



Transport

EIS information guideline



Queensland
Government

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Introduction

This guideline advises proponents about the information and assessment requirements for the transport section when preparing an environmental impact statement (EIS).

What should be addressed in an EIS?

Transporting people and materials (including supplies, products and wastes) into, within, and away from a project site is often a significant source of impacts. The impacts may be on the natural environment (e.g. clearing a road or rail corridor), on people (e.g. due to noise or dust), or on assets (e.g. damage or deterioration of existing road or rail facilities due to increased traffic).

Consequently, the EIS must have a dedicated section that:

- describes the relevant existing environment and transport infrastructure
- details how the project would transport people and materials
- describes the necessary changes to infrastructure
- assesses the direct and indirect impacts of the changes to infrastructure and traffic volumes
- proposes mitigation measures for significant impacts
- cross-references to other sections of the EIS (such as the ecology, noise, land and air sections) to ensure the transport impacts are holistically assessed.

Proponents must address transport in the broadest terms, and any reference to transport in this guideline must be taken to include any and all modes and infrastructure, such as conveyors, pipelines, stock routes, airfields, helipads, air routes, ports, jetties, shipping channels and routes, and marine transshipment facilities, as well as road and rail. Also, proponents must address the effects of their project on transport not only at the project site, but also anywhere within an Australian jurisdiction, including shipping or transshipping within Australia's Territorial Sea.

The following sections of this guideline provide advice on how to achieve these requirements.

When this guideline requires a matter to be described, use appropriate maps, diagrams, charts and/or photographs. Multiple graphics may be needed to adequately illustrate a matter. If a particular matter is not relevant, rather than being silent, explain why it is not relevant to demonstrate that it has been considered.

Existing environment and transport infrastructure

Provide an overview of the existing environment that may be impacted by use of, or changes to, transport infrastructure and modes. Illustrate the description with photographs, aerial photographs, and maps. Identify locations and map coverage by latitude and longitude in decimal degrees referenced to the Geocentric Datum of Australia 2020 (GDA2020). Cross-reference the overview to other sections of the EIS that provide a more detailed description of the existing environment (e.g. the ecology, noise, land and air sections). Include the current grazing potential of any relevant stock routes.

Describe and illustrate the existing transport infrastructure that may be used, altered or impacted by the project. Describe the current condition and usage of the infrastructure; for example, provide the following information:

- routes, surface material, width and number of lanes of roads; current statistics of vehicle movements
- routes and capacity of the rail network and relevant branch lines; current rolling stock, size and frequency of trains
- specifications of berths at ports, including cargo type, maximum size of vessel
- design standards and Aerodrome Reference Code of any airfield/aerodrome the project may use, unless the airfield is an existing airport taking regular commercial flights, in which case a brief description of its facilities and typical traffic would be sufficient.

Describe who owns or controls the infrastructure. For example, identify which roads are private, local authority or state controlled, and for ports, identify the port authority.

Include public transport networks and privately operated school bus routes. Also, include any public pedestrian, cycle and/or bridle pathways or trails.

Proposed transport demand

Describe in detail the project's proposed demand for transport for: people, materials coming in, products going out, and wastes.

People

Describe how many people of the workforce, contractors, service providers, and so on, would travel to and from the project site. Describe in detail how they would travel, how frequently they would travel, and their likely departure points and destinations. In particular, provide the following information:

- For fly-in fly-out workers, provide details of the likely numbers of travellers, and which airports/airfields they would use. Describe the flightpaths and the type(s) of aircraft that would fly into and out of the project's airfield, or mention which current commercial flights would be used between existing airports. Describe the likely type, number, frequency and routes of vehicle movements for workers between the airfield, on-roster accommodation and worksite.
- Similarly, for drive-in drive-out workers, provide details of the likely numbers of travellers, and the towns and cities they would likely drive from and to. Describe and illustrate the likely routes and distances that workers would drive between home and the project when coming on, and after finishing, a roster. Describe the likely type, number, frequency, and routes of vehicle movements between their accommodation and worksite when they are on shift.

