
AP[®] Human Geography

Sample Student Responses and Scoring Commentary Set 2

Inside:

Free-Response Question 2

- ☒ **Scoring Guidelines**
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Question 2: One Stimulus**7 points**

(A) Identify ONE type of boundary shown on the map.**1 point**

Accept one of the following:

- A1. Political boundary (e.g., state, district, county)
- A2. Physical or natural boundary (e.g., the Potomac River)
- A3. Geometric boundary (e.g., District of Columbia, Arlington County)
- A4. Relict boundary (e.g., Arlington County was once part of the District of Columbia)
- A5. Superimposed boundary (e.g., District of Columbia)
- A6. Consequent boundary (e.g., Potomac River between the District of Columbia and Virginia)
- A7. Antecedent boundary (e.g., colonial-era boundaries)
- A8. Subsequent boundary (e.g., District of Columbia carved out of already existing Maryland and/or Virginia)

(B) Describe ONE site characteristic of Washington, D.C., shown on the map.**1 point**

Accept one of the following:

- B1. Washington, D.C., is located along the Potomac River and/or the Anacostia River.
- B2. Washington, D.C., is at the confluence or intersection of the Potomac River and the Anacostia River.
- B3. Washington, D.C., is at the intersection of the coastal plain and the Piedmont (foothills) or on the fall line.
- B4. Washington, D.C., is located in an area with a tidal estuary, a peninsula, freshwater streams, wetlands, fertile soils, low-lying areas, and/or tidal flats.

(C) Explain how political power is spatially distributed within a federal system of governance.**1 point**

Accept one of the following:

- C1. Power is dispersed or shared between the central, sub-national, and/or local governments.
 - C2. Most federal systems have capital districts (e.g., Washington, D.C., Brasília) or locations (e.g., courts, military bases) where some government functions are centralized and also sub-national (state, provincial, departmental) capitals where local or regional political functions are dispersed.
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- (D) Explain ONE way suburban sprawl is likely to negatively affect environmental sustainability in metropolitan areas. 1 point**

Accept one of the following:

- D1. Development related to sprawl (e.g., construction, transportation, utilities) can lead to increased air or water pollution.
- D2. Land cover change related to sprawl (e.g., deforestation) can lead to the loss or fragmentation of habitats, water pollution, and/or decreased biodiversity.
- D3. Expansion of transportation networks related to sprawl can lead to more pollution and/or warmer climates (e.g., traffic, congestion, urban heat islands, inefficient energy use).
- D4. Development related to sprawl can inhibit the use of land for local food production, open space, conservation, greenbelts, or preservation efforts.

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- (E) Describe ONE way transportation-oriented development, such as expanding a Metrorail line, may promote urban sustainability. 1 point**

Accept one of the following:

- E1. By promoting walkability, livability, more efficient land use (e.g., fewer roadways, reduction in impermeable surfaces), and/or reductions in pollution.
- E2. By reducing the number of cars, resulting in decreased air and/or noise pollution.
- E3. By reducing the ecological footprint (e.g., reduced carbon footprint, reduced energy use) of the city.
- E4. Heavily trafficked and/or accessible transit stops may become places of mixed-use development.
- E5. Additional transit stops can reduce commuting distances or travel times to work and/or to other service locations.
- E6. Commuting can be more economically sustainable than car travel (e.g., cost of car ownership, fuel, maintenance, insurance, parking).

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- (F) Explain how regional transportation networks led to the development of edge cities. 1 point**

Accept one of the following:

- F1. Transportation enabled commercial land use to decentralize (move away) from city centers.
 - F2. Edge cities formed near major highway intersections or transit stations because those developments needed to be accessible to workers and/or consumers.
 - F3. By providing access to services or office locations for the people who live, work, and/or shop there.
 - F4. Transportation provides access to lower-cost land away from the city center (bid rent theory).
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|------------|--|----------------|
| (G) | Explain how the geographic fragmentation of local governments could present a challenge to the Washington, D.C., metropolitan area’s ability to construct a new Metrorail line. | 1 point |
|------------|--|----------------|
-

Accept one of the following:

- G1. Construction could be challenging because it would involve multiple governments to fund, plan, zone, and/or cooperate.
- G2. Local governments could disagree with the federal government about where to construct a new Metro line.
- G3. Construction could be challenging because parts of the new Metro line might not fall clearly under the jurisdiction of a specific government.
- G4. Having many competing ideas or authorities could make the planning process inefficient and/or make it difficult to determine accountability.
- G5. Local governments could disagree on how to share the costs of construction and/or operational costs of the rail system.
- G6. Local governments could disagree on the location of new stations because development around new Metro stations is a source of tax revenue and/or economic development.

