supervision consultancy firm with capacity for overseeing environmental and social aspects on the ground and the engagement of environmental and social development specialists by the contractors. It also provides for capacity building training on relevant ESSs and support for the updating of the Manual.

ESS10 - Stakeholder Engagement and Information Disclosure

Relevant

The Government of the State of Santa Catarina launched the Estrada Boa – Good Roads Program in 2023. Since then, it has carried out a broad publicity campaign (mostly using the websites and social media run by the state government) and some presentations about the Program – including on its criteria for the selection of the state roads to be rehabilitated and maintained with support of the Project – to key stakeholders (for example, the Santa Catarina Federation of Municipalities-FECAM and the Federation of Industries of the State of Santa Catarina-FIESC). The selection of the state roads also considered previous meetings and rounds of dialogue between the state government, the state deputy house, municipal authorities and state representative instances, and representative entities representing distinct sectors of the state economy – industry, agriculture, tourism, transport and logistics – who pointed out priorities. As previously mentioned, consultation with communities in the neighborhoods of the road rehabilitation and maintenance works sites is part of the routines followed by SIE/SC for licensing and implementing these works. SIE/SC has prepared a draft Stakeholder Engagement Plan (SEP) for the Project based both on these routines and in the specific requirements of ESS 10. The draft SEP has mapped the Project’s main stakeholders, which include: a) municipal governments and populations, who rely on the state road networks to have access to services, jobs and business opportunities; b) companies from the many sectors of the Catarinense economy and their representative organizations, which business are mostly dependent on the good maintenance of the state road network for business; and c) communities located in the neighborhoods of construction sites, that may be directly affected or benefited by the project. The draft SEP also describes measures and procedures for properly disseminate relevant information on the Project to each group of key stakeholders, considering their different needs, concerns, and most accessible channels as well as the different types of risks and the intensity of risks they are exposed to. Finally, and considering the potential types of grievances and concerns requiring the provision of information and/or facilitation of resolution according to each group of key stakeholders, the draft SEP recommends

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a two tier grievance mechanism: At the first tier and aiming to address concerns and grievances directly related to on-the-ground works and their impacts at the local level, the contractors will be required to keep a social office, that will be in charge of a) disseminating information on the schedule of works, b) responding to requests of information of local stakeholders on the scope and progress of the works, c) facilitating the prompt resolution of complaints related to adverse impacts/temporary disturbances on the life of local communities and dwellers, and d) registering and reporting to the PMU on the requests of information and complaints received and how they have been treated and resolved on prompt basis. At the second tier and aiming to address issues that cannot be resolved at the local level or are outside of the governance of the contractors, the project will rely on SIE’s Ombudsman System. Complaints can be lodged by phone (0800-6448500), an online registration form available at <https://ouvidoria.sc.gov.br/cidadao/> or <https://www.sie.sc.gov.br/>, SIE/SC Regional Coordinators or at SIE/SC headquarters in the state capital city. Users of these channels are notified of the receipt of their complaints (when they are not made anonymously) by email or telephone call and can monitor the progress of their processes through the website <https://ouvidoria.sc.gov.br/cidadao/>. By law, SIE/SC has 20 days to provide a proposal of resolution. The PMU will be responsible to ensure that contractors properly a) disseminate at the work sites and nearby communities the channels for requesting information and registering complaints, b) register the requests of information and complaints, c) promptly respond the requests of information and/or forward them to the PMU when they are beyond their responsibilities, and d) promptly facilitate the resolution of complaints and/or forward them to the PMU when they are beyond their responsibilities and governance. The PMU will semianually report to the Bank on the operation of this grievance mechanism.

ESS2 - Labor and Working Conditions

Relevant

The proposed project will involve direct workers and contracted workers. The use of Brazil’s policy and legal framework on labor and working conditions allow the achievement of outcomes that are materially consistent with the objectives and requirements of this standard. It is not possible to quantify the contingent of workers to be engaged in the implementation of core functions of the project at this stage. However, it is sure that many of the contracted workers will face risks associated with work in the open air and with heavy machinery. They will also be exposed to risks associated with road safety. The standards and rules on Occupational Health and Safety required by the Brazilian legislation properly address these risks, that can be minimized and mitigated through the adoption of routine measures – such as the use of proper personal protection equipment (PPE), the certification of skills and training as a condition for hiring operators of heavy machinery, and the signaling of working sites aimed at reducing the speed of vehicles traveling on roads undergoing rehabilitation and maintenance services. Following this legislation, the contractors will be required to engage occupational safety technicians, to develop and implement operational safety plans and to provide the PPE needed. Following requirements of the Manual, working and OHS conditions are overseen by SIE/SC inspectors as well as the Brazilian Ministry of Work and Employment and the Brazilian Public Ministry of Labor. Furthermore, the Manual requires the implementation of legal occupational health and safety requirements and guidance to workers on appropriate conduct towards the resident population as well as of a Safety Program in Road Works and Services that defines control measures related to devices and procedures designed to protect highway users, workers, pedestrians, cyclists and the population residing in the vicinity of the construction site and support areas during the execution of construction and related activities (including the implementation of temporary signaling devices). Finally, the Project’s ESCP includes material measures aiming at compliance with the Brazilian Labor Law with regards to fair and equal treatment of the workforce, non-discrimination, freedom of association, working conditions, zero tolerance with child and forced labor, SEA/SH,

