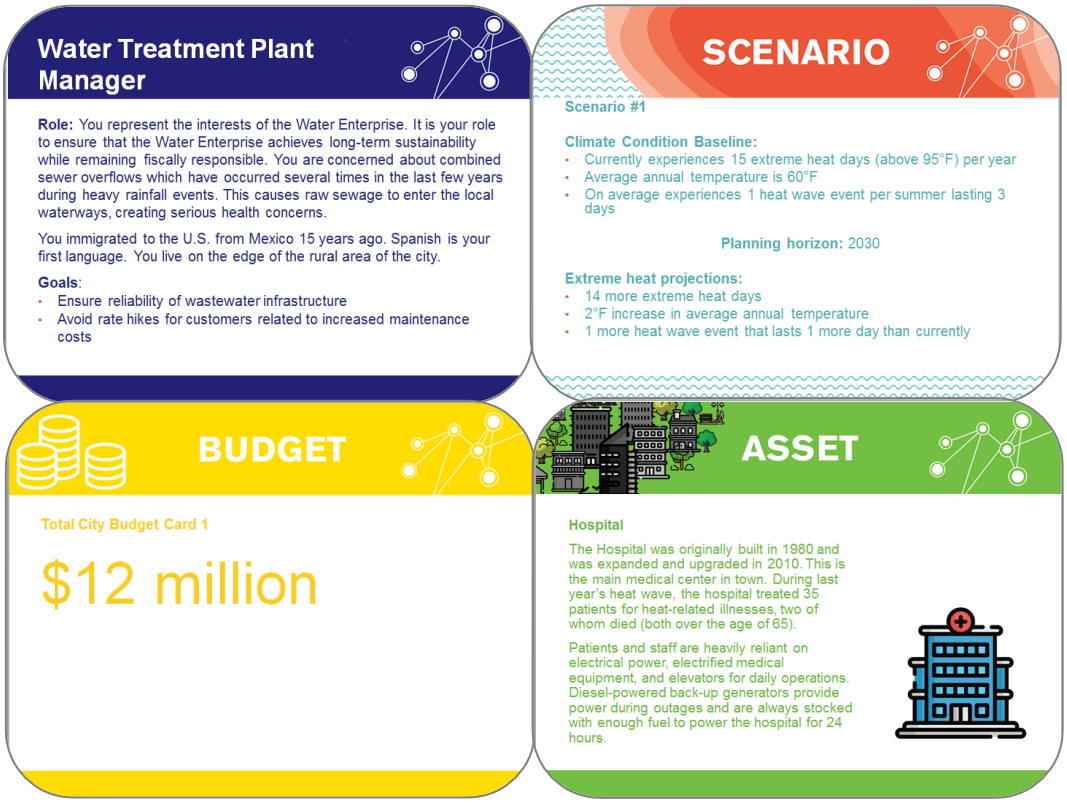
Trainer “How to” Guide

Game of Heat

&

Game of Extremes



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1. Introduction

The purpose of Game of Heat and Game of Extremes training games is to educate city staff and other stakeholders about climate change and its impacts to city assets and, as a result, the people who depend on them. Climate change will affect many of the environmental stressors that cities currently consider during the planning, design, construction, and maintenance of city assets. City staff and other stakeholders will need to proactively address these challenges to maintain core city services and functions in a changing climate.

These games focus on impacts from extreme heat (Game of Heat) and riverine and coastal flooding and extreme heat (Game of Extremes) and, through game play, educate players, encourage cross-departmental collaboration, and promote incorporation of climate change and resilience considerations into day to day activities. The goal of these training games is to equip city staff and other stakeholders with the knowledge and resources to integrate climate change preparedness and resilience into planning, engineering, operations, and maintenance activities.

Many cities are completing climate change vulnerability and risk assessments to better understand how climate change will impact their assets and operations. City staff are increasingly being asked to lead, manage, or participate in these assessments. These games provide an overview of the climate change vulnerability and risk assessment and adaptation planning and implementation processes to build capacity for city staff and other stakeholders to support these ongoing efforts and understand what type of data and other information may be requested of them and why.

Who should be trained?

The games are primarily aimed at staff – planning, design, operations, engineering, public health – who deal with assets and communities – such as transit systems, public facilities, vulnerable populations and roadways. They are likely to be in departments such as:

- Public Works / Hard Infrastructure
- Transportation
- Water, Stormwater, and Wastewater utilities
- Sustainability
- Planning
- Environment and Parks
- Public Health
- Emergency Management

In addition, as experience with adaptation planning is teaching us, non-city stakeholders such as NGO and community organization representatives, academia, the business community and community members are critical voices in successful adaptation planning. As such, these games are designed to be able to engage these communities, alongside city staff in the game play and enable them to learn about city climate adaptation processes, ultimately enabling them to advance adaptation planning in their cities.

How many people can be trained at once?

