


Traffic forecasting

Key Learning Area	Unit or lesson title and main focus questions	Most appropriate level and suggested number of lessons
 Geography	Traffic forecasting Why does the North West region need improved public transport?	Stage 4–5
		1–2 lessons

Teacher briefing

People living in Sydney’s North West region will be more familiar with travelling by car or bus rather than by train. Why does the North West region need better public transport?

The following activity is designed to help students discover answers to this question, and provide insights into how transport forecasters and planners work.

After reading Source 1 and analysing the information contained in Sources 2 and 3, students can discuss why adding more buses to North West region routes may be unsustainable, and why the region needs a rail link.

This is an introductory Stage 4 Geography learning activity, but can easily be incorporated into lesson sequences in transport or forecasting topics with Stage 5 students.

Requirements for these lessons

- Interactive whiteboard
- Sources 1, 2 and 3, either printed or projected on an interactive whiteboard.

Assessment

Assess students’ ability to interpret maps, and understanding of forecasting increased road congestion and longer journeys, as a result of population growth and other factors.

Key terms and vocabulary

Sustainable, extrapolation, trend, Sydney Metro Northwest, North West Growth Centre, Central Business District, Sydney’s Global Economic Corridor, travel speed and reliability, traffic volume, layover parking.

Background information

The NSW Department of Planning and Environment published the Sydney Metro Northwest *Corridor Strategy* on 15 May 2013. It is a guide for future development along the Sydney Metro Northwest. It includes planning around studies on each of the eight new train stations that will be built along the alignment at Cherrybrook, Castle Hill, Hills Showground, Norwest, Bella Vista, Kellyville, Rouse Hill and Tallawong. It is predicted that the area surrounding these new train stations will provide 27,400 new homes and 49,500 new jobs by 2036.

Section 2.4 of the Sydney Metro Northwest *Corridor Strategy* details reasons as to why increasing the number of buses operating in the North West region may be unsustainable, and why the region needs a rail link. These reasons include:

- By 2036, over 40 per cent of residents from the North West Growth Centre are expected to travel to Sydney's Central Business District by public transport in the morning peak period, while a further 15 per cent will travel to Macquarie Park, Chatswood, St Leonards and North Sydney
- Without improvements in public transport, it is predicted that by 2021 road congestion will increase travel times from the North West region by more than 50 per cent (in some cases more than 70 per cent)
- It is forecast that there will be an overall increase in buses entering the Central Business District of some 34 per cent by 2021; and growth in M2 express buses will account for almost 70 per cent of that growth.

Web links



Sydney Metro Northwest priority urban renewal corridor

<https://www.planning.nsw.gov.au/Plans-for-your-area/Priority-Growth-Areas-and-Precincts/Sydney-Metro-Northwest-Urban-Renewal-Corridor>

Further information on the challenges commuters currently experience when using public transport can be found in *Understanding the challenges*, Project Overview June 2012, page 15.

https://www.sydneymetro.info/sites/default/files/Project_overview.pdf%3Fext%3D.pdf

Syllabus links

Geography K-10

Geography Stage 4 – Place and Liveability

- the influence of accessibility to services and facilities on the liveability of places
- strategies used to enhance the liveability of places

(GE4-1) locates and describes the diverse features and characteristics of a range of places and environments

(GE4-3) explains how interactions and connections between people, places and environments result in change

(GE4-7) acquires and processes geographical information by selecting and using geographical tools for inquiry

(GE4-8) communicates geographical information using a variety of strategies.

Geography Stage 5 – Changing places

- the causes and consequences of urbanisation
- the management and planning of Australia’s urban future

(GE5-2) explains processes and influences that form and transform places and environments

(GE5-3) analyses the effect of interactions and connections between people, places and environments

(GE5-5) assesses management strategies for places and environments for their sustainability

(GE5-7) acquires and processes geographical information by selecting and using appropriate and relevant geographical tools for inquiry

(GE5-8) communicates geographical information to a range of audiences using a variety of strategies.

Learning experiences

Step 1

Print and distribute Sources 1 and 2 (pages 31–32) or download and project on the interactive whiteboard.

Students answer the following questions by studying the sources:

- Why does the North West region need improved public transport?
- Why does the North West region need a rail link?
- Why is there a problem with just adding more buses?

Step 2

Students write a short newspaper article using one of the following headlines or create short 30 second news presentations on the need for improved public transport in Sydney’s North West region:

- By 2021 bus journeys may take 50 per cent longer
- Is Sydney’s Central Business District filling up with buses?
- What can we do about road congestion in Sydney’s North West region?

