Australian Open Services Index

aosi

Open Support Services Data in Australia: Landscape, Standards, and a Working Resource

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Abstract

Australians looking for help with food, housing, health, legal aid, work, mental health, family violence, disability or aged care rely on a patchwork of directories. The biggest directories are freely accessible as services, but the underlying data is proprietary: there is no open licence, no bulk download, and no specification that lets another system exchange records with them. Government open-data portals publish pieces of the picture under different schemas. Community-contributed data fills a little more. No openly licensed, consolidated dataset covers this ground end to end. This paper maps the landscape, looks at what comparable systems have built in Scotland, the UK and North America, and introduces the Australian Open Services Index (aosi): an open pipeline that pulls 24,497 services from 27 public sources into a single standardised dataset, with a public web explorer and a native iOS app. The paper is honest about what automated aggregation can and cannot reach. It sets out the standards aosi follows (FAIR, CARE, the Human Services Data Specification) and the explicit carve-outs required for safety-sensitive services.

1 The Support Services Data Landscape in Australia

This section describes the systems that hold Australian support services data today. It is descriptive, not evaluative. Each provider serves a real user base and a real purpose. The question is whether the sum of them produces openly licensed, interoperable data that researchers, civic technologists and the sector itself can build on.

1.1 Consumer and case-worker directories

Most Australian support services data sits inside a small number of national directories. These are run by not-for-profit providers under proprietary terms. Between them they hold several hundred thousand listings [19, 20]. They power the mobile apps and web tools that case workers and service users actually use day to day. One of the more widely-used apps was co-designed with people who have experienced homelessness [21]. The same directories feed bilateral APIs into federal and state governments and most of the peak bodies in the sector [19].

The data is kept current by in-house curation teams. Staff spend their days on the phone to providers, verifying records and entering updates [19, 20]. The result is good. The services themselves are freely usable by the public. The trade-offs are about what can be done with the underlying data, not about access to the service:

- **Data reuse is conditional.** Programmatic access to the underlying records sits under bilateral licence agreements or terms that prohibit reuse without written consent. Bulk download is generally not available.

- **Schemas are proprietary.** Each directory uses its own internal data model. No published specification exists, so another system cannot ingest or contribute records programmatically.
- **The data carries no open licence.** No Creative Commons or equivalent open licence is applied to the underlying dataset.
- **Redistribution is not permitted.** Partner organisations integrate through APIs or widgets at the provider's discretion. They cannot publish derivative datasets.

One data point from this history is worth recording precisely, because it is often mischaracterised. In October 2016 the operator of the dominant national directory launched an "Ask Izzy Open Data Platform" with A$500,000 of philanthropic funding [1]. It was not a publication of the service directory itself. It was a demand-mapping dashboard: aggregated Ask Izzy search queries overlaid against government open datasets, so that policymakers and funders could see where demand for particular types of support was concentrated and where provision looked thin. The underlying service-directory records were never released under an open licence, then or since. The dashboard was subsequently retired [1]; the notice on the original announcement now reads "If you are interested in accessing our search directory data, please get in touch." The structural reading is modest and useful: a philanthropically-funded open-analytics layer did not survive past its grant, and the capability it offered has moved back behind a bilateral relationship. That pattern, not any editorial failing, is what the rest of this paper discusses.

1.2 National Health Services Directory

The National Health Services Directory (NHSD) is run by healthdirect Australia and funded jointly by the Commonwealth and the states. It is the national source for GPs, hospitals, pharmacies, allied health and mental-health providers. It uses a FHIR R4 data model and is available under a licence agreement with healthdirect [2]. A spatial snapshot appears on data.gov.au, but is served through AURIN under its own terms of use. No part of the NHSD is openly licensed, and coverage is limited to health.

1.3 ACNC Charity Register and AIS Programs

The Australian Charities and Not-for-profits Commission publishes its Charity Register weekly as CSV and XLSX under CC-BY-AU 3.0 via data.gov.au [3]. It is the cleanest openly licensed dataset in this landscape.

A registered charity is not the same as an active service. The register has short-form descriptions, no structured contact or location fields, and a lot of umbrella-entity duplicates (a single trustee corporation registered many times, one per parish or program). As a source it behaves like *reference* data, not a service directory. I integrated it into aosi as a prototype in April 2026 and pulled it back out the same month. It grew the record count by an order of magnitude while cutting overall data quality.