The games are designed for a maximum of 10 players per group, (although they can be played with fewer players) and one facilitator per group to keep everyone on task. Ideally, each group of 10 players has a dedicated facilitator, but it is possible for 1 facilitator to manage more than 1 group. Facilitators should read and the Facilitators Guide and be briefed in advance of the training. A similar game, Game of Floods, has been played in groups as large as 60 people, arranged around 6 tables of players.

How long will it take?

PowerPoint Presentation	10-15 minutes
Climate Science Exercise	10 minutes
Asset Inventory Exercise	40 minutes
Vulnerability Exercise	30 minutes
Consequence Exercise (Optional)	20 minutes
Budget/Adaptation Exercise	45 minutes
Adaptation Implementation Exercise (Optional)	30 minutes
Debrief	20 minutes

As described in the table above, each game takes 3-3.5 hours to play if the optional consequence and implementation exercises are included. Game sections should be tightly managed in order to finish in time.

Game components

The games consist of a PowerPoint deck, a game set (board, cards, cost guides) and participant and facilitator guides. Details used in the game, including city demography, climate projections and adaptation costs, are based on averages across multiple, diverse cities across the US.

What documents do I need?

Guides and Resources:

- *Trainer How-To Guide* (PDF)
- *Facilitators Guide to Game of Heat or Game of Extremes* (PDF)
- Training Presentation and Speaker Notes (PowerPoint)
- Adaptation Cost Reference Sheet (PDF)

Game Materials:

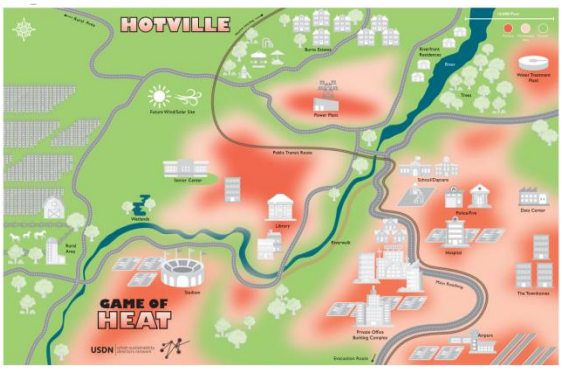
- *Game of Heat or Game of Extremes Participant Workbooks* (PDF)
- *Game of Heat or Game of Extremes* Board (PDF)
- Adaptation Costs Worksheet (PDF)
- Rulers for Game of Extremes only (foot-long, flexible preferred) - *optional*

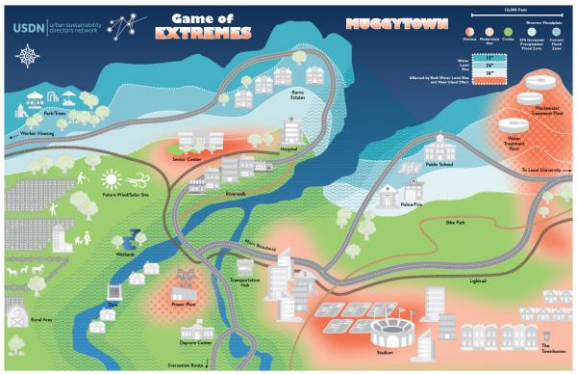
- *Game of Heat and Game of Extremes* Cards (PowerPoint)
    - Asset Cards
    - Budget Cards
    - Role Cards
    - Scenario Cards
    - Disruption Cards

2. Game of Heat and Game of Extremes

How to prepare to run the Game of Heat and Game of Extremes

The games give participants the opportunity to walk through the steps of a vulnerability assessment and adaptation planning process.





The Game of Heat board illustrates potential scenarios for localized heat (urban heat islands) in the City of Hotville. The Game of Extremes illustrates potential scenarios for water level rise[1], riverine flooding and localized heat (urban heat islands) in Muggytown. Regardless of game, each team is given one of three climate change scenarios and asked to evaluate which assets are at risk, to prioritize adaptation efforts based on vulnerability, and to choose climate adaptation strategies based on a set level of funding. After an initial round of adaptation planning, each team experiences a surprise disruption, e.g., a heatwave, that augments or reduces their budget, and they are then instructed to rethink their adaptation strategy selections in light of the disruption.

Trainers should follow the steps below to prepare for the games and to assist the teams in completing the games.

STEP 1: Print and read through the *Facilitator Guide* for Game of Heat or Game of Extremes, depending on which game is to be played.

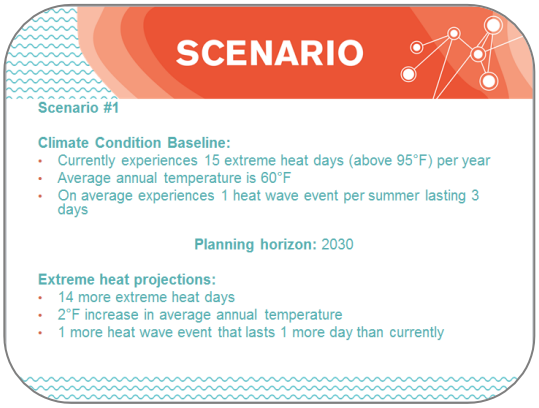
[1] Note that Game of Extremes materials use "water level rise" instead of sea level rise so to keep the game relevant for cities not located near the coast.

