

February 2024



MAPPING THE DIGITAL GAP

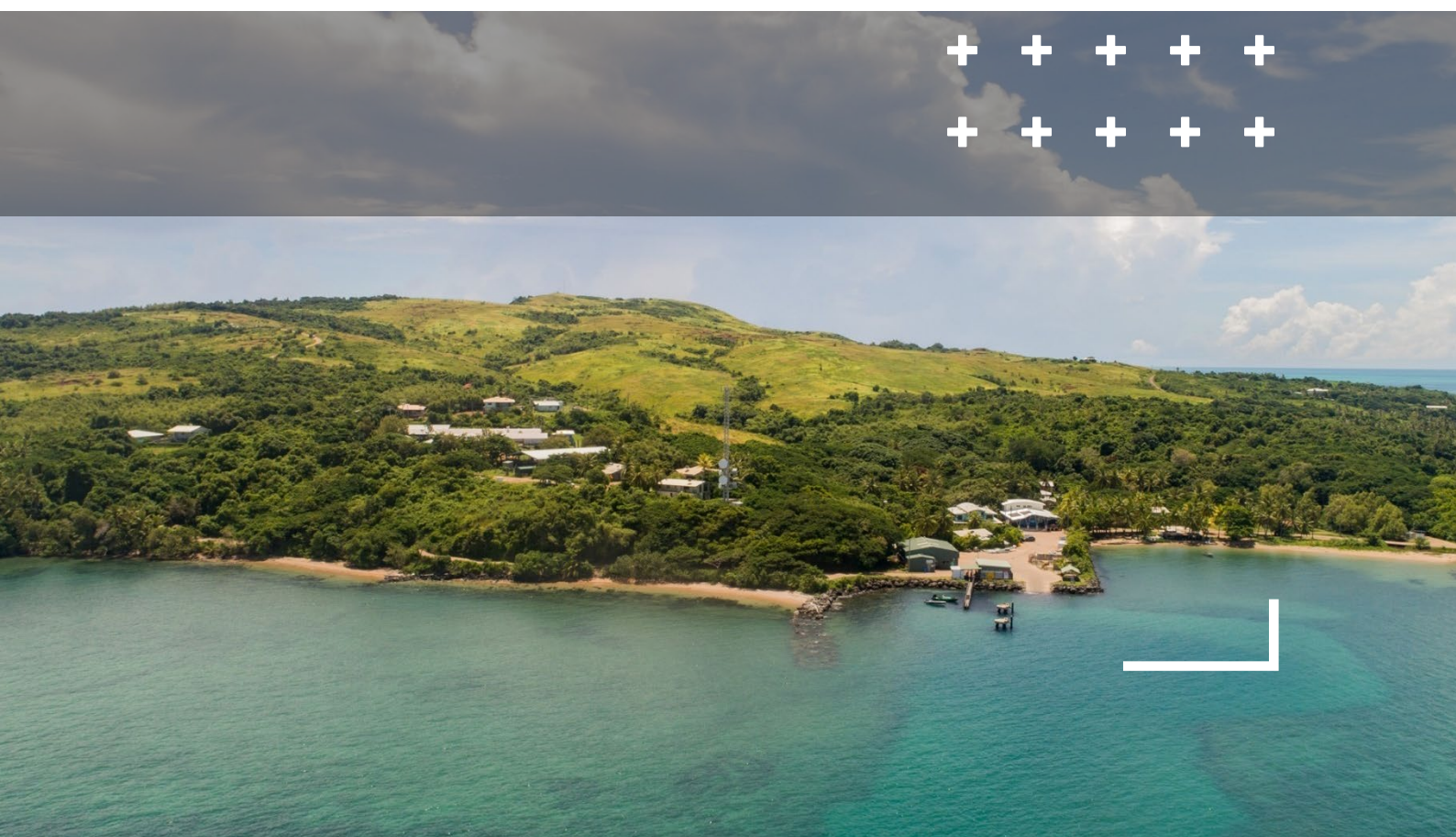
Measuring Digital Inclusion and Media Use in Remote Aboriginal and Torres Strait Islander Communities 2021-24



Erub (Darnley Island)

Zenadth Kes (Torres Strait), Queensland

2023 Community Update Report



Acknowledgement of Country

We respectfully acknowledge the Erubam Buaigiz, the traditional owners for Erub, and all Torres Strait Islands peoples, and pay our respect to their Ancestors and Elders, past and present. We also acknowledge the Traditional Custodians and their Ancestors of the lands and waters across Australia where we work, live and undertake our research.

About the Mapping the Digital Gap Research Project

Mapping the Digital Gap is a 4-year research project working in partnership with local organisations in 12 remote First Nations communities, to generate a detailed account of digital inclusion and uses of digital services including news and media, track changes over time, and inform appropriate local strategies and services enabling informed decision making by remote Aboriginal and Torres Strait Islander people. It is a supplementary project to the Australian Digital Inclusion Index, coordinated within the RMIT University node of the Centre of Excellence for Automated Decision Making and Society in partnership with Telstra.

Contact

Dr Daniel Featherstone
Project Lead



E: mtdg@rmit.edu.au
M: 0437 798 076
W: mappingthedigitalgap.com.au

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Community Co-researchers 2022–23

Lala Gutchen and Nixon Mye (report co-authors)

Research participants and stakeholders:

Thank you to all the community residents and local agency staff who generously participated in the surveys and interviews, providing the personal experience to make this research meaningful. We conducted 56 surveys with First Nations community residents in 2023 (44 in 2022). During 2022 and 2023 research visits, we undertook 20 interviews with community leaders, residents and the following stakeholder agencies:

- + Torres Strait Islands Regional Council
- + Prescribed Body Corporate (Native Title)
- + Torres Strait Islanders Media Association
- + Tagai State School – Erub campus
- + Erub Primary Health Care Centre
- + My Pathways (CDP provider)
- + IBIS Supermarket
- + Erub Arts
- + TSIRC Engineering
- + Erub Erwer Meta TSI Corporation
- + Torres Strait Islands Police Support

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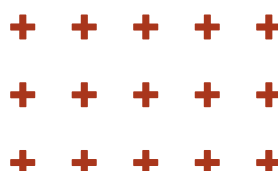
Dr Daniel Featherstone
Assoc Prof Lyndon Ormond-Parker
Assoc Prof Jenny Kennedy

Report design/Research support: Leah Hawkins

Copy editing: Lucy Valenta

Photography: Daniel Featherstone

Cover photo: Erub's central villages – Sadi, Egrue and Medige (Drone photograph by Jimi K Thaiday)



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01. EXECUTIVE SUMMARY

This report outlines updated findings from our second research visit to Erub (Darnley Island), which is located in the eastern island group of Zenadth Kes (Torres Strait), near the Great Barrier Reef. It is approximately 200 km northeast of Horn Island, where the regional airport is located.

The traditional owners are the Erub Mer people who, like all Torres Strait Islanders, have close connections to land, sea and sky and consider themselves as part of *Gogobithiay* (land, sea and sky).

Erub is approximately 3 km long by 2 km wide. The Erub community comprises 19 villages, with nine villages on the southern side of the island (Isem, Tor, Iwau, Banidog /Banidun, Greenhill, Mogor, Dadamud, Seim and Badog), three villages on the south-westerly side (Medige (the Central Business District), Babineur and Wau), three westerly villages (Kedarwasi, Egruie, and Sadi) and four on the north-east side (Saager, Zaum, Zaum Paur and Ewi) (see Erub map in Appendix 4).

Our first research visit in April 2022 identified a range of challenges for Erub residents and service providers in terms of mobile and communications access, particularly outside of the central villages. Nevertheless, we found high levels of digital ability compared with other Australians (see page 5).

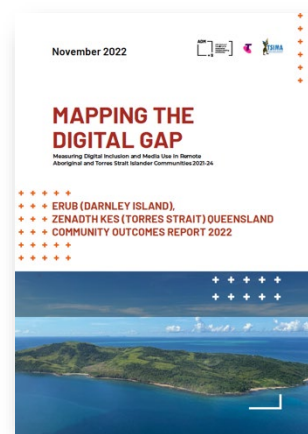
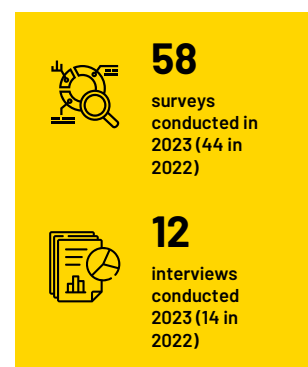
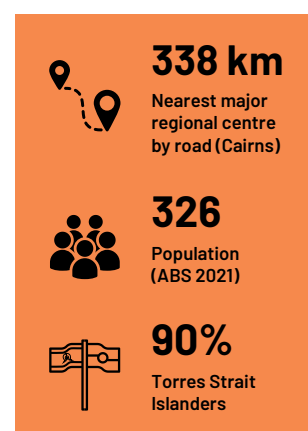
Our second visit to Erub, undertaken 20–24 March 2023, was another productive week of surveys, interviews and discussions. A big *eso* (thanks) to community research partner Torres Strait Islander Media Association (TSIMA), co-researchers Lala Gutchen and Nixon Mye and TSIMA Senior Content Creator Jenni Enosa, for their contribution and guidance. *Eso* also to Torres Strait Islands Regional Council for hosting us, and to all research participants, including 58 residents who undertook surveys and 12 community leaders and stakeholders who participated in interviews.

Building on the 2022 Erub Community Outcomes Report, this Update Report is intended to assist community agencies, leaders and residents to better understand the barriers to digital inclusion, develop local strategies to address these barriers, and support planning and partnerships with government and industry stakeholders.

This report presents research findings to date, comparing survey results from 2022 to 2023, outlining changes in communications and media services and usage, and renewing the analysis section with 2023 findings and quotes. The proposed Digital Inclusion Plan has been updated based on community input and progress to date, as well as planned activities.

The report also presents 2023 Australian Digital Inclusion Index scores for Erub relative to national averages and key findings from our first round of visits to 10 remote towns, communities and homelands in 2022.

This report is part of our commitment to Indigenous data sovereignty, providing data and research findings to the participating communities to use for their own analysis, planning and advocacy. We will publish another update report following the final research visit in 2024.



Erub at a glance

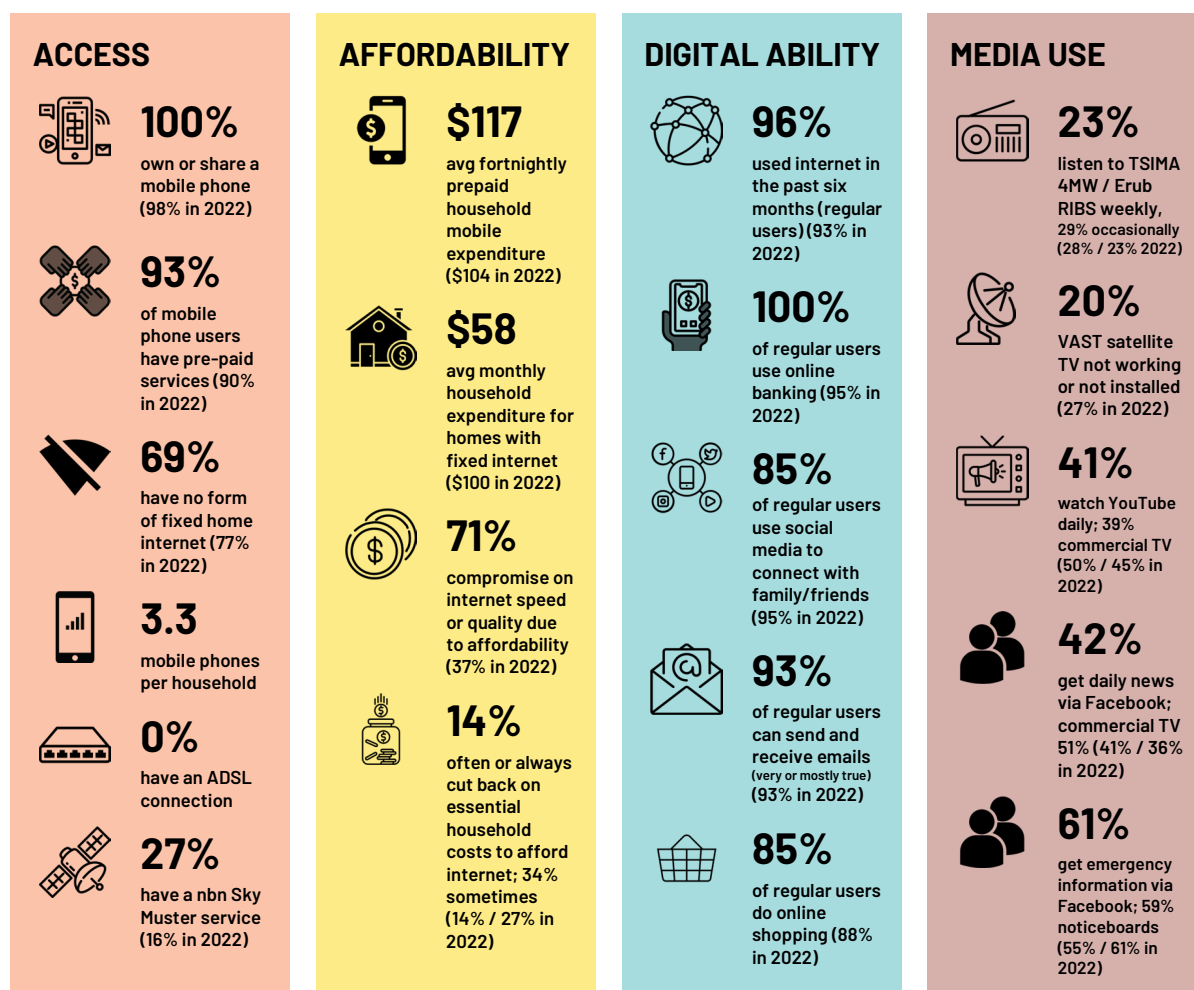
Distance	993 km	to nearest regional centre (Cairns), via two flights
Dwellings	80	occupied dwellings
	3.5	people per ATSI household
Language	92%	ATSI people who speak a Torres Strait Islander language
Income	\$387	median ATSI personal income



Figure 1: Houses are clustered in 19 villages on Erub

Key survey findings

Below is a summary of unweighted 2023 survey results, in comparison to 2022 results.



Full 2023 survey results are available in Appendix 1, with comparison to 2022 results. An updated audit of demographics and communications and media services available in Erub is provided in Appendix 2.

What is digital inclusion? How is it measured?

Digital inclusion refers to equitable and reliable access to and use of information and communication technologies for participation in social and economic life.

The Australian Digital Inclusion Index (ADII) is a biennial national survey that measures three dimensions of digital inclusion: Access, Affordability and Digital Ability. ADII scores range from 0 to 100. The higher the score, the greater level of digital inclusion. ADII scores are relative, enabling comparisons across demographic groups and geographic areas over time.

The Mapping the Digital Gap project uses an amended version of the ADII survey to collect digital inclusion data. This enables us to compare results for the participating remote communities, towns and homelands with the national results collected by the ADII, and track changes in digital inclusion between and within these sites.

In 2021, Closing the Gap Outcome 17 was introduced to ensure First Nations people in Australia have “access to information and services enabling participation in informed decision making regarding their own lives.” Target 17 includes a target of equal levels of digital inclusion for Aboriginal and Torres Strait Islander people by 2026.

Combined with ADII data collection, the Mapping the Digital Gap project is helping, for the first time, to track progress towards Target 17 for remote, regional and urban First Nations people.

DIGITAL INCLUSION



ACCESS

- Reliable access to phone and internet
- Access to IT devices and/or facilities
- Access to trusted media, news and information



AFFORDABILITY

- Affordable phone and internet services
- Affordable devices



DIGITAL ABILITY

- Ability to use digital devices, software and online services
- Awareness of cybersafety, scams, and viruses

ADII First Nations data dashboard

The [First Nations dashboard](#) on the ADII website provides interactive charts and community-specific results from the ten research sites in 2022. The Mapping the Digital Gap [2023 Outcomes Report](#) provides summary findings across all sites. These will be updated in 2024 with 2023 survey results.

View dashboard using the QR code below:

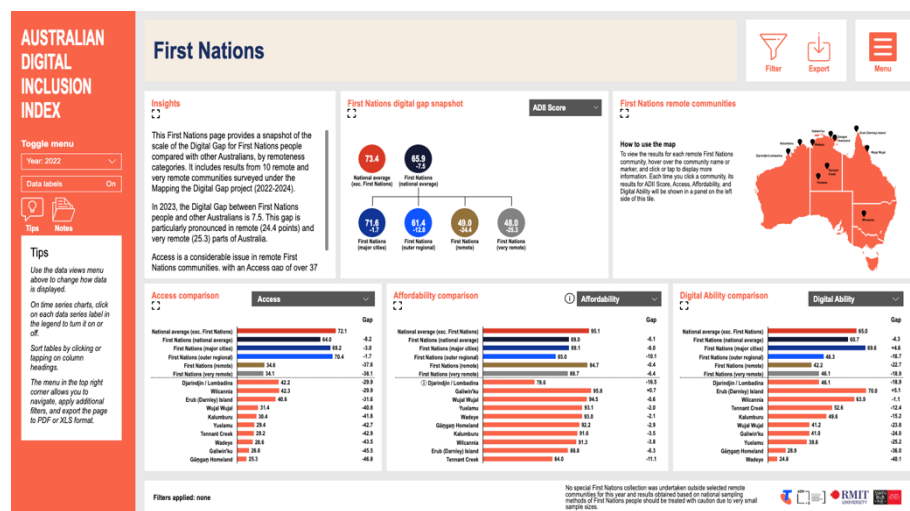


Figure 2: First Nations dashboard on ADII website.
digitalinclusionindex.org.au/dashboard/firstnations.aspx

ADII 2023 report findings

The 2023 ADII found a digital gap of 7.5 points for First Nations people compared with other Australians. This gap widened substantially for people living in remote (24.4) and very remote Australia (25.3), where contributing factors include limited access to digital infrastructure and services, high internet costs relative to income, climate, geography and cultural context.

Based on our 2022 survey results, the average ADII score for Erub was 60.2. While higher than most other remote communities, this was 13.2 points below the national average for non-First Nations Australians (Figure 3).

