

## **Suggested Practice Questions 2019-2020**

*Judges will be given mandatory questions on competition day to ask all teams.*

*Below are questions we provide to the teams for practice. The level to which teams practice answering these questions will vary depending on a number of team-specific factors.*

### **Budget**

1. How do you fund city operations (i.e. utilities, infrastructure, and public services)?
2. How does your city support low-income or vulnerable residents?

### **Industry and Jobs**

1. What industries drive the economy in your city?
2. What types of jobs are available in your industrial and commercial zones?

### **Environment & Energy**

1. What measures does your city take to prevent/reduce pollution (i.e. improve air quality and increase sustainability)?
2. How do you generate power in your city and why did you choose that method?

### **Transportation**

1. Is most transportation in your city public (like a train or bus today), or private (like an individual car)? What are the pros & cons to each?
2. How is transportation in your city futuristic and innovative?

### **Health & Services**

1. How does your city design ensure equal access and opportunity for people with disabilities?
2. What foods do your residents eat and where does the food come from?
3. What services does your city provide to its residents (i.e. police, fire, medical, sanitation)?

### **Lifestyle**

1. How are children and adults educated in your city?
2. How does your city support a healthy lifestyle for its residents?
3. Why is it important for a city to have a diverse population of citizens?
4. How do residents in your city communicate with each other?

### **Building the Model**

1. What factors did you consider while laying out the zones in your city? Are the zones separate or mixed-use?
2. What was the most difficult challenge you encountered while building the model?
3. How did you design your moving part? How does it help your city function?
4. How did you determine what part(s) of your city to depict in your model?

### **Future City Process**

1. How did your team's vision of your future city evolve and change as you worked on the deliverables?
2. Did anything you learned about engineering surprise you?
3. Did your team have any disagreements along the way? How did you solve them?
4. Describe the process you and your teammates used to create your city.

### **Clean Water: Tap Into Tomorrow**

1. What threat to your city's water supply did you choose? What are the immediate and long-lasting effects of this threat?
2. How does your city's resilient water system supply clean drinking water to your residents, during/despite your chosen threat?
3. What are some risks and tradeoffs of your resilient water system?
4. Where does your city's water come from (a river, an aquifer, a reservoir, etc.)?
5. What types of engineers and engineering disciplines were utilized in the design of your water supply system? What types of engineers are involved in the day-to-day operations of the system?
6. Beyond the water system, what are other examples of how your future city is resilient?
7. How does your chosen threat impact the health and safety of your city's residents, especially vulnerable populations?
8. There are many parts to a city's water system (collection, storage, treatment, etc.). Which part of your system is the most futuristic and innovative? How so?
9. What vulnerabilities in current water systems does your futuristic system address and prevent?
10. Beyond making water safe to drink, does your city use any other water treatment processes or techniques (for things like enhancing taste, preventing cavities, etc.)? What are the benefits and risks of having additives in drinking water?