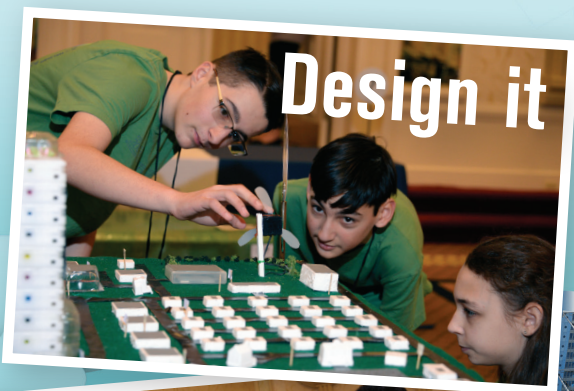


future City

COMPETITION

Judges Manual



DISCOVER



LET'S MAKE A DIFFERENCE

2017–2018

Each year 6th, 7th, and 8th grade students embark on a transformative experience as they ask and answer the question: How can we make the world a better place? From this simple starting point, teams spend four months imagining, researching, designing, and building cities of the future.

www.futurecity.org

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Welcome!

Thank you for volunteering to serve as a judge for the Future City Competition. Students, educators, and mentors have dedicated countless hours over the last several months to create the materials that you are judging. As you start to review the submissions, you will see the students' remarkable capacity for learning about our world and envisioning what the future may hold. Each year the creativity and poise of our participants inspire pride and amazement. While the competition's primary objective is to promote an interest in engineering, it also offers students the opportunity to flex their problem-solving skills, learn valuable lessons about the power of teamwork, and increases their motivation to study science, math, and engineering.

The Future City Competition

Across the country, teams of middle school students work with educators and STEM mentors to build cities of the future. Over four months, student teams design a virtual city using SimCity software; research and write a city essay addressing this year's theme—The Age-Friendly City: Identify an issue that senior citizens have and engineer two innovative solutions so they can remain active and independent; build a model of their city using recycled materials; complete a project plan to help organize their work; and present their ideas before judges at Regional Competitions in January. Regional winners represent their region at the Finals in Washington, DC in February.

Future City engages kids in engineering and so much more...

An evaluation (conducted by Concord Evaluation Group in 2015–2016) has again found that Future City is delivering on its educational promise!

Students Build 21st Century Skills

Educators, mentors, and parents agree Future City is strengthening students' skills.

	Educators	Mentors	Parents
Teamwork	94%	94%	94%
Problem-Solving	90%	84%	92%
Public Speaking	89%	92%	85%
Time Management	80%	77%	81%
Writing & Research	85%	86%	78%

Students Learn Value of Math, Science, and More

- 85% now see math and science as important to their future.
- 57% said Future City helped them in non-STEM subjects like English-language arts, social studies, history and others.

Students Discover Engineering

- 83% reported they learned how to use engineering to solve real-world problems.
- 68% said Future City helped them see themselves as engineers someday.
- 69% said Future City made them want to keep doing other engineering clubs or activities.

Students Drive Future City

- 75% of students said Future City boosted their self-confidence.
- 85% said Future City taught them that they could create something on their own—without the direction of an adult.

Students Learn How Their Communities Work

- 85% of students reported that Future City helped them learn how cities work.
- 89% reported that Future City helped them to appreciate all of the engineering that goes into a city.

How Does the Competition Work?

Future City is open to kids in grades 6, 7, and 8 who are from the same school, a home school environment, or are members of a nationally, regionally, or state-recognized youth-focused organization, such as the Boy or Girl Scouts, Boys and Girls Clubs, or 4-H.

The Future City Competition consists of five project deliverables. Teams can earn up to 258 points.

PROJECT DELIVERABLE	COMPETITION POINTS	DUE DATE
1. PROJECT PLAN	10 POINTS	DUE ONE WEEK BEFORE THE COMPETITION
Students complete a Project Plan to help them plan and organize the project. They use it throughout the project.		
2. VIRTUAL CITY	48 POINTS	DUE BEFORE COMPETITION
Students design a Virtual City using SimCity software and present their city's progress via a slideshow presentation.		
3. CITY ESSAY	60 POINTS	DUE BEFORE COMPETITION
Students describe the unique attributes of their city and provide a solution to this year's challenge: Identify an issue that senior citizens have and engineer two innovative solutions so they can remain active and independent (1,500 words maximum).		
4. CITY MODEL	70 POINTS	PRESENTED AT THE COMPETITION
Students build a physical model of a section of their city using recycled materials. In addition to highlighting their city of the future, the City Model must also show the solution to this year's challenge and include at least one moving part.		
5. CITY PRESENTATION	70 POINTS	PRESENTED AT THE COMPETITION
Students give a 7-minute presentation about their future city and their solution to the challenge, followed by a question and answer period of 5–8 minutes from the judges.		

“What I took away from the competition was how we were treated with respect by adults in the engineering industry. They took our ideas seriously and it felt like they were looking at us as peers, which is so rare when you are a kid. It really helped to build our confidence.”

– Adam Patinkin, Future City Alumnus

Your Role as a Judge

As a judge it is your job to draw on your expertise and to utilize Future City’s assessment tools to evaluate the teams’ efforts. In most cases, a panel of judges will review each deliverable. The scores are then averaged to compute a team’s final score for each deliverable.

Talk to your Regional Coordinator about what deliverable(s) you would like to judge and if they offer any local training sessions. Go to www.futurecity.org and click on Find My Region to contact your Regional Coordinator.

Types of Judges

Judges may volunteer to review any deliverable besides the Project Plan. (The Project Plan is not scored using a rubric; rather, teams earn the full points if it is submitted by the deadline.) Depending on which deliverable(s) you choose to judge, you will fall into one of two categories: Virtual Judge or Day-of-Competition Judge.

Virtual Judges: These judges score the Virtual City Slideshow and/or City Essay deliverables. These two deliverables may be scored remotely from your home or office, at your convenience. Typically judged late November – early January (depending on regional deadlines).

Day-of-Competition Judges: These judges score the City Model and City Presentation. This scoring takes place at the Regional Competition in your area and requires you to be present on that day. Typically judged on a weekend in January (specific date varies by region).

Note: The majority of regions follow this judging model, but some may categorize their judges slightly differently. If you have questions, contact your Regional Coordinator.

How to score a team’s work

Before you start judging, become familiar with the deliverable(s) —learn more about them at futurecity.org/about-the-competition/competition-deliverables. Next review the deliverable’s assessment rubric and the corresponding score sheet (located in this manual). But the most important thing is to remember that this competition is for students in 6th, 7th, and 8th grades.