The key element of this gap was in the Access dimension score of 40.6, which was 31.6 points below the non-First Nations average, primarily due to low levels of household internet access, limited mobile coverage across the island, and high reliance on mobile devices. Figure 4 shows a gap of 6.2 for Affordability but and an impressive Digital Ability score of 70.0, which is 5.2 above the national average. However these scores vary widely for different demographic groups as outlined below.

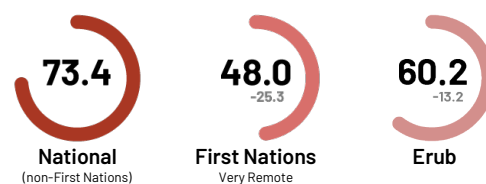


Figure 3: Erub ADII scores compared to national average (non-First Nations) and very remote First Nations scores, based on 2022 surveys

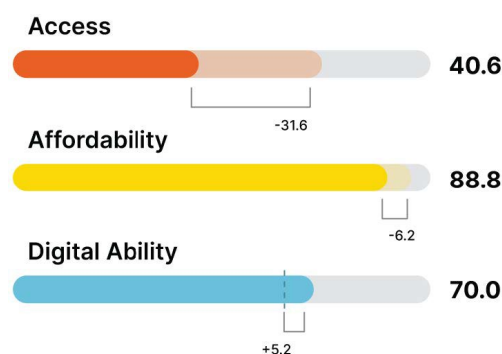


Figure 4: 2023 ADII scores for Erub, with gap against national non-First Nations averages

Demographic gaps in Erub:

The 2022 survey results found significant variations in digital inclusion (DI) scores between various demographic groups. These results demonstrate that targeted digital support activities would benefit these demographic groups in Erub.

Disability gap 9.9	People with disability had average DI scores of 59.4 compared to 69.3 for those without disability. The gap was largest in terms of Digital Ability (68.3 compared with 88.6), with Affordability also a factor (88.4 compared with 92.6).	Gender gap 10.2	Women had higher average DI scores than men (64.6 compared with 55.4). The gap was particularly high in the area of Digital Ability (79.3 compared with 59.3) with Access also higher (42.7 compared with 39.0).
Education gap 12.4	Those who completed secondary school (Year 12 or equivalent) had an average DI score of 61.6 compared to those who completed up to Year 10, who averaged 49.2 (12.4 gap). The gap was largest in Digital Ability (64.8 compared with 49.0) but was also seen in Access (43.8 compared with 35.6) and Affordability (94.3 compared with 87.7).	Employment gap 6.8	The average DI score for unemployed people was 55.1 compared to 61.9 for those employed (full-time or part-time). The greatest gap was in Affordability (68.1 compared with 93.2). Inversely, unemployed people had much higher Digital Ability scores (84.3 vs 64.3).
		Age gap 30.6	Those aged 65–74 had an average DI score of 34.6, compared with a score of 65.2 for those aged 18–34 years (30.6 gap). There was wide variation in Digital Ability scores (0.0 for 65–74 compared to 84.6 for 18–34 year olds), but Affordability was lower for the 18–34 age group (89.8 compared with 98.6 for 65–74 group).

A demographic gap also exists for those living in group or shared households compared with couple with no children (62.7 compared to 78.8).

02. INTRODUCTION

The Mapping the Digital Gap project seeks to track changes in digital inclusion and media and communications use in each research site over three years. This report provides an update from our second visit to Erub in March 2023, comparing the survey and interview results to our findings from the first visit in April 2022. It also seeks to track any progress on the suggested strategies for a local Digital Inclusion Plan and update the plan with any newly identified strategies or activities.

2022 findings

During our 2022 visit, we heard significant frustration by residents at the limited and unreliable mobile coverage to many households on Erub, with calls for expanded coverage on the island and out to sea. Being located in the eastern cluster of the Torres Strait Islands, Erub has unique communications challenges. Communications access is primarily via a regional microwave repeater network which provides backhaul for 3G/4G mobile and ADSL services, with nbn Sky Muster satellite internet also used by most agencies and some households. Erub's hilly terrain and dense vegetation, dispersed population across 19 villages, and extensive use of boats for fishing and inter-island travel also make for challenging communications access, with 4G mobile coverage limited to only three central villages.

In the 2022 Erub Community Outcomes Report, we outlined the following key findings:

- Pre-paid mobile is the primary means of phone and internet access
- There is limited use of fixed internet by agencies or households
- 4G mobile coverage in Erub has limited range and is congested and unreliable
- Mobile communications are critical for health and safety, including while out at sea
- There is a high level of digital ability in Erub
- About a quarter of residents surveyed have a home internet connection
- Affordability is a key concern constraining internet access and use of digital services

Erub faces similar digital inclusion barriers to many other remote First Nations communities, with limited fixed home phone or internet access and low household incomes limiting affordability of media and online services. 98% of the 44 survey respondents primarily use a mobile phone for making phone calls, with 90% of these using pre-paid services. 77% of households surveyed did not have any form of fixed home internet, with 16% having nbn Sky Muster. 63% of regular internet users surveyed gave lack of access as the main reason for not using the internet more often. Respondents described issues of little or no 4G coverage on many parts of the island, regular outages and dropouts, slow services during peak periods and low penetration inside houses.



"[We want] improvement of the technology for the region, speed up a bit, so we [in Torres Strait] come in line with the mainland communities. We must not be neglected ... we're Australian, we're equal to them down there."

- Kapua Gutchen, My Pathways Supervisor and Cultural Leader, 2022

Limited access to reliable communications was also described as a health and safety concern, particularly for elderly and vulnerable people living in villages without phone or internet connectivity. Erub Islanders travel significant distances out to sea in dinghies for fishing or inter-island travel and often rely on 3G coverage from nearby islands to alert family or local authorities if in trouble. There was significant concern about the potential impact on coverage with the planned 3G network switch-off in June 2024. Electronic beacons such as EPIRBs were seen to be ineffective due to the time delay from activation to search and rescue.



"The 15 islands are divided by water. If I want to go to Murray [Island, I don't] jump in a car, [I] have to go [26 miles] by boat ... When you get out of mobile range, you're on your own."

- Lesley Pitt, TSIRC Division, 2022

Service providers also reported issues with speed and reliability of ADSL and 4G services, which were the main broadband services being used. Sky Muster satellite services were also described as having limited speed, latency issues affecting videoconferencing and cloud-based applications, and unreliable access in wet season. Telstra services were impacted by rainfall within the microwave repeater pathway, local power outages and damage to the fibre optic backhaul on the mainland, with recent outages lasting up to two weeks.



"Sometimes the signal is bad and keeps dropping off [so] no calls can be made and internet access is difficult. [That] affects the workplace, like EFTPOS, phone lines and computers."

- John Armitage, TSIRC Divisional Manager for Erub, 2022

With high levels of education among Erub residents, we found a relatively high level of digital literacy and cyber-safety awareness in Erub. Most people were confident using online services for banking, Centrelink, MyGov and licensing, as well as online shopping, social media, and entertainment services. However, there was demand for more digital skills training and support, particularly by elders and others with low digital ability, those concerned about scams and other cyber-safety issues, and people wanting to develop workplace skills. There was also demand for community access Wi-Fi and a facility to undertake creative and cultural projects including language recording, cultural archiving, and video and music production.

2023 findings

Most Erub residents and service providers told us that there had been no improvement in the quality and reliability of mobile, ADSL and satellite services, with some services having worsened since our 2022 visit. The ongoing lack of mobile coverage to 16 of the 19 villages had led to increased household uptake of Sky Muster services, however affordability was a key factor in preventing further uptake. Calls were repeated for mobile coverage to be expanded across the island.



We're still having issues [with] slow internet ... we're still far away from being up there with [having quality services] like the mainland.

- John Armitage, Erub Divisional Manager, TSIRC, 2023

The only improvement in communications access since 2022 has been the introduction of an nbn Wi-Fi hotspot at the TSIRC office in the central village of Medige. This is well used, particularly by young people, with calls for more Wi-Fi in villages without mobile access. The Indigenous Knowledge Centre was also re-opening during our visit after a long period of closure, enabling community access to computers, library facilities and basic IT support.

We heard that mobile and ADSL services had become less reliable, with regular dropouts and outages, including a nine-day outage in February 2023 shortly before our visit. Being toward the end of the line of the Telstra microwave repeater network means that mobile and fixed line services can be impacted by a range of factors – heavy rainfall in the microwave repeater path, damage to fibre optic cable between Cairns and the top of Cape York, failure of any of the five microwave links leading to Erub, local exchange or transmission equipment faults, and local power outages on Erub. Communications on the two neighbouring islands of Mer and Ugar are linked from Erub and are consequently impacted by any network failure at or prior to Erub (see map in Section 3).

The closure of the island's short airstrip to commercial flights by Civil Aviation Safety Authority (CASA) from October 2022 increased the importance of reliable communications on Erub. With no regional passenger transport flights available for nine months, and the high cost of charters, this restricted residents' travel for meetings, education, medical appointments or social events and limited access by external service providers, medical specialists and technicians. There was increased reliance on online services as well as videoconferencing for telehealth, meetings and remote technical support. With the nearest airstrip at Masig (Yorke Island), residents regularly made the 22 nautical mile trip by dinghy to catch flights, with significant safety concerns due to lack of mobile coverage for much of the trip.

There has been increased residential and agency use of nbn Sky Muster satellite services since 2022, largely as a response to the lack of mobile services and reliability concerns. With increased use of digital services for telehealth, and online meetings and training by agencies, we heard many stories of frustration from several agencies and staff regarding the speed and reliability of Sky Muster services, especially during wet season. There was also increased use of 4G modems and mobile boosters to access signals from neighbouring islands. We did not hear of any uptake of Starlink low earth orbit (LEO) satellite services at the time of our visit.

Some agencies described ongoing challenges in using cloud-based database systems for financial and client records management, remote servers, and online administrative systems, due to congestion on 4G and ADSL services and intermittent dropouts. Agencies with access to both fixed line and satellite services described alternating between the two depending on which was working best at any time. Most agencies reported technical issues and a lack of affordable technical and IT support, impacting on service delivery.

Despite the connectivity challenges, there is increasing demand for broadband data by residents to access online news and information, social media, and online entertainment, especially by young people. With increased costs of food, fuel and other essential items, communications costs are increasing affordability issues for many households. Cost and unreliable incomes were major factors in service and device choices and usage.

Based on 2022 surveys, there is a high level of Digital Ability among Erub residents (ADII score 5.2 above the national average), with similar results in 2023. However, the high level of digital skills tends to be concentrated in the younger population, with ongoing demand for digital skills training and support for elders, people with disability and those with lower education or English literacy levels. There is also demand for awareness-raising around issues such as scams, misinformation, and other cyber-safety issues.

There is a growing cohort of young people involved in multi-media production, including music, video, digital artwork, and language and cultural content, with many sharing their work via social media platforms. These include award-winning multi-media artist Jimmy John Thaiday, digital artist and drone videographer Jimi K Thaiday, musician and broadcaster Nixon Mye and co-researcher Lala Gutchen, who won a 2023 NAIDOC award for Caring for Country and Culture for her work in documenting the Erub Mer language and climate change advocacy. There were calls for more support for media producers, including a facility to undertake this ground-breaking work.

While there are no current plans for upgrading existing communications services in the region, there was a Regional Connectivity Program funding announcement in December 2023 of nbn establishing fixed wireless services across the Torres Strait. Details of the delivery model and timeframe are not yet public.

Updates to proposed Digital Inclusion Plan

Telecommunications is typically a state or federal government responsibility, with decisions and timeframes often determined by telecommunications services providers or funding programs. This can leave residents and agencies feeling disempowered, with limited input to identify the appropriate solutions needed in their communities. We have proposed development of local digital inclusion plans to address this.

The 2022 Outcomes Report included a proposed digital inclusion plan, outlining a list of potential strategies to improve digital inclusion based on input from research participants. Building on the suggested strategies in the

2022 report, an updated Digital Inclusion Plan is provided in Section 6. This includes new strategies proposed by residents and stakeholders, as well as a summary of progress or planned activities for each item listed.

We recognise the challenges in implementing a local digital inclusion plan, with multiple agencies involved in delivering media, communications and digital support programs. However, TSIRC, TSRA and TSIMA have been successful in advocating for improved services in the region over several years. We hope that this draft plan may assist in seeking improved services and leveraging external funding and support.

As part of our ongoing research work with the Erub community in 2024, the Mapping the Digital Gap team can assist with development of this plan.



Figure 5: Photo of research team in Erub – Dr Daniel Featherstone, TSIMA Senior Content Creator Jenni Enosa, Co-researchers Lala Gutchen and Nixon Mye, Dr Lyndon Ormond-Parker and Dr Jenny Kennedy, in front of the 'Tree of Knowledge' at Medige Village on Erub.

03. MEDIA & COMMUNICATIONS IN ERUB

Existing telecommunications services



Backhaul to community

There is Telstra fibre optic running from Cairns to Bamaga in the Northern Peninsula Area at the top of Cape York. There is then a Telstra microwave repeater network that provides backhaul to the islands in the Torres Strait region via Thursday Island. The map below shows the layout of the microwave repeater network, with 4 repeaters between Bamaga and Erub.



Figure 6: Map showing path of Telstra microwave repeater network (Source: <https://tsirc.qld.gov.au/deputations/connected-islands>)



Mobile coverage

The 3G / 4G mobile tower is located in Medige Village with coverage of Sadi, Egure and some of Seim and Dadamud Villages. Due to Erub's hilly terrain, there is little or no 4G coverage to villages in the west, east and northeast of the island, nor out to sea. There were upgrades in 2018 and 2021, with 3G planned for shutdown in mid 2024. Weak 3G signals from neighbouring islands Mer, Ugar and Masig can be accessed in some villages.



Landlines

Landlines are available in most service agencies and some staff residences. However the majority of residents surveyed do not have landlines. As a result, Erub residents are predominantly reliant on mobile for primary phone use.



nbn services

Erub is designated as a satellite delivery zone under nbn planning, with no fixed line or fixed wireless. An estimated 12–14 residential dwellings (of 72) have Sky Muster services. These are primarily in agency staff houses or outside the 4G coverage area.



ADSL access

The TSIRC building, store and other central agencies have ADSL services (Note: the school and clinic use 4G broadband with satellite backup). Telstra has advised TSIRC that it will cease using the copper network, but has not yet provided a timeframe.



Public phones

There are no public phones available on Erub.



Public Wi-Fi

Free Wi-Fi is available from the Centrelink agency for access to government and banking services.



nbn Wi-Fi service

nbn co has installed a free public Wi-Fi hotspot at the TSIRC building on 28th May 2022 under its Communities in Isolation program, with free services provided via Sky Muster Plus Premium satellite backhaul. The Wi-Fi was on full-time at the time of our visit.



HF / UHF radio

An HF radio tower atop the island is used by Borderforce for search and rescue and border security. Local agencies reported using mobile or satellite phones for emergency communications, not HF or UHF radio.

Media services



Radio services

TSIMA 4MW broadcasts regionally on 1260 AM and on VAST satellite channel 922. Erub's RIBS service 4DI FM re-transmits 4MW on 106.1 FM with local RIBS content most weekday mornings. ABC Far North Queensland broadcasts from Thursday Island on 1062 AM, with a weak signal at Erub.



Newspaper

The local IBIS store sells the weekly Torres News newspaper, published by TSIMA.



TV services

Free to air TV is only available via VAST satellite direct-to-home, however about 20% of houses do not have the VAST service working (see Section 5). Some houses have subscription satellite TV services (Foxtel or Austar), especially to access sports and movies.



Local news

Regional news is shared via 4MW radio, Torres News, TSRA and TSIRC websites and Facebook pages. Local Erub news is shared via Radio 4DI, community noticeboards (TSIRC, IBIS store), distribution of flyers and a Facebook page called 'Erub Notices'.

Access and support facilities



Community access facilities

The Indigenous Knowledge Centre (IKC), situated at the rear of the TSIRC office, re-opened during our visit. The IKC provides access computers, library facilities, language and cultural records, and occasional training through Deadly Digital Communities and Tech Savvy Seniors (supported by the State Library of Queensland). The Centrelink agency operates from 9am–12pm weekdays within the IKC and has one computer available for accessing Centrelink, banking and other government services.



IT support

Support in accessing and using online services is available at the IKC, Centrelink office and TSIRC office.



Mobile phones and recharge sales

A limited range of Android smartphones and flip phones are available from the IBIS store as well as Telstra pre-paid vouchers.

04. REGIONAL PLANNING AND PROGRESS

Communications services have improved across the Torres Strait region in the last decade



"It's come a long way from Bu shell and smoke signal. There's already [big changes]. There was only one VHF here [to communicate with] the outside world. [Then, in the 1980s] there was one public phone [and] you queue up for talk or you're expecting a call. [Then landlines came] to the houses. [Now with mobile phones] we can be anywhere now ... well, almost."

- *Kapua Gutchen, My Pathways Supervisor and Cultural Leader*

Mobile and communications services in the Torres Strait have historically lagged behind outer regional areas in mainland Australia, largely due to remoteness and widely distributed islands, with most outer islands having 3G only or no mobile access until the late 2010s.

- + "Currently, many islands across the Torres Strait have patchy outdoor coverage, if they do have it at all, while some only have 3G services." (Telstra representative cited in a Queensland Government press release, 2019).¹

Torres Strait Regional Authority's *Torres Strait Development Plan 2019–2022* lists the "lack of some critical infrastructure such as communication infrastructure" as a limiting factor for the Torres Strait region's economic development.² Identifying strategies to improve communications infrastructure was a priority area in phase two of TSRA's Regional Economic Investment Strategy³ with a key activity of the Safe Communities programme being to "support safe and accessible community infrastructure and land and sea communication systems."⁴

Mobile access has improved since 2016 due to advocacy from TSIRC⁵ and co-investment from TSRA, Queensland and Australian Governments, and Telstra. Two major projects have resulted in upgraded mobile coverage – with there now being 4G coverage on 14 islands, as well as upgrades to the regional microwave backhaul network connecting to the fibre optic cable at the top of Cape York. TSIRC has continued to seek further investment to complete the full scope of the telecommunications upgrades needed.

