



# AUSTRALIAN GEOGRAPHY COMPETITION

## 2023 Year 11

Welcome to the 2023 Australian Geography Competition!

You have 30 minutes to complete 40 questions.

NOTE: Due to the size of some graphics, you may need to scroll down the page to see the complete graphic.

Some questions require the use of a ruler or calculator. To use, click on the icon at the top right of the screen. To turn off, click the icon again.

If you want to enlarge a graphic or text, click on the magnifying glass at the top left of the screen.

There is a timer count-down at the top left of the screen.

The flag button at the bottom right of the screen can be used as a reminder for a question you want to come back to. On the question overview page you can see which questions you flagged.

The tiles button in the top middle of the screen next to the question number takes you to the question overview.

The question overview shows a summary of questions not started, completed or flagged.

**Progress summary**

Show all	1	Answered	3	Not answered	36	Not read	1	Flagged
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**Questions**

Click a number to go to that question.

1 2 3 4 5 6 7 8 9

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Good luck!

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\*note: on a question where this is more than one drop down to be answered, and only one list is visible, all answer options are the same for each of the drop downs

  Question 1 of 40   

Based on the animation below, which type of flooding occurred in this area of the Kimberley in January 2023?

- flash       overland       riverine       coastal



Flooding in the Kimberley, WA

Images source: NASA Earth Observatory

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  Question 2 of 40   

What was the cause of the flooding seen in the image?

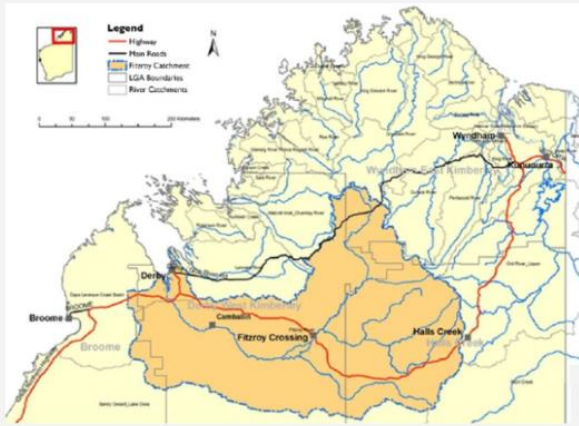
- ex-tropical cyclone       East Coast low       severe thunderstorm       cold front



Flooding in the Kimberley, WA

Images source: NASA Earth Observatory

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Fitzroy River catchment

© University of WA CENRM



Flooding in the Kimberley, WA

Images source: NASA Earth Observatory

Based on the two images, which statements relating to the flooding on the Fitzroy are correct? Select all that apply.

- Remote communities were isolated by the flooding.
- Flooding of the Fitzroy is unusual in January.
- Freight trucks from Perth to Halls Creek detoured via Darwin.
- Bridges were damaged by the flooding.

The Fitzroy River is included in the West Kimberley National Heritage Listing. Choose the drop-down word that correctly classifies its values as aesthetic, cultural, economic or environmental.

**Fitzroy River Values**

The Fitzroy River is a rich source of food for both Indigenous and non-Indigenous people.

The threatened purple-crowned fairy wren is restricted to the forests fringing the Fitzroy.

Four different expressions of the Rainbow Serpent traditions are found within the Fitzroy's catchment.

The towering white and grey walls of Geikie Gorge are breathtaking.

**Classification**

Economic

Environmental

Cultural

Aesthetic

Question 5 of 40

Drag and drop the term that best matches each definition.

Term	Definition
<b>Hazard</b>	a situation that has the potential to endanger communities or damage the environment
<b>Risk</b>	the likelihood that a harmful situation will occur and its possible impacts
<b>Disaster</b>	a situation that causes more adverse impacts than a community can recover from without external support

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The areal extent of a hazard refers to the:

- specific location of a hazard
- area that a hazard impacts
- direction of a hazard
- distance a hazard has moved

