

Recent developments in rural and regional DRT: experience from NSW, Australia

Presented by

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SMACKER Webinar

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THE UNIVERSITY OF
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On Demand Public Transport trials – NSW

- One of the largest contemporary programmes of On Demand Transport (ODT) trials is currently taking place in New South Wales (NSW), Australia.
- The trials form a core component of the Transport for New South Wales *Future Transport 2056* strategy) which has a focus on managing a more integrated transport network with a strong emphasis on customer experience.
- A series of ODT services (mostly trials) have been operating across Greater Sydney, Central Coast, Illawarra and Newcastle (14) and Regional NSW (11), (of which 6 services remain in Greater Sydney and Newcastle and 9 remain in Regional NSW as of October 2020).
 - Details at: <https://transportnsw.info/travel-info/ways-to-get-around/on-demand>
 - Short video at: <https://transportnsw.info/travel-info/ways-to-get-around/on-demand>

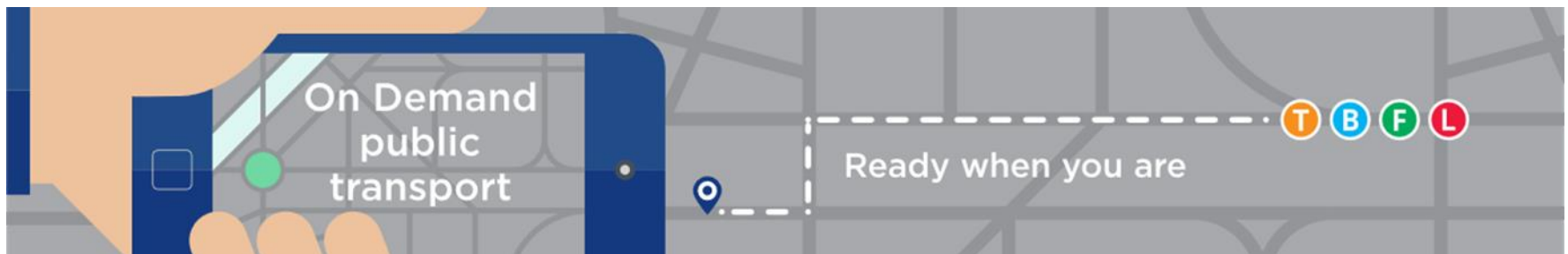
On Demand Public Transport trials – NSW

- Trial objectives (TfNSW):
 - Identify and test new service delivery models
 - Identify technology requirements
 - Improve customer outcomes
 - Achieve better value for money

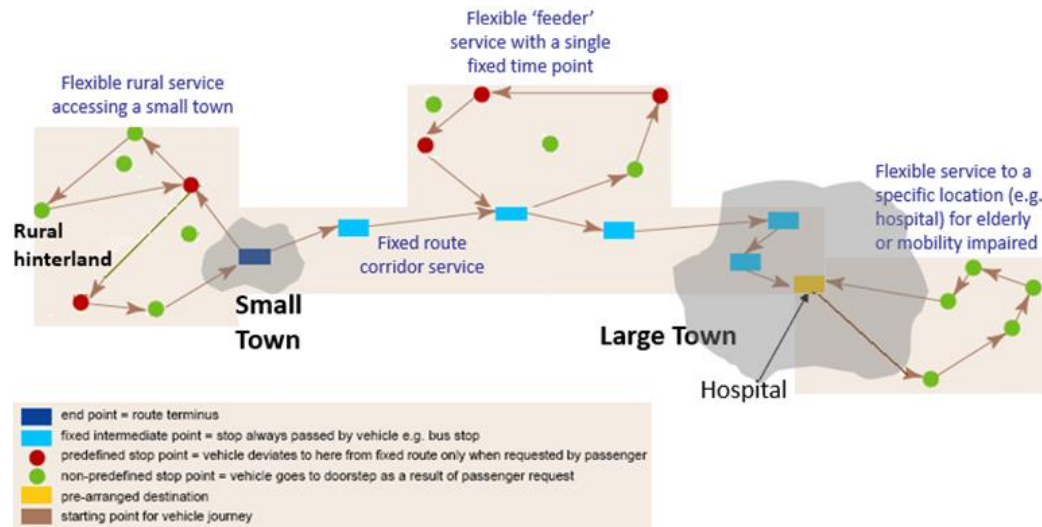


Snap shot stats (at July 2020)