Total for question 2: 7 points

Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

- A. One type of boundary shown on the map includes a geometric boundary. This is represented by the Washington D.C. and state border lines in the key.
- B. One site characteristic of Washington D.C. shown on the map includes that it is located by the Anacostia River.
- C. Political power ~~is~~ within a federal system of governance is spatially distributed by providing power to regional, state, and local governments, as well as the central government remaining. Some autonomy (semi-autonomy) is provided at a subnational scale to take care of local issues.
- D. One way ^{Suburban} ~~urban~~ sprawl is likely to negatively affect environmental sustainability in metropolitan areas is by leading to an increase in use of transportation to commute in and out. A larger is going to make it take longer to get to services in the central part of city causing less walkability and more car usage, resulting in an increase in ~~the~~ the carbon footprint.
- E. Establishing a transport-oriented ^{development} ~~development~~ by expanding a Metrorail line would promote urban sustainability is reducing the amount of cars / other modes of transportation on the road resulting in less ~~less~~ crammed highways and roads, and also less gas ~~emissions~~ emissions in the atmosphere resulting in less pollution and healthier air to breathe.

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- Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

F. Regional transportation networks have led to the development of edge-cities as commuting to spaces farther away has become less time-consuming and much more efficient with the introduction of public transportation. This allows people to settle farther out from the CBD and create opportunities for offices and services to open up in edge-cities and flourish.

G. Geographic fragmentation of local governments could represent a challenge to the Washington D.C. metropolitan area as it could be extremely hard to get all of the governments to agree on one thing considering their differences in priorities based on their region. The government of Arlington County may not favor to put money into a Metrorail line due to its already proximity to the main city meanwhile Prince Georges county might.

Page 5

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● Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

A. The state borderline boundaries are geometric.

B. One site characteristic of Washington D.C. is the Anacostia river. It is a distinct thing that is unique to this area. The river ~~is~~ flows directly into the center of Washington D.C.

C. In a federal ~~system~~ system of government political power is distributed throughout the ~~area~~ area they are in control of. It is distributed evenly to allow everybody to be represented. The power spans across the area and accounts for cultural differences in the locations where it is at.

D. Suburban sprawl negatively affects environmental sustainability because it locates in the farmland. By locating in the unoccupied farm land, that land can no longer be used for agricultural practices. This decreases sustainability because the land available may not be able to support the increasing and expanding population as it grows.

E. Transportation oriented development increases urban sustainability by decreasing ~~the~~ pollution. By increasing and promoting the use of public

Page 5

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Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

transportation, ~~not~~ not as many people own person ~~and~~ auto mobiles. This then decreases the amount of greenhouse gasses being emitted into the atmosphere.

F. Because you can travel further people are able to live further. Advancements in transportation like regional transportation allow people to live in rural areas and commute to work. This decreases the need to live at the center of business and people choose to live in the less densely populated areas such as edge cities.

G. Because of the fragmentation of local governments everybody might not agree on constructing a new metrorail line. If ~~if~~ not all areas of government agree they may not be able to get proper funding to proceed. To add another rail line everyone has to agree which can be challenging with everyone having their own opinions.

- **Important:** Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

- A. One type of boundary shown is a geometric boundary.
- B. One site characteristic of Washington, D.C. is ~~there~~ metro rail lines.
- C. Political power is spatially distributed by country borders.
- D. Suburban sprawl will cause more transportation which will lead to more carbon emissions affecting environmental sustainability.
- E. It will promote urban sustainability by causing more people to live in urban areas.
- F. It leads to the development of edge cities because it will cause the federal system to give assistance.
- G. It will give local governments authority to oppose to the ability to construct a new Metrorail line.

