



CHARTIS
TECHNOLOGY



SPATIALLY ENABLING ENVIRONMENTAL DECISIONS

Chartis Technology



The Project Brief

- Web enabled Environmental Impact Reporting Tool to assist with decision making
- Guide Users through the Legislation mine field
- Cost effective report production
- Efficient retrieval, storage and on demand access to data
- Simple to use
- Flexibility to change report format

Red Tape is sometimes Green

- Problems associated with ‘green tape’.
- Complying with ever increasing regulations is expensive
- Need to be driven to seek out innovative solutions to complex problems to increase efficiencies and reduce the regulatory burden

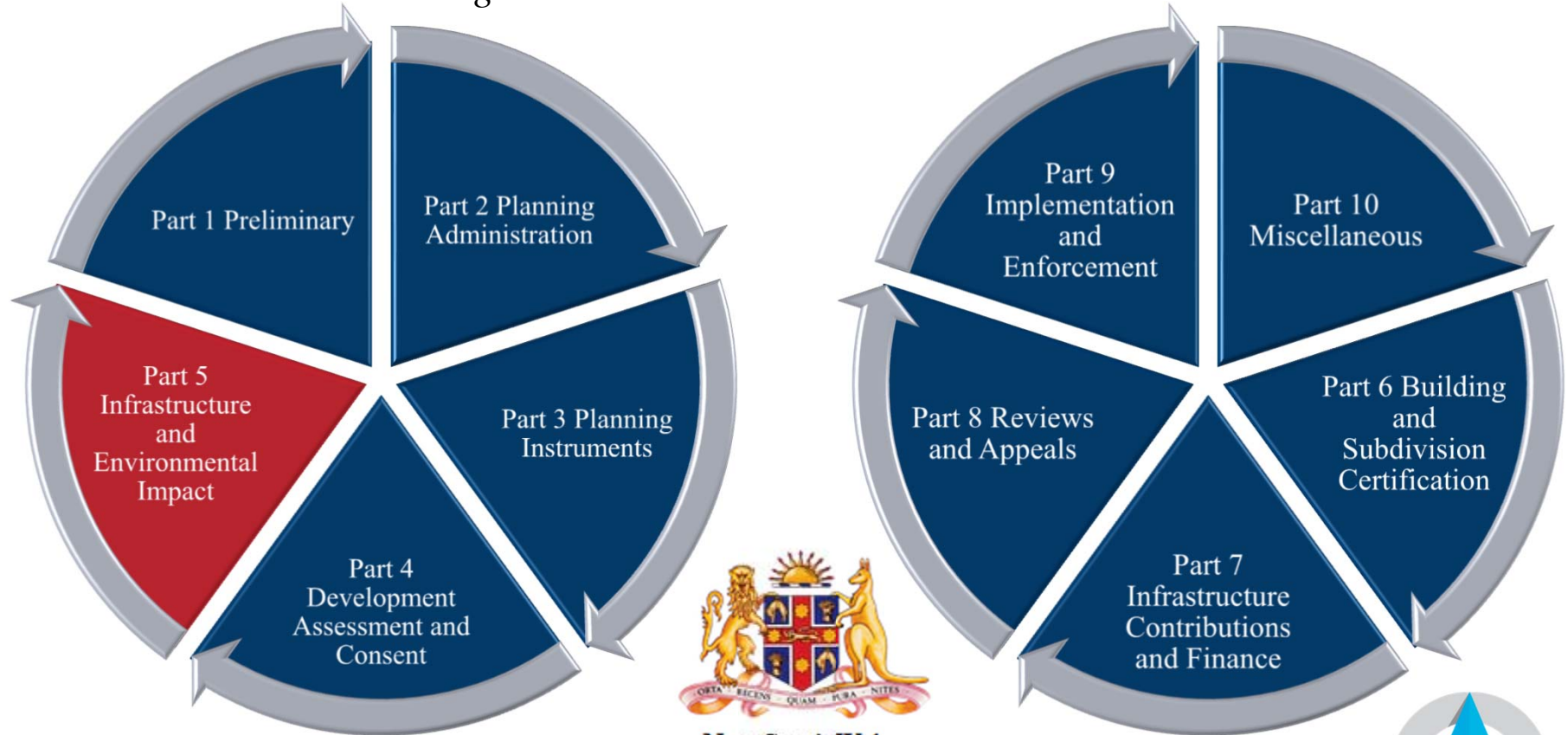
green tape (*uncountable*)

1. (*derogatory*) Time-consuming **bureaucratic** procedures or regulations relating to **environmental** concerns.



The Legislation - EP&A Act

NSW Environmental Planning and Assessment Act 1979



New South Wales

NSW Environmental Planning and Assessment Amendment Act 2017
– Adopted March 2018



EP&A Act - Part 5 (short version)

- Determining Authority (Councils, Utilities, TelCo's, Mining etc) have a duty to consider environmental impact
- They have a mandatory statutory requirement to consider potential environmental impacts under Part 5 of the EP&A Act prior to undertaking certain activities
- Failure to comply with these provisions can result in significant penalties

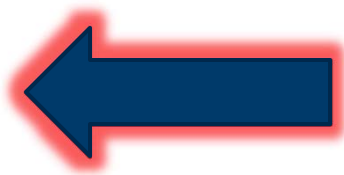


EP&A Act Part 5 – Council Requirements

- Activities proposed by Council may fall under Part 4 or Part 5
- Part 4 is assessed using a DA, Exempt or Complying Development
- Part 5 (Division 5.1) used when Part 4 doesn't apply
- Activities can be low to high impact
- **Activities are SPATIAL**



Location-based activities



activity means:

- (a) the use of land, and
- (b) the subdivision of land, and
- (c) the erection of a building, and
- (d) the carrying out of a work, and
- (e) the demolition of a building or work, and



EP&A Act Part 5 – Council Requirements

Part 5 approvals for public authorities

Development without consent can also apply to activities undertaken by government departments or agencies as part of their everyday responsibilities (e.g. water supply infrastructure being constructed by a water utility). Many of these activities are allowed to be carried out under [State Environmental Planning Policy \(Infrastructure\) 2007](#) (ISEPP).

Environmental assessment of these activities is undertaken under Part 5 of the [Environmental Planning and Assessment Act 1979](#) (EP&A Act).

- Part 5 assessment system is to ensure public authorities fully consider environmental issues before they undertake or approve activities that do not require development consent from a council or the Minister.
- If an activity is judged by the relevant public authority to ‘significantly affect the environment’, then an EIS/EIA will need to be prepared and considered



Demo

EasyEIA Login

The screenshot displays the EasyEIA web application interface. At the top left is the 'easyeia' logo. The top right navigation bar includes 'My reports', 'Matt Robinson', 'Admin', and a menu icon. The main interface is divided into two panels on the left and a large map area on the right. The left panel, titled 'Run new report', contains a search box with 'CSU Wagga' and buttons for 'Draw an area', 'Draw a point', 'Draw a line', 'Draw a circle', and 'Map layers'. The right panel, titled 'Selected study area', shows 'Area: 0.014 sq km' and buttons for 'Clear area', 'Zoom to study area', and 'Run environmental aspect triggers'. The map area shows an aerial view of a campus with a large field outlined in orange, adjacent to a pond and other green spaces.

