

PROJECT RISK SOLUTIONS

CRAFT

Cost & Risk Analytics and Facilitation Tool

Sample Output Pack

Water infrastructure and regional development | PR001

A complete worked project, carried from risk identification through prioritisation and the analysis canvas to a converged, seeded, risk-adjusted cost estimate.

Every table and every screen on the following pages is unedited CRAFT output.

Fictional project. The figures are internally consistent and reproducible, but they describe no real scheme and are not benchmarks. Not for use in any real decision.

Simulation run 3 August 2026 · seed 123456 · converged at 80,000 iterations

How to read this pack

Everything here is real output. Nothing is dressed up.

One question: what do you actually get out of CRAFT? So this pack reproduces the exports and the screens themselves rather than a designed interpretation of them.

The rule this document follows

Every column, value and chart on a data page reproduces a CRAFT export or a CRAFT screen. Nothing is derived, aggregated or recalculated for presentation. Column headings are printed in the export's own wording in a monospaced typeface, so you can match them line for line against a file you generate yourself. Where the project left a field empty, it is shown empty.

Who produced what

Each section carries one or more markers. The AI boundary is a claim worth checking rather than taking on trust, so it is marked against the output itself:

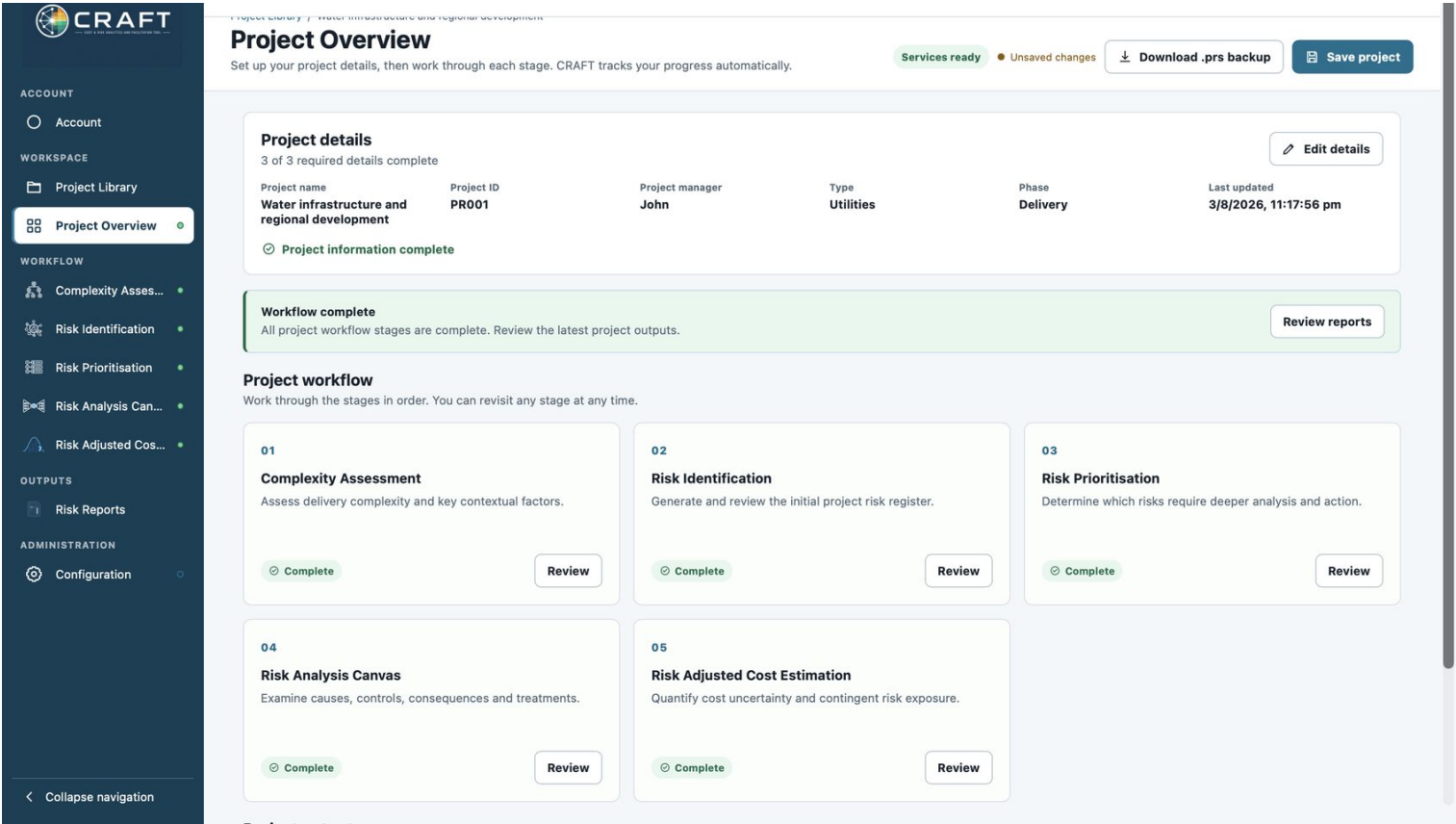
AI-ASSISTED DRAFT	A model produced a first draft. It is a draft until a person accepts it.
DECIDED BY THE TEAM	A person or the workshop group decided this. No model input.
FACILITATION SURFACE	A working surface for a facilitated session. The room decides; CRAFT records.
ENGINE-CALCULATED	Deterministic calculation from your inputs. Reproducible from the stored seed.

From here on there's a short note like this at the foot of each page. They explain the method rather than the product, so the pack still reads if quantified cost risk isn't your day job.

The shape of the work

Five stages, one project file.

Each stage builds on the one before it, working on the same risks throughout. Nothing is re-keyed between stages, so the risk your team wrote in stage two is the risk that drives the cost model in stage five.



CRAFT screen: Project Overview, with all five workflow stages complete.

Work moves through five stages and each one reads from the last. The risk your team wrote in stage two is the same record driving the cost model in stage five. Nobody re-keys it, so a register, a workshop output and a cost model can't quietly drift apart.

Stage 1

Complexity Assessment

DECIDED BY THE TEAM

Eight factors scored before anyone writes a single risk.

CRAFT

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Complexity Assessment

Score eight complexity factors. The result shapes how CRAFT generates your risk register.

Services preparing Saved locally at 9:49 pm Download .prs backup Save project

Assessment context

Type: Utilities Phase: Delivery

Project type and phase come from Project Overview and can only be changed there.

Higher ratings contribute more project complexity or uncertainty.

D1 Scope and Requirements Maturity

Scope boundaries, exclusions, acceptance criteria, assumptions, design maturity and requirements stability.

Complexity rating

Mostly defined with manageable gaps

Numeric contribution to total: 2 of 5

Rationale / evidence (optional)

D2 Stakeholder, Political and Community Sensitivity

Public interest, political exposure, stakeholder influence and community opposition.

Complexity rating

Moderate sensitivity

Numeric contribution to total: 3 of 5

Complexity profile

Total score14/40

Complexity levelModerate

Red flags0 selected

Dominant driversD4, D1, D2

Reset assessment

Stage 1 of 5 · Complexity Assessment

Complete assessment

CRAFT screen: D1 and D2 of eight, with the running complexity profile on the right.

Before you list risks it helps to say out loud what is actually hard about this delivery. Eight factors, each scored with room to record the evidence behind the score, adding up to a complexity profile: a total, a level, any red flags, and which factors are doing the most work. It sets the conversation up, and it shapes the draft register CRAFT generates next. Type and phase come from Project Overview and cannot be edited here, so the assessment stays anchored to one description of the project.

Stage 2

Risk Identification

AI-ASSISTED DRAFT

DECIDED BY THE TEAM

Project context in, a structured draft register out.