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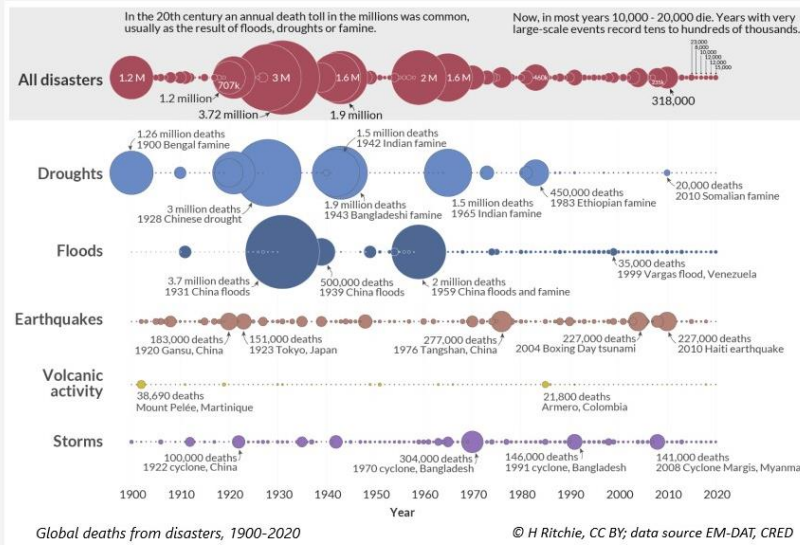


**Question 7 of 40**



Using the graph below, the largest number of deaths from natural disasters occurred during which time period?

- 1900 - 1920     
  1920 - 1940     
  1940 - 1960     
  1960 - 1980



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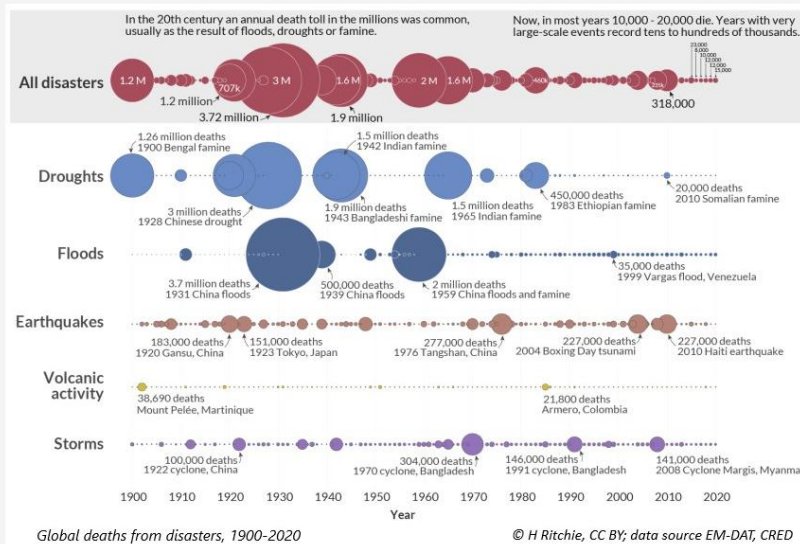


**Question 8 of 40**



Choose the drop-down word that correctly completes the sentence.

From the graph below,  hazards have been responsible for the greatest number of deaths since 1900.



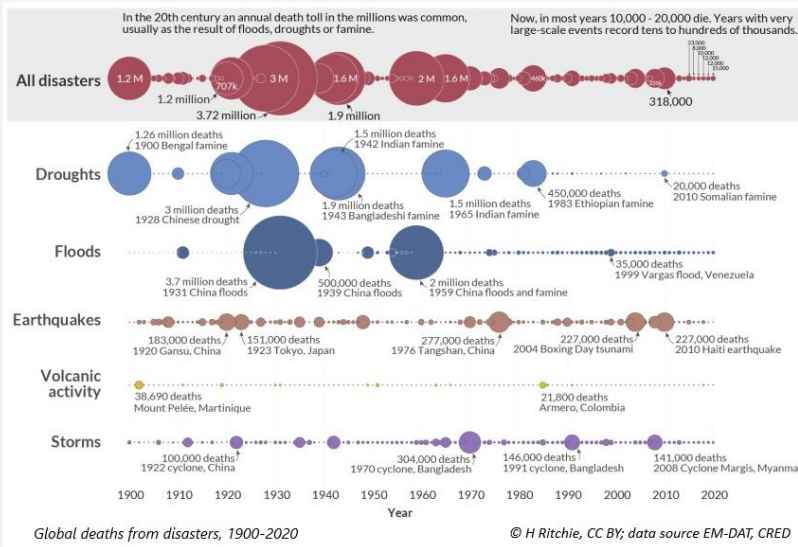
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What is the most likely reason for the change in the number of deaths attributed to droughts since the 1980s?