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Occupational Health and Safety (OHS) and SEA/SH Prevention Procedures. The ESCP also provide for: a) the adoption of all measures needed to either require that primary suppliers take measures to remedy promptly and appropriately cases whenever child labor or forced labor inadvertently happen or to replace them in line with ESS 2 requirements; b) reporting to the Bank on all incidents and accidents that may cause harm to the health and safety of project workers (and beneficiary community members) or expose them to any form of discrimination, harassment and abuse, and take measures to prevent their recurrence; and c) disclosing information on internal and external grievance mechanisms where project workers can raise concerns about working conditions and terms (including SEA/SH and Gender-Based Violence issues).

ESS3 - Resource Efficiency and Pollution Prevention and Management

Relevant

This standard is relevant. Road rehabilitation and maintenance works (Component 1) and mobility interventions (Component 3) will generate solid waste. To mitigate this impact, contractors are required to implement a solid waste management program in accordance with the 2015 DEINFRA’s Environmental Management Manual requirements. This program outlines the measures that the construction company must incorporate into its work planning. The program specifies two main categories of waste: inert waste and hazardous waste, detailing the set of actions to be carried out, for each category, in the stages of collection, transportation, transshipment, treatment and environmentally appropriate final disposal of solid waste and rejects, in accordance with current environmental legislation. Another potential environmental negative impact commonly associated with road works is the need for deposits, borrow areas, and asphalt plants. Nevertheless, due to the scale of the planned works, and with the requirements 2015 DEINFRA’s Environmental Management Manual, priority will be given to utilizing commercial quarries and sand deposits, as well as asphalt, concrete, and crushing plants. This method not only cuts cost and provides logistical benefits but also includes a sustainability aspect. The operation of these commercial facilities is regulated by strict national laws and environmental licensing requirements, ensuring they meet environmental standards during their operation and subsequent rehabilitation. In any case, if the installation of support areas for the Project works is still necessary, the 2015 DEINFRA’s Environmental Management Manual indicates the guidelines and instruments necessary for their operation and rehabilitation. For non-commercial deposits, the following steps are required: (i) authorization from the owner of the area to extract materials used specifically for the work contracted by SIE; (ii) regular environmental licensing from IMA or the competent environmental agency and (iii) Degraded Area Recovery Project (Projeto de Recuperação de Área Degradada - PRAD). During road works, air pollution mainly arises from dust (due to earthmoving, waste disposal, and heavy vehicle traffic on unpaved roads) and gases (from vehicle exhaust and smoke from asphalt plants). Additionally, the increased traffic and operation of service machinery contribute to higher noise levels. To mitigate these impacts, the 2015 DEINFRA’s Environmental Management Manual mandates that contractors implement devices and measures to control dust, reduce noise, and protect cargo. Soil erosion and compaction are anticipated due to the removal and movement of soil and the operation of heavy machinery. To manage and mitigate these impacts, the 2015 DEINFRA’s Environmental Management Manual mandates the adoption of an erosion and siltation control program. This program includes monitoring and implementing control measures, utilizing devices and procedures designed to prevent, mitigate, or correct erosion and siltation processes that may arise during earthmoving activities. Finally, the 2015 DEINFRA’s Environmental Management Manual Manual provides detailed information in Chapter 6 about the general environmental guidelines for contractors that cover: (i) installation and operation of construction sites; (ii) implementation, operation and deactivation of crushing, concrete and asphalt plants; (iii) effluent treatment; (iv) execution of temporary works; (v) execution of permanent works; and (vi) records of work occurrences. Greenhouse gas (GHG) emissions are expected

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to come from various small sources and are not anticipated to be significant, thus GHG estimations will not be necessary.