Data Requirements

- Web based access based upon environmental information available from various NSW and Commonwealth Government departments.

- Periodic update the information,
 - monthly, quarterly, six monthly or yearly depending upon the legal obligations for the currency of the information.



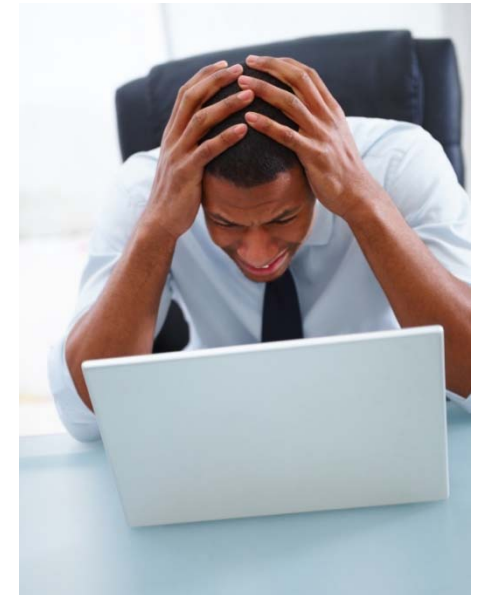
Data Stakeholders

- ❑ OEH Bionet
- ❑ SEED Data Portal
- ❑ Dept of Environment and Energy
- ❑ EPA
- ❑ Spatial Services
- ❑ Data.gov.au
- ❑ DPI
- ❑ NSW Geological Survey
- ❑ + more



No Uniform Data Formats

- ❑ WFS – Web Feature Service
- ❑ WMTS – Web Map Tile Service
- ❑ WMS – Web Map Service
- ❑ Shapefiles
- ❑ Geodatabase
- ❑ Excel / CSV
- ❑ Web Endpoint (JSON)



Data Themes

- **Aboriginal Culture**

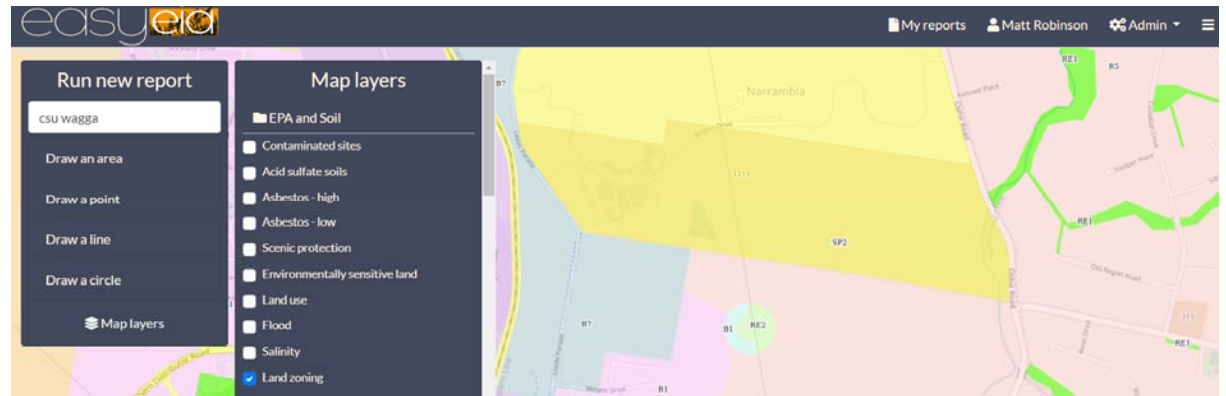
- Aboriginal Register
- Native Title

- **Environmental**

- Critical Habitat
- Mitchell Landscapes
- Flora
- Fauna

- **Heritage and Planning**

- Various Heritage Datasets
- Heritage (State s170)
- World Heritage
- Land Zoning



Data Themes

□ Land

- Acid Sulphate Soils Risk
- Contaminated Land
- Land use (2007)
- Steep or Highly Erodible

□ Waterways

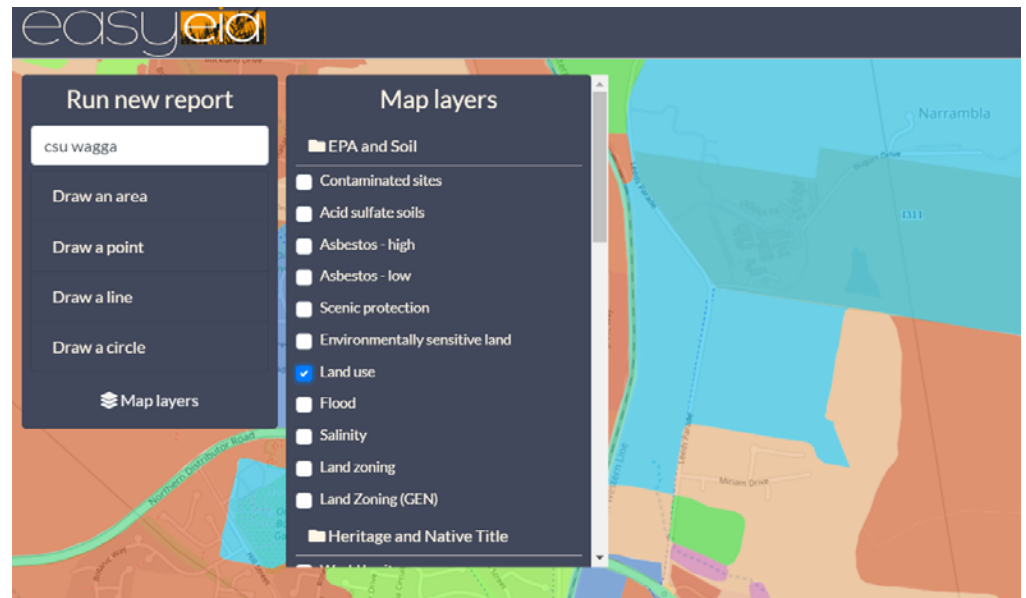
- Marine Parks
- Wetlands
- SEPPs

□ Administrative Data

- LGA
- State Forest
- National Parks

□ Foundation Data

- DCDB
- Imagery



Data Challenges

- ❑ Threatened Species 13 Million Records and growing
- ❑ Vegetation, Bushfire, Land Use – large and complex polygons
- ❑ Currency
- ❑ Sourcing the right data for the job
- ❑ Some Custodians not Open Data minded



We Love Web Services and APIs



Home > Bionet

BioNet Web Services

About

BioNet is the trusted source of biodiversity data for the state of NSW and a resource for all. As a part of OEH's **Open OEH** initiative, data held in BioNet has been made available via an Open Application Programming Interface (API). This enables organisations and individuals to directly integrate biodiversity data into their software systems and unlock the innovation potential of this valuable data asset.

