Proposal:

Creating the Wimmera Social Services Community of Practice (WSSCP):

An Initiative for Social Services Data Mapping and Sharing Stage 1: Establishment

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Background

The issues that define and challenge communities in rural Australia, in both positive and negative ways, are unique. While there has been a small bodyof work undertaken which focusses on the advantages of rural living, including the capacity for enhanced community and personal relationships, lower levels of stress and lower reliance on commercial food chains (Combs, 2006; Lederbogen et al., 2011), the vast majority of publications have focused on rural disadvantage, particularly as it relates to health, educational and employment opportunity and determinants of socio economic advantage. A notable body of research into measures of disadvantage in rural locales highlights that, in comparison to urban Australia, rural communities face significant disadvantage across a broad range of domains. These include, but are not limited to:

- Levels of alcohol misuse (Boden et al., 2012; Coomber et al., 2011; Miller et al., 2010; Petrie et al., 2009; Scholes-Balong et al., 2013; Temple et al., 2013).
- Intimate partner violence (Ragusa, 2013).
- Road and workplace trauma (Fragar, 2010).
- Poor health status against determinants of mortality and morbidity (Department of Health, 2014; National Rural Health Alliance, 2014; Richarts, 2011).
- Low levels of access to support by victims of violent crime (Murphy et al., 2011b).
- Rates of suicide (Cheung et al., 2012).
- Educational opportunity (Lamb et al., 2014; Whannell & Tobias, 2015).

These indicators of disadvantage, consistent across all rural locations, have been mapped specifically in the Wimmera through the research process (Murphy et al., 2011a; Victorian State Government, 2014; Wimmera Primary Care Partnership, 2013). This Wimmera specific research identified trends which mirror and, in some instances, reflect greater disadvantage, at a systemic level, than in other parts of rural Victoria.

Acknowledging the scope of rural disadvantage in general, and the issues facing the Wimmera in particular, effective response strategies become a priority.

Moving forward: The research context

The evidence on proactive approaches through which to address systemic disadvantage consistentlyconfirms the critical role of interagency collaborative practice as a means of facilitating the development and implementation of holistic and coordinated responses to complex social, community and health issues (Boxelaar, 2006; Lachini, 2015; Johns, 2010; Kreindler et al., 2009; Schultz, 2009). Despite strong evidence around the importance of collaboration for addressing systemic disadvantage in the social, health and community services arena, attainment of this goal has always been problematic. These difficulties can be directly linked to organisational, sector, professional and funding differences, and the tendency for the creation of domain specific silos, despite issues being linked, multifaceted and spanning a range of service areas.

Barriers to service system integration

The barriers created by organisational and inter organisational silos are not unique to rural Australia. Indeed it is a pervasive problem across locations and across industries (Gleeson & Rozo, 2013). It is driven, in the main, by service delivery demands, resource limitations and professional boundaries. Frontline practitioners often seek to work together, however a range of conflicting demands can impact on their ability to achieve effective integration and collaboration. In rural locations endemic organisational and inter organisational boundary issues become compounded by factors such as rural isolation, service accessibility and targeted funding models. Geographic isolation can limit the capacity of service providers and communities to network, to capture, to explore and to address unique locational and cultural factors shaping community practices. Isolation and community resistance to seeking help (NRHA, 2014) also impact on the sharing of critical information and knowledge. Within the context of this evidence, the role of information technology as a facilitator for building connection needs to be considered.

Information technology and breaking down silos

The potential for information technology to be used to overcome issues of location and culture, and to support and facilitate inter agency collaboration, has been recognised (Glaser, 2011; Schultz, 2009). The use of digital

innovation, with capacity for interactivity, crowdsourcing and mapping provides a means through which to overcome barriers to community engagement and knowledge sharing. It is also a mechanism for integrated and inclusive involvement in planning while increasing opportunities to build organisational and community capacity (Busch, 2011; Cegarra-Navarro et al., 2014; Deters et al., 2014; Elmore et al., 2010; Garcia et al., 2014; Hesse et al., 2011; Lloyd-Smith, 2009; Ramirez, 2007; Simpson et al., 2003; Thompson et al., 2014; WHO, 2011).

It is acknowledged that the level of uptake of technology in rural locations can be problematic for a range of reasons. Internet access (or lack thereof) and internet capabilities can create access barriers in many rural communities, including communities throughout the Wimmera. These problems manifest as patchy connectivity, 'not spots', lower speeds and poor quality broadband (Rao Hill et al., 2011; Roberts et al., 2015).

Accepting these infrastructure barriers and the fact that internet access is often identified as an ongoing issue in rural communities (Al Musawi, 2014; 2004; Roberts et al., 2015) research in this area has shown that, while real, these are not the principal barriers to the uptake of technology as a mechanism for capacitybuilding. In reality it is a multi-layered issue comprising infrastructure (or lack thereof), the types of information technology services available, the content and the skills as well as the world view of end users around the role and potential of information technology as a mechanism to enhance service system capacity and responsiveness (Newman et al. 2012; Park et al, 2015; Radoll, 2010).

Adoption of an intersectoral approach for addressing systemic issues through the mechanism of information technologymust therefore address a number of challenges, particularly as they relate to overcoming rural cultural resistance, behaviours and perceptions around information access and information sharing (Bannister, 2001; Burke-Bebee et al., 2012; Chedid et al., 2013). In the social services arena¹ concerns around information access and privacy have historically created barriers to advances in the use of information technology for intersectoral collaboration and systemic responses to issues. It is important to note that, both nationally (Department of Premier and Cabinet, 2016) and internationally (Haberer et al., 2013; Sutton, 2013; WHO, 2011), the use of privacy as a key rationale for avoiding the use of technology has been identified as limiting service system growth and potential. It has been assessed as minimising the opportunity for community capacity building and empowerment. It has also been identified as a barrier to effective preventive work and holistic service system interventions. Privacy issues are not minimised or discounted – rather they can be addressed through a range of techniques and tools.

