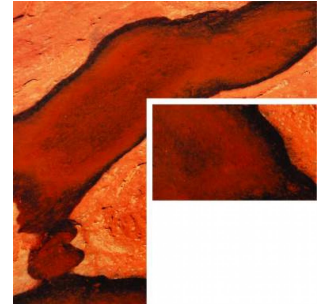


Capability Statement

28 Nov 2018

FYFE PTY LTD



INDUSTRIES SERVED

CONSTRUCTION &
ENGINEERING

DEFENCE

LAND &
AGRICULTURE

MINING

OIL, GAS & ENERGY

PROFESSIONAL
SERVICES

RAIL

STEEL

TRANSPORT

WATER

Company Details

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Web: www.fyfe.com.au

ICN Gateway Company ID: 74809

ABN: 57 008 116 130

Locations: 11

NT CAL Accredited: Yes

Works in Remote Locations: Yes

Contacts

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Fyfe provides a national survey service across a broad range of industry sectors.

Summary

Fyfe Pty Ltd (Fyfe) is a multi-disciplinary consultancy providing comprehensive engineering, environmental, planning, and surveying services throughout Australia. Fyfe work with a wide range of clients in the energy & resources, infrastructure and property sectors to provide high quality, commercially pragmatic solutions with a strong focus on client service and delivery.

Fyfe was established in South Australia in 1982 and is

headquartered in Adelaide, Australia. Fyfe is an employee-owned company, and as such delivers a business model with a vested interest in project ownership and client satisfaction.

Fyfe has approximately 250 staff located in offices throughout metropolitan and regional areas of South Australia, Queensland, Northern Territory, New South Wales, Victoria and Western Australia.

Description

Fyfe's workforce is situated in offices throughout metropolitan and regional areas of Queensland, Northern Territory, South Australia, New South Wales, Victoria and Western Australia.

Fyfe maintains offices at the following locations – Adelaide, Alice Springs, Ballera, Brisbane, Chinchilla, Darwin, Melbourne, Moomba, Mt Barker, Muswellbrook, Perth and Roma.

Fyfe has the capability to provide the following services:

- Automation
- Civil Engineering
- Electrical and Instrumentation
- Environmental

- GIS/Survey Plans
- 3D Laser Scanning
- Mechanical Engineering
- Pipeline Engineering
- Planning
- Process Engineering
- Project Management
- Structural Engineering
- Survey / Drone Survey
- Urban Development

Fyfe has established business systems that have proven successful through the achievements of the Company. These systems provide the necessary control of the business and cater for our key objective of 'fit for purpose project outcomes', which provide value for money services.

Associations

- > Board Membership of the Australian Pipeline & Gas Association
- > SACOME Council
- > APGA Research and Standards Committee
- > APGA Young Professionals
- > HIA Committee
- > Member of Surveyors Board of South Australia
- > Membership of Trimble Trusted Advisory Committee
- > Member of Surveying Spatial Science Institutions SA
- > Women in Resources SA
- > Member of Norwood Resource Incorporated
- > SACOME
- > UDIA

Accreditations

- > ISO 9001:2015 Quality Management System - Certificate No. 516051-Q
- > AS/NZS 4801:2001 Occupational Health & Safety Management System - Certificate No. 516051-S
- > ISO 14001:2015 Environmental Management System - Certificate No. 516051-E

Industries Served

- > Construction & Engineering
- > Defence
- > Land & Agriculture
- > Mining
- > Oil, Gas & Energy
- > Professional Services
- > Rail
- > Steel
- > Transport
- > Water

Products & Services

- > Automation
- > Engineering (civil, structural, mechanical, E&I, process, pipeline)
- > Environmental services
- > Planning
- > Survey / 3D laser scanning / GIS / UAV drone survey

Major Clients

- > Adelaide Brighton Cement
- > Adrail
- > APA Group
- > ATCO Gas Australia
- > AV Jennings
- > Arrow Energy
- > Bardavcol
- > Beach Energy
- > BHP
- > BMD Constructions Pty Ltd
- > Bunnings
- > CPB Contractors
- > Department of Defence
- > Department of Planning, Transport & Infrastructure (SA)
- > Department of Infrastructure (NT)
- > Department of Infrastructure Planning & Logistics (NT)
- > Downer EDI
- > EPA SA
- > Enerflex
- > Eni
- > Epic Energy
- > ExxonMobil
- > Fluor
- > Gladstone LNG
- > Halikos Group
- > Heathgate Resources
- > Hickinbotham
- > Jemena
- > juwi Renewable Energy Pty Ltd
- > Kogas
- > Leightons
- > Lendlease
- > Local Government
- > Mach Energy Australia
- > MacMahon/John Holland JV
- > Macmahon
- > McConnell Dowell
- > Milestone Engineers
- > MPC
- > NACAP
- > NT Gas
- > OM Manganese
- > Origin
- > Ostojic
- > Peregrine
- > Petronas
- > Power Water Corporation
- > QGC
- > Quadrant Energy Australia Ltd
- > Renewal SA
- > Rio Tinto
- > SA Government
- > Saipem
- > Santos Ltd
- > SEA Gas
- > Senex Energy
- > Sitzler Pty Ltd
- > Sitzler/Boulderstone JV
- > Starfish Developments
- > Stratco
- > Strike Energy
- > Territory Alliance
- > Total
- > Victoria Petroleum
- > Viva Energy
- > WorleyParsons