The ACNC's *Annual Information Statement (AIS) Programs* dataset (2022 onwards) is a better fit. Each row describes a program a charity runs, with a description, beneficiary tags and operating locations. That is service-shaped data, and it remains a candidate for future integration.

1.4 Government open-data portals

Every federal and state open-data portal runs on CKAN, except the ACT, which uses Socrata. All default to CC-BY 4.0 under the AusGOAL framework:

All portals expose public CKAN APIs built for developers [4]. The data is legally open and legally redistributable. The problem is what gets published. Most of the support-services content is administrative: payment demographics, provider registers, service-area statistics. Actual

Portal	Jurisdiction	Default licence
data.gov.au	Federal	CC-BY-AU 3.0
data.nsw.gov.au	New South Wales	CC-BY 4.0
discover.data.vic.gov.au	Victoria	CC-BY 4.0
data.qld.gov.au	Queensland	CC-BY 4.0
data.sa.gov.au	South Australia	CC-BY 4.0
catalogue.data.wa.gov.au	Western Australia	CC-BY 4.0
data.act.gov.au	ACT	CC-BY 4.0
data.nt.gov.au	Northern Territory	CC-BY 4.0

Table 1: Australian government open-data portals

service directories are rare. Field names and category labels drift between jurisdictions. The same service can appear as "Emergency Relief" on one portal and "Community Support" on another. There is no combined national dataset, no common schema, and nothing that reconciles records across portals.

1.5 State and territory directories

Only one state-level services directory in Australia is openly licensed. It is a South Australian community directory, published under CC-BY-AU 3.0 and funded by the SA Department of the Premier and Cabinet through the public library network. It is operated on behalf of the SA Government by the same not-for-profit provider that runs the dominant national directory described in Section 1.1 [22]. Annual snapshots also appear on data.sa.gov.au. Every other state-level directory is either proprietary, white-labelled over a national provider's platform, or web-only with no open licence attached. Victoria consolidated its Human Services Directory into the NHSD [5]. The NSW Human Services Dataset is an administrative data asset held under a Cabinet-level committee. It is not open.

1.6 Sector-specific directories

Beyond these sit several dozen directories scoped to a single domain or jurisdiction. None publishes a CC-licensed bulk dataset or an open public API:

Directory	Scope	Focus	Open?
My Aged Care	National	Aged-care providers	No
NDIS Provider Register	National	Disability providers	No
Medicare Mental Health	National	Mental health	No
Workforce Australia	National	Employment providers	Partial (job posts)
Starting Blocks / ACECQA	National	Early childhood	Ambiguous (daily CSV)
Carer Gateway	National	Carer support	No
1800RESPECT	National	DV, sexual assault	No (counselling)
HealthPathways	National	Clinical referrals (31 PHNs)	No (subscription)

Directory	Scope	Focus	Open?
Service NSW	NSW	Government services	No
Queensland oneplace	QLD	Community organisations	No
WAConnect	WA	Community employers	No
FindHelpTAS	TAS	Community sector	No
ACT Community Directory	ACT	Community sector	No
NTcommunity	NT	Community sector	No

Table 2: Sector-specific and state/territory directories (non-exhaustive)

HealthPathways is worth calling out. It runs across 31 Primary Health Networks and is one of the largest clinical service directory systems in Australia. It is also entirely behind clinician logins.

1.7 Indigenous-specific directories and data sovereignty

Any open dataset that lists Aboriginal and Torres Strait Islander services sits inside the scope of Indigenous Data Sovereignty. NACCHO coordinates roughly 148 Aboriginal Community Controlled Health Organisations across eight state and territory affiliates. Membership runs through the affiliates. Reuse of listing data needs their engagement [6].

The controlling protocols are:

- **Maiam nayri Wingara** Aboriginal and Torres Strait Islander Data Sovereignty Principles, endorsed in Canberra in 2018 [7].
- **CARE Principles for Indigenous Data Governance** (Collective benefit, Authority to control, Responsibility, Ethics), developed by the Global Indigenous Data Alliance and adopted by the Australian Research Data Commons as the companion to FAIR [8].
- **AIATSIS Code of Ethics for Aboriginal and Torres Strait Islander Research** (2020).
- **NIAA Framework for Governance of Indigenous Data** (2024).