- humans adapting to climate change
- better water security
- better food security
- fewer droughts due to climate change



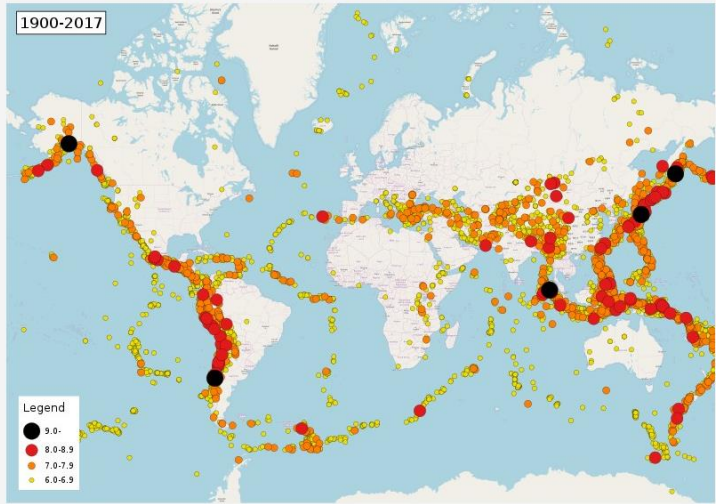
Which of these hazards generally has the fastest rate of onset?

- a riverine flood
- an earthquake
- a volcanic eruption
- a pandemic

Based on the data in the map below, drag and drop the words to correctly complete the sentences.

divergent   transform   duration   rate of onset   Africa   America

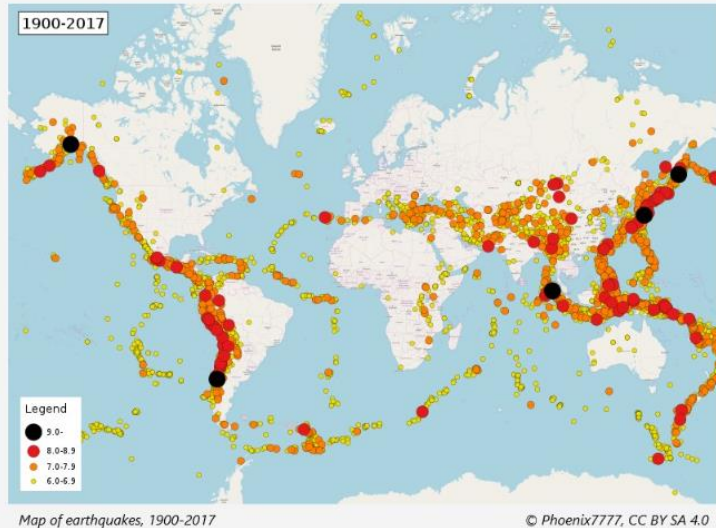
In areas where there is a **convergent** plate margin, the **magnitude** and frequency of earthquakes tend to be higher. An example of this is eastern **Asia**.



Based on the data in the map, indicate if these statements are true or false by dragging your answer into the box.

True   False

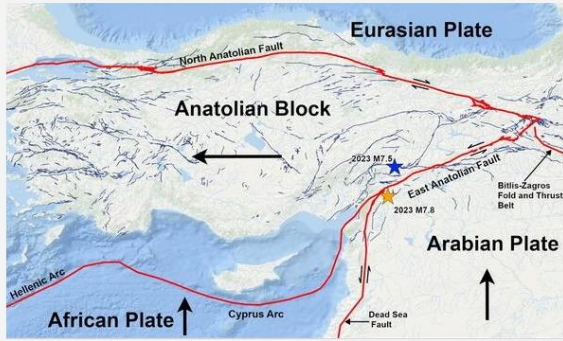
Statement	True/False
The earthquakes with the highest magnitude occur the least frequently.	True
Earthquakes occur more often on South America's Atlantic coast than on its Pacific coast.	False
The majority of earthquakes over magnitude 8 occur around the Ring of Fire.	True



Question 13 of 40

Drag and drop the text that correctly completes the sentence.

The earthquakes in Turkey on 6 February were in the East Anatolian Fault Zone. Based on the map below, the East Anatolian Fault is a  fault.



Question 14 of 40

Drag and drop the essential steps of hazard mitigation into order, from first to last.

- hazard identification
- vulnerability analysis
- defining a mitigation strategy
- implementation of mitigation projects



Question 15 of 40

Which strategies increase a country's resilience to earthquakes? Select all that apply.