Facilities and Equipment

- > 12D
- > Leica Laser Scanner
- > AutoCAD
- > ArcView
- > Bentley
- > CAD (various)
- > AutoCAD Map
- > CivilCAD
- > Cloudworx
- > GIS
- > Hysis
- > 3D laser scanners
- > MapInfo
- > Pipesim
- > Phast
- > Plant 3DRevit
- > Staad
- > TEDDS
- > Terra Model
- > Trimble Total Stations
- > Trimble GPS
- > Trimble GNSS GPS
- > Trimble S6 Robotic station
- > Vehicles | Field Survey Vehicles (x 30)
- > Surveyors | Licensed Surveyors (x 20)

Previous Significant Projects

2018

Atlas Lateral Pipeline | Survey **\$100,000**

Client: Jemena Limited

Scope: Cultural heritage and environmental survey, pipeline control survey, centreline survey, 3D scanning of tie-in facilities, cadastral survey (easement plans)

The pipeline alignment comprises three parts:

- Part 1: 11 km from Atlas Compression facility to Gadsbys Road north of QGC's Woleebee Creek facility.
- Part 2: 41 km from south of QGC's Woleebee Creek facility to the Darling Downs Pipeline (DDP).
- Part 3: Approximately 4 to 5 km route connecting part 1 and part 2

2018

BHP Olympic Dam Tailings Retention System **\$500,000**

Client: BHP

Fyfe has been engaged by BHP to provide ground survey and aerial photogrammetry services of the following areas as part of the portfolio of Tailings Retention System Upgrade Projects at Olympic Dam -

- TSF4 Buttress Upgrade
- Dam Break Barrier Wall
- Evaporation Pond 3 Raise
- Northern and Southern Borrow Pits
- Existing Stockpiles

2018

Atlas Lateral | Pipeline Detailed Design **\$500,000**

Client: Jemena Limited

Scope: Pipeline engineering design (mechanical, process, electrical, civil/structural, cathodic protection, GIS and drafting/design)

The Atlas Lateral will be one continuous pipeline (DN200 15.3 MPa) from the Atlas Compressor Station to the tie-in point on DDP approximately 60 km in length. Project Atlas is planned to commence commercial production in 2019.

2018

Australian Height Datum (AHD) Determination for Groundwater and Surface Water Monitoring Networks **\$400,000**

Client: Ventia Pty Ltd (Principal DELWP)

Ventia currently monitor both groundwater and surface water sites across Victoria for DELWP. Approximately 1450 groundwater sites are monitored on a quarterly basis and approximately 250 surface water sites (of a total 750) are monitored monthly.

Fyfe's main role with this project was to utilise the Global Navigation Satellite System (GNSS) and Continuously Operating Reference Station (CORS) network for height determination and site calibration.

2018

Chinchilla Solar Project **\$50,000**

Client: LSG Group

The Chinchilla Solar Project is a 20 MW solar farm located 10 km west of Chinchilla, Queensland. Fyfe has been engaged by the LSG Group to provide survey services across the site.

2018**Darlington Upgrade Project | Offsite Bridge Construction Set-Out Survey
\$300,000****Client: Gateway South (JV Laing O'Rourke / Fulton Hogan - Principal: DPTI)**

The Darlington Upgrade Project is an important stage in the delivery of Adelaide's North-South Corridor and will deliver an upgrade of approximately 3.3 kilometres of the existing Main South Road.

Fyfe provided:

- Design and set out temporary structural towers for the construction of bridge spans off site
- Establish high accuracy survey control around bridge construction site
- Determine logistical travel paths for Self-Propelled Modular Trailers (SPMT) + 3D Modelling
- And more

2018**Hamilton Hill Estate, Woodforde
\$400,000****Client: Starfish Developments**

Starfish Developments is the Developer, Development Manager and Sales Agent to Hamilton Hill Estate at Woodforde consisting approximately 400 dwellings progressively constructed over some four years.

Fyfe's role and responsibility

- Planning Phase Works
- Project Management
- Project Engineering and Service Authority Liaison
- Stormwater Management Design
- Civil Design and Documentation
- Tender Call, Contract Award, Superintendency & Contract Administration

2018**Environmental Services
\$300,000****Client: Peregrine Corporation**

2011-ongoing

Scope: Trusted Advisor, Acquisition Due Diligence Assessments, Risk Management, Environmental Site Assessments, Site Remediation, Regulatory Liaison, Portfolio Management

2018**GLNG Project, Eastern Queensland
\$1,000,000****Client: Santos Ltd**

Fyfe is providing design, costing and construction documentation for Santos CSG gathering systems. The gathering systems range from a few flowlines to hundreds of flowlines. Fyfe is

- Performing constructability reviews, including consideration for environmental and safety requirements
- Integrating GIS with engineering and drafting tools and processes
- Provide GIS data of pipeline routes and related infrastructure for construction

2018**Mount Pleasant Mine Rail Loop
\$300,000****Client: BGC and Rhomberg (Principal MACH Energy)**

Scope: Survey services, land division, project management, drone surveys, as-built information, laser scanning and machine guidance

Fyfe was recently engaged to undertake the survey of a new 6km private rail line for a new coal mine in the Hunter Valley. The track was diligently surveyed over a week during day and night shifts as a tamping machine chased us down the line moving the rail to millimetre accuracy.

2018
Northern Gas Pipeline | Land Survey and Dilapidation Survey
\$1,000,000

Client: McConnell Dowell Constructors (Aust) Pty Ltd (Principal Jemena / Owner NT Government)

Stage 1:

Fyfe's Subcontract Scope of Services comprises of land surveying and dilapidation survey as separable portions to support the construction of the Northern Gas Pipeline (NGP). The works include construction of 481km of the 622km 12 gas pipeline between Tennant Creek and Mt Isa, main line valves, CP stations and a scraper station.