Project inputs
More detail produces a more relevant draft risk register. [Generate risk register](#)

Project scope *
reduce discharge to a sensitive river system. The project includes augmentation of an existing treatment plant, new tertiary treatment and disinfection systems, two pump stations, approximately 42 kilometres of buried transfer and distribution pipelines, storage lagoons, electrical supply upgrades, SCADA and telemetry, road and rail crossings, land access and easements, environmental approvals, cultural heritage management, customer connection points, commissioning and a staged ramp-up to the target annual supply volume. Construction spans public road reserves, private agricultural land and environmentally sensitive areas.
723 / 5,000 characters

Assumptions
- A single environmental referral will cover the pipeline and treatment works.
- Construction water can be sourced locally without affecting potable supply.
- The project will use conventional open-trench construction except at major crossings.
- Pipe material will be a mix of high-density polyethylene and steel based on pressure class.
- The delivery program assumes two consecutive dry-season construction windows.
- The existing SCADA platform can be expanded without full replacement.
- All costs are in current Australian dollars and exclude customer-funded on-farm infrastructure.
1,023 / 5,000 characters

Known risks and issues *
- The project assumes a single environmental approval but regulators may require separate permits for waterways.
- Power connection lead times could exceed the planned pump station commissioning date.
- The existing SCADA vendor has advised that some installed hardware is approaching end of support.
- Spoil disposal options are limited near the southern section of the pipeline.
- Heavy vehicle access to several work fronts is constrained by narrow local roads.
- Customer connection design criteria are not consistent across the proposed offtake sites.
- The ramp-up plan may require temporary discharge arrangements if customer demand starts late.
1,790 / 5,000 characters

Risk register
Review and edit each draft risk before moving the register to another stage. 14 risks [Add risk](#) [Export Excel register](#)

	performance requirements.	disinfection systems must operate under seasonal conditions.	2. Operational rework and increased	variable inf
R010	Odour impacts from treatment plant operations generate community complaints and increased scrutiny of the project.	1. Odour complaints have previously occurred near the existing plant 2. The project includes summertime of treatment	1. Community dissatisfaction and reputational damage 2. Additional odour control and monitoring	Previous or complaints explicitly ic and the sc includes al
R011	Pipe material price escalation and contractor competition increase delivery costs and reduce contractor availability.	1. Steel and HDPE pipe prices are exposed to international supply conditions 2. A nearby wind farm project may compete for contractors and	1. Budget overruns and procurement delays 2. Reduced bidder participation or higher tender prices	The brain c identifies e volatile pip and compe contractors
R012				

Stage 2 of 5 · Risk Identification

Move risks to [Risk Prioritisation](#) [Move 14 risks to Risk Prioritisation](#) [Mark stage complete](#)

CRAFT screen: scope, assumptions and known issues feed the draft; the register sits below. 14 risks in this project.

A risk is only worth writing down if someone can own it, price it and act on it. That's why each one here is built as cause, event and consequence rather than a one-line worry. CRAFT drafts candidates from your project context and your categories, but nothing reaches the register until a person edits it and says yes.

Export

Consolidated risk register

AI-ASSISTED DRAFT

DECIDED BY THE TEAM

The register as exported: statement, ownership, category, and both current and residual ratings.

Current is where things stand now. Residual is where you expect to be once the agreed controls and actions are actually working. Showing both is what lets someone check whether a treatment plan is doing anything, rather than taking the improvement on trust.

SOURCE CRAFT Consolidated Risk Workbook.xlsx > sheet 'Risk Register'

Risk_ID	Risk_Statement	Risk_Owner	Risk_Category	Current_Risk_Rating	Residual_Risk_Rating	Probability
R001	Landowners refuse survey access or easement agreements leading to pipeline alignment changes and construction delays.	Adam	Stakeholders	High	Medium	0.45
R002	Environmental and waterway approvals are expanded or delayed leading to disruption of the delivery program.	Becca	Environment & Cultural Heritage	High	Low	0.55
R003	Cultural heritage constraints at creek crossings lead to redesign, restricted work methods or delays to construction.	Charlie	Environment & Cultural Heritage	High	Medium	0.35
R004	Reactive clay, shallow basalt or flood-prone ground conditions are encountered leading to construction difficulties and increased costs.	Dorothy	Network and Customer Service Continuity	High	Medium	0.65
R005	Rail and highway crossing approvals or access windows are not secured in time leading to critical path delays.	Ellen	Transport System Safety	High	Medium	0.45
R006	Existing electrical infrastructure and grid connection capacity are insufficient leading to delayed pump station commissioning.	Faruk	Resources	High	Low	0.55
R007	SCADA expansion and legacy hardware limitations lead to integration failures or unreliable operational control.	Gilbert	Integration	Extreme	High	0.4
R008	Anchor customer demand does not materialise as forecast leading to reduced scheme utilisation and revenue shortfalls.	Helen	Financial	Medium	Low	0.35
R009	Seasonal influent quality variation prevents the treatment process from consistently meeting recycled-water performance requirements.	Andrew	Compliance	High	Medium	0.45
R010	Odour impacts from treatment plant operations generate community complaints and increased scrutiny of the project.	Kiran	Stakeholders	High	Medium	0.3
R011	Pipe material price escalation and contractor competition increase delivery costs and reduce contractor availability.	Chloe	Resources	High	Medium	0.7
R012	Limited spoil disposal capacity and constrained heavy vehicle access reduce construction productivity and increase disruption.	Nguyen	Network and Customer Service Continuity	High	Medium	0.6

Risk_ID	Risk_Statement	Risk_Owner	Risk_Category	Current_Risk_Rating	Residual_Risk_Rating	Probability
R013	Inconsistent customer connection requirements lead to redesign, scope growth and delayed customer onboarding.	Brian	Customers	Medium	Low	0.55
R014	Temporary discharge arrangements are required during ramp-up leading to regulatory and operational complications.	Abdullah	Compliance	High	Medium	0.4

Export

Cause and consequence, in full

AI-ASSISTED DRAFT

DECIDED BY THE TEAM

Two risks with every text field intact, so the structure is visible rather than described.

SOURCE CRAFT Consolidated Risk Workbook.xlsx > sheet 'Risk Register'

R001 Landowners refuse survey access or easement agreements leading to pipeline alignment changes and construction delays.

Cause		Consequence
1. Several landowners have not agreed to survey access 2. One landowner has indicated opposition to an easement 3. The project assumes permanent easements can be negotiated without compulsory acquisition		1. Schedule delays to design and construction activities 2. Increased land acquisition and legal costs 3. Rework of alignment design and stakeholder dissatisfaction
source	rationale	confidence
user	The brain dump identifies unresolved landowner access and easement opposition, while assumptions rely on negotiated easements. This creates a direct stakeholder and delivery risk.	0.96

R002 Environmental and waterway approvals are expanded or delayed leading to disruption of the delivery program.

Cause		Consequence
1. Potential habitat for a listed grassland species exists along the preferred alignment 2. Regulators may require separate permits for waterways 3. Construction passes through environmentally sensitive areas 4. The project assumes a single environmental referral will cover all works		1. Approval delays and additional assessment requirements 2. Increased environmental management and offset costs 3. Construction sequencing constraints and schedule impacts
source	rationale	confidence
user	The scope includes environmentally sensitive areas and the brain dump identifies threatened species habitat and possible separate permits. This indicates elevated approval complexity.	0.95

source says where the input came from, not who wrote the words. rationale and confidence are captured at drafting time, so anyone reviewing later can see why a candidate risk was put forward without having to ask.

Stage 3

Risk Prioritisation: current exposure

DECIDED BY THE TEAM

Each risk rated against the project's own matrix. Likelihood and consequence are stored alongside the rating, not just the colour.

Assessment basis

Current

Residual

Rating profile

CRAFT Default 5x5 - v1 (active snapshot)

Manage profiles in Configuration

Risks

14 in stage · 14 current rated

R001

Landowners refuse survey access or easement agreements leading to pipeline alignment changes and construction delays.