- **Metro and Outer Metro:**
 - >1,012,000 passenger trips delivered from Oct 2017
 - >37,000 passenger trips / month
- Useful summary: On Demand public transport pilot program - Lessons learned report. Published by Transport for NSW (May 2020)
- **Rural and Regional:**
 - >148,000 passenger trips delivered from Nov 2018
 - >7,000 passenger trips / month



Demand Responsive Transport typologies



DRT service typologies

Source: Nelson and Wright (2021)

Variety of operating rationale:

- Interchange ODT
- Network ODT
- Destination-specific ODT
- Substitute ODT

Variety of operating models:

- Many-to-one ODT
- Many-to-few ODT
- Many-to-many ODT
- Fixed route, flexible schedules

Moree On Demand Service

Operated by Reynolds and Fogarty

- Trial began in Nov 2018, 3 fixed route services replaced by on demand. A twice daily fixed route service connects the Moree Train station with selected points within Moree
- Hours of operation:
 - Service runs 7 days a week (on demand 7am-7pm)
- Bookings can be made up to one day ahead by phone or text
- A one-way trip costs \$3.00 and a daily fare is \$6.90 (concession \$1.50 / \$3.40)
- Patronage (to end Sept 2020):
 - 91,132 passenger trips
 - 4-5,000 trips / month
- RFP to establish the service on a permanent basis for up to 4 years issued in Oct 2019

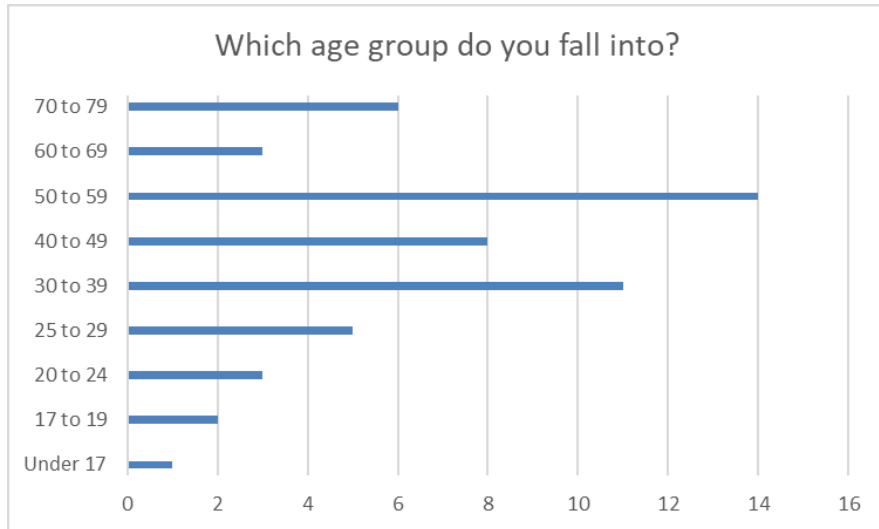


Service will pick up at or near your home and drop off at desired destination within Moree

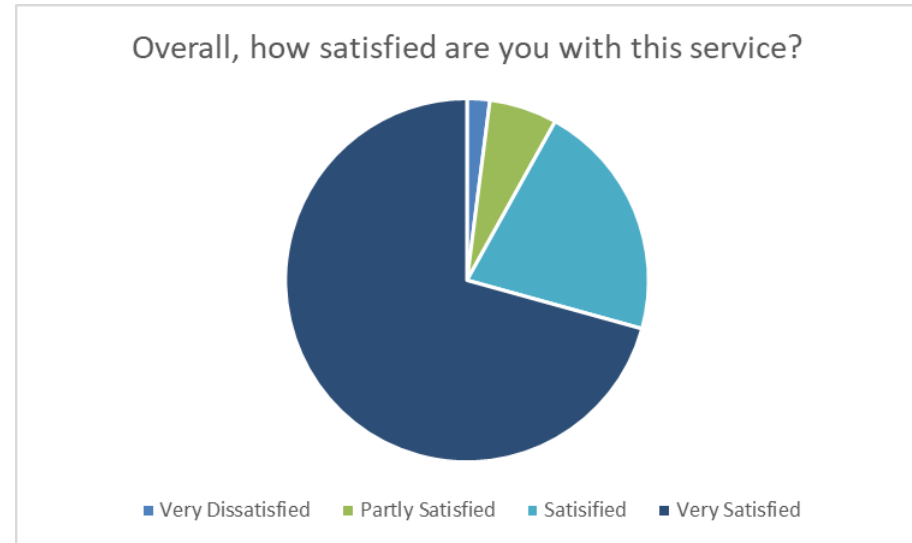
<https://moreebus.com.au/moree-on-demand-bus-service/>