This understanding of the importance of information technology as a medium through which to enhance service system outcomes and to support information sharing for knowledge building establishes the first guiding principle of this proposal. This is:

Principle 1: That the role of information technology as a mechanism for overcoming systemic barriers and enhancing capacity for holistic responses to complex issues is acknowledged as a foundational principle for inter-agency service system planning and development.

This approach aligns closely to evidence that inter-organisational connection, the building and maintenance of a trust relationship and user friendly information technology are the main drivers of knowledge sharing (Dobson et al., 2013; Makhubele et al., 2012). The challenge in breaking down the silos is in ensuring that information sharing becomes the conduit for building knowledge that is applicable and relevant across a range of domains (Miron et al., 2011) – this is a key driver and a key challenge in the current project proposal.

Information technology and the social services arena

The use of information technology in building capacity in the social services arena is an emerging field, While a significant amount of work has been undertaken within many of the sectors that are included within the 'social

¹ For descriptive ease the term 'social services' has been used as an overarching term to describe a range of sectors. They include: Health (primary and acute), housing, education, mental health, homelessness, child, youth and family services, disability, the drug and alcohol sector, local government, services for Indigenous Australians, justice and aged care. It is acknowledged that the term is not discipline specific and has been used to simplify the writing process. It can be altered in the next draft of the proposal, dependent on feedback received.

services' cluster, much of this has been focused on frontline service delivery. Technology has been used to improve service accessibility by creating tools such as client information systems, online diagnostics and a web presence. Global Navigation Satellite Systems (GNSS), Global Positioning Systems (GPS) and Geographic Information Systems (GIS) have been used to better map services systems and to increase understanding of service scope and availability.

This type of technological service consolidation and enhancement has occurred consistently across a broad range of service domains such as primary and secondary health services (Baum et al., 2010; Chaudhry et al., 2006; Chedid et al., 2013; Graetz et al., 2014; McGuire et al., 2011), legal services (Farrell & Phillips, 2015), local government (Pettit et al., 2012; San-Antonio-Gomezet al., 2014), homelessness services (Chan et al., 2014) drug and alcohol services (Choo et al., 2012), mental health (Lyon et al., 2016) and school and tertiary education (George et al., 2012; Whannel & Tobias, 2015).

Analysis of impact has shown that these advances have significantly enhanced the capacity for more universal service access, have facilitated greater information access and knowledge sharing and have allowed for extended levels of control by service users in the service delivery process. They have however, in the main, mirrored the existing practice context. Just as service delivery occurs specific to a field of practice (e.g. medicine, education, drug and alcohol services), so too have initiatives to enhance service delivery through information technology remained, in the main, uni-sectoral. They have focused on streamlining records management, providing online service delivery and increasing access to discipline specific data and/or research evidence. They have also played a role in facilitating communication processes between service users and those with responsibility for service delivery.

These enhanced capabilities through the availability of information technology are extremely beneficial to improved service outcomes and align closely with current government policy direction relating to improved access and opportunity through the medium of information technology (Department of Premier and Cabinet, 2016). However systemic change and the capacity to answer complex social and community questions, as well as the capacity owork in a preventative way, is dependent on using information technology in a much more integrated, inclusive and sophisticated way.

There is an emerging body of work which has identified the importance of cross organisational alliances using information technology for improved service delivery. This has occurred in the disciplines of law (Hart, 2011), education (Bice-Urbach & Kratachwill, 2016), social work (Bryant et al., 2015) and health (Frimpong et al., 2013). This work however continues to be very sector and discipline specific when available evidence has highlighted the need for the use of service system wide, interagency approaches, particularly within the rural context (Bourke et al., 2012).

Notably, the movement away from sector specific responses and toward more holistic approaches through the mechanism of information technology has been increasingly championed globally. There has been a clear recognition that issues in the social services arena are rarely linked to only one area and that, in order to answer complex social questions there is a requirement to take a multidimensional approach where a variety of areas are able to work together to address commonalities. This enables better recognition of how one issue in a social arena impacts on a range of other issues in the lives of individuals and communities.

The work of Pan and Leidner (2003) provided an initial basis for the identification of the importance of diverse communities working together, using information technologyto identify commonalities in service needs and build a knowledge infrastructure that is beneficial across diverse (but linked) service delivery areas. This has extended over a decade, with, most recently, the importance of building links between and across groups using information technology being promoted by the World Economic Forum (2012).

In Australia, the cross referencing of data sets as the basis for analysis of trends and identification of systemic issues has occurred with a range of strategic and service planning groups such as Primary Care Partnerships (including the one based in the Wimmera region of Victoria). These groups have identified the importance of data access, analysis and consolidation for planning and informed development in the social services arena. Information technologyprovides a means through which to streamline this approach and maximise accessibility and usability by service planners (Joshie et al., 2013; Mahmud et al., 2013).

Barriers remain because much of this data is held across diverse locations and within different data sets. The capacityto access diverse, and current data from across a range of sources is an area requiring development for the social services. While groups such as the Australian Urban Research and Infrastructure Network (AURIN) have achieved advances in the use of technologyto increase access to a range of data sets, this work has been focused on the enhancement of *urban* planning and development processes, and has not had a specific focus on the social services arena or been specific to rural environments and rural information issues and needs.

Recognising the importance of information technology and the importance of adoption of solutions appropriate to the unique characteristics of rural locations (socio-economic disadvantage, isolation and service access disadvantage), this proposal seeks to address this service system shortfall. The proposal focuses on the use of technology to overcome interagency and geographical barriers and to maximise the potential to respond proactively and preventively to systemic issues manifest within the Wimmera region.

This focus is captured in the second guiding principle for this proposal.

Principle 2: That a service planning and development resource for social services in the Wimmera region be characterised by federation of data that is current, comprehensive, relevant to the regional context and driven by inter agency cooperation.