High

R002

Environmental and waterway approvals are expanded or delayed leading to disruption of the delivery program.

High

R003

Cultural heritage constraints at creek crossings lead to redesign, restricted work methods or delays to construction.

High

R014 — Current rating

CRAFT Default 5x5

Select the cell that matches this risk's likelihood and consequence.

LIKELIHOOD	Almost Certain	Medium	High	High	Extreme	Extreme
	Likely	Medium	Medium	High	High	Extreme
	Possible	Low	Medium	Medium	High ☒	High
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Medium	Medium
		Insignificant	Minor	Moderate	Major	Catastrophic
		CONSEQUENCE				

Rating: High — Possible × Major

Stage 3 of 5 · Risk Prioritisation

Move risks to

Risk Analysis Canvas

Move 14 risks to Risk Analysis Canvas

Mark stage complete

CRAFT screen: current rating for R014 against the CRAFT Default 5x5 v1 profile. 14 in stage, 14 rated.

A matrix turns two judgements, how likely and how bad, into one rating you can rank a portfolio by. CRAFT keeps the likelihood and consequence you chose, not just the colour that came out, so the judgement can be argued with. Use your own matrix: anything from 3x3 to 6x6.

Stage 3

Risk Prioritisation: residual exposure

DECIDED BY THE TEAM

The same risk rated again, on the assumption that agreed controls and actions are working.

Assessment basis

Current

Residual

Rating profile

CRAFT Default 5x5 · v1 (active snapshot)

Manage profiles in Configuration

Risks

14 in stage · 14 residual rated

R001

Landowners refuse survey access or easement agreements leading to pipeline alignment changes and construction delays.

Medium

R002

Environmental and waterway approvals are expanded or delayed leading to disruption of the delivery program.

Low

R003

Cultural heritage constraints at creek crossings lead to redesign, restricted work methods or delays to construction.

Medium

R014 — Residual rating

CRAFT Default 5x5

Select the cell that matches this risk's likelihood and consequence.

LIKELIHOOD	Almost Certain	Medium	High	High	Extreme	Extreme
	Likely	Medium	Medium	High	High	Extreme
	Possible	Low	Medium	Medium	High	High
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Medium	Medium
		Insignificant	Minor	Moderate	Major	Catastrophic
		CONSEQUENCE				

Rating: Medium — Unlikely × Moderate

Stage 3 of 5 · Risk Prioritisation

Move risks to

Risk Analysis Canvas

Move 14 risks to Risk Analysis Canvas

Mark stage complete

CRAFT screen: residual rating for R014. The rating profile is a snapshot, so it travels with the project and historical assessments are not rewritten when a profile changes.

Rating twice is what makes a treatment plan testable. If residual looks no better than current, the controls aren't earning their keep. If it looks dramatically better, someone should be able to point at the control doing the work, which is what the canvas records next.

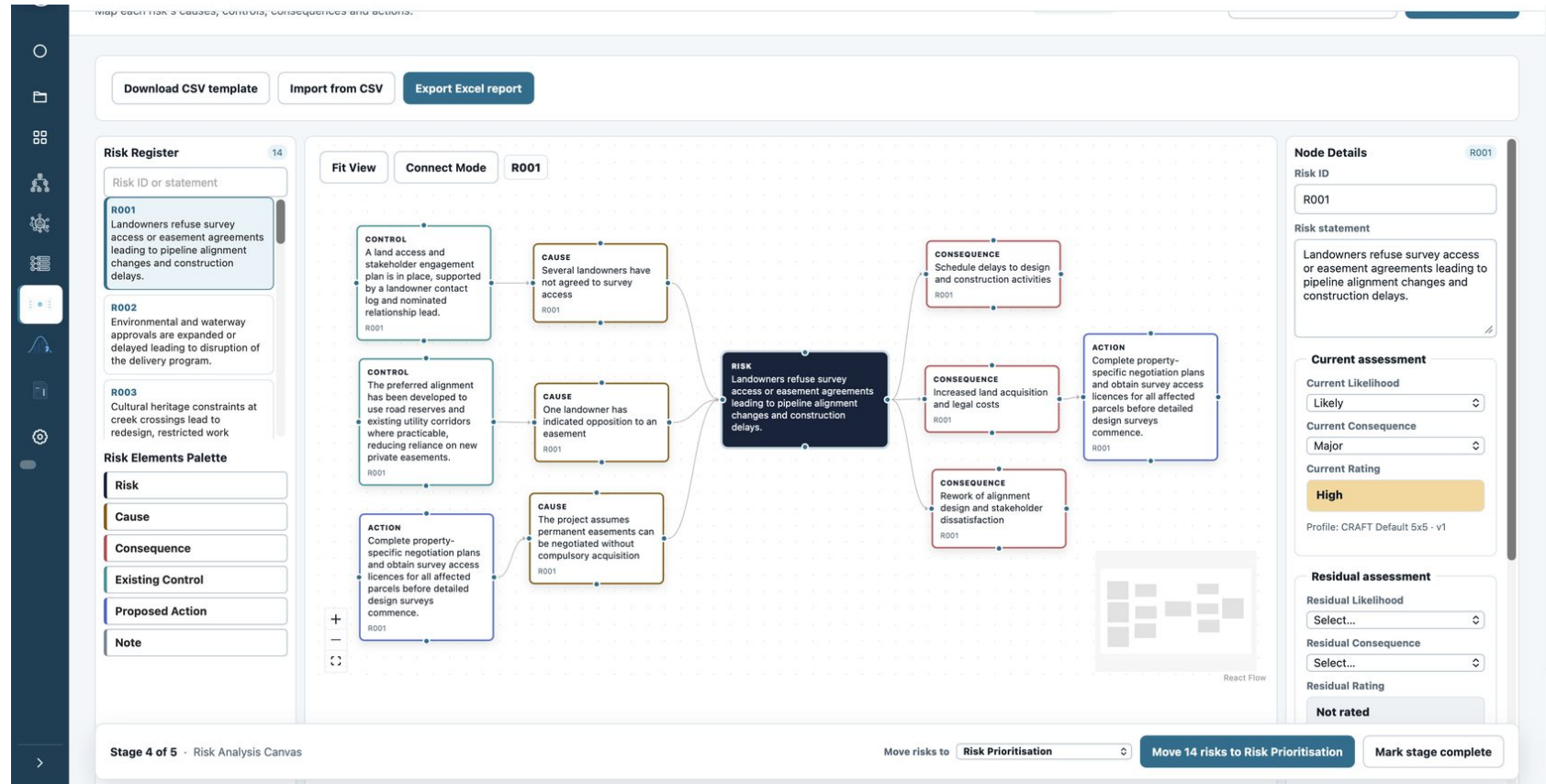
Stage 4

Risk Analysis Canvas

FACILITATION SURFACE

DECIDED BY THE TEAM

Causes, controls, the risk, consequences and actions as objects the room can see and agree on.



CRAFT screen: bow-tie layout for R001 with the node detail panel open.

This is a bow-tie. Causes on the left, consequences on the right, the risk event in the middle, with controls sitting between cause and event and actions where new work is needed. Its real job is getting a room to agree ownership while everyone is still in it, and making the record as you go rather than writing it up from memory afterwards.

Export

Controls and actions

DECIDED BY THE TEAM

25 controls and 26 actions exported with the register, each tied to its risk.

A control already exists and is doing something today. An action is work still to be done. Keeping them apart matters more than it sounds: counting planned work as though it were already in place is one of the commonest ways a residual rating flatters itself.

