

Efficiency in Aeromedical Operations



Adrian Wilson



"There is a rapidly closing window of opportunity to secure a liveable and sustainable future for all"

IPCC Climate Report 2023.





"There is a rapidly closing window of opportunity to secure a liveable and sustainable future for all"

UN Climate report 2023.





Per-Capita Recession





Per-Capita Recession



Population Growth 2%



Per-Capita Recession



GDP 1.2%

Population Growth 2%



Per-Capita Recession



GDP 1.2%

Deficit -0.8%

Population Growth 2%



Future for emissions reduction

- *SAF*
- *eVTOLL*
- *Hydrogen*

Efficiency = Now





Definition

Efficiency is tasking the most appropriate asset based on patient condition.

Cost/ CO2

vs

Time

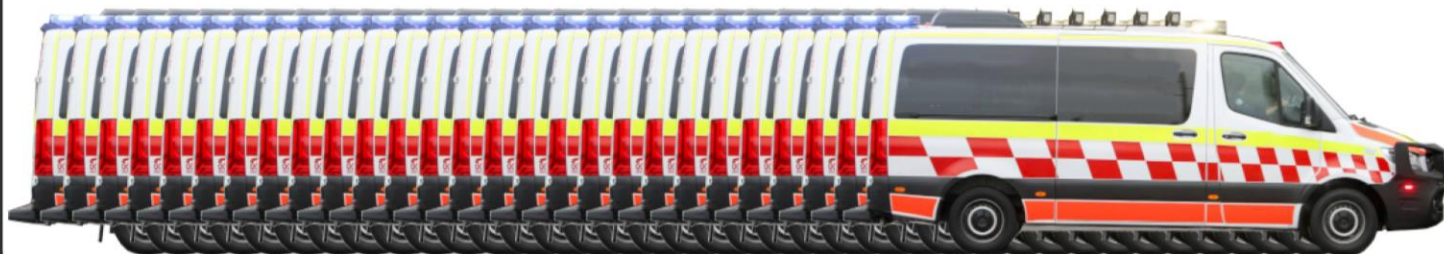


Tasking Efficiency

Network Efficiency



Cost



\$1.90 per km

27



\$49.95 per km

1

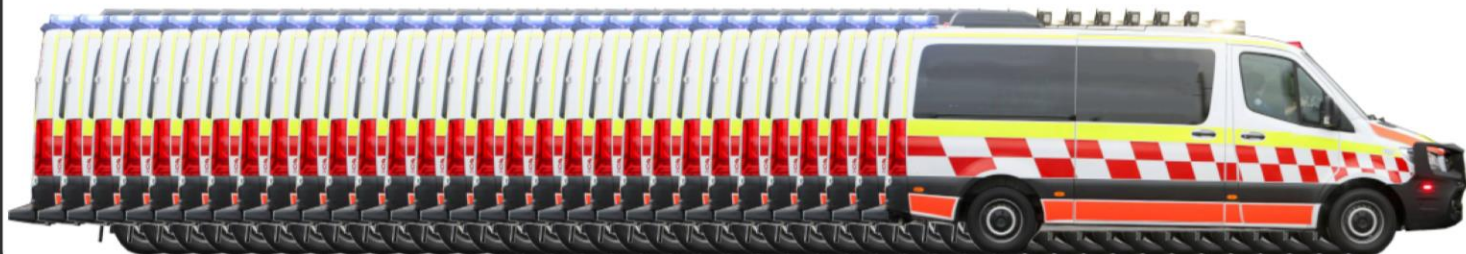


\$13.20 per km

3



Emissions



170g CO2 per km

30



5120g CO2 per km

1



1100g CO2 per km

5



100 Nautical Miles



\$352

31kg CO2



\$9,240

948kg CO2



\$2442

203kg CO2

400 Nautical Miles



\$1406

124kg CO2



\$36,963

3,792kg CO2



\$9,768

812kg CO2



Time



1:27 Cost
1:30 CO2



1:1 Cost
1:1 CO2



1:3 Cost
1:5 CO2



Time



1:27 Cost
1:30 CO2



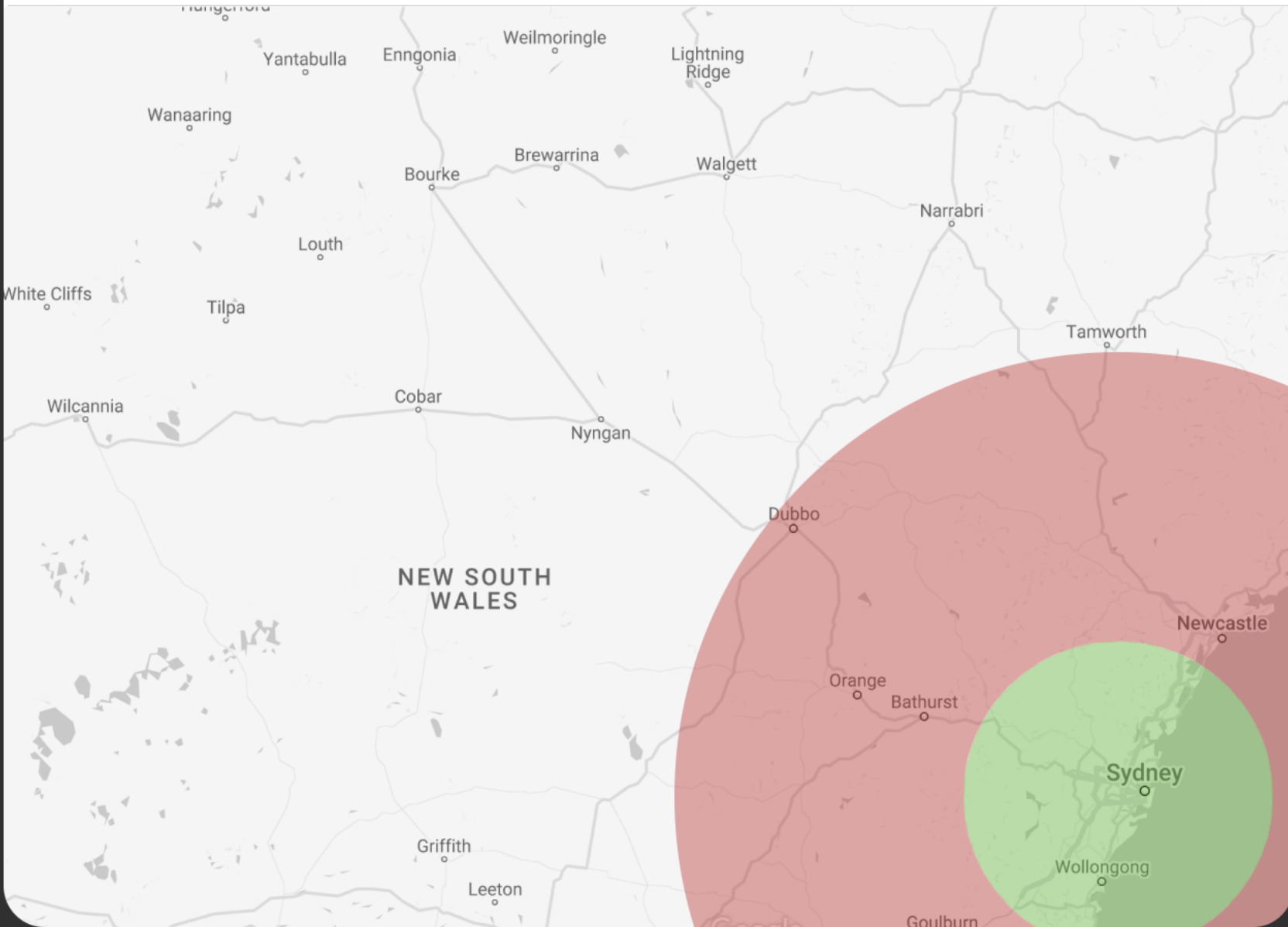
1:1 Cost
1:1 CO2



1:3 Cost
1:5 CO2



Time



1:27 Cost
1:30 CO2



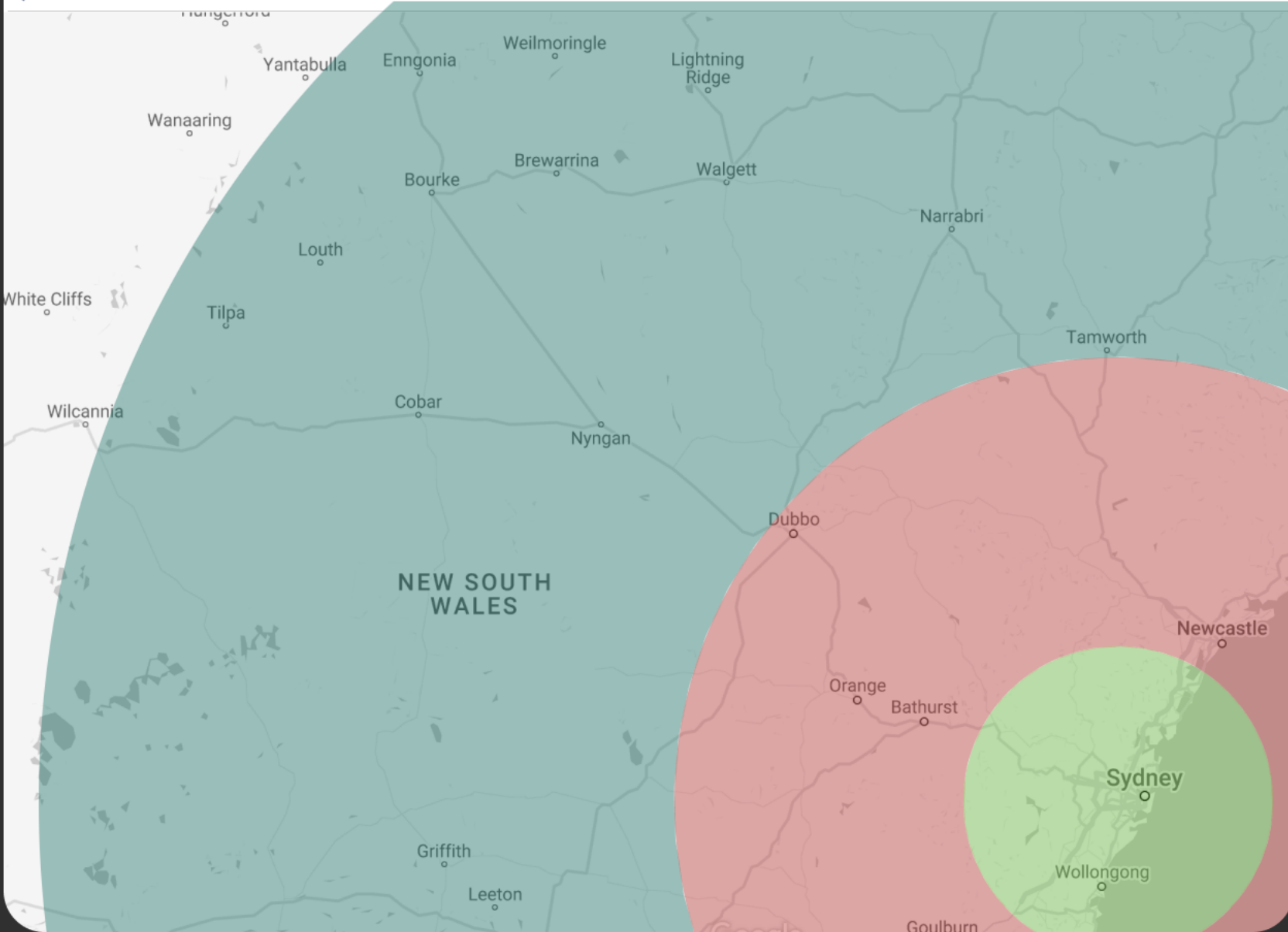
1:1 Cost
1:1 CO2



1:3 Cost