Teacher references and extension work

This brief study of traffic forecasting may be extended by exploring the growth of employment and housing in the North West region in addition to population growth.

Sources

Source 1

Transport connections

“The current demand for public transport from North West Sydney to the Sydney Central Business District and broader Global Economic Corridor is serviced by a combination of rail and bus services. Access to the rail network from The Hills District is poor, with long bus or car trips required to access stations on the Richmond, Western or Northern Lines. As a result, a network of City Express bus services provides direct connections from The Hills District to the Sydney Central Business District on the M2/Epping Road corridor, with connections to the other centres between Macquarie Park and North Sydney. Transport for NSW has identified the city connection corridor to Macquarie Park and the North West Growth Centre as one of Metropolitan Sydney’s five strategic transport corridors that is highly constrained, based on morning peak load factors for the rail network, travel speed and reliability for buses, and the volume and capacity on the road system.

Transport for NSW has forecast North West Sydney to represent one of the largest areas of train patronage growth over the next 20 years. Figure 3 (page 32) shows the change in daily train trip demand projected to occur between 2011 and 2031. There is limited capacity in the regional bus system to cater for increased demand from North West Sydney. Without improvements in public transport, it is predicted that by 2021 road congestion would increase travel times from North West Sydney by more than 50 per cent (in some cases more than 70 per cent). Direct and higher capacity transit connections are therefore required from the North West to the Global Economic Corridor to meet existing and future travel demands.

The demand for M2 Express buses has created substantial congestion problems within the Sydney Central Business District. M2 Express buses make up a significant proportion (30 per cent) of buses entering the Central Business District via the Sydney Harbour Bridge. The requirements for bus stops and bus layover parking contribute to growing congestion in bus terminals and regular substantial delays to buses on the Harbour Bridge.

Transport for NSW forecasts an overall increase in buses entering the Central Business District of some 34 per cent by 2021; and growth in M2 Express buses will account for almost 70 per cent of that growth. The introduction of North West Rail Link is expected to significantly reduce M2 Express bus flows (some M2 Express services will be retained after North West Rail Link becomes operational) and help to relieve pressure on the Central Business District to accommodate buses.”

Note: The North West Rail Link is now known as Sydney Metro Northwest.
For more information visit <https://www.sydneymetro.info/>

Source: Section 2.4 of Sydney Metro Northwest *Corridor Strategy*, NSW Department of Planning and Environment, page 7.
<https://www.planning.nsw.gov.au/-/media/Files/DPE/Reports/north-west-rail-link-corridor-strategy-2013-09.ashx>

Sources

Source 2

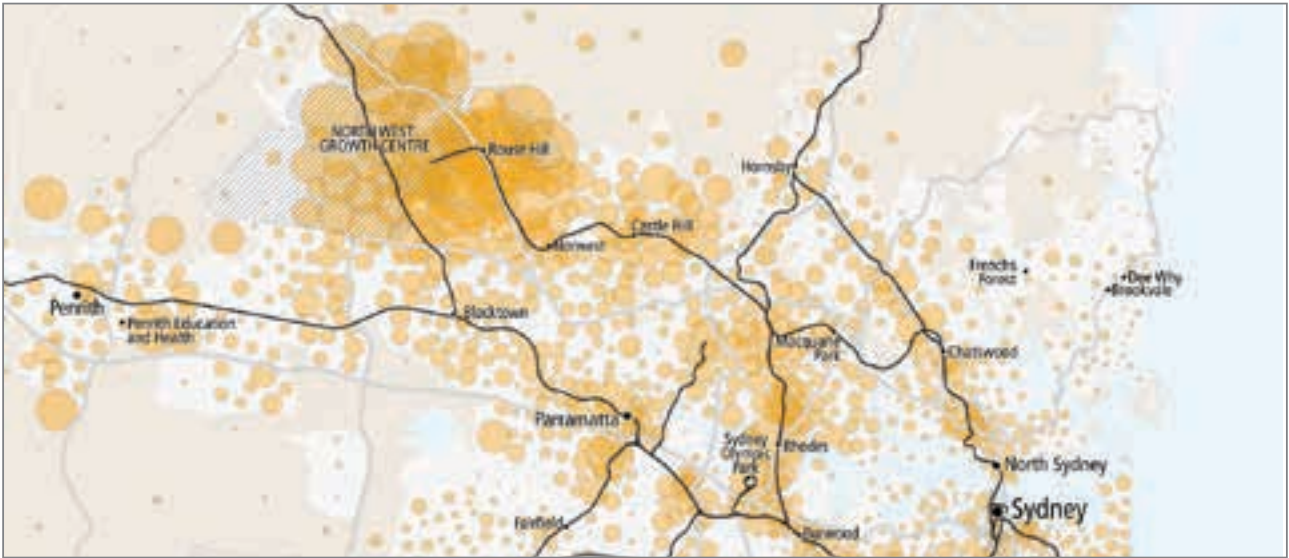


Figure 2: Forecast change in daily demand for trains services by origin zone 2011-2031 (AM peak).