SOURCE CRAFT Consolidated Risk Workbook.xlsx > sheet 'Controls'

risk_id	control_id	control	control_owner	control_type	control_effectiveness
R001	R001-CTRL01	A land access and stakeholder engagement plan is in place, supported by a landowner contact log and nominated relationship lead.	Adam	Preventative	Partially effective
R001	R001-CTRL02	The preferred alignment has been developed to use road reserves and existing utility corridors where practicable, reducing reliance on new private easements.	Adam	Preventative	Partially effective
R002	R002-CTRL01	An environmental adviser is engaged and desktop ecology mapping has been completed for the preferred alignment.	Becca	(blank)	Partially effective
R002	R002-CTRL02	Environmentally sensitive areas and waterways are recorded in the project GIS and approvals register.	Becca	(blank)	Partially effective
R003	R003-CTRL01	A preliminary cultural heritage review has been completed and sensitive locations near the creek crossings are mapped.	Charlie	(blank)	Partially effective
R003	R003-CTRL02	A cultural heritage adviser is engaged and the project has an unexpected-find and stop-work procedure.	Charlie	Preventative	Partially effective

First 6 of 25 exported control rows.

SOURCE CRAFT Consolidated Risk Workbook.xlsx > sheet 'Actions'

risk_id	action_id	action	action_owner	end_date	action_status
R001	R001-A03	Complete property-specific negotiation plans and obtain survey access licences for all affected parcels before detailed design surveys commence.	Adam	2026-12-31	In progress
R001	R001-A04	Complete property-specific negotiation plans and obtain survey access licences for all affected parcels before detailed design surveys commence.	Adam	2027-02-28	(blank)
R002	R002-A01	Undertake targeted seasonal flora and fauna surveys, including surveys for the listed grassland species.	Becca	2027-04-30	In progress
R002	R002-A02	Hold pre-lodgement meetings with regulators and prepare a permit matrix confirming whether separate waterway approvals are required.	Becca	2026-11-26	In progress
R002	R002-A03	Incorporate avoidance buffers, offsets and approval float into the reference design and delivery program.	Becca	2026-11-20	In progress

First 5 of 26 exported action rows.

Simulation settings

What the estimator chose before the engine ran. These settings are stored with the project.

CRAFT screen: target precision, maximum iterations, random seed, correlation modelling and cost currency.

Target precision is how tightly you want the contingency figure pinned down. CRAFT keeps sampling until it gets there. The random seed is what makes the run repeatable, so the same model and the same seed give the same answer. Correlation modelling decides whether cost lines are allowed to move together, which is the next page.

Stage 5 - setup

Correlation: what moves together

DECIDED BY THE TEAM

Every cost line is deliberately classified - either it shares a named driver, or it is explicitly independent. Nothing is left to a silent default.

SOURCE Risk Adjusted Cost Report.xlsx > sheet 'input_correlation'

cbs_name	driver_name	sensitivity
01.01 Project governance mobilisation	Independent — correlation not applicable	none
01.02 Project management team	Independent — correlation not applicable	none
01.03 Program controls and scheduling	Market & economic conditions	low
01.04 Cost management and estimating	Market & economic conditions	medium
01.05 Risk and assurance reviews	Market & economic conditions	high
01.06 Contract administration	Labour market & productivity	low
01.07 Document and data management	Labour market & productivity	medium
01.08 Quality management	Labour market & productivity	high
01.09 Health and safety management	Site & environmental conditions	low
01.10 Stakeholder and community engagement	Site & environmental conditions	medium
02.01 Topographic and cadastral survey	Site & environmental conditions	high
02.02 Geotechnical investigation program	Regulatory environments	low
02.03 Hydraulic transient modelling	Regulatory environments	medium
02.04 Treatment process pilot testing	Regulatory environments	high

First 14 of 100 exported correlation assignments.

Projects don't fail one line at a time. If steel prices rise, every steel-bearing line moves with them, and a model that treats them as independent will understate the top end badly. CRAFT makes you say which lines share a driver and how strongly, and lets you mark a line independent deliberately, so a line nobody has thought about can't pass as one that has been.

Stage 5 - inputs

Cost breakdown structure

DECIDED BY THE TEAM

100 cost lines, each with a three-point range.

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Risk Adjusted Cost Estimation

Estimate risk adjusted project cost using Monte Carlo simulation

Services ready • Unsaved changes

Download .prs backup

Save project

Simulation SettingsCost modelRisk registerSimulation & Results

Cost Breakdown Structure

Base total: AUD 150,031,000

Download CSV template

Import from CSV

Add cost line

ID	Name	Base Cost	Confidence Factor	Best case	Most likely	Worst case	Delete
CBS001	01.01 Project gove	675000	User Defined	643000	685000	718000	
CBS002	01.02 Project man	259000	User Defined	246000	259000	292000	
CBS003	01.03 Program coi	192000	User Defined	184000	191000	216000	
CBS004	01.04 Cost manag	476000	User Defined	463000	485000	538000	
CBS005	01.05 Risk and ast	396000	User Defined	378000	397000	432000	
CBS006	01.06 Contract ad	670000	User Defined	659000	679000	748000	
CBS007	01.07 Document a	159000	User Defined	152000	161000	172000	

Stage 5 of 5 • Risk Adjusted Cost Estimation

Completes after a successful simulation

CRAFT screen: the cost model, showing the base total CRAFT reports for this project.

SOURCE Risk Adjusted Cost Report.xlsx > sheet 'Inputs_CBS'

id	name	baseCost	confidenceFactor	best case	most likely	worst case
CBS001	01.01 Project governance mobilisation	675,000	User Defined	643,000	685,000	718,000
CBS002	01.02 Project management team	259,000	User Defined	246,000	259,000	292,000

id	name	baseCost	confidenceFactor	best case	most likely	worst case
CBS003	01.03 Program controls and scheduling	192,000	User Defined	184,000	191,000	216,000
CBS004	01.04 Cost management and estimating	476,000	User Defined	463,000	485,000	538,000
CBS005	01.05 Risk and assurance reviews	396,000	User Defined	378,000	397,000	432,000
CBS006	01.06 Contract administration	670,000	User Defined	659,000	679,000	748,000

First 6 of 100 exported cost lines.

A single number hides what you don't know. A three-point range says it out loud, and that range is what the simulation samples from. Set it yourself, or pick a confidence factor and let CRAFT derive it from the base cost.

Stage 5 - inputs

Contingent risks in the cost model

DECIDED BY THE TEAM

The same risks as the register, carrying the probability and cost range the engine uses.

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Risk Adjusted Cost Estimation

Estimate risk adjusted project cost using Monte Carlo simulation

Services ready • Unsaved changes

Download .prs backup

Save project

Simulation SettingsCost modelRisk registerSimulation & Results

Risk register

Imported Risk IDs and statements remain immutable here. Complete modelling fields before simulation.

Download CSV templateExport risk register (CSV)

Import from CSVAdd risk

ID	Risk statement	Risk Type	Probability	Low	Most likely	High	Remove
R001	Landowners refuse survey access or easement agreements leading to pipeline alignment changes and	conting	0.45	400000	1500000	5000000	
R002	Environmental and waterway approvals are expanded or delayed leading to disruption of	conting	0.55	600000	2000000	7000000	
R003	Cultural heritage constraints at creek crossings lead to redesign, restricted work methods or delays	conting	0.35	300000	1200000	4000000	
R004	Reactive clay, shallow basalt or flood-prone ground conditions are encountered leading to	conting	0.65	1000000	4000000	12000000	

Stage 5 of 5 • Risk Adjusted Cost Estimation

Completes after a successful simulation

CRAFT screen: risk IDs and statements are immutable here; only modelling fields are editable.

SOURCE Risk Adjusted Cost Report.xlsx > sheet 'Risk_Register'

id	name	riskType	probability	lowCost	mostLikelyCost	highCost
R001	Landowners refuse survey access or easement agreements leading to pipeline alignment changes and construction delays.	contingent	0.45	400,000	1,500,000	5,000,000
R002	Environmental and waterway approvals are expanded or delayed leading to disruption of the delivery program.	contingent	0.55	600,000	2,000,000	7,000,000

Unedited CRAFT output from a fictional project, published by Project Risk Solutions to demonstrate the tool. Not for use in any real decision.