In order for this proposal to be implemented successfully, partnership plays a critical role. There will be the requirement for partnership both in the planning and the development of the resource, in the provision of data for inclusion in the resource, and a partnership approach to resource implementation, sustainability, monitoring and development.

An effective framework for the building of this type of communal resource to address systemic issues across multiple and diverse sectors and organisations is that of a Community of Practice. Communities of Practice have been classified as a mechanism for collective learning in a shared domain. They have three defining features:

- 1. A shared domain of interest.
- 2. A community which engages in joint activities and discussions and shares information to address a recognised issue / area of interest.
- 3. A shared practice arena professionals with a shared repertoire of resources, tools and ways of addressing concerns, problems and/or issues.

Wenger-Trayner(2015)

These features characterise the current project and provide a foundation for its development into the future. They also provide the third guiding principle for the project.

Principle 3: That a Community of Practice be established as a central resource in order to ensure that information sharing and knowledge building is maximised. The establishment of this Community of Practice will also ensure that resources developed are as representative and as responsive as possible within the context of a complex and multifaceted service system arena.

As a result of identified need, and an understanding of the characteristics identified in research literature as pivotal for successful development of a communal resource, this project is established as the *Wimmera Social Services Community of Practice (WSSCP)*. This will be a strong interagency partnership to proactively address, through information and resource sharing and joint activities, the issues currently being managed within the Wimmera social services arena.

Wimmera Social Services Community of Practice (WSSCP)

The WSSCP is defined by the following characteristics:

• A group of agencies working together to share information, build knowledge and develop response strategies to systemic issues.

- A customised, single point of access, end user portal for information sharing and information access that will allow for: 1) data sharing and enhanced information exchange; 2) the building of an evidence base of both primarylocal data and research informed repositories of evidence for best practice; and, 3) the use of spatial technology for mapping and trend identification.
- A program of research to measure: 1) the impact of the portal on decision making and practice; and, 2) data discoveries issues and characteristics of the social services arena that have previously been hidden but which the portal makes visible as research ready data sets.

The project seeks to present a new model, using information technologyto access a range of data sets (existing digital data, hard copy information, reports, new data) from across discipline areas to maximise the potential for preventative and responsive work in the social service system in the Wimmera region of rural Victoria.

The geographical areas to be included within the scope of this project include, but are not limited to:

Horsham Rural City Ararat Rural City Buloke Shire Northern Grampians Shire Yarriambiack Shire West Wimmera Shire Hindmarsh Shire

This work will be undertaken as a partnership with a range of agencies and with the Centre for eResearch and Digital Innovation (CeRDI) at Federation University Australia (FedUni).

WSSCP partner agencies

The Wimmera based agencies that have indicated their commitment to involvement in the WSCP project are:

- Barengi Gadjin Land Council
- Department of Health and Human Services
- Department of Justice and Regulation Horsham (to be confirmed)
- FedUni Wimmera campus

- Grampians Community Health
- Horsham Rural City Council
- Victoria Police Horsham Western District Division Four
- Wimmera Drug Action Taskforce
- Wimmera Primary Care Partnership
- Wimmera Southern Mallee LLEN
- Wimmera Uniting Care

Additionally a Ballarat based participant to the project with strong links with the Wimmera region is the Centre for eResearch and Digital Innovation at FedUni.

Centre for eResearch and Digital Innovation (CeRDI)

CeRDI is located within the Office of the Deputy Vice Chancellor (Research and Innovation) at FedUni. CeRDI has successfullyestablished a broad range of research initiatives defined by notions of knowledge management and data sharing, customised technologies and collaboration and partnership building.

This work occurs across a range of disciplines including, but not limited to: business, environmental science, geology, geographic information science, history, information technology, law, psychology and sociology. The discipline and project expertise at CeRDI has enabled the delivery of technological innovations that achieve:

- Real world application
- Build evidence bases for enhanced practice
- Multidisciplinary approaches
- Accessibility for, and empowerment, of communities
- A mechanism for research capacity building

- Sector development
- A community and/or industry presence
- Research using mixed methodologies
- A mechanism for community capacity building
- Open standards and open data

CeRDI has developed a range of technological innovations that allow for multiple data sets to be brought together in ways that support evidence-based planning, advocacy and community engagement. This is achieved through approaches which involve:

- Federation of data via customised end-user portals which provide a single point of access to information which would otherwise be difficult and time consuming to access.
- Data interoperability which means that any changes, updates, modification to data in the originating data set will automatically be reflected in the end user portal.
- Capacity for data custodians to make their data openly available for discovery and reuse, with the ability to establish different levels of access for different types of end users.
- Tools to support portal stakeholders and citizens in sharing what they know, providing knowledge or feedback about local issues and concerns, identifying data gaps and making this new information available.
- Web based spatial information systems which inform 'big picture' understanding and enhance decision making, create efficiencies in communications, increase the quality of information and support policy formulation and evaluation.

The Guiding Principles

The project is underpinned by three guiding principles:

- Principle 1: That the role of information technology as a mechanism for overcoming systemic barriers and enhancing capacity for holistic responses to complex issues is acknowledged as a foundational principle for inter-agency service system planning and development.
- Principle 2: That a service planning and development resource for social services in the Wimmera region be characterised by federation of data that is current, relevant to the regional context and driven by inter agency cooperation.
- Principle 3: That a Community of Practice be established as a central resource to the project in order to ensure that information sharing and knowledge building is maximised. The establishment of this Community of Practice will also ensure that resources developed are as representative and as responsive as possible within the context of a complex and multifaceted service system arena.

The Vision

The long term vision for the WSCP project partners is to work together to establish a portal which contains information that can be accessed and shared across social services agencies within the Wimmera. Data ownership will be retained by custodians through data access agreements. This enhances the potential for involvement without compromising rights and responsibilities and control of data. Interoperabilitytechnologywill maximise data accuracy, currency, quality and protect data integrity. It is overtly acknowledged that there are challenges to a project such as this. These include issues of privacy, scalability and cost. They are acknowledged and discussed in the following sections of this proposal.