Customer feedback – March 2019 (n=53)

- Male (31%)
- Female (69%)



- 36 % had uses the service more than ten times
- Main trip purpose is shopping
- 29% own or have access to a car

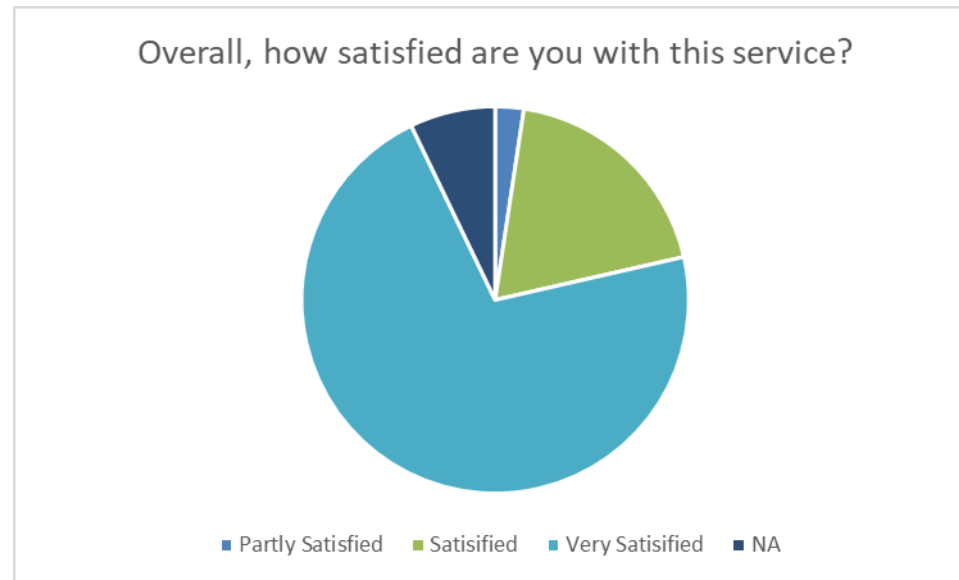


High satisfaction (>90% very satisfied or satisfied with a wide range of service attributes.

Average customer satisfaction scores:

- Timeliness (5.9)
- Safety and security (6.3)
- Convenience (5.7)
- Accessibility (6.2)
- Comfort (6.1)
- Cleanliness (6.2)
- Ticketing (6.3)
- Booking (6)
- Overall service (5.8)

Customer feedback – September 2019 (n=42)



Experience to date shows that customer satisfaction is very high

Woopi Connect, Coffs Harbour

- **Operated by Forest Coach Lines**
 - Trial began in March 2019
 - Service area is split into 2 zones
 - Pick you up at or near your home to any destination within the zone; travel between zones also permitted
 - Operating hours: 7am to 7pm - Mon to Fri & 8am to 2pm Sat
 - Bookings can be made via App or by calling from 1 week up to 60 minutes prior to your trip.
 - One-way trip: \$4.30; cross-zone \$6.40 (concessions available \$2.30 & \$3.30)
 - Patronage (to end Sept 2020):
 - 20,193 passenger trips
 - 12-1400 trips / month