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id	name	riskType	probability	lowCost	mostLikelyCost	highCost
R003	Cultural heritage constraints at creek crossings lead to redesign, restricted work methods or delays to construction.	contingent	0.35	300,000	1,200,000	4,000,000
R004	Reactive clay, shallow basalt or flood-prone ground conditions are encountered leading to construction difficulties and increased costs.	contingent	0.65	1,000,000	4,000,000	12,000,000
R005	Rail and highway crossing approvals or access windows are not secured in time leading to critical path delays.	contingent	0.45	500,000	2,500,000	8,000,000
R006	Existing electrical infrastructure and grid connection capacity are insufficient leading to delayed pump station commissioning.	contingent	0.55	800,000	3,000,000	9,000,000
R007	SCADA expansion and legacy hardware limitations lead to integration failures or unreliable operational control.	contingent	0.4	300,000	1,200,000	4,500,000
R008	Anchor customer demand does not materialise as forecast leading to reduced scheme utilisation and revenue shortfalls.	contingent	0.35	1,500,000	6,000,000	20,000,000
R009	Seasonal influent quality variation prevents the treatment process from consistently meeting recycled-water performance requirements.	contingent	0.45	700,000	3,000,000	10,000,000
R010	Odour impacts from treatment plant operations generate community complaints and increased scrutiny of the project.	contingent	0.3	200,000	900,000	3,000,000
R011	Pipe material price escalation and contractor competition increase delivery costs and reduce contractor availability.	contingent	0.7	2,000,000	7,000,000	18,000,000
R012	Limited spoil disposal capacity and constrained heavy vehicle access reduce construction productivity and increase disruption.	contingent	0.6	700,000	2,500,000	7,000,000
R013	Inconsistent customer connection requirements lead to redesign, scope growth and delayed customer onboarding.	contingent	0.55	300,000	1,500,000	5,000,000
R014	Temporary discharge arrangements are required during ramp-up leading to regulatory and operational complications.	contingent	0.4	400,000	1,800,000	6,000,000

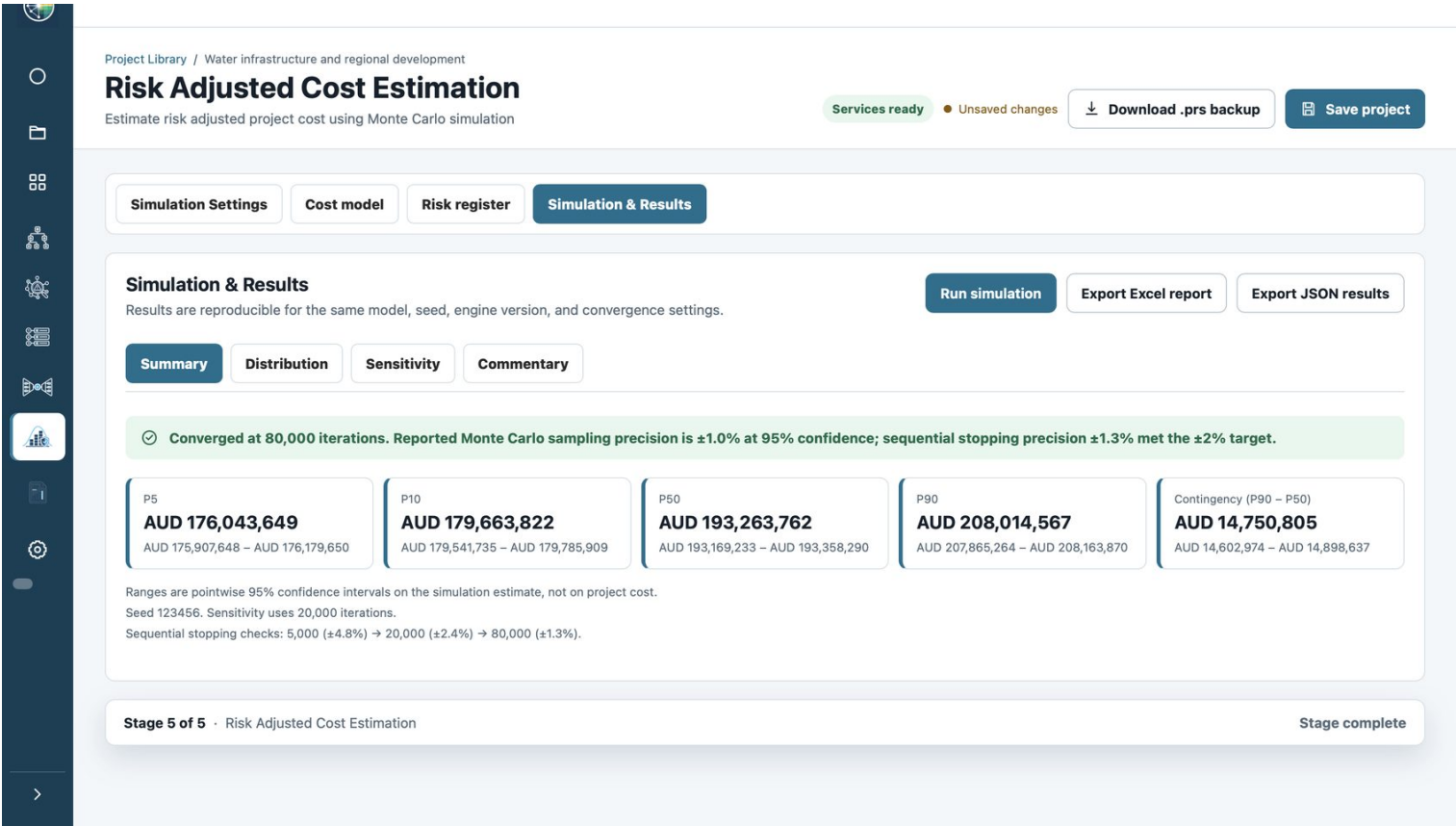
A contingent risk either happens or it doesn't. Each simulated run decides that first, on the probability you set, and only then draws a cost from the range. That's why the answer comes out as a distribution, and why adding up worst cases isn't the same exercise.

Stage 5 - results

The number, and its precision

ENGINE-CALCULATED

Five reported outcomes, each with a pointwise 95% confidence interval on the simulation estimate.



CRAFT screen: results summary, with the convergence statement above the figures.

P50 is the middle: half the simulated outcomes land below it. P90 is the confident number, with nine in ten below. The gap between them is your contingency. The smaller ranges printed under each figure are a different thing entirely. They say how precisely the simulation has measured that number, not how uncertain the project is.

Export

Results, as exported

ENGINE-CALCULATED

The same figures from the workbook, with the interval columns CRAFT writes alongside them.