The content and focus of the portal will be incremental, with changes and additions made over the life of the project. We recommend a staged approach to a long-term research project that will include, but will not be limited to, the following elements:

- A digital library
- A primary evidence base². This can be accessed in a range of ways including:

² Primary evidence refers to service delivery and service support data specific to a field of practice that has been captured by data custodians and is available in a range of formats.

- Spatially. This will include the nature and scope of the service system, movement between services and key features/point of relevance to services and service delivery. It will also allow for a building, support and understanding of networks and their role across the region.
- Written summaries. These will be available as standalone resources and as embedded links with spatial elements of the portal.
- Historical and contemporary PDFs. These are currentlyheld with agencies and will be brought to life through linking PDF data with compatible resources such as other data sets, historical documentation, government reports These links will be identified through the consultative process inherent to a Community of Practice.

T his element will facilitate data sharing for cross disciplinary social service professionals across a large geographic area.

- A secondary evidence base³. This will be built through analysis of available research on world's best practice on a range of issues, the identification of trends and priority issues. It will be captured and made available through the mechanism of knowledge repositories/knowledge bases which will have, as a defining feature, the provision of evidence around proven practice approaches.
- A research program. This will comprise the following elements:
 - Data discovery. CeRDI has domain expertise in the field of social, community services and health. A Senior Research Fellow will be allocated to work in analysis of the primary evidence base drawn from the content of the portal to map data discoveries, identify new learnings and uncover hidden knowledge that will become overt once previously siloed information and knowledge is able to be mapped, overlaid and analysed. Additionally, into the longer term, funding will be sought for a PhD to work with the WSCP in a research and development capacity.
 - Impact. CeRDI researchers will track implementation and uptake to measure how the initiative has supported decision making and enhanced practice change. The importance of using information technology in the social services sector for capacity building in the sector has been acknowledged however it is making the benefits of this approach within the social sciences overt and building an understanding of the benefits of this approach that shifts in behaviour and attitudes are likely to occur (Hackler & Saxton, 2007; Zhang & Gutierrez, 2007). The need for research to evaluate the role of information technology in improving decision making has consistently been identified in the literature (Lubick Goldswieg et al., 2009; Ortiz & Clancy 2003), with the extent to which this approach represents a paradigm shift dependent on the ability to measure the impact of information technology in complex service delivery areas (Chan & Holosko, 2016). Given these indicators, impact research is embedded in the planning and the delivery of the portal into the longer term. This will ensure that these factors are able to be tracked and results disseminated.
- A crowdsourcing initiative. The portal will, over time, explore the crowdsourcing potential (what is happening in terms of local communities, role of community in preventative work etc). Consultation across LGAs is an established mechanism to identify issues and cultural norms across locations. It will allow tracking of local innovations in social services and allow individuals and communities to become part of the knowledge building process. The web portal is able to become an engagement and empowerment tool with crowdsourcing capabilities used to ensure ongoing participation in planning and knowledge building. End users will input information and access will be facilitated through compatibility of the portal with mobile technology. Issues of privacy and the placing of controlled access to certain data sets, given the nature of the work in the social services sector, will be determined through consultation with members of the Wimmera Community Practice. Access and privacy legislation.

³ Secondary evidence refers to the collection of a range of research findings on particularly issues that, as a whole, when systematically reviewed, provide a high quality evidence base around what is known and proven on a particular issue and/or approach

• A repository to support the mapping, understanding and connection with Aboriginal Torres Strait Islanders to maximise cultural representation and understanding.

A key goal of the portal is to provide practitioners, researchers, the sector, government and the communitysocial services place based and region wide information on demand, and to maximise the capacityfor evidence based decision making, planning and service system development into the future. The portal will also provide a central mechanism through which unique rural and regional area issues are mapped, presented and overtly understood beyond the communities in which they occur.

Scalability

In order to gain an understanding of the potential scale of the project into the longer term, a scoping process for portal content was undertaken. This identified that the WSCP has a vision, into the longer term, for the inclusion of the following areas to ensure that the capacity for knowledge building for the social service system is maximised.

Data to be federated within the portal into the longer term will be drawn from the following data sets (including existing hard copy documentation targeted for digitisation):

Demographic characteristics

- Population by location, projected population changes, internal migration, births, deaths, age structure.
- Crime statistics with an emphasis on:
 - o family violence prevention and community safety
 - building capacity for predictive operational planning through use of data discovery techniques, crowdsourcing and holistic data inclusion for trends identification.
- Housing: Social housing and what influences people to need housing, housing stock
- Cultural diversity: this should include an identification of demographics on culturally and linguistically diverse groups, indigenous populations and rural clusters however the focus is on the building of knowledge on cultural characteristics and the building of cultural competency. Helping Indigenous people and rural populations to tell their stories.

Families, children and young people

- Family Breakdown
- Service access rates mapping the access to, and take up of, family violence services, child protection and out of home care

Health conditions and behaviours

- Chronic disease smoking, nutrition, physical activity, diabetes, cancer, cardiovascular disease, asthma, obesity.
- Deaths, Ambulatory Care Sensitive Conditions.
- Access to health services across the age spectrum

Social determinants of health

- Social and economic indicators (relative disadvantage, population decline – including detailed population statistics and population distribution
 - Food insecurity and access
 - o Financial stress
 - o Welfare recipients
 - o Aged pensioners and carers
 - o Disability
 - o Dental health
 - o Income personal and household
 - Employment across the age spectrum, labour force participation
 - o Occupation and industry of employment
 - Education Literacyrates, preschool, school completion and universityentry rates. This could be mapped in a variety of ways. For example comparing GIS postcode representation of FedUni student destination survey results with regional, state and national actual workforce demand

Mental Health and Wellbeing

• Mental health rates

- Suicide rates
- Substance use, alcohol consumption,
- Alcohol and drug use in the area (type of drugs, demographics, location and drivers). As drivers for use can often be related back to other health and social

factors such as employment, education and housing the inclusion of the full scope of data on a single portal is critical.