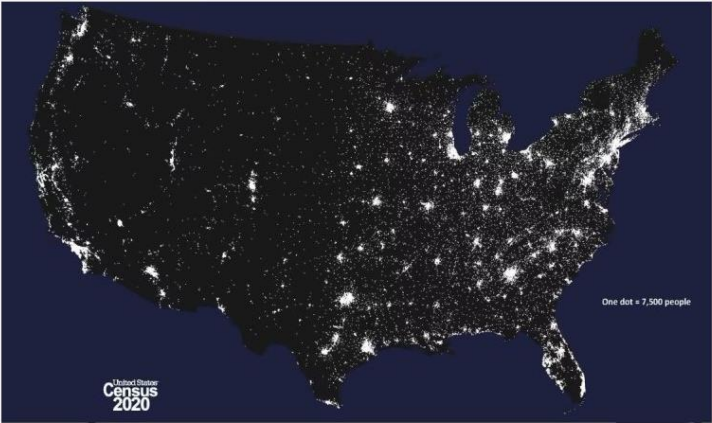
- early warning evacuation technology
- enforcing appropriate building codes
- developing local search and rescue capacity
- public education preparedness programmes

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Question 16 of 40




Based on the map below, what is the spatial pattern of the population distribution in the USA?

clustered       random       linear






2020 population distribution in the contiguous USA ©US Department of Commerce




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  **Question 17 of 40** 

What are some reasons why people choose to move to cities? Select all that apply.




- access to healthcare services
- access to education
- increased job opportunities
- less polluted air
- access to open spaces

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  **Question 18 of 40** 

A city's demographic characteristics refer to the:

- processes that drive urbanisation
- ways that urban functions change over time
- attributes of a city's population such as age and gender
- historical, cultural and economic factors that affect the city's spatial layout

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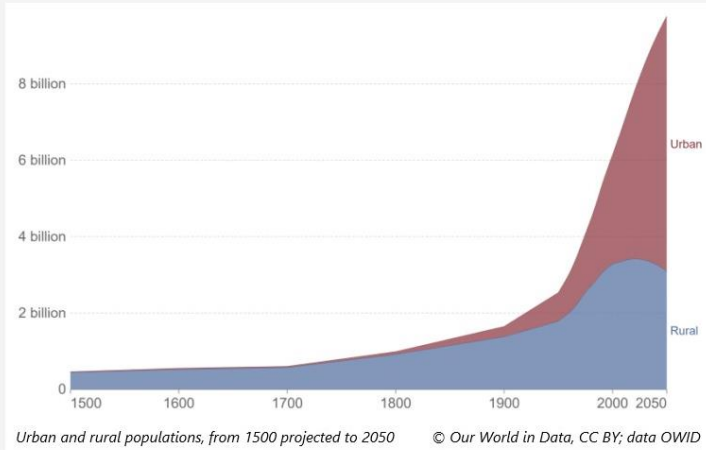


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Which type of graph is the one below?

- multiple line graph
  histogram  
 ternary graph
  cumulative line graph



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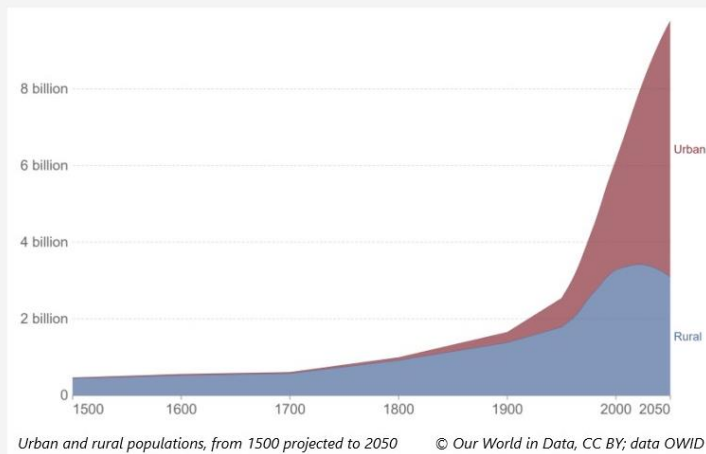


Question 20 of 40



Using the graph, when did the proportion of the world's population living in urban areas exceed that living in rural areas?

- 1800
  1910
  1960
  2010



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**Question 21 of 40**

Using the graph, approximately how many people are predicted to be living in urban areas by 2050?