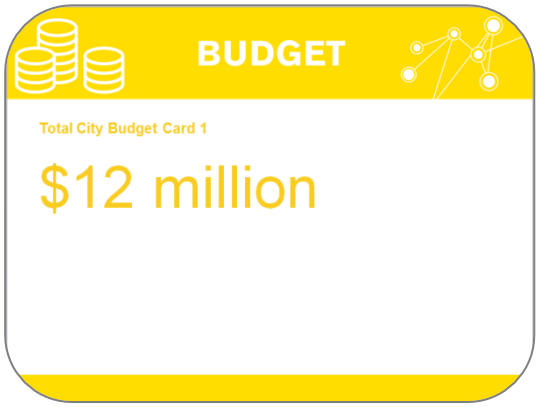
STEP 2: Based on group size and assuming about 10 players per team, determine how many teams will be playing and what their tentative Climate Scenarios and Budgets may be (see Step 3). Decide whether you will play the optional risk and implementation sections of the game, and brief your facilitators accordingly.

STEP 3: Select a defined climate scenario and funding limit for each team from the Scenario cards and the Budget cards. The Scenario Cards focus on different timeframes and climate projections. If multiple teams are playing, cross-learning can be enhanced by giving:

- All teams the same scenario but different budget cards.
- Each team a different scenario and different budget.
- All teams different scenarios and the same budget.

Example Scenario and Budget Cards:

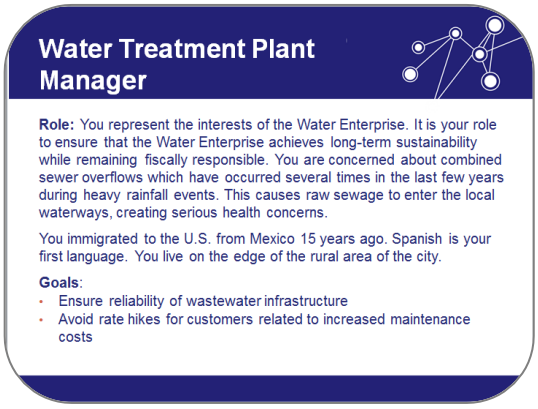


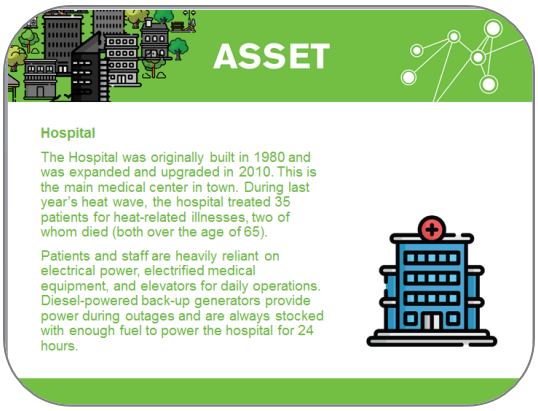


STEP 4: Print the following Game materials for each team:

- Enough participant guides such that no more than two players have to share a guide
- 1 Game Board
- 1 Scenario and 1 Budget Game Card
- 1 Set of Role, Asset and Disruption Cards

Example Role and Asset Cards:





- Notes on printing:
    - All files are intuitively arranged in folders for ease of use and printing. In the first instance, it will be useful to familiarize yourself with the files.
    - Game Boards look best printed landscape 24x36", but can also be printed as landscape18x24"; facilitators may choose to laminate the board and provide dry erase markers to allow teams to write on the board and revise their strategies as needed. Note that any of the Game Cards, if printed using the instructions in the next bullet point, can be used as a ruler for the game board if printed at 24x36". The horizontal length of each card is the same length as the scale on the boards (rulers are needed for Game of Extremes only).
    - The Game Cards and Disruption Cards PDFs are set up to print 4 slides / page in landscape on 8.5x11" pages and must be printed double-sided with "flipping" on the short edge. If these files are printed any other way, the front and backs of cards will not match. The pages must then be cut into individual cards and ideally laminated so that they can be used multiple times
    - The optional name tent should be printed directly from PDF, already set as 2 per page. Be sure to print one for every player.
    - The Asset, Vulnerability, Risk Table is included in the Participant and Facilitator Guidebooks and also provided as a standalone file (in the Participant Materials Folder) if the facilitator chooses to print at a larger size, e.g., 11x17" (landscape orientation).

STEP 5: Identify a facilitator for each team in advance of the day of game play. Brief the facilitator on the guidance and game materials and answer any questions the facilitators may have.

STEP 6: Divide participants into teams of 10 and assign each team to a facilitator.

STEP 7: Instruct and facilitate the game as prompted by Introductory PowerPoint presentation and the guidance materials.

STEP 8: At the end of the session, ask each Facilitator to report their team's results; stating scenario and budget and then providing an overview of the results of their Asset Inventory, Vulnerability Assessment, Consequence Assessment, Adaptation Strategy selection and Implementation exercises.