Stage 2:

Fyfe were also engaged to carry out the construction survey.

2018
Replacement M6 Pipeline | Survey
\$100,000

Client: BHP

Fyfe were engaged by BHP to undertake a topographical survey providing:

- Placement of original survey marks to establish a local datum and to locate the existing pipeline easement corridor.
- Location of valves in subject area to aid in establishing the location of the existing pipeline.
- Topographic survey of corridor of interest.
- Establish one temporary bench mark every kilometre, which is available for use by the construction contractor.

2018
Origin Energy 3D Laser Scan (Various facilities)
\$100,000

Client: Origin Energy

Fyfe has been providing 3D laser scanning services to many of Origin's assets located throughout Queensland for many years. Of particular note are sites visited as part of the HV Cable Replacement Project including:

- Orana GPF
- Combabula GPF
- Condabri South GPF
- Condabri Central GPF
- Condabri North GPF
- Reedy Creek GPF
- Eurombah Creek GPF

2018
Port Adelaide Redevelopment Dock 1 & Port Approach South
\$125,000

Client: Starfish Developments Pty Ltd

Fyfe have been engaged by Starfish Developments to undertake the civil engineering design, survey and construction phase services for the Port Adelaide Redevelopment (Dock 1 and The Port Approach South). The Port Adelaide Redevelopment is an ongoing high density redevelopment of a brownfield site located on the banks of the Port River. An old, unused dock breaks the site into two sections which have been given the names, Dock One and Port Approach South. Project value \$32m (2016-present)

2018
Roma East Gathering
\$1,000,000

Client: Santos Ltd

Fyfe is currently engaged by Santos to provide detailed design services for the Roma East gathering system. The new gathering system comprises more than 600 kilometres of gas and water pipelines and more than 400 wells. The gathering system also includes pipeline assemblies such as lease risers, isolation valves, low point drains and high point vents.

2018**Tanami Gas Pipeline | Construction Survey
\$1,500,000****Client: MPC Kinetic (Principal Australian Gas
Infrastructure Group [AGIG])**

Running for approximately 440 km, the Tanami Gas Pipeline will carry gas from an Inlet Meter Station connecting to the Amadeus Gas Pipeline, at a location approximately 180 km north west of Alice Springs. MPC Kinetic has been awarded the construction contract which is anticipated to take approximately ten months commencing in the second quarter of 2018. Fyfe was subsequently awarded the Construction Survey Services Package for the duration of the construction phase.

2018**WAG Altona and Geelong Metering Upgrade
\$100,000****Client: Viva Energy**

A feasibility study was completed, providing the options for Installation of new meters, associated piping and metering control system that would bring metering and data control in line with current API standards and remove the risk associated with corrosion of the underground components of this system, including dead legs, flanges and small bore fittings. The proposed upgrade will also improve redundancy of the system, reduce ongoing operation and maintenance costs and remove redundant pipework

2017**Arcadia Lateral Design
\$150,000****Client: Santos**

Fyfe was engaged by Santos to provide engineering services for the detailed design of the Arcadia Lateral Pipeline. The pipeline connects the Arcadia Compressor Station (ACS01) to the Gladstone Transmission Pipeline (GTP) at MLV80.

2018**Varanus Island Firewater and Produced Water
Upgrade Projects
\$500,000****Client: Quadrant Energy**

1. Varanus Island firewater upgrade program
2. Varanus Island water system upgrade program

Fyfe's scope of services includes

- Site laser scanning and underground survey
- FEED for tank location study
- Engineering and detail design for process, mechanical, E&I, civil and structural works

2018**Volumetric Reporting | Waste Facilities
\$175,000****Client: Upper Hunter Shire Council**

Location Scone, Aberdeen, Merriwa and Murrurundi Landfills, NSW

Scope Engineering Surveying, Volumetric and Ancillary Reporting

Year(s) 2018 - 2021 (four year contract)

Fyfe has been engaged by the Upper Hunter Shire Council (UHSC) to provide timely and accurate volumes to meet Environmental Protection Authority (EPA) requirements for each of the UHSC waste facilities around their area.

2017**Blackwater Solar Farm
\$50,000****Client: Juwi Renewable Energy**

Fyfe was engaged by juwi to undertake an initial site detail for the design and construction of a proposed 150 MWac solar farm for Energy Developments Limited on a property approximately 14 km south of Blackwater in the Bowen Basin. Detail of part of the Capricorn Highway and nearby rail line was required together with Cadastral surveys to reconfigure the lot for titling purposes.

2017

C-17 Maintenance Facility, Aircraft Apron and Associated Infrastructure Project **\$200,000**

Client: CPB Contractors

Existing heavy aircraft maintenance facilities at RAAF Base Amberley including the shared hangar and workshops were found to have significant shortfalls when required to support both the C-17A and KC-30A aircraft.

Fyfe has been contracted by CPB to provide survey services for project control establishment, survey set-out and auditing and service location in addition to GFIS.

2017

Pacific Highway Upgrade Project **\$600,000**

Client: Seymour Whyte Constructions

Construction of enabling works for 30 km of the Woolgoolga to Ballina section Wave 5A, from Woolli to Tynedale (bulk earthworks, drainage, soft soils, bridges, local road diversions, haul roads and subsidiary roads).

Fyfe's role and responsibility included construction survey services, providing up to six surveyors including survey manager and data manager.

2017

Port Augusta Solar Farm Redevelopment (UAV Drone Survey) **\$75,000**

Client: Confidential

Fyfe was engaged to carry out a topographic site feature and boundary survey of the 800 Hectare site for the proposed 300MW photovoltaic solar power generation plant located just kilometres outside a regional town centre.