 Impacts of drug use (family violence, crime, emergencydepartment admissions, ambulance attendances).

An enhanced ability to use multi sectoral information to build a holistic response to, and understanding of, linked issues (social, environmental, educational, health etc.) was viewed as a needed development for the region. The ability to capture all of this data through a single point of access (using data federation) from which to build a knowledge base and support informed decision making and enhanced practice capacity has been embraced by the WSCP, as was data currency (interoperability) to accurately map and better understand the unique aspects of the Wimmera area.

Figure 1 captured diagrammatically the vision for the WSSCP portal into the longer term.

Figure 1: the WSSCP Portal – A vision



It was acknowledged that it will not be possible, in the initial stages, to build a portal that meet all needs and captures the full dimension, as captured within the vision, particularlygiven funding constraints. While the intended resource is likely to meet multiple needs overtime, it has been determined, through a consultation process with members of the WSCP, to build an initial resource and then grow this as funding becomes available. Outside of funding issues and constraints, as the portal develops and grows, and there is a process of information sharing, new and sometimes unanticipated directions can emerge. The growth and future development of technological innovation is often an organic process with the initial portal providing a conduit to highlight and/or uncover new data sets, knowledge management needs and collaboration opportunities.

An initial project

It has been determined that, in the initial stages, a portal will be developed which focuses on education, health and the local economy. Initial data inclusion will encompass, but will not be limited to, the following:

Education

- Collated NAPLAN results, school by school and also region wide (literacy and numeracy levels).
- School enrolments, Year 12 attainment (total school population), apparent and real retention rates.
- Number of students from culturally and linguistically diverse backgrounds and Indigenous populations, their attainment and attendance rates.
- School level of disadvantage.
- Data from My School website.

Health

• Key indicators drawn from social determinants of health – final scope of this collection to be determined by the WSCP members. Housing as a social determinant is included in this initial cluster.

Economy

- Gross regional product
- Employment growth sectors
- Unemployment rates including youth unemployment rates
- Population decline/distribution

Data relating to these areas will be drawn from a range of sources, including government data sets, local and regional data pools, hard copy documentation and local government data. Issues of access (open versus licenced access) for both content inclusion and end user accessibility will be explored and determined during initial project development.

The emerging questions from the collection and analysis of this type of data provides the potential to explore factors such as:

What is the correlation between health outcomes, local economic conditions and educational outcomes?

To what extent, and in what ways, has negative growth in the region in the last decade impacted on outcomes in the health and education sectors?

What can be identified to be opportunities emerging from employment growth sectors?

What are the areas of greatest need and of greatest opportunity across the Wimmera Region in relation to health, education and economic development?

These are areas and research questions that will be finalised during project implementation.

Figure 2 (overleaf) provides a visual representation of the scope of the initial WSCP project.

Figure 2: the WSSCP Portal – An initial project



Cost and funding capacity:

Funding discussions during initial stages of the WSCP project have determined that, for portal development capacity to be optimised, a budget of \$150,000 or more is needed. This does not mean however that this amount would be needed before any work could occur. Small initial contributions from member agencies, including inkind contributions will support work on the establishment activities. This will provide the foundation for the WSCP making application for funding from a range of potential areas, including the Public Sector Innovation Fund.

The types of contributions available for establishment of the initial project are:

- 1. In kind: information, practical case studies, access to practitioners, project direction support and collaboration
- 2. \$5,000 plus in kind support through contribution of agencydata sets (after negotiation and clarification of a range of issues)
- 3. \$5,000 plus in kind through portal planning and development. Gaining information from schools and Department of Education and Training Victoria
- 4. In-kind through provision of regular meeting rooms with basic refreshments, lobbying and collaboration on construction of elements
- 5. In-kind contribution through access to government data on service use multiple service use across family violence, housing, disability, youth justice and child protection

6. In-kind contribution of technical expertise, research and domain expertise

A number of agencies have also indicated a capacity to review contributions at the end of the financial year and all agencies have indicated a willingness to provide partnership support for funding application processes, such as the Public Sector Innovation Fund.

Timelines:

The initial project will be in place by December 2016. Processes to meet this timeline will involve:

August 2016 September 2016 October – December 2016 WSSCP meeting to finalise model Role allocation and collection of data sets Establishment of initial web portal, phase one of impact research

Timelines for ongoing project development are dependent on funding processes.

References

Al Musawi, H. (2014). Information provision and retrieval in the farming industry in Western Australia. *Digital Dissertation, Edith Cowan University.*

AURIN (2016). "Australian Urban Research Infrastructure Network." The University of Melbourne, Parkville. Retrieved June 2016 at: https://aurin.org.au/.

Bannister, F. (2001). Dismantling the silos; extracting new value from IT investments in public administration, *Info Systems J*, 11, pp. 65 – 84.

Bice-Urbach, B. & Kratochwill, T.R. (2016). Teleconsultation: The use of technologyto improve evidence-based practices in rural communities, *Journal of School Psychology*, 56, pp. 27 – 43.

Boden, J.M., Fergusson, D.M. & Horwood, L.J. (2012). Alcohol misuse and violent behaviour: Findings from a 30 year longitudinal study, *Drug and Alcohol Dependence*, 122, pp. 135 – 141.

Bourke, L., Humphreys, J.S., Wakerman, J. & Taylor, J. (2012). Understanding rural and remote health: A framework for analysis, Health and Place, 18, pp. 496 – 503.