ASSESSMENT RUBRICS

Each deliverable (except the Project Plan) has a detailed rubric that outlines how the deliverable is to be scored. The rubrics were developed to help ensure consistent scoring from judge to judge and from region to region. However, we recognize that the criteria cannot cover all possible situations. Judges need to examine the specific elements of each entry and determine a score that is consistent with the rubric and accurately reflects the quality of the team’s effort.



REMEMBER:

Future City’s participants are in 6th, 7th, and 8th grades. While they will be able to speak impressively about their cities and engineering technologies, remember that they are **kids!** Please ask age-appropriate questions (and see page 24 for some examples).

Virtual Judges

The next several pages will prepare you to successfully judge the Virtual City Slideshows and/or City Essays.

Competition Management System

Student teams upload their Virtual City Slideshows and City Essays directly to the Future City Competition Management System (CMS). This system allows judges to access these deliverables from any computer that has an internet connection.

This comprehensive computerized scoring program was developed to make judging easier, more efficient, and eliminate the need to fill out paper score sheets and return them to the regional coordinator. The system also eliminates the possibility of error by checking for missed scores and improper inputs.

STEPS FOR USING THE CMS:

1. Register as a Judge at www.futurecity.org/register. Select what region you are volunteering in and what deliverables of the competition you would like to judge. Be sure to save your username and password.
2. When the judging period begins, you will receive an email asking you to log-in and begin the judging process.
3. When you log into the CMS it will take you to a personalized homepage. This page will list the teams you have been assigned to judge. If you have volunteered to judge multiple deliverables (for example, the City Essay and the Virtual City Slideshows) a set of tabs will appear on your homepage. Please toggle between these tabs to see your assignments for each deliverable.
4. Next to each team's name there is a download button and a link to the electronic score sheet. The score sheets follow the outline of the rubrics and offers you an easy way to record your score for each team.
5. To begin reviewing, select "download" next to the first team's name on your list. Next, return to the CMS and open that team's score sheet. As you review the team's work you can enter the accompanying scores directly into the CMS.



Note: While all scores must be entered in the CMS, you may find it helpful to use a paper copy of the score sheet as you review a team's work. Each deliverable's score sheet is available in this Judges Manual. Simply make a number of copies and use these as you review. But remember, you must enter their scores in the CMS.

6. Once you are finished scoring please click "submit" to enter the scores. After you have submitted a team's score you can go back and make changes if you wish. This is helpful if you are reviewing a large number of entries.

Please check with your Regional Coordinator or Regional Judging Coordinator for more details.

While you will be assigned a limited number of teams to judge, if you are on a roll and having fun you can continue to judge by simply clicking the "give me another" button. (This option varies by region.)

Virtual City Slideshows

Students design a Virtual City using SimCity software and present their city's progress via a slideshow.

SimCity is a great learning tool for students to understand the complexities of city design and apply that learning as they develop their future city. They will see how early decisions (like where to place their roads, power plants, or industrial zones) affect their city's growth and development. The Virtual City is a trial run before kids design their competition city, but it is not a prototype of their city. Rather it's a chance for kids to experiment and get ideas they can apply to their future city.

For this deliverable, students choose two goals that they want to achieve in their Virtual City. At two points during the development of their Virtual City, students will document its development and their progress toward meeting their two goals. This closely follows the engineering design process. It also concentrates on students demonstrating their learning and sets them up to apply that learning to their City Essay, City Model, and City Presentation.

Slideshow Requirements

PROGRESS REPORT #1

When the Virtual City reaches a population range of 8,000 to 20,000 Sims/citizens, the team needs to pause to record their city's progress in the Virtual City Presentation Template. When the team reaches this point, we recommend saving the SimCity. This allows the students to compare how their city is developing over the two phases. Instructions on how to save a SimCity game are available in the SimCity Download Instructions at futurecity.org/resources (filter for SimCity).

Progress Report #1 includes the following items.

1. Four screenshots of their city including:

- One bird's-eye view of the city. This gives an overview of the city's layout. At this stage, it is important for the team to establish a fixed location where they will take their screenshots from. This fixed location will be the same for progress report #1 and #2.
- One screenshot showing the budget panel details. These include expenses, income, and taxes.
- Two screenshots showing the population panel details. These include one screenshot showing "workers" and "shoppers" and a second screenshot showing "students," "tourists" and "homeless."

2. A completed Benchmark Chart

The information here is a simple reporting of the status of the city.

3. A completed Progress Toward Goals Chart

The team will list its two goals, report on the status of each, and provide evidence that supports the status it has selected. The team will also provide two screenshots that illustrate the progress they are making toward each goal.

- #### 4. Strategies.
- The team will share what strategies worked and didn't work, and share strategies they will try in the next stage of development.

PROGRESS REPORT #2

Once the city's population reaches 20,000+ Sims/citizens, the team can complete the Virtual City Presentation Template. They'll fill out Progress Report 2 as well as address lessons learned about city planning and how they will apply this to the other Future City deliverables.

Virtual City Requirements

Teams will:

- Use SimCity software to design their virtual city
- Name their city after their team (**the city name and the team name have to be the same**)
- Complete the Virtual City Presentation Template in either PowerPoint, Word, or Google Slides
- Not add slides to the template
- Choose a region in which to build their city (any region is acceptable)
- Record their city's progress at two different points in time by taking screenshots that capture the layout of the city, the population size, and budget details
- Not use sandbox mode
- Create their cities in offline mode. (Although online mode is acceptable, the game should be private so no other players can make modifications to the city.)
- Turn off random disasters
- Try to build a city without using cheat codes
- Submit their final slideshow as a PDF



A HELPING HAND

Future City encourages teams not to use SimCity cheat codes. However, sometimes cities run into problems and need a bit of help (in the game and in the real world). If teams chose to use a cheat code, they were instructed to record this information under the "Financial Aid" section of the Benchmark Chart in their slideshow, and to then work diligently to reduce their city's reliance on financial assistance.