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Use a pen with black or dark blue ink only. Do NOT write your name. Do NOT write outside the box.

Question 2

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Overview

This one-stimulus question focused on how the attitudes and values of a population, as well as the balance of power within that population, are reflected in the built landscape, as revealed in decisions on how and where to expand commuter rail lines within a metropolitan region. Students were expected to draw from two main units for this question, Unit 4 (Political Patterns and Processes) and Unit 6 (Cities and Urban Land-Use Patterns and Processes). The main skills for this question are found in Skill Category 2 (Spatial Relationships) and Skill Category 4 (Source Analysis). Additional skills for this question are found in Skill Category 1 (Concept and Processes) and Skill Category 5 (Scale Analysis).

The stimulus for this question was a map of Washington, D.C., and surrounding jurisdictions showing the boundaries of political jurisdictions as well as current and future Metrorail lines.

In part A students were asked to identify one type of boundary shown on the map.

In part B students were asked to describe one site characteristic of Washington, D.C., shown on the map.

In part C, given that Washington, D.C., is the seat of the national government in the federal government system of the United States, students were asked to explain how political power is spatially distributed within a federal system of governance.

In part D, given the suburban sprawl that has impacted the Washington, D.C., area, students were asked to explain one way suburban sprawl is likely to negatively affect environmental sustainability in metropolitan areas.

In part E students were asked to describe one way transportation-oriented development, such as expanding a Metrorail line, may promote urban sustainability.

In part F students were asked to explain how regional transportation networks led to the development of edge cities.

In part G students were asked to explain how the geographic fragmentation of local governments could present a challenge to the Washington, D.C., metropolitan area's ability to construct a new Metrorail line.

Question 2 (continued)

Sample: A **Score: 7**

The response to part A earned 1 point because it correctly identifies one type of boundary shown on the map as a “geometric boundary,” as stated in A3.

The response to part B earned 1 point because it correctly describes a site location of Washington D.C., found on the map as “located by the Anacostia River,” as stated in B1.

The response to part C earned 1 point because it correctly explains how political power is spatially distributed within a federal system of governance. The response correctly explains that political power within a federal system of government “is spatially distributed by providing power to regional, state, and local governments, as well as the central government remaining.” This response corresponds with power being dispersed or shared between the central, sub-national, or local governments, as stated in C1.

The response to part D earned 1 point because it correctly explains one way suburban sprawl is likely to negatively affect environmental sustainability in metropolitan areas. The response correctly explains that sprawl will lead to an “increase in use of transportation to commute in and out ... causing less walkability and more car usage, resulting in an increase in the carbon footprint.” This response corresponds with the expansion of transportation networks related to sprawl leading to more pollution, congestion, and inefficient energy use, as stated in D3.

The response to part E earned 1 point because it correctly describes one way transportation-oriented development, such as expanding a Metrorail line, may promote urban sustainability by “reducing the amount of cars/other modes of transportation on the road.” This response correctly describes that fewer cars will result in “less crammed highways and roads, and also less gas emissions in the atmosphere resulting in less pollution and healthier air to breathe.” This response corresponds with reducing the number of cars, resulting in decreased air pollution, as stated in E2.

The response to part F earned 1 point because it correctly explains how regional transportation networks led to the development of edge cities. The response correctly explains that “regional transportation networks ... allows people to settle farther out from the CBD and create opportunities for offices and services to open up in edge-cities.” This response corresponds with transportation enabling commercial land-use to decentralize (move away) from city centers, as stated in F1.

The response to part G earned 1 point because it correctly explains how the geographic fragmentation of local governments could present a challenge to the Washington, D.C., metropolitan area’s ability to construct a new Metrorail line. The response correctly explains that it “could be extremely hard to get all of the governments to agree on one thing considering their differences in priorities.” This response corresponds with construction being challenging because it would involve multiple governments to fund, plan, zone, or cooperate, as stated in G1.

Question 2 (continued)

Sample: B

Score: 5

The response to part A earned 1 point because it correctly identifies one type of boundary shown on the map as “geometric,” as stated in A3.

The response to part B earned 1 point because it correctly describes one site characteristic of Washington, D.C., shown on the map. The response correctly describes how water from the Anacostia River “flows directly into the center of Washington D.C.” This response corresponds with Washington, D.C., being located along the Anacostia River, as stated in B1.