Boxelaar, L., Paine, M., Beilin, R. (2006). Community engagement and public administration: Of silos, overlays and technologies of government, Australian Journal of Public Administration, 65(1), pp.113-126

Bryant, L., Garnham, B., Tedmanson, D. & Diamandi, S. (2015). Tele-social work and mental health in rural and remote communities in Australia, International Social Work, pp. 1 – 13. Burke-Bebee, S., Wilson, M. & Buckley, K.M. (2012). Building Health Information TechnologyCapacity: They may come but will they use it? *CIN: Computers, Informatics, Nursing*, 30(10), pp. 547 – 553.

Busch, T. (2011). Capabilities in, capabilities out: overcoming digital divides by promoting corporate citizenship and fair ICT, *Ethics and Information Technology*, 13 (4), pp 339-353.

Cegarra-Navarro., J-G., Author VitaeGarcia-Perez Author Vitae, A.& Moreno-Cegarra, J-L. (2014). Technology knowledge and governance: Empowering citizen engagement and participation, *Government Information Quarterly*, 31 (4), pp.660–668

Chan, C. & Holosko, M.J. (2016). A review of information and communication technologyenhanced social work interventions, *Research on Social Work Practice*, 26 (1, pp. 88 – 100.

Chan, D.V. Gopal, S. & Helfrich, C. (2014). Accessibility patterns and community integration among previously homeless adults: A Geographic Information Systems (GIS) approach, *Social Science & Medicine*, 120, pp.142-152.

Chaudhry, B., Wang, J., Wu, S., Maglione, M., Mojica, W., Roth, E., Morton, S. & Shekelle, P. (2006). Systematic Review: Impact of Health Information Technologyon Quality, Efficiency, and Costs of Medical Care. *Ann Intern Med*, vol. 144, pp. 742-752.

Chedid, R.J., Dew, A. & Veitch, C. (2013). Barriers to the use of information and communication technologyby occupational therapists working in a rural area of New South Wales, Australia, *Australian Occupational Therapy*, 60, pp. 197 – 205.

Cheung, Y.T.D., Spittal, M.J., Pjrkis, J. & Yip, P. S.F. (2012). Spatial analysis of suicide mortalityin Australia: Investigation of metropolitan-rural-remote differentials of suicide risk across states/territories, *Social Science and Medicine*, 75 (8), pp. 1460 – 1468. Choo, E.K., Ranney, M.L., Wong, Z. & Mello, M.J. (2012). Attitudes toward technology-based health information among adult emergency department patients with drug or alcohol misuse, *Journal of Substance Abuse Treatment*, 43(4), pp.397-401.

Combs, C. (2006). Rural choice advantageous, *Therapy Today*, 17 (1), p. 12.

Coomber, K., Toumbourou, J.W., Miller, P., Staiger, P.K., Hemphill, S.A. & Catalano, R.F. (2011), Rural adolescent alcohol, tobacco and illicit drug use: A comparison of students in Victoria, Australia, and Washington State, United States, *The Journal of Rural Health*, 27, pp. 409 – 415.

Department of Health, (2014). Victorian Population Health Survey 2011-12 Survey findings Revised December 2014, Retrieved May 2016 at file:///C:/Users/aamurphy/Downloads/Victorian%20Population%20Health%20Survey%202011-12%201%20-%20PDF%20(2).pdf

Department of Premier and Cabinet. (2016). *Information Technology Strategy – Victorian Government*, State of Victoria. Retrieved May 2016 at http://www.enterprisesolutions.vic.gov.au/wp-content/uploads/2016/05/Information-Technology-Strategy-for-the-Victorian-Government-2016-to-2020.pdf

Detres, M., Lucio, R. & Vitucci, J. (2014). GIS as a Community Engagement Tool: Developing a Plan to Reduce Infant Mortality Risk Factors, *Maternal & Child Health Journal*, Vol. 198, pp. 1049 – 1055.

Dobson, P., Jackson, P. & Gengatharen, D. (2013). Explaining Broadband adoption in rural Australia: Modes of reflexivity and the morphogenetic approach, *MIS Quarterly*, 37 (3), pp. 965 – 991.

Elmore, K., Flanagan, B., Jones, N.F. & Heitgerd, J.L. (2010). Leveraging Geospatial Data, Technology, and Methods for Improving the Health of Communities: Priorities and Strategies from an Expert Panel Convened by the CDC, Journal of CommunityHealth, 35, pp.165–171.

Farrell, J, & Phillips, E. (2015). Queensland CommunityLegal Centres' Use of Information Technologyto Deliver Access to Justice, Legal Information Management, 15(2), pp.131-136.

Fragar, L. J., Eather, J., Depczynski, J. & Lower, T. Alcohol and farm workplace - Final Research Report. ACAHS, Moree 2010.

Frimpong, J.A., Jackson, B.E., LaShonda, M.S., Singh, K.P. & Rivers, P.A. (2013). Health information technology capacity at federally qualified health centers: a mechanism for improving quality of care. *BMC Health Services research*, 13 (35), pp. 2-12.

Garcia, M.M. Messner, K. Urban, R. J. Tripodis, S. Hancock, M. E. Colegrove, T. (2014). 3D Technologies: New tools for information scientists to engage, educate and empower communities, Proceedings of the American Society for Information Science and Technology, 51(1), pp.1-5.

George, A., Duff, M. Ajwani, S., Johnson, M., Dahlen, H., Blinkhorn, A., Ellis, S., Bhole, S. (2012). Development of an online education program for midwives in Australia to improve perinatal oral health, Journal of Perinatal Education, 21(2), pp.112-22.

Glaser, J. (2011). Interoperability: the key to breaking down information silos in health care, Healthcare Financial Management, 65 (11), pp. 44- 50

Gleeson, B. & Rozo, M. (2013). The Silo Mentality: How To Break Down The Barriers, Forbes, Retrieved June 2016 at http://www.forbes.com/sites/brentgleeson/2013/10/02/the-silo-mentality-how-to-break-down-the-barriers/#6b70ebde5f3e

Graetz, I., Reed, M., Shortell, S., Rundall, T. G., Bellows, J. & Hsu, J. (2014) The Next Step Towards Making Use Meaningful: Electronic Information Exchange and Care Coordination Across Clinicians and Delivery Sites. Med Care 52, pp. 1037–1041

Haberer, J.E., Trabin, T. & Klinkman, M. (2013). Furthering the reliable and viable measurement of mental health screening, diagnoses, treatment and outcomes through health information technology, *General Hospital Psychiatry*, 35, pp. 3459-353.