In June 2018 TSRA, Queensland Government and Telstra finalised the the first phase of this work, the \$8.26 million Torres Strait Digital Foundation Project. Begun in January 2017, this project delivered improved 3G performance across all sites with existing mobile services, established new 4G coverage on two central islands (Badu Island and Kubin Village on Moa Island), increased ADSL ports on Horn Island, and delivered new 4G infrastructure at Mabuag Island, Ugar and Mer Islands. An additional \$410,000 was provided for a 4G base station at Erub Island under the Australian Government's Mobile Black Spot Program.

TSRA and TSIRC successfully advocated for Stage Two co-investment from Telstra, Queensland, and Australian governments, to provide "the technology and innovation needed to protect our borders and deliver multiple socioeconomic, educational, health and community safety outcomes for the island communities and people of

¹ Queensland government 30/10/2019. Source: <https://statements.qld.gov.au/statements/88754>

² Page 22, Torres Strait Development Plan 2019–2022. Source: <https://www.tsra.gov.au/the-tsra/programmes/economic-development/torres-strait-development-plan>

³ TSRA 2019:23

⁴ TSRA 2019:97

⁵ TSIRC's Queensland Government Deputation 2016 listed Digital Connectivity as Priority Area 7. TSIRC sought Queensland Government investment in a planned \$25.44 million Torres Strait Mobile Network Expansion Project (TSMNEP), to expand mobile coverage and improve telephony and data across the Torres Strait region. Source: <http://www.tsirc.qld.gov.au/sites/default/files/PDFs/Projects/Communications%20State%20Government%20Deputations%20October%202016%20FOR%20WEB.pdf>

the Torres Strait region.”⁶ The \$7.32 million Torres Strait Digital Expansion Project was successfully completed in 2021, building upon Stage One to upgrade the telecommunication infrastructure needed to deliver 4G coverage to all remaining islands of the Torres Strait.⁷

However, TSIRC continued to advocate for further investment, with a 2019 deputation to Queensland Government listing ‘Support Digital Transformation & Connected Islands’ as Priority Area 3.⁸ TSIRC cited regular communication blackouts, sometimes lasting several days, impacting on essential services and business continuity. It argued that “inadequate or band-aid style investment approaches in connectivity will drive an even greater digital divide for our communities in economic participation, social inclusion and access to essential services like allied health and tertiary studies.”⁹ The deputation sought investment in four areas: upgraded telephony and data access to all TSIRC communities, equivalent to mainland infrastructure; expanded Smart Cities and Suburbs Program to include regional and remote areas; new programs that foster renewable energy, digital adaption and automation opportunities for remote communities; and a Digital Local Government and Rural / Regional Telecommunications Program to increase benefits of connectedness and innovation.¹⁰

The ongoing need for telecommunications improvements in the Torres Strait and Cape York regions was raised in the *TCICA Region Telecommunications and Digital Connectivity Final Report 2021*,¹¹ commissioned by Torres and Cape Indigenous Councils Alliance, which outlined six strategic focus areas for a Telecommunications and Digital Connectivity Strategy. A 2021 discussion paper by the Rural Economies Centre of Excellence¹² called for “a more holistic and bold approach” to invest in “both the hard infrastructure and the social infrastructure needed to achieve overall digital inclusion, social equality, and economic development.”¹³ It recommended that the Queensland Government lead digital development efforts in regional Queensland, with a call to address “the urban-rural digital divide with appropriate place-based analysis, planning, and solution building.”¹⁴

Plans for nbn fixed wireless infrastructure for the Torres Strait region

The December 2023 announcement of the Regional Connectivity Program Round 3¹⁵ including \$10,527,846 for a major nbn project to “provide fixed wireless broadband to islands in the Torres Strait.” This will be a major improvement of the current situation, in which nbn services are only available via Sky Muster satellite delivery. There is no public information available about this project at the time of writing, including the timeframe, means of backhaul or list of sites to be included.

⁶ TSRA Annual report 2017-18:24

⁷ Telstra contributed \$3.66 million, with Queensland Government contributing \$2.26 million and TSRA \$1.4 million. This project involved 12 separate projects across 10 islands, with a key focus on upgrading 4G Base stations in the Top Western islands of the Torres Strait to address biosecurity risks due to the proximity to Papua New Guinea and Indonesia.

⁸ <http://tsirc.qld.gov.au/sites/default/files/TSIRC%20QLD%20Government%20Deputations%202019.pdf>

⁹ TSIRC 2019:10

¹⁰ TSIRC 2019:10

¹¹ Babacan, H., McHugh, J., Marshall, A., Gopalkrishnan, N. and Dale, A. (2021). *TCICA Region Telecommunications and Digital Connectivity Review Final Report 2021*.

¹² Marshall, A., Babacan, H., & Dale, A. (2021). *Leveraging digital development in regional and rural Queensland: Policy Discussion Paper*. Rural Economies Centre of Excellence: QUT Digital Media Research Centre and James Cook University. Brisbane.

¹³ Marshall, Babacan & Dale 2021: Executive Summary p.ii

¹⁴ Marshall, Babacan & Dale 2021, p. iii

¹⁵ <https://www.infrastructure.gov.au/media-communications-arts/internet/regional-connectivity-program>

05. KEY FINDINGS FROM DATA ANALYSIS

This section provides key findings from the 12 interviews undertaken with community members and stakeholders in 2023, and 14 interviews in 2022, as well as observational data and survey results. The new topics added since the 2022 Community Outcomes Report are labelled with 2023 after the heading.

See Appendix 1 for the full set of unprocessed survey results from 2022 and 2023. As outlined in the Executive Summary, the finalised results published in the [2023 Outcomes Report](#) and on the [First Nations dashboard](#) of the Australian Digital Inclusion Index website can differ slightly from raw survey results following data cleaning and weighting against ABS data.

Communications access

Pre-paid mobile is the primary means of phone and internet access

100% of survey respondents own or share a mobile phone, with 80% of these being smartphones and 93% using pre-paid services. 85% of regular internet users said they use their smartphone as their primary means of internet access.

No respondents had a fixed line phone in their home, and there are no public phones on Erub. Thus the only other means of making phone calls is via a community office or workplace phone (9% said they use one of these).



Figure 7: Local resident and digital artist Jimi K Thaiday using his mobile phone

There is limited fixed home internet access

69% of people surveyed reported that their homes do not have any form of fixed internet. Despite up to 16 of the 19 villages on Erub receiving limited or no 4G coverage, only 27% of respondents reported that their household had an nbn Sky Muster service (up from 16% in 2022) and 21% used a non-phone mobile broadband, such as a portable 4G modem.

At the time of our visit, there were an estimated 12–14 houses (of 72 occupied dwellings) with Sky Muster services on Erub. These were primarily in households of agency staff, people with regular income and households in villages outside of the 4G coverage area. In survey responses and interviews, Erub Island residents reported that they were not using Sky Muster primarily because it is only offered through a post-paid (billed) option, is unreliable in wet season, and has insufficient data limits. Mobile services are also more flexible, enabling phone and internet access beyond the house and when travelling to other communities or regional centres.

While improved, the 4G mobile and ADSL network remains patchy, unreliable, and congested

Most Erub residents rely primarily on the 4G mobile service, with 100% of survey respondents using their mobile phone for calls and 85% for internet. Service providers also rely heavily on the 4G service for communications.

Since the upgrade of Erub's mobile service from 3G to 4G in 2018, and the regional network upgrade in 2021, the 4G bandwidth available has improved and the service become more reliable. However, with the 4G tower located near the school in Medige village, only the central villages of the island (Medige, Seim and Dadamud Villages) have good reception. Due to Erub's hilly terrain, there is little or no coverage to many of the other 16 villages on the island, the airport and north side of the island, and out to sea.

There are also increasing reliability issues with the service. During periods of heavy rainfall across the Torres Strait, especially in wet season, the microwave signal required for backhaul of 4G and all internet and phone

services can be interrupted. Extended power outages also affect communications services on the island. Interviewees reported that the dropouts and outages had become more regular since our previous visit in 2022.

- + “We are still struggling with [our communication] services. When we have blackouts, whether that’s because of power outages or weather, we can still lose access to our telephones and communication systems [on ADSL].” (Karin Neilson, Nurse, Erub Primary Health Care Centre, 2023)



Figure 8: Heavy rainfall can lead to network dropouts across the region

During our visit, the mobile service dropped out for several hours without explanation. This was described as a regular occurrence.

- + “We have all these days where, like now, the thing goes down ... Some day good, some day not good. [If there’s an issue] somewhere on the mainland or another island that will stuff up the network [until they can get it] back up and running.” (John Armitage, Erub Divisional Manager, TSIRC, 2023)
- + “Lately we’ve been having this issue of no coverage, and as you’ve experienced it’s been happening today. [The 4G signal is] gone altogether, nothing. It’s a similar thing every time [there is] a storm in the Cape or bushfire then we’re cut off here ... You’re on your own there until it comes back on [so] you’ve just got to wait.” (John Bourne Mye, Torres Strait Island Police Support Officer, Erub, 2023)



“We got more frequent [mobile outages] on the island. It’s really annoying people. It’s sometimes long times, two days, sometimes it’s several hours at a time. [So] we can’t buy things we want, like fuel, because [the] signal is down or the office is shut because of the communication outages. [Sometimes mobile outages are due to] the power [outages].”

– *Kapua Gutchen, Elder/ My Pathways CDP Supervisor, Erub, 2023*

ADSL and fixed line phones were still working, suggesting it was a local transmission issue, not a network issue. Sometimes TSIRC’s IT department provide updates about network issues in the region.

- + “We just wait for [Telstra to fix] wherever the place has that issue ... the last one was on the mainland, in the Cape, and another one was in the western islands, so we just have to wait.” (John Armitage, Erub Divisional Manager, TSIRC, 2023)

Several agencies urged the need for further upgrades to communications for Erub to address the speed, reliability and congestion issues described above.

We heard from the IBIS supermarket that the EFTPOS system has been regularly interrupted by ADSL dropouts, with customers having to return grocery items to shelves if the internet drops out during a payment transaction.

- + “[If there is a dropout mid-transaction], it takes the money out of the [customer’s] account and it kind of holds it. [It] doesn’t release it back into the account straight away [so] on their statement [the money is gone, however] it hasn’t come through on our end because it’s still showing not approved in our system. It’s embarrassing having to tell them to put the shopping back. it’s not good [because most people] only get paid once a fortnight and, if it takes \$500, they don’t have enough in there to [buy their groceries]. A couple of days later the money eventually goes back into their account, they’ll come

back and [do the shopping]. [It mostly happens] when it's raining [but] sometimes on a good day [too]. You can't really tell when it's going to happen but it happened a lot last year." (Daisy Ketchel, Manager, IBIS Supermarket, Erub, 2023)

Customers have become wary about doing EFTPOS transactions and are opting to get cash out of the ATM instead if it is raining or another person has been affected by the issue.

- + "People go to the ATM [to get cash out] if they want to pay for their shopping, just to be on the safe side. Otherwise they encounter the same problem, like the ones just gone before them." (Daisy Ketchel, as above, 2023)



Figure 9: IBIS supermarket

Fortunately, the Torres Strait was not using cashless welfare cards, which would have increased this issue.

We heard from some interviewees that their household mobile access had reduced, with several people blaming this on the increased uptake of Sky Muster satellite services.¹⁶

There is limited 4G coverage on Erub, with repeated calls for expanded coverage (2023)

Local leaders and community residents consistently called for expanded 4G coverage on Erub. As outlined above, the location of the tower at Medige Village leaves much of the island without coverage.

Some locations receive a weak 3G signal from neighbouring islands – Ugar (Stephen Island) to the north, Mer (Murray Island) to the south-east and Masig (Yorke Island) to the south-west – but despite being only 4 km long, most of Erub is without coverage.

- + "When we're here in the main village, where everything is located like the council office and shop, we get it good ... when you go further east of the other villages, there is not much ... When we go to the back of the island, nothing. There's ... small spots where you go up on the hill ... but when you go down in the valley you get zilch, there's nothing there." (Nixon Mye, resident, 2022)



Figure 10: Telstra mobile tower in Medige Village

Several interviewees raised concerns about elderly or vulnerable people living in villages or sites without any phone connectivity and therefore unable to notify of a health issue or other emergency situation.



"We've got some vulnerable people living the other side of the island and if they have an emergency, they've got no phone service to call us. They've got to wait for someone to come by or check in on them before we know that there's a problem. So, it's a huge health risk."

– Karin Neilson, as above, 2022

¹⁶ Several interviewees made similar claims that their mobile signal had dropped since a neighbour had installed a SkyMesh service. While not discounting the claims, we cannot see how the two services could be interfering due to different backhaul types and being on different spectrum.

One resident with a disability, Anne David, told us that there is no phone or internet access at her home in the island's east near the airport. To make a call or contact Centrelink, she has to walk up the hill to get a weak 3G signal from Mer.

- + "I always [walk] to the coconut [tree] for the [3G] signal from Murray Island [because there's no signal from Erub]. Sometimes signal is better, sometimes not. [It can take] one hour [to get 3G] connection, [sometimes] one hour and a half and the sun was very hot. [If] I needed something at hospital or come down to the shops sometime [I] have to stop any car [to get a lift]. I feel bad [doing this]." (Annie David, Resident, Erub, 2023)

In an emergency situation, she has to get one of her children to run to the road to try to make a call.

- + "One time I fell down [so] my eight year old daughter run to the [tree] and stand up on a chair to ring up the health centre [and they sent the ambulance. But it] could be problem if no one was around." (Annie David, as above, 2023)

Lala Gutchen said that a mobile booster was needed near the airport to provide improved coverage.

- + "Elders that live in that area [have] to walk a hundred metres just to look for signal in the hot sun. [They have lived] there for twenty years [without a phone service and] there hasn't been any change [so] I hope something happen soon." (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, Erub, 2023)

Lala also said that lack of mobile coverage restricts their cultural practices due to safety concerns.

- + "[I] avoid going on the northeast side of Darnley, [which is] my traditional country, [due to not having] a good network. It's stopping me from [being able to] practise my cultural practices." (Lala Gutchen, as above, 2023)

As previously noted, the Island's mobile tower was heightened in 2018. However, as it has remained in the same location, the coverage footprint provided has remained largely unchanged. TSIRC Councillor Jimmy Gela has long advocated for the mobile tower to be at the highest point of the island so the signal could cover all villages, reach the island's north side, and extend out to sea.

- + "They need to consider relocating the tower from here and put it up on the highest place up there which is where it's supposed to go in the first place. [From there the signal] would overlap with Stephen Island and Yorke Island and also Mer Island." (Jimmy Gela, TSIRC Councillor, TSRA Board member, 2022)

Co-researcher Lala Gutchen described how lack of connectivity on the north side of the island, where her family's traditional homeland and fishing waters are located, limits the family's ability to visit and carry out cultural practices. Other interviewees and survey respondents called for an additional mobile tower to be located at the top of the Island.

- + "[That mobile service] need to be fixed [to give] 100% coverage in the community ... It'll help the families that are living on the airstrip side, and our safety in the water ... We've got workers who work outside of the main village [or at the airstrip]. It can be very hard to get contact with that health centre and our employer. The [mobile] needs to be fixed up." (Kapua Gutchen, Elder/ My Pathways CDP Supervisor, Erub, 2023)

Mobile boosters can improve the signal strength but are costly (2023)

Councillor Gela wants mobile boosters installed to fill coverage gaps for several villages.



"There's four areas [to the east that are] an ideal spot to have [a booster] and you can have one [near] the airstrip ... it'll be good for business [and] emergencies and safety out at sea."

- Jimmy Gela, TSIRC Councillor, TSRA Board member, 2022

This would require capital funding and ongoing maintenance. Some interviewees told us about the use of household mobile boosters at their homes to pick up signals from neighbouring islands.

- + “Where our village is, it’s one of those black spots [so we] had to do the whole statue of liberty stuff on the veranda [or] put the phone on the window. [So my father bought a] mobile repeater [and] now we have signal in the house. [We get] signal from Murray and Yorke [but] not from Erub so [we can] still get signal [if it’s] down here on Erub. But [outside] the house, there isn’t any signal.” (Gladys Doolah, Manager, Erub Arts, 2023)

While household boosters are a way of getting a mobile service, they are very costly. Gladys Doolah said the booster cost \$1200 plus freight from Cairns. However, some 4G mobile boosters are available for around \$4-500¹⁷. Telstra also supply Telstra GO stationery repeaters for houses or mobile repeaters for vehicles, either on a plan or direct sale¹⁸.

We also heard about a portable mobile booster¹⁹ used by a contractor when visiting the region.

- + “[A contractor at Badu had a booster that] he hooked [an antenna] on the bamboo stick and lift it up, and he turned the system on [in a place with no coverage] then suddenly all the phones started beeping everywhere. {The range was about} thirty, 40 metres.” (John Bourne Mye, Torres Strait Island Police Support Officer, Erub, 2023)

A recent network outage had significant impact (2023)

There were consecutive network outages on Erub in late January 2023, lasting a total of nine days.



“Just recently we had an outage for six days [in February]. No internet whatsoever so it was really hard on a lot of things ...Telstra came through and fixed it and went again ... they fixed it for seven hours [and] then it dropped for another three days. So basically nine days and it made it really hard on work stuff [because] things on internet was a no go, especially for those without nbn. [It was] nine shit days of madness.”

- *Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, Erub, 2023*

Network outages can have a significant impact on emergency communications and access to services reliant on Telstra services. Fortunately, the IBIS supermarket, which had nbn Sky Muster satellite backup installed in recent years, was able to continue trading during the outage.

- + But the IBIS [supermarket] was really good, we could still buy our food [on] credit card.” (Lala Gutchen, as above, 2023)

This impacted Shire services, including rent and bill payments and purchase of power cards and fuel, which require a bank transfer to the TSIRC account prior to fuel being provided. TSIRC Divisional Manager John Armitage said this was a very stressful time, especially due to high demand and staff being away at the time.

- + “That was a really hard time [because a line of] people was waiting for fuel [and] waiting for the person at the front desk to do all the receipts. [He] was the only one working at that time so there was a lot of people standing outside frustrated with that network being down. [Some people were without power at their house because] they have to pay power doing that.” (Lala Gutchen, as above, 2023)

¹⁷ <https://reviewsbee.org/mobile-signal-boosters-au/>

¹⁸ <https://www.telstra.com.au/coverage-networks/network-coverage-extension-devices#stationary>

¹⁹ This was most likely a Cel-Fi Go Cellmate V2 portable mobile repeater.