1:5 CO2



Time



1:27 Cost
1:30 CO2



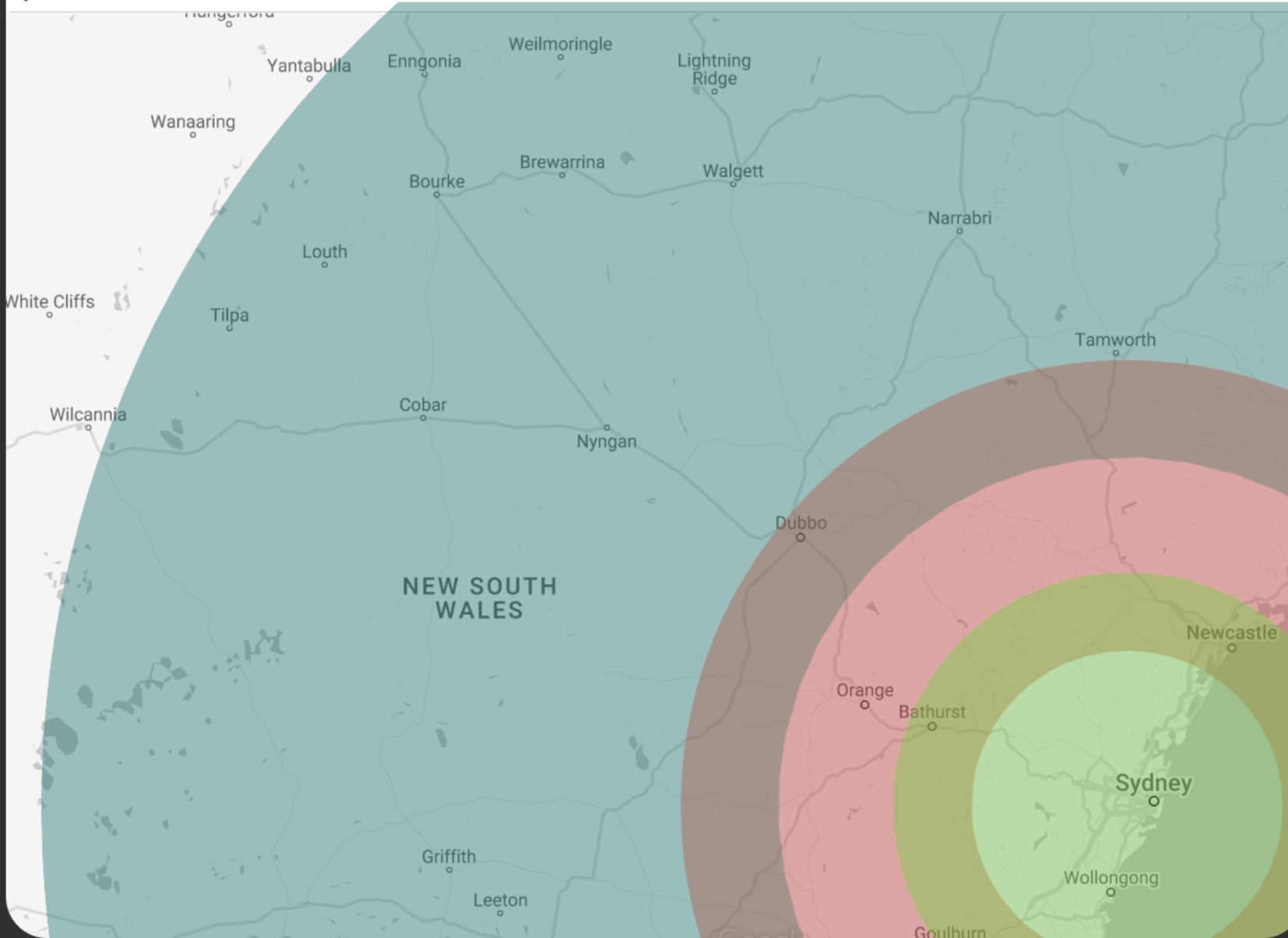
1:1 Cost
1:1 CO2



1:3 Cost
1:5 CO2



Compromise Cost vs Time



1:27 Cost

1:30 CO2



1:1 Cost

1:1 CO2

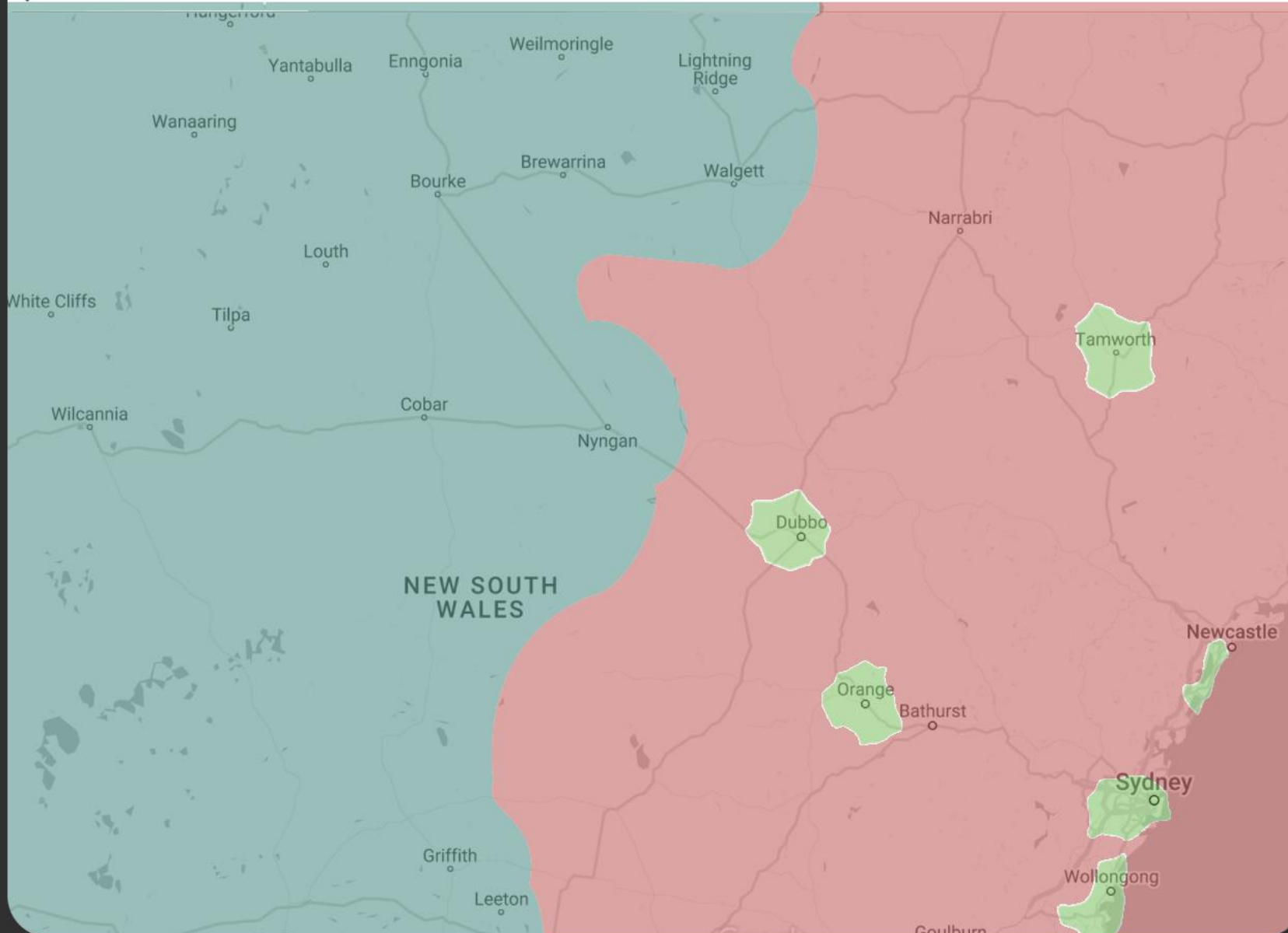


1:3 Cost

1:5 CO2



Complexity



Asset Availability

Weather

Fuel

Medical Team location

Airports

Fatigue

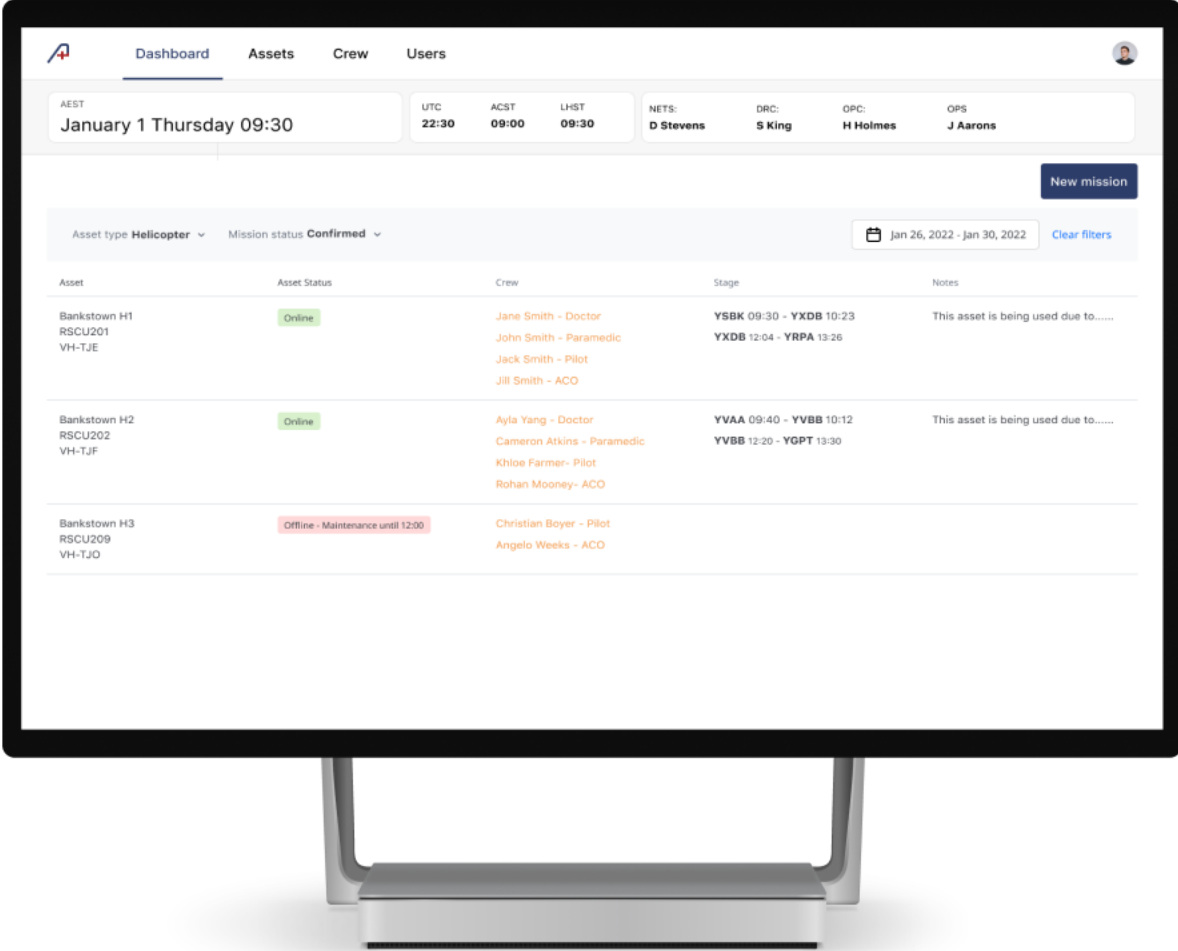
Road Traffic

Destination hospital

Return costs



Decision Support Software



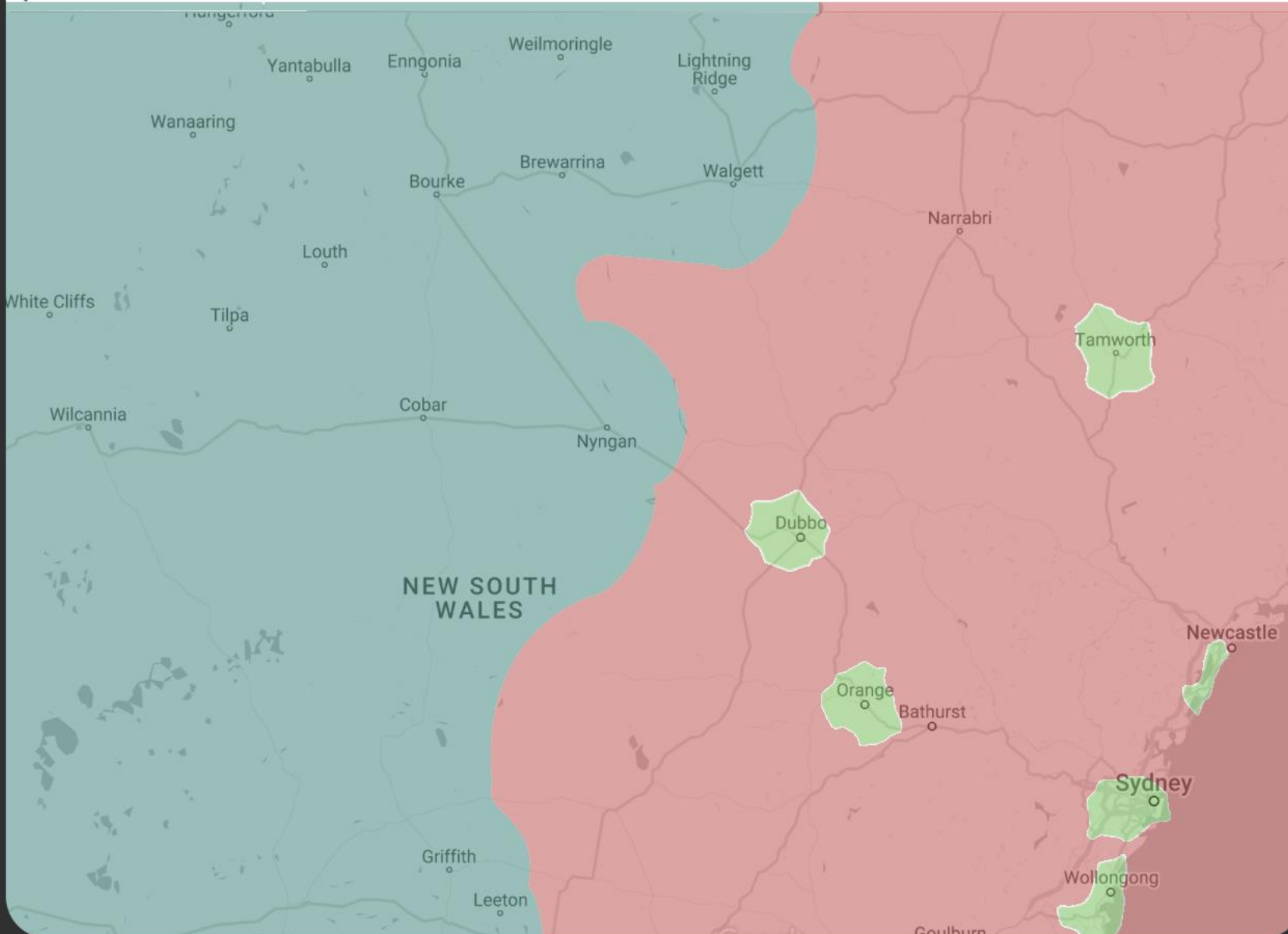
The image shows a computer monitor displaying a web-based Decision Support Software interface. The interface has a top navigation bar with tabs for 'Dashboard', 'Assets', 'Crew', and 'Users'. Below the navigation