3.1 billion     
  6.7 billion     
  9.8 billion

Urban and rural populations, from 1500 projected to 2050 © Our World in Data, CC BY; data OWD

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**Question 22 of 40**

Choose the drop-down word that correctly completes the sentence.

Using the graph, from 1500 to 2021, the number of people living in rural areas .

Urban and rural populations, from 1500 projected to 2050 © Our World in Data, CC BY; data OWD

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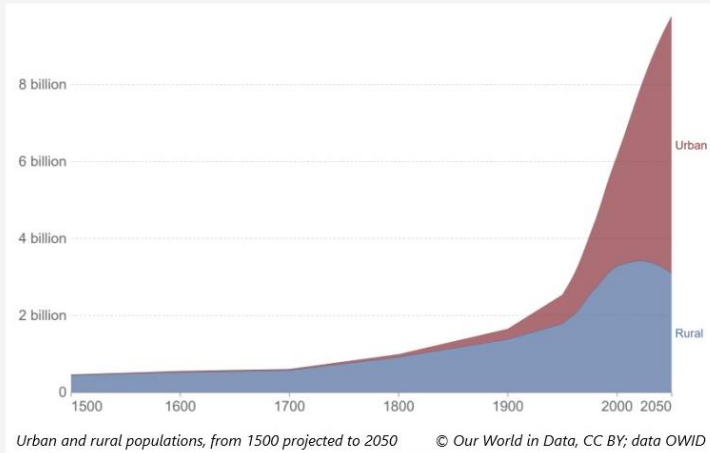


Question 23 of 40



Which of these conclusions can be correctly determined from the graph? Select all that apply.

- The industrial revolution is responsible for the rapid rise in the urban population.
- A rapid increase in the proportion of people living in urban areas coincided with rapid population growth.
- The world has undergone a process of rapid urbanisation since 1950.
- The world's population has only recently become more urbanised than rural.



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Question 24 of 40



Which of these statements are correct? Select all that apply.

- Urbanisation refers to an increasing proportion of people living in urban areas.
- An increasing number of people living in an urban area is referred to as urban growth.
- Urbanisation must always occur for urban growth to take place.
- Urbanisation refers to large capital cities while urban growth is more relevant to smaller cities.

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Question 25 of 40

Classify the statements as either a cause or consequence of the growth of Jakarta, Indonesia. Click on the box in the correct column.

Statement	Cause	Consequence
Traffic congestion in Jakarta creates long commutes for residents.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Jakarta is the centre of government.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Increased drilling for home wells to access groundwater is causing subsidence.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Air pollution is routinely higher than WHO air quality guidelines.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traditional farming practices do not provide enough income for families.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Question 26 of 40



Building in Singapore

© B Morin, CC BY SA 4.0

Which of these urban challenges is the design in the photo best addressing?

- traffic congestion
- urban blight
- urban heat island
- high housing cost

Question 27 of 40


The term urban morphology refers to a city's:

- site and situation
- development and expansion
- functional complexity
- layout and form


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Question 28 of 40


The diagrams below are of street networks covering 1 square mile (2.6 km<sup>2</sup>) from four different cities. Match the captions to the diagrams by dragging and dropping below the appropriate diagram.



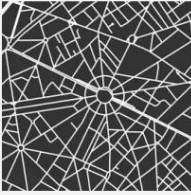
A suburban business park in North America, designed in the 1960s



A planned residential suburb, typical of late 20th century American urban design



A North African city with its medieval medina quarter in the centre



Near the centre of a European city, extensively remodelled in the 19th century

Images © G Boeing, CC BY SA 4.0

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Which process in a city is best defined as where one land use function takes over from another?

- succession
- gentrification
- rural-urban fringe
- urban expansion

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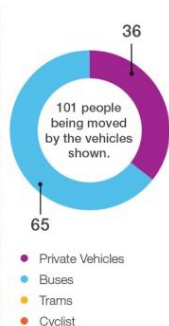
Question 30 of 40



Based on the image below, in which ways can multi-modal transport improve liveability? Select all that apply.