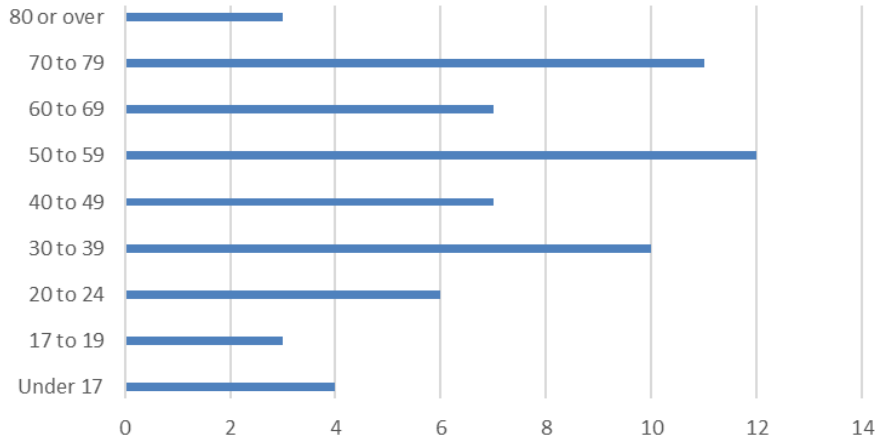


Zone 1 provides a 10-minute catchment area around Woolgoolga; Zone 2 provides a 20-minute catchment area.

Customer feedback – August 2019 (n=63)

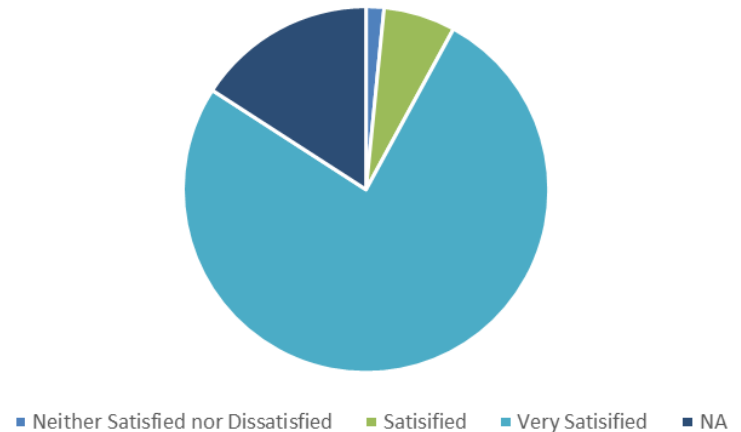
- Male (35%)
- Female (65%)

Which age group do you fall into?



- 41% had uses the service more than ten times
- Main trip purpose is shopping
- 40% own or have access to a car

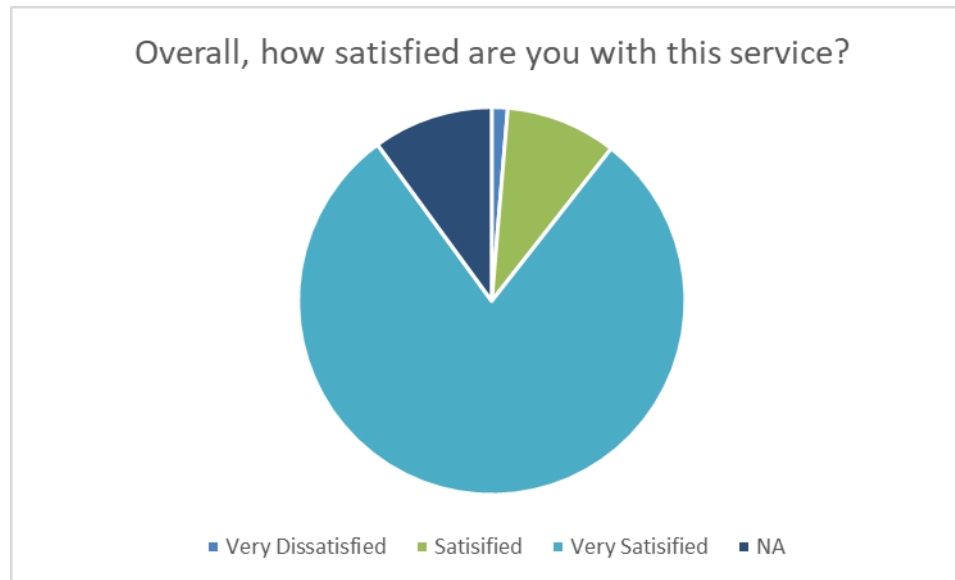
Overall, how satisfied are you with this service?