ESS4 - Community Health and Safety

Relevant

This standard is relevant as the Project involves civil construction works that cross local communities and urban areas. Concerns regarding community health and safety arise from potential road safety issues, accidents, noise and air pollution, and, eventually, incidents related with SEA/SH and gender-based violence (GBV) against local population. Specific measures to control and monitor these risks are already outlined in the 2015 DEINFRA’s Environmental Management Manual. Contractors are contractually obliged to comply with these measures, which are aimed at: Ensuring operational and traffic and road safety through the implementation of safety devices that must consider the mobility of work or service fronts and the numerous risk situations to which both employees, users, pedestrians, cyclists and the surrounding population are exposed. These risks are basically related to the traffic of vehicles at speed, the traffic of pedestrians and cyclists, the absence or restriction of escape areas, the obstructions of lanes, shoulders and/or pedestrian crossings, the movement of machinery and equipment and excavations. Protecting local ecosystem services from adverse impacts that may result in adverse health and safety risks to neighboring communities through: i) proper management of hazardous materials and wastes; ii) avoidance or minimization of soil erosion and siltation control; iii) avoidance or minimization of vegetal suppression and guaranteeing forest compensation and restoration; and iv) environmental and social management of quarries and borrow-pits of rock, soil and sand. Hence, the 2015 DEINFRA Manual highlights that operational and traffic and road safety requires a preliminary risk assessment in each of the different activities according to the possibility of occurrences relating to accidents involving people, loss and material damage of any nature and interruption of traffic and accessibility. It requires that – depending on the characteristics of the activity to be carried out - it is necessary to implement devices and procedures to i) isolate the construction site from external interference, ii) implement temporary passages, lighting and signage, iii) inform users, pedestrians, cyclists and residents about the conditions of the highway, changes or interference with traffic and iv) remove materials of any kind that pose a risk to vehicle traffic, pedestrians and cyclists. Furthermore, the 2015 DEINFRA Manual requires the following measures are taking according with different stakeholders: Workers must receive training on safety measures on construction sites (covering: isolation of work fronts; safety in machine and equipment operations; movement of materials; use of safety devices; defensive driving; and Code of Conduct) and be supplied with safety devices (costumes with reflective materials; use of devices for handling explosives; radiocommunication equipment; isolation and signaling devices suitable for each activity or construction site). Road users must be protected through the implementation of signage warning about risks related to the works being carried out, pavement conditions in the segment under construction open to traffic, and about interruptions, diversions and alternative traffic routes. Pedestrians and cyclists must be protected through the isolation of the construction site with the implementation of temporary walkways or corridors, to prevent pedestrians and cyclists from traveling on the road or in other risky conditions, signage implementation warning about risks related to the works being carried out and information about segments under construction, interruptions and deviations. Nearby population must be protected through the implementation of walkways and temporary access to homes, commercial and industrial establishments, schools, public offices, etc, as well as communication of interruption in the supply of water and basic services for the execution of works. The 2015 DEINFRA Manual also requires that safety devices be taken/installed in and around the working sites as well as the supporting areas – that is, dormitories, eating areas, laboratories, offices, workshops, warehouses, parking lots, industrial crushing, asphalt and concrete installations, quarries and borrow-pits, loan boxes and dumps. It is worth to highlight that, according

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with country law and the 2015 DEINFRA Manual, the management of solid waste is addressed with the objectives of preventing environmental impacts, especially those that affect water resources (obstruction, silting of water courses), avoiding degradation of the landscape due to poor disposal of rock waste, stone material, debris, plant remains and garbage and prevent accidents. The incineration and final disposal of inert waste in open landfills is prohibited and the prioritization of their reuse on the site itself or its recycling are encouraged. With regards to hazardous materials, measures to prevent the occurrence of events that result in contamination and pollution of soil and water resources or result in damage to workers and community health are required. Hence, the requirements include procedures for storage in containers suitable for each type of material, considering proper identification, and specific and isolated storage areas equipped with waterproof floors are required, and final disposal in areas duly licensed in accordance with Brazilian legislation. It is also required that maintenance and washing of machines and vehicles must be supplied in areas away from water bodies and equipped with devices to contain liquid effluents, which must be sent to companies specialized in the reprocessing of lubricants. Finally, the ongoing routines require the proper environmental and social management of quarries and borrow-pits, including: i) the environmental licensing – and, consequently, the impact assessment – of these mineral deposits; ii) the implementation of drainage and sediment containment devices around their perimeters during their operational life to prevent or mitigate erosion and siltation in neighboring areas (especially when close to bodies of water, river and irrigation channels, urban drainage, permanent preservation areas and conservation units); iii) the continuous humidification of these mineral deposits during their operational life to avoid or mitigate air pollution caused by particulate matters that may affect the population living in their vicinities; and iv) the implementation of Degraded Areas Recovery Plans, which must begin during the operation phase, be carried out progressively, and be fully implemented before completing the extraction of materials from the deposits. Although mentioning that workers of contractors must receive training on a Code of Conduct, SIE/SC regulations do not render clear the scope of this code and, to address this gap, the Project’s ESCP includes material measures related with a) the development of behavioral standards to be integrated in the bidding documents for all road works supported by the project, b) the conduction of awareness raising campaigns aimed at avoiding SEA/SH and all types of and setting behavioral standards to be followed by project workers in their relationships and in their relationships with local population, c) the dissemination of information on the available networks of referral services for survivals and d) the availability of a Grievance Mechanism for raise complaints with regards to improper behavior. As previously described, Brazil has both a robust legislation against SEA/SH and GBV and a geographically widespread network for provision of GBV referral services.