- reduces traffic congestion
- reduces carbon emissions
- reduces destination choice
- improves social connections

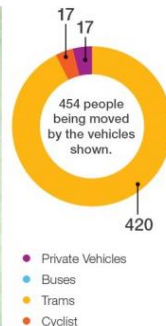
CAR ORIENTED



Note assumptions:

- 30 Private vehicles with 1.2 people per car moving 36 people
- 2 Buses with 50% occupancy moving 65 people

MULTI-MODAL



Note assumptions:

- 14 Private vehicles with 1.2 people per car moving 17 people (with less traffic congestion)
- 2 Trams with 70% occupancy moving 420 people
- 17 Bicycles moving 17 people

Using the Gold Coast's road space more efficiently

© City of Gold Coast

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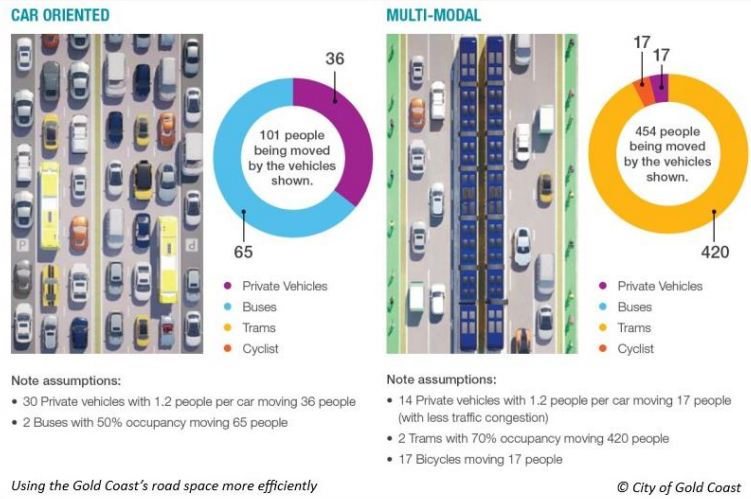
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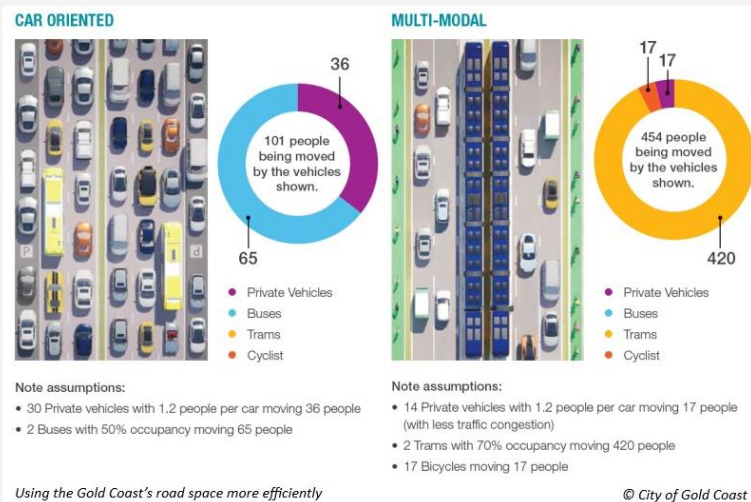
Choose the drop-down text that correctly completes the sentence. You can estimate the number or use the calculator by clicking on the symbol in the top right corner.

Using the car-oriented information below, with average occupancies, a bus moves approximately 27 times as many people as a car.



What is the best explanation why buses are shown as having a lower occupancy rate than trams in the image below?

- Trams only travel on popular routes.
- More people can travel on trams.
- Trams emit fewer greenhouse gases.
- Buses are very noisy.



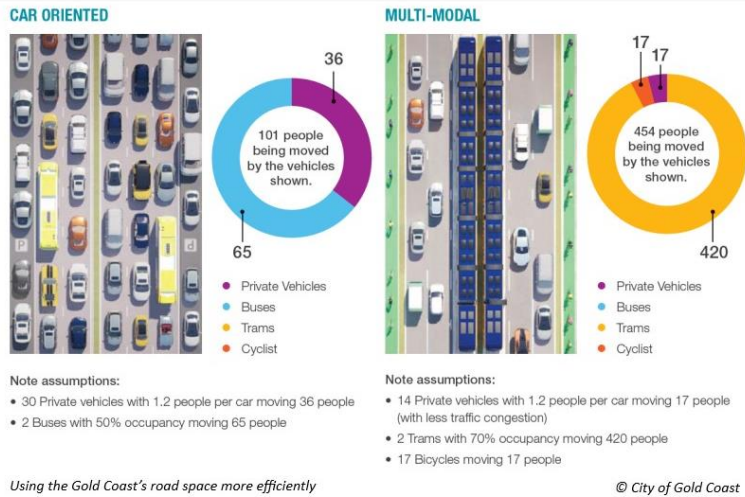


Question 33 of 40



Which of these would be a negative consequence of shifting to the multi-modal transport model shown in the image below?