In practical terms, a blanket CC-BY licence over Indigenous service listings does not work. Indigenous Data Sovereignty requires free, prior and informed consent from each ACCHO or affiliate. The responsible default is opt-in inclusion, affiliate-level custodianship, and tiered licensing: open on locator fields, restricted or excluded on analytics joins. Culturally sensitive service types are omitted on purpose.

1.8 Family violence and safety-sensitive services

Family violence and related services need their own rules. Addresses of confidential refuges and crisis services cannot be openly published. Australian guidance from specialist peak bodies is unambiguous. In 2021 the Australian Information Commissioner ordered compensation and an independent audit after a Commonwealth agency disclosed a family-violence victim-survivor's new address to her former partner [9]. The Victorian Family Violence Information Sharing Scheme (Part 5A FVPA) is the statutory reason this category of data is shared through a specific scheme rather than as open data [10]. In any open services dataset, family-violence, sexual-assault and homelessness-crisis services need their addresses suppressed or coarsened by default, or excluded entirely.

1.9 OpenStreetMap

OpenStreetMap carries community-contributed data on social facilities, community centres, NGOs and charities under the Open Database Licence (ODbL) [11]. Coverage varies by region. It is updated continuously by a global volunteer community. For geospatial service points in Australia, it is the only fully open, machine-readable source available today.

2 International Context: What Works Elsewhere

Open services data is not a new idea. Several jurisdictions already run working open infrastructure for human services. These comparators matter because they show what is possible, and what conditions make it possible.

2.1 Human Services Data Specification (HSDS) and Open Referral

The Human Services Data Specification (HSDS) is an open, machine-readable standard for describing organisations, services, locations and contacts. It is stewarded by the Open Data Services Cooperative through a standing Technical Committee [12]. Version 3.0 (2023) made JSON primary and folded the API schema into the spec itself, making HSDS API-first. Version 3.1 added multi-URL fields, capacity fields and POST endpoints for sensitive queries. Version 3.2 was approved for release by the Technical Committee in September 2025.

HSDS has mature governance, an active implementer community, and a known crosswalk to Schema.org's `GovernmentService`, `Service`, `LocalBusiness` and `Place` types. For any Australian open services dataset, HSDS is the obvious interoperability spine. Adopting it means the data speaks the same language as Open Referral UK, US 211, Ontario Open211, California's UWW National 211 Data Platform, and any future national implementation.

2.2 Scotland: ALISS

A Local Information System for Scotland (ALISS) is a CC-BY 4.0 API-accessible directory of community supports. It is delivered by the Alliance Scotland under Scottish Government funding [13]. In late 2023 it listed about 5,444 services from 1,314 organisations, handled roughly 10,000 monthly searches on its main site, and saw significant reuse through NHS Inform. ALISS is the closest live analogue to what an open Australian services layer could look like at state scale. A public funder. An anchor user (the national health information service). A shared open standard. That is the shape.

2.3 United Kingdom: Open Referral UK and Family Hubs

Open Referral UK was endorsed by the Department for Levelling Up, Housing and Communities (now MHCLG) and the Local Government Association in 2019. The Cabinet Office Data Standards Authority endorsed it shortly after. In March 2024, MHCLG's Local Digital programme committed £600,000 over three years to drive adoption [14]. The Department for Education added funding to validate local Family Hubs feeds against the standard. Live councils now include Shropshire, Bournemouth Christchurch & Poole, Adur & Worthing, Leeds and Essex.

The UK case shows what is possible when three things line up. A central-government funder underwrites the shared infrastructure. The standard has policy-level endorsement. Local authorities sit under a statutory information duty, which gives the data a built-in anchor user.

2.4 United States and Canada: 211

The US 211 system comprises around 200 local centres, mostly funded by local United Ways, covering close to 99% of the US population. Inform USA (formerly AIRS) runs the five-year accreditation programme and the practitioner certification that underpins data quality [15]. Since 2016, United Way Worldwide's National 211 Data Platform has aggregated about 1.7 million programs and services from participating 211s. Ingested data is transformed to align with Open Referral HSDS. Local 211 directories are mostly proprietary. Openness sits at the network layer, not at the per-centre level.