Source: Sydney Metro Northwest *Corridor Strategy*, NSW Department of Planning and Environment, page 7.

Source 3

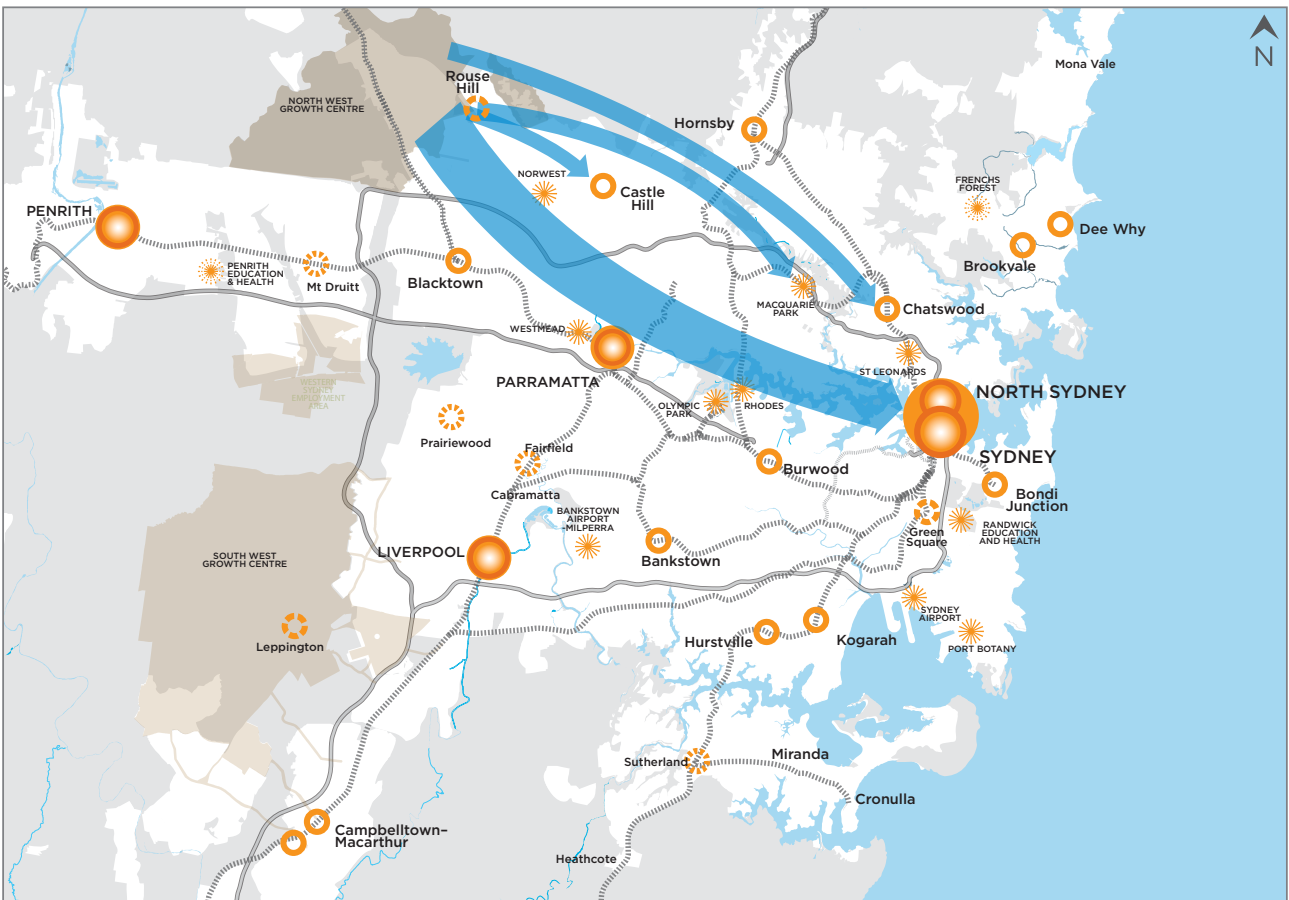


Figure 3: Forecast trip volumes from North West Growth Centre by public transport 2036.

Source: Sydney Metro Northwest *Corridor Strategy*, NSW Department of Planning and Environment, page 9.



First Metro train arrives at Chatswood Station, January 2019.