Sample Virtual City Goals

Before developing the city, teams need to choose two goals and two corresponding pieces of evidence from the list below or set their own:

SimCity Goal	SimCity Measurement
It is a green city	<ul style="list-style-type: none"> • Power source is wind or solar only • Sewage treatment plan is operational • Water filtration system in place (if needed for water pollution) • The city has a wave generator
Healthy, active, engaged citizens of all ages	<ul style="list-style-type: none"> • Excellent health facilities with low sickness, injury rates • 0 unemployment • At least two interconnected public transit options, used by citizens, with wait times less than 20 minutes • Happy citizens (100% satisfaction, green)
The city's population is highly educated	<ul style="list-style-type: none"> • Education level = 4 or more • All students enrolled in school
The city is free of pollution	<ul style="list-style-type: none"> • No water, air, ground, or radiation pollution • High-tech or manufacturing industry only • Sewage treatment plan is operational • Water filtration system in place (if needed for water pollution)
The city is well managed	<ul style="list-style-type: none"> • Mayor rating at least 75% • Balanced budget with no loans, cheats, or gifts • Tax rates no more than 10%
Public transit available to all Sims	<ul style="list-style-type: none"> • At least two types of public transit systems • Integrated transit systems (working together to get Sims where they want to go) • At least 50% of low- and medium-wealth Sims using the public transit systems • Wait times no more than 20 minutes
City is a happy, healthy city to live and work	<ul style="list-style-type: none"> • Excellent health facilities with low sickness • Injury rates = 0 deaths • Less than 10% of population is sick/injured • Parks and recreation facilities (20% of Sims visiting) • Park with walking distance (4 to 5 blocks)
City is a safe place to live and work	<ul style="list-style-type: none"> • Excellent police coverage across entire city (0 crimes committed) • Excellent fire coverage across entire city (0 buildings burned down)

Virtual City

RUBRIC & SCORESHEET

(0 to 48 points)

Judge's Name: _____

Future City Name: _____

Organization/School: _____

Students design a virtual city using SimCity software and present their city's progress via a slideshow presentation.

	0 points	1 point Poor	2 points Good	3 points Excellent	SCORE
I. SPECS (12 POINTS)					
1. Presentation quality and content <ul style="list-style-type: none"> Spelling, grammar, neatness Followed template <ul style="list-style-type: none"> Slide count didn't exceed 23 Did not use sandbox mode Complete goals, benchmarks, and required screenshots Same city throughout 	Didn't follow template. Sloppy, with errors. Used Sandbox mode.	Some errors. Followed the template. Missing some of required information or not using the same city throughout.	Few errors. Followed the template. Missing some of the required information. Same city throughout.	No errors. Adheres to template and all requirements for assessments and goals. Same city throughout.	
2. Goals <ul style="list-style-type: none"> Set two goals Goals are challenging and measurable Same goals used throughout slideshow 	No goals.	Fewer than 2 goals, or goals change from one phase to the next. Or, goals not measurable or challenging.	Good selection of goals that are measurable and somewhat challenging. Same goals throughout.	Excellent selection of challenging and measurable goals. Same goals throughout.	
3. Two reporting stages <ul style="list-style-type: none"> Virtual city assessment (benchmarks) and reporting at two points Each stage exhibits enough development to show progress 	No reporting phases.	Fewer than 2 reporting phases.	2 reporting phases. But little progress between phases.	2 reporting phases showing excellent progress between each.	
4. Screen shots <ul style="list-style-type: none"> Screen shots show zoning, budget details, population details, and goal progress Bird's-eye shots are from a consistent point/orientation in both phases All of the screenshots documenting a phase are taken at same point in time 	No or few screen shots.	Some of required screen shots, but not consistent orientation or time point.	Most of the required screen shots. Consistent orientation and time.	All required screen shots. Consistent orientation and time. Includes shots and detail to illustrate important goal progress points.	
II. TEST IT, IMPROVE IT (18 POINTS)					
5. Benchmark assessment and analysis of progress <ul style="list-style-type: none"> Accurate and fair assessment of features in city Include information to support goal progress 	None or inaccurate assessments.	1 assessment that is relatively accurate, but incomplete.	Benchmark assessment complete at each phase. Relatively accurate assessment of city features.	Benchmark assessment at each phase. Extremely accurate and complete assessment of city development.	
6. Analyzing strategies <ul style="list-style-type: none"> For both reporting phases, report on strategies tested during the simulation What worked and what didn't work 	No report on strategies.	1 report on strategy analysis. Incomplete analysis.	Reports on strategy analysis for each phase. Analysis somewhat incomplete.	Reports on strategy analysis for each phase. Excellent and complete analysis toward meeting goals.	

CONTINUED ON NEXT PAGE

VIRTUAL CITY RUBRIC AND SCORESHEET	0 points	1 point Poor	2 points Good	3 points Excellent	SCORE
II. TEST IT, IMPROVE IT (18 POINTS) (CONTINUED)					
7. Progress toward achieving stated goals <ul style="list-style-type: none"> For each reporting phase, city should show steady progress toward achieving stated goals Actually achieving goals is not required 	No progress toward achieving goals.	1-2 reports on goal progress. Not much advancement toward goals.	Reports on goal progress for each phase. Good advancement, but could be better or more consistent.	Reports on goal progress for each phase. Excellent and consistent advancement toward meeting goals.	
8. Refine design <ul style="list-style-type: none"> Using results of assessment, determine updates to plans and measurements as needed to make further progress toward goals in the next phase(s) of the simulation 	Updates to plans not addressed.	Plan updates are unrelated to goals.	Plan updates for next phase are reasonable, appropriate and address most goals.	Detailed plan updates and measurements for next phase are reasonable, appropriate and address all goals.	
9. Implement design changes and continue testing <ul style="list-style-type: none"> Adjust or change the virtual city as planned to further goal progress Test changes with the simulation and assess results 	No changes and no further goal progress.	A few changes added to further goal progress. Not much testing of changes.	Some of planned changes were added to the simulation and tested.	All planned changes were added to the simulated city. Thoroughly tested and measured for effectiveness.	
10. Budget manipulation <ul style="list-style-type: none"> Includes use of cheat codes, gifts or other budget manipulation techniques Allowable if: <ul style="list-style-type: none"> Recognized in benchmarks and analysis Strategies developed and implemented to eliminate dependence on budget help 	Cheats or other manipulation used, no admission.	Budget manipulation used throughout simulation. No effort to stop.	Budget manipulation used. Good effort and progress to eliminate dependence on assistance.	No budget manipulation or excellent and successful efforts to eliminate dependence on assistance.	
III. CONCLUSION (3 POINTS)					
11. Conclusions & lessons learned <ul style="list-style-type: none"> What team learned from the simulation about city design and operation What lessons will the team apply to their essay, model, and/or presentation? 	No lessons learned about city design/operation. No lessons to apply to other deliverables.	Brief summary of city design/operation lessons. Brief description of how team plans to use simulation lessons in the rest of the project.	Good summary of city design/operation lessons. Good description of how team plans to use simulation lessons in the rest of the project.	Excellent summary of city design/operation lessons. Excellent description of how team plans to use simulation lessons in the rest of the project.	
IV. JUDGE ASSESSMENT OF DESIGN & PROCESS (15 POINTS)					
12. Goals, city operation and design <ul style="list-style-type: none"> Goals are significant to a well-designed, well-operated city Overall well-designed, vital city showing significant growth, development and progress toward goals Good city management as reflected in strong budget 	Poor goal choice. Poor city development.	Good goals, but city is immature or underdeveloped. Poor budget management.	Good goals. City somewhat well-developed, but could have made better progress toward goals. Good balanced budget management.	Excellent goals and city development. Significant progress toward achieving goals. Strong positive cash flow budget.	

