Mayor

Role: You are the Mayor of Hotville, elected for your holistic view of the city's future, and an interest in balancing social, economic, and environmental concerns. You have primary interest in the business future of the city with the goal of attracting two new Fortune 500 companies to the city in the next 5 years. You brought the Data Center to the city, one of your crowning achievements.

Your family has worked in the city's agriculture industry for 50 years and your father still operates a local farm. You reside in Burns Estates.

Goals:

- Balance the competing interests of residents and businesses.
- Ensure the city can continue to function in the face of increasing heat waves without loss of human life.

Public Health Department Representative

Role: You represent the Hotville public health department, which is charged with protecting the city's public health, educating the community to make informed healthy decisions, and ensuring equitable distribution of health services.

You are actively involved in the city's black churches network. You regularly (but unofficially) speak to the interests of the faith-based community at city meetings. You are also on the local City Park Board and spend time at the Parks with your family. You live near the downtown area.

Goals:

- Protect resident's public health and avoid heat-related casualties, especially among heat-vulnerable populations.
- Educate the community to make healthy decisions under heat stress and to avoid outdoor activities during high air pollution (e.g. ozone) and humidity days.

Transit Agency Chief Engineer

Role: You represent the Hotville Transit Agency (HTA), which maintains and operates the city's public transportation system. This includes an electrified light rail system and buses. Your agency's assets are the primary mode of transportation for 30% of the city's residents, meaning you provide access to many parts of the city for those without alternatives.

You live in Riverfront Residences and regularly recreate on the river. You don't believe that people have any influence on climate change and think it's a waste of time and resources to reduce greenhouse gas emissions.

Goals:

- Provide safe transit options for moving people around the city.
- Ensure any requirements on the agency take into account budget constraints.

Power Utility Manager

Role: You represent the interests of Energy Enterprise, the local power utility. It is your role to provide electricity to the city, ensure the utility achieves long-term sustainability and remains fiscally responsible.

You were in a car accident two years ago and are disabled from those injuries. Your mother recently moved into the city's Senior Center. She is receiving excellent care and you visit her regularly. You live in Riverfront Residences.

Goals:

- Provide uninterrupted electricity services in the city.
- Avoid rate hikes for customers resulting from unnecessary regulations or system upgrades.
- Strive to achieve the state Renewable Portfolio standard.

(Public Health, cont.)

Primary Concerns:
Hospital, Senior Center, Emergency Services (Police/Fire)

Secondary Concerns:
City Park, Main Roadway

Populations of Concern:
Elderly, Babies, Chronically/acutely ill, Outdoor workers, Pregnant women, Faith-based community

(Mayor, cont.)

Primary Concerns:
All assets

Secondary Concerns:
Farm, Burns Estates

Populations of Concern:
All residents and businesses, with a particular interest in development

(Power Utility Manager, cont.)

Primary Concerns:
Power Plant

Secondary Concerns:
Senior Center, Hospital, Riverfront Residences

Populations of Concern:
Residents, Businesses

(Transit Engineer, cont.)

Primary Concerns:
Light Rail, Roadways, Power Plant

Secondary Concerns:
Riverfront Residences, River

Populations of Concern:
Anyone who uses or relies on transit (residents – low-income in particular, businesses)

City Planning Representative

Role: You represent Hotville's Planning Department, in which you focus primarily on resilience and sustainability. You've noticed the increase in extreme heat days over the years and know the city needs to account for this change in its planning. You are a big proponent of expanding the city's greenspace and increasing local access to green space to achieve national standards.

You immigrated to the U.S. from Mexico 15 years ago. You have two kids who attend the local school and you serve on the school board. You live in the northern area of the city.

Goals:

- Develop parks that meet national standards and are water conscious.
- Find ways to integrate heat risk consideration across all city planning processes.

Emergency Preparedness and Response Director

Role: You represent the Hotville Emergency Preparedness and Response Department. Your role is to ensure the city is prepared for all emergency scenarios and has response plans in place. You work closely with the city's police and fire departments.

Your brother was recently hospitalized from a heat-related illness while working on a farm. You feel worker-safety regulations aren't strong enough. You live on the edge of the rural area of the city. You've taken a great personal interest in the potential future wind/solar site and think renewable energy should be key in the city's future planning efforts.

Goals:

- Provide education to communities for emergency preparedness, including related to heat waves.
- Operate effective response activities in the event of an emergency.

Vice President, Luxury Homes Inc.