Average customer satisfaction scores:

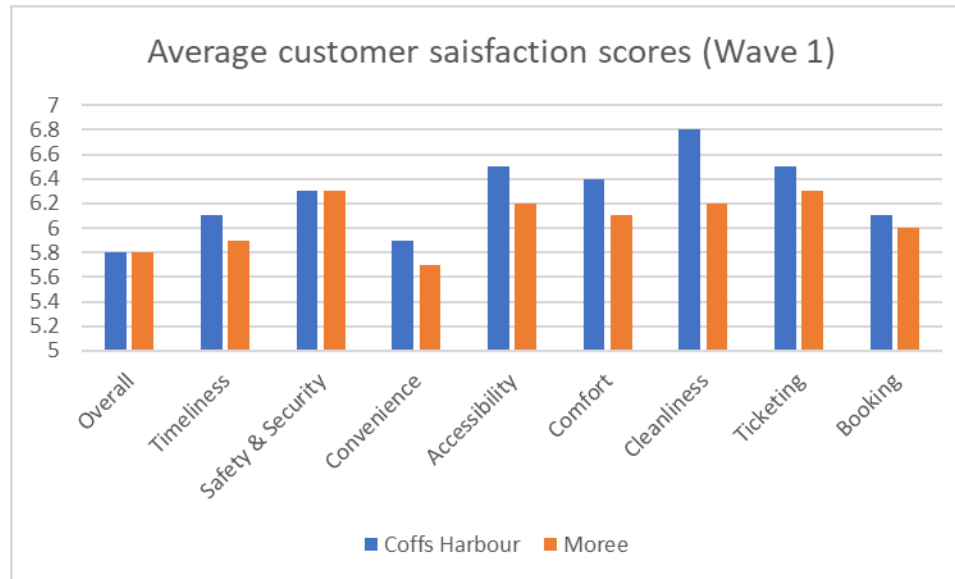
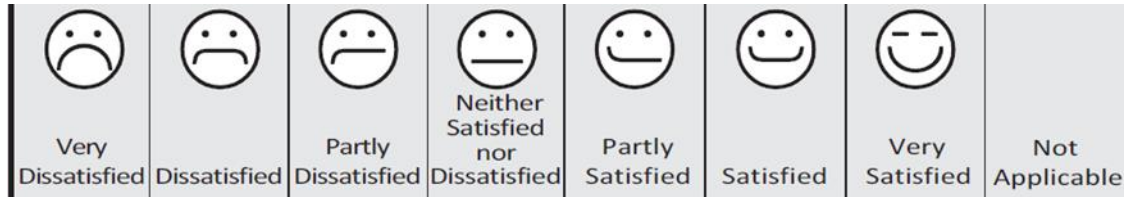
- Timeliness (6.1)
- Safety and security (6.3)
- Convenience (5.9)
- Accessibility (6.5)
- Comfort (6.4)
- Cleanliness (6.8)
- Ticketing (6.5)
- Booking (6.1)
- Overall service (5.8)

Customer feedback – February 2020 (n=76)



Experience to date shows that customer satisfaction is very high

Customer satisfaction scores



Open questions / issues to resolve with ODT in NSW

- Fare integration between ODT and fixed route services
 - In NSW this is somewhat alleviated by Opal Connect (\$2 transfer rebate in Sydney and the \$2.50 Regional Excursion Ticket in Regional & Rural)
- Technology “barriers” – the need to download and book using a different application for different trials contributes to a fragmentation of service offering
 - although it is rare that customers will need to use more than one.
- Complexity of operating models:
 - Restricted service zone and operating hours
 - Need to raise awareness about what ODT is and how it works
- Can we design a network which truly integrates ODT and fixed route services?
 - **Newcastle (NISC1)** was first multimodal contract in Australia (2017), bringing together bus, ferry, light rail and ODT
 - **SMBSC6** was first contract to combine fixed route bus and ODT (2018)
 - **SMBSC1/4** were amended to incorporate a permanent ODT service connecting to Sydney Metro Northwest (2019)