VIRTUAL CITY RUBRIC AND SCORESHEET	0 points	1 point Poor	2 points Good	3 points Excellent	SCORE
IV. JUDGE ASSESSMENT OF DESIGN & PROCESS (15 POINTS) (CONTINUED)					
13. Quality of analysis <ul style="list-style-type: none"> Analyzing and understanding results of simulation Fair and honest assessment of what works and what doesn't 	No analysis or complete misunderstanding of simulation results.	Little analysis or understanding of simulation results.	Good analysis and insight of simulation results.	Excellent analysis and insight into city operation and design as result of simulation.	
14. Got It: strategic thinking <ul style="list-style-type: none"> Developing reasonable and appropriate strategies for design changes/refinements from the information in benchmark analysis 	No reasonable or appropriate strategies.	Strategies somewhat reasonable or appropriate, but not effective in advancing toward goals.	Strategies reasonable and appropriate and somewhat effective in advancing toward goals, but could be better.	Strategies reasonable and appropriate and highly effective in advancing toward goals.	
15. Got it: design-test-refine process <ul style="list-style-type: none"> Using the simulation, applying the strategies, analyzing results Lessons to apply to other Future City deliverables (essay, model, presentation) 	No evidence of understanding the process or lessons to apply.	Some evidence of understanding the process. Lessons listed but could be improved.	Good understanding of the process. Team learning and adapting to simulation and testing. Good lessons to apply.	Excellent understanding of the process. Team learning and adapting to simulation, and testing. Significant lessons to apply.	
16. Got it: city design and operation <ul style="list-style-type: none"> Conclusions & lessons learned about city design/operation are significant and appropriate based on information given. Team learned lessons beyond the two original stated goals. Conclusions are thorough and illustrate understanding of simulation process. 	No significant or appropriate conclusions. No lessons learned beyond stated goals.	1-2 somewhat significant conclusions. One learned beyond stated goals.	Conclusions are significant, but missed some important areas. Two lessons learned beyond stated goals.	Excellent, thorough list of significant, appropriate conclusions. Three or more lessons learned beyond stated goals.	

Total Score (0–48 points) _____

The City Essay

Students write a 1,500-word essay that describes the unique attributes of their city and provides a solution to this year's challenge.

The essay asks students to imagine what it would be like to walk down the main street of their city 100 years in the future. What would someone hear, see, smell, feel? How would the people who live in this future city describe it? How is this city futuristic and innovative?

As students draft their City Essay, they explore questions like these and more to develop their future city. Students will think deeply about their city, its population, geographical location, culture, unique characteristics, and community's needs. In addition, the City Essay asks students to thoughtfully address this year's challenge: The Age-Friendly City.



Tim Ashton (photographer) and Andriote (designers)

The Age-Friendly City Overview

“We have to stop building cities as if everyone is 30 years-old and athletic.”

Gil Penalosa, Executive Director, 8-80 Cities

What does it mean to be a senior citizen? The official definition in most countries is a person who is more than 60 or 65 years old. Beyond that, there is little else that seniors have in common. Today, a revolution in the “culture of aging” is underway, and timeworn notions of the elderly no longer fit. Older adults are living longer, staying in the workforce longer, and contributing to their communities in myriad ways.

But aging can have its challenges. As people get older, they may experience physical and cognitive changes. Loss of mobility, visual and hearing impairments, slowed reflexes, illness, and memory loss are a few examples of changes that can create barriers to independent living and sometimes lead to isolation and loneliness.

Because the number of older adults will exceed the number of all children under the age of 14 by 2050, the World Health Organization (WHO) developed a framework to help cities become more age-friendly. This entails designing and adapting a city's natural and built environment to create accessible and safe transportation options, barrier-free access to homes and public buildings, and health care support and services so that people can maintain their health and independence for as long as possible. Such features do not just benefit the elderly, but people of all ages.

The students' challenge: Identify an age-related challenge that exists in today's urban environments and engineer two innovative solutions that allow your future city's senior citizens to be as active and independent as they want to be.

City Essay Requirements

- Students should identify one age-related challenge older citizens have and engineer two solutions.
- The essay cannot exceed 1,500 words and should be free of grammatical and spelling errors.
- The essay can include a maximum of four graphics.
- The essay must cite at least three sources of information used during the idea development process. (MLA style is preferred; download guidelines from futurecity.org/resources (filter for Handbook & Student Handouts.)
- Students should use a variety of sources of information, such as interviews with experts, reference books, periodicals, and websites. (Note: Wikipedia is not accepted as a source of research.)
- The essay must be submitted as a Word document via the online submission center at futurecity.org. Check with your Regional Coordinator for the exact date.

City Essay: Suggested Outline

Part 1: The Introduction

Briefly introduce your future city by including the basic information about it. Your city's name, how old it is, where it is, and how many people live there all go in the introduction.

Part 2: A Closer Look

Paint a picture of life in your future city—as if you are describing it to someone who has never been there. Share details about:

- The climate and any natural features (like rivers, mountains, or a nearby ocean)
- Who lives in your city and what kind of work do they do
- Any innovative or futuristic aspects of your city's infrastructure (like housing, transportation, energy, pollution control, etc.)
- What services your city provides (such as education, healthcare, etc.)
- The average age and life span of your citizens, and your city's definition of senior citizen.
- Briefly share the features and services that make your city age-friendly.

Part 3: Define the Problem

Describe the typical challenges older adults in 21st century cities faced in remaining active and independent. Then identify one challenge in particular, describe its impact, and why your city decided this was the most important problem to address (with your two innovative solutions).

Part 4: Describe Your Solutions

Here's where you get to detail the two innovative solutions (to the problem you identified) that make your future city more age-friendly. Be sure to:

- Describe your two engineered solutions and how they work.
- Emphasize the innovative, futuristic features of your two solutions.
- Explain how your solutions improve your citizens' ability to remain active and independent.
- Describe some of the risks connected with using the solutions and how the solutions reduce these risks.
- Provide examples of how both solutions benefit other members of your future city (not only senior citizens) and/or enhances the quality of life in general.
- Explain why you made the choices you did and what tradeoffs, if any, were involved.
- Explain what types of engineering were involved and what kinds of engineers were most helpful.