SOURCE

Risk Adjusted Cost Report.xlsx > sheet 'Results'

key	value
simulationMode	converged
iterationsUsed	80000
seed	123456
percentiles	0.05, 0.1, 0.5, 0.9
confidenceTableVersion	v1
generatedAtUtc	2026-08-03T14:36:56.833345+00:00
converged	True
tolerance	0.02
maxIterations	320000
attempts	5,000 → 20,000 → 80,000
sensitivityIterationsUsed	20000
result	value
contingency_p90_minus_p50	14750805
p10	179663822
p5	176043649
p50	193263762
p90	208014567

result	value	ci95Low	ci95High	halfWidth	relativeHalfWidth	stoppingRelativeHalfwidth
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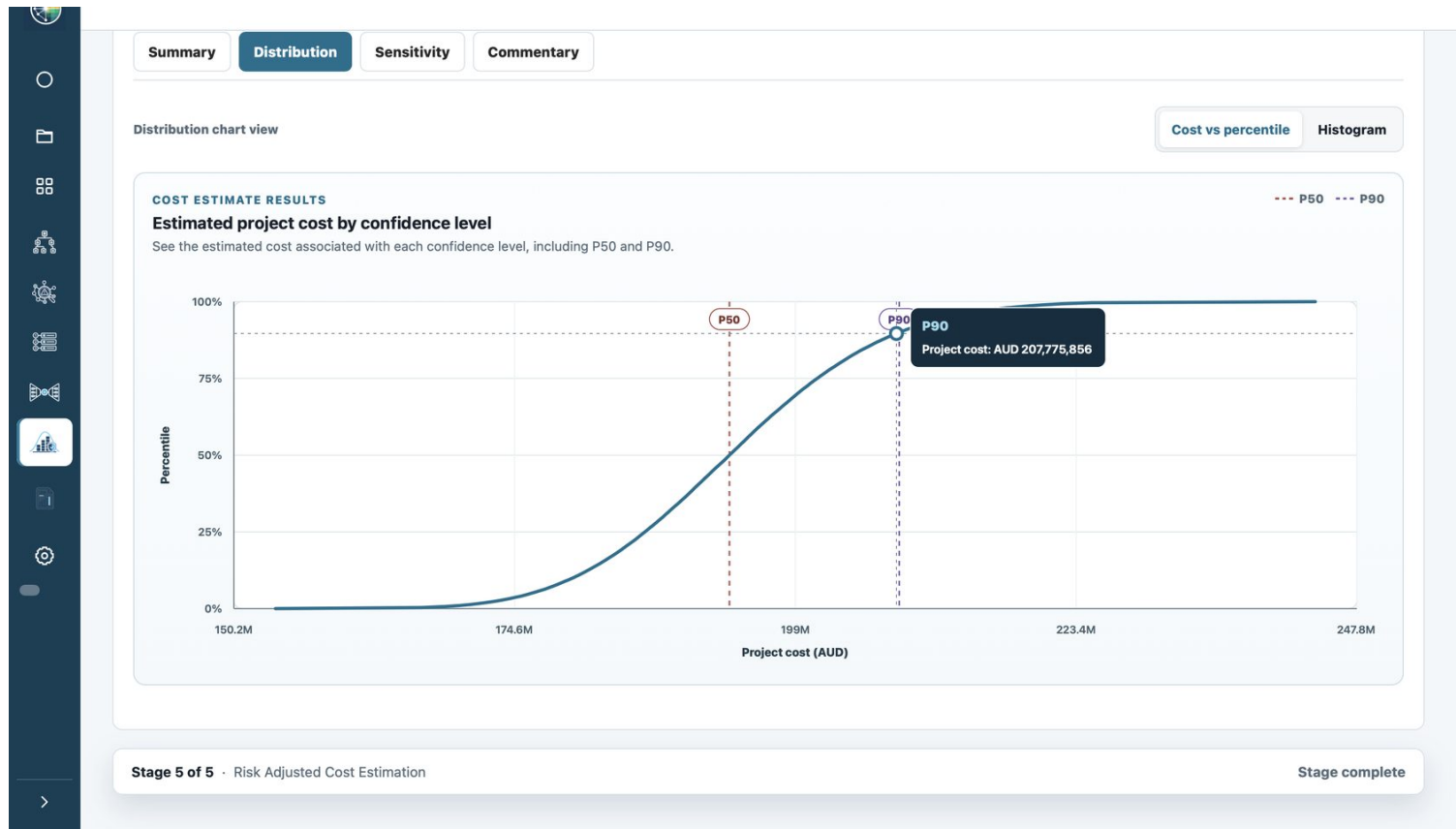
attempts shows the engine sampling harder until the answer stopped moving. It checked at 5,000 and 20,000 before settling at 80,000. Publishing that ladder is the difference between saying you ran a simulation and showing you ran it until it was stable.

Stage 5 - results

Distribution: cost against confidence

ENGINE-CALCULATED

The full percentile curve, marked at P50 and P90 and inspectable at any point.



CRAFT screen: cost-versus-percentile view.

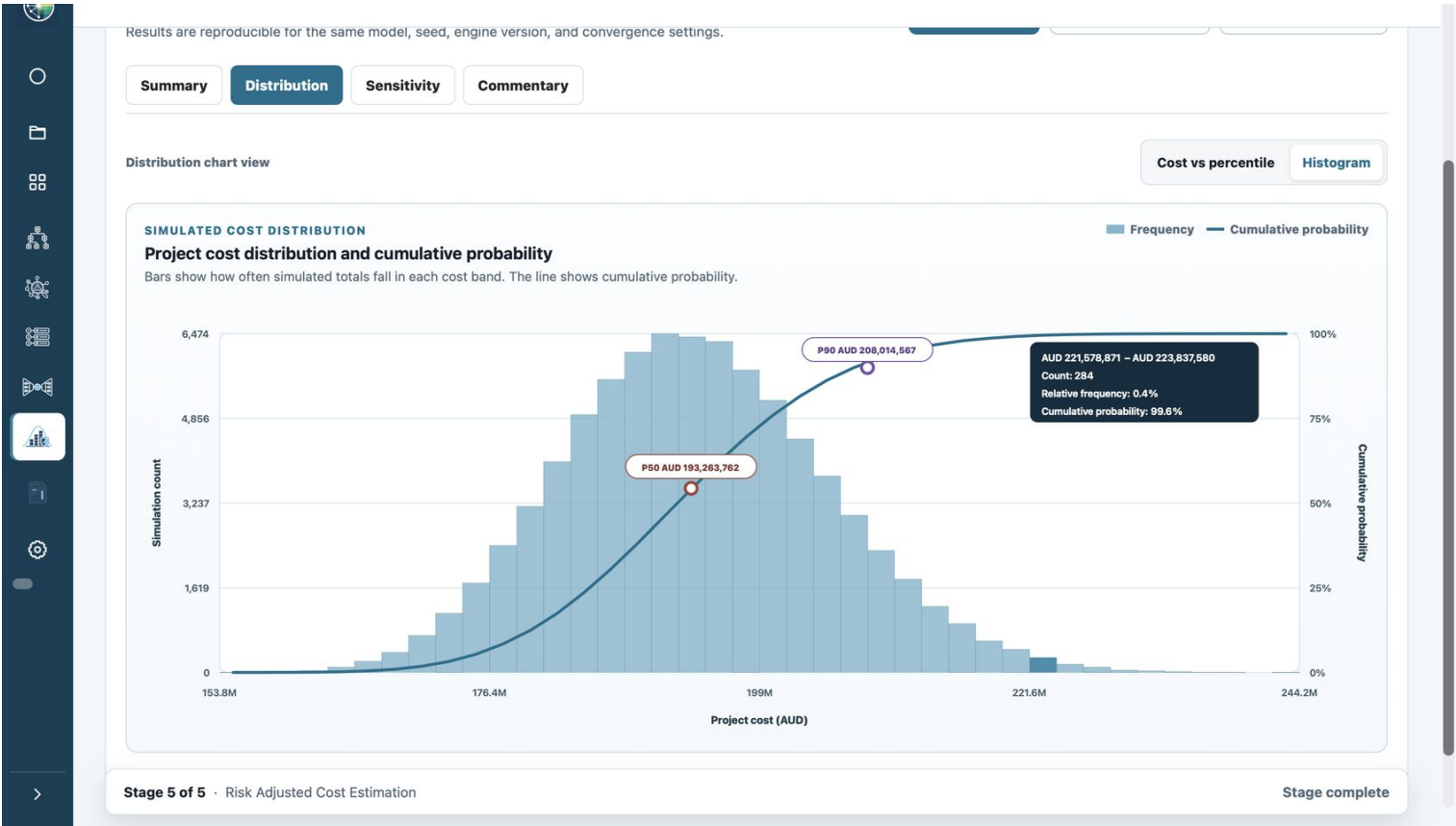
Read it as a question and an answer. Pick a confidence level on the left, read the cost off the bottom. The curve is steep through the middle, where a little more confidence costs very little, and flattens near the top, where each extra point gets expensive. That shape is usually the most useful thing on the page.