Inward materials

Describe the composition and expected size and weights of all significant shipments of materials (such as machinery, equipment and supplies) that would be brought into the project. Describe how the materials would be transported; show the likely routes from their distribution source; and estimate the frequency of shipments. Include any pipeline(s) that would input gas, liquid (including water) or slurry. Make particular mention of any flammable or hazardous goods, or over-mass or oversized loads and vehicles.

Products

Describe the composition and expected weights and volumes of all products that would be moved within and away from the site.

For a coal mine, list the tonnages of run-of-mine coal that would be produced during different stages of the project. Describe how run-of-mine coal would be transported from the pit to a coal handling and preparation plant (if there would be one), and how product coal would be transported to its domestic market or export. Describe and illustrate the haul routes, truck type, number and frequency of vehicle movements. If coal would be moved by conveyor, describe the route, size and length of the conveyor. Describe and illustrate the routes along the rail transport network that would move product coal to market or a port. Describe the expected tonnage of product on trains, the size of trains, the frequency of train movements, the times of day they would travel, and their destination(s). For export coal, provide details of which coal terminal would ship the product.

For a metalliferous mine, provide equivalent details for run-of-mine ore and concentrate or metallic product(s).

If product would be moved as a slurry or liquid, describe its composition, the pumping facilities, the size and length of the pipeline, its route, and the width of cleared corridor.

Similarly, for a coal seam gas project, describe the likely pipe network, and the volumes of gas that would pass through the pipe network from the wells to the field compression facility, central gas processing facility and transmission pipeline. Also describe the pipe and pumping network for, and potential volume of, coal seam gas water moving to holding and treatment facilities, and the pipeline(s) for treated water that would be approved for beneficial use. If a portion of the gas would go for export, provide details of which liquefied natural gas plant would receive it, and the likely increase in shipping movements.

Wastes

Describe how the expected types, weights and volumes of all waste material would be moved within and away from the site. Include such material as waste rock, slurry or tailings, brine, or waste gas, as well as domestic waste (e.g. from an associated accommodation camp or an onsite mess). Provide details of the amount(s) and type of any regulated waste(s) that would be transported from the project site. For each solid waste, provide details of the haul routes, truck type, and number of vehicle movements over time. For slurries, liquids or gasses, provide details of compression and/or pumping facilities, and the size, length and routes of pipelines.

Potential impacts and changes to infrastructure

Assess whether the existing infrastructure can meet the proposed demand for transport, and where demand would exceed current capacity, describe in detail what changes would be needed. Include flow-on effects that would require other service providers to upgrade or relocate their infrastructure. Describe feasible alternatives that could be considered, and explain why the preferred choices were made. Furthermore, identify whether any of the proposed new works would be assessed through a regulatory process separate from the EIS.

Assess the potential impacts of all modes of transport for the project on community amenity and tourism. For all modes of transport, assess the risks of spills of any hazardous materials. Assess the impacts and changes separately for each mode of transport, but also explain any interactions (e.g. a new haul road might need a new level crossing on an existing rail line). Also, indicate in which phase of the project the impacts would occur (e.g. construction, operation and decommissioning).

Noise

In addition to the information requirements for each mode outlined below, specifically address the potential impacts on noise levels from all forms of increased traffic, including by road, rail, and air. Cross-reference the assessment to the noise section of the EIS where all the project's noise impacts must be assessed in detail and cumulatively with other existing sources.

Road

Undertake a traffic impact assessment in accordance with the [Guide to traffic impact assessment](#) (Transport and Main Roads 2018). Provide the results of traffic modelling for the project, and assess the capacity of the current road network (including pavement, bridges, intersections) to take the increased traffic.

Describe and illustrate in detail any new roads and intersections that would be constructed for the project, whether on the site or outside the boundary to link to existing roads.