bar, there's a header section showing the current date and time (January 1 Thursday 09:30) and various time zones (UTC, ACST, LHST). There are also buttons for 'NETS', 'DRC', 'OPC', and 'OPS'. A 'New mission' button is located on the right side of the header. Below the header, there's a filter section with 'Asset type: Helicopter' and 'Mission status: Confirmed'. A date range selector shows 'Jan 26, 2022 - Jan 30, 2022' with a 'Clear filters' button. The main content area is a table with columns: Asset, Asset Status, Crew, Stage, and Notes. The table lists three assets: Bankstown H1, Bankstown H2, and Bankstown H3. Bankstown H1 and H2 are 'Online', while Bankstown H3 is 'Offline - Maintenance until 12:00'. The table also shows crew members and their roles, as well as mission stages and notes.

Asset	Asset Status	Crew	Stage	Notes
Bankstown H1 RSCU201 VH-TJE	Online	Jane Smith - Doctor John Smith - Paramedic Jack Smith - Pilot Jill Smith - ACO	YSBK 09:30 - YXDB 10:23 YXDB 12:04 - YRPA 13:26	This asset is being used due to.....
Bankstown H2 RSCU202 VH-TJF	Online	Ayla Yang - Doctor Cameron Atkins - Paramedic Khloe Farmer- Pilot Rohan Mooney- ACO	YVAA 09:40 - YVBB 10:12 YVBB 12:20 - YGPT 13:30	This asset is being used due to.....
Bankstown H3 RSCU209 VH-TJO	Offline - Maintenance until 12:00	Christian Boyer - Pilot Angelo Weeks - ACO		

Consider All Variables
Calculate Time
Calculate Cost/ CO2
Cost/ Benefit Priority
Recommend Asset
Record Data