The response to part C did not earn a point because it incorrectly explains how political power is spatially distributed within a federal system of governance. The response incorrectly states that “political power is distributed throughout the area they are in control of. It is distributed evenly to allow everybody to be represented.” The response would have earned a point if it had described how power is dispersed or shared between the central, sub-national, and/or local governments, as stated in C1.

The response to part D earned 1 point because it correctly explains one way that suburban sprawl is likely to have a negative effect on environmental sustainability in metropolitan areas. This response correctly explains that “by locating in the unoccupied farmland, that land can no longer be used for agricultural practices. This decreases sustainability because the land available may not be able to support the increasing and expanding population.” This response corresponds with development related to sprawl inhibiting the use of land, as stated in D4.

The response to part E earned 1 point because it correctly describes one way transportation-oriented development, such as expanding a Metrorail line, may promote urban sustainability. This response correctly explains that “promoting the use of public transportation, not as many people own personal automobiles. This then decreases the amount of greenhouse gasses being emitted into the atmosphere.” This response corresponds with reducing the number of cars, resulting in decreased air and/or noise pollution, as stated in E2.

The response to part F did not earn a point because it incorrectly explains how regional transportation networks led to the development of edge cities. The response incorrectly explains how advancements in regional transportation “allow people to live in rural areas and commute to work.” The response would have earned a point if it had explained that transportation enabled commercial land-use to decentralize (move away) from city centers, as stated in F1.

The response to part G earned 1 point because it correctly explains how the geographic fragmentation of local governments could present a challenge to the Washington, D.C., metropolitan area’s ability to construct a new Metrorail line. The response correctly explains that “if not all areas of government agree they may not be able to get proper funding to proceed.” The response corresponds with construction being challenging because it would involve multiple governments to fund, plan, zone, and/or cooperate, as stated in G1.

Question 2 (continued)**Sample: C**
Score: 2

The response to part A earned 1 point because it correctly identifies one type of boundary shown on the map as a “geometric boundary,” as stated in A3.

The response to part B did not earn a point because it incorrectly describes one site characteristic of Washington D.C., shown on the map as the “metrorail lines” rather than describing a physical attribute inherent to the location of Washington, D.C. The response would have earned a point if it had described Washington, D.C., as located along the Potomac River and/or the Anacostia River, as stated in B1.

The response to part C did not earn a point because it incorrectly explains how political power is spatially distributed within a federal system of governance. The response incorrectly explains that “political power is spatially distributed by country borders,” which does not address the sharing of power between central and local governments. The response would have earned the point if it had explained that power is dispersed or shared between the central, sub-national, and/or local governments, as stated in C1.

The response to part D earned 1 point because it correctly explains that “suburban sprawl will cause more transportation which will lead to more carbon emissions affecting environmental sustainability.” This response corresponds with the expansion of transportation networks related to sprawl leading to more pollution and/or warmer climates, as stated in D3.

The response to part E did not earn a point because it incorrectly describes one way transportation-oriented development, such as expanding a Metrorail line, may promote urban sustainability. The response incorrectly states that “it will promote urban sustainability by causing more people to live in urban areas,” which does not address how transportation-oriented development promotes urban sustainability. The response would have earned the point if it had described how expanding a Metrorail line could promote urban sustainability by reducing the number of cars, resulting in decreased air pollution, as stated in E2.

The response to part F did not earn a point because it incorrectly explains how regional transportation networks led to the development of edge cities. The response states, “it leads to the development of edge cities because it will cause the federal system to give assistance,” which does not address the role of transportation networks. The response would have earned the point if it had explained that transportation enabled commercial land-use to decentralize (move away) from city centers, as stated in F1.

The response to part G did not earn a point because it does not explain how the geographic fragmentation of local governments could present a challenge to the Washington D.C., metropolitan area’s ability to construct a new Metrorail line. The response states that “it will give local governments authority to oppose to the ability to construct a new Metrorail line,” without providing additional explanation. The response would have earned the point if it had clearly explained how construction could be challenging because it would involve multiple governments to fund, plan, zone, and/or cooperate, as stated in G1.