Fyfe provided:

- outer boundary and certified land division survey
- preparation of a Lease Plan for registration with the Lands Titles Office:
- topographic and site feature survey
- drone survey of the site

2017

Muswellbrook Recycled Water Treatment Works **\$100,000**

Client: Downer EDI

Fyfe are Downers' on-site representative for all surveying services related to the project.

2017

O-Bahn City Access Project **\$125,000**

Client: Fulton Hogan

Fyfe has been working with Fulton Hogan since August 2017 to complete pavement surfacing works for all roads on this project. The project is expected to be complete by the end of 2017. Fyfe has provided its survey personnel experienced in working with asphalt crews in providing: fill or cut numbers; QA reports; accumulative spreadsheet of volumes; and set-out as required.

Fyfe has performed the surveys in accordance with the requirements of Fulton Hogan and their approach to the works.

2017

Port Augusta Northern Power Station **\$25,000**

Client: Zen Energy

Zen Energy was interested in acquiring current aerial photography plus levels over the former switchyards at the Northern Power Station to enable the design of new infrastructure. Fyfe was able to accomplish both of these requirements in one package by using a survey grade Drone incorporating a good quality camera and a suitable coverage of ground control targets which were surveyed using GPS to obtain accurate coordinates to control the photography.

2017**Sporting Hub Feasibility Study
\$75,000****Client: City of Tea Tree Gully**

Scope Project Lead, Town Planning, Civil Engineering, Environmental, Surveying, Consultation, Implementation, and Reporting

The City of Tea Tree Gully requested investigation into a potential multi-use sporting hub be considered for a parcel of land located at Smart Road, St Agnes, including the preparation of concept designs and long term staged development costing; and, with the potential relocation of the Golden Grove Central District Basketball Club a main consideration.

2016**Adelaide Brighton Cement - Various
Environmental Assessments
\$100,000****Client: Adelaide Brighton Cement**

2013 ongoing Scope Groundwater monitoring and management

Fyfe has to date undertaken the monitoring and management of a number of identified groundwater plumes across a number of sites for Adelaide Brighton Cement.

2016**Alice Springs Regional Land Use Plan
\$100,000****Client: Department of Lands, Planning and the
Environment (now DIPL)**

The Northern Territory Planning Commission (NTPC) identified the need to develop and implement an Alice Springs Regional Land Use Plan into the NT Planning Scheme to provide direction for growth of the municipality of Alice Springs.

Fyfe led the multidisciplinary team and undertook the preparation of the plan in consultation with key stakeholders and the general public with the ultimate aim for it to be included into the NT Planning Scheme as a Policy Document.

2017**Shoal Bay Waste Management Facility
\$150,000****Client: Territory Civil for City of Darwin**

The Shoal Bay Waste Management Facility is Darwin's singular waste management facility. It incorporates a landfill capacity, recycling facility and an independently operated recycle shop and mulch facility for green waste. Fyfe undertakes an end of month survey to calculate volume of mulch piles which has previously been done using conventional survey methods.

2017**Tarcoola Gold | Flora and Fauna Monitoring
\$50,000****Client: Environmental Projects Pty Ltd (for
Tarcoola Gold)**

Tarcoola Gold is required to undertake regular flora and fauna monitoring on its mining lease site in South Australia as part of its Program Environment Protection and Rehabilitation (PEPR) requirements.

The project is an established monitoring program which began in 2013. Fyfe has completed annual monitoring to determine if there are any long term trends in flora and fauna abundance and composition that may be attributed to the mine and its operation.

2016**Air 7000 Phase 2B - Service Identification and
Survey Recording
\$175,000****Client: Lendlease Building Contractors Pty Ltd
(Principal Department of Defence)**

Lend Lease has engaged Fyfe to undertake the Services Identification and Survey Recording of the existing underground services for the proposed construction of facilities required as part of the Maritime Patrol Aircraft Replacement Capability Project at the RAAF Base, Edinburgh - Main Operating Base.

2016

**BHP Billiton Sulphur Tank Replacement
\$300,000****Client: Ottoway Engineering**

Due to corrosion BHP Billiton required replacement of an existing molten sulphur tank and associated equipment. Extensive use of a 3D laser scan was used to align tie-in points with existing pipework. A 3D model was generated to facilitate an operability review with BHP Billiton onsite. Based on the final model construction drawings for the tank, pipework and structure were generated.

2016

**Bunnings Store, Seaford
\$150,000****Client: Pascale Constructions**

New Bunnings Store at Seaford delivered as a design and construct contract. The new building is 5,300 square metres and the development has a 252 space car park. The store is of steel frame construction and concrete pre-cast walls. Fyfe provided

- Geotechnical investigations
- Design of all structural elements of the buildings
- Design of all civil works including pavements and stormwater, both internal to the site and external in Council and DPTI controlled roads

2016

**Frost Road Meter Station Upgrade
\$200,000****Client: Epic Energy**

2015-2016: Detailed facility design including survey services

Fyfe provided engineering services for detailed design involving process, mechanical, structural and electrical disciplines.

To complement the engineering services Fyfe provided survey services for the determination of existing site boundary and as-built location of piping, equipment and supports to ensure minimal on-site work through the use of prefabricated spooling.

2016

**Beverley Road Upgrade Project
\$300,000****Client: Heathgate Resources**

Fyfe was engaged to undertake engineering survey and detailed design and documentation for 115 km of haul roads, which included upgrade of six existing and creation of two new roads to service Heathgate Resources Beverley Uranium mine site. The existing roads were constructed of poor quality local material and had become depressed compared to the surrounding area through regular maintenance, resulting in poor drainage and rutting following minor rainfall events.