- Lack of parking reduces trade in local businesses.
- Active transport methods are discouraged.
- Commuters spend less time travelling to work.
- Private car ownership becomes more expensive.



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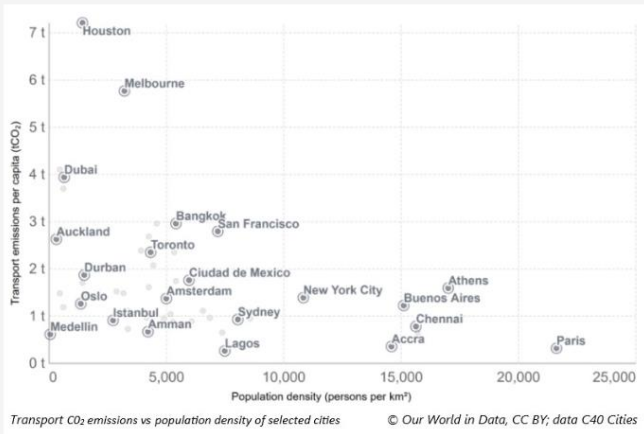
Which of these best defines transit oriented development?

- the development of communities in greater density around public transport infrastructure
- aligning development to make the best use of existing major arterial roads and motorways
- the development of integrated transport infrastructure
- a development where medium and high-density housing, retail and employment are in walking distance of each other

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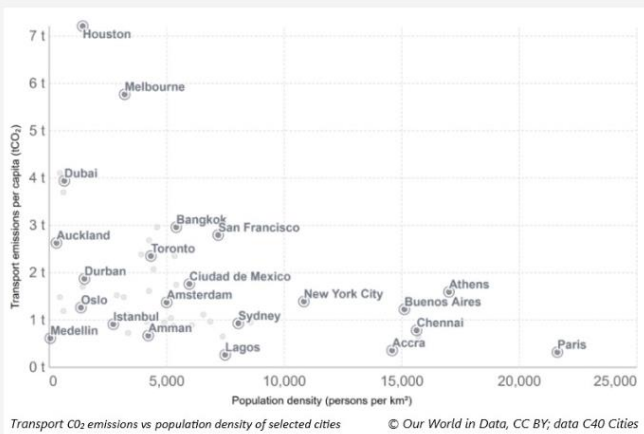
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Which of these statements is supported by the data in the graph?

- For most cities, there is no correlation between the indicators.
- For the most densely-populated cities, there is a negative correlation between the indicators.
- For the least densely-populated cities, there is a positive correlation between the indicators.
- There is a strong negative correlation between the indicators.

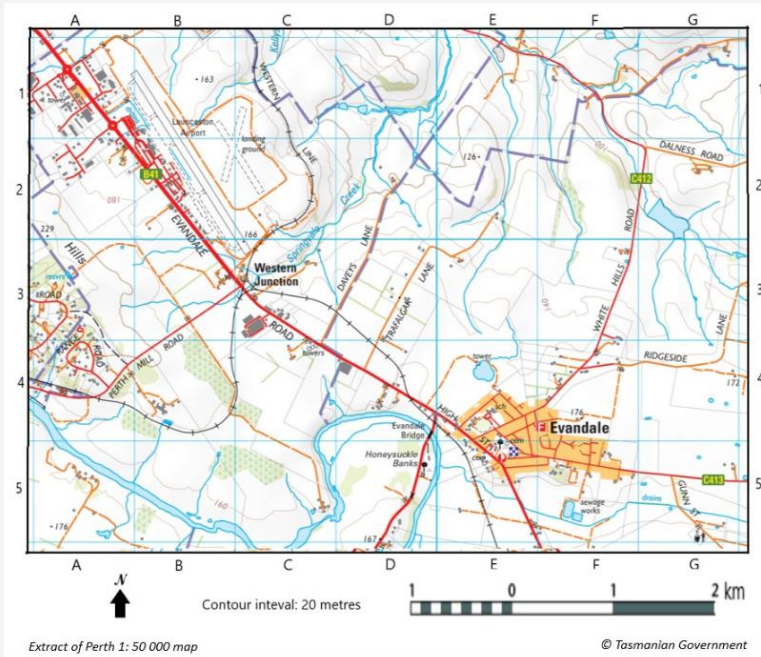


Which other factor most influences the level of CO<sub>2</sub> emissions from low density cities?

