HURRICANE APPROACHING!

Developed by Pamela Murray-Tuite, Virginia Tech, 2013

INTRODUCTION: This game introduces the players to the complexities and challenges of evacuating from a hurricane. Players make decisions about their destinations and the types of activities in which they participate. During the evacuation, players must monitor their fuel and the amount of elapsed time. They also face uncertainties and random events associated with the hurricane, environment, fuel and supply availabilities, and traffic conditions.

BACKGROUND STORY: Players live on a peninsula that is threatened by a category 4 hurricane. They must evacuate within 2 days. Their homes will be randomly subjected to damage. They must choose a type of accommodations: a relative's home, hotel, or public shelter. They may change their accommodation selections while enroute. Each player should assume that he/she is the head of his/her household and has a spouse and 2 children who will evacuate with them. None of family members (children & spouse) can drive. The vehicle can seat 2 more adults from outside the family.

Before actually departing the threatened area (or reaching the final destination), each player may choose to participate in various activities, such as buying supplies to secure the home, buying supplies at the grocery store, getting cash from the bank, filling the gas tank, and picking up friends so that they evacuate with the player's family. Each activity has a disadvantage (primarily time delay) and an advantage that may not be revealed until certain events are realized.

During the trip, players will be subject to chance events. Some of these are to the players' advantage but most will slow them down, require the expenditure of cash, or cause them to use some supplies.

OBJECTIVE: To evacuate within the time limit of 2 days (48 hours) and with the most points. Points are awarded for speed of evacuation, cash, and destination choice.

SUPPLIES NEEDED:

- Game pieces one for each player
- 10 sided die
- Set of chance cards (file available for download)
- Individual tally sheet one for each player (template available at the end of this file)
- State of the system recording sheet one per game (template available at the end of this file)
- Writing implements

NUMBER OF PLAYERS: 4 is considered ideal

RULES:

Interpreting the Board:

The board shows links (lines), nodes (blue rectangles and green circles), activity locations (labeled buildings in the interior of the board), and destinations in the corners.

• Lines

- o Next to the lines are black numbers and red numbers. These represent the minimum number that must be rolled in order pass that link (e.g., if the number on the board says 0.3, a 3 or higher must be rolled to pass). To know whether to consider the black or red numbers, consider the state of the system (see below).
- o Three links are labeled as bridges. When the state of the system says they are open, players may pass through without rolling. When they are closed, they may not be used.

• Circles & Rectangles

- o Green circles are free nodes. No action is required when a player lands on one.
- O Blue rectangles are chance nodes. When a player lands on one, he/she must draw a chance card and follow the instructions on it.
- Activities. Players are NOT required to participate in any activities but may choose to participate in any combination, including the same activity more than once. Reaching an activity location ends the player's current turn. After an activity, players must return home, participate in another activity, or proceed to their final destination.
 - o *Bank*: At the bank, a player may withdraw \$2000 in cash per trip, up to \$4000 total.
 - O Home Supplies: Home supplies cost \$500. If a player chooses to travel to the home supply store and purchase supplies, he/she must return home before evacuating to the final destination. At home, the turn ends since the player will spend time securing windows, etc. Securing the home mitigates against storm damage at the end of the game. Players may participate in other activities on the way home, if desired.
 - o *Friends*: At the "friends" location, players can pick up friends. Friends can act as other drivers, should the player be too tired at some point during the trip. They also pay for half the gas and accommodations but cause the player to use twice the supplies when needed (indicated in the chance cards).
 - o *Gas Station/Convenience Store*: Fuel is needed for travel for both activities and reaching the final destination. The gas tank holds 20 gallons. Each link traveled uses 1 gallon. Players keep track of their fuel using the Individual Tally Sheet provided. Players may visit the gas station as often as needed. Each time, players may fill the tank at the current price.

At the same location is a convenience store. Players may need consumable supplies for the trip. They may purchase supplies in increments of 25 at the

current rate. Players must have at least 5 units of supplies when they reach their final evacuation destinations.

If players choose to buy both supplies and gas at the same location, they forfeit their next turn – basically using one turn per activity.

Fuel may also be purchased at other activity locations (friends, bank, home supply store) but at 3 times the current price.

• At the corners of the board are the origins and destinations.

Possible Destinations	End of the Game Cost	End of the Game Points
Starting location	\$0	0
Public shelter	\$0	5
Hotel	\$500	25
Relative's home	\$100	50

Start of the Game:

- Each player will start at the origin (labeled start and looks like a house). Roll the die to determine the player sequence.
- Everyone starts with 50 units of supplies.
- Each player rolls the die 2 more times. Consider a 0 to mean 10.
 - o Roll 1 determines how much fuel is currently in the vehicle: 10 gallons plus the number on the die. Record this fuel level in the Individual Tally Sheet.
 - o Roll 2 determines how much cash the player starts with: \$100 multiplied by the number on the die. Record this value in the Individual Tally Sheet.

Travel:

To travel through the network, at each link, a player must roll a number equal to or higher than printed on the board. Initially, the black numbers will be the ones to follow. Chance cards may require switching to the red numbers for everyone.

The player can continue to move until he/she reaches an activity location/destination, is told to stop by a chance card, or reaches a link where he/she cannot pass. The zero on the die means 1.0. The other numbers (X) mean 0.X.

Each link consumes:

- 1 gallon of fuel
- 0.5 hours of time (30 minutes)

If a player runs out of fuel, he/she must pay \$500 for a tow to the gas station and pay twice the current fuel price.

If a player cannot move on a particular turn because the roll is too low, he/she still uses 30 minutes.

End of the Game:

The game ends when either 2 days (48 hours) have elapsed for each player or everyone has reached their destinations.

- Once play has ended, each player rolls the die to determine whether their home was damaged. (If the chance cards dictated a return home, assume no damage to the home). If the player went to the home supply store and prepared the home, subtract 5 from the roll. Multiply the roll by \$500. Subtract damage costs from cash supplies.
- Subtract any accommodation costs from the available cash.

Scoring:

The player with the most points wins the game.

- Cash points
 - O Use the current price of fuel to determine the cash value of the vehicle's remaining fuel.
 - o Use the current price of supplies to determine their cash value.
 - O Compute the total cash. Total cash = cash on hand + current fuel value + current supply value home damage accommodation cost
 - o Divide total cash by 100 to determine the points.
- Destination points
 - o Relative's home = 25 points
 - \circ Hotel = 20 points
 - o Public shelter = 5 points
 - o Incomplete evacuation = 0 points
- Evacuation time points
 - o 20 points for evacuating before the time limit expired
 - o 30 points for reaching the destination first, according to the players' elapsed time
 - o 20 points for reaching the destination second
 - o 10 points for reaching the destination third
 - o 0 points for fourth or more
- Find the total points: Total = cash points + destination points + evacuation time points

Individual Tally Sheet

Elapsed Time	Fuel	Cash	Supplies 50
Elapsed Time			50

State of the System Record

Which numbers to follow (red/black)	Price of Fuel	Fuel Purchase Limits	Price of Supplies	Availability of Bridges	Evacuation Direction
Black	\$5.00 / gal	20 gal or full tank	\$10 / unit	Open	Away from home, all destinations available