Indicate and illustrate all existing roads, intersections, bridges and accesses that would need to be altered to take the project's traffic, and describe and illustrate the necessary works (e.g. resurfacing, widening, reprofiling, reconstruction). Provide details of any road that would be realigned (e.g. because it crosses a proposed open pit), and any road that would be affected by subsidence of an underground mine.

Indicate who would own, and have responsibility for maintaining, any new roads.

Assess whether any road assets that could be used without alteration would nevertheless have an increased need for maintenance due to increased traffic.

In consultation, with the local or state authority, estimate the costs of capital works or increased maintenance that would be due to the project, and indicate which entity would pay the costs.

Assess the impacts of any new or altered rail level crossings using the Australian Level Crossing Assessment Model (ALCAM), and having regard to the Department of Transport and Main Roads' (DTMR) [Queensland level crossing safety strategy 2012–2021](#) (DTMR 2012).

Assess the potential impacts on road safety, including such matters as: how the choice of pavement would affect driveability; increased turning traffic at accesses; and driver fatigue for drive-in drive-out workers or contractors.

Assess the potential impacts on public transport, school bus routes, pedestrians and bicycle traffic, with particular regard to disruption of services and reduction of safety.

Assess the potential impacts on any stock routes.

Assess the potential for the project's road infrastructure and traffic to directly or indirectly impact on any environmental values, and cross-reference to other relevant sections of the EIS that assess the impacts in more detail. For example, describe and illustrate any vegetation clearing that would be needed for road construction or improvement, and cross-reference to the ecology section of the EIS for a more detailed assessment. Also, assess potential impacts of transport corridor construction on ecological connectivity. Similarly, if road works would construct embankments, cuttings and/or culverts, cross-reference to the section that assesses the impacts on water resources. Specifically assess the potential impacts of using any unsealed haul roads on air quality due to dust.

Rail

Assess whether the rail transport demand could be met by the existing network, and, if not, describe in detail any new spur lines, rail loops, load-out facilities, and track upgrades that would be needed. Identify who would construct and own the new or upgraded infrastructure. If the party that would be responsible for the new works is not the proponent for the EIS, provide evidence that the responsible party has been consulted and that the proposed works are practically, environmentally and financially feasible.

When assessing any development (e.g. overbridges, noise barriers, and security fencing) in the vicinity of railways use DTMR's [Guide to development in a transport environment: rail](#) (DTMR 2015) and its associated technical standards.

Assess the potential impacts of any temporary or permanent disruption of existing freight and passenger rail services that would be due to either track works, increased rail traffic, or subsidence. Similarly, assess the impacts of works, fencing or increased rail traffic on access to properties, and on other industries, such as impeding the movement of agricultural machinery or stock.

Assess the impacts of constructing or upgrading rail infrastructure on environmental values. If the work would involve vegetation clearing, outline the impacts in the transport section and cross-reference to the other ecology section(s) of the EIS that assess the impacts in more detail. Also, outline the potential impacts of constructing embankments, cuttings and/or culverts on water flow and quality, and cross-reference to the section that assesses the impacts on water resources. Assess the potential impacts of dust dispersal from uncovered rail wagons.

Conveyor

If the project would move material by conveyor, describe the conveyor, including its shielding for spillage, dust and noise. Assess the conveyor's potential impacts on environmental values due to noise, dust, vegetation clearing, and loss of ecological connectivity along the conveyor corridor. Also, assess the conveyor's impacts on access to properties, and whether it would impede the movement of agricultural machinery or stock.

Pipeline

If the project would move material in or out by pipeline, assess the potential impacts on ecology due to clearing for constructing and maintaining the pipeline corridor. Assess the potential impacts on water resources of constructing supports at crossings of watercourses and other significant drainage lines. Also, assess the potential impacts of any leak or burst of the pipeline.