According to a story in the Cape York Weekly on 31st January 2023,²⁰ the initial network fault was due to a malfunction at Telstra's Sailor Creek exchange on Cape York. As there is a single fibre optic line providing backhaul to Bamaga in the Northern Peninsula Area and the Torres Strait Islands microwave network, this resulted a four-day outage across both regions. However, the extended outage at Erub appears to have been due to the need for a replacement part. Residents reported a lack of communications from Telstra about the cause of the issue and when service would be rectified.

- + "We didn't get any messages but people that lived on the mainland [saw the Telstra website and] said, "Oh it was in the Northern Peninsula Area, the outage" ... The central islands in the west [also had an outage which] only lasted two days. Ours went for six days. [At] Horn Island [we got a text message] that Telstra is doing maintenance work [but when] we get to Darnley, there's no text whatsoever. [So we want to know] why we don't get told that [information]." (Lala Gutchen, as above, 2023)

The outages also affected the neighbouring islands of Mer (Murray Island) and Ugar (Stephen Island) which are connected to the microwave network via Erub.²¹ Residents with nbn satellite services communicated updates on network outages to other Erub residents.

- + "It was [also] very hard for the other two islands beside us. [Mer residents] were asking 'do you know when the signal will be on, because the whole island is out at the moment.' Only a few of us have nbn [so] we were giving them updates. [And] Stephen Island's just northwest from us [and has about] 40 people on it. And they had the same experience because both of the two islands was hanging off Erub. And they contacted us and said, 'Is there anything happening with the network?' ... It was really hard [for all three islands]." (Lala Gutchen, as above, 2023)



Figure 11: TSIRC building with nbn Sky Muster dish and Wi-Fi access point on roof

Satellite services are also affected by heavy cloud or rain. This can lead to a lack of any communications services during periods of heavy rainfall, including VAST TV and radio which also are satellite-delivered. This creates health and safety risks in the community.

There are limited back-up communications options available for Erub residents during outages, with most reliant on mobile connectivity for day-to-day services and applications. A new nbn Sky Muster service at the TSIRC office and the introduction of the nbn Wi-Fi hotspot have provided a means of maintaining basic communications access during network outages.

Power outages also affect communications and services (2023)

Power outages impact on communications, with the mobile tower having only 12 hours of battery back-up and nbn Sky Muster and Wi-Fi services reliant on power. In December 2022, the power went out on Erub for about five days which affected food supply, household fridges, service delivery and communications.

- + "[Just before Christmas] we had power outages and our phone lines were down so we couldn't contact Ergon ... we were without power for five days because we had no way to contact them ... the Police [and hospital] have the satellite phone [so] they're the only

²⁰ Issue #119: https://issuu.com/capeyorkweekly/docs/cyw_edition_119

²¹ The microwave network map in Figure 7 (p12) indicates that the Erub tower also provides the link to Mer and Ugar.

two [places with communications. That was] leading up to Christmas [so people couldn't] do shopping [or use the EFTPOS and ATM]. Nothing they can do, just have to suffer for a bit." (Nixon Mye, Erub RIBS Broadcaster, 2023)

The health care centre is the only local agency with a back-up generator in the case of power outages. The IBIS supermarket does not have a back-up generator and so has to remain closed during power outages.

- + "[During] power outages we just don't open, we can't serve ... until the power comes back on [because the ATM, the EFTPOS, the fridges, everything] shuts down. [Our UPS gives us a few minutes] to close or serve the last customer or something, and then [we have to] ask everybody kindly [leave], because we can't really do anything." (Daisy Ketchel, Manager, IBIS Supermarket, Erub, 2023)
- + "[When that happens, it's] chaos for everyone ... people suffer ... At least we've got the sea and the land [so] people [can] still get their tummy filled. [But] people are more dependent on that [store now]." (John Armitage, Erub Divisional Manager, TSIRC, 2023)

While uptake of nbn Sky Muster satellite service has increased, there are mixed reviews

Our survey found that 27% of respondents said they had Sky Muster services at their homes. This is a relatively high level of uptake compared with other First Nations communities, primarily owing to the very limited 4G coverage across the island.

- + "One [house in our village] had it last year and now this year another one's got it. So yeah, the SkyMesh is kind of growing [on] Darnley because they think that it's good for [the] reception [with not much 4G]." (Nixon Mye, Erub RIBS Broadcaster, 2023)

However, many Erub residents do not see Sky Muster as an option due to the risk of signing up for a post-paid billed service on low and unreliable incomes.

- + "I can't afford [satellite] because myself and my kids [are living] on my pension [so no money to get that satellite]." (Annie David, Resident, Erub, 2023)

There were mixed reviews in relation to the performance of the nbn Sky Muster satellite services. Some users described the benefits of having a broadband service such as enabling household internet access and streaming, while others focused on issues such as dropouts during cloud cover (especially in wet season), high costs of plans, and the need for higher data limits.

- + "[We] have a SkyMesh²² at home which everybody use in the household. But it's only convenient when the weather is good. Sometimes when the weather is good, it does play up [but during] the monsoon time, it's a no go, [it] doesn't work ... but the Telstra works. But if both of them out at the same time, then it's bad for us." (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, Erub, 2023)

To mitigate these issues, some residents reported alternating between 4G and Sky Muster services.

- + "Sometime the mobile playing up. Then we go to SkyMesh. Then the SkyMesh play up and then we come back to mobile." (Florence Gutchen, Artswoker / Artist / Elder, 2022)

The standard Sky Muster service was also described as too slow for some applications such as gaming.

- + "I hear the families that have it they complain about it. [One guy] lives up near the airstrip, [his] parents got SkyMesh, but he always complaining about SkyMesh when he

²² Skymesh is a retail service provider for nbn Sky Muster <https://www.skymesh.net.au/>

play game [but] when we come down here [to the hotspot] and play game here [it's not] lagging or slow ... he loves it.”²³ (Nixon Mye, Erub RIBS Broadcaster, 2023)

For services and businesses on the island, these limitations impact their ability to provide critical services and conduct their core business. For Erub Arts, the bandwidth of their Sky Muster service is not always sufficient for their needs, particularly when sending large files such as high-resolution photos of artworks.

Furthermore, it can take some time to get Sky Muster services installed, with contractors having to wait to have enough installs to justify the cost of the trip.

- + “The person that does the nbn [installs], he only comes if there was at least four instalments [ordered], he won't fly out if there's only one. [First] that dish have to get here [on the barge, and then] he comes out with his own plane [and] does the work and flies back. [Recently] he installed a few at Murray Islands and flew over here quickly and installed two and went again.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, Erub, 2023)

TSIMA are using Sky Muster services to provide internet access to RIBS broadcast facilities at Poruma, Iama, Warraber and St Pauls. While this service mostly meets their needs, TSIMA manager Diat Alferink described how congestion and dropouts during cloudy weather impact on live radio broadcasts from these sites.²⁴

During our 2023 visit, we did not hear of any agencies or residents that were using Starlink Low Earth Orbit (LEO) satellite services, however some were considering its use in the future.

There is concern about loss of mobile access in some areas when 3G is switched off in 2024

As part of a national phase out of 3G services to re-allocate spectrum for higher capacity 4G and 5G services, Telstra is switching off 3G services by June 2024.²⁵ 3G-only devices will no longer work after that time, including mobile phones, modems, mobile boosters, remote monitoring and health warning devices.

While 3G may have limited data capacity compared to 4G, it is currently relied on heavily for voice communications throughout the Torres Strait. On Erub, numerous residents raised concerns that locations with 3G access only, including many villages and when travelling or fishing at sea, may be without mobile access after the 3G switch-off.

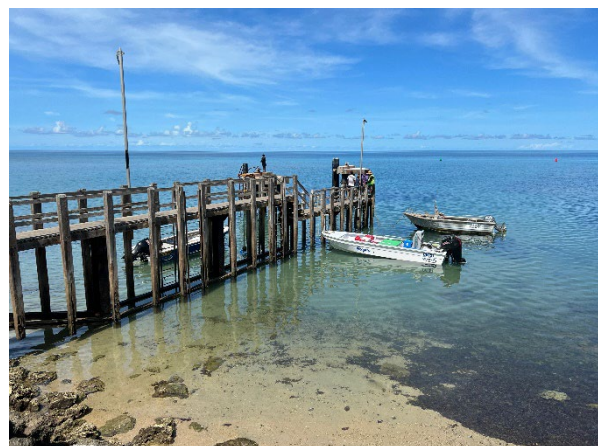


Figure 12: Fishing in dinghies is a common occupation in the Torres Strait

- + “[When 3G is switched off] we go back to where we started [before 2018], we're just going backward again.” (Lesley Pitt, TSIRC Division Engineering Supervisor, 2022)

Telstra have publicly committed to boosting its 4G coverage to a “materially equivalent size and reach” compared to the 3G network.²⁶ This expanded 4G coverage would be beneficial, particularly if it extends

²³ The nbn Wi-Fi hotspot uses a Sky Muster Plus Premium services which is much faster, up to 100Mbps, and has unlimited download. Standard Sky Muster services are either 12/1 Mbps or 25/5 Mbps.

²⁴ Live RIBS Radio shows are conveyed to the TSIMA Radio hub on Thursday Island using codecs over an IP link.

²⁵ <https://www.zdnet.com/article/telstra-flags-3g-switch-off-planned-for-2024/>

²⁶ See: <https://www.telstra.com.au/support/mobiles-devices/3g-closure>

beyond the islands to areas where there is regular boating traffic for inter-island travel, fishing and border security. However, Telstra provide the following warning regarding offshore mobile coverage:

- ✦ “The offshore coverage shown is only indicative of where a device may operate. Factors beyond Telstra's control such as the weather, tides, sea conditions and your antenna installation (type and height of antenna above sea level) can significantly influence the actual user experience of coverage, data speed and performance. Public mobile networks must not be relied upon as a primary method of emergency communication at sea.”²⁷

There is a lack of awareness among residents on Erub that 3G is being switched off.

- ✦ “[We need] that information, people like myself ... the younger ones may understand 4G from 3G from 5G [but] we need to be told [why they're] changing all the Gs without people knowing what they really mean.” (Kapua Gutchen, Elder / My Pathways CDP Supervisor, Erub, 2023)

Mobile communications are critical for safety at sea

Many Erub Islanders travel significant distances out to sea in dinghies for fishing or travelling to neighbouring islands. There is currently a lack of 4G coverage out to sea, with no signal to the north of the island. While Telstra warns that “public mobile networks must not be relied upon as a primary method of emergency communication at sea”,²⁸ interviewees described a heavy reliance by seafarers on the 3G coverage to alert family or local authorities if in trouble at sea.

- ✦ “[We need communications] not only on land but [out to sea because] our island's surrounded by sea and [most of us are] fishermen and we travel way out there. Most places out here, especially at the back of the island, there's no reception [and] further out, you're on your own. [We need a mobile tower on the hill so] if you do have an engine problem [you] still can communicate.” (John Bourne Mye, Police Officer, Erub, 2022)
- ✦ “When I go out fishing I try to stay within the ten mile radius so I get good reception. [Due to lack of mobile coverage] people don't go fish on the back of the island because if they [have] distress at sea, [like] something plays up with the outboard, how are they going to text and tell [people] they're drifting? Once you drift back off the island you end up in Papua New Guinea.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, 2022)
- ✦ “We've had instances where there's been some bad weather and we haven't been able to contact the boys that were out in the dinghy. [We didn't know whether to] wait to see if they come online [or] call the rescue choppers. [So] not having reliable service out



Figure 13: Co-researcher Lala Gutchen searches for mobile reception while out fishing

²⁷ Source: <https://www.telstra.com.au/coverage-networks/our-coverage>

²⁸ Source: <https://www.telstra.com.au/coverage-networks/our-coverage>

there is obviously a big factor when it comes to safety of our community when they're ... doing their fishing work." (Karin Neilson, Nurse, Erub Primary Health Care Centre, 2023)

Interviewees told us that rapid response to breakdowns is critical due to strong currents. Emergency beacons, such as EPIRBs,²⁹ can have up to 4–5 hours delay between sending an SOS signal to Canberra and a search and rescue helicopter arriving from Horn Island, in which time boats may drift north into Papua New Guinean waters. Search and rescue teams often struggle to locate a small dinghy broken down at sea.

- + "When there is an outboard motor problem in rough weather conditions, search and rescue is done by the locals and community local Police, but it can be difficult. It's like looking for a needle out on sea ... If we have good mobile coverage, communication will not be an issue. [The] person in the dinghy [could] give precise directions of where they're located out on sea." (John Armitage, TSIRC Divisional Manager for Erub, 2022)
- + "If you've got an accident [we] can do the rescue from here. [But] if you've got no signal [and a helicopter has to] come from 120 miles away, [it may be too late] when we could have saved a life." (Kapua Gutchen, Elder/ My Pathways CDP Supervisor, Erub, 2023)

Maintenance of IT and satellite equipment

Maintenance of IT and satellite equipment is a critical issue in the Torres Strait. The climatic factors of wet season, high salt levels, humidity, and coastal winds impact on IT equipment, resulting in significant rust on steel towers, guy wires and satellite dishes.

- + "[Salt air affects all the equipment and] every vehicle ... Also, all these satellite dishes, the one that [is] almost on the waterfront, all the way down, it just chew[s] the things away. It's a continuous issue with maintenance. It won't stop." (Lesley Pitt, TSIRC Division Engineering Supervisor, 2022)

However, with limited technicians available in the Torres Strait region, the lack of timely and affordable IT support is a critical issue. Most technical roles are outsourced by key agencies to technicians from regional centres such as Cairns or Brisbane, resulting in high costs and delays in getting IT equipment or systems working.

Delays in maintenance of satellite equipment was raised as an issue by Erub Arts during our 2022 visit.

- + "Last October, we were without the internet for 6 weeks while we waited for a technician to come [to fix] a part on the satellite dish that had deteriorated with the weather and the conditions up here ... it's just unbearable to go through things like that." (Diann Lui, Manager Erub Arts, 2022)

When we visited in 2023, Erub Arts were again experiencing technical issues, making online use a daily challenge. Their IT technician was unable to visit due to lack of Skytrans flights and the high cost of charters.

²⁹ An Emergency Position Indicating Radio Beacon (EPIRB) is a device to alert search and rescue services in case of an emergency out at sea.

- “Our internet has been down for nearly every second day. [Our server is] that old that [it] just kicks it every night, and then we have to [re-]boot it in the morning [and] plug it back in. There’s nothing we can do if we have no internet.” (Gladys Doolah, Manager, Erub Arts, 2023)

Even repairs to landlines or fixed internet can involve lengthy delays in access while waiting for a technician.

- “We’ve had elderly community members, who have had to wait to get their landline fixed. It’s not like you ring and someone comes the same day to fix the issue. It’s more of a waiting game for Telstra to fly into community.” (John Armitage, TSIRC Divisional Manager for Erub, 2022)



Figure 14: Erub Arts facility

TSIRC employ electricians to carry out repairs across the region, including to Council, health and school facilities. However the electricians had left in 2022, and the newly recruited electrician was yet to visit Erub.

In response to these dynamics, service providers told us that having expertise available on the island would be a useful step. There are calls for technical training to provide local support and jobs.

- “There needs to be capacity building [for local people to] become IT experts, broadcast technicians ... I’m constantly dealing with someone from outside of the Torres Strait to fix the problem. Why can’t I just ring up someone locally [on Erub] to fix the problem?” (Jenni Enosa, TSIMA Senior Content Creator, 2022)

The closure of the community airstrip increased the need for reliable communications (2023)

The Erub, Mer and Mabuiag community air strips were closed to commercial flights in October 2022 by CASA (Civil Aircraft Safety Agency), including the Skytrans regular public transport (RPT) flights. This was due to the runways not meeting CASA safety standards, including the runway length required for RPT flights. While Skytrans flights to Mer resumed in early 2023, flights were not permitted to Erub and Mabuiag until July 2023. Erub residents were having to make the 22 nautical mile crossing to Masig (Yorke Island) by dinghy to catch Skytrans passenger flights. During our visit we heard the impact of this closure on residents, including the risks.



Figure 15: Erub airstrip was closed to commercial flights for nine months

- “The airstrip [has been closed] since October last year and we’re going into six months of closure now. [So] Skytrans [which] provides those flight throughout the Torres Strait ... can’t do a landing here ... We can’t afford [charter flights so] to use our [discount fares on Skytrans] the only nearest runway for us is at Yorke Island [so] we do this island hopping by dinghy. [It’s] frustrating for a lot of us.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, Erub, 2023)

- + “[It makes it] hard [for] people that want to get off the island. [They either] have to pay \$3,000 for a charter or they have to book their seat from Yorke [and] take a dinghy across to Yorke. Sometimes the weather isn’t good [which can be quite dangerous]. Earlier on this year [a] family had to travel across [on a rough day to Yorke Island. They] didn’t have time to change [so they got] straight into the plane [soaking] wet, the mother and the two little kids.” (John Armitage, Erub Divisional Manager, TSIRC, 2023)
- + “[My] family, Lala, children, other daughter children, partner, my wife [and grandkids came back in a dinghy from Yorke Island] in the bad storm time where Qantas themselves have turned back to Cairns ... One of my grandson end up, he got that anxiety thing. [We are all] running between Erub and Yorke Island to bring the other ones home [and trying] to catch a [bit of] communication. We [are] taking a risk.” (Kapua Gutchen, Elder / My Pathways CDP Supervisor, Erub, 2023)
- + “We go Masig to catch a [8am] flight [so] we have to leave in the early morning. [But if you] don’t think straight [and] forget a fuel drum [or] oil or something [you can get] stuck out there [unable] to call people because there’s no reception within certain miles of the islands when we go certain mile, there’s no reception.” (Nixon Mye, Erub RIBS Broadcaster, 2023)

Most people rely on mobile services as their only affordable means of communication on the boat journey. However, with only limited 3G mobile coverage on the journey, and regular network dropouts during monsoonal conditions, this can create a safety risk.