Canadian 211 reached national coverage in October 2020, paid for through the Commonwealth of Canada's Emergency Community Support Fund. Ontario's Open211 API, launched earlier, was the first 2-1-1 implementation anywhere to publish an Open Referral API.

North Carolina's NCCARE360 is a statewide closed-loop referral platform, HSDS-aligned, integrating with Unite Us. It is a good example of HSDS acting as a common language between public-health infrastructure and the community sector.

2.5 The pattern

No jurisdiction has produced sustained open services data through legislation on its own. The cases that worked share three ingredients. A **funder**, public or philanthropic, that pays for the shared infrastructure. An **anchor user** whose own operations need routing or referral data: a national health information service, local authorities with statutory information duties, a payer-routing system. And a **shared open standard** that lets the data federate. Where one of these is missing, open-services projects stall.

3 Standards, Principles and Safeguards

Any open Australian services dataset operates inside a mature set of international standards, and inside specific Australian obligations around safety and sovereignty. Publishing such a dataset means naming those standards and obligations explicitly.

3.1 FAIR and CARE

The FAIR Guiding Principles (Findable, Accessible, Interoperable, Reusable), set out in Wilkinson et al. (2016) [16], are the international baseline for research and reference data. They are widely adopted across Australian research-data infrastructure (ARDC, Data61). Uptake in Australian human-services data specifically is thin.

For Indigenous data, FAIR's necessary companion is CARE (Collective benefit, Authority to control, Responsibility, Ethics), developed by the Global Indigenous Data Alliance [8]. FAIR without CARE is not enough for any dataset that includes Indigenous services.

3.2 HSDS as the canonical data model

HSDS is the practical internal model for services data. It describes organisations, services, locations, contacts, schedules, eligibility and service-at-location relationships. It maps cleanly onto both relational databases and JSON-LD. In 2026, a serious open services dataset should adopt HSDS 3.1 (moving to 3.2 on release) rather than invent another bespoke schema.

3.3 Schema.org as the publishing surface

Schema.org's `GovernmentService`, `Service`, `LocalBusiness`, `MedicalOrganization`, `CivicStructure`, `ServiceChannel`, `ContactPoint` and `Place` types give a JSON-LD surface that search engines and semantic-web consumers already understand [17]. Schema.org does not replace HSDS. It complements it. The practical split is HSDS as the internal model and Schema.org JSON-LD as the per-record publishing surface for semantic reuse.

3.4 Safety-sensitive carve-outs

The default licensing posture for an open services dataset has to carve out:

1. Indigenous-specific services, subject to affiliate-level custodianship and free, prior and informed consent (CARE Principles).
2. Family-violence, sexual-assault and homelessness-crisis services with confidential addresses, via suppression or coarsened geography.
3. Any service that explicitly requests delisting.

These carve-outs have to be written down, published and in force *before* coverage expands past the current dataset, which is primarily geospatial and government-published.

4 The Structural Gap

The shape of the gap is now clear. Australia has comprehensive directories whose services are freely usable but whose underlying data sits under proprietary terms. It has fragmented open data across eight government portals. It has openly licensed reference data (ACNC) that is not service-shaped. It does not have an open, consolidated, interoperable dataset of services that meets FAIR principles.

Mapped onto FAIR explicitly:

Principle	Proprietary directories	Government open portals	aosi
Findable	No DOI; access is by bilateral relationship.	Fragmented across eight portals; no unified index.	DOI-issued release; single download URL.
Accessible	Conditional API; written-consent terms.	Public CKAN APIs, but per-portal.	HTTP download; no auth; CSV, JSON, SQLite.
Interoperable	Proprietary schemas; no public specification.	Inconsistent schemas between jurisdictions.	Common schema (HSDS-aligned in progress); 17 normalised categories.
Reusable	No open licence; redistribution not permitted.	CC-BY by portal, but attribution and terms vary.	CC0 code, CC-BY data, provenance per record.

Table 3: FAIR assessment of Australian support-services data

The practical consequences of this gap are concrete:

- Organisations that want to build tools for vulnerable people have to negotiate access with a proprietary provider, or build their own data collection from scratch.

- Researchers studying access, coverage gaps or regional disparities cannot easily combine data across jurisdictions.
- Government agencies cannot benchmark their own coverage against a consolidated national picture.
- Community organisations cannot verify whether their services are discoverable in the systems people actually use.
- Case workers and peer supporters search across multiple disconnected platforms.
- The sector has no shared data standard to align procurement, grant reporting or impact measurement against.