ESS5 - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

Relevant

The Project will mostly comprise works focused on road maintenance of already existing roads. However, to improve road safety or increase the climate resilience of road infrastructures, some site-specific works to implement third lanes, roundabouts, and pedestrian crossings, among others, may occur outside of the established rights of way, potentially leading to land acquisition through expropriation. Since the exact location and nature of these works are not defined yet and potentially adverse impacts related to involuntary resettlement (both economic and physical displacement) are unlikely and, at worse, small in magnitude, a Resettlement Framework with the purpose of clarifying resettlement principles, organizational arrangements, and design criteria to be applied would be the proper instrument to be prepared in accordance with the requirements of ESS 5. SIE/SC regulations for road works include guidelines and principles related to the need to expropriate areas necessary for interventions. Thus, the DEINFRA 2015 Manual determines that: a) The Final Engineering Project for each project must contain the specific project for expropriation of these areas; b) the Expropriation Project must contain the location of the properties to be



expropriated along the stretch under project; and, when the Expropriation Project identifies the possibility of the existence of a low-income population living in the right-of-way covered by the Declaration of Public Utility or in an adjacent area that could be interfered with by the work, c) the following must be done: Conduct a Socioeconomic Survey of the Affected Population, in accordance with Procedures for Involuntary Settlements of Low-Income Populations; Comply with the regulations contained in Service Instruction MA-20 Procedures for Involuntary Resettlement of Low-Income Populations (IS-MA 20), available at [https://www.sie.sc.gov.br/webdocs/sie/bid/reassentamento_involuntario_populacao_baixa_renda .pdf](https://www.sie.sc.gov.br/webdocs/sie/bid/reassentamento_involuntario_populacao_baixa_renda.pdf); and Develop a preliminary project, considering the acquisition and preparation of the resettlement area, infrastructure services, construction of houses, demolition of old houses and cleaning and environmental recovery of the area. IS-MA 20 is the main internal protocol that SIE/SC must follow to address land acquisition and involuntary resettlement. It translates two fundamental principles: Avoid or reduce as much as possible the need for population movement. If it is imperative to relocate families, ensure equitable treatment for the affected social segments, determining that: i. When there are affected families that have sufficient purchasing power to self-recompose their living conditions, the solution of expropriation and cash compensation for improvements may be adopted, in accordance with the constitutional provisions and specific legislation that governs the matter and adopting market values for cash compensation. ii. When low-income families and vulnerable segments of the population are affected, and face difficulties in restoring their living conditions, compliance with this principle of equitable treatment is corroborated in the preparation of a Resettlement Plan that guarantees living conditions and access to goods and services that are at least equivalent to those available in the previous situation, as well as the maintenance of sociocultural relations. IS-MA 20 determines that Resettlement Plans must:

- Ensure the participation of affected communities and families in decision-making on resettlement and compensation through the establishment of consultation mechanisms.
- Consider existing informal property systems and seek equitable and fair forms of compensation.
- Represent an opportunity for the development of affected communities and provide economic opportunities for involuntarily displaced populations.
- Establish eligibility criteria for compensation, economic rehabilitation, replacement of housing or land and other benefits, in the initial stage of project planning in order to avoid speculation and other opportunistic behaviors in search of compensation benefits.
- Estimate displacement impacts and estimate numbers and categories of displaced persons.
- Avoid monetary compensation, whenever possible, and limit it to situations in which families with higher income i) have their property only partially affected, but can continue their economic activities without problems, or ii) their property is affected in a way that does not allow the continuation of their economic activities, but they prefer to choose their new property, or iii) when the affected property is located in an urban area and the family has access to the real estate market to choose their home. In these cases, adopt market values for monetary compensation in order to guarantee the possibility of acquiring equivalent properties.
- For low-income and vulnerable families, give preference to alternative solutions that effectively promote improvements in the population's living conditions and considering:
 - o Possible locations for resettlement closer as possible to previously occupied areas, in order to preserve pre-existing family ties and access to the equipment, goods and services used;
 - o Potential sources of conflict or cooperation between the resettled population and the host populations;
 - o The forecast of the minimum area or lot to be allocated to families, taking into account that the area reserved for resettlement must i) have characteristics equivalent to pre-existing ones (such as the use capacity of the land), ii) enable the continuity of economic activities and iii) have market value equivalent to the area originally occupied;
 - o The mechanisms to be adopted for the economic and social recovery of affected families, maintaining or improving their living conditions.
- Ensure that compensation alternatives include the social and economic rehabilitation of affected families.
- Establish independent mediation and arbitration mechanisms.
- Define the legal