By delivering this data via an Open API we are aiming to improve environmental decision making through integration of up to date, consistent and reliable biodiversity data in planning and decision making systems.

What data have you made available via your API?

Release 3.1 of the API (<https://data.bionet.nsw.gov.au/biosvcapp/odata>) makes the following BioNet data collections available:

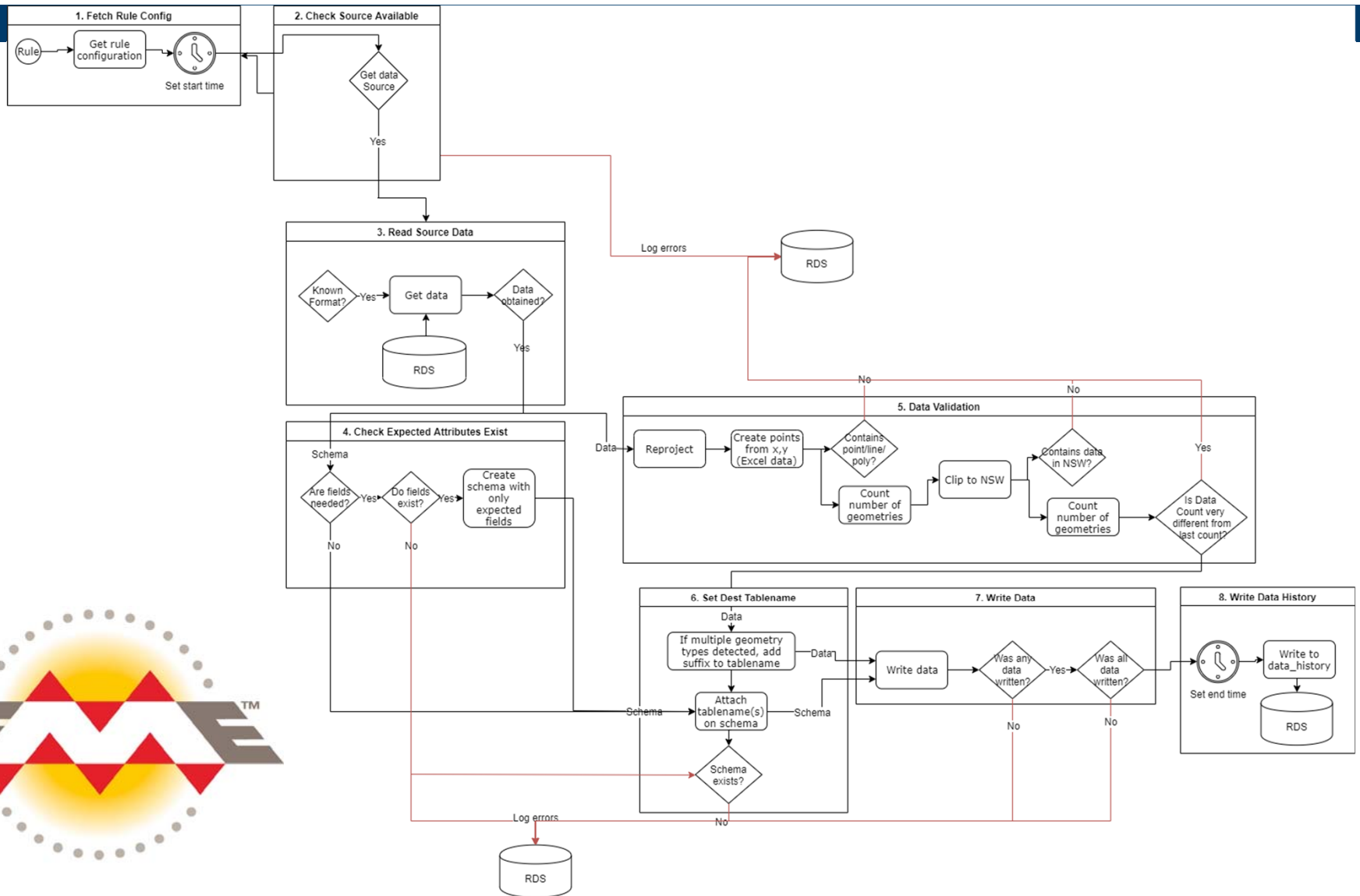
- Species Sightings
- Vegetation Classification
- NSW Landscapes
- Threatened Biodiversity
- Species Names

Data Validation

- ❑ Has request failed
- ❑ Valid Geometry
- ❑ Valid Projection
- ❑ Does the dataset have a changed schema from supply to supply