Open data of this kind does not replace the existing proprietary directories. It lets a broader ecosystem exist alongside them, where anyone can build, analyse, cite and contribute without gatekeeping.

5 What Automation Can and Cannot Reach

aosi started as an engineering hypothesis. If the data is legally open, a well-designed pipeline should be able to consolidate it. That turned out to be only partly true. The partial result is the most important finding of the project so far.

5.1 The automation ceiling

Government open-data portals and OpenStreetMap together cover roughly 20 per cent of the Australian support-services landscape. This is the part you can reach with automation: public APIs, predictable schemas, machine-readable formats. aosi's current pipeline is close to exhausting that supply. Connecting the remaining 24 identified open sources would lift the number, but not the order of magnitude.

The other 80 per cent is community-level services, small NGOs, local food banks, informal support groups, sector-specific directories and state directories that only exist as websites. That data is not missing because the pipeline is immature. It is missing because nobody ever published it as open data. No amount of extra engineering retrieves data that was never released in a machine-readable form.

5.2 Why the ceiling exists

Useful services data is a human-maintenance problem. Services open and close. Phone numbers change. Hours shift. A new program starts in a church hall and never reaches a portal. Capturing that takes people making phone calls, reading local newsletters, visiting providers and verifying records by hand. Inform USA's accreditation standards, the international reference for information-and-referral data quality, require every resource record to be verified annually [15].

This is why the comprehensive national directories employ in-house curation teams. The moat is not technical. It is the cost of keeping a national directory current, year after year. So far, that cost has been carried by proprietary providers and paid for by bilateral licensing. The open equivalent has not been built anywhere in Australia yet.

5.3 Directory rot

An honest note on staleness. There is no peer-reviewed Australian figure for the rate at which service-directory records go stale. The 20–30 per cent annual decay number people sometimes cite comes from B2B contact databases (Landbase, ZoomInfo). It is suggestive, not authoritative, for human services [18]. Open Referral case studies and NCCARE360 reports describe verification cycles ranging from six months to annual. Machine-to-machine source feeds reduce

staleness by a lot compared with outreach-based verification. Producing an Australian evidence base on this question is itself a useful research contribution aosi can make, by instrumenting staleness metrics (record age, last-verified date, diff rate per snapshot) from day one.

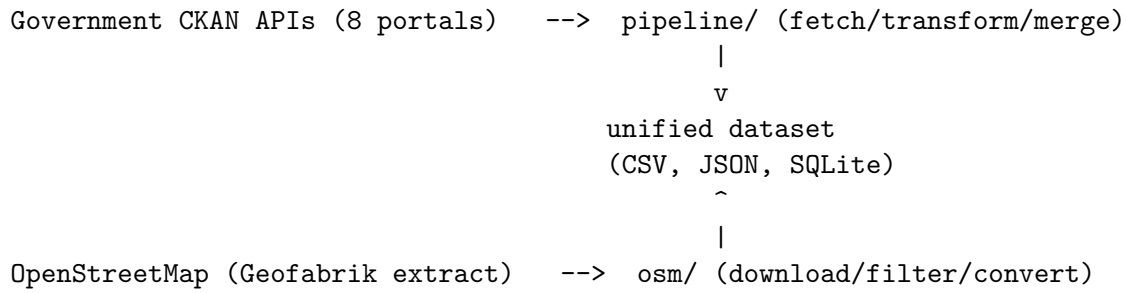
5.4 Implication

This changes how to think about the project. The pipeline is not the product. The *dataset* is the product. The pipeline is the cheapest way to get the first 20 per cent of that dataset, and it has done its job. Getting past 20 per cent is not an engineering problem. It is a curation and partnerships problem: cleaning data that arrives in unusable formats, negotiating open licences for data that already exists inside proprietary systems, verifying records against the live world, and building a contribution path for knowledge that currently lives only in the heads of case workers and volunteers. aosi is a data project that uses software where software helps.

6 aosi: The Current Resource

aosi (Australian Open Services Index) is an automated, open-source pipeline and public service explorer. It aggregates Australian government open data and OpenStreetMap into a single standardised dataset under an open licence, and makes it searchable through a web interface and a native iOS app. It is designed as an *open interoperability layer* for Australian human-services data: complementary to the existing directories, published under open licences, and aligned with international standards.