Conclusion: The Impact of The Age-Friendly City

Summarize how your age-friendly solutions make your city a great place to live, especially for older adults, and how they keep your citizens active and independent in your future city.

City Essay

RUBRIC & SCORESHEET

(0 to 60 points)

Judge's Name: _____

Future City Name: _____

Organization/School: _____

Students will research and write a City Essay (maximum 1,500 words) that describes the unique attributes of their city and provides a solution to this year's Age-Friendly City challenge.

	0 points	1 point Poor	2 points Good	3 points Excellent	SCORE
I. INTRODUCE CITY AND DEFINE THE PROBLEM (15 POINTS)					
1. City overview <ul style="list-style-type: none"> Basic city information: population, age, location Climate and/or natural features City economy 	No description of city.	Brief description of city.	Good description of the city.	Detailed description of city.	
2. Infrastructure <ul style="list-style-type: none"> Types of infrastructure could include: housing, transportation, energy, pollution control or others. 	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.	
3. City services <ul style="list-style-type: none"> Types of city services could include: education, healthcare, fire or police protection, elder services, etc. 	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. Describes the age related problems in 2017 <ul style="list-style-type: none"> Identify problems in general, describe problem areas 	No description of any present-day challenges.	Brief description of present-day challenges.	Good description of present-day challenges.	Detailed description of present-day challenges.	
II. SPECS AND SOLUTION (21 POINTS)					
6. Describes the selected problem <ul style="list-style-type: none"> One problem selected (i.e., housing, transportation, health, other) Why problem is important to solve Description of impact on citizens Importance to city to address 	No description of challenge city addressed.	Brief description of problem city decided to address. Touched on problem's impact, why important.	Good description of problem city addressed. Clearly states impact on seniors and why important.	Excellent description of problem city addressed. Thoroughly details impact on seniors and why important.	
7. Describes two innovative, futuristic & engineered solutions	No description.	Brief description of only one solution or describes two solutions but lacks details on how innovative or futuristic.	Good description. Clearly outlines two solutions and how they are innovative and futuristic.	Excellent description. Thoroughly describes two solutions and how they are innovative and futuristic.	

CITY ESSAY RUBRIC AND SCORESHEET	0 points	1 point Poor	2 points Good	3 points Excellent	SCORE
II. SPECS AND SOLUTION (21 POINTS) (CONTINUED)					
8. Discusses the impact on senior population <ul style="list-style-type: none"> Ability to remain active and independent 	No discussion.	Brief discussion of impact. Few details on how seniors' ability to be active and independent improved.	Good discussion on impact. Provides some details on how seniors' ability to be active and independent improved.	Excellent discussion on impact. Provides many details on how seniors' ability to be active and independent improved.	
9. Discusses futuristic technology involved in solution	No discussion of technology.	Some discussion of technology involved.	Good discussion of technology involved.	Excellent discussion of technology involved.	
10. Describes risks and tradeoffs of solutions	No discussion of risks or tradeoffs.	Briefly describes one risk and/or tradeoff.	Good description of one risk, how it was reduced, and one tradeoff or compromise.	Excellent description of two risks, how they were reduced, and two tradeoffs or compromises.	
11. Describes solutions' benefits to citizens <ul style="list-style-type: none"> Other citizens (not just seniors) Enhances quality of life in general 	No description of how solutions benefit other citizens and/or enhance quality of life.	Short description of how solutions benefit other citizens and/or enhance quality of life.	Good description with two examples of how the solutions benefit other citizens and/or enhance quality of life.	Excellent description with three or more examples of how solutions benefit other citizens and/or enhance 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)					
13. Effectiveness and quality of solution <ul style="list-style-type: none"> Effective solutions to stated problems Clever design and application of technology Ability to remain active and independent 	Not effective.	Solution is somewhat effective, technology and design can be better, with fair impact on seniors' ability to remain active and independent.	Solution is effective, but technology and design could be improved, with good impact on seniors' ability to remain active and independent.	Solution is highly effective, with excellent technology application, with high impact on seniors' ability to remain active and independent.	
14. Innovative and futuristic solution <ul style="list-style-type: none"> Reasonable extrapolation and application of technology Degree to which solution involves engineering 	Not innovative or original.	Somewhat original or innovative. Not futuristic. Little engineering involved.	Solution is innovative, original and somewhat futuristic. Some engineering involved.	Solution is highly innovative, original, and futuristic. Extensive engineering involved.	
15. Plausibility of solution <ul style="list-style-type: none"> Based on sound scientific principles 	Implausible or not scientifically sound.	Solution is not very plausible (science fiction).	Solution is somewhat plausible.	Solution is highly plausible and scientifically sound.	
16. Tradeoffs & compromises <ul style="list-style-type: none"> Accounting for risks and tradeoffs Assessing consequences and making logical decisions 	Does not explore tradeoffs.	Some consideration of risks and tradeoffs, but ignores major issues.	Adequate assessment of risks and tradeoffs. Analysis and decisions could be better.	Excellent assessment of risk, benefits, and tradeoffs in decision-making process.	

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CITY ESSAY RUBRIC AND SCORESHEET	0 points	1 point Poor	2 points Good	3 points Excellent	SCORE
V. WRITING SKILLS (12 POINTS)					
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.		
20. Maximum number of graphics • If used, max of 4 (does not include tables)	Exceeds maximum of 4 graphics, illustrations.		Does not exceed maximum of 4 graphics and/or illustrations.		
21. List of references • At least three acceptable references • Wikipedia not recognized as an acceptable reference	No references.	Less than three acceptable references.	At least three acceptable references.		
22. Word count • Does not include title, references	No word count at end of document or inaccurate count.		Accurate word count at end of document.		

Total Score (0–60 points) _____

Day-of- Competition Judges

Judges who volunteer at the Regional Competition typically judge both City Models and City Presentations.

City Model Requirements

- Must be built to scale as determined by the team.
- Must be no bigger than 20" high, 50" long, and 25" wide, including all support braces, material hanging below or beyond the tabletop, and any fully extended parts, such as access doors or hinged pullouts.
- Vertical-oriented models are not accepted.
- Must contain one or more moving part(s). Any electrical power must be self-contained (e.g., a household battery and a simple circuit).
- Use of electrical floor or wall outlets is not allowed.
- Use of live animals, perishable items, or hazardous items (e.g., dry ice) is not allowed in the model.
- Use of audio or sound is not allowed as part of the model.
- Although a small number of individual pieces from previous competition models may be reused, models must be a new representation of a Future City and built from the baseboard up.
- The total value of the materials used in the model, as well as those used in support of the presentation and special awards (including color copying/printing, three-dimensional printing, visual aids, costumes, and other demonstration aids) may not exceed \$100 and must be reported on the Competition Expense Form.
- A completed City Model Identification Index Card must be submitted. This 4" x 6" index card is used by the judges to identify your team's information. The card should include:
 - City name (has to be the same as the team's name)
 - Scale used for the model
 - Organization name
 - Names of the three presenting students, educator, and mentor.