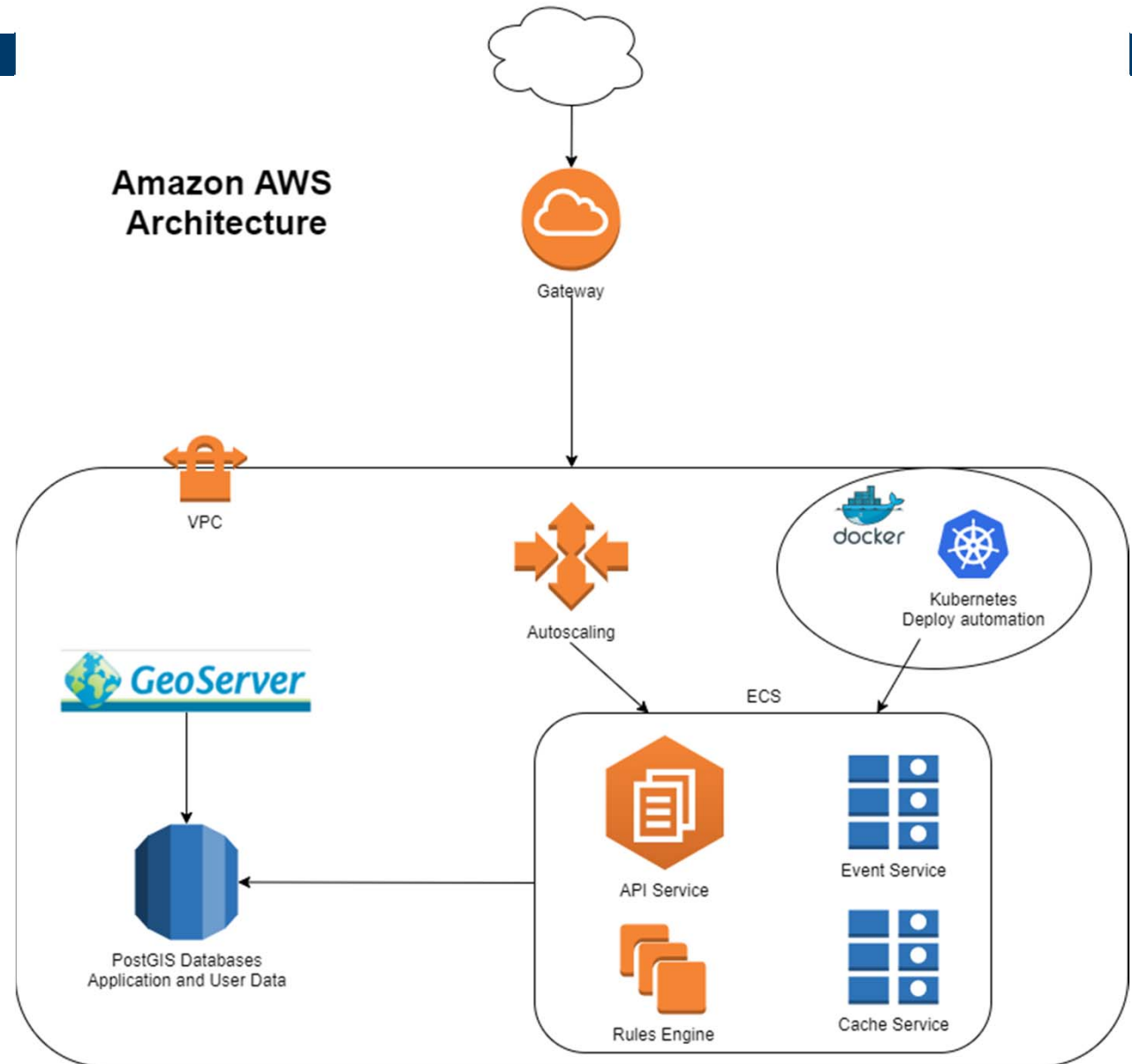
Data Load and Validation



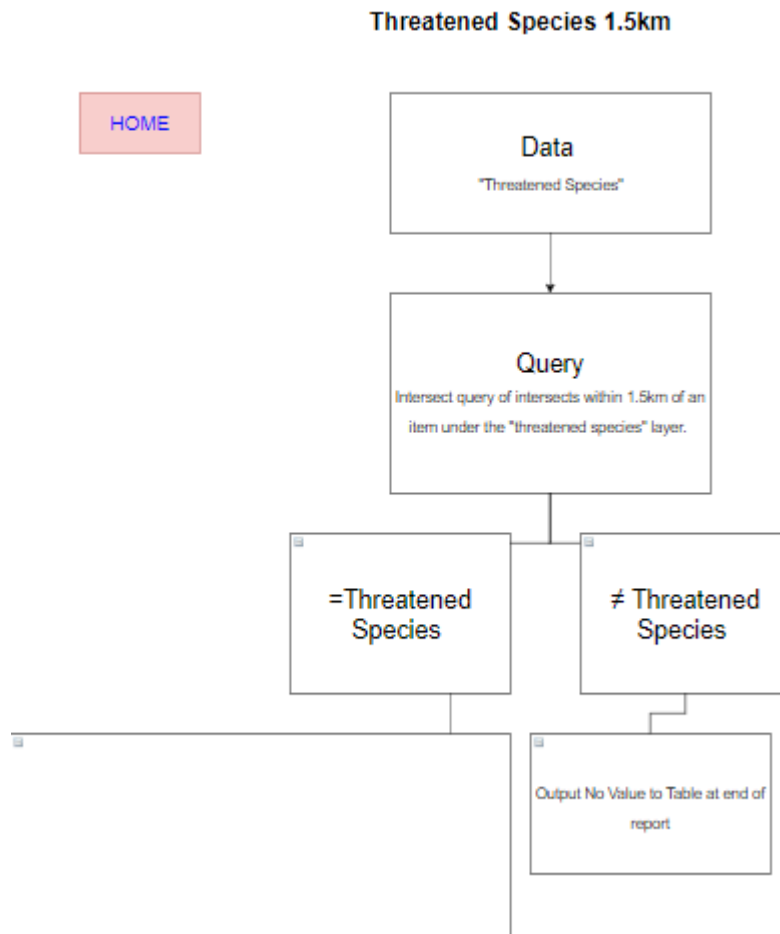
Cloud Architecture



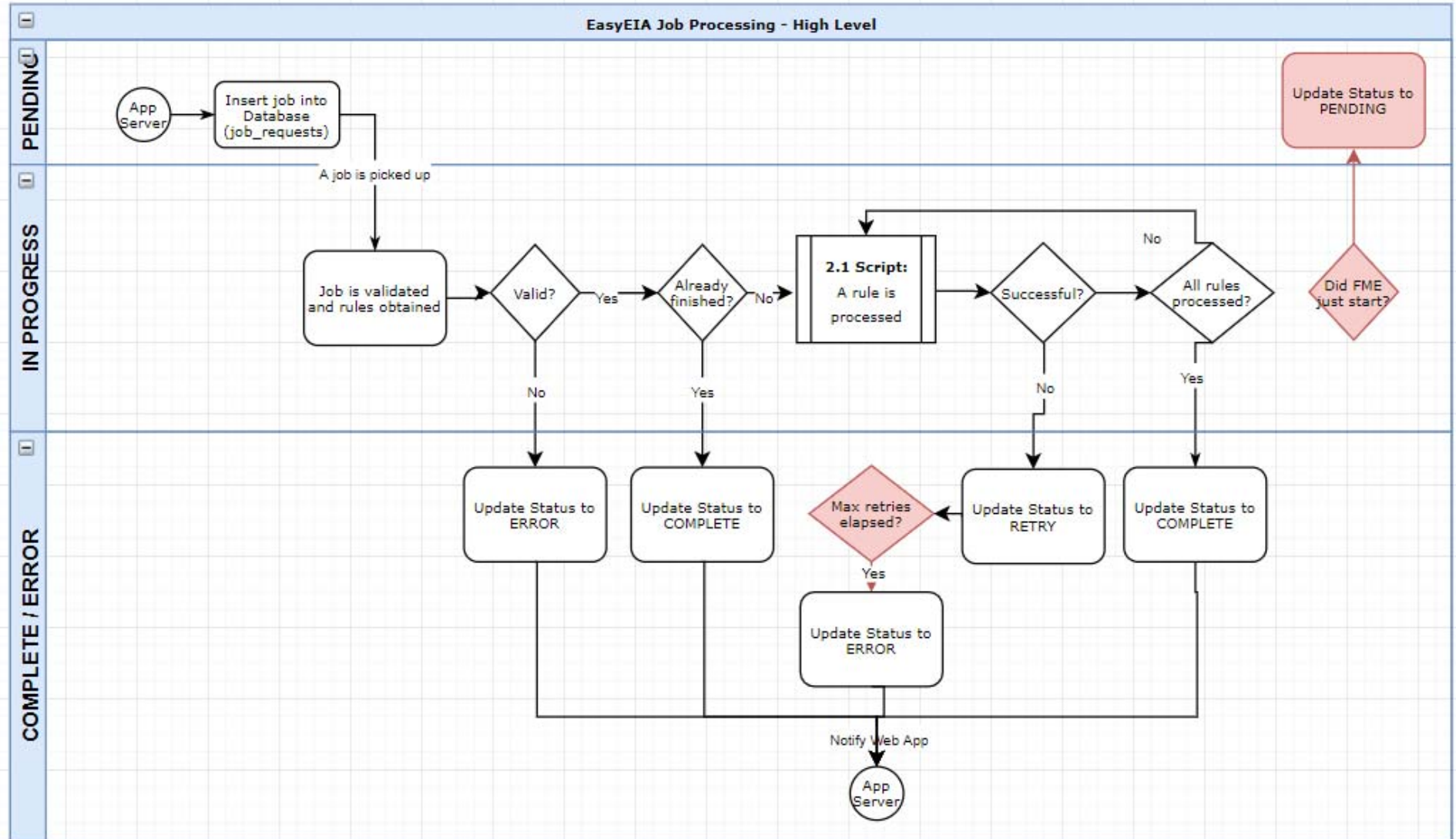
Amazon AWS Architecture



Rules Logic



Data Workflow and Report Engine





Contact

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0407 315 585

Chartis Technology

Offline Demo

The screenshot displays the 'easyeia' web application interface. At the top left is the 'easyeia' logo. The top right navigation bar includes 'My reports', a user profile for 'Matt Robinson', 'Admin' settings, and a help menu. A dark sidebar on the left contains the following options: 'Run new report', 'Address search' (with an input field), 'Draw an area', 'Draw a point', 'Draw a line', 'Draw a circle', and 'Map layers'. The main map area shows a geographical view of Australia with labels for 'Dubbo', 'Tamworth', 'Armidale', 'Grafton', 'Coffs Harbour', 'Taree', 'Guy Fawkes River National Park', 'Oxley Wild Rivers National Park', 'Hunter Special Purpose', 'Hunter Marine Park', and 'Central Eastern National Park Zone'. A purple boundary line is drawn on the map. In the bottom right corner of the map, there is a small copyright notice: '© OpenStreetMap contributors'.



Offline Demo

The screenshot displays the 'easyeia' web application interface. At the top left is the 'easyeia' logo. The top right navigation bar includes 'My reports', a user profile for 'Matt Robinson', an 'Admin' dropdown menu, and a help icon. On the left side, a dark sidebar menu is open, showing the following options: 'Run new report' (with a search box containing 'CSU Wagga'), 'Draw an area', 'Draw a point', 'Draw a line', 'Draw a circle', and 'Map layers'. The main area is a map of the Charles Sturt University campus, featuring buildings, roads labeled 'Warradagang Drive', 'Yirramarra Place', 'Leeds Parade', and 'Bungamba Way', and parking areas marked with 'P'. A large blue lake is visible on the right side of the map. The bottom right corner of the map area contains a small copyright notice: '© 2017 Chartis Technology'.



Offline Demo

The screenshot displays the easysurvey software interface. At the top left is the logo "easysurvey". The top right navigation bar includes "My reports", "Matt Robinson", and "Admin" with a dropdown arrow. Below this, a secondary bar repeats "My reports", "Matt Robinson", and "Admin".

On the left side, there are two main panels:

- Run new report:** A search box containing "CSU Wagga". Below it are buttons for "Draw an area", "Draw a point", "Draw a line", and "Draw a circle". At the bottom of this panel is a "Map layers" button with a map icon.
- Map layers:** A list of map layers with checkboxes:
 - EPA and Soil
 - Heritage and Native Title
 - Threatened Species and Fish
 - Vegetation
 - Base mapsBelow this list are three radio button options:
 - OSM
 - Stamen
 - NSW Imagery

The main map area shows an aerial view of a campus with several buildings, parking lots, and roads. To the right of the campus is a large green field, and further right is a body of water. The interface is overlaid on this map.



Offline Demo

The screenshot displays the 'easyEIA' software interface. At the top left is the 'easyEIA' logo. The top right navigation bar includes 'My reports', 'Matt Robinson', 'Admin', and a help icon. The main interface is divided into a sidebar on the left and a map area on the right.

Sidebar Menu:

- Run new report
- CSU Wagga
- Draw an area
- Draw a point
- Draw a line
- Draw a circle
- Map layers

Map Layers Panel:

- Scenic protection
- Environmentally sensitive land
- Land use
- Flood
- Salinity
- Land zoning
- Land Zoning (GEN)
- Heritage and Native Title
- Threatened Species and Fish
- Vegetation
- Base maps
 - OSM
 - Stamen
 - NSW Imagery

Map Area:

The map shows an aerial view of a rural area with several colored overlays. A large green area is labeled 'SP2'. A winding green line is labeled 'RE1'. Other areas are labeled 'RE2', 'R1', 'R2', 'IN1', 'B7', 'B1', and 'R5'. A zoom control is visible in the top right corner of the map area.



Offline Demo

The screenshot displays the 'easyEIA' software interface. At the top left is the 'easyEIA' logo. The top right navigation bar includes 'My reports', a user profile for 'Matt Robinson', 'Admin' settings, and a help icon. On the left side, there is a dark grey sidebar with the following options: 'Run new report' (with a dropdown menu showing 'CSU Wagga'), 'Draw an area' (highlighted in orange), 'Draw a point', 'Draw a line', 'Draw a circle', and 'Map layers'. The main area shows an aerial map of a campus and surrounding fields. A large, irregularly shaped area in the center of the map is outlined in orange. To the right of the map, a 'Selected study area' panel displays 'Area: 0.014 sq km' and three buttons: 'Clear area' (red), 'Zoom to study area' (grey), and 'Run environmental aspect triggers' (green). A zoom control with '+' and '-' buttons is located in the top right corner of the map area.