Hackler, D. & Saxton, G.D. (2007). The strategic use of information technologyby non-profit organisations: increasing capacity and untapped potential, *Public Administration Review*, May/June, pp. 474 – 497.

Hart, C. (2011). Sustainable regional legal practice: the importance of alliances and the use of innovative information technologyby legal practices in regional, rural and remote Queensland, Deakin Law Review, 16 (1), pp. 225-263.

Hesse, B., O'Connell, M., Augustson, E., Chou, W-Y.S., Shaikh, A. & Finney Rutten, L. (2011). Realizing the Promise of Web 2.0: Engaging CommunityIntelligence, Journal of Health Communication, Vol.16, sup.1, p.10-31.

lachini, A.L., Dehart, D.D., Mcleer, J., Hock, R., Browne, T., Clone, S. (2015). Facilitators and barriers to interagencycollaboration in mother–child residential substance abuse treatment programs, Children and Youth Services Review, 53, pp.176-184.

Johns, S. (2010). Early childhood service development and intersectoral collaboration in rural Australia: [Paper in special issue: 'Driving Change', General Practice and PrimaryHealth Care Research Conference (2009: Melbourne).] Australian Journal of Primary Health, 16 (1). Pp. 40-46.

Joshi, A., Meza, J., Costa, S., Puricelli Perin, D.M., Trout, K. & Rayamajih, A. (2013). The Role of Information and Communication Technologyin CommunityOutreach, Academic and Research Collaboration, and Education and Support Services (IT-CARES), Perspectives in health information management/AHIMA, American Health information Management Association, 10, pp.1g.

Kreindler, S.A., Dowd, D.A. Dana Star, N. & Gottschalk, T. (2012). Silos and Social Identity: The Social Identity Approach as a Framework for Understanding and Overcoming Divisions in Health Care, Milbank Quarterly, 90 (2), pp. 347-374.

Lamb, S., Glover, S. & Walstab, A. (2014). Educational disadvantage in regional and rural schools, AcER Research Conference – Quality and Equality: What does research tell us?, Adelaide August 2014.

Lederbogen F., Kirsch P., Haddad L., Streit F., Tost H., Schuch P., Wust S., Pruessner J., Rietschel M., Deuschle M. & Meyer-Lindenberg A (2011). City living and urban upbringing affect neural social stress processing in humans, *Nature*, 474(7352), pp. 498-501

Lloyd-Smith, M. (2009). Information, power and environmental justice in Botany: The role of community information systems, *Journal of Environmental Management*, 90(4), pp.1628-1635.

Lyon, A.,Wasse, J., Ludwig, K., Zachry, M., Bruns, E., Unützer, J. & McCauley, E. (2016). The Contextualized Technology Adaptation Process (CTAP): Optimizing Health Information Technology to Improve Mental Health Systems, *Administration and Policy in Mental Health and Mental Health Services Research*, 43(3), pp.394-409 Mahmud, A.J., Olander, E., Eriksén. Haglund, B.J.A. (2013). Health communication in primaryhealth care – A case study of ICT development for health promotion, *BMC Medical Informatics and Decision Making*, 13 (17), pp. 2-15.

Makhubele, L., Kinyua, J. & Kekwaletswe, R. (2012). The Effect of Organizational, External, Social, Trust, Information Technology Factors and Knower's Attitude on Knowledge Sharing: A Case of Financial Service Firm in South Africa, Second International Conference on Digital Information and Communication Technology and it's Applications, May 2012, pp.498-503

Marnewick, C. (2014). The business case: The missing link between information technologybenefits and organisational strategies, Acta Commercii 14 (1) 11 pages.

Mcguire, S., Kruger, E., Tennant, M. (2011). Travel patterns for government emergency dental care in Australia: A new approach using GIS tools, Australian Dental Journal, 56(4), pp.389-393.

Miller, P.G., Coomber, K., Staiger, P., Zinkiewicz, L. & Toumbourou, J.W. (2010). Review of rural and regional alcohol research in Australia, Australian Journal of Rural Health, 18, pp. 110 – 117.

Miron, A., Ciobanu, L., Menda, T.A. & Matoschi, C.O. (2011). The importance of implementing the ICT network in achieving knowledge transfer in the rural areas, Annals of the University of Oradea : Economic Science, 1(1), pp.100-105.

Murphy, A, Ollerenshaw, A & McDonald. (2011a). Examining Communitybased Factors influencing Year 12 completions in Rural Victoria, Department of Education and Early Childhood Development, Grampians Region of Victoria. Federation University Printing.

Murphy, A, McDonald, J, Ollerenshaw, A, (2011b). *Mapping Access and Referral Pathways for Marginalised Victims of Violent Crime in Rural and regional Victoria*, through Centacare, Catholic Diocese of Ballarat Inc.

National Rural Health Alliance., (2014). Alcohol use in rural Australia, *National Rural Health Alliance Fact Sheet*, retrieved at http://ruralhealth.org.au/sites/default/files/publications/nrha-factsheet-alcohol.pdf

Newman, L., Biedrzycki, K. & Baum, F. (2012). Digital technologyamong disadvantaged Australians: implications for equitable consumer participation in digitally-mediated communication and information exchange with health services, *Australian Health Review*, 36, pp. 125 – 129.

Pan, S.L. & Leidner, D.E., (2003). Bridging communities of practice with information technology in pursuit of global knowledge sharing, *Journal of Strategic Information Systems*, 12, pp. 71 – 88.