2016

**Coober Pedy Airport Runway Upgrade
\$25,000****Client: Fulton Hogan**

Fyfe carried out surveying activities over a three month period for Fulton Hogan's construction crews as a part of Coober Pedy's regional airport upgrade project. This upgrade included the widening of the main runway, improvement of the taxiways and re-marking of all pavements to meet current airport standards.

2016

**Elizabeth Village Development
\$100,000****Client: Elizabeth Village**

Elizabeth Village is a 64 allotment retirement community on Andrews Road, Penfield. Fyfe's role on this greenfield community titled development included survey, engineering and tender documentation.

2016
Kilburn Blair Athol Urban Renewal Master Plan
\$150,000

Client: Renewal SA

The study area comprised the northern portion of the suburbs of Kilburn and Blair Athol. The objective of the study was to provide a robust and flexible renewal strategy for the renewal of the study area, particularly the future redevelopment of government assets.

Multiple development scenarios were considered having regard to the key factors influencing the study area, in particular the impacts of industry on the development potential of the area.

2016
Marden Connect
\$3,000,000

Client: Qattro Pty Ltd

2014-2016 Scope: Planning, Survey, Civil Engineering, Project Management
 Project Value \$3million

Marden Connect is a comprehensive and sustainable medium density brown field redevelopment located at an inner-metropolitan area, 5 mins away from the Adelaide CBD.

Fyfe provided "one stop shop" services through the full life-cycle of this development, including planning, survey, engineering, project managing other consultants.

2016
WEST Residential Project | Stage 1 and 2
\$75,000

Client: Commercial & General

Commercial & General's residential project WEST encompasses the redevelopment of the former Footy Park in West Lakes.

Fyfe's work included gaining approval to create 146 residential allotments together with associated internal roads, reserve areas and subsequent dwelling applications.

2016
Glenelg East Stage 3: Environmental Site Assessment
\$150,000

Client: Environment Protection Authority, South Australia

2015-2016 Environmental Consultancy Services

Fyfe was engaged by the SA EPA to provide environmental consultancy services involving the assessment of soil, groundwater and soil vapour along with vapour intrusion modelling and human health risk assessment within the SA EPA designated assessment area.

2016
Northern Connector - Engineering Survey
\$300,000

Client: Department of Planning Transport and Infrastructure

2015-2016: Full Engineering Survey

Fyfe was awarded the DPTI contract to survey the Northern Connector Underground Services which was undertaken during November and December 2015. Fyfe delivered this project to DPTI on time and within budget on 14 December 2015.

Fyfe was subsequently awarded the full Engineering Survey contract which commenced on completion of the underground services survey in December 2015 and was delivered at the end of February 2016.

2016
Whyalla Northern Coastal Master Plan
\$50,000

Client: City of Whyalla and RDAWEP

In 2015, the City of Whyalla jointly with Regional Development Australia Whyalla Eyre Peninsula (RDAWEP) decided to take a strategic approach to the economic diversification of Whyalla, through the preparation of a tourism master plan for the Northern Coastline.

Awards: Winner, UDIA SA Awards for Excellence 2017, Category: Professional Consulting (Fyfe)

2015**Aldi Stores - Strategic Advice****\$100,000****Client: Aldi Stores**

Provision of strategic advice regarding the rollout of supermarkets across South Australia in terms of legislation and planning policy.

Undertaking research and analysis of potential sites which led to the preparation of development applications seeking planning consent, then negotiation with planning authorities to obtain approvals.

2015**ASC Dimensional Control Survey****\$700,000****Client: ASC Shipbuilder Pty Ltd / Air Warfare Destroyer Alliance**

2013-2015

Fyfe supplied five surveyors to assist the AWD Quality Control team during the construction the new fleet of navy ships. This highly confidential work involved precision surveys of the ship parts and components during construction. Our surveyors took sub millimetre measurements during the build that was critical for the designers and construction crews. Survey work was carried out on land and on the water, during critical parts of construction in 'round the clock' shifts.

2015**Defence Hazardous Areas Survey and Rectification Project - RAAF Base Edinburgh**
\$200,000**Client: Department of Defence**

Scope: Hazardous Area Classification

Fyfe was engaged to undertake the Hazardous Area Classifications (HAC) of 20 facilities at RAAF Base Edinburgh. A hazardous area classification report was generated for each of the twenty facilities.

2015**APY Lands Access Road****\$250,000****Client: Department of Planning, Transport and Infrastructure**

Fyfe's role and responsibility included providing survey crews and drafting services necessary for the provision of an engineering survey model for approximate 40 kilometres of dirt road for the purpose of design work for new road to DPTI Rural Standards; and providing survey control and project manage the subcontracting for photogrammetry of 231 kilometres as per the above specifications. Fyfe were able to employ three Traditional Owners on a casual basis during stages of the project.

2015**Bylong Coal Project - Hunter Valley NSW****\$500,000****Client: WorleyParsons (Principal: Kepco)**

Scope: Site survey services within mine site including roads; cadastral boundaries; fencelines; proposed rail loop; existing services; communications; UG MIA; OC MIA; and ARTC Level Crossings and Underpasses.

2015**Defence Hazardous Area Survey and Rectification Project - Larrakeyah, Coonawarra, Humpty Doo and Berrimah**
\$150,000**Client: Department of Defence**

Scope: Hazardous Area Classification

Fyfe was engaged to undertake the Hazardous Area Classifications (HAC) of 19 facilities at Larrakeyah Barracks, HMAS Coonawarra, Defence Establishment Berrimah and Humpty Doo Transmitter Station located at Northern Territory. A hazardous area classification report was generated for each of the nineteen facilities.