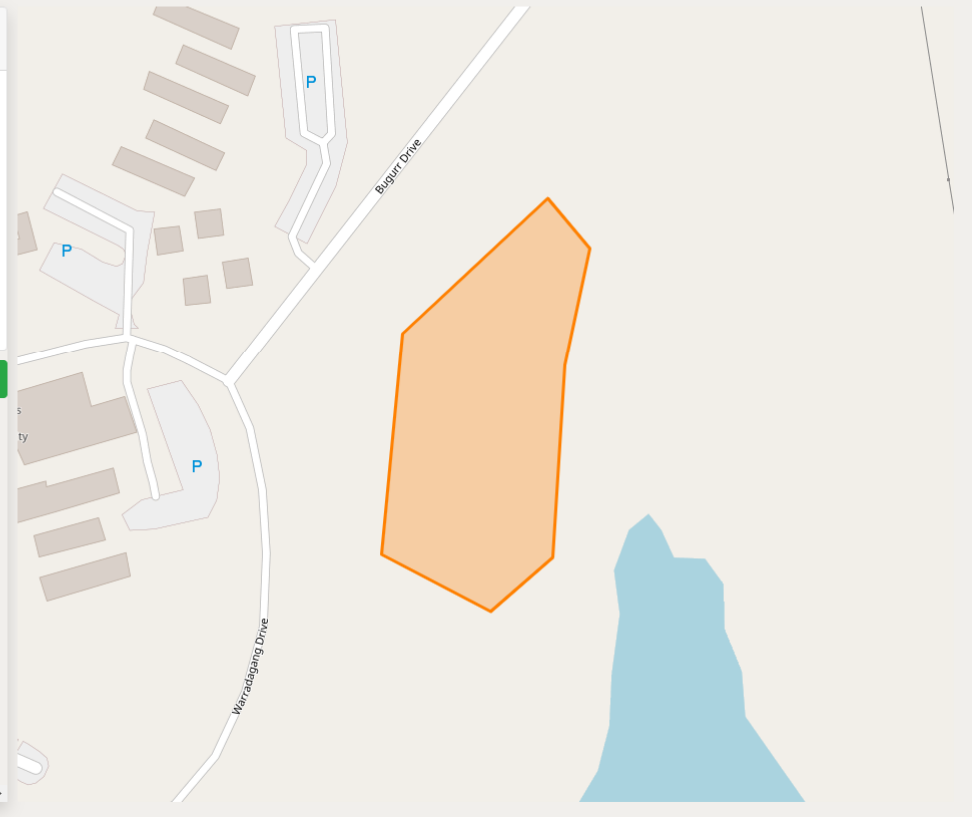


Save draft

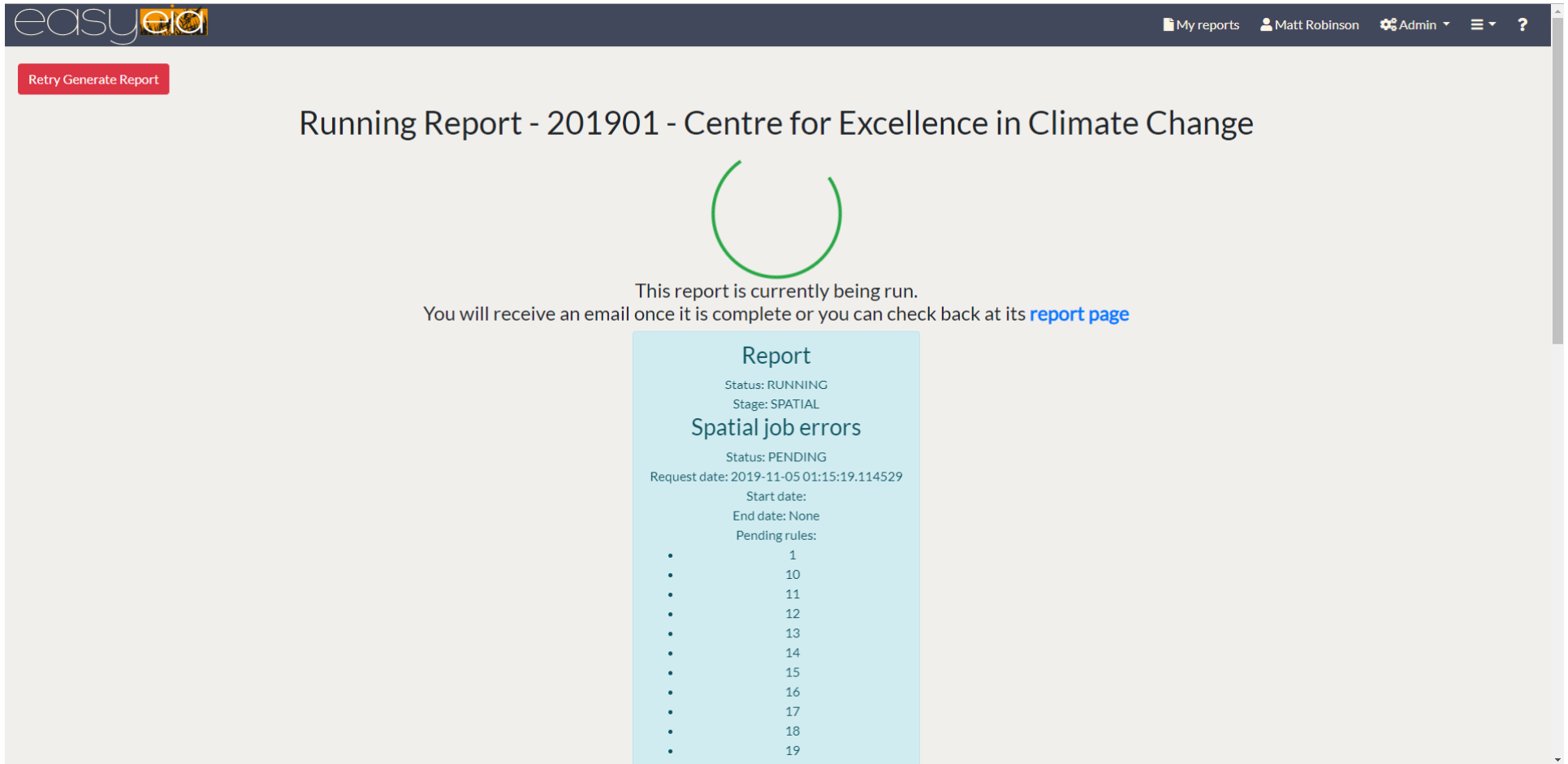
Project details

Project Number	<input type="text" value="201901"/>
<small>(Required) Project number for your reference</small>	
Project Name	<input type="text" value="Centre for Excellence in Climate Change"/>
<small>(Required) The name of your project.</small>	
Assessor	Matt Robinson
Report Date	Tuesday, November 5, 2019 12:13 PM

▶ Run Environmental Aspect Triggers report



Offline Demo – ~ 50 rules



The screenshot shows the 'easyeda' web interface. At the top left is the logo. At the top right, there are navigation links: 'My reports', 'Matt Robinson', 'Admin', and a menu icon. Below the navigation bar, there is a red button labeled 'Retry Generate Report'. The main heading is 'Running Report - 201901 - Centre for Excellence in Climate Change'. Below this is a green circular progress indicator. The text states: 'This report is currently being run. You will receive an email once it is complete or you can check back at its [report page](#)'. A light blue box contains the following details:

Report
Status: RUNNING
Stage: SPATIAL

Spatial job errors
Status: PENDING
Request date: 2019-11-05 01:15:19.114529
Start date:
End date: None
Pending rules:

- 1
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19



Offline Demo

The screenshot displays the 'easy eia' web application interface. The top navigation bar includes the logo, user information (Matt Robinson), and utility icons. The main content area is split into two columns. The left column, titled 'Project details', contains a 'Save draft' button and a series of questions for selection, each with a 'Yes' radio button. The right column shows a preview of the 'Environmental Aspect Triggers Report', which includes a title, a download button, the 'easy eia' logo, and a section for 'Environmental Aspect Constraint Report' with 'Report Details' (Name, Number, Assessor, Report Date, Report Number) and a 'Planning Heritage' section with an aerial image.

easy eia

My reports Matt Robinson Admin ?

Save draft

Environmental Aspect Triggers > Summary Environmental Report > Complete

Project details

Please select one of the following

Is the proposal covered by an existing lawful approval that is still valid? Yes

Can the proposal be undertaken as Exempt Development? Yes

(Rule 20) Can the proposal be undertaken as Exempt Development? Yes

Can the proposal be assessed under Part 5? Yes

Finalise Report

Environmental Aspect Triggers Report Download

easy eia

Environmental Aspect Constraint Report

Report Details

Name: Centre for Excellence in Climate Change
Number: 201901
Assessor: Matt Robinson
Report Date: 2019-11-05 01:13:46.176153
Report Number: 229b8628-ece3-4f82-b385-9e4f2c7bf6ab

Planning Heritage



Offline Demo

easy eia

My reports Matt Robinson Admin ?