- reliance on car travel
- type of housing density
- location of city
- level of development

Using the map, in approximately which direction would you be driving to go from Evandale to Western Junction?

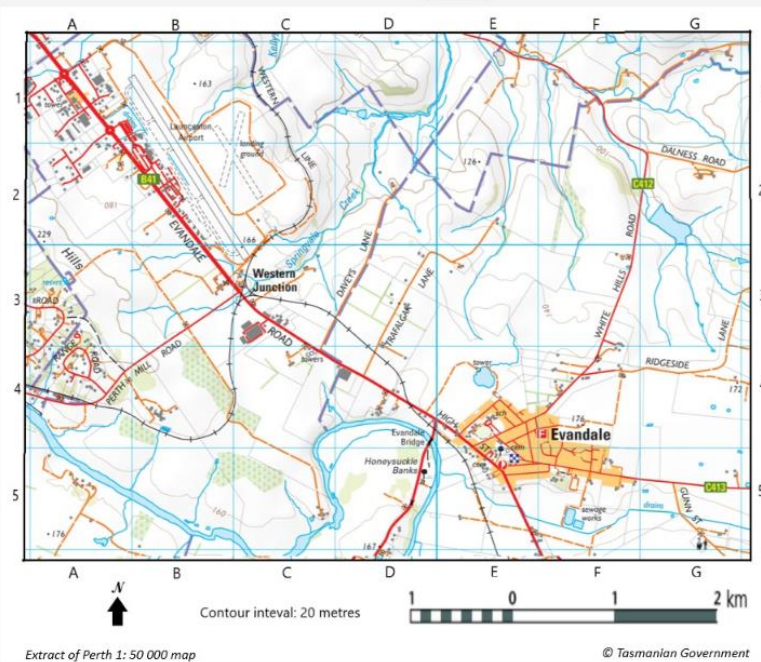
- WNW     
  SSE     
  NNW     
  ESE



Drag and drop the number that correctly completes the sentence. You may need to scroll down to see all the map.

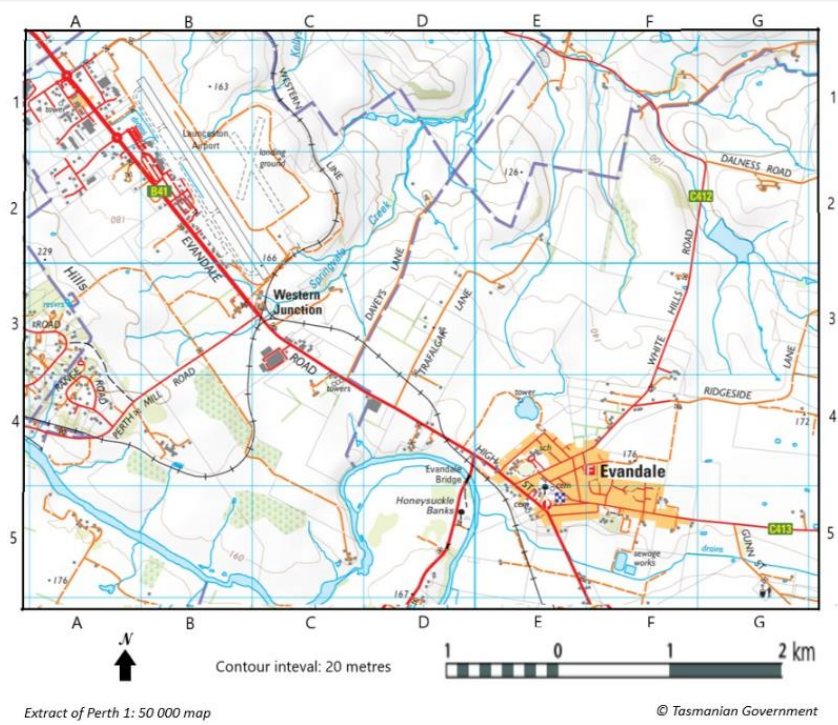
- 150    170    190    200

The plantation shown in grid square C5 on the map is approximately  metres above sea level.



Which of these is located in grid square G2 on the map?

- farm dam     
  hydroelectric station     
  lagoon     
  swamp



Drag and drop the number that correctly completes the sentence. You may use the on-screen ruler - click on the symbol in the top right corner, drag and rotate it.

- 1.2    3.2    4.3

Using the map below, the length of Launceston Airport's main runway (see B1) is approximately  km.