and institutional mechanisms established for the operationalization of the Plan, considering the definition of the technical group responsible for and the agencies involved in its implementation as well as the estimated inherent costs for carrying out the works foreseen in developing of the plan and for compensating and moving affected families.

- Appoint a qualified consultant to develop works aimed at population participation in studies and analyzes of compensation alternatives and create a Plan Management Committee (when it involves a significant number of families in contiguous areas) with the participation of affected families.
- Make the Plan's implementation schedule compatible with the general works schedule, considering that Service Orders for works in segments where there are families to be resettled are only released after their removal.
- Include in the project cost all compensation and resettlement costs.

IS-MA 20 also defines the operational procedures to be followed and describes the steps for developing and implementing the Resettlement Plan, highlighting the preparation of physical and socioeconomic records as well as basic studies, the proposal of specific solutions fit to each type of affected family and the strategy for monitoring and evaluation of progress implementation and conclusion of the Resettlement Plan. Following the country's legislation when carrying out land expropriation, ASDES/SEI adopts procedures and principles ensuring either a) compensation of affected land and assets at replacement cost (market value without as established through independent and competent real state valuation, without depreciation plus all transaction costs and moving allowances), or, when dealing with disadvantaged and vulnerable social groups, b) compensation at a value sufficient to acquire a house that meets acceptable minimum community standards of quality and safety. In short, IS-MA 20 and ASDES/SEI procedures endorse principles and guidelines that render possible the achievement of outcomes materially consistent with the objectives of ESS 5 through its use and will be adopted as the Project's Resettlement Framework for guiding the development and implementation of Resettlement Plans that may be eventually needed.

ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

Relevant

This standard is relevant. Road rehabilitation and maintenance works (Component 1) and mobility interventions (Component 3) will be implemented on existing roads and respective ROW, which are expected to be a completely anthropized area (modified habitats). However, on a smaller scale and in specific localized areas, expanding rights-of-way may be necessary to improve road safety, climate resilience, or mobility adaptations. Since the exact location and nature of these works are not defined yet and potentially adverse impacts related to the removal of vegetation, which may result in habitat loss. S As specified in the Environmental Operating Licenses (Licença Ambiental de Operação - LAO) issued by IMA to SIE, and in accordance with the 2015 DEINFRA Manual requirements, any activities within this Project, which is entirely located in the Atlantic Forest biome, must receive prior authorization. As indicated in the 2015 DEINFRA Manual, SIE, contractors and subcontractors, will be granted authorization to remove native vegetation, provided that legal precepts contained in Federal Law No. 11,428 of December 26, 20061, which provides for the use and protection of native vegetation in the Atlantic Forest Biome. The Cutting Authorization (AuC) is the legal instrument that establishes the rules for suppressing native vegetation in projects or activities subject to environmental licensing, such as the project activities. In Santa Catarina, the Environmental Institute (IMA) is legally responsible for issuing the AuC, based on CONSEMA Resolution 98/20172, analysis of documents, requested information and in accordance with specific Normative Instructions (<https://in.ima.sc.gov.br/>) and other relevant legislation (<https://www.ima.sc.gov.br/index.php/licenciamento/informacoes-e-procedimentos/supressao-de-vegetacao>). No vegetation removal in the project activities is permitted without proper authorization and compensation assessment. This material measure has been agreed and incorporated in the project's ESCP. Concerning interference with protected areas, the National System of Conservation Units (Sistema Nacional de