Complexity



Asset Availability

Weather

Fuel

Medical Team location

Airports

Fatigue

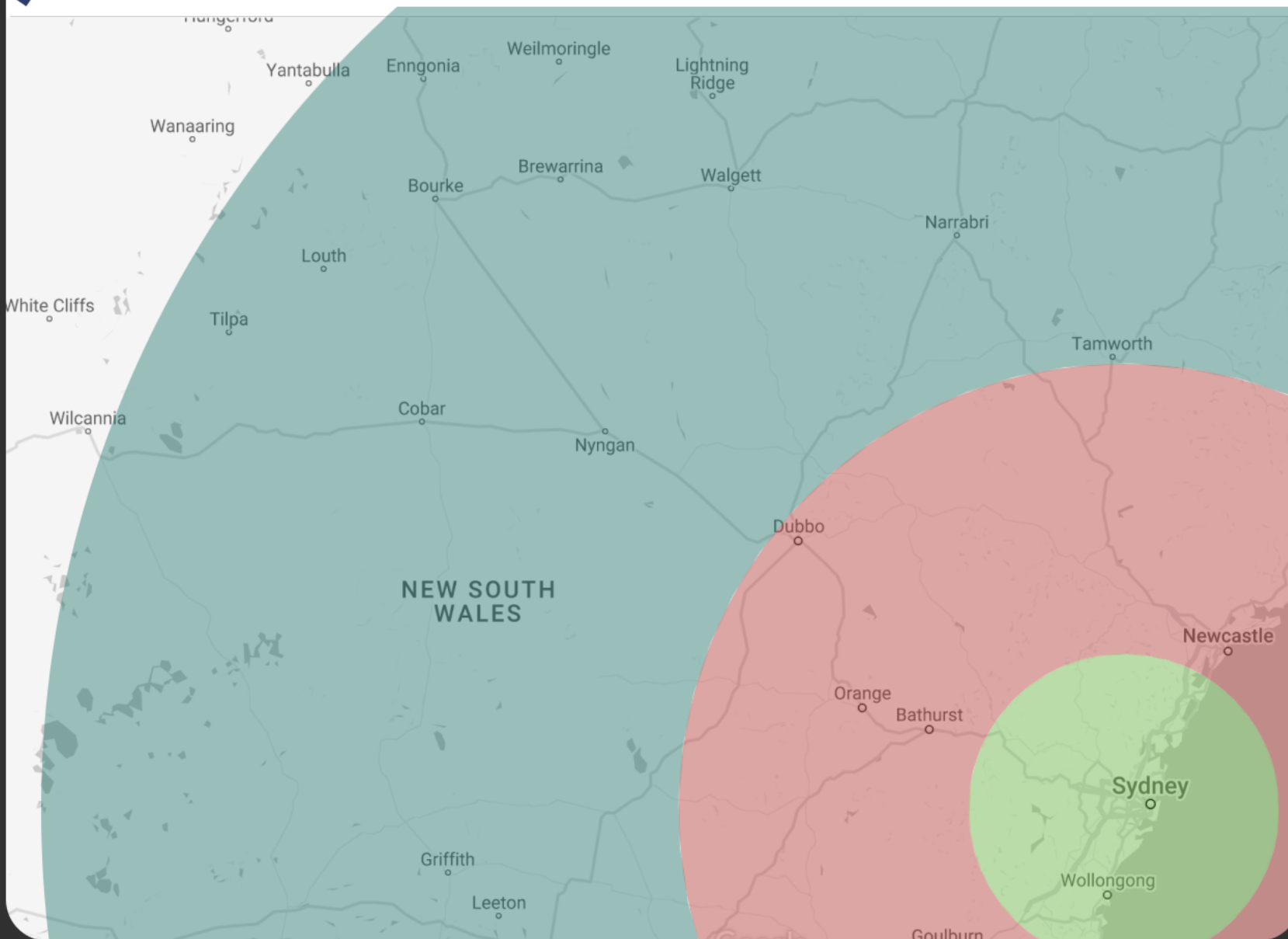
Road Traffic

Destination hospital

Return costs



Network Efficiency



1:27 Cost

1:30 CO2



1:1 Cost

1:1 CO2

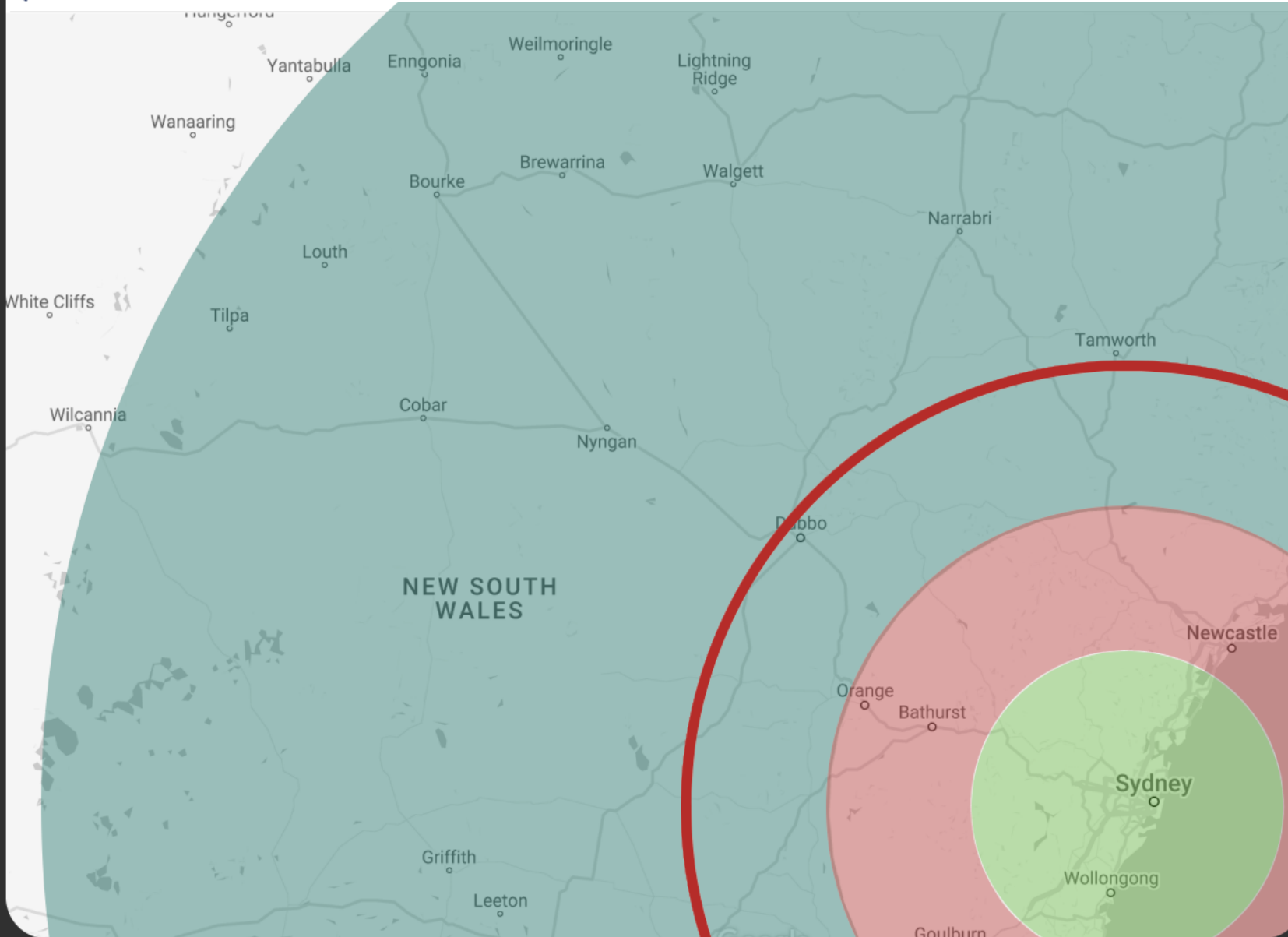


1:3 Cost

1:5 CO2



Faster Fixed Wing Response



*Faster than ever
retrieval.*

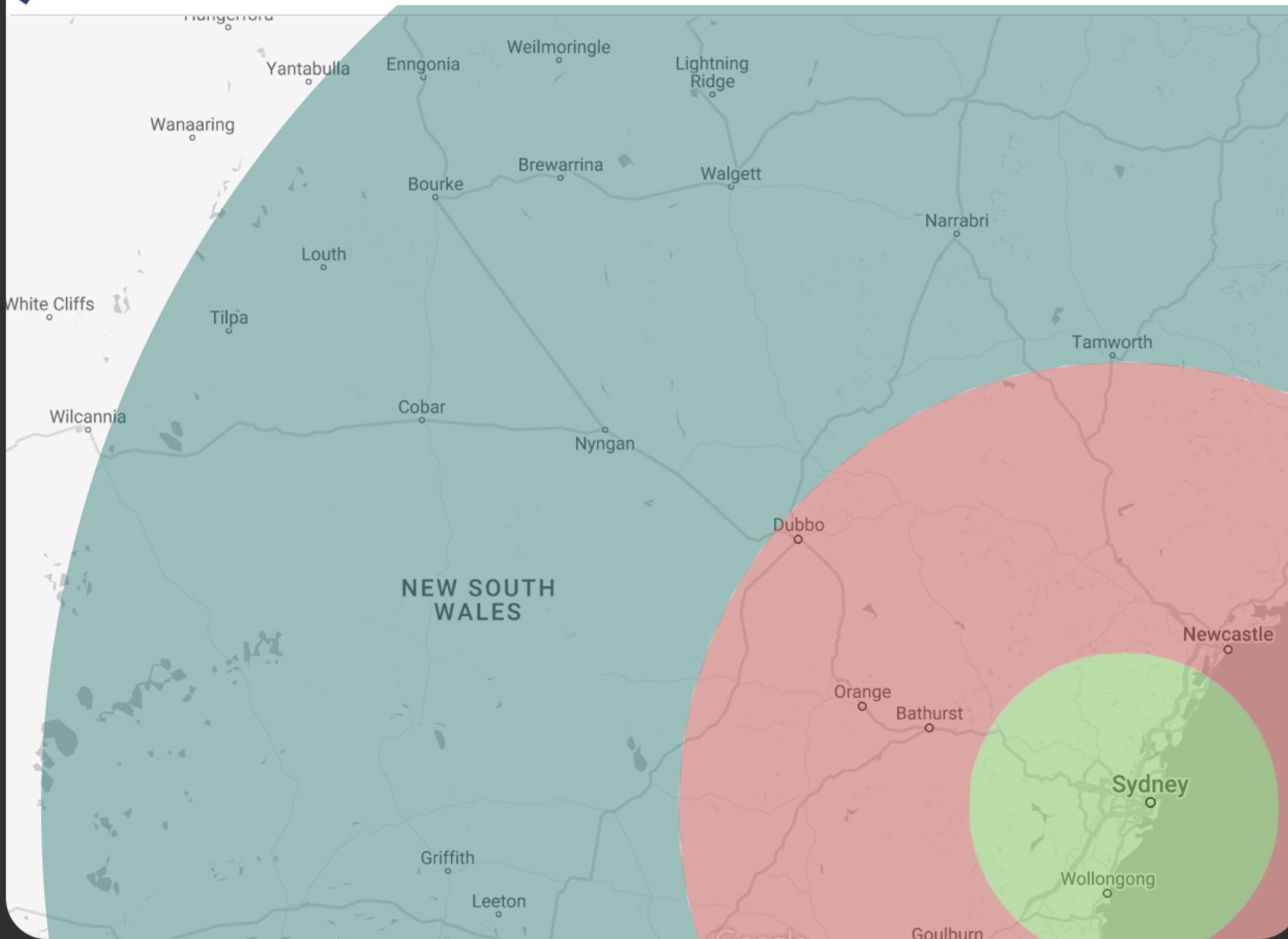
*More Patients moved
by Fixed Wing*