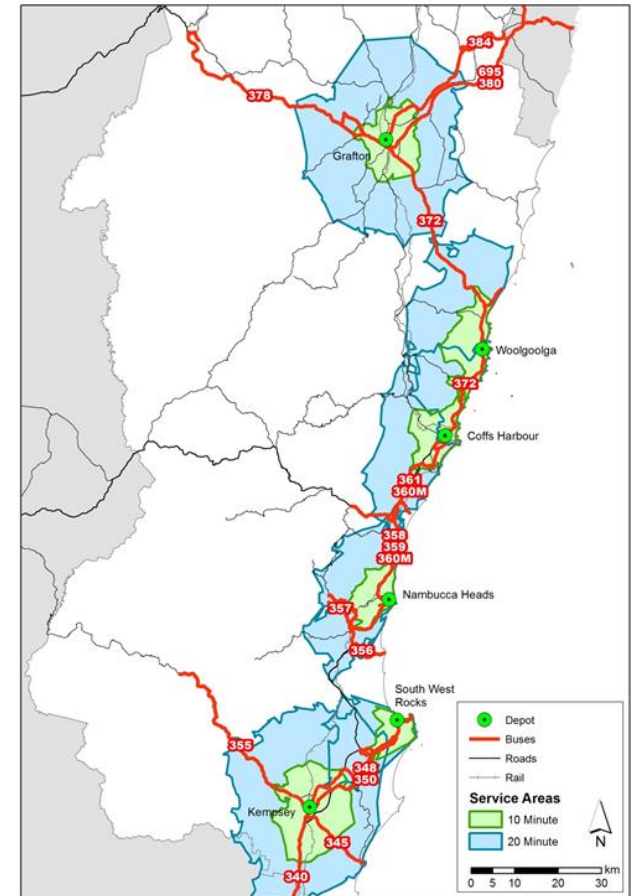
Observations for DRT in rural and regional contexts from international experience

- In Rural and Regional contexts the planning of public transport networks requires trade off between coverage and frequency
- If DRT is part of public transport offer, the following recommendations are offered:
 - Provide a framework for DRT to be used as access to higher frequency routes serving job locations to enhance inclusion (rebalancing the network); DRT should be integrated within a network of fixed route services will achieve greater cost effectiveness it
 - Convert low demand fixed services to FTS – either by geographical area or by time of day to reduce variable costs
 - Create DRT areas that are geographically large enough to reap economies of scale using smaller vehicles as part of public transport mix (consider increasing size of contract areas to at least the size of the labour market)
 - Look for commercial niches to use spare capacity (e.g. at employment shift changeover; evenings and weekends; education; leisure and retail)
 - Introduce new operators – ‘conventional’ operators do not always understand DRT
 - Ensure use of appropriate technology (which will also be used to get the most appropriate vehicle for journey requested)
 - Consider vehicle brokerage between authorities and agencies to reap economies of scale

Characteristics of an area making it suitable for DRT (Ho et al, 2019)

Areas

- which are particularly rural,
- have a higher incidence of deprivation, and
- which have reduced options for travelling distances to access services/jobs.



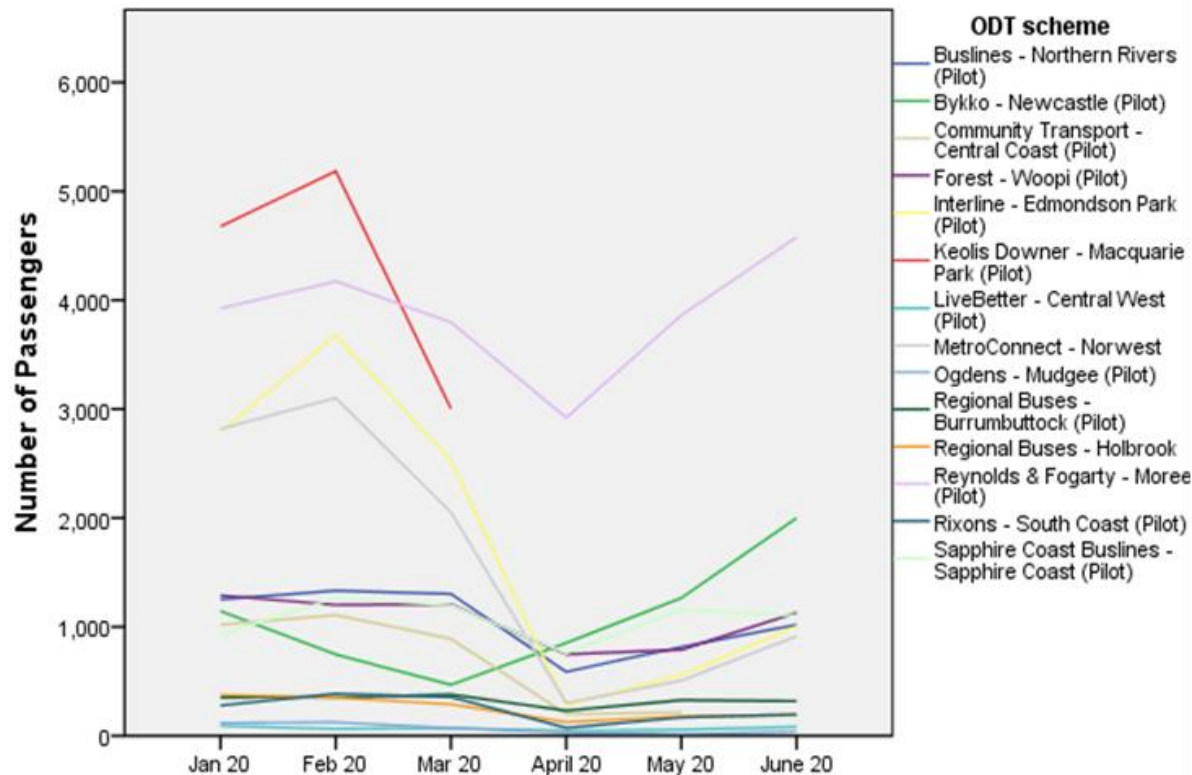
Regional routes retained to provide connections between major settlements in the Coffs Harbour study area