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Unidades de Conservação da Natureza - SNUC, Law No. 9,985 of July 18, 2000) serves as the national legal framework for managing and safeguarding the country's natural areas. SNUC classifies protected areas into two main categories: (i) integral protection areas, aiming to preserve nature and allow only indirect use of their natural resources and (ii) sustainable use areas, aiming to balance nature conservation with sustainable use of natural resources by human populations. In this context, a single conservation unit is crossed by one of the project's highways. A section of 1,600 m of the SC-350 highway (Lote Meio Oeste) crosses the Caçador National Forest (IUCN category VI), a Sustainable Use Conservation Unit. The Caçador National Forest (Floresta Nacional - FLONA) was established by Ordinance 560 on October 25, 1968. Spanning 710 hectares, this FLONA is located within the Atlantic Forest domain, though it contains only a minimal area of native forest—just 0.7 hectares. Originally characterized by Araucaria Forest, the extensive reforested areas now give this FLONA significant potential for various activities, including seedling production, fish farming, honey production, seed collection, ecotourism, environmental research and education, and the restoration of deforested areas. As part of the licensing process for the Lote Meio Oeste segment of the project, the Caçador National Forest Advisory Board³ must be consulted and provide their inputs on any works or activities that may impact the FLONA. Other segments of the roads included in the project are situated in close proximity to Protected Areas. For instance, a section of the SC-486 highway forms part of the boundary of Serra do Itajaí National Park (IUCN category II), while the SC-370 highway in Serra do Corvo Branco (currently under restoration) is located 720 meters from São Joaquim National Park (IUCN category II). Both conservation units are designated as integral protection areas with established buffer zones (Zona de Amortecimento – ZA) as outlined in their management plans. These buffer zones impose specific standards and restrictions on human activities. For any works or services conducted within these buffer zones, the managing units must be notified and can provide their input on the activities. These material measures will be set in the Project's ESCP. As previously mentioned, the project activities will primarily occur within the right-of-way of existing and operational roads. In this context, national and SC legislation, along with current Environmental Operating Licenses (LAO), already mandate the implementation of a wildlife monitoring program as a key component of the environmental management practices recommended by the 2015 DEINFRA Manual. The Wildlife Monitoring Program is designed to propose and implement control measures aimed at correcting, mitigating, and preventing various environmental impacts on wildlife resulting of roadworks. As part of the implementation of the Wildlife Monitoring Program for its operational roads, SIE commissioned a survey in 2022 to identify critical areas at risk of wildlife being run over. In November 2022, SIE presented the Mitigation and Monitoring Program for the Impacts of Highways on Wildlife (Programa de Mitigação e Monitoramento dos Impactos de Rodovias na Fauna Silvestre - PROMIRF) to IMA. This program consists of five modules: (i) Module 1 - Monitoring of Road-Breached Wildlife; (ii) Module 2 - Data Analysis for Mitigation of Impacts on Wildlife; (iii) Module 3 - Mitigation of Impacts on Wildlife; (iv) Module 4 - Modeling of Areas at Risk of Roadkill; (v) Module 5 - Complementary Information. The result is a predictive model that can be used to: A. Improve the terms of reference for contracting studies focused on locations with a significant impact of roadkill. B. Identify high-risk stretches during the design phase, allowing for the early installation of mitigation measures. C. Enable the State of Santa Catarina to provide highway users with information on risk areas through on-board technology. D. Identify areas at risk of roadkill within conservation units and other priority areas. E. Plan highway concession programs more effectively, offering reliable information on the investments needed to mitigate roadkill impacts, thereby avoiding future contract adjustments. Using the information from this consultancy, if there is a need for improvement or rehabilitation of any road within the project, the design phase may specify the location and provide justifications for the placement and type of wildlife crossings. Additionally, as outlined in the 2015 DEINFRA Manual, contracted companies are required to conduct prior training and awareness programs for workers responsible for critical services. These programs cover



the legal conditions applicable to Legally Protected Areas, as well as the restrictions and legal sanctions related to wildlife.

ESS7 - Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities Not Currently Relevant