6.1 Architecture



The system is six repositories under the `oa-sa` GitHub organisation:

Repository	Purpose
`oa-sa/data`	Published dataset in CSV, JSON and SQLite formats
`oa-sa/pipeline`	Python ETL: fetch from CKAN APIs, transform to common schema, merge into output
`oa-sa/browse`	Web interface for searching and exploring the dataset (https://oa-sa.vercel.app)
`oa-sa/aosi-ios`	Native iOS app, available on the App Store (https://apps.apple.com/au/app/aosi/id6764553687)
`oa-sa/osm`	OpenStreetMap extraction via Geofabrik download and osmium filtering
`oa-sa/landscape`	Research documentation: portal APIs, dataset catalogue, licence matrix, data-quality analysis

Table 4: Repository structure (https://github.com/oa-sa)

6.2 Pipeline

The pipeline runs in three stages:

1. **Fetch.** Downloads CSVs from government CKAN APIs. Handles direct download, the CKAN Datastore API (for portals that block cloud IP ranges), and GeoJSON.
2. **Transform.** Normalises field names across sources. Maps 130+ source-specific category labels to 17 standard categories. Derives missing state values from postcodes. Scores record quality (complete, partial, minimal). Strips HTML from text fields.
3. **Merge.** Combines transformed records into per-state and combined files in CSV, JSON and SQLite. Source attribution is embedded in every record.

6.3 Dataset (April 2026)

Metric	Value
Total records	24,497
Data sources	27 (26 government + 1 OpenStreetMap)
Government portals connected	5 of 6
Schema fields	24 (16 service fields + 8 source metadata)
Service categories	17 standardised
Record completeness	84% complete, 16% partial, 0.3% minimal
Output formats	CSV, JSON, SQLite
Code licence	CC0 1.0 (public domain)
Data licence	CC-BY (per source)
DOI	10.5281/zenodo.19564281
Web interface	https://oa-sa.vercel.app
iOS app	https://apps.apple.com/au/app/aosi/id6764553687

Table 5: aosi dataset summary

6.4 Web explorer and iOS app

The dataset is browsable through a public web interface at https://oa-sa.vercel.app and a native iOS app available on the Apple App Store. Both are designed for case workers, researchers and members of the public looking for services near them.

The web explorer provides:

- Interactive satellite map with 24,000+ service markers, colour-coded by category.
- Pie-chart cluster icons showing the category mix within each cluster at a glance.
- SA3 statistical-area boundaries (340 regions from the ABS) and state boundary overlays for geographic context.
- Geolocation-based “Near me” sorting and radius-based “Near a place” filtering.
- “Search this area” map-viewport filtering, full-text search, and faceted filtering by state, suburb, category, readiness, source type and data quality.
- A detail panel with prominent call-to-action buttons (Call, Directions via Google Maps), copy-to-clipboard on phone numbers and addresses, Web Share API integration, and a “Report issue” link that pre-fills a GitHub issue.

- Deep-linking: all filter state, selected service and map viewport are encoded in the URL for sharing and bookmarking.
- Streaming data loading in batches of 1,000 records to keep the interface responsive during initial load.
- Accessibility: ARIA landmarks, keyboard navigation, skip links, focus management, and screen-reader-compatible structure, targeting WCAG 2.1 AA.

The iOS app replicates core search and map functionality as a native experience. It is built with Expo and React Native and is available at https://apps.apple.com/au/app/aosi/id6764553687.

Both interfaces include a disclaimer ("Data sourced from government registers and OpenStreetMap. This is an open-source research project. Always verify information before use.") and link to published Terms of Use and Privacy Policy pages.

6.5 Coverage by jurisdiction

Jurisdiction	Sources	Records	Status
Federal	3	6,952	Connected
South Australia	4	14,610	Connected
Victoria	8	456	Connected
Queensland	9	523	Connected
Tasmania	1	27	Connected
New South Wales	0	0	Covered via federal sources
Western Australia	0	0	Covered via federal sources
OpenStreetMap	1	1,929	Connected
Total	**27**	**24,497**	

Table 6: Data sources by jurisdiction

The South Australian concentration reflects a single fact. SA is the one jurisdiction where a state-funded community directory is openly licensed. Other states rely on federal and sector datasets visible through the current pipeline. Services for NSW, WA, ACT and NT residents appear largely through federal sources.