- + “Throughout the monsoon time [there is often] an outage for signal [which can] become a risk for us ... I went to Cairns in early February and my parents had to come and pick me up [by dinghy]. There was a severe storm happening throughout the week [and the mobile] network did play up a lot that time. So that’s one of our biggest worries. [We are] taking risks now to do frequent island hopping. And [we need the mobile] network good for safety purposes. [I have] an EPIRB in the boat [but many people] don’t have EPIRB [or] safety gears [so] if something happens, they [need] their phone. And then what if the network is down?” (Lala Gutchen, as above, 2023)
- + “[Sometimes] my sons [leave for Yorke in good] weather ... but when the winds pick up I’m the guy that sits up there [watching the time and waiting for a call so] I know [they will] get back home ... It’s a very difficult time.” (John Bourne Mye, Torres Strait Island Police Support Officer, Erub, 2023)
- + “[We need] communication all the way for safety, before you fly off, and returning the same way ... communication is a really important thing for fixing, fixing better than what it is.” (Kapua Gutchen, Elder / My Pathways CDP Supervisor, Erub, 2023)

The lack of Skytrans flights was also an issue for the Erub Primary Health Care Centre, which normally uses the service for patients to attend medical appointments on Thursday Island or Cairns. While charter flights remain an option, these are much more costly.

- + “[It’s] much more difficult for us to get patients to appointments with limited charters and [no] Skytrans ... it does definitely add to the isolation.” (Karin Neilson, Nurse, Erub Primary Health Care Centre, 2023)

This also impacted on Erub Arts, restricting artist travel, art sales, visitors and technical support.

- + “It’s been quite a big [impact on sales], supplies, people coming up for workshops, even maintenance. So, we’ve had a lot of IT issues [and] I can’t get a technician out here [without a costly charter so] everything has to be done over the phone. [It limits] artists travelling to exhibitions [and] we’ve had to stop doing our online sales [due to issues

with postage of works]. It has a huge impact, not only on personal families [but on] businesses as well.” (Gladys Doolah, Manager, Erub Arts, 2023)

The impact of the airstrip closures was highlighted by the tragic death of a medical specialist in June 2023 when the boat she was travelling in capsized near Mabuiag Island, leading to pressure on CASA to re-open the airstrips.³⁰ In July 2023, CASA gave conditional approval to resume services to Erub and Mabuiag, however this was given to Hinterland Aviation not Skytrans.

Access to IT devices, Wi-Fi or shared facilities

A new nbn Wi-Fi hotspot is being well used, with calls for more Wi-Fi services (2023)

A public Wi-Fi hotspot was installed in March 2022 at the TSIRC office in Medige Village by nbn under its Communities in Isolation program. This is a welcome initiative that addresses one of the actions outlined in the 2022 Digital inclusion Plan. The free service operates from a Sky Muster dish located on the TSIRC building, providing a limited range Wi-Fi hotspot at the front of the TSIRC office and IBIS supermarket.

- “[nbn] recently put a satellite on the top of the building [for free Wi-Fi so] everybody comes and sits around the building. There are days when [it’s] not working, and then decides to come on again.” (John Armitage, Erub Divisional Manager, TSIRC, 2023)

Residents were initially surprised to hear about the new free Wi-Fi service.

- “[At first people] didn’t know that there was a free Wi-Fi installed for the community until the power outage ... So all of a sudden people were sending messages and saying, we have free Wi-Fi so they came down to, the whole village was down here. And when they all was connected to that Wi-Fi, it made it really slow.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, Erub, 2023)

The Wi-Fi was described as providing a much-needed service, helping to address the issue of affordability of pre-paid mobile services, especially for young people.

- “The nbn Wi-Fi [has been] a good addition to the community ... It’s free, on all day, all night ... you’ve got to log in, but no password ... It’s been good for the youth around the island because they come here and they connect to the Wi-Fi and play games and [do what] they want on the internet ... School holiday, you see a lot of boys and girls hanging around.” (Nixon Mye, Erub RIBS Broadcaster, 2023)

The Wi-Fi hotspot was getting regular use, with nbn reporting the following 12-month data usage from November 2022 to October 2023:

- Total data consumed: 239.7 GB
- Average devices (unique) connected to the network per month: 129
- Average data consumed per device per month: 1.82 GB

We heard that the Wi-Fi does not work when it is raining due to being satellite delivered. Nevertheless, it provides a backup service during mobile or ADSL outages.

- “I [previously] worked upstairs [in the TSIRC building]. When the power [or mobile] signal went out, we had to connect our work computers to the community Wi-Fi, just so we could load emails or send something.” (Lala Gutchen, as above, 2023)



Figure 16: Log-in screen for nbn Wi-Fi hotspot

³⁰ Source: <https://www.australianflying.com.au/latest/casa-under-fire-over-torres-strait-airports>

nbn provide the option of community input into the setup of the Wi-Fi service, including content filtering options, curfew times and daily data caps for users. However, the Erub Wi-Fi hotspot had been installed according to a standard setup without a switch-off time at night, leading to some issues.

- + “Our [Wi-Fi] is on 24/7 ... it’s okay [but] it attracts young people around the building at night, and we don’t want them around the building [and] a few times, we’ve had a few break-ins ... I think it’s the Wi-Fi that’s attracting them to the building and, yeah, into mischief.” (John Armitage, as above, 2023)
- + “When the boys broke into the council office [last year] they switched off the [Wi-Fi] for a week [as punishment], and then a week later they turned it back on.” (Nixon Mye, Erub RIBS Broadcaster, 2023)

The TSIRC Divisional Manager said the community would have appreciated more consultation prior to the service being installed.

- + “When they put that Wi-Fi, it would have been good if someone would have come [in the] weeks prior and had a meeting to explain [about the service] so the community would have a more understanding.” (John Armitage, as above, 2023)

TSIRC also raised the issue of not having anyone on the island who can provide technical support if the Wi-Fi service is not working.

- + “I don’t even know how it works. They just put it up and they left ... When the Wi-Fi ... goes down, I have [to] email them and say there’s an issue with this Wi-Fi [and see if] they can make a quick visit and fix it ... They did once.” (John Armitage, as above, 2023)

There was a suggestion that more Wi-Fi services could be installed in the villages without mobile coverage and where access to the central village was difficult. This would reduce the need for children to come into town to access Wi-Fi.

- + “I think they should have it maybe a couple of places within the community. Because sometimes you see the kids [here] at night [who] lives up at the airstrip. [So] there should be some other services [up] near the airport [and in villages without mobile coverage].” (Nixon Mye, Erub RIBS Broadcaster, 2023)
- + “That Wi-Fi [is only available in] the same place that gets the best mobile coverage [and] the rest of the island doesn’t get this Wi-Fi ... We need one on [the east side near] the airstrip [where there’s no mobile coverage], every [village] needs a Wi-Fi set up.” (John Armitage, as above, 2023)

The Indigenous Knowledge Centre has re-opened, increasing computer access (2023)

During our 2022 visit, we found there was limited access to computers on Erub, with limited access to the Indigenous Knowledge Centre (IKC) over the previous two years due to a lack of a coordinator. However, the Erub IKC re-opened during our visit, with new computers and iPads ordered and plans to provide computer access and support.

- + “We’ve just recently got a new IKC coordinator in [and] we’re just waiting for all the laptops and stuff to come [from] the State Library of Queensland ... The IKC coordinator [will provide training and support] for elders and community members, [to] teach them simple things [like] internet banking and Centrelink stuff and [how to use the] laptops or whatever. Older ones [need help with scams and online safety issues such as] phishing and all that.” (John Armitage, Erub Divisional Manager, TSIRC, 2023)

There was demand from community members for the IKC to be better utilised as a space for online learning, research and working on digital projects, including language and culture projects. This is outlined further in the Digital Ability section (p. 39).

Service delivery and use of online services

Effective coverage is critical for health service delivery

Reliable communications are crucial for the Erub Primary Health Care Centre, which provides health services for both Erub and Ugar (Stephen Island):

- “We deal with emergencies, primary healthcare, across the whole islands ... we need communications for emergency situations and we can be very challenged by not having good access or connectivity ... A few months ago, we had a plane crash at the airstrip and we’ve got no reception at the airstrip. [So] communications are a big challenge and can impact patient safety and our safety at times.” (Karin Neilson, Erub Primary Health Centre, 2022)

The lack of reliable communication to the clinic continued to be an issue in 2023, with regular dropouts on the ADSL service and power outages.

- “[There’s] hasn’t been any great improvements with our access in the clinic [since 2022]. There’s still not a stable reliable network supplying the clinic. [That is] concerning if we have emergencies or [just for] trying to get in contact with some of our external resources that we rely on.” (Karin Neilson, as above, 2023)



Figure 17: Erub Primary Health Care Centre

The clinic has a Sky Muster service as backup for when there are outages in the ADSL service, however staff found the Sky Muster service slow and unreliable.

- “We have a satellite [backup], but obviously that’s dependent [on] backup power. [And] it fluctuates, and [is] really, really slow. I had a family member who passed away about two weeks ago, and I was trying to link in and be part of the funeral with my family, and just couldn’t ... it’s just not good enough.” (Karin Neilson, as above, 2023)

We asked if there had been consideration of using Starlink LEO satellite system, but there was limited awareness of the service or the difference compared with existing broadband options. This would be a decision for Queensland Health.

The clinic has a generator for back-up during a power outage, which was recently repaired before our 2023 visit following issues of insufficient power supply. However, power outages had impacted the clinic’s PABX telephone system, leaving the clinic without fixed line phone services and reliant on using mobile phones.

- “Unfortunately, with the power dropping in and out, it affected our PABX system [so] we’ve lost our phone service as a result of some of those power outages.” (Karin Neilson, as above, 2023)

There has been increased use of telehealth by the Erub Primary Health Care Centre, especially since COVID when specialists were unable to visit the community in person. Telehealth can save lives and reduce costs due to more immediate diagnosis, reduced number of Royal Flying Doctor Service flights, and remote support for on-site treatment or emergency procedures.

- “We are using the Telehealth quite a lot at the moment, [especially] in the past few months. Again, if the connections are bad or if the signals’ too slow, then it doesn’t work or it’s not very clear if we’re trying to link with other health professionals.” (Karin Neilson, as above, 2023)

We previously heard that unreliability and poor image quality led to patients not wanting to use telehealth.

- “People get disheartened ... it’s a resource we need, but there’s not a lot of buy in with it because of the quality.” (Karin Neilson, as above, 2022)

In 2022 we heard about the challenges with using the cloud-based patient records systems due to poor connectivity, with clinic staff having to duplicate effort by keeping paper-based records. Little had changed when we returned in 2023.

- “We [still] run a dual system, and we have to do that because when the internet’s down we’ve got [no] access to [our] records, so we do keep a dual system.” (Karin Neilson, as above, 2023)

Poor internet access and quality impacts on education and home learning

The Erub campus of Tagai School has 52 children enrolled, four teaching staff and 15 local support staff. While broadband is needed for student learning, external communication and staff development, the school struggles with low broadband speeds and outages, impacting on many online learning applications and resources.

- “Internet access is fundamental, it’s part of our core business every day [but] when internet was down for a week [during COVID], we couldn’t provide a service. It went back to paper and pen learning.” (Jody Warbrick, Principal, and Gary Taylor, IT Support, Erub School, 2022)

There was interest from a number of Torres Strait Islander households in applying for the Federal Government’s School Student Broadband Initiative³¹ aimed at providing free NBN broadband for 12 months to low-income households. However, the Torres Strait region and other remote areas are ineligible for the program due to the cost of installing equipment. TSIMA have called for the program to be expanded to the region.

Use of Teams and videoconferencing

Videoconferencing applications (e.g. Teams, Zoom) have been increasingly used during and since the COVID pandemic by local agencies (including TSIRC office health care centre, school, Erub Arts) for meetings, professional development, client communications and online support. Some interviewees described this as a positive experience.

- “It’s a good thing really because people see each other and they can actually talk face-to-face [but] it’s less expensive [if] you don’t have to fly [from the islands for meetings]. I think it’s the way of the future.” (Diat Alferink, TSIMA Operations Manager, 2022)



Figure 18: Videoconference facility in TSIRC Boardroom

TSIMA also plan to use Teams for delivering training and support to RIBS broadcasters across the region.

TSIRC Councillors and staff used videoconferencing for meetings during the pandemic, but had returned to attending most meetings in-person in 2022. However in 2023, with no Skytrans flights and a new videoconference unit set up in the meeting room, the Erub TSIRC reps had returned to attending more meetings via videoconference.

Erub Arts regularly have meetings, artist workshops and presentations online. However they have found the quality and reliability to be sporadic over their Sky Muster satellite service, especially during wet season, and alternate with 4G coverage at times.

³¹ <https://www.infrastructure.gov.au/media-communications-arts/internet/national-broadband-network/school-student-broadband-initiative-ssbi>

- “Depending on what agency, sometimes we use [Zoom, Teams or] Google Meets, but Zoom is our go-to. [Online meetings work sometimes], depends on what kind of day we’re having. If it’s overcast, I [often have] to log out and log back into the meeting.” (Gladys Doolah, Manager, Erub Arts, 2023)

Lala Gutchen works and studies from home, where she hangs a 4G dongle from the verandah to get internet connection, but often struggled with connectivity for online meetings.

- “I still do all my online studies [and] a lot of climate change work [including] Zoom catchups with climate change ambassadors. [We use] Zoom and Teams meetings [to] share screen [and show] where we at. [But often I] can’t get online on the Zoom [via the mobile dongle] so we have to go through a Whatsapp ... When the signal [is] down, we just got to do a verbal call [but] sometimes the call even drops out.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, 2022)

Use of Cloud-based and automated online systems in the remote context

Cloud-based and automated systems are increasingly being used for record-keeping and data management, especially for regional and state-wide service providers. However, the cloud-based systems used by TSIRC were described as very slow and inefficient over the new satellite service installed on the TSIRC building.

- “[Since they] put in that new satellite [I’ve found] everything’s so slow, [especially the TSIRC payments] system that we’re using. [We] have 14 other islands using the same system [so] it slows up. Even when we do the receipting, I will go brrrr [fast typing], then [I] wait [while] everything is typed behind [before] I can do the next one. I don’t like slow. [I can’t] keep up with [all the daily tasks]. We’re one of the busiest divisions in the region for [transactions], we’re flat-out. [And] if another division go down, we support them. [And] if we’re down, we get another division [to] help us.” (John Armitage, Erub Divisional Manager, TSIRC, 2023)*

For instance, Erub Arts use the SAM online database for all arts records and sales, with local arts workers training in data entry. While this has worked well previously, there were local network issues (awaiting IT upgrade) that made this difficult to use during our 2023 visit.

- “When our internet is down, especially in our gallery, we’re reliant on the Wi-Fi to access [the SAM database with] all the artist details [and] artwork details like price and how many editions and all that stuff. Once our internet goes down, we can’t access SAM while customers are in the gallery [to do sales]. It’s a struggle.” (Gladys Doolah, Manager, Erub Arts, 2023)

Torres Strait Island Police were in the process of introducing an online record system using an iPad in the field, however it was unclear how this would work on Erub where there is limited connectivity.

- “[We will be] having our own iPad or [laptop] that we carry around. Instead of [going] back to the office to do up our report, we can send it [straightaway. That will come in] after the training mid this year.” (John Bourne Mye, Torres Strait Island Police Support Officer, Erub, 2023)

Communications use for border security and biosecurity

Being located only 40 km from Papua New Guinean waters, Erub Island and the Torres Strait more broadly are often at the frontline of illegal immigration, quarantine issues, and other illegal activity. Reliable communications are critical for effective border security.

- “We border ... Papua New Guinea, and a lot of illegal things, we need instantly to report ... there’s nothing outside of us. It’s another nation over there. So, that’s why the

communication [of] the Torres Strait must be improved from the current state.” (Kapua Gutchen, My Pathways Supervisor / Cultural Leader, 2022)

Borderforce have a HF tower on the top of the uppermost hill in Erub to communicate with the Borderforce boats. While there is space to locate a mobile tower on the top of the island, TSIRC thought it unlikely that Borderforce would share the HF tower with other agencies. There was also a UHF radio tower at the top of the hill previously.

Access to media and news services

A fifth of households are still without working VAST TV services following equipment upgrades

The VAST direct-to-home satellite TV service was installed on all premises in remote communities by the Australian Government in about 2013, with the ongoing maintenance to be a householder responsibility. Prior to the rollout of VAST, Erub had only two TV channels via local broadcast – ABC and Channel 10.

Our survey found that about 20% of households no longer have VAST satellite TV service working. Surprisingly, this is a very low failure rate compared with most other sites visited. This rate is also down from 25% in 2022 due to replacement of some rusty satellite dishes by TSIRC.³² However, several interviewees said that VAST was still not working or was not reliable at their house.

- + “I do remember a couple of people [from TSIRC] coming through and fixing TVs ... but I’m not too sure how many people got it fixed. Ours [is still not working since] monsoon season ... It doesn’t help that we live literally by the beach [so the dish is very rusty].” (Gladys Doolah, Manager, Erub Arts, 2023)
- + “They change some dishes. In my village I see a lot of my neighbours got TV, but I don’t have TV.” (Nixon Mye, Erub RIBS Broadcaster, 2023)



Figure 19: The proximity to salt water in Erub causes rapid corrosion of satellite dishes

As well as rust or damage to satellite equipment or cabling (36% of those with VAST not working), a key cause of VAST failure is set-top boxes issues (45% of those with VAST not working), often due to damage from surges in the local power supply. The cost of a replacement set-top box is about \$400 at the supermarket in Erub.

It is common to hear that the VAST TV services drop out regularly during wet season. However we heard reports of the service not coming back on.

- + “[Every] monsoon season [during] the big rains our TV literally goes off. We can’t get any signal. At first it used to [be for] a couple of weeks, and then we’d have signal again. But it’s now March, and we haven’t had TV since Christmas.” (Gladys Doolah, Manager, Erub Arts, 2023)

The failure of free-to-air television service means that households are paying high data costs to access entertainment online.

- + “[So] we’ve just been watching YouTube [and other streaming] apps [on] the TV ... When the TV was working, we weren’t using the Wi-Fi as much. But now that it’s not

³² We saw a pile of replaced VAST satellite dishes near the TSIRC depot during our 2023 visit.

working, we have every TV using up all the Wi-Fi. It's keeping everybody busy, but it's also costing us a lot of money." (Gladys Doolah, Manager, Erub Arts, 2023)

While most remote regions do not have coordinated VAST maintenance, TSIRC Housing Services undertake basic repairs to VAST satellite dishes on some households, though not set-top boxes.