Role: Luxury Homes Inc. focuses on luxury residential developments in Hotville. You have two developments in progress and are planning three more in the next 10 years. It is essential for you to keep development costs low to maintain your business. You also have a keen interest in the local tech economy since tech employees are the majority of the luxury home buyers in the area.

You regularly volunteer at the city's largest homeless shelter. You live in Burns Estates.

Goals:

- Build new, profitable luxury developments in the city.
- Ensure that the city prioritizes the amenities that your customers tend to enjoy, e.g., the Riverwalk, and doesn't include things that would scare potential buyers.

Worker's Rights Advocate

Role: You represent the laborers and workers of Hotville as a local advocate and work closely with outdoor workers. You recently started a campaign to highlight the poor workplace conditions for outdoor workers (road, transit, farms, green spaces) in the city.

Your spouse recently got a job at the city's data center and uses public transport to get to and from home and work. You live on the edge of the rural area of the city. You go to church every Sunday.

Goals:

- Advance worker's rights within the city.
- Ensure work locations, including air quality, are safe for employees.

(Emergency, cont.)

Primary Concerns:
Emergency Services (Police/Fire), Public and private buildings/warehouses, Hospital, All residential areas, Roadways

Secondary Concerns:
Farm

Populations of Concern:
Residents, Businesses

(City Planning, cont.)

Primary Concerns:
All city assets

Secondary Concerns:
School, Daycare

Populations of Concern:
Residents, Businesses, New Americans

(Worker's Rights, cont.)

Primary Concerns:
Farm, Light rail, Roadways, Outdoor tourism sites, Private offices/warehouses

Secondary Concerns:
Data Center, Rural area

Populations of Concern:
Outdoor workers, Disabled populations, First responders, Faith based community

(Luxury Homes, cont.)

Primary Concerns:
Workplaces/ economic industries: Data Center, Private offices/warehouses; City Parks; Riverfront,

Secondary Concerns:
Burns Estates

Populations of Concern:
High-income residents, Homeless individuals

Community Organization President

Role: You live in the Townhomes and represent the public housing community. Your neighborhood has historically been neglected by the city, and you provide a trusted voice for the concerns of low-income residents. You are also the organizer of your neighborhood farmer's market. You believe all neighborhoods should have access to local, fresh food regardless of income level.

You rely solely on public transit for transport. You and your support local teams by regularly attending games at the stadium.

Goals:

- Encourage development of local, well paid jobs.
- Facilitate wealth generation through home ownership.
- Prevent displacement of residents in face of new development.

Chamber of Commerce Representative

Role: You represent the Chamber of Commerce. Your primary interest is the economic development of the city and maintaining the small business community you've helped build in the city center and Riverwalk. You have seen an uptick in business interest in the city since the building of the stadium.

You own a kayak rental shop not far from the city's Riverwalk. Your business has been doing well with the city's thriving natural, historic, and economic resources located along the river. You live by the airport in the southeastern part of the city.

Goals:

- Attract new businesses to the area and grow the city's economy.
- Support tourism in the city, especially along the river.

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(Chamber of Commerce, cont.)

Primary Concerns:

Data Center, Businesses, Riverwalk, River, Stadium

Populations of Concern:

Businesses, Tourists, Developers

(Community Organization, cont.)

Primary Concerns:

Public Housing, Public Buildings, City Park, Riverwalk, Rural Area

Secondary Concerns:

Light rail, Roadways, Stadium

Populations of Concern:

Low-income residents, Athletes

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Hotville Description

- ***History:*** *Originally settled by Native peoples, then colonizers, as a farming community. Early 1900's boom with additional farmland development and rapid urbanization.*
- ***Economy:*** *Still has a strong agriculture focus, but it has also expanded to include technology, tourism, and healthcare industries.*
- ***Demographics:*** *Current population of 422,000; 50% White, 30% Black or African American, 14% Hispanic or Latino, 5% Asian American, and 1% Native American; 20% of residents are below the poverty line and the city has a homeless population of roughly 4,000 people.*

SCENARIO

Scenario #1

Climate Condition Baseline:
- Currently experiences 15 extreme heat days (above 95°F) per year
- Average annual temperature is 60°F
- On average experiences 1 heat wave event per summer lasting 3 days

Planning horizon: 2030

Extreme heat projections:
- 14 more extreme heat days
- 2 degree F increase in average annual temperature
- 1 more heat wave event that lasts 1 more day than currently