The proposed works on already existing roads will not cross Indigenous Lands. Following the Brazilian legislation, they do not require the carrying out of new environmental licensing processes when a) Funai shall issue a technical opinion, b) affected indigenous communities must be consulted and c) a plan to compensate adverse impacts on Indigenous Peoples must be developed and implemented. According to the National Indigenous Peoples Foundation (Funai), there are 26 recognized indigenous lands in the State of Santa Catarina, covering a total area of almost 80 thousand hectares. According to the 2022 Census, 10,563 people from the Xokleng, Kaingang and Guarani (which are divided between the Guarani Mbyá and Guarani Ñandeva or Chiripá) peoples live in Santa Catarina. The Kaingang and Xokleng belong to the southern branch of the Macro-Jê linguistic family. The Guarani Mbyá and Ñandeva belong to the Tupi-Guarani linguistic family and the Tupi linguistic trunk. The Kaingang are the only or the majority population in eight indigenous lands that have an area of more than 27 thousand hectares (approximately 47% of the indigenous territory in the state). The majority of the Xokleng People (2,517 individuals) live in the LãKlanõ Indigenous Land, which covers 37,108 hectares in the Upper Itajaí Valley. There are small groups of Xokleng remnants in the Rio dos Pardos Indigenous Land, in the municipality of Matos Costa (identified in 1992 and demarcated in 1998, with 758 hectares) and living on the outskirts of the cities of Blumenau, Joinville and Itajaí. In South America there are four groups of the Guarani people with dozens of settlements covering Brazil, Argentina, Uruguay and Paraguay. Three are present in Brazil: The Kayova, the Chiripá (or Ñandeva) and the Mbya. The first are concentrated in Mato Grosso do Sul; the Ñandeva and the Mbya are present in the Center-West, Southeast and South. On the South Coast, the Mbya communities are the majority. In Santa Catarina, they are found from the coastal region to the Far West, living on 15 small indigenous lands (three of which are still under study). The roads included in the DBM and PPP programs for proactive and preventative maintenance do not cut through or intersect indigenous lands and quilombola territories, but there are stretches of the roads SC-108, SC-410 and SC-263 that are less than 10 km away from three indigenous lands, respectively: the Guarani Mbya lands of Águas Claras (Tekoa Vy'a), in the municipality of Major Gercino, and Canelinha (Tekoa Tava'í) in the municipalities of Canelinha and Tijucas; and the Kaingang's Toldo Pinhal Indigenous Land, in areas of the municipalities of Arvoredo, Seara and Paial. The first of these three lands has an area of 165 hectares and a population of 67 inhabitants. The Tekoa Tava'í has 207 hectares and a population of 70 inhabitants. The Toldo Pinhal Indigenous Land has an area of 5,000 hectares and a population of 644 inhabitants. The proposed works on already existing roads will neither cross Indigenous Lands; nor have adverse impacts on land and natural resources subject to traditional ownership or under customary use or occupation; nor cause relocation of Indigenous Peoples from land and natural resources subject to traditional ownership or under customary use or occupation; nor have significant impacts on Indigenous Peoples' cultural heritage that is material to the identity and/or cultural, ceremonial, or spiritual aspects of Indigenous Peoples' lives. These works are likely to benefit Indigenous Peoples as much as the non-indigenous population who live nearby the recovered and maintained roads and the Project will disseminate relevant information and conduct engagement with the groups of Indigenous Peoples whose lands are located less than 10 km from these roads. Thus, the PMU will contact traditional leaderships and representative organization of these three Indigenous Peoples communities to identify whether they have concerns in relation to the execution of the planned works, to determine specific measure that are necessary to address these concerns and to establish avenues for prior disclosure of culturally appropriate information regarding the planning and the

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implementation of these works. These material measures have been incorporate in the Project's Stakeholder Engagement Plan (under consultation) as well as agreed and set in the Project’s Environmental and Social Commitment Plan.

ESS8 - Cultural Heritage

Relevant

The CREMA works will be implemented on state roads already built and within the already established rights of way. Its activities are not expected to be located within a legally protected area or a legally defined buffer zone, nor in, or in the vicinity of, a recognized cultural heritage site. Nevertheless, to improve road safety or increase climate resilience, some site-specific construction works to implement third lanes, roundabouts, and pedestrian crossings may be required. These eventual works shall involve excavation and earth movement works, albeit on a small scale. Although the possibility of encountering unknown cultural heritage during project activities is low, a chance finds procedure following the similar requirements of ESS 8 and the Brazilian legislation will be included as a requirement in the bidding documents of contractors in charge of these eventual works. The Brazilian legislation with regards to cultural heritage is robust and includes specific chance finds procedures that allow the achievement of outcomes materially consistent with the requirements and objectives of ESS 8. Hence, Law 3,924/1961 provided that the chance finds of any elements of archaeological or prehistoric, artistic or numismatic interest must be immediately communicated by the author of the find or by the owner of the site where it occurred to IPHAN or to the authorized official bodies. IPHAN Normative Instruction 01/2015 reinforced these requirements, determining that – in projects located in altered areas that do not coincide with registered archaeological sites – private or public entrepreneurs must sign a term in which they assume to a) immediately suspend works or activities in the event of the chance find of archaeological assets, b) report the occurrence to IPHAN, c) halt works in the sections or areas where the heritage has been identified, d) await deliberation and pronouncement from IPHAN on the actions to be carried out (which must occur within a maximum period of fifteen days) and e) take the responsibility for the management costs that may arise from the need to rescue archaeological material in the case of projects with low risk to cultural heritage. These provisions are well aligned with ESS 8 requirement that all works contracts involving excavations, demolitions, earthmoving, flooding or other changes to the physical environment include a chance find procedure that defines how they will be managed by the project, including the obligations of: (a) notifying the competent authorities of the objects or sites found by cultural heritage experts; (b) fencing off the areas of to avoid any possibility of further disturbance; (c) conducting an assessment of the objects or sites found by cultural heritage experts; (d) identifying and implementing actions consistent with the requirements of ESS8 and the national legislation; and (e) training project officials and workers on procedures related to chance finds. The bidding documents for all works involving excavation and movement of earth will require the establishment of a chance find procedure in accordance with the Brazilian legislation and ESS 8. This material measure has been agreed and incorporated in the Project’s ESCP.