Port or transshipping

For any significant amounts of material to be imported or products exported by sea, assess whether existing port facilities could handle the throughput and the necessary size of vessels. If not, describe in detail how road or rail access, bulk handling facilities, jetties, shipping berths, swing basins, or channels associated with the port(s) would need to be altered or constructed to meet the increased transport demand. Include any need for capital dredging or increased maintenance dredging or bed levelling, and for land reclamation, and/or sea wall construction or revetment. Assess whether the port operation would be a new instance of the *Bulk material handling* environmentally relevant activity (Environment Protection Regulation 2019, Schedule 2, Part 11, no. 50), and, if so, fully assess the potential impacts of the activity.

If the project would involve new or altered transshipping facilities within estuarine or marine waters, describe in detail where and how the transshipping facilities would be constructed and operated. Indicate the jurisdiction of the waters in which transshipping would occur (e.g. Queensland Coastal Waters, Australian Territorial Sea, Great Barrier Reef Marine Park). Assess the potential impacts of spills or accidents during the typical operation of transshipping and during severe weather.

Demonstrate that all proposed works and maritime operations have been planned and assessed in accordance with Maritime Safety Queensland's [Maritime Safety Queensland guidelines for major development proposals](#) (MSQ 2015).

Identify who would construct and own the new or upgraded infrastructure. Provide evidence that the owner/port authority has been consulted and that the proposed works are practically, environmentally and financially feasible.

Cross-reference to the sections of the EIS that assess in detail the potential impacts on coastal and marine environmental values of constructing and operating any new or altered port facilities. In particular, assess the potential impacts related to shipping or transshipping on any marine parks or fish habitat areas. Also, when assessing noise impacts, include the potential impacts on marine animals of any pile driving.

Air transport

Assess whether existing airports or airfields could handle the demand for air transport of people and/or freight. If existing facilities do not have sufficient capacity, describe and illustrate the requirements for any new or altered air transport facilities, including runways, radar, lights and/or beacons.

Describe the likely additional number of flights, size of aircraft, their frequency and timing, particularly noting any increase in night arrivals or take-offs. Describe and illustrate any air routes that would take new or increased air traffic.

Describe any features of the project that could impact on air transport, such as the placement of waste dumps, stacks or flares beneath flight paths.

Demonstrate that all proposed works and operations have been assessed and planned in accordance with the [State Planning Policy—state interest guideline—Strategic airports and aviation facilities](#) (DILGP 2016).

Assess the potential impacts of the construction and operation of new or altered air transport facilities on environmental values. Cross-reference to the sections of the EIS that assesses in detail the potential impacts of air traffic on ecology, amenity and any other relevant values.

Avoidance and mitigation measures

Propose avoidance and mitigation measures for all significant potential impacts. The measures for noise impacts must accord with the management hierarchy stated in section 9 of the Environmental Protection (Noise) Policy 2019.

Consult with all relevant transport authorities to ensure that the proposed measures would not conflict with the authorities' requirements or forward planning. Provide details in the EIS of that consultation.

Provide a timeline for all significant components of the mitigation measures, and indicate who would implement them. Provide cost estimates for all financially significant mitigation measures, and indicate which entity would pay the costs.

Design all mitigation measures so that their effectiveness can be monitored. Propose measurable objectives that would indicate successful performance.

Describe how, when and by whom the effectiveness of mitigation measures would be monitored and reported.

Outline the regulatory approval processes that would ensure mitigation measures become enforceable conditions wherever possible.

Propose corrective actions to be used if mitigation measures are not being effective. Also, propose a program for reviewing and updating mitigation measures as new information is acquired (e.g. as the project's increased traffic is actually measured and compared to previous estimates).

Develop the mitigation measures and corrective actions into separate management plans as needed for use by the various personnel and contractors who would undertake the work.

References

Note: These references were correct at the time of publication. Where more recent versions are available, these must be used.

Australian Level Crossing Assessment Model (ALCAM), viewed April 2020, <<http://alcam.com.au>>.

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Maritime Safety Queensland 2015, *Maritime Safety Queensland guidelines for major development proposals*, Maritime Safety Queensland, Brisbane, Queensland, viewed April 2020, <<https://www.msq.qld.gov.au/Waterways/Major-development-proposals>>.