SCENARIO

Scenario #2

Climate Condition Baseline:
- Currently experiences 15 extreme heat days (above 95°F) per year
- Average annual temperature is 60°F
- On average experiences 1 heat wave event per summer lasting 3 days

Planning horizon: 2050

Extreme heat projections:
- 28 more extreme heat days than currently
- 2 more heat wave events that lasts 2 more days than currently
- 4°F increase in average annual temperature

SCENARIO

Scenario #3

Climate Condition Baseline:
- Currently experiences 15 extreme heat days (above 95°F) per year
- Average annual temperature is 60°F
- On average experiences 1 heat wave event per summer lasting 3 days

Planning horizon: 2030

Extreme heat projections:
- 20 more extreme heat days than currently
- 1 more heat wave event that lasts 1 more day than currently
- 3°F increase in average annual temperature

Scenario #1 *(cont.)*

Additional Estimated Annual Impacts of Projected Scenario:

- 20 people will fall ill to heat stress or heat stroke, 8 will be admitted to the emergency room, 1 will pass away
- 5% increase in roadway maintenance budget and labor
- 30 agricultural workers will lose their jobs due to profit loss by the local farms
- City tourism will decrease by 2% compared to typical summer visitors due to high heat and humidity limiting outdoor tourism activities
- 1 athletic sporting event will be cancelled each year due to high heat concerns for the players

Hotville Description (continued)

- ***Urban Landscape:*** *Downtown area is made up of many impervious surfaces such as roadways, buildings, and parking lots. Urban heat islands in the city cause temperature differences of up to 10°F inside vs. outside the heat island.*
- ***Historical Heat:*** *In the past decade, the city has experienced three heat waves lasting longer than three days which have claimed at least 26 lives.*

Scenario #3 *(cont.)*

Additional Estimated Annual Impacts of Projected Scenario:

- 30 people will fall ill to heat stress or heat stroke, 10 will be admitted to the emergency room, 2 will pass away
- 8% increase in roadway maintenance budget and labor
- 50 agricultural workers will lose their jobs due to profit loss by the local farms
- City tourism will decrease by 2% compared to typical summer visitors due to high heat and humidity limiting outdoor tourism activities
- 1 athletic sporting event will be cancelled each year due to high heat concerns for the players

Scenario #2 *(cont.)*

Additional Estimated Annual Impacts of Projected Scenario:

- 60 people will fall ill to heat stress or heat stroke, 20 will be admitted to the emergency room, 4 will pass away
- 10% increase in roadway maintenance budget and labor
- 75 agricultural workers will lose their jobs due to profit loss by the local farms
- City tourism will decrease by 3% compared to typical summer visitors due to high heat and humidity limiting outdoor tourism activities
- 3 athletic sporting events will be cancelled each year due to high heat concerns for the players

BUDGET

Total City Budget Card 1

$1 million

BUDGET

Total City Budget Card 2

$800,000

BUDGET

Total City Budget Card 3

$1.3 million

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ASSET

Power Plant

The power plant was built in 1987 and becomes overwhelmed, i.e., experiences brown- and black-outs, by the city's electricity demand during extreme heat. Also, plant components themselves are increasingly stressed because of increases in average annual temperature.

During last year's heat wave, roughly 30% of the population was without power for several days.

ASSET

Senior Center

The senior center is home to some of the city's oldest residents. The center is frequently visited by the younger generation, and its expansive grassy lawn is the location for many community gatherings and festivals. It has a robust AC system, but it does not have a back-up generator. During the heatwave-related black out three years ago, the power went out for several hours, and five residents became ill with heat exhaustion, and one sadly passed away.

Built in 1995.

ASSET

Hospital

The Hospital was originally built in 1980 and was expanded and upgraded in 2010. This is the main medical center in town. During last year's heat wave, the hospital treated 35 patients for heat-related illnesses, two of whom died (both over the age of 65).

Patients and staff are heavily reliant on electrical power, electrified medical equipment, and elevators for daily operations. Diesel-powered back-up generators provide power during outages and are always stocked with enough fuel to power the hospital for 24 hours.

ASSET

Emergency Services (Police / Fire)

The Emergency Services (Police / Fire) buildings were built in 1980 and haven't gone under any major renovations. The buildings are located in a relatively hot area of town but have sufficient air conditioning to keep workers comfortable. That said, they don't have back-up power in case of a power outage.

Heat waves increase the emergency calls and response services of the police and firemen. This puts a strain on these individuals and the city's resources.

Senior Center (cont.)