DRT and the pandemic

ODT patronage trends, Jan-June 2020

(Source: TfNSW Open Data Hub)

Monthly patronage



- The Figure shows the extent to which ODT has “bounced back”.
- Anecdotally, it is being reported that people feel more comfortable with the service in the more challenging times of the pandemic.

DRT and the pandemic (Nelson, 2020)

- During lockdown, DRT (like other forms of public transport), was characterised as an essential service and this was beneficial for certain groups of travellers such as carers for example.
- With DRT the ability to book ahead ensures that physical distancing is maintained (and vehicles are larger than those of taxis and TNCs) and DRT through its booking and confirmation of pick-up and set down ensures contact tracing where required.
- Cashless payment adds confidence.
- Several operators provide COVID-19 information prominently on their web site.
- In NSW the rate of recovery has been greater for some regional schemes (e.g. the Moree pilot and the Woopi Connect service at Coffs Harbour).
- Service design issues may also be relevant:
 - the best performing service in terms of recovery (Moree) is an area-based rather than a feeder to fixed route service which typically is designed for commuters.
 - there is minimal recovery of patronage figures on the Edmondson Park and Norwest services which are peak hour only first/last mile services.

Implications for the future of Public Transport

- Does the experience with ODT offer some insights for the future for public transport?
- The need to keep physical distancing can perhaps induce a revision of what is considered an acceptable capacity in public transport vehicles; the ability to reserve a seat on certain services could provide a more personalised and safer experience.
- The travel patterns being exhibited in the “current normal” imply that public transport customers have become more adaptable and less predictable and with greater flexibility as to where and when they work
 - Might a more personalised transport offer with elements of flexibility be seen as more attractive?
- In some locations it may be more efficient to run On Demand instead of fixed route services on a larger scale to reflect this “new normal”.

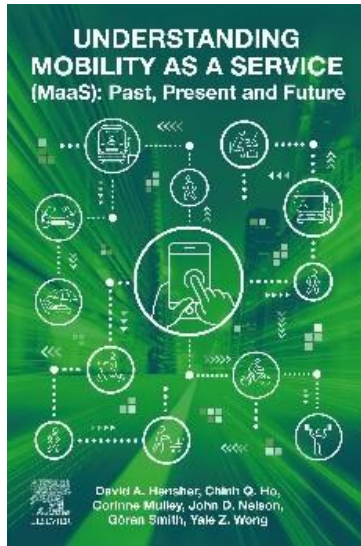
Acknowledgements

- The Transport for New South Wales ODT team for providing access to customer satisfaction survey data

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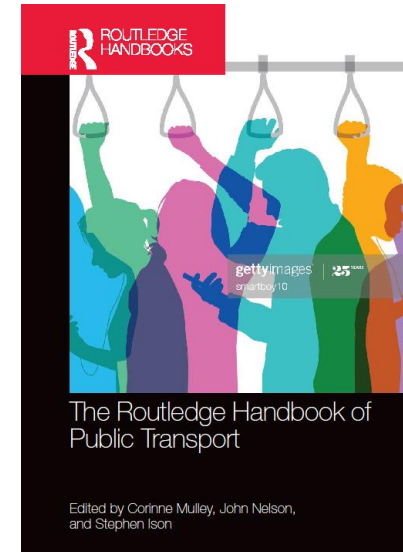
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https://future.transport.nsw.gov.au/sites/default/files/media/documents/2018/Future_Transport_2056_Strategy.pdf
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New books