Radio is an important source of local news and information, but reception is difficult on Erub (2023)

The Torres Strait Islander Media Association (TSIMA) 4MW radio service is the primary radio service for the Zenadth Kes (Torres Strait) region, with an AM radio service from Thursday Island and regional distribution via satellite to FM radio transmitters on 14 islands.

TSIMA has five active remote Indigenous broadcasting service (RIBS) communities at St Pauls (Moa), Warraber, Yam, Poruma, and Erub, which can broadcast locally or do weekly shows over the regional network. When the RIBS is not broadcasting locally, TSIMA 4MW provides regional news and weather and bed programming.

Radio 4DI, the RIBS radio service on Erub, is one of the longest continuously-staffed RIBS services in Australia. Veteran broadcaster Walter Lui, who had broadcast local news, information and music requests both locally and over the regional TSIMA network for over 25 years, hung up his headphones and retired in February 2023.

- "[Walter had] a regular program on TSIMA Radio 4MW. [Our] funding requirement is for [RIBS broadcasters to be on air] at least two hours a day in their community and one hour of those on our regional network through Radio 4MW. And Walter has been doing that for [over 25 years]. He's seen all those changes in technology from the BRACS³³ days [with local broadcasting only] to where we are technically today, able to stream online." (Jenni Enosa, Senior Content Creator, TSIMA, 2023)



Figure 20: Former broadcaster Walter Lui in the Erub RIBS studio, 2022

Nixon Mye has begun as the new Erub RIBS broadcaster, with the radio name Awa (uncle) Yanga.

- "[I'll be working] twenty hours a week. No more 80s rock music [from now on]." (Nixon Mye, Erub RIBS Broadcaster, 2023)

TSIMA 4MW is the primary radio service for the Torres Strait and plays a vital role in keeping people in the region informed on regional as well as national issues.

- "[We keep people informed on the] big topics about the Torres Strait [such as climate change, treaty], land issues, health [and] the national narrative around the voice to parliament ... People do not understand [about] the referendum [and need information before they] go to the polls." (Jenni Enosa, Senior Content Creator, TSIMA, 2023)

Radio is seen as an effective way of sharing local news with agencies on Erub, such as TSIRC, the clinic and school, using the RIBS to distribute local information. Erub School students are also learning how to share news, songs and stories through Radio 4DI to the community.

³³ Broadcasting for Remote Aboriginal Communities Scheme (BRACS) is now re-named as Remote Indigenous Broadcasting Services (RIBS)

However, broadcasting over the regional network requires reliable connectivity.

- + “We use a lot of streaming [of shows from the RIBS] for our broadcast services, and we have bad days whenever the storms are around ... it’s frustrating to see the signal fail [and] the broadcast can’t go on.” (Jenni Enosa, TSIMA Senior Content Creator, 2023)

Our survey found that radio listenership among Erub residents is relatively low, with 23% of respondents listening to Radio 4MW daily or weekly (11% for ABC) and a further 29% occasionally (16% for ABC), with 32% saying they never listen to the radio. Most radio listening happens in the car (46% of those surveyed), with only 18% listening to a radio at home and 16% via phone or tablet.

Older people tend to listen to radio more than young people, however radio is seen as an important source of news and emergency information.

- + “The oldies at home, they listen to [radio. But if] there’s serious weather, disaster, then I’d definitely be on the radio. Probably be the only form of keeping in touch with the outside world, what’s going on.” (Barrumah Pilot, Erub resident, 2023)

While low radio listenership aligns with a national trend towards increased use of online and on-demand music and news content, Torres Strait Islanders still rely on radio as a primary means of accessing local news and information. However, several factors affect radio listenership on Erub. First, the AM signal for Radio 4MW and ABC is weak at Erub due to being about 200 km from Thursday Island, requiring a large antenna for a quality signal.

Additionally, the FM broadcast of Radio 4DI has limited range due to the transmitter being located at the RIBS in the central village of Medige, with most villages unable to pick up the signal. The broadcast tower was previously at the top of the hill but was relocated due to issues with power and need for repairs, with a lack of infrastructure funding to upgrade the facility. Erub’s new RIBS broadcaster Nixon Mye would like to see the transmitter relocated back to the top of the hill to reach the whole island.

- + “[The FM signal is] only going two villages away ... people [can’t] hear [it] because it’s not going anywhere.” (Nixon Mye, RIBS broadcaster / digital content producer, 2022)

TSIMA 4MW has a [radio app](#) and so can be listened to online or via the [indigiTUBE app](#), enabling listeners to get a high quality stream of the live program. This also enables Torres Strait Islanders living in other parts of the country to list to 4MW, helping to maintain their connection and cultural identity.

- + “[Many] people [on the mainland] listen to [TSIMA 4MW] radio on their phone ... because there’s a really big Torres Strait diaspora all around Australia [and] it’s vital [that our] media organisations put those information out to the rest of our community ... like late Mr Mabo said, “You can take me away from the island, but you can’t take the island away from me.” No matter where you are, you’re still a Torres Strait Islander.” (Jenni Enosa, Senior Content Creator, TSIMA, 2023)

Radio 4DI local broadcast is not streamed. However, while on Erub we did find out about a number of Android mobile apps that enable live FM radio listening directly on the smartphone.³⁴ With few radios in houses, this enables the mobile phone to be used as a radio receiver.

We also encouraged the IBIS supermarket and other local services to have Radio 4DI playing for customers.

- + “They used to have a radio play all the time [but now we play] music ... we need to buy a radio [to play TSIMA].” (Daisy Ketchel, Manager, IBIS Supermarket, Erub, 2023)

³⁴ Only some Android phones enable FM reception, including HTC, LG, Motorola, and Samsung, with the headphone wire acting as an antenna. However iPhones do not have the FM chip to receive live radio. FM apps include FM Radio, NextRadio, Tuneln, Simple Radio, and more.

News and emergency information are shared via Facebook, newspaper and in person

Our survey found that Facebook is the primary channel for news and information, with 42% of respondents using Facebook to access news and information daily and 61% for emergency information. Other news sources are commercial TV (37% daily) and in-person communications (34% daily). Local noticeboards are also well used for emergency information (59%) along with in-person communications (52%).

- “Some of them listen to the radio, but most people [use] Facebook, ‘cause we have a Torres Strait Island Regional Council Facebook, so any news updates are on that page.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, 2022)



Figure 21: Noticeboard in TSIRC office

Nixon Mye runs the local Erub Notices Facebook page to share locally relevant news:

- “I started up ... Erub notices [during COVID. It] has been very useful to the people that’s in isolation, because they get their information through there, because people text me, and I put it on the Facebook ... [People use it] to sell stuff, like selling, buying ... if there’s a public meeting, or if there’s an inter-agency meeting where the public can come and be involved. Schools, they tell me to upload stuff for them.” (Nixon Mye, RIBS broadcaster / digital content producer, 2022)

To keep up with changing audience needs and technology use, TSIMA have diversified from radio broadcasting to other channels including social media and running the regional newspaper, Torres News since 2020.

- “Gone are the days of just radio service ... we’ve got that multi-platform to deliver now with the recording studio, the newspaper, radio, [TV] and social media page.” (Jenni Enosa, Senior Content Creator, TSIMA, 2023)

Affordability

Affordability of mobile data is a significant concern

Affordability of internet access is a key issue for Erub residents due to low incomes and high pre-paid data costs. 48% of respondents said that they have had to cut back on essential household costs to afford personal or household internet within the past six months, up from 41% in 2022. 71% said they compromise on internet speed and/or quality to prioritise affordability.

Erub residents are primarily using pre-paid mobile services for phone and internet access as it enables people to pay what they can afford, rather than commit to a monthly billed service. While uptake of nbn Sky Muster services is increasing, some people struggle to maintain the post-paid service.

- “[Some people] have a bit of issues with paying the bill with the SkyMesh, especially if they’re just one person. If they’re in a family, they don’t [often] pitch in and pay for it [so one person has to find the money].” (Nixon Mye, Erub RIBS Broadcaster, 2023)

Data use has increased significantly with uptake of online streaming services such as Netflix and/or online games, particularly by young people, increasing monthly costs. While the nbn Wi-Fi has helped some users reduce their data costs, most usage is primarily reliant on pre-paid mobile or Sky Muster services.

- + “I spend about \$90 a month because I spend a lot of time on social media ... Thirty dollars will probably last me 1.5 weeks ... my data runs out way before the expiry date comes along.” (Barrumah Pilot, Erub resident, 2023)

Pre-paid credit is a valued commodity in the community, with demand by young people on parents and grandparents to buy pre-paid vouchers, or share data via hotspots, to enable access to online content including social media, streaming and games.

There is limited information available in the community on telecommunications plan options or ways of managing data costs. However, some Erub residents have made use of a Telstra disaster assistance subsidy which has helped to reduce mobile data affordability issues in the short term.

- + “There’s this link ... you click on [to get] \$30 [Telstra credit]. A few people [on Erub are] accessing that [link and] the credit will last them for probably a month.” (John Armitage, Erub Divisional Manager, TSIRC, 2023)
- + “Telstra [are] doing the disaster assistance where you apply and you get 25 GBs for free, so we’ve been doing that here.” (Nixon Mye, Erub RIBS Broadcaster, 2023)

Cost of devices is also an affordability issue

The cost of smart phones was raised as an issue, particularly due to regular replacement of phones and limited local options. The IBIS supermarket provides a range of smartphones as well as non-smartphones (flip-phones) for different price ranges.

- + “We sell a lot of [Samsung] A16 and Oppo phones. [Prices vary from] \$300, \$69, \$329. ... Refurbished iPhones [are about \$400 but] the young people that are buying them said the phone quality is really good. [Some elderly people] still ask for the [flip phones] because it’s got buttons, they like those ones better.” (Daisy Ketchel, Manager, IBIS Supermarket, Erub, 2023)

Several people we spoke to were without a phone and saving up to get a replacement, with preferred models costing over \$300, equivalent to nearly a week’s Centrelink income. However, mobile phone ownership is a high priority for many young people.

- + “If your phone is broken or lost or stolen, within a period of this week ... the next pay, regardless of what you have to pay, whether it be food or things for the house, no, your phone’s got to be the first one you have to pay.” (Barrumah Pilot, Erub resident, 2023)

Digital ability

Very high level of digital ability

Based on the 2022, survey results, Erub residents had an average ADII score for digital ability of 70.0, which is 5.2 points above the national non-First nations average. This is particularly impressive given the limited household internet access of many residents. This high level of digital ability enables personal agency and capability in accessing online information and services independently and developing digital skills needed for work, enterprise, or governance.

However, as outlined in the Executive Summary, the 2022 results found lower levels of digital ability for some demographic groups. These included people with disability (20.3 point below Erub average), those who completed up to Year 10 (14.8 points below those who completed year 12) and 65–74 year olds (score of 0.0 compared with 84.6 for 18–34 year olds).

- + Not many elderly people can text or send email and things. They’d rather talk. [Our generation] didn’t grow up with it [but we’re] still part of the island. [If] you change too quick for them and you will leave some people behind.” (Kapua Gutchen, Elder / My Pathways CDP Supervisor, Erub, 2023)

Our 2023 survey results again indicate high levels of digital ability among most Erub residents, especially young people and those who completed high school. 96% of those surveyed had used the internet within the last six months (up from 93% in 2022).

85% of these regular users had kept in touch with friends and family online in the last six months (95% in 2022) and 85% had done online shopping (88% in 2022). While email is used more for workplace communications and setting up online services than personal communications, 93% of regular internet users reported being able to send and receive emails (same as 2022).

Use of online services (2023)

There is high take-up and competence among Erub residents in use of online services for banking, Centrelink, MyGov, licensing and completing forms online. Our 2023 survey found that 100% of regular internet users had used online banking and accessed online government services in the last six months.

- + “I use the internet also, for shopping online, and the government services like ATO ... pay my car registration It’s a very useful tool to have, especially living out here, when we don’t have direct access to stuff like that ... [It’s better online than calling because] sometimes we’re on hold for so long, our credit finish, or time’s up.” (Nixon Mye, RIBS broadcaster / digital content producer, 2022)
- + “We used to have a lot of clients coming in to access our Centrelink computer and phone. Now they can access MyGov and other Centrelink forms using their own private mobile phone.” (John Armitage, TSIRC Divisional Manager for Erub, 2022)

However many older people do not know how to use online services.

- + “I can’t go in [to MyGov] with internet because [I] don’t know how to use computer or anything ... So I ring up Centrelink and talk to them.” (Annie David, Resident, Erub, 2023)

Need for ICT access and support

94% of survey respondents had used the internet in the last week, with only 4% rarely or never using the internet. However, most internet use is via smartphones (85% of regular users, down from 95% in 2022), with limited use of laptops (30% in 2023 / 39% in 2022) or home computers (24% in 2023 / 32% in 2022), primarily due to cost and limited availability. The main reason regular internet users gave for not using the internet more often was “I do not have convenient access to the internet” (63%).

The lack of household computers limits the development of keyboard skills and applications used in most workplaces, including Microsoft Office. Jody Warbrick, the Principal of the Erub campus of Tagai School, said that the lack of keyboard skills by school students was an issue for students doing NAPLAN tests which are now online. She wants more digital skills training for students and staff to use computers, however as of 2022, digital skills was not listed as a priority area for Tagai College.

While there is clearly a strong culture of peer and family support for developing digital skills, there are limited opportunities for support for the elderly and people with disability.

- + “We don’t have [courses and] information given out for elderly people, [they mostly] target young people. [Elderly people need support] to learn that whereas my generation were born into it ... We’re teaching them now [but] they should have [more] elders’ days where you teach them how to use a phone. Because once they know how to text and [do online banking] and stuff, they don’t need to come down to the village.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, Erub, 2023)

As outlined in the Access section above (p. 29), the Indigenous Knowledge Centre (IKC) was re-opened during our visit, with plans to provide computer access and support. Support in using online government services is available at the Centrelink and TSIRC offices during opening hours. There was demand for more digital literacy training training and support, especially for the elderly, people with disability, and those with low English and

digital literacy. The IKC could be a useful space for computer access and computer skills workshops through Deadly Digital Communities and Tech Savvy Seniors (both coordinated by the State Library of Queensland). There was also demand from community members for the IKC to be better utilised as a space for online learning, research and working on digital projects, including language and culture projects.

Some interviewees identified the need for more advanced capabilities and workplace digital skills. Cr Jimmy Gela identified the need for trade and administration training to create a pathway for young people into executive positions and better paid jobs. Erub Arts described digital communications as a specialist area needed by businesses for online marketing and promotions now. This could be an area for skills development in the region.

TSIMA Operations Manager Diat Alferink said that training and support needs to be done using cultural modes of learning with delivery by local organisations and people. Peer learning is also effective for digital skills development, both in the workplace and within the home environment.

- + “If one knows, they’ll show the other ... Most community members are fairly switched on ... the younger generation are more educated in modern technology than what we are.”
(John Armitage, TSIRC Divisional Manager for Erub, 2022)

Online learning is starting to be embraced

While online professional development training can save travel time and expense for agencies, there was a mixed experience of its effectiveness due to poor connectivity and cost. Most training is still done face to face, with people flying to Thursday Island or Cairns for study. TSIRC sends its staff to Cairns to learn new systems.

72% of the regular internet users surveyed said they had used the internet for some form of learning or study in the last six months (76% in 2022). This enables people to stay living in community with their family while studying. However, issues of connectivity and data cost were described as barriers to online learning.

- + “I wanted to go out to do Uni [but] I would prefer to do my study [online] instead of leaving country ... But the problem was that the signal is very bad ... If they better the Telstra service and then we [could do our studies on] the island.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, 2022)

Use of apps for communications and learning

Erub artists use WhatsApp for group messaging, especially while on overseas trips and during COVID to keep connected. Erub Arts are also keen to move to digital board meeting papers for directors to reduce use of paper, but many older people don’t use email or have iPads to access the documents.

Artworker and artist Florence Gutchen uses ICTs at home for family communications and cultural research as well as using email and Microsoft Teams for her work and training at Erub Arts. Through her artworker training with the Indigenous Art Centre Alliance in Cairns, Florence is learning to use the Story Art Money (SAM) database, and studying art law, governance and photography online. She also does cultural research.

Nixon Mye described using a range of apps including the Stan streaming app, GarageBand (for music production), YouTube and the WillyWeather app. He also takes photos and videos on his phone and posts these on Facebook and Instagram. Nixon is one of several local musicians creating music using digital applications such as GarageBand, and sharing their work on YouTube, Facebook, Soundcloud and iTunes.

- + “We were doing a lot of music stuff, on the GarageBand, that was the app. So, that was like the whole reason why we got the iPad, so we could do some music ... There’s a lot of people here that are very talented in the music industry ... [and] neighbouring islands as well.” (Nixon Mye, RIBS broadcaster / digital content producer, 2022)

There is interest in more music production training and a studio facility to enable more professional recording and production work.

Social media is a primary means of communication, but can get misused

Beyond voice and text communications, social media is a primary channel for keeping in touch with family or friends (85% of regular users, down from 95% in 2022), engaging with community (82%), and meeting new friends or reconnecting with old friends online (80%). Primary platforms used are Facebook, TikTok, Snapchat and Instagram.

- + “If we want to reach community [I] think Instagram and TikTok for younger ones, but also Facebook’s still pretty relevant.” (Diat Alferink, TSIMA Operations Manager, 2022)
- + “Social media nowadays is part of life ... There’s a lot of good contents on [TikTok] and a lot of those contents are very educational. [I also use Facebook and Snapchat and] I make my own content, too. [I] get the ideas from the other influencers on there.” (Barrumah Pilot, Erub resident, 2023)

As outlined above, Facebook is the main channel used by Erub residents to access news and emergency information. TSIRC and TSRA use Facebook to share information, and the local Erub Notices page was started by Nixon Mye in 2018.

- + “[Erub Notices is] specifically for people living on island. [I put up] anything really, like meetings or fundraising events, any social events that’s happening in the community by other people ... I have to approve it because I don’t want people to be putting stuff like sly grogging or selling smokes [or] bad stuff ... A lady that’s working with TSIRC division in Cairns [uploads] job vacancies [and] council office [updates].” (Nixon Mye, Erub RIBS Broadcaster, 2023)

Some local businesses also have Facebook pages for online promotions and marketing, including Erub Arts.