Environmental Aspect Triggers > Summary Environmental Report > Complete

Save draft

Project details

Please select one of the following

Is the proposal covered by an existing lawful approval that is still valid? Yes

Can the proposal be undertaken as Exempt Development? Yes

(Rule 20) Can the proposal be undertaken as Exempt Development? Yes

Can the proposal be assessed under Part 5? Yes

Please complete the following questions
All questions are required

Other approvals, permits, consent

Q2.1 - Is your proposal within land reserved under the National Parks and Wildlife Act 1974 (e.g., national park, nature reserve, state conservation area etc?)

Yes No [National Park Estates Map](#)

NOTE: Works within reserved land require the consent of the regulating agency. Works must not proceed without consent.

Q2.2 - Is your proposal on land mapped as coastal wetland or littoral rainforest as per State Environmental Planning Policy (Coastal Management) 2018?

Yes No [Planning Littoral Rainforest Map](#)
[Planning Wetland Map](#)

Environmental Aspect Triggers Report [Download](#)

easy eia

Environmental Aspect Constraint Report

Report Details

Name: Centre for Excellence in Climate Change
Number: 201901
Assessor: Matt Robinson
Report Date: 2019-11-05 01:13:46.176153
Report Number: 229b8628-ece3-4f82-b385-9e4f2c7bf6ab

Planning Heritage



Offline Demo

Please complete the following questions

All questions are required

Other approvals, permits, consent

Q2.1 - Is your proposal within land reserved under the National Parks and Wildlife Act 1974 (e.g., national park, nature reserve, state conservation area etc?)

Yes No

[National Park Estates Map](#)

NOTE: Works within reserved land require the consent of the regulating agency. Works must not proceed without consent.

Please attach consent or evidence of agreement for the works to be carried out.



Offline Demo

Q2.5 - Is your proposal within a State Forest?

Yes No

[State Forest Map](#)

NOTE: Works within State Forest will require the consent of the regulating agency. Works must not proceed without consent.

If yes, please attach consent or evidence of agreement for the works to be carried out.



Offline Demo

Non-Aboriginal heritage considerations

Q2.10 - Does your proposal involve harm (any works) to a State Heritage listed item?

Yes

No

Works impacting listed heritage item or an item under an interim protection order require approval prior to works commencing. NSW heritage has a series of exemption, but still require a form detailing the extent of the exemption to be detailed and a form submitted for approval. In addition, if your activity is likely to expose a heritage item, e.g., an excavation, then a permit is also required. The following forms apply to state heritage items, items subjected to an interim protection order or where a proposal is likely to expose a heritage item:

<http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/StandardExemptions.pdf>

<http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/formexemptionnotifications57.pdf>

<http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/s60applicationform.pdf>

<http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/S140-S144Frm2013.pdf>



Offline Demo

Q6.2 - Threatened species, ecological communities or their habitats (NSW)

Level 1 Level 2 Level 3

Level 1: No impacts identified

Level 2: Impacts will be minimised and appropriately managed.

Level 3: A higher degree of potential impact requiring specialist advice



Offline Demo



Tue 5/11/2019 12:18 PM

reports@easyeia.com.au

EasyEIA Report

To matt.robinson@chartistechnology.com



EasyEIA - Report 201901 - Centre for Excellence in Climate Change ready to view

Hi Matt Robinson,

Good news! Your EasyEIA report has finished running.

You can complete the Summary Environmental Report stage of your report on the [report page](#).

--
easyEIA team

Offline Demo

Summary Environmental Report

Report Details

Name: Mapped Out Demo
Number: 123
Assessor: Matt Robinson
Report Date: 2019-11-05 01:04:33.949151
Report Number: 4d90c16f-1b14-4943-83f2-9d14625be070

Other approvals, permits, consent

Is your proposal within an area of outstanding biodiversity value?

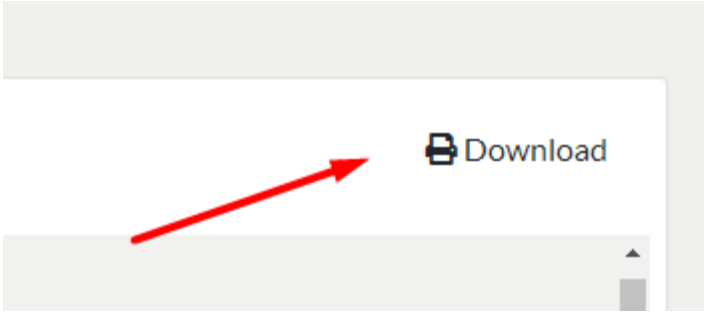
No

Is your proposal within a marine park or aquatic reserve?

Yes

Is your proposal on land mapped as coastal wetland or littoral rainforest as per State Environmental Planning Policy (Coastal Management) 2018?

No



Download

www.chartistechnology.com



Offline Demo



Summary Environmental Report

Report Details

Name: Mapped Out Demo
Number: 123
Assessor: Matt Robinson
Report Date: 2019-11-05 01:04:33.949151
Report Number: 4d90c16f-1b14-4943-83f2-9d14625be070

Other approvals, permits, consent

Is your proposal within an area of outstanding biodiversity value?

No

Is your proposal within a marine park or aquatic reserve?

Yes

Is your proposal on land mapped as coastal wetland or littoral rainforest as per State Environmental Planning Policy (Coastal Management) 2018?