Hensher, D A, Mulley, C, Nelson, J D, Ho, C, Smith, G and Wong, Y (2020) Understanding Mobility as a Service (MaaS). Past, Present and Future. Elsevier. Published May 7 2020, 188pp. (softcover and e-book). Order at: <https://www.elsevier.com/books/understanding-mobility-as-a-service-maas/hensher/978-0-12-820044-5>

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Mulley, C, Nelson, J D and Ison, S (Eds) (2021) Handbook of Public Transport. Routledge, Abingdon, Oxon UK. To be published in May 2021. Order at: <https://www.routledge.com/The-Routledge-Handbook-of-Public-Transport/Mulley-Nelson-Ison/p/book/9780367418724>

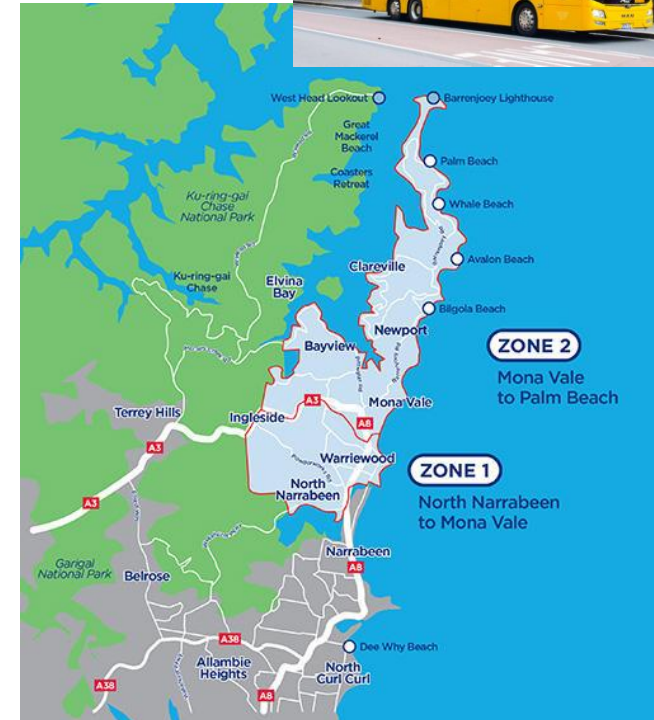
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Northern Beaches – Keoride

Operated by Keolis Downer, in partnership with Via and GoGet










- Book via app, web or phone
- Hours of operation:
 - Mon-Wed 6am-10pm
 - Thurs-Fri 6am-11:30pm
 - Sat 7am-11:30pm
 - Sun 7am-9pm
- A one-way trip costs \$3.10 (concession \$1.55)
- Service began in Nov 2017:
 - 357,677 passenger trips to end Sept 2020
 - 17,000 trips / month



Feeder service transporting passengers to / from home or nearby meeting point to transport hubs and selected B-Line stops

Satisfaction questions

Q19. Rate your satisfaction with the following based on this, or your most recent, trip:

								Not Applicable
	Very Dissatisfied	Dissatisfied	Partly Dissatisfied	Neither Satisfied nor Dissatisfied	Partly Satisfied	Satisfied	Very Satisfied	
Overall how satisfied are you with this service?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	
Timeliness								
The vehicle turning up on time	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Journey time given the distance travelled	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Number of pick-ups and drop-offs on the way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Safety & Security								
Feeling safe while in the vehicle	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Feeling safe at the pick-up point	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Convenience								
Ease of connection to other transport services	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Ease of finding or identifying pick-up point	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Ease of identifying the vehicle	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Hours of operation	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Convenience of pick up/set-down locations	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Time taken from booking to pick up	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Accessibility								
Ease of getting on and off the vehicle	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Comfort								
Personal space on the vehicle	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Cleanliness								
Cleanliness of the vehicle	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Ticketing								
Ease of payment	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Booking								
Ease of booking the service	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Information on my booking e.g. booking accepted, estimated time of arrival	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Length of advance noticed required when making a booking	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>
Information on how to book the service	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/>