Adaptive Capacity

It is relatively easy and cheap to install and maintain back-up generators that enable continued power supply in the event of a blackout.

Planting more trees around the Center's grassy lawn will help provide shade and reduce temperatures on the property for little cost.

Making the building more energy efficient will help keep the building cooler. Low effort measures include ensuring windows are properly sealed, ensuring existing insulation is adequate, and applying a cool roof coating to the flat roof.

Power Plant (cont.)

Adaptive Capacity

It is relatively expensive to enhance the existing plant to increase the amount of power provided or expand the power grid to provide redundancy in the event that the power plant capacity is exceeded.

Emergency Services (cont.)

Adaptive Capacity

It is moderately difficult and expensive to add solar and battery storage to enable continued power supply in the event of a blackout.

Hospital (cont.)

Adaptive Capacity

While not currently needed, it would be relatively easy to add additional back-up generators to the system. It would be relatively expensive, however, for the hospital to develop a micro-grid as an alternative to the generators. The addition of an on-site solar panel array and battery storage will provide alternative power source in case of an outage and provide redundancy to existing generators.

ASSET

Public Housing – The Townhomes

The Townhomes were built in the 1970s to provide public housing for low income renters and as worker housing. There are 300 2-bedroom units. The majority of residents are of color and / or immigrants.

It gets excruciatingly hot in the homes in summer. The homes do not have central air conditioning and are known to have poor insulation. During a recent two-day heat wave, the homes became so hot that several complaints were filed against the city by renters because of the lack of safe living conditions. The nearest park is more than a mile away.

ASSET

Public Transit Route

The city's public transit system opened in the 1950s with bus service along all the city's main roadway. The light rail line opened in 2005 and was built to support the town's growing commuter base and tourist economy. The light rail system has the highest ridership among the city's public transit options.

During past heat waves, there was some minor buckling of one stretch of rail line, and communication boxes lost power, leading to massive system delays. Several outdoor transit workers were told to not report to work for three days because of unsafe working conditions. They were not compensated, leading to major complaints. The buses' AC systems are old and malfunction, but the light rail AC system is quite good.

ASSET

Rural Area

The rural area is located on the outskirts of town, with many farms producing the area's primary cash crop, wheat. Irrigation comes from the river and, to a lesser extent, the water utility. Farms have experienced crop losses during years with long heatwaves. In addition, there are several days annually that farm workers are not able to work because of heat. This shuts down production, with negative impacts for workers, farm owners, and the city's economy. At the same time, the average annual temperature increase has lengthened the growing season, enabling additional production.

Farms still employ 6% of the city, with many workers receiving minimum wage, but the rural area generally speaking is experiencing population decline as young people leave to seek jobs they find more desirable.

ASSET

Water Treatment Plant

Originally built in the 1930s, the town's main water treatment plant supplies drinking water to residents and irrigation to the local farming community. It was renovated in 1970 to accommodate growing water demand. Maximum capacity is 20 MGD.

The water pipes occasionally lose pressure in some parts of the city when water use is high for cooling needs and increased irrigation demands. This has been the case in past heat waves, but the consequences have been minimal.

Public Transit Route (cont.)

Adaptive Capacity

Modifying established rail lines by, for example, re-laying track with expansion joints is relatively difficult and expensive.

Painting the sides of the rails white so they absorb less heat and are therefore less likely to buckle is relatively inexpensive.

Adding hydration and shade options for public transit riders to reduce heat-related illness and uncomfortable conditions is relatively easy.

Adding a backup power supply, such as solar, battery storage, and/or generators, is generally an easy modification to the system in the event of a grid outage, but given the size of the system, would be expensive.

Public Housing (cont.)

Adaptive Capacity

Installing central air conditioning or insulation would be a moderately expensive modification. Providing window AC units to residents would be a relatively easy and cheap modification. Changing the roofing materials to be cool roof options (light colored or reflective) would be a relatively expensive modification.

The homes could be made more energy efficient by sealing the windows properly and ensuring existing insulation amount is adequate. This requires relatively limited effort.

Water Treatment Plant (cont.)

Adaptive Capacity

Increasing the capacity of the water plant to accommodate for occasional loss of pressure would be costly and difficult to implement.

Rural Area(cont.)