6.6 Source tracking

The landscape repository tracks 56 data sources across all states and territories:

Status	Count
Connected (data flowing through pipeline)	27
Blocked (format or authentication issues)	5
Identified, not yet integrated	24
Excluded (low signal; reference data only)	1
Total sources tracked	**56**

Table 7: Source tracking status

6.7 Commitments

aosi operates under a set of explicit commitments. They are recorded in the project repository and they govern how any record is ingested or published:

- **HSDS alignment.** The current 24-field schema will be retired and re-expressed as an HSDS 3.1 profile, moving to 3.2 on release. That makes aosi records natively exchangeable with international open-referral systems.
- **CARE compliance for Indigenous data.** Indigenous-specific services are included only by opt-in, with affiliate-level custodianship. A blanket CC-BY licence does not apply to this subset.
- **Safety carve-outs.** Family-violence, sexual-assault and homelessness-crisis services with confidential addresses are suppressed or coarsened by default.
- **Staleness instrumentation.** Every record carries a source-provenance field and an ingest timestamp. Record age, last-verified date and diff rate per snapshot are published alongside the dataset.
- **Delisting on request.** Any service can request removal. The process is documented and honoured.
- **Terms and privacy.** Published Terms of Use and Privacy Policy cover data disclaimers, no-warranty posture, no-tracking commitment (no cookies, no analytics), and location-data handling (browser-only, never transmitted to servers).

6.8 Infrastructure cost

The system runs on near-zero infrastructure. GitHub Actions runs the pipeline. GitHub hosts the data and the code. Vercel serves the web interface. The only recurring cost is the Apple Developer Program (A$149/year) for the iOS app. That matters, but not because the project has to stay free. It matters because the *publication* layer is cheap once the data is clean. The expensive part, as Section 5 argues, is not the infrastructure.

7 Pathways

Three broad pathways exist for developing the archive further. They are research findings, not a funding plan.

7.1 Near-term: additional open sources

- **Remaining government sources.** 24 identified datasets not yet connected, particularly state-level datasets from NSW, WA, ACT and NT.
- **Additional OpenStreetMap tags.** Libraries, clinics, pharmacies and other facility types not currently extracted. An estimated 5,000+ additional records.
- **Shapefile conversion.** Several government sources publish in Shapefile only. Conversion support would unlock those datasets.
- **ACNC AIS Programs.** Openly licensed, service-shaped data from 2022 onwards. A candidate integration, subject to quality filtering.

7.2 Medium-term: open licensing of existing proprietary data

The biggest single opportunity is not building new data collection. It is persuading existing directory operators to publish an openly licensed snapshot of their data alongside their operational platforms. International precedent (ALISS, Open Referral UK, NCCARE360) shows this is achievable when a public funder, an anchor user and a shared standard are in place. The equivalent Australian conversation is the obvious next research question.

7.3 Long-term: community contribution

Case workers, volunteers and community organisations hold knowledge of services that lives in no database: small food pantries, informal support groups, community-run programs. A verified contribution path could capture that knowledge. It needs infrastructure for submission, verification and moderation, and it cannot be deployed responsibly until the safety and sovereignty carve-outs above are in force.

8 Conclusion

The case for aosi is not that the existing directories are inadequate. They are not. The case is that Australia lacks an *open* layer in its services-data infrastructure. Something researchers can cite. Something civic technologists can build on. Something small organisations can integrate with without negotiating a licence first. Something the sector as a whole can align against.

The work so far shows three things. First, the open-data portion of this infrastructure is reachable today with modest engineering: 24,497 records from 27 sources, CC0 code and CC-BY data, published under a DOI, with a public web explorer and a native iOS app, at near-zero recurring cost. Second, the rest of the landscape is not an engineering problem. It is a curation and licensing problem, and it runs on the same human-maintenance economics that every successful services directory in the world runs on. Third, the international standards needed to do this responsibly (HSDS, FAIR, CARE) are mature and freely available, and the safety carve-outs needed to do it safely are well understood.

This paper is a baseline. The landscape is mapped. The gap is described. The working resource exists, with the commitments and safeguards it operates under written down. What happens next is a sector conversation, not one project's roadmap.

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