



RISK GAMING

04

Southwest Silicon

IAN CURTISS

Southwest Silicon

**Water, Semiconductors and the
Future of American Economic Security**

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Lux Capital

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About Lux Capital

Lux Capital is a New York- and Silicon Valley-based venture capital firm investing in companies on the edge of scientific and technological breakthroughs. Over the past two decades, Lux has expanded from our New York City roots to Silicon Valley, and built a firm with over \$5 billion AUM and more than 30 full-time professionals, with a wide spectrum of technical backgrounds and the versatility