*Overall reduced cost
reduced CO2*

*Enhanced Rotary wing
availability*



Benchmark



1:27 Cost

1:30 CO2



1:1 Cost

1:1 CO2

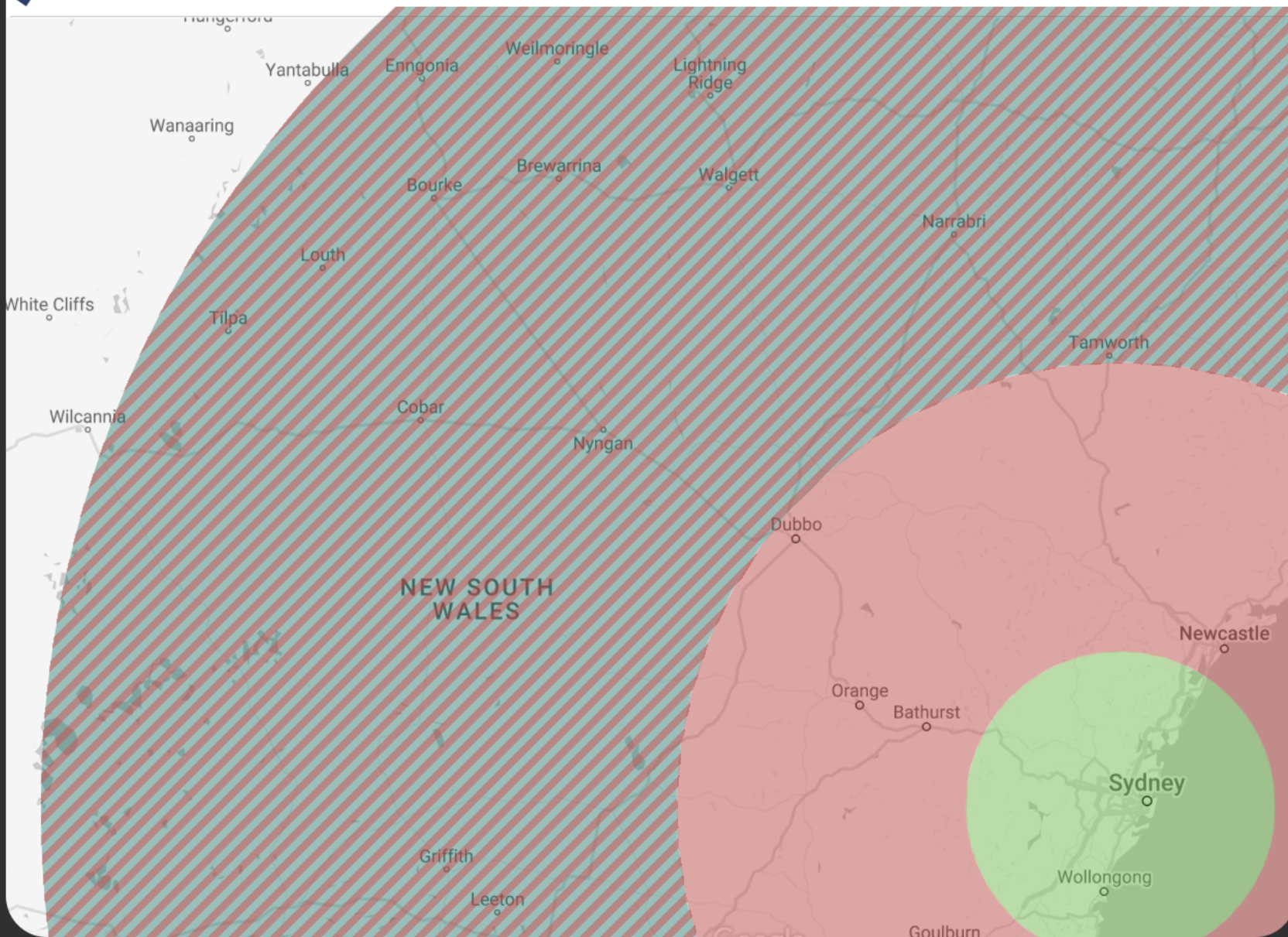


1:3 Cost

1:5 CO2



Fixed Wing Unavailable



***Asset cost offset by
reduced operating
costs***

***Cumulative benefit to
CO2 reduction***

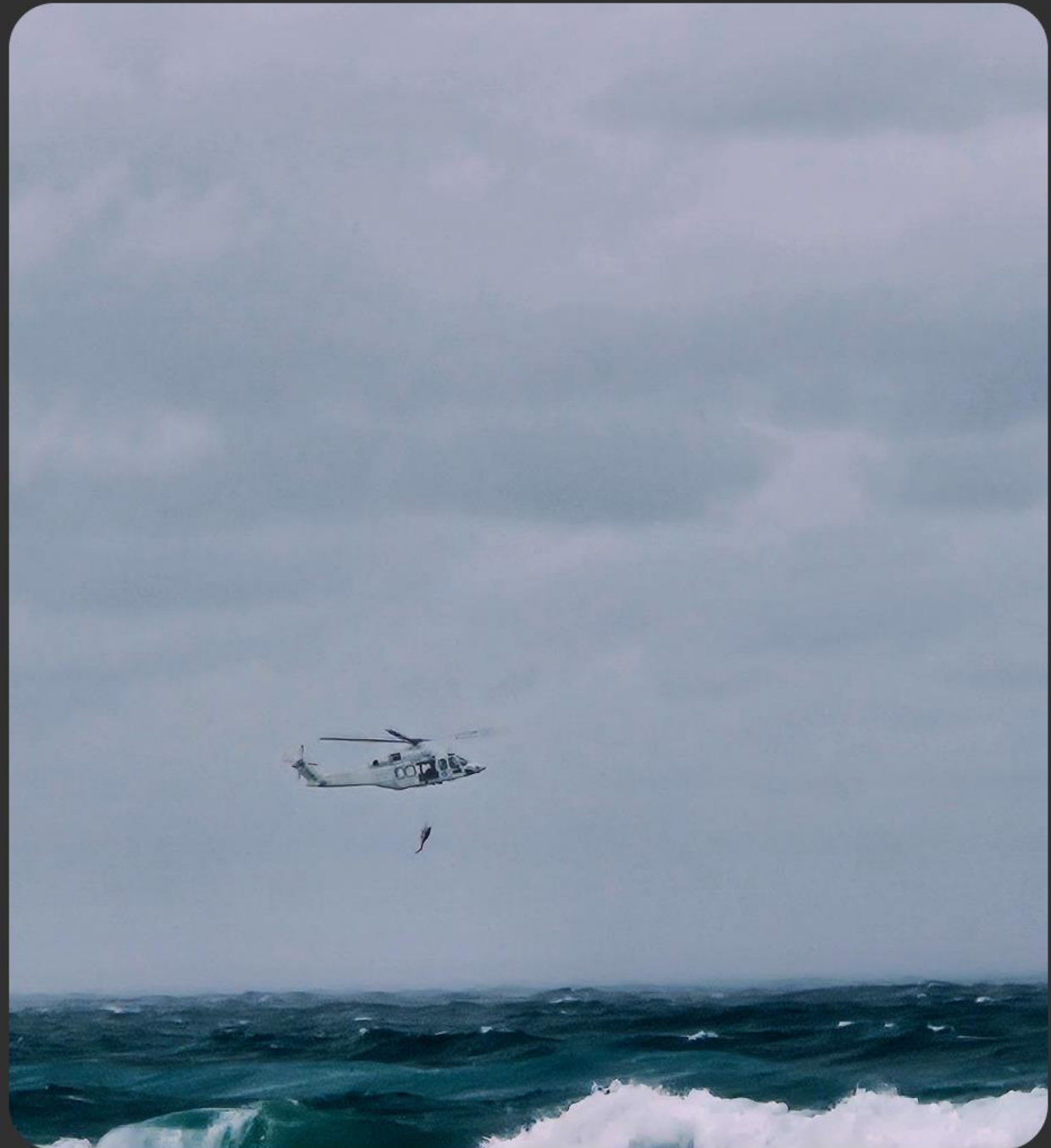
***Better patient
outcomes***



Indirect Benefits

Additional Rotary Wing Availability

Delayed RW Fleet Replacement





Benefits

Tasking Efficiency

Network Efficiency

Better Patient outcomes

Reduced CO2 Emissions

Reduced operating costs





***When it comes to cost - whether patient,
planetary or financial - we cannot afford to
continue as we are.***





*When it comes to cost - whether patient,
planetary or financial - we cannot afford to
continue as we are.*



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