City Presentation Requirements

- **Time allowed:** The presentation can be up to 7 minutes, followed by a question and answer period of 5–8 minutes.
- **Use visual aids and props.** While the model is the primary demonstration aid, students may use pointers, display boards, flip charts, costumes, handouts, and brochures during the presentation. With the exception of handouts and costumes, any visible item that is not part of the City Model will be deemed a visual aid and subject to the following size limitations:
 - *Display boards*—Teams may create multiple display boards and may choose either:
 - Visual aids, such as flip charts, foam boards, poster boards, etc must adhere to these parameters: the display(s) must be standard size (24" x 36" for poster boards, 25" x 30" for flip charts) and up to two boards may be displayed concurrently. Note: signs created with a matte finish look better in photographs.
 - *Flip Charts*—If you are using prepared flip charts, make sure your writing does not show through to the next page. Make your lettering BIG AND DARK. (Use blue, black, brown, purple, or dark green markers.)
 - *Costumes*—These include anything the presenters wear or carry that enhances the role they are depicting in their presentation (e.g., team t-shirts, cell phones, briefcases).
 - *One handout and small mock-ups*—All items in this category must collectively fit within a 6" x 6" x 12" volume (e.g., a shoe box).
 - *One brochure*—This is limited to one 8.5" x 11" sheet of paper.
- **Expense Limit: Stay within \$100.** The total value of ALL the materials used in support of the presentation and special awards, including the city model and costumes, may not exceed \$100. All materials must be documented on the Competition Expense Form found at futurecity.org/resources (filter for Competition Forms & Project Plan.)
- **Audiovisual equipment:** Audiovisual equipment, including laptop computers, overhead projectors, DVD/video players, iPods, iPads, and mp3 players, is not allowed.

City Model

RUBRIC & SCORESHEET

(0 to 70 points)

Judge's Name: _____

Future City Name: _____

Organization/School: _____

Students build a physical model of a section of their city using recycled materials. In addition to showcasing their city of the future, the City Model must also show their solution to this year's challenge. The City Model must have at least one moving part, be built to scale, and may not exceed the \$100 expense budget.

	0 No Points	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent	SCORE
I. CITY DESIGN (20 POINTS)							
1. City representation <ul style="list-style-type: none"> Includes all zones: residential, commercial, industrial Clearly recognizable elements, identifiable structures, zones 	No evidence of zoning. No variety of structures.	Zoning unclear. Little variety of structures.	At least one zone; small variety of structures.	1–2 zones, some variety of structures.	2 or more zones and some variety of structures. Could be more comprehensive.	All 3 zones; excellent variety of recognizable structures.	
2. City infrastructure and services <ul style="list-style-type: none"> Includes essential infrastructure (water, roadways, power, utilities, etc.) Includes variety of essential city services (public safety, health, education, etc.) 	No infrastructure or services.	Shows very little infrastructure and services.	Few infrastructure or service components.	Some infrastructure and services. Not all essential to city operation.	Several infrastructure and services. Not all essential to city operation.	Several comprehensive infrastructure and services essential to city operation.	
3. Interconnectivity within city <ul style="list-style-type: none"> Interconnectivity of zones and infrastructure Transportation modes: pedestrian, public, goods and services 	No interconnectivity.	Little interconnectivity.	Some interconnectivity, but some awkward design. Few transportation modes shown.	Adequate interconnectivity and transportation modes.	Very good interconnectivity and illustration of transportation modes.	Excellent interconnectivity of zones and illustration of transportation modes.	
4. Model demonstrates theme: The Age-Friendly City <ul style="list-style-type: none"> Essay topic/theme incorporated into model Shows solution for theme 	No illustration of problem or solution.	Little illustration of problem or solution.	Some illustration of problem and attempt at solution.	Fairly good illustration of solution for theme topic.	Good overall illustration of the theme solution. Could be more comprehensive.	Excellent illustration and overall solution for problem presented by theme.	
II. BUILD IT: QUALITY & SCALE (15 POINTS)							
5. Quality workmanship and age appropriateness <ul style="list-style-type: none"> Age appropriate for 6th, 7th, 8th grades Quality construction Reasonably durable 	Poor quality.	Mediocre quality.	Fair to good quality.	Good quality. Age appropriate.	Very good quality. Age appropriate.	Excellent quality. Age appropriate.	
6. Appearance <ul style="list-style-type: none"> Use of color, graphics, shapes, etc. Realistic elements (flora, fauna, landscapes) Good use of available space 	No aesthetics.	Poor aesthetics.	Fair aesthetics.	Good aesthetics, enhance the model.	Very good aesthetics, enhance the model.	Excellent and realistic aesthetics, enhance the model.	

CITY MODEL RUBRIC AND SCORESHEET	0 No Points	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent	SCORE
II. BUILD IT: QUALITY & SCALE (15 POINTS) (CONTINUED)							
7. Model scale: _____ <ul style="list-style-type: none"> • Appropriate scale chosen to create a good city model • Consistent scale throughout model • Applied horizontally and vertically 	Scale not used.	Inconsistent scale for majority of model.	Fair scale choice. Some scale inconsistencies.	Good scale choice; city elements easy to identify. Scale consistently applied over majority of model.	Very good scale choice; city elements easy to identify. Consistent application.	Excellent scale choice; city elements very easy to identify. Consistent application of scale across entire model.	
III. BUILD IT: MATERIALS AND MOVING PARTS (15 POINTS)							
8. Innovative construction materials, techniques <ul style="list-style-type: none"> • Variety of materials, imaginative or unusual materials • Creative modification and application of recycled materials • Building materials primarily recyclables to comply with \$100 budget 	No creativity or innovation.	Few recycled materials. Not within budget. Very few creative materials or materials used without modifications.	Recycled materials. Little creativity, variety. Little attempt to modify.	Recycled materials. Some variety of innovative materials. Some creatively modified recycled materials.	Recycled materials. Good variety of innovative materials. Many creative modifications and applications.	Recycled materials. Exceptionally varied and innovative. Most creatively modified and applied.	
9. Moving part innovation and quality <ul style="list-style-type: none"> • At least one moving part • Quality workmanship, durability • Repeatability of movement • Innovative execution and creative engineering 	No moving part.	One moving part. Fair quality. One time movement. Minimum engineering or modification to a purchased moving part.	One moving part. Good quality. Little innovation. Little engineering or modification to a purchased moving part.	At least one moving part. Good quality. Repeatable movement. Somewhat innovative.	At least one moving part. Very good quality. Repeatable movement. Innovative.	More than one moving part. Excellent quality. Repeatable movement. Highly innovative.	
10. Moving part <ul style="list-style-type: none"> • At least one moving part • Related to design or function of city 	No moving part.	Moving part cosmetic; not relevant to city function.	Moving part not relevant to city function.	At least one moving part somewhat related to city function.	At least one moving part intrinsic to city function.	More than one moving part essential to city function.	
IV. JUDGE ASSESSMENT OF MODEL (20 POINTS)							
11. City Design <ul style="list-style-type: none"> • Well planned. Considers livability concepts: <ul style="list-style-type: none"> – Neighborhoods, green spaces, mixed use zones – Interconnectivity – Sustainability and environmental elements – Accessibility 	No planning.	Little planning. Little consideration of livability concepts.	Some planning is obvious. A few livability elements included.	Planned design. Incorporates some livability concepts.	Well-planned design. Incorporates several livability elements.	Excellent planning. Excellent design. Highly livable.	
12. Innovative solutions <ul style="list-style-type: none"> • Innovative solutions to problems (power, environment services, transportation) • Technologically plausible 	No solutions.	One solution, not innovative.	One solution. Somewhat innovative.	More than one solution. Somewhat innovative and plausible.	More than one solution that is innovative.	Several innovative and plausible solutions.	