2015

**Lajamanu Road Upgrade, Katherine Region
\$100,000****Client: Department of Infrastructure NT**

Scope civil services for the design and documentation to upgrade Lajamanu Road. The Department of Infrastructure required the detailed design of approximately two kilometres of road upgrade (chainage 331.360 km to 333.360 km), incorporating part of the existing unsealed Lajamanu Road as sub-base.

2015

**Moomba to Gidgealpa Fuel Gas Pipeline
\$400,000****Client: Santos Ltd**

Scope: Engineering Services for FEED and Detailed Design

Project specification:

- Sales gas line from Moomba to Gidgealpa satellite to supply fuel gas to compressors
- Project specifications: DN 200, 26.5 km long with two midline risers with provisions for future connections.

2015

**North-South Corridor (T2T) - Property
Condition Assessment
\$250,000****Client: Department of Planning, Transport &
Infrastructure (DPTI)**

The North South Corridor Torrens Road to Torrens River is a critical piece of infrastructure for the creation of an improved north-south transport link in Adelaide.

Fyfe has been engaged to complete building inspections for over 300 premises and buildings to undertake the condition assessment and critically advise on any structural issues arising from the construction works.

2015

**Harts Range Defence Fuel Installation (DFI)
Remediation
\$150,000****Client: McMahon Services for the Department of
Defence**

Fyfe's role and responsibility included 3D laser scan of the existing facilities to allow as built information and reverse engineering of the installation; and design and documentation of all remedial works to the non-compliant items for submission to Defence including replacement of the fuel storage facility of horizontal tanks and delivery piping, upgrade of the flammable liquid drum store and installation of additional safety showers.

2015

**North East Gas Interconnect Proposal
\$100,000****Client: DDG Operations Pty Ltd [Principal:
Department of the Chief Minister, NT
Government]**

Through a competitive tender process, four organisations were invited to progress to a final request for proposals stage, one of those organisations was DDG Operations. Fyfe formed part of the DDG Operations Team. Fyfe provided preliminary design, environmental, planning and surveying services to DDG to enable them prepare a commercially competitive bid to the Northern Territory Government to design, construct, operate and own the NEGI pipeline.

2015

**Property Condition Assessments - Park Terrace,
Fitzroy Terrace and Torrens Road Capacity
Upgrade
\$100,000****Client: Bardavcol Pty Ltd**

The Park Terrace, Fitzroy Terrace and Torrens Road capacity upgrade is being undertaken to improve capacity and ease traffic congestion during construction of the North-South Corridor Torrens Road to River Torrens project. Fyfe were engaged by Bardavcol to undertake Property Condition Assessments for over 70 residential and

2015
QCLNG Project
\$60,000,000

Client: WorleyParsons & QGC

The Scope of work covered the survey of 2000 CSG wells and 3500 km of access and pipeline gathering corridors. The Engineering Survey Services contract scope for the QCLNG Upstream Project included control surveys, trunkline surveys, detail/cadastral/setout/cultural heritage and fencing surveys, pegging party surveys, rectification of digital cadastral database (DCDB) boundaries, petroleum well location survey, dual surveys for earthworks calculations, QA and GIS mapping.

2015
Santos Panel Contract
\$4,500,000

Client: Santos Ltd

Engineering, Design, GIS, Survey and Environmental Services, Queensland and NSW

Project Value \$4 million per annum Survey only

2015
Strzelecki Track South Australia
\$200,000

Client: Santos Ltd

Fyfe carried out the engineering design and project management associated with the road upgrade works on a 20 kilometre unsealed section of the Strzelecki Track from Moomba to the Big Lake Facility in the Cooper Basin. The upgrade included changes to the horizontal and vertical alignments to meet Austroad Guidelines for unsealed road design. Fyfe also carried out the Engineering survey on which the road design was based.

2015
RAAF Base Edinburgh DFI Remediation
\$500,000

Client: McMahon Services for the Department of Defence

Scope included laser scanning, mechanical engineering, pipeline engineering, electrical engineering, civil and structural engineering, architecture and building services engineering.

2015
Rio Tinto Alcan - Gove Operations Groundwater Assessments
\$500,000

Client: Rio Tinto Alcan Pty Ltd

Fyfe was engaged by Rio Tinto Alcan Gove Operations (Gove Operations), to undertake bi-annual and quarterly groundwater monitoring events and surface water monitoring events at their mine and processing operations located in Nhulunbuy, Northern Territory. The groundwater monitoring events completed by Fyfe are part of a long term groundwater monitoring program that has been running for over ten years at the site.

2015
Tiger Brennan Drive - Duplication Project
\$1,000,000

Client: BMD Constructions Pty Ltd for Department of Infrastructure

2014-2016

Fyfe has been contracted to provide the Survey Services for the construction of the Tiger Brennan Drive - Duplication Project.

Construction on the project began in December 2014 and is scheduled for completion in June 2016.

Project Value \$88 million

2015**Wilton Junction Master Plan and Consultation
\$100,000****Client: Wilton Junction Land Owners Group**

Fyfe is currently involved in the master planning, research and rezoning of Wilton Junction, a 35,000 person 11,700 worker new town south west of Sydney. Our role has involved the co-ordination of multiple landowners, the preparation of master plans, town centre and key location designs, input into the retail and employment strategies, establishment of a centres' hierarchy, input into the transport network formulation, the running of workshops with Council staff and elected representatives.