- + “Most of our promotion is done digitally. We have a Facebook page, we have an Instagram page [and] a website but it’s currently being upgraded.” (Gladys Doolah, Manager, Erub Arts, 2023)

Some older people are learning to use social media to stay connected with family members dispersed across the region and mainland. Walter Lui described the changes in family communications because of social media.

- + “[Nowadays with social media] It doesn’t matter you’re on the other side of this region, they know where you are. ... [You can] send a message, send a photo to a family living down south [or] grandchildren send the photo [to] grandpa or grandma ... So happy to see.” (Walter Lui, Erub Radio Broadcaster, 2022)

TSIMA broadcaster Jenni Enosa described social media as a powerful tool for maintaining family connections with the potential to educate, inform and empower. However, she also has seen social media used to spread misinformation (especially during COVID), disrespectful or abusive comments, and breach cultural protocols. Others also expressed concern about the erosion of cultural protocols via social media.

- + “If there’s a death on the Island, and we do have cultural protocol about how we approach getting the news across, but there’s some idiot ... put it on Facebook ... You don’t have that right to, until the elder of the family does give the okay ... [We need] to have a clean line between cultural protocols and your right to go on [social] media.” (John Bourne Mye, Police Officer, Erub, 2022)
- + “I’ve even seen a lot of traditional things that aren’t supposed to be put on there [like men’s] initiation stuff I seen on there, where it’s cultural protocol, only for men [but] it’s out there for everybody to witness.” (Barrumah Pilot, Erub resident, 2023)

There was also a caution about posting images on social media depicting hunting of turtles and dugongs, a cultural food source, as this can attract backlash from animal rights activists.

Cyber safety and scams are a significant concern

Local agencies have identified a range of cyber-safety issues prevalent in the region from scams, access to inappropriate content, online bullying and harassment, and posted comments leading to family disputes. With scams increasing and becoming more targeted via calls, text and social media, there is a need for more cyber-safety awareness to inform people how to discern and avoid them.

- ✦ "A couple of people got scammed on the island ... People have lost thousands of dollars" (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, 2022)
- ✦ "I think people need to be educated ... [about scam calls and people] giving all their details and next minute they've got \$500 stolen out of their bank account." (Diat Alferink, TSIMA Operations Manager, 2022)

Local digital media content production, archiving and sharing

Projects are underway to document and revive language and cultural heritage (2023)

Erub elders outlined the need for language and cultural resources to teach current and future generations, to reduce the impact of western media and online content. Elder Kapua Gutchen argues that young people need to learn the language to maintain their Erub Meriam identity. He and other elders began language preservation work in the 1990s, leading to a project with the Australian Literacy and Numeracy Foundation:

- ✦ "Kids were more becoming Torres Strait Creole speakers [so we asked] the Australian Literacy and Numeracy Foundation [to help us to] save the language ... [Now] I can tell that some of the children know more language than their parents that didn't speak anything." (Kapua Gutchen, My Pathways Supervisor / Cultural Leader, 2022)

TSIMA CEO Diat Alferink also identified the need to document the cultural heritage of the Torres Strait region due to the increasing impacts of climate change.

- ✦ "[With] rising sea levels now, six communities are possibly unliveable in the next 70 to 100 years in the Torres Strait ... that's why this [work in] cultural maintenance, language renewal, myths and legend, animation [is] really important and gives voice to our identity and our culture." (Diat Alferink, TSIMA Operations Manager, 2022)

TSIMA also produce language content for radio and online channels.

- ✦ "Sometimes in my program I do language interviews as well with cultural content. We also are encouraging more language content to go on air as well. And also podcasts so that we can put them online for the communities." (Jenni Enosa, Senior Content Creator, TSIMA, 2023)

Currently the rangers use Traditional Ecological Knowledge software to record information about plants and animals, fish and locations and language. They have developed a detailed seasonal calendar with input from Kapua Gutchen and daughter Lala Gutchen.

Lala works as a First Language programs facilitator using the Living First Language Platform developed by ALNF³⁵



Figure 22: Lala Gutchen with the Erub Kerker seasonal calendar

³⁵ See: <https://alnf.org/2019/07/12/alnf-technology-helping-save-erub-language/>

to document and teach the Erub Mir dialect of the Meriam Mir language spoken on Erub and Ugar (Stephen Island).

- + “We’ve recorded over 3,000 words to the platform We’ve documented a lot of new stories and ... translated old dance songs and ... hymns so that these generations could understand what they’re singing about now.” (Lala Gutchen, Language facilitator / teacher / fisherwoman / advocate, 2022)

However, Lala described the impact of poor connectivity when she is trying to add language recordings to the cloud-based Living First Language Platform.

- + “[Sometimes] when I [get elders] to record onto the platform, because of the connectivity problem, the recording sometimes come out [like a] stutter. [So] I usually handwrite everything now and I type it in Documents. Because if something [fails] I have it in black and white. So I basically prepare myself for the worst.” (Lala Gutchen, as above, 2023)

Lala photographs and documents local plants, animals and fish species and uses digital platforms such as Instagram to teach people the names in the Erub Mir dialect, including people living away from country. She teaches the language remotely, face-to-face, and even through online networks.

- + “I have my Instagram page where I go on there and I put pictures and stuff, videos of the island, and I translate them in language. So I’m basically teaching the language off a platform that requires to use internet.” (Lala Gutchen, as above, 2022)

In 2023, Lala had recently finished creating a literacy gaming app in Erub Mir language, based on the successful Feed the Monster phonics game for children. Her significant work in language preservation, teaching, land and sea management and climate change advocacy was recognised in a National NAIDOC Award for Caring for Country and Culture.³⁶

Lala and her family played a lead role in a successful Land Court of Queensland court case Waratah Coal vs Youth Verdict (Galilee Coal Project).³⁷ The hearing was held on the islands of Erub and Poruma to hear evidence about the climate impacts of coal mining in person rather than online via videoconference.

- + “I was one of the First Nation witnesses [and] gave evidence in court to back up an objection to an application for Waratah Coal Mines ... We did on country evidence [on Erub and] my mother’s island on Poruma [to] show climate change impacts. [We had] a ground-breaking historical win where our cultural rights were recognised [over the interests of] the coal mines.” (Lala Gutchen, as above, 2023)

Demand for a facility to support digital media production

In 2022, the Erub Arts manager Diann Lui (since retired) said there was community interest in setting up a digital media unit, building on projects undertaken by Erub Arts, to make animations and movies in traditional language. She suggested this could be done as a collaboration between TSIMA, the arts centre, and the IKC, and maybe as a My Pathways project. She suggested starting by collecting existing content and building on existing projects and capacity.

There is demand for programs that support digital content creation by young people. The new generation of artists at Erub Arts are coming from the digital era, with Jimmy John Thaiday winning the multi-media category at both the 2022 and 2023 Telstra awards.³⁸ Other young people are doing video production using online apps:

³⁶ <https://www.naidoc.org.au/award-finalist/lala%C2%A0gutchen>

³⁷ <http://envlaw.com.au/waratah/>

³⁸ https://issuu.com/tsimatorresnews/docs/23-08-17_torres_news_ed094_16p_lo_res/s/29907033

- + “When we go out on the reef, we take videos or pictures ... [We edit] the video together, and add music and whatever and post it up. Makes families down the South miss island and they want to come back.” (Nixon Mye, resident, 2022)

TSIMA are keen to set up a media hub on every island for creating and accessing content and archives.

- + “We need to have more [Torres Strait] content, whether it’s on NITV or indigiTUBE, or even our own platforms ... to raise that awareness [of our history] in our younger generation. Media’s really important and able to do that.” (Diat Alferink, TSIMA Operations Manager, 2022)



Figure 23: Photo archive wall in Erub IKC



06. CONSIDERATIONS FOR LOCAL DIGITAL INCLUSION PLAN

Developing a local Digital Inclusion Plan would enable a coordinated whole-of-community approach to address some of the challenges outlined in this report. It would also provide a useful tool for advocacy to government, industry, and fundraising efforts. Strategies outlined below are based on input from community stakeholders and are provided as possible options for local planning to improve communications services and digital inclusion in Wujal Wujal. These are not intended to be prescriptive, nor are they listed in order of priority.

Based on our 2023 interviews and discussions, the proposed Digital Inclusion Plan has been updated with new/revised strategies and a column for progress/ next steps, to track progress on the actions over time.

Identified issue	Possible actions	Potential stakeholders	Progress/ next steps
Access			
Expanded 4G mobile coverage to unserved villages, airport and north side of island, and out to sea.	Advocate to Telstra and Queensland and Australian Governments for additional 4G tower at top of island, plus increased speed, reliability, and coverage to meet growing demand. Advocate to Telstra to expand 4G coverage footprint as part of planned upgrade from 3G, prior to 3G switch-off in mid-2024. Apply for funding (e.g. through Regional Connectivity Program) for 4G small cell, boosters or repeaters for unserved villages.³⁹	TSIRC Telstra Queensland Government Australian Government (DITRDC)	Advocacy ongoing but no mobile upgrades planned as of January 2024. RCP3 funding for NBN fixed wireless across Torres Strait.
Need for fast, low latency broadband services with unlimited data for agency and business use.	Trial of Starlink satellite service for agency and/ or business use (Note: Queensland Government are currently undertaking a trial of Starlink). TSRA to consider including support for reliable internet connectivity as part of business loans.	TSIRC TSRA Queensland Government	No known Starlink trials as at January 2024. Not as yet.
Lack of mobile coverage at many houses, or weak signal from neighbouring islands.	IBIS supermarket could look at stocking an affordable 4G stationery mobile booster.	IBIS supermarket TSIRC	New strategy – no progress as yet.

³⁹ Some options of boosters at: <https://www.telstra.com.au/coverage-networks/network-coverage-extension-devices>

Identified issue	Possible actions	Potential stakeholders	Progress/ next steps
Need for improved safety and emergency communications, especially for ocean fishing, sea rescue, border security.	Explore options for expanded /shared use of HF & UHF radio and satellite communications for safety and emergency communications in areas without mobile coverage and while out to sea.	TSIRC Borderforce Queensland Police Rangers Erub Primary Health Care Centre	Borderforce have HF radio tower on Erub but no shared access for other agencies as yet.
Impact of power outages on communications and food security.	IBIS supermarket and/or TSIRC to consider installation of back-up generator to ensure access to food, ATM, EFTPOS and nbn Wi-Fi during power outages.	IBIS supermarket TSIRC	New strategy – no progress as yet.
Need for community access computers and software in Indigenous Knowledge Centre (IKC).	Seek funding through State Library of Queensland (SLQ) for new community access computers and regularly used software ⁴⁰ , including learning games.	TSIRC/ Erub IKC SLQ	TSIRC had applied for new computers at time of visit.
VAST direct-to-home satellite TV services not working in about 20% of homes; high cost for households to repair equipment and replace set-top boxes.	Advocate for funding to upgrade damaged or rusted satellite dishes, replace VAST set-top boxes in homes where not working, and provide shelf unit and power surge protectors for all set-top boxes. Arrange supply of VAST set-top boxes and surge protectors at subsidised cost in IBIS stores across region.	TSIRC Queensland Government housing Australian Government (DITRDC) IBIS supermarket	TSIRC Housing had replaced VAST satellite dishes on at least six houses, with more needed. Yet to do.
Limited access to Radio 4DI FM radio service across island; TSIMA 4MW and ABC AM radio services poor quality signal.	Move broadcast tower to higher location to reach more of community and install higher powered FM transmitter. Consider establishing transmission of at least one ABC radio service as FM from Erub RIBS facility.	TSIMA/ Erub RIBS TSIRC TSRA	Yet to do.

⁴⁰ Refurbished computers and discount software available through Connecting Up: <https://www.connectingup.org/>

Affordability

Primary use of pre-paid mobile data; limited awareness of options.	Provide easy-to-read materials in store, IKC and post office (posters, brochures) and radio messages outlining how to reduce data use and options for affordable mobile and data services.	TSIRC / Erub IKC TSIMA IBIS supermarket Telstra Sky Muster retail service providers	Yet to do.
Need for public Wi-Fi to provide affordable access to online services.	Establish NBN satellite service and free public Wi-Fi with content filtering in town centre. Review NBN Wi-Fi use and explore need for Wi-Fi in other villages and public sites without 4G coverage (e.g., airport / visitor's quarters).	TSIRC NBN Australian Government/ Centrelink Queensland Government	NBN installed free Wi-Fi hotspot 28/5/22. Yet to do.
Primary use of pre-paid mobile data; limited awareness of options.	Provide easy-to-read materials in store, IKC and post office (posters, brochures) and radio messages outlining how to reduce data use and options for affordable mobile and data services.	TSIRC/ Erub IKC SLQ ACCAN TSIMA IBIS supermarket Telstra	Yet to do.

Digital ability

Need for digital skills in using mobile and computer-based applications, online services and security, particularly for seniors.	Provide in-house training and support opportunities at IKC (with support from Deadly Digital Training and Tech Savvy Seniors supported by SLQ) in basic IT skills, mobile and online services (MyGov, banking, shopping, travel bookings etc) and managing security.	TSIRC / Erub IKC SLQ My Pathways	Yet to do (at time of 2023 visit).
Provide workshops for workforce readiness, trade & administration skills and business development.	Run specific workshops on workforce readiness (CV preparation, MS office, keyboard/typing skills, email use, job search etc), trade skills, administration and business skills (email, accounting, HR, project management etc) and IT skills for governance and leadership.	TSIRC/ Erub IKC SLQ Tagai TAFE My Pathways	Yet to do (at time of 2023 visit).
Mentor support in use of government and online services when needed.	Explore possible employment of local Digital Mentor to support people to independently use government and online services/ apps (e.g., MyGov, Centrelink, banking services); located either at TSIRC, Centrelink or Erub IKC.	TSIRC/ Erub IKC Australian Government/ Centrelink Banks or other online service providers	Yet to do (at time of 2023 visit).

Concerns around cyber-safety issues, especially scams and on social media.	Arrange cyber-safety awareness workshops (including in schools and workplaces) as well as locally targeted posters and radio promos to build awareness.	TSIRC/ Erub IKC TSIMA Erub campus of Tagai School	TSIRC IT distribute scam alerts to staff but more needed.
Media production and archiving			
Demand for digital media and music production for local language and cultural maintenance and skills development, and need for a facility to support production and archiving of existing content.	Explore options for a multi-media facility to support existing language and cultural projects (i.e. Rangers' Traditional Ecological Knowledge, Living First Language Platform, Erub Arts' videos/animations) and support learning and use of multi-media production (e.g. videos, animation, online content), music recording and archiving could be within the community, possibly at IKC, Erub Arts or the school. Explore options for skills development in digital photography, audio recording, video, music production and journalism. Seek support for language and cultural recording projects.	TSIMA Erub Arts IKC TSIRC TSRA (funding) Rangers My Pathways Australian Literacy and Numeracy Foundation / Living First Language Platform First Nations Media Australia (already	TSIMA support regional media production; ALNF support Erub Meuram language app; Erub Arts support multi-media projects; Some local media and music production but no dedicated funding or facility.
Other Identified Needs			
Lack of IT and technical support.	Arrange IT technical services company as regular service provider to support multiple agencies' needs (to reduce travel time and costs). Provide technical training for local people to provide first-in support.	TSIRC My Pathways	Yet to do.

Appendix 1: Summary of survey results

Note: Surveys undertaken in 2022 included 1 of 44 non-First Nations respondents, whereas 100% of the 56 respondents in 2023 were First Nations people. Please note this difference when making comparisons between the two sets of results. Not all respondents answered all questions so percentages are based on the number of respondents to that question.

Demographics	2023 (44 respondents)	2023 (56 respondents)
Gender	59% female; 37% male; 4% non-binary / genderfluid	55% female; 43% male; 2% non-binary / genderfluid
% Torres Strait Islander	98%	100%
Education	25% up to year 12 16% year 10 or below 41% with tertiary education (certificate, diploma, degree)	48% up to year 12 18% year 10 or below 18% with tertiary education (certificate, diploma, degree)
Employment	70% employed or on CDP (45% of these full-time) 9% unemployed 27% looked for work in past month	54% employed or on CDP (53% of these full-time) 21% unemployed 45% looked for work in past month
Welfare	52% received Centrelink (primarily Family Tax Benefit)	68% received Centrelink (primarily Family Tax Benefit)
Housing	50% in multi-generational or shared households (5.5 people per house)	48% in multi-generational or shared households (5.7 people per house)
% with long-term disability or health condition	9%	11%
% who speak a language other than English at home	95%	86%
Torres Strait Islander languages spoken (multi-choice question)	70% Torres Strait Creole (Youmpla Tok) 52% Erub / Meriam Mir 5% Kulkalgaw Ya	81% Torres Strait Creole (Youmpla Tok) 50% Erub / Meriam Mir 5% Kulkalgaw Ya 3 other languages spoken
Understanding of English (very and quite well)	Written English: 95% Spoken English: 95%	Written English: 96% Spoken English: 93%
Average weekly household income	\$968	\$566
Income breakdown	2% nil income 30% \$1-\$399 30% \$400-\$999 28% \$1000-\$1999 9% above \$2000	7% nil income 20% \$1-\$399 57% \$400-\$999 15% \$1000-\$1999 0% above \$2000
Phone use	2023 (44 respondents)	2023 (56 respondents)
Primary devices used for phone calls (multi-choice question)	98% mobile phone (own) 14% shared mobile phone 20% phone in community office or workplace 2% fixed line phone in home 2% without phone access	100% mobile phone (own or shared) 9% phone in community office or workplace

