

Appendix: Rubrics

# City Essay Rubric

0 **No Points** Requirements missing.

Poor Poor-Fair quality. Fulfills less than 50% of requirements.

1

2

Good Average-Above average quality. Fulfills at least 85% of requirements.

#### 3 Excellent Excellent quality. . Fulfills 100% of requirements with additional distinctive features.

I. Introduce City and Define the Problem (15 points)	0	1	2	3
<ol> <li>City overview</li> <li>Basic city information: population, age, location</li> <li>Climate and/or natural features</li> <li>City economy</li> </ol>	No description of city.	Brief description of city.	Good description of the city.	Detailed description of city.
<ul> <li>2. Infrastructure</li> <li>Types of Infrastructure could include: housing, transportation, energy, pollution control or others.</li> </ul>	No description of city infrastructure.	Brief description of one type of city infrastructure.	Good description of two different types of infrastructure.	Detailed description of two or more types of infrastructure.
<ul> <li>3. City services</li> <li>Types of city services could include: education, healthcare, fire or police protection, etc.</li> </ul>	No description of city services.	Brief description of one type of city service.	Good description of two different types of city services.	Detailed description of two or more types of city services.
4. City innovations & futuristic elements	No description of innovation and what makes it futuristic.	Brief description of innovations and what makes it futuristic.	Good description of innovations and what makes it futuristic.	Detailed description of innovations and what makes it futuristic.
5. Problems to be solved with public spaces	No description of any problems.	Brief description one problem.	Good description of two problems.	Detailed description of two or more problems.
II. Specs and Solution (21 Points)	0	1	2	3
<ul> <li>6. The solution</li> <li>Network of public spaces across city</li> <li>Two examples of redeveloped public spaces: <ul> <li>roadway</li> <li>greyfield or brownfield</li> </ul> </li> </ul>	No description of network of public spaces or examples of redeveloped space.	Brief description of network of public spaces and one redeveloped spaces or two examples are not different in type.	Good description of network and two different examples of redeveloped spaces.	Excellent description of network, two different types of redeveloped spaces, and how they work together.
<ul> <li>7. Public space before improvements and after</li> <li>Infrastructure improvements</li> <li>Improvements to health, happiness, safety of citizens</li> </ul>	No description.	Brief description of either before improvements made or after improvements made.	Good description of before improvements made and after improvements made.	Excellent description of before improvements made and after improvements made.



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II. Specs and Solution (21 Points) (Continued)	0	1	2	3
<ul> <li>8. Impact of the public space on environment and other problems</li> <li>Environmental impacts, social, or other issues</li> </ul>	No description of how problems were solved.	Brief description of how problems were solved.	Good description of how problems were solved and impact on environment, or other described issues.	Excellent description of how problems were solved, impact on environment, or other described issues, and other improvements.
9. Technology involved	No discussion of technology.	Some discussion of technology involved.	Good discussion of technology involved.	Excellent discussion of technology involved.
<ul> <li>10. Tradeoffs &amp; compromises</li> <li>Benefits, drawbacks, risks</li> <li>Tradeoffs &amp; compromises</li> <li>Positive and negative impacts</li> </ul>	No discussion of benefits, risks or tradeoffs	Brief description of at least one benefit/risk and tradeoff.	Good description of benefits, risks and tradeoffs or compromises	Excellent description of benefits, risks and tradeoffs or compromises for this solution.
11. Public Usage & Quality of Life	No discussion of how citizens use space or impact on quality of life.	Some discussion of how citizens use space and impact on quality of life.	Good discussion and description of how citizens use space and impact on quality of life.	Excellent discussion and description of how citizens use space or impact on quality of life.
12. Engineering disciplines involved and role of 1-2 engineers	Engineering disciplines are not identified.	Discusses one engineering discipline or role of one engineer.	Discusses more than one engineering discipline and role of engineers.	Good discussion of more than one engineering disciplines and roles of the engineers.
III. Judge Assessment of Solution (12 Points)	0	1	2	3
<ul> <li>13. Effectiveness and quality of solution</li> <li>Effective solutions to stated prob-lems</li> <li>Clever design and application of technology</li> <li>Overall health, happiness, safety of citizens</li> </ul>	Not effective.	Solution is some- what effective, technology and design can be better, with fair impact on citizens' health, happiness, and safety.	Solution is effec- tive, but technology and design could be improved, with good impact on citizens' health, happiness, and safety.	Solution is a highly effective, with excellent technol- ogy application, with high impact on citizens' health, happiness, and safety.
<ul> <li>14. Innovative and futuristic solution</li> <li>Reasonable extrapolation and application of technology</li> </ul>	Not innovative or original.	Somewhat original or innovative. Not futuristic.	Solution is innovative, original and somewhat futuristic.	Solution is highly innovative, original and futuristic.

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III. Judge Assessment of Solution (15 Points) (Continued)	0	1	2	3
<ul><li><b>15. Plausibility of solution</b></li><li>Based on sound scientific principles</li></ul>	Implausible or not scientifically sound.	Solution is not very plausible (science fiction).	Solution is somewhat plausible.	Solution is highly plausible and scientifically sound.
<ul> <li>16. Tradeoffs &amp; compromises</li> <li>Accounting for risks, benefits</li> <li>Assessing consequences and making logical decisions</li> </ul>	Does not explore tradeoffs.	Some consideration of tradeoffs, but ignores major issues.	Adequate assessment of tradeoffs. Analysis and decisions could be better.	Excellent assessment of risk, benefits, and tradeoffs in decision-making process.
IV. Writing Skills (12 Points)	0	1	2	3
17. Organization	Poorly organized.	Fair organization.	Good organization.	
18. Writing skills	Poor writing.	Fair writing.	Good writing.	
19. Grammar & spelling	Many errors.	Some errors.	Few, if any, errors.	
<ul> <li>20. Maximum number of graphics</li> <li>If used, max of 4 (does not include tables)</li> </ul>	Exceeds maxi- mum of 4 graphics, illustrations.		Does not exceed maximum of 4 graphics and/or illustrations.	
<ul> <li>21. List of references</li> <li>At least three acceptable references</li> <li>Wikipedia not recognized as an acceptable reference</li> </ul>	No references.	Less than three acceptable references.	At least three acceptable references.	
<ul><li>22. Word count</li><li>Does not include title, references</li></ul>	No word count at end of document or inaccurate count.		Accurate word count at end of document.	