2014**Big Lake Fuel Gas Pipeline
\$250,000****Client: Jacobs (Principal Santos Ltd)**

Scope: Pipeline design and engineering services

Fyfe's pipeline design services for the Big Lake fuel gas pipeline included:

- 20 km buried DN150 steel fuel gas line from Moomba Plant to Big Lake with a lateral connected into Moomba South Central Facility.
- 20 km buried optic fibre cable terminated at the Moomba Plant, Big Lake and Moomba South Central Facility ending at a junction box in a buried concrete pit at a convenient location adjacent to the trunkline pig traps.

2014**Coal Seam Gas Gathering Systems
\$10,000,000****Client: Santos Ltd**

Since 2005 (current)

Santos continues to expand the Fairview, Roma and Scotia Coal Seam Gas Fields, and is using a standard wellhead gas gathering skid, developed by Fyfe, for all wellheads and standard flowline components.

Fyfe design for gas and water gathering systems includes:

- two-phase separator sizing and design
- FEED studies
- detailed mechanical design
- HAZOP facilitation
- detailed E&I design (power & control systems and

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- issuing of IFC packs

2014**APLNG Upstream Project Phase 1, Gas
Gathering System - Surveying Services
\$300,000,000****Client: WDS Limited**

Fyfe has been providing survey services since December 2012 (current).

The Surveying Services contract scope for the project includes: control surveys; right of way (ROW) pegging; set-out and as-built surveys of pipelines and associated utilities; quality assurance (QA) and production of client specific geographic information system (GIS) deliverables.

2014**Ban Ban Meter Station Design (NT)
\$100,000****Client: APA Group**

Design of a new odorant facility, vessel supply, construction supervision and commissioning.

(Project Value Confidential)

2014**Clovelly Park / Mitchell Park Environmental
Assessment
\$1,000,000****Client: Environment Protection Authority, SA**

Fyfe were engaged by the SA EPA to provide environmental consultancy services including soil, groundwater and soil vapour assessment works along with vapour intrusion modelling and human health risk assessment within the SA EPA designated assessment area located within the suburbs of Clovelly Park and Mitchell Park, South Australia. The designated assessment area is bordered by Main South Road to the east, Sturt Road and Sturt Creek to the west.

2014

**HEA and EEHA Engineering Services: 140
Defence Sites
\$100,000**

**Client: Transfield Services, CMS South Australia
(Principal: Department of Defence)**

Fyfe has been engaged by Transfield Services to provide HEA (Hazardous and Explosive Area) and EEHA (Electrical Equipment for Hazardous Area) consultancy services for verification dossiers and classification auditing including preparation of new classifications for approximately 140 areas. This represents nearly every Defence site in South Australia.

(Project Value Confidential)

2014

**Jacksons Airport - New Aviation Fuel Depot
\$100,000**

Client: Pacific Energy Aviation Limited

This project involved the construction of a brand new Jet A-1 fuel storage and handling depot which is connected to the underground fuel hydrant system servicing the Jacksons Airport Domestic and International Terminals.

Fyfe provided concept and detailed design; tender preparation and management to award.

2014

**Moomba Crocker Street Carpark
\$25,000**

Client: Santos Ltd

Fyfe were engaged by Santos to undertake the project management and design works required for the tender and construction purposes of the Moomba Crocker Street and FC70 camp car park upgrade. A Cat A excavation plan was also to be undertaken to accompany the work pack.

2014

**DLNG CO2 Absorber Tower (Darwin)
\$100,000**

Client: Monadelphous/ConocoPhillips

A new CO2 Absorber Vessel was to be installed at the Conoco Phillips DLNG onshore gas plant. The vessel was manufactured in Korea and shipped to the DLNG plant, where it was placed in a lay down yard for final dressing before being lifted into position. During these preparations, Fyfe were engaged to undertake a variety of dimensional surveying services to ensure the vessel would align with its design position and could be placed within its vertical operating tolerances.

2014

**Ichthys LNG Project Civil Works (CVL2 & CVL6)
\$300,000,000**

Client: Macmahon John Holland JV

Provided site survey services from 2012 to June 2014.

2014

**Longford Liquids Pipeline Replacement (Survey)
\$1,000,000**

Client: WorleyParsons

Feed pipeline route and boundary survey. The Longford to Long Island Point pipeline replacement project will construct and commission 186 kilometres of DN350 crude oil transmission buried pipeline with mainline valves. The project along the existing easement will replace a crude oil pipeline between Longford and Long Island Point in Victoria, Australia.

2014**Northern Territory Secure Facilities
\$400,000,000****Client: Sitzler Boulderstone Joint Venture**

Fyfe has been providing survey services since 2011.

Brief project description:

A 100 ha greenfield site at Howard Springs is being developed through a public-private partnership. The secure facility will contain an 800 bed multi-classification men's and women's prison with capacity for a further 200 beds, a mental health facility and a supported accommodation and program centre.

2014**Port Adelaide Precinct Plan
\$100,000****Client: Renewal SA**

Master Planning and Urban Design: Preparation of the Precinct Plan for the rejuvenation of Port Adelaide. Combining master planning and urban design principles formulation of ten precincts at Port Adelaide, delivery of an implementation strategy, including evaluation of the economic impact of the proposed strategy on Port Adelaide and a consultation strategy, involving presentations, meetings, information flyers and static displays.

2013**Gorgon Domgas Meter Station
\$100,000****Client: Enerflex (ultimate client: Chevron Australia)**

Fyfe (Robert Elks & Associates) provided civil engineering design services to Enerflex Process, as part of the engineering, procurement, construction and pre-commissioning contract for the Gorgon domestic gas custody transfer meter station.