Reliability of public phone⁴¹	59% don't use a public phone 5% said it was reliable 36% said it was not or sometimes reliable	64% with no access to public phone 14% said it was reliable 16% said it was not reliable 5% don't know
Rate of mobile phone ownership	95% own or share (88% of these smartphones)	100% own or share (80% of these smartphones)
% of phone owners on prepaid services	90%	93%
Average pre-paid data allowances	48% pay for up to 10 GB / month 33% 11-40 GB / month 7% 41-60 GB / month 12% over 60 GB / month	2% do not pay for data 57% pay for up to 10 GB / fortnight 27% 11-40 GB / fortnight 7% 41-60 GB / fortnight 7% over 60 GB / fortnight
Average number of prepaid services per household	N/A	3.3
Household pre-paid mobile expenditure	43 responses Average household cost of \$207 / month 42% pay up to \$100 / month 23% pay \$101-\$200 / month 16% pay \$201-\$300 / month 19% pay over \$300 / month	52 responses Average household cost of \$117 / fortnight 46% pay up to \$100 / fortnight 41% pay \$101-\$200 / fortnight 13% pay over \$200 / fortnight
Media use	2023 (44 respondents)	2023 (56 respondents)
Radio Access (multi-choice question)	45% listen via car 11% listen to a radio at home 11% through VAST / TV 9% via phone / tablet 30% never listen to radio	46% listen via car 18% listen to a radio at home 16% via phone / tablet 32% never listen to radio
Primary radio stations listened to	Radio 4MW / Erub RIBS (28% daily or weekly, 23% occasionally) ABC Radio (7% daily or weekly, 24% occasionally)	Radio 4MW / Erub RIBS (23% daily or weekly, 29% occasionally) ABC Radio (11% daily or weekly, 16% occasionally)
TV Access (multi-choice question)	84% on TV via VAST satellite 50% via phone 27% use subscription satellite TV service 7% never watch TV	75% on TV via VAST satellite 55% via phone 23% only via USB / DVDs on TV 23% use subscription satellite TV 6% never watch TV
VAST TV Access	73% have VAST service working 25% VAST not working (45% due to set-top box not working, 36% due to damaged dish or cabling) 2% do not have VAST installed at house	80% have VAST service working 7% VAST not working (60% due to set-top box not working, 40% due to damaged dish or cabling) 13% do not have VAST installed at house

⁴¹ There is no public phone on Erub. Responses may refer to public phones on other islands

Most popular sources of TV and online content (multi-choice question)	YouTube (50% daily, 16% weekly) Commercial TV (45% daily, 25% weekly) Streaming services (41% daily, 30% weekly) ABC TV (27% weekly)	YouTube (41% daily, 26% weekly) Commercial TV (39% daily, 15% weekly) Streaming services (35% daily, 20% weekly) ABC TV (18% weekly)
Primary sources of news and information (multi-choice question)	Facebook (41% daily) Direct/ in person communication (39% daily) Commercial TV (36% daily) Social media (non-Facebook – 34% daily) Online news services (27% daily) Local noticeboards (25% daily) Newspaper (27% weekly)	Facebook (42% daily) Commercial TV (37% daily) Direct / in person communication (34% daily) ABC TV (27% daily) Local noticeboards (24% weekly) NITV (36% occasionally) Newspaper (26% occasionally)
Primary sources of emergency information (multi-choice question)	Local noticeboards (61%) Direct / in person communication (61%) Facebook (55%) Text message from police or emergency services (50%) Commercial TV (45%) ABC TV (42%)	Facebook (61%) Local noticeboards (59%) Direct / in person communication (52%) Text message from police or emergency services (45%) ABC TV (41%)
Internet use	2023 (44 respondents)	2023 (56 respondents)
Latest internet use	89% used internet in past week 5% in past month 0% never use the internet	94% used internet in past week 2% in past month 4% rarely or never use the internet
Rate of internet use (of respondents who had used the internet within the last three months)	66% use the internet almost constantly 22% several times a day 12% about once a day or several times a week	63% use the internet almost constantly 38% several times a day 7% about once a day or several times a week
Regular internet users (The following indented sections refer to respondents who had used the internet within the last six months)	93%	96%
Primary online devices (multi-choice question)	Smartphone (95%) Tablet (46%) Smart TV (39%) Laptop (39%) Desktop computer (32%)	Smartphone (85%) Smart TV (33%) Laptop (30%) Desktop computer (24%) Tablet (20%)
Use of internet provided by others (multi-choice question)	44% at houses of friends and family 41% at place of work or education	44% public space with free Wi-Fi 44% community or Shire office 37% at houses of friends and family 28% at place of work or education

Reasons given for not using the internet more (multi-choice question)	"I do not have convenient access to the internet" (63%) "The internet is too expensive for me" (41%) "I am concerned about privacy or scams" (17%)	"I do not have convenient access to the internet" (35%) "I do not need to use the internet more often" (31%) "I am concerned about privacy or scams" (28%) "The internet is too expensive for me" (20%)
Concern about amount of time spent online	22% extremely concerned 15% moderately concerned 27% slightly concerned 29% not at all concerned	17% extremely concerned 19% moderately concerned 22% slightly concerned 37% not at all concerned
Low internet users	7%	4%
Reasons given for not using the internet more (multi-choice question)	"I am not confident using the internet" (33%) "I am concerned about privacy or scams" (33%) "I am concerned about inappropriate content and causing conflict" (33%) "The internet is not a priority for me" (33%)	"I am not confident using the internet" (100%) "I have no need to use the internet" (100%) "I do not have access to the internet" (100%) "I do not have access to content in my own language" (100%)
Fixed Broadband Services (e.g. nbn Sky Muster, ADSL, Starlink)	77% did not have any form of fixed internet 16% on nbn service (Sky Muster satellite)	69% did not have any form of fixed internet 27% on nbn service (Sky Muster satellite) 4% satellite other than nbn
Respondents with fixed broadband	23%	31%
Data allowances	10% had less than 49 GB/month 10% between 50-99 GB/month 50% between 200-499 GB/month 30% unlimited	25% had less than 49 GB/month 40% between 50-99 GB/month 10% between 100-99 GB/month 25% unlimited
Average cost	\$99.75 / month	\$58.20 / month
Mobile broadband Services (e.g. 4G modem or dongle)	14% used a Wi-Fi dongle 5% used a laptop / tablet SIM 2% other (78% of these pre-paid)	21% used a Wi-Fi dongle 2% used a laptop / tablet SIM 2% other (86% of these pre-paid)
Respondents with mobile broadband	20%	25%
Data allowances	56% had less than 20 GB/month 11% between 21-40 GB/month 33% unlimited	43% had less than 20 GB/month 29% between 21-40 GB/month 29% above 40 GB/month or unlimited
Frequency of exceeding data limits	0% exceeded their monthly data limit between 1-5 times in the last year 56% 6-12 times	36% exceeded their monthly data limit between 1-5 times in the last year 14% 6-12 times

Affordability		
	2023 (44 respondents)	2023 (56 respondents)
How often cut back on essential household costs to afford personal or household internet	14% often or always 27% sometimes 59% rarely or never	14% often or always 34% sometimes 52% rarely or never
Respondents who compromise on internet speed and/or quality to prioritise affordability	37%	71%
Digital Ability		
	2023 (44 respondents)	2023 (56 respondents)
Regular internet Users (The following indented sections refer to respondents who had used internet within the last six months)	93%	96%
Basic digital ability metrics (very true or mostly true of me)	Send and receive emails (93%) Download and open a file (88%) Find and install apps (90%) Complete online forms (85%) Open a new browser tab (90%) Connect to a Wi-Fi network (90%) Use a mobile device as a Wi-Fi hotspot (88%)	Send and receive emails (93%) Download and open a file (83%) Find and install apps (81%) Complete online forms (85%) Open a new browser tab (91%) Connect to a Wi-Fi network (91%) Use a mobile device as a Wi-Fi hotspot (94%) Use keyboard shortcuts (66%)
Online security and cyber-safety awareness (very true or mostly true of me)	Set/manage secure passwords (90%) Identify which apps / software are safe to download (83%) Set/adjust privacy settings (83%) Check if information is trustworthy (93%) Decide what personal information to share online (85%) Add or remove friends or followers on social media (88%)	Set/manage secure passwords (89%) Identify which apps / software are safe to download (79%) Set/adjust privacy settings (87%) Check if information is trustworthy (81%) Decide what personal information to share online (87%) Add or remove friends or followers on social media (89%)
Online content creation (very true or mostly true of me)	Produce online content (71%) Post videos (83%) Create websites (42%) Awareness of online copyright law (74%)	Produce online content (67%) Post videos (81%) Create websites (48%) Awareness of online copyright law (67%)
Smart devices (e.g. smart TV) (very true or mostly true of me)	Connect smart devices (e.g. smart TV) to the internet (83%) Adjust privacy and security settings (81%)	Connect smart devices (e.g. smart TV) to the internet (89%) Adjust privacy and security settings (87%)
Primary online activities (activities undertaken in past six months)	Online banking (95%) Accessing government services (95%) Package tracking (88%) Online shopping (88%) Comparing prices of products or	Online banking (100%) Accessing government services (100%) Online shopping (85%) Package tracking (82%) Online buying and selling (80%) Online learning/study (72%)

	services (83%) Accessing health information (83%)	
Social media use (activities undertaken in past six months)	Keeping in touch with family or friends (95%) Meeting new friends or reconnecting with old friends online (88%) Engaging with community (90%)	Keeping in touch with family or friends (85%) Meeting new friends or reconnecting with old friends online (80%) Engaging with community (82%)
Online entertainment (activities undertaken in past six months)	90% used online entertainment services 54% attended an online music, arts, or cultural event online	89% used online entertainment services 74% played online games 60% attended an online music, arts, or cultural event online
Online navigation and transport (activities undertaken in past six months)	39% had navigated a route via maps on a smartphone 27% had used a public transport app 29% had booked a rideshare app	53% had navigated a route via maps on a smartphone 43% had used a public transport app 47% had booked a taxi via app

Comments:

Mobile service quality:

- + Mobile reception and satellite drops out when there's a storm. TV breaks up quickly when there's cloud cover. Radio service doesn't have coverage across island.
- + We need good network; they should relocate Erub Telstra mobile tower to higher ground.



I wish the mobile tower to be put on the highest hill on Erub so the network can be radiated far and wide for safety purposes. This is because we live on an island and we frequent the seas as part of our daily livelihood. In a case of emergency rescue services could be assisted by community members, you help each other. There is no need for rescue services for come from Thursday Island 120 nautical mile journey.

- + When I buy cheap pre-paid Telstra phone, it's really slow. It's hard to use internet. SkyMesh works well, just slows down when data used up. It doesn't work when it rains. Where I live near the airstrip we don't get reception, only 3G from Murray Island.
- + The mobile service is really slow, you get spinning wheel of death waiting for services. The signal is only one bar at my house, drops out a lot. I listen to Uncle Walter's radio show on the FM radio app.



We need someone to help teach digital skills. Mobile is mostly but signal goes down sometimes. It was down for a week a couple of weeks back. We couldn't get fuel and I couldn't talk to my kids in high school nor the mainland.

Internet/entertainment services:

- + VAST available in house but not connected. Son is watching ABC Kids TV on mobile phone.
- + I use internet all the time, for social media, viewing, creating own content and blogging, inspirational quotes, helping people.

Appendix 2: Community communications audit

About the Community	
Community Name:	Erub
Traditional owners/ Language group	Darnley Island
Location (Coords)	Erubam Buaigiz / Erub Mer
Region	9.5975° S, 143.7614° E
LGA/Shire/ Regional Council	Zenadth Kes (Torres Strait), Queensland
Land Council	Torres Strait Islands Regional Council
Regional Service Centre, distance	Torres Strait Islands Regional Council
Remoteness (ABS)	Horn Island 200 km; Horn Island to Cairns 793 km; 993 km in two flights to regional centre Cairns
Population Data – ABS 2021	
ABS link	https://abs.gov.au/census/find-census-data/quickstats/2021/SAL30983
ABS link – Aboriginal and Torres Strait Islander (ATSI) Quickstats	https://abs.gov.au/census/find-census-data/quickstats/2021/IL0C30700501
Total population	326
ATSI population	292 – 89.6%; (19 / 5.8% not stated)
ATSI gender breakdown	49.1% male / 50.9% female
Median age and breakdown	Median age 30; 103 (31.6%) 0–19 years; 56 (17.2%) 20–29 years; 44 (13.5%) 30–39 years; 39 (12.0%) 40–49 years; 22 (6.7%) 50–59 years; 38 (11.7%) 60–69 years; 18 (5.5%) 70+ years
Number of families and number of children per family	84 families; Average 1.9 children for families with children / 1.0 for all households (including without children)
Language groups, number of speakers	267 (90.1%) speak Yumplatok (Torres Strait Creole) or other Indigenous languages
% ATSI people who speak language at home	91.8% speak a Torres Strait Islander language at home
% ATSI people who speak English at home	2.4% speak only English at home
Employment levels (15+)	40.9% in the labour force. Of these, 41.2% worked full-time, 32.9% part-time; 16.5% away from work. 56.7% not in the labour force
Education levels (15+)	13.5% completed year 9 or below; 11.1% completed Year 10; 7.7% completed Year 11; 21.2% completed Year 12; 27.4% completed Certificate 3 or 4; 7.2% completed Diploma or Bachelor degree
Number of occupied dwellings	72 occupied dwellings (community housing)
Average people per household and bedroom	Avg 3.6 people per ATSI household; 0.8 people per bedroom
Median weekly ATSI household income	\$974 (\$900 for ATSI households)
Median weekly ATSI personal income (15+)	\$401 (\$387 for Aboriginal and / or Torres Strait Islander people)
Average weekly rent	\$150

Community Services and Plans	
Community Layout Plan	See: TSIRC – Zenadth Kes Planning Scheme 2018 (Erub Local Plan p. 291-316)
Agencies in community	Torres Strait Island Regional Council, Tagai State School, Biosecurity office, Erub Primary Health Care, IBIS Supermarket (CEQ); Erub Arts; Erubam Rangers; Indigenous Knowledge Centre (run by TSIRC, supported by State Library of Queensland); Torres Strait Police; Prescribed Body Corporate
Visiting agencies	Ergon Energy; Indigenous Consumer Advice Network (ICAN); Telstra; Police; nbn; State Emergency Service (SES); contractors
Existing Community Development Plans	See: TSIRC – Zenadth Kes Planning Scheme 2018 (Erub Local Plan p. 291-316); TSRA Torres Strait and Northern Peninsula Regional Plan 2009–2029 (Erub Community Booklet 2012)
Power supply/type/backup in community; relevance to telecommunications	Local diesel generator managed by Ergon Energy; backup generator at health centre. Telstra services run off mains power with battery backup
Use of power cards in households	Yes, Ergon Energy; can buy from TSIRC office or IBIS store
Basics card site?	No
Communications modes available	
Public phones	No public phones in Erub
Home phones	Several, number unknown
Mobile – 3G, 4G, 5G, small cell (satellite backhaul), provider, location of base station	3G, 4G available; backhaul via microwave links coming from top of Cape York via Thursday Island; main tower near school (tower height raised and upgraded about 2017)
Coverage description	Covers south-west side of island, but several villages have little or no reception due to hilly terrain. See Telstra coverage map: https://www.telstra.com.au/coverage-networks/our-coverage
ADSL, number of connections	Unknown
Business grade services – locations	None due to limited network capacity
Fibre to community	No, backhaul via microwave links from NPA
Satellite services, number, locations, provider	Sky Muster on 11 houses/agencies (estimate), three more coming
UHF or HF radio	HF radio set up on hill by Australian Border Force with Immigration (Dept Agriculture and Forestry); UHF use unknown
Status of services	Reports of regular 4G network dropouts and data dropouts/slow speed due to microwave links failing, weather impacts, power outages, and congestion; Reports of nbn Sky Muster dropouts in heavy cloud or rain
Communications programs history	TSIRC and TSRA have co-invested in 4G network and microwave backhaul upgrade to 6 communities across TSI (including Erub) since 2014–15, with another agreement signed in 2020–21. Erub had 4G tower extended in 2017.
Any planned upgrades?	Not known if further Telstra upgrades are planned. TSIRC have requested 4G tower on top of hill and four small cells or boosters to cover villages with poor or no 4G coverage

Emergency information system	Limited emergency communications. HF radio managed by Australian Border Force with Immigration; Satellite phones used by other agencies
Telemetry network	Unknown
Media services available	
Radio services broadcast	TSIMA 4MW 1260 AM (922 VAST); 4DI- 106.1FM; ABC Regional (Far North Queensland) 1062 AM
TV services	TV delivery via VAST direct-to-home; 20% of houses don't have VAST working - see survey
RIBS radio station	Local broadcaster (Walter Lui retired Feb 2023, now Nixon Mye) broadcasts from Erub RIBS
RIMO	TSIMA (based on Waiben / Thursday Island)
Other media services	Torres News published weekly by TSIMA (available in IBIS store)
Community access facilities	
Internet access facilities	Indigenous Knowledge Centre (IKC) provides two computers plus printer for community use
Public Wi-Fi availability and mode	nbn public Wi-Fi near TSIRC office (installed 28/5/22 under Communities in Isolation program); IKC Wi-Fi access by password for in-house use only
Access computers available in other facilities	One Centrelink computer for Centrelink / banking purposes only
Programs supporting community access	Erub IKC managed by TSIRC, supported by State Library of Queensland
Training / Skills Data	
Digital training participation / needs	No details; demand for more digital skills and cyber-safety training, including for seniors
Nature and provider of training programs	No details
Training options available	My Pathways offer some courses but not in digital skills
Any workplace digital skills training	Some agencies do online professional development by Zoom (School, health, Shire etc) but most training face to face; Artworkers do training in Stories Art Money (SAM) database
Staff / resources to support digital skills	IKC coordinator / Centrelink office
Use of online services / applications	
Apps or digital tools in use	Lala Gutchen using Living First Language Platform for language recording/documentation, supported by Australian Literacy and Numeracy Foundation; SAM database well used at Art centre; State Library of Queensland provides access to historical records; no other local archive systems in use
Telehealth usage	Being used at Erub Primary Health Care Centre, although limited by connectivity
Online education or training	Limited use, mostly staff training
Online court hearings or prison visits	No, all court hearings done in person
Cyber-safety or scam support	No cyber-safety training or resources available; ICAN can assist people who have been scammed

Appendix 3: Photos of research activities



Figures 24 & 25:
Resident Harry Pilot
Jr doing survey with
Nixon; Co-
researchers Lala
Gutchen and Nixon
Mye



Figures 26 & 27:
Retired broadcaster
Walter Lui, TSIMA
Senior Content
Creator Jenni Enosa
and former Erub Arts
manager Diann Lui
with Daniel; Jenni
interviews Lala and
Daniel at Erub RIBS
studio.



Figures 28 & 29:
TSIRC building with
nbn dish and Wi-Fi
Access Point on roof;
Digital artist and
drone operator Jimi K
Thaiday.



Figures 30 & 31: Joey
Saylor with Daniel;
Lala (centre)
farewelling the team
(Daniel, Jenni, Lyndon
and Jenny) at Erub
airstrip.

Appendix 4: Map of Erub (Darnley Island)