Park, S., Freeman, J., Middleton., Allen, M., Eckermann, R. & Everson, R. (2015). The Multi-layers of digital exclusion in rural Australia, Paper presented at the 48th Hawaii International Conference on System Sciences, Hawaii.

Petrie, D.J., Doran, C.M., Shakeshaft, A.P., Sanson-Fisher, R. (2010). The relationship between riskyalcohol consumption, crime and traffic accidents in Australian rural communities, *Addictive Behaviours*, 35, pp. 359 – 362.

Pettit, C., Widjaja, I., Russo, P., Sinnott, R.O., Stimson, R. and Tomko, M. (2012). Visualisation support for exploring urban space and place. *Conference Abstracts, The XXII Congress of the International Society for Photogrammetry and Remote Sensing (ISPRS2012), 25 Aug-1 Sept 2012*, Melbourne Convention and Exhibition Centre, Melbourne, Australia. from: http://www.isprs2012.org/abstract/851.asp

Radoll, P.J. (2010). Stone Chips to Silicon Chips: A grounded theory of information and communication technologyadoption in Australian indigenous households – rural, urban and remote. *Digital Dissertations, Australian National University,*

Ragusa, A. (2013). Rural Australian Women's Legal Help Seeking for Intimate Partner Violence, *Journal of Interpersonal Violence*, 28(4), pp.685-717.

Ramirez, R.(2007). Appreciating the Contribution of Broadband ICT With Rural and Remote Communities: Stepping Stones Toward an Alternative Paradigm, *The Information Society*, 23 (2), pp. 85 – 94.

Rao Hill, S., Burgan, B., and Troshani, I. (2011). Understanding broadband adoption in rural Australia. *Ind. Manag. Data Syst.* 111, 1087–1104.

Rickards, L. (2011). Rural Health: Problems, prevention and positive outcomes, *Health* – Retrieved May 2016 at http://www.futureleaders.com.au/book_chapters/pdf/Health/Lauren_Rickards.pdf.

Roberts, E., Farrington, J., and Skerratt, S. (2015). Evaluating New Digital Technologies Through a Framework of Resilience. Scott. *Geogr. J.* 131, 253–264.

San-Antonio-Gomez, C., Velilla, C. and Manzano-Agugliaro, F. (2014). Urban and landscape changes through historical maps: The Real Sitio of Aranjuez (1775-2005), a case study. *Computers, Environment and Urban Systems* **44**. pp: 47-58.

Scholes-Balog, K.E., Hemphill, S.A., Kremer, P. & Toumbourou, J.W. (2013). A longitudinal study of the reciprocal effects of alcohol use and interpersonal violence among Australian young people, *Journal of Youth Adolescence*, 42, pp. 1811 – 1823.

Schultz, J. (2009). Openness, collaboration and participation: [The new tools of change. Paper in: Participation Society. *Griffith REVIEW*, 24, Winter, pp. 7-10.

Simpson, L., Daws, L. & Wood, L. (2003). More Than Just an Internet Connection: Building Rural Social Capital through Public Access, *Rural Society*, 13 (2), pp. 5 – 17.

Stewart, J., Lohoar, S. & Higgins, D. (2011). Effective practices for service delivery coordination in indigneous communities, *Closing the Gap Clearinghouse*, Australian Institute of Health and Welfareand the Australian Institute of FamilyStudies.

Stimson, R.J. (2011). The Australian Urban Research Infrastructure Network (AURIN) Initiative: A Platform Offering Data and Tools for Urban and Built Environment Researchers across Australia. *State of Australian Cities (SOAC) Conference, 29 November - 2 December 2011*, Melbourne. from: http://soac.fbe.unsw.edu.au/2011/papers/SOAC2011_0043_Final.pdf

Sutton, J. (2013). Of information, trust and ice cream: A recipe for a different perspective on the privacy of health information, *Arizona Law Review*, 55, pp. 1171 – 1200.

Temple, J.R., Shorey. R.C. Fite, P., Stuart, G.L., & Le, V.D. (2012). Substance use as a longitudinal predictor of the perpetration of teen dating violence, *Journal of Youth and Adolescence*, 42 (4), pp. 596 – 606.

Thompson, H., Dahlhaus, P. and MacLeod, A. (2014). The hype and the hope: Progressing towards big data insights for regional communities. *Digital Rural Futures Conference*, *25th - 27th June 2014*, University of Southern Queensland, Toowoomba, Queensland. Vol. Abstracts, p.53

Victorian State Government., (2014). *Wimmera Southern Mallee Regional Growth Plan: Background Report.* Retrieved June 2016 at http://www.dtpli.vic.gov.au/__data/assets/pdf_file/0011/230015/Wimmera-Southern-Mallee-Regional-Growth-Plan-Background-Report-May-2014.pdf Wenger-Trayner., E. & Wenger-Trayner, B. (2015). Communities of Practice. *An overview of the concept and its uses*, Retrieved June 2016 at http://wenger-trayner.com/introduction-to-communities-of-practice/

Whannell, R. & Tobias, S. (2015). Improving mathematics and science education in rural Australia: A practice report, *Australian and International Journal of Rural Education*, Vol.25(2), p..91-99

Wimmera PrimaryCare Partnership (2013). *Population Health and Wellbeing Profile*, Wimmera PrimaryCare Partnership, Horsham.

World Economic Forum. (2012). *The Global Information Technology Report 2012 – living in a hyper connected world*. The INSEAD Insight Report World Health Organisation. S Dutta and B Bilbao-Osorio (eds). World Economic Forum.

World Health Organisation., (2011), Update. Capacity Building and Information Technology, *Injury Prevention*, 17 (2). Update downloaded May 30, 2016 from http://injuryprevention.bmj.com/.

Zhang, W. & Gutierrez, O. (2007). Information technologyacceptance in the social services sector context: An exploration, *Social Work*, 52 (3), pp. 221 – 231.