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CITY MODEL RUBRIC AND SCORESHEET	0 No Points	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent	SCORE
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IV. JUDGE ASSESSMENT OF MODEL (20 POINTS) (CONTINUED)

<p>13. Application of futuristic, advanced technologies</p> <ul style="list-style-type: none"> Includes futuristic technologies, components, infrastructure Plausible extrapolations of technological/scientific advancements 	No futuristic examples.	1–2 futuristic examples. Artistic, but not technologically or scientifically sound.	Few futuristic examples. At least 1 technologically or scientifically sound.	Some futuristic examples, most of which are technologically and scientifically sound.	Several futuristic examples, many of which are technologically and scientifically sound.	Highly futuristic and based on sound technological and scientific principles.	
<p>14. Model effectiveness</p> <ul style="list-style-type: none"> Functions as stand-alone representation of city design Function and purpose of model elements and relationship to each other is evident on visual examination 	No effective representation.	Fair representation of a city. But for many elements, one asks “What is this and why is it here?”	Good representation of a city, however the function and purpose of many of the elements is not evident.	Good visual representation of a city, but purpose/function of some elements not evident.	Very good visual representation of a city. A few elements not obvious.	Extremely effective visual representation of a future city. Function and purpose of elements easy to understand.	

Total Score (0–70 points) _____

City Presentation

(0 to 70 points)

RUBRIC & SCORESHEET

Students give a 7-minute presentation discussing features of their future city followed by a 5–8 minute question and answer period from the judges (overall time will not exceed 15 minutes). The Judging Coordinator will review the format and exact times with you.

Judge's Name: _____

Future City Name: _____

Organization/School: _____

Mandatory Questions

You will be provided a set of mandatory questions to ask during the competition. You are free to add additional questions AFTER all of the mandatory questions have been answered.

	0 No Points	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent	SCORE
I. CONTENT & DELIVERY (35 POINTS)							
1. Presentation content, organized <ul style="list-style-type: none"> Major elements: intro, body, and conclusion. Logical flow, Transitions between elements Supporting info (definitions, examples, statistics, quotes, etc.) Concise, relevant 	Poorly organized and no major elements addressed.	Poorly organized and missing some major elements. Little relevant information.	Fair organization. Contains most major elements. Some relevant, supporting information. Some transitions.	Fulfills all requirements (major elements, transitions, supporting info that could be more relevant, concise). Could develop ideas more thoroughly.	Well organized, and contains all major elements. Supporting info is relevant, concise, but could be better.	Extremely well organized and creative. Excellent variety of effective supporting information providing credibility. Concise, relevant.	
2. Overall city design & features <ul style="list-style-type: none"> City features, benefits, and aesthetics Geography, demographics or distinctive characteristics Unique infrastructure and services (e.g., transportation, energy, waste or pollution control) 	No description of city.	Very brief or incomplete description of the city. Few benefits or innovations discussed. Little explanation or not believable.	Fair description of the city. Some distinctive benefits and innovations explained. Somewhat futuristic and believable.	Good overall description of the city. Many distinctive benefits and innovations explained. Somewhat futuristic and believable.	Very good description of city. Many benefits and innovations explained. Futuristic and believable.	Excellent description of city. Highly innovative technology applied throughout. Explained in detail. Futuristic and believable.	
3. Essay topic: The Age-Friendly City <ul style="list-style-type: none"> Discusses essay topic Explains how the theme influenced the city design or development 	Essay theme not addressed.	Refers to essay briefly; little or no discussion of other program components.	Briefly discusses essay topic and solution. No real supporting facts. Little explanation of how their city design incorporates the theme.	Discusses the essay topic and solution; some supporting facts. Solution is adequate, somewhat innovative. Somewhat explains how their city design incorporates the theme.	Discusses the essay topic and solution. Good supporting facts. Solution innovative or futuristic. Fully explains how their city design incorporates the theme.	Discusses the essay topic and solution with excellent supporting facts. Excellent explanation of how their city design incorporates the theme.	