Adaptive Capacity

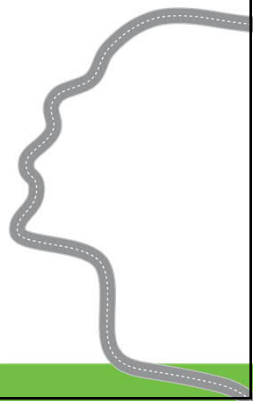
Changing to a strain of wheat better suited to hotter conditions is a relatively easy and accessible modification to the system; Establishment of shaded areas with tree canopy cover, as well as adding additional water breaks to the work day, are relatively easy ways to protect worker health and safety.

ASSET

Roadways

The roadways are essential for efficient passage through and around the city. Last year, a stretch of the road near the Stadium buckled. In addition, the increased incidence of extreme heat has led to more pavement buckling and potholes, increasing maintenance costs by more than 15%, as compared to 25 years ago (accounting for inflation).

The roadways were built in the 1920s, with some widening occurring in the 1990s. The Main Roadway is most critical road for the city.



ASSET

Private Office Building Complex

The complex is home to five of the city's major employers and has over 1,000 employees onsite. The complex has a cooling system to maintain a safe work environment for employees and participates in the local power utility's load shifting program, which reduces the grid demand, thereby reducing the complex's risk associated with a grid-wide failure.

During last year's heat wave, the AC system became very sluggish, and indoor temperatures rose to 85 degrees for several days in a row. As a result, nearly 500 workers stayed home, leading to productivity losses for all five employers.

ASSET

Public Library

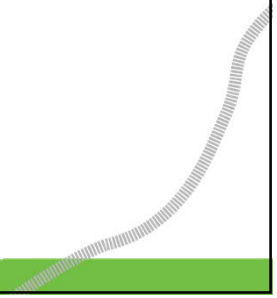
The Public Library was built in the 1950s and is a registered landmark. The building houses many of the city's historical artifacts and is also often used for community events. The Public Library serves as a cooling center for the community during extreme heat events.

The building doesn't have a back-up power source, and during a brown-out a couple years ago, the building was without power for a few hours. The building is aging and, even though it serves as a cooling center, doesn't have great insulation to keep the building cool during the summer.

ASSET

Riverwalk

The historic Riverwalk area has recently undergone additional renovations to attract tourists and locals to enjoy the scenery along the river. The Riverwalk is now a tourist destination with stunning views and a walking path. Activity increases during heatwaves because the area is substantially cooler than other parts of the city.



Private Office Building (cont.)

Adaptive Capacity

It's possible to make the building more energy efficient, which will keep the building cooler. Innovations such as ensuring windows are properly sealed, ensuring existing insulation amount is adequate, changing the roof to a cool roof option, or adding a higher capacity air conditioner, require a small to moderate amount of effort. Dress codes could also be relaxed during extreme heat events.

Roadways (cont.)

Adaptive Capacity

It is moderately difficult to apply cool pavement techniques (e.g., high-reflectivity coating) or line streets with vegetation to increase shade. Continuing to increase maintenance budgets is relatively difficult.

Riverwalk (cont.)

Adaptive Capacity

Although the river walk area has some of the coolest temperatures in the city, there is room to enhance the canopy cover in the long-term by planting and maintaining additional trees with little cost.

Public Library (cont.)

Adaptive Capacity

The addition of an on-site solar panel array and battery storage will lessen the possibility of a power outage and would be moderately expensive to install.

It's possible to make the building more energy efficient, which will keep the building cooler. Innovations such as ensuring windows are properly sealed and ensuring existing insulation is adequate, require a small to moderate amount of effort.

ASSET

Riverfront Residences

Originally developed in the 1950s, the neighborhood has tripled in size over the last two decades and now comprises 300 homes. Housing styles range from original Craftsmen to new vacation homes. This neighborhood is often overrun by locals and tourists, which annoys the residents, during high heat events due to its proximity to the river, which provides a cooling breeze.

ASSET

Data Center

The state-of-the-art Data Center opened two years ago to match the city's growing technology industry. It is essential to the company's cloud storage and services. The site currently employs 100 individuals. The Data Center is heavily reliant on the grid for electricity but has backup generators onsite. The diesel-fueled generators are equipped to run for eight hours. During the brown-out last year, the Data Center's power switched to the generator, and services were uninterrupted.

ASSET

High-income Housing – Burns Estates

The Burns Estates is a development with 100 new luxury residences. This neighborhood is home to many wealthy residents. The homes are new and have central air conditioning, and there are plenty of trees and green spaces in the area. That said, the residents want to see more city tree-planting in their neighborhood for the beautification co-benefit they provide.