The project site is near Compressor Station 1, about 150km south of Karratha in WA. When completed, the facility will enable the Gorgon joint venture partners to supply gas to the Dampier to Bunbury Natural Gas Pipeline.

2014**Moomba FC47 Camp Expansion - Sewer System Design
\$50,000****Client: Santos Ltd**

Santos wished to expand its main camp at Moomba (FC47). A previous review of the available services had shown that the existing sewer system did not have the available capacity to support this expansion. A new rising main sewer system was required to transfer the waste from the new camp expansion to the existing waste water treatment plant (WWTP).

Fyfe were contracted to complete the design of the sewer rising main and the tie in to the existing WWTP.

2014**QCLNG Engineering Survey Services
\$40,000,000****Client: QGC**

Provided ongoing engineering survey services since 2011. The SOW covered the survey of 2000 CSG wells and 3500 km of access and pipeline gathering corridors. The engineering survey services included control surveys, trunkline surveys, detail/cadastral/(DCDB) boundaries and petroleum well location survey.

2013**Cooper Infrastructure Expansion Program (CIEP) - Pipeline Concept Design
\$250,000****Client: Santos**

Scope: Concept design for Stage 1 and Stage 2 gas field developments in the Cooper Basin.

As part of Santos' Cooper Infrastructure Expansion Project (CIEP) Santos engaged Fyfe to develop the concept design for several hundred new wells with associated flowlines and gathering lines into selected satellites in the Cooper Basin. Concept design also included a new trunkline from Gidgealpa to Moomba and a return fuel gas line from Moomba to Gidgealpa.

2013**Gorgon Project - Rock Bolting Rig (RBR)
\$250,000****Client: SapuraClough (Principal Chevron)**

The AUD 52 billion Chevron operated Gorgon project is focused on developing the Gorgon and Jansz gas fields off the northwest coast of Western Australia. Part of this project is the 59.4 kilometre-long DomGas pipeline. Robert Elks & Associates (a Fyfe company) was retained to perform structural and mechanical engineering design and fabrication detailing for the rock bolting rig, which installed 1,546 pairs of stabilisation anchors along the pipeline. Won: 2013 Aust National Eng Excellence Award

2012**Environmental Assessments, Cooper Basin
\$100,000****Client: Santos Ltd**

Commenced in 2012 (ongoing)
Various Locations - SA and Queensland

Fyfe has been engaged to conduct Environmental Assessments for flowline corridors and well locations. The scope of these assessments includes:

- Flora
- Fauna
- Land use
- Water resources
- Air and noise
- Wetlands
- Cultural heritage (desk top only)

2011**AAMI Stadium Precinct Strategic Directions
\$100,000****Client: SANFL**

Strategic Advice: Fyfe conducted an investigation of site characteristics, infrastructure requirements and market opportunities leading to the preparation of a comprehensive strategic directions report identifying key opportunities and constraints, implementation tasks, delivery options, staging, income generation potential and indicative concept plans.

2013**Roma Town Gas Supply
\$1,000,000****Client: Santos Ltd**

Fyfe's role and responsibility

- Project management services from FEED through to commissioning
- Survey, including line of sight survey, detailed alignment survey, site layout, and as-built survey
- Survey plans
- Front end engineering design
- Detailed design
- Procurement services
- Commissioning documentation
- HAZOP facilitation
- Safety management study facilitation

2012**Fairview GLNG Upstream Project
\$4,000,000****Client: Fluor Corporation**

Survey Fyfe has been surveying the upstream infrastructure for gas and water flowlines, powerlines, roads and well sites. Fyfe established the survey control network for the entire project that facilitates further survey activities by future contractors.

2012**Northern Expressway, Port Wakefield to the
Gawler Bypass
\$100,000****Client: DPTI**

The Northern Expressway survey project involved a 23 kilometre road linking the Gawler Bypass with Port Wakefield Road and an upgrade of the existing Port Wakefield Road. Fyfe were contracted to complete a large portion of the engineering surveys prior to the design of the road and the junctions at each end. This involved surveying a large section of Port Wakefield Road, the Gawler Bypass, the Gawler Soaring Club and open farmland in between.

2010
Brisbane Airport Link and Northern Busway
Project
\$175,000

Client: Thiess John Holland

The Northern Busway is an infrastructure project designed to connect Brisbane airport and communities in Brisbane's northern suburbs to Brisbane City, major shopping centres and workplaces. It will become a vital link in the expanding busway network and reduce travel times for people travelling to and from the northern suburbs of Brisbane. Fyfe won the tender to survey and prepare the volumetric survey plans for three of the lease areas of the Brisbane Northern Busway Tunnel Project.

2010
Cassidy International Airport Runway Scan
Survey
\$25,000

Client: AECOM

Fyfe were engaged to undertake detailed survey activities including locating pavement levels, line marking and airstrip lighting at Cassidy International Airport. Due to scheduled once a week flights to and from the island, these works had to be completed in less than one week, so Fyfe derived a methodology utilising 3D laser scanning technology to ensure the maximum amount of data could be collected in the short time frame provided, whilst still maintaining the level of precision required.

2011
Devil Creek Development Project -
Accommodation Village
\$800,000,000

Client: Apache Energy Ltd, Nomad Modular Building

From 2008 - 2011 - Detail engineering for civil works
Description:

The Devil Creek Gas Plant is located on Mardie Station pastoral lease approximately 45 km south-west of Dampier, in Western Australia's north-west. The plant's onshore facilities consist of a two-train gas plant designed to process 200 million standard cubic feet per day. REA (a Fyfe Company) provided detailed engineering services for civil works at the accommodation village.



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