Stage 5 - results

Distribution: where the simulated totals fall

ENGINE-CALCULATED

The same run as a histogram with cumulative probability overlaid.



Stage 5 of 5 · Risk Adjusted Cost Estimation

Stage complete

CRAFT screen: histogram view. Both views are exported to an auditable Distribution sheet.

Each bar counts how many simulated totals landed in that cost band. The long tail on the right is the honest part: a handful of runs where several things went wrong at once. That tail is what a P90 exists for, and why a plan built on the most likely case alone tends to disappoint.

Export

Distribution sheet

ENGINE-CALCULATED

The histogram as data: 40 bins with counts, relative frequency and cumulative probability.

SOURCE Risk Adjusted Cost Report.xlsx > sheet 'Distribution'

bin_start	bin_end	bin_midpoint	count	relative_frequency	cumulative_probability
153,817,606.009	156,076,314.8455	154,946,960.4272	2	0	0
156,076,314.8455	158,335,023.6821	157,205,669.2638	6	0.0001	0.0001
158,335,023.6821	160,593,732.5187	159,464,378.1004	15	0.0002	0.0003
160,593,732.5187	162,852,441.3553	161,723,086.937	37	0.0005	0.0008
162,852,441.3553	165,111,150.1919	163,981,795.7736	99	0.0012	0.002
...	...	...	...	...	...
237,389,832.9624	239,648,541.799	238,519,187.3807	6	0.0001	1
239,648,541.799	241,907,250.6356	240,777,896.2173	0	0	1
241,907,250.6356	244,165,959.4721	243,036,605.0538	2	0	1

First 5 and last 3 of 40 exported bins.

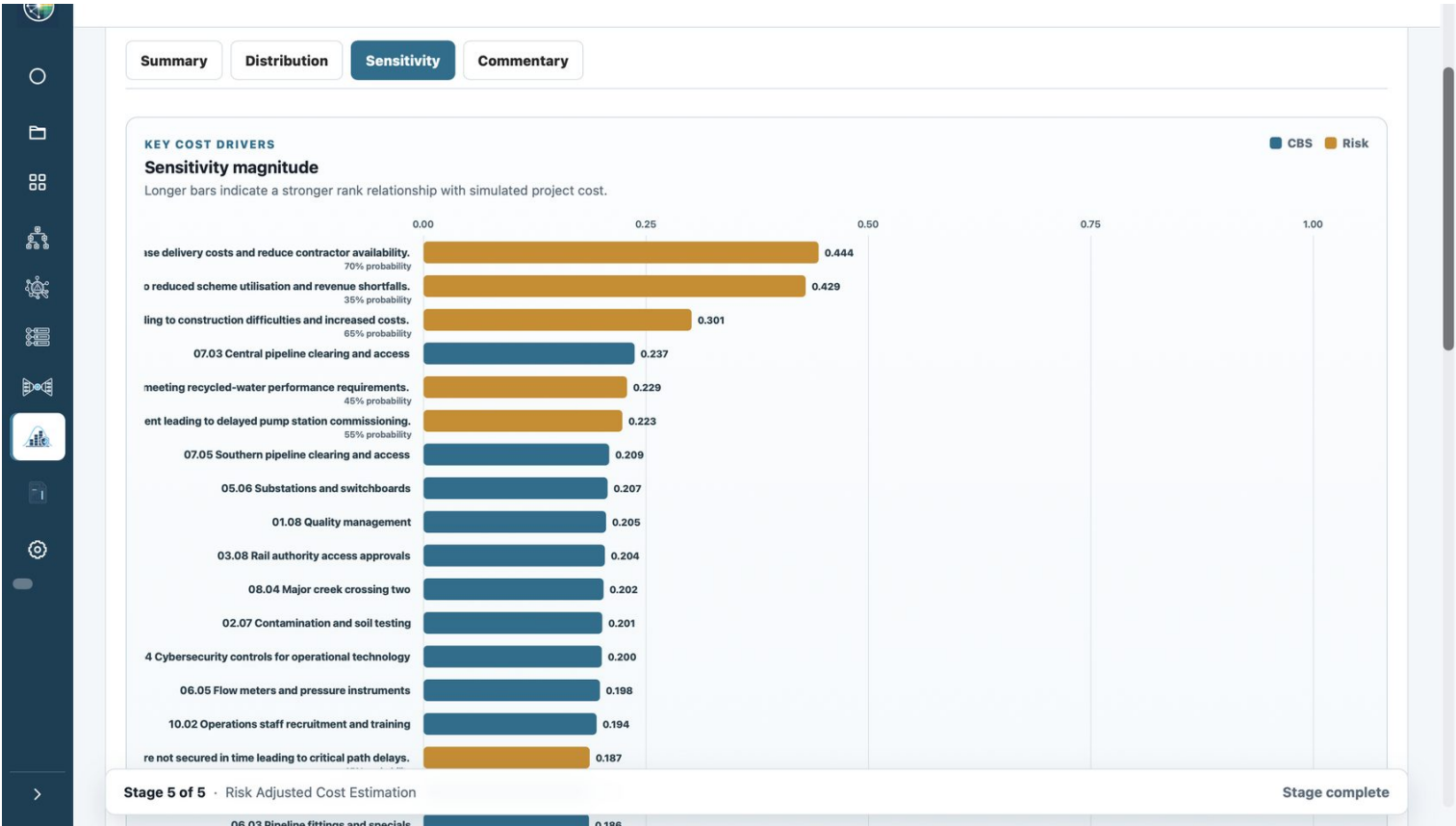
The chart comes out as numbers, not just a picture, so the distribution can be re-plotted, checked or dropped into a board pack without anyone having to take a screenshot on faith.

Stage 5 - results

What actually moves the number

ENGINE-CALCULATED

Spearman rank correlation between each driver and the simulated project total.



CRAFT screen: key cost drivers, with contingent risks and cost lines distinguished.

This ranks drivers by how closely they track the project total across every run. A long bar means that when this one moves, the total tends to move with it. It's a prioritisation tool more than a diagnostic: a big cost line with a narrow range can matter far less than a smaller one that swings.

Export

Sensitivity, as exported

ENGINE-CALCULATED

All 20 ranked drivers with the correlation figures behind the chart.

Spearman rank correlation compares orderings rather than raw values, so one extreme run can't distort it. Magnitude sits between 0 and 1, and the sign says which way the total moves. It shows association, not proof of cause.

SOURCE Risk Adjusted Cost Report.xlsx > sheet 'Sensitivity'

rank	driver	category	spearman_rho	abs_rho	sign	risk_probability
1	Pipe material price escalation and contractor competition increase delivery costs and reduce contractor availability. — 70% probability	RISK	0.444	0.444	+	0.7
2	Anchor customer demand does not materialise as forecast leading to reduced scheme utilisation and revenue shortfalls. — 35% probability	RISK	0.4294	0.4294	+	0.35
3	Reactive clay, shallow basalt or flood-prone ground conditions are encountered leading to construction difficulties and increased costs. — 65% probability	RISK	0.3012	0.3012	+	0.65
4	07.03 Central pipeline clearing and access	CBS	0.2372	0.2372	+	
5	Seasonal influent quality variation prevents the treatment process from consistently meeting recycled-water performance requirements. — 45% probability	RISK	0.2287	0.2287	+	0.45
6	Existing electrical infrastructure and grid connection capacity are insufficient leading to delayed pump station commissioning. — 55% probability	RISK	0.2234	0.2234	+	0.55
7	07.05 Southern pipeline clearing and access	CBS	0.2086	0.2086	+	
8	05.06 Substations and switchboards	CBS	0.2068	0.2068	+	
9	01.08 Quality management	CBS	0.2051	0.2051	+	
10	03.08 Rail authority access approvals	CBS	0.2038	0.2038	+	
11	08.04 Major creek crossing two	CBS	0.2023	0.2023	+	
12	02.07 Contamination and soil testing	CBS	0.2008	0.2008	+	
13	09.04 Cybersecurity controls for operational technology	CBS	0.2003	0.2003	+	
14	06.05 Flow meters and pressure instruments	CBS	0.1982	0.1982	+	
15	10.02 Operations staff recruitment and training	CBS	0.1945	0.1945	+	
16	Rail and highway crossing approvals or access windows are not secured in time leading to critical path delays. — 45% probability	RISK	0.1867	0.1867	+	0.45
17	03.05 Customer supply agreements	CBS	0.1865	0.1865	+	

rank	driver	category	spearman_rho	abs_rho	sign	risk_probability
18	06.03 Pipeline fittings and specials	CBS	0.1859	0.1859	+	
19	07.02 Northern pipeline trenching and laying	CBS	0.1855	0.1855	+	
20	01.05 Risk and assurance reviews	CBS	0.1855	0.1855	+	