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CITY PRESENTATION RUBRIC AND SCORESHEET	0 No Points	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent	SCORE
I. CONTENT & DELIVERY (35 POINTS) (CONTINUED)							
4. Presentation skills <ul style="list-style-type: none"> Fluent, clear, audible delivery Correct grammar and appropriate language use Upright posture with practiced use of visual aids Overall confident, direct, and animated delivery 	Poor skills throughout.	A few verbal and nonverbal skills are fairly well done but needs more practice to improve in most areas.	Fair to good skills for the majority of the presenters.	Good verbal and nonverbal skills for most presenters; somewhat confident and direct.	Very good verbal and nonverbal skills by most of team throughout most of the presentation.	Excellent verbal and nonverbal skills by the entire team throughout the presentation.	
5. Use of model and other demonstration aids <ul style="list-style-type: none"> Model is the key element of entire delivery Additional visual aids, if used (posters, props, costumes, handouts) are neat, well-prepared All aids enhance, rather than distract, from presentation Delivery with all visual aids is well practiced and confident 	Model not referenced. No other visual aids.	Model is not used effectively. Other demonstration aids poor or non-existent.	Model is partially effective at enhancing the presentation. Other visual aids fair-good.	Good use of the model as an illustration of city design and function. Other visual aids effective and generally add to presentation.	Model used effectively to illustrate city design, function and innovations. Other visual aids very good and enhanced the presentation.	Extremely creative, integrated use of model; contributed to the understanding of city design, function and innovations. Other visual aids excellent.	
6. Teamwork during presentation and Q&A <ul style="list-style-type: none"> Team members supported each other Team members shared time equally Team members displayed an equal amount of knowledge Full complement of team members (three students) 	No evidence of teamwork.	A small amount of collaboration among team members but more support of one another is needed; one or two tend to dominate during both presentation and Q&A.	Some collaboration, some support and sharing among some team members. Amount of knowledge appears unequal. One or two tend to dominate during either presentation or Q&A.	Good collaboration; support and sharing among most members. Full complement of three team members. Some team members have more knowledge and dominate.	Very good collaboration, support and sharing among the team on both Q & A and presentation. Equivalent knowledge level for most of team. Full complement of three team members.	Students fully, accurately, and confidently answer all questions with many supporting details.	
7. Questions and answers <ul style="list-style-type: none"> Answers questions with confidence Accurate, complete answers 	Unable to answer questions coherently.	Answers a few questions accurately. No supporting facts.	Students answer at least 50% of the questions accurately, few supporting facts.	Students answer 85% of questions with accuracy and some supporting facts.	Answers 95% of the questions accurately with supporting detail.	Students fully, accurately, and confidently answer all questions with many supporting details.	
II. ENGINEERING AND TECHNOLOGY (20 POINTS)							
8. Technologies used in city <ul style="list-style-type: none"> Innovations in technology and futuristic concepts Discusses solutions to problems: transportation, utilities, services, etc. 	No discussion.	Little discussion of technologies in city, little innovation.	Some discussion of technologies, little innovation.	Good discussion of technological solutions to problems. Somewhat innovative.	Very good discussion of technological solutions to problems. Innovative.	Excellent discussion of technological solutions to problems. Highly innovative, plausible.	

CITY PRESENTATION RUBRIC AND SCORESHEET	0 No Points	1 Poor	2 Fair	3 Good	4 Very Good	5 Excellent	SCORE
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II. ENGINEERING AND TECHNOLOGY (20 POINTS)

9. Engineering design process <ul style="list-style-type: none"> Discusses the application of engineering design process to the Future City project. 	No discussion.	Little or no discussion of engineering design process.	Briefly discusses engineering design process	Discusses engineering design process and application to FC project.	Good discussion and understanding of engineering process. Discusses application to FC project.	Excellent discussion and understanding of engineering design process and application to FC project.	
10. Engineering and engineering roles <ul style="list-style-type: none"> Demonstrates a knowledge of engineering roles in city design and operation 	No mention of engineering roles.	Mentions engineering, but little discussion of roles.	Briefly discusses and shows limited understanding of engineering.	Discusses and shows understanding of engineering.	Good discussion and understanding of engineering role.	Excellent discussion and understanding of engineering roles in city design & operation.	
11. Tradeoffs <ul style="list-style-type: none"> Discusses potential limitations and benefits Analyzes tradeoffs 	No mention of tradeoffs.	Little mention of limitations or benefits. No tradeoffs.	Some discussion of limitations, benefits or tradeoffs.	Good analysis of limitations and benefits. Mentions tradeoffs.	Very good analysis of risks, limitations and benefits and the tradeoffs made.	Excellent analysis of risks, limitations and benefits and the resulting tradeoffs.	

III. JUDGE ASSESSMENT OF KNOWLEDGE AND UNDERSTANDING (15 POINTS)

12. Gets It: engineering, technology and innovation <ul style="list-style-type: none"> Demonstrates an understanding of technology used in city. Solutions proposed are innovative Technologies are futuristic, but plausible extrapolations of current state-of-the-art 	No understanding or technology. No plausible innovation.	“Buzzwords,” but little understanding of technology. Little innovation that is plausible.	Fair understanding of technology. Few plausible innovative solutions.	Good understanding of technology and application to the solution. Some innovative solutions and plausible technological advancements.	Very good understanding of technology. Innovative and advanced technological solutions that are plausible.	Excellent understanding of the technologies used. Solutions are innovative and advanced technologies are plausible.	
13. Gets It: city design and requirements <ul style="list-style-type: none"> Demonstrates an understanding of city issues, requirements and operation Excellence in city design 	No city design or understanding of issues.	Overall city design is lacking. Little understanding of issues.	Overall city design is fair. Some understanding of issues.	Overall city design is good. Good understanding of issues driving the requirements.	Overall city design is very good. Understanding of issues, requirements is reflected in design.	Excellent city design shows very good understanding of issues and requirements that influenced decisions.	
14. Gets it: Future City and design process <ul style="list-style-type: none"> Understands the integration of the Future City process from initial design, virtual city, research, model and presentation Applies lessons learned from various phases of Future City project to solution 	No understanding.	Demonstrated little understanding of the Future City design processes.	Demonstrated fair understanding of Future City design process. Little indication that lessons from early testing, research used in final design.	Showed good understanding of Future City design processes. Some application of knowledge gained to final solution.	Very good understanding of Future City design processes. Evidence that knowledge gained in various stages applied to final solution.	Excellent understanding of Future City design processes. Final solution builds on knowledge gained throughout the project.	

Total Score (0–70 points)

Practice Questions

Judges will be given mandatory questions on competition day. 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 did you plan your city's budget to accommodate and encourage growth?

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. How does your city prevent pollution (i.e. air and water)?
2. How do you generate power in your city and why did you choose that method?
3. How do residents in your city communicate with each other?

Transportation

1. What modes of transportation are available to your citizens?
2. How is transportation in your city futuristic and innovative?

Health & Services

1. How does your city 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. Describe the education system 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?

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. How did you design your moving part? How does it help your city function?
3. How does your model show your solution to the Age-Friendly City theme?

Future City Process

1. Did anything you learned about engineering surprise you?
2. Share an example of when your team disagreed about something and how you worked through it.
3. What did you learn from your research and using SimCity that you applied to your own future city?

The Age-Friendly City

1. What age-related challenge did your city address and why did you choose that one?
2. How are your team's solutions to the age-related challenge innovative and futuristic?
3. How does your city encourage seniors to be active and independent?
4. How do your solutions to the age-friendly problem you identified positively impact the quality of life in your city - not just for seniors but for all residents?

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Regional Coordinators

The Future City staff would like to thank and acknowledge the dedication of our tireless Regional Coordinators and their committee members. The countless hours that they contribute as they answer every question (big and small), match mentors to schools, fundraise, and host wonderful Regional Competitions is the foundation on which Future City rests. Thank you!



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