ESS9 - Financial Intermediaries

Not Currently Relevant

This standard is not currently relevant.

B.2 Legal Operational Policies that Apply

OP 7.50 Operations on International Waterways

No

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OP 7.60 Operations in Disputed Areas

No

B.3 Other Salient Features

Use of Borrower Framework

In Part

The Environmental and Social task team has assessed the Borrower's Environmental and Social Framework – considering the federal and state regulatory framework as well as the specific normative issued by SIE/SC (and its predecessors) ruling out construction, rehabilitation, expansion and maintenance works of the state road network – that is relevant in terms of the objectives and requirements of the Environmental and Social Standards of the World Bank Environmental and Social Framework as well as on matters related with SEA/SH risks. The task team also assessed the institutional capacity of SIE/SC to enforce compliance of these normative rules by contractors and supervision consultancies.

The main conclusions reached from this assessment are: a) SIE/SC operates within an adequate legal and regulatory framework to guide environmental and social impact assessments, mitigation, management and monitoring in a context defined by clearly established legal and regulatory authority; b) SIE/SC has a large experience working with projects of similar complexity and properly dealing with the moderate risks that rehabilitation and maintenance of paved roads pose to the environment and society; c) the use of the existing regulatory framework and internal procedures followed by SIE/SC would allow the achievement of outcomes that are materially consistent with the objectives of the relevant Environmental and Social Standards with the adoption of a few additional material measures that will be incorporated in the Project's ESCP; but d) the institutional capacity of SIE/SC to enforce compliance with the existing regulatory needs to be enforced due to the small contingent of specialists working on its managerial units responsible for the management of environmental and social risks.

In consequence, the following material measures have been agreed and included in the Project's Environmental and Social Commitment Plan in addition to the enforcement of the regulatory framework and normative ruling rehabilitation and maintenance of the state road network put in place by SIE/SC:

The PMU will be staffed with one environmental and one social development specialist in charge of overseeing the implementation of the risk prevention, mitigation and compensatory measures required from contractors. These specialists will work in coordination with ASMAM/SIE and ASDES/SIE, SIE/SC regional coordination units as well as the supervision consultancy firms that are in charge of inspection visits.

The PMU will promptly report on accidents and incidents related to the Project that have or are likely to have significant adverse effects on the environment, local communities, and project workers.

The Borrower will adopt and cause contractors to adopt behavioral standards to prevent SEA/SH and Gender Based Violence.

Contractors will be required to operate a first-tier Grievance Mechanism, which operation will be routinely reported to the PMU.

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The Terms of Reference for the technical activities associated with the planning of both the urban mobility in the Florianópolis Metropolitan Region and the active mobility and road safety urban passages will incorporate and apply a participatory, inclusive and gender-oriented approach.

Use of Common Approach

No

There are no financing partners.

C. Overview of Required Environmental and Social Risk Management Activities

C.1 What Borrower environmental and social analyses, instruments, plans and/or frameworks are planned or required by implementation?

During project implementation, the Borrower will:

Timely implement all material measures and actions incorporated in the Project’s Environmental and Social Commitment Plan, causing all the partners, contractors and subcontractors to comply with their respective obligations.

Establish and maintain a Project Management Unit (PMU) staffed with qualified environmental and social development specialists.

Implement and report on the undertaking of the activities defined in the Project’s Stakeholder Engagement Plan.

Operate a Grievance Mechanism and develop a communication management mechanism

Update the 2015 DEINFRA Environmental Works Manual for Contractors (The 2015 Manual), incorporating the principles and requirements of the ESSs and other best national and international practices and procedures.

Abridge in a single Normative Instruction the guidelines, principles, processes and procedures adopted for land expropriation by SIE’s Expropriation Advisory (ASDES/SIE).

Meanwhile, the Bank task team will conduct biannual implementation support missions (including visits to field work sites, meetings with contractors and supervision consultancy firms and interviews with key stakeholders and local population) and provide timely guidance on environmental and social risk management aspects.

III. CONTACT POINT

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Brazil Proactive, Safe, And Resilient Road Asset Management Program - State Of Santa Catarina Project - Phase 3 (P504253)

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