Stage 5 - results

Commentary

AI-ASSISTED DRAFT

ENGINE-CALCULATED

Deterministic figures, explained in model-written language. Reproduced exactly as CRAFT generated it.

Simulation & Results

Results are reproducible for the same model, seed, engine version, and convergence settings.

Run simulationExport Excel reportExport JSON results

SummaryDistributionSensitivityCommentary

Commentary

ai

Cost outcome interpretation

- **P50** is AUD 193.26m: the median outcome (50% of simulations are below, 50% above).
- **P90** is AUD 208.01m: a high-confidence outcome (90% of simulations are below this cost).
- **Contingency** (P90 - P50) is AUD 14.75m: the additional allowance to move from a 'most likely' plan to a 'high confidence' plan.
- The pointwise 95% Monte Carlo sampling interval for contingency is AUD 14.60m to AUD 14.90m.
- The simulation converged at 80,000 iterations. Reported sampling precision is $\pm 1.0\%$ at 95% confidence; sequential stopping precision of $\pm 1.3\%$ met the $\pm 2\%$ target.
- These precision ranges describe the simulation estimate, not uncertainty in the project cost model or its assumptions.

Sensitivity interpretation (Spearman rank correlation)

- There are **3 dominant** cost drivers ($|p| \geq 0.30$). Focus management effort here first.
- There are **5 moderate** drivers ($0.15 \leq |p| < 0.30$) that also matter, but are secondary.

Top drivers (ranked by $|p|$)

- 1. **Pipe material price escalation and contractor competition increase delivery costs and reduce contractor availability.** (R011) **[RISK]** - Dominant relationship ($|p|=0.44$, $p=+0.44$). When this driver increases, total cost tends to increase.
- 2. **Anchor customer demand does not materialise as forecast leading to reduced scheme utilisation and revenue shortfalls.** (R008) **[RISK]** - Dominant relationship ($|p|=0.43$, $p=+0.43$). When this driver increases, total cost tends to increase.
- 3. **Reactive clay, shallow basalt or flood-prone ground conditions are encountered leading to construction difficulties and increased costs.** (R004) **[RISK]** - Dominant relationship ($|p|=0.30$, $p=+0.30$). When this driver increases, total cost tends to increase.
- 4. **07.03 Central pipeline clearing and access (CBS063)** **[CBS]** - Moderate relationship ($|p|=0.24$, $p=+0.24$). When this driver increases, total cost tends to increase.
- 5. **Seasonal influent quality variation prevents the treatment process from consistently meeting recycled-water performance requirements.** (R009) **[RISK]** -

Stage 5 of 5 · Risk Adjusted Cost Estimation

Stage complete

CRAFT screen: the commentary tab, marked 'ai' in the product itself. The panel scrolls; the sensitivity export two pages back is the authoritative ranking.

The figures here are the engine's. The language is written around numbers that were already calculated. CRAFT marks the panel 'ai' on screen so nobody has to guess which part was drafted. Treat it as a starting point for your own narrative, not a conclusion.

The point of all this

Reproducibility record

ENGINE-CALCULATED

 Everything needed to run this simulation again and get this answer again.

SOURCE Risk Adjusted Cost Report.xlsx > sheet 'Project info + Results'

Setting	Value
Random seed	123456
Simulation mode	converged
Iterations used	80,000
Sequential ladder	5,000 (+/-4.8%) > 20,000 (+/-2.4%) > 80,000 (+/-1.3%)
Target contingency precision	0.02
Maximum iterations	320,000
Sensitivity iterations	20,000
Correlation modelling	standard
Confidence table version	v1
Cost currency	AUD
Simulation date	2026-08-03T14:33:37.856Z

With the same model, the same seed, the same engine version and the same convergence settings, CRAFT returns the same result. That is what makes a contingency figure defensible in a room entitled to ask how it was produced. The project file carries all of it, so the answer travels with the number.

Monte Carlo means random sampling, which sounds like the opposite of repeatable. The seed is what fixes that. It makes the randomness deterministic, so the same inputs give the same answer every time. Without one, nobody can check your number. They can only agree with it or not.

Before you decide

What CRAFT does, and what it does not

Most software of this kind only tells you the first half. The second half is here because finding out in month two is worse for both of us.

What CRAFT does

Assess complexity first

Eight factors scored with evidence, producing a complexity profile that shapes the draft register.

Draft a structured register

Risks written as cause, event and consequence from your project context and your own categories. A model drafts; your team edits and accepts.

Rate against your own matrix

Current and residual ratings on a profile from 3x3 to 6x6. The likelihood and consequence you chose are stored, not just the resulting band.

Run the workshop on a canvas

Bow-tie layout of causes, controls, consequences and actions, owned and agreed in the room.

Model cost honestly

A cost breakdown with three-point ranges, contingent risks with probabilities, and every line deliberately assigned a correlation driver or marked independent.

Simulate until it settles

Monte Carlo sampling that climbs a fixed ladder until it reaches your precision target, then reports the ladder it climbed and a 95% interval on every figure.

Explain and export

P5 to P90 and contingency, two distribution views, ranked sensitivity, generated commentary, and Excel and JSON exports you can hand to someone else.

Reproduce itself

The seed and settings are stored with the project, so the same inputs return the same curve.

What CRAFT does not do

No schedule risk analysis

Cost only. CRAFT does not simulate activity durations or programme networks. Where a delay has a cost you can quantify, model it as a contingent risk.

No multi-user editing

One person drives one file. Teams pass the project file between them under whatever version control they already use.

Single seat, desktop browser

One user per subscription. Built for a desktop screen; mobile and tablet are not recommended for real project work.

PRS cannot recover your projects

Your data stays on your device. That is the point of local-first, and it cuts both ways: we cannot read your projects, and we cannot get them back for you. Keep your own backups of the .prs file.

If any of the four on the right is a dealbreaker, better to know now than after you have paid. They are deliberate consequences of the design rather than gaps waiting to be filled, and each one buys something on the left.

Project Risk Solutions

See it on a project of your own.

CRAFT is a local-first cost and risk workbench. Your project data stays on your device in a portable file you control.

What this pack demonstrated

- A 14-risk register drafted from project context and accepted by the team, with cause, consequence, ownership, category and recorded reasoning.
- Current and residual ratings against a configurable rating profile, with the underlying likelihood and consequence stored, not just the band.
- A bow-tie analysis canvas with controls and actions owned in the room.
- A 100-line cost model with three-point ranges, contingent risks, and every line deliberately classified as sharing a correlation driver or explicitly independent.
- A converged Monte Carlo simulation reporting its own sampling precision, with P5, P10, P50, P90 and contingency each carrying a 95% interval.
- Two inspectable distribution views, a ranked sensitivity analysis, and generated commentary marked as model-written.
- A stored seed and settings record that lets the whole run be repeated.

projectrisksolutions.com.au

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