About Inland Rail

Inland Rail is a once-in-a-generation project connecting regional Australia to global markets, transforming the way we move freight around the country. It will complete the ‘spine’ of the national freight network between Melbourne and Brisbane via regional Victoria, New South Wales and Queensland.

This new 1,700km line is the largest freight rail infrastructure project in Australia. Early works will start in 2017, and based on the 10-year delivery schedule developed in 2015, the first train is expected to operate in 2024/25.

The Australian Government, through Australian Rail Track Corporation (ARTC), is delivering the multi-billion dollar infrastructure in partnership with the private sector.

Commitment

ARTC is committed to working with landowners at every stage of the planning and development of Inland Rail between Melbourne and Brisbane. To undertake a survey on your land we will work with you to prepare a Land Access Agreement.

Part of these negotiations include discussing your expectations and requirements of our field teams when undertaking and completing environmental surveys on your land. This includes the duration and types of activities our teams will undertake as part of the surveys.

We will work with you to agree a suitable time for the surveys to take place. Our field teams will be advised of the access and completion requirements agreed as part of your Land Access Agreement.

Once the surveys are complete, our field teams will liaise with you to close out their work. We are committed to leaving investigation sites in accordance with the Land Access Agreement.
Environmental Field Studies

Environmental Field Studies consist of various types of surveys and investigations carried out to inform the design and environmental assessment of Inland Rail. These may include any of the following surveys:

- Ecological – flora and fauna, aquatic ecology
- Water quality
- Groundwater
- Soils and geology
- Noise
- Air quality
- Cultural heritage
- Transport
- Social and socio-economic
- Land use
- Landscape and visual amenity

Ecological surveys

Ecological surveys help identify existing animal and plant species and their habitats within an area. This aids engineering designs to avoid or minimise impacts, and develop mitigation measures or environmental offsets where needed. Field teams will have the necessary permits and approvals in place to conduct their work, and comply with the relevant State Government and Australian Government ecological survey guidelines.

Flora and fauna surveys

The flora (plant) surveys involve a walk through of identified areas, with plant species photographed and in some cases sampled where species verification is required. Areas called ‘transects’ may be set out in locations where detailed studies are required, to accurately count the number and distribution of any species of conservation significance. Flora surveys usually occur during daylight hours, involving two ecologists. The duration of the surveys will vary. It may be necessary to conduct surveys at certain times of the year when certain species are more easily detected (e.g. when flowering occurs).

The fauna (animal) surveys are designed to optimise the likelihood of detecting the particular species of interest. Since most Australian animal species are nocturnal, many of these surveys will occur at dawn, dusk and sometimes evenings. Fauna surveys are usually undertaken in a team of two ecologists, for up to a week. It may be necessary to conduct these studies at certain times of the year when certain species are more easily detected (e.g. during breeding season).

The fauna survey method adopted will depend on the species of interest. Surveys may involve observations during a walk using spotlights, using specialist call back and recording equipment, and placing nets or traps to gather hair samples, or catch animals. Some traps may be placed on trees, on the ground, or involve the digging of small temporary pits called ‘pit falls’ with guide fencing to lead targeted species into the pit fall. All traps are checked at dawn to prevent harm to captive animals, and to allow them to return to their daytime nests.

Aquatic ecology surveys

These water based studies identify existing aquatic life in streams, creeks and rivers. It usually involves a team of two aquatic ecologists traversing a property during periods of flowing water.

While methods and approaches can vary, aquatic surveys are generally undertaken for up to five consecutive days, for up to 12 hours a day.

The aquatic ecology field team will use nets to capture aquatic species for investigation and recording. The species will be released after examination.

The aquatic ecology field team may also undertake electro-fishing which is a common scientific survey method used to sample fish populations to determine abundance, density, and species composition. Boat based electro-fishing operations can only be used in creeks and streams where there are sufficient flows, water depth and suitable access to launch a boat. Alternatively, low flow areas, difficult to access sites and pooled areas can be sampled using portable “backpack” based units.
**Water quality surveys**

Water quality surveys measure or identify trends in water quality and turbidity (transparency of the water) levels in streams, creeks and rivers. Sampling is usually done by hand, ideally capturing data both prior to and after rainfall events up and down the water course. Samples are sent to laboratories for analysis. This information also helps to inform the aquatic ecology survey results.

Water sampling usually requires a team of two in the field for a half day to a full day, depending on the number of sampling sites.

**Groundwater surveys**

Groundwater surveys determine the depth and chemistry of groundwater. These surveys will generally be undertaken in conjunction with geotechnical surveys, which obtain information about the physical properties of soil and rock at a site.

**Soils and geology surveys**

Geotechnical investigations will be undertaken to inform design and environmental assessments. These investigations will help us to understand physical ground conditions like soils and rocks.

**Noise surveys**

Noise monitoring measures existing noise levels and assists us to predict construction and operational noise levels for the proposed rail infrastructure. Noise monitoring data is captured through the installation of noise monitoring equipment, with the results incorporated into noise modelling software. Noise modelling factors include land use, traffic data, weather conditions and other ambient noise inputs.

Noise monitoring equipment is typically installed for a period of at least one week, close to a dwelling, to monitor background noise levels. The noise monitoring team will install and calibrate the monitoring equipment, and will return after the monitoring is complete to remove the equipment.

**Air quality surveys**

Similar to noise, air quality monitoring will be undertaken as required to collect information about existing air quality conditions. The air quality monitoring team will install and calibrate the monitoring equipment, and will return after the monitoring is complete to remove the equipment.

**Cultural heritage surveys**

Cultural heritage surveys are undertaken to understand the extent to which cultural heritage sites or objects on the proposed rail network may be impacted by planned works, and how any impacts can be managed.

Cultural heritage surveys involve walking over the proposed area of development to identify cultural heritage sites and objects. In some locations, archaeological investigations (also known as test pits) may be undertaken to gain a better understanding of Aboriginal artefacts located beneath the ground surface. Archaeological investigations are generally only undertaken in areas of higher cultural heritage sensitivity or potential.

Other heritage surveys may be undertaken on private land to assess the presence or potential for non-Indigenous cultural heritage.

**Transport surveys**

Traffic counts and surveys may be undertaken to collect data about how the local road networks are used. These are usually conducted from public areas, and would not require private land access.
Social and socio-economic surveys

Social and socio-economic surveys inform the extent of potential social and economic impacts and benefits created by Inland Rail. Generally these will not require access to private land, and are conducted online, by phone, face to face or during other community engagement activities.

Land use surveys

Land use surveys may be required to determine the particular purpose of land use in an area including mapping, zoning and aerial imagery.

Landscape and visual amenity surveys

Landscape and visual amenity surveys and site visits determine the current scale, landform and pattern of the existing landscape. We will look at these and use them to predict the potential changes in available views of the landscape that occur as a result of Inland Rail infrastructure being developed. Generally these will be conducted from public areas and vantage points. If private land access is required this will form part of your Land Access Agreement.

Want to know more?

ARTC is committed to working with State and local governments, communities and landowners as a vital part of our planning and consultation work, and we value your input. If you have any questions or comments about environmental field studies in your area please let us know.

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