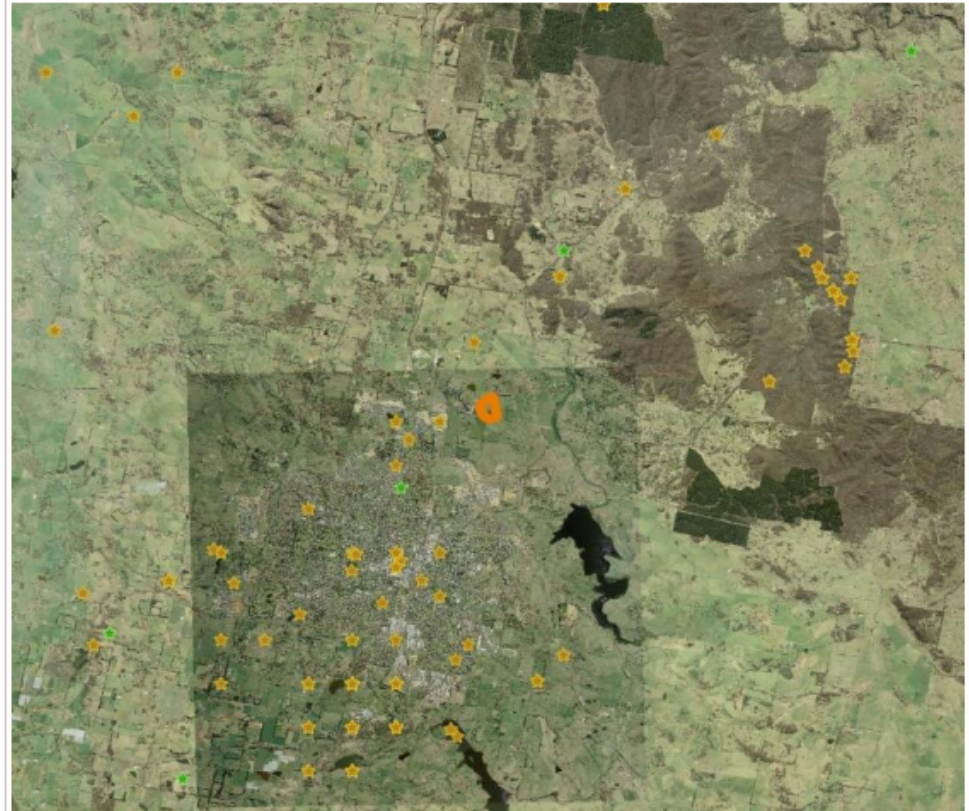
No

Is your proposal within land reserved under the National Parks and Wildlife Act 1974 (e.g., national park, nature reserve, state conservation area etc?)

Yes

Offline Demo

Threatened Species 10000m



Results

kingdom	vernacularname	stateconservation	countryconservation
Plantae	Silver-Leaf Candleba	Vulnerable	Endangered
Animalia	Scarlet Robin	Vulnerable	Not Listed
Animalia	Superb Parrot	Vulnerable	Vulnerable
Animalia	Koala	Vulnerable	Vulnerable
Animalia	Greater Glider	Not Listed	Vulnerable
Animalia	Little Eagle	Vulnerable	Not Listed
Animalia	Grey-headed Flying-f	Vulnerable	Vulnerable
Animalia	Blue-billed Duck	Vulnerable	Not Listed
Animalia	Freckled Duck	Vulnerable	Not Listed
Animalia	Speckled Warbler	Vulnerable	Not Listed
Animalia	Squirrel Glider	Vulnerable	Not Listed
Animalia	Dusky Woodswallow	Vulnerable	Not Listed
Animalia	Varied Sittella	Vulnerable	Not Listed
Animalia	Flame Robin	Vulnerable	Not Listed
Animalia	Diamond Firetail	Vulnerable	Not Listed


Offline Demo

Unaffected Constraints Summary

The following constraints have been checked but were unaffected by the input study area

- Planning Wetland
- Planning Littoral Rainforest
- Aquatic Reserve
- Marine Park
- RAMSAR
- World Heritage
- Critical Habitat
- State Heritage
- State Forest
- EPA Sites
- Soil Class
- Commonwealth Heritage
- Declared Wilderness
- National Heritage
- Native Title Claims
- Native Title Determinations
- National Park Estates
- Section 170 Register
- Vulnerable Lands Riparian
- Vulnerable Lands Special
- Vulnerable Lands Erodible
- Wild Rivers
- Murray Regional Plan
- Asbestos High
- Asbestos Medium
- Aquatic Reserve 500
- Marine Park 500
- National Park Estate 500
- Asbestos Mines and Exploration
- LEP Drinking Water Catchments
- LEP Environmentally Sensitive Land
- LEP Scenic Protection
- LEP Flood
- LEP Salinity
- SEPP Wetland - Proximity area
- SEPP Littoral Rainforest - Proximity area
- Marine Habitat

Offline Demo

easy  Reports My reports Matt Robinson Admin ?

[▶ Run new report](#)

All reports **Draft** Complete Error All users reports

201901 - Centre for Excellence in Climate Change Environmental Aspect Triggers > Summary Environmental Report (Current) > Complete	Draft	Tuesday, November 5, 2019 12:13 PM
123 - Mapped Out Demo Environmental Aspect Triggers > Summary Environmental Report > Complete (Current)	Complete	Tuesday, November 5, 2019 12:04 PM
Impact123 - Mt Keira Power Line Design Environmental Aspect Triggers > Summary Environmental Report > Complete (Current)	Complete	Monday, November 4, 2019 6:43 PM
Test - Testing Environmental Aspect Triggers > Summary Environmental Report > Complete (Current)	Complete	Thursday, September 12, 2019 10:28 AM
hjk - Testing Environmental Aspect Triggers > Summary Environmental Report > Complete (Current)	Complete	Tuesday, August 27, 2019 5:07 PM
Not set Environmental Aspect Triggers (Current) > Summary Environmental Report > Complete	Draft	Tuesday, August 27, 2019 4:32 PM
hjk - gc Environmental Aspect Triggers > Summary Environmental Report > Complete (Current)	Complete	Tuesday, August 27, 2019 10:05 AM
Test - Test Environmental Aspect Triggers > Summary Environmental Report > Complete (Current)	Complete	Thursday, August 22, 2019 3:44 PM



Offline Demo – Question Templates

easyeia Section My reports Matt Robinson Admin

Section Details

[Back](#)

Title:

Order:

Is subsection?

[Save Section](#)

Questions

[Add question](#)

- Q2.1**
Is your proposal within land reserved under the National Parks and Wildlife Act 1974 (e.g., national park, nature reserve, state conservation area etc?)
YesNo Exempt Risk Part 5
- Q2.2**
Is your proposal on land mapped as coastal wetland or littoral rainforest as per State Environmental Planning Policy (Coastal Management) 2018?
YesNo Exempt Risk Part 5
- Q2.3**
Is your proposal within a marine park or aquatic reserve?
YesNo Exempt Risk Part 5
- Q2.4**
Is your proposal within an area of outstanding biodiversity value?
YesNo Exempt Risk Part 5
- Q2.5**
Is your proposal within a State Forest?
YesNo Exempt Part 5
- Q2.6**
Will your proposal involve harming marine vegetation, result in the obstruction of fish in a waterway or involves a local council dredging or reclaiming a waterway (including excavations)?
YesNo Exempt Part 5
- Q2.7**
Will your proposal involve undertaking an activity within an area subject to a conservation agreement or biodiversity stewardship site?
YesNo Exempt Part 5



Offline Demo – Spatial Rules

easyeia Edit Rule My reports Matt Robinson Admin ?

[Back](#)

Description	<input type="text" value="Planning Wetland"/>
Layer	<input type="text" value="gis_easyeia_nsw.public.coastal_wetland"/>
Where	<input type="text" value="epi_name = 'State Environmental Planning Policy (Coastal Management) 2018' and"/>
Fields	<input type="text"/>
Buffer	<input type="text"/>
Extra Fields	<input type="text"/>
Style Name	<input type="text"/>

[Save Changes](#)

Result Values

Affected

Your works are within a coastal wetland.

Only certain emergency or routine maintenance, specific environmental protection works, or exempt development works under the Infrastructure SEPP are permissible without consent.

Not Affected



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