ASSET

Airport

The city's Airport was built in 1975 and is located on the south east side of town in a heat island. The mid-sized airport has 5 million passengers pass through it each year.

During a heat wave three years ago, planes were unable to take off due to air density and quality issues and because a small section of the runway melted. This stopped all air service for roughly five hours and caused major delays in the area.

Data Center (cont.)

Adaptive Capacity

The addition of an on-site solar panel array and battery storage will lessen the possibility of a power outage, provide redundancy to the existing generator, and would be moderately expensive to install.

It's possible to make the data center more energy efficient by replacing old servers with newer more efficient models, which would be quite expensive. Energy efficiency could also be improved at a lower cost by retiring inefficient or unused systems or consolidating underutilized machines.

Riverfront Residences (cont.)

Adaptive Capacity

While not currently necessary, it would be relatively easy to enhance canopy cover to decrease immediate air temperatures and provide more privacy for local homeowners.

It's possible to weatherize homes to make them more energy efficient, such as ensuring windows are properly sealed and ensuring existing insulation amount is adequate, require a small to moderate amount of effort.

Airport (cont.)

Adaptive Capacity

Extending runways to account for the increased distance required for the plane to get off the ground are theoretically possible, but are expensive and may not be possible due to space limitations.

Repaving the runway with cool pavement technology, such as a light-colored coating, may not comply with FAA regulations.

High-income housing (cont.)

Adaptive Capacity

While not currently needed, planting of additional trees is a relatively inexpensive way to increase canopy cover and further decrease temperatures in the immediate area.

ASSET

Stadium

The Stadium is where the locals love to go cheer on the Hotville Hornets. This brings tourists and economic opportunity to the city every time there is a big game. The area is surrounded by multiple parking lots and no trees. It does not have a roof or substantially shaded areas.

Being located in a heat island, the stadium often gets very hot during afternoon games for both the players and attendees. The players have to regularly stop the game for water breaks, extending game times. Also last year, five game attendees have had to leave a game due to falling ill from heat exhaustion.

ASSET

Public School / Daycare

The Daycare Center was built in 1999. This is the primary location for infant to four year old child care. There is a large recreational area outside including a large asphalt playground, picnic area, and tots soft play area. The City recently paid for the construction of a brand new, state of the art, K-12 grade School at the same location as the daycare.

In last year's heatwave the Daycare lost power for 8 hours, and parents had to leave work to take their children home. There haven't been any heat-related impacts to the School, which does not have back-up power.

ASSET

Trees

The city's trees offer shade to pedestrians throughout the city. There was a big tree planting push roughly 20 years ago, after there were major improvements in air quality. For every 10% increase in urban tree canopy, ozone is reduced by 3-7%! There are also fruit-bearing trees that the city regularly harvests for the homeless shelters and food bank.

Rapid urbanization has decreased the pockets of trees throughout the city. The remaining tree canopy consists primarily of tree species that rely on wet soils. With the city's decreasing soil moisture content due to higher temperatures, there has been increased die off in recent years.

ASSET

River

The River is important to the city's recreation, tourism, and agricultural industries. The citizens and tourists of Hotville are regularly out kayaking and canoeing in the waterway. The local farms rely heavily on the River for irrigation, especially during the hot months where they are battling decreased soil moisture.

The River has been increasingly polluted with rapid urbanization due to increased runoff from the large areas of impervious surface. When water levels are low due to high demand of water resources, such as during heat waves, these pollutants are concentrated, compromising water quality.

School/Daycare (cont.)

Adaptive Capacity

The addition of an on-site solar panel array and battery storage will lessen the possibility of a power outage and would be moderately expensive to install. A less environmentally friendly, but cheaper option would be the addition of a backup generator.

Stadium (cont.)

Adaptive Capacity

Cool pavement techniques (e.g., high-reflectivity coating) require a bit more effort and cost as normal maintenance.

Establishment of shaded areas with tree canopy cover, as well as adding additional water breaks to the sporting events, are relatively easy ways to protect athlete's and worker's health and safety.

River (cont.)

Adaptive Capacity

Increasing green infrastructure in the city would help reduce impervious surfaces and in turn reduce polluted runoff into the River. This would be moderately difficult and expensive.

Implementing a water conservation program for city residents during periods of high water demand (heat waves), such as limiting lawn watering, would be relatively easy.

Trees (cont.)

Adaptive Capacity

Planting more native or drought-tolerant tree species is a relatively easy modification to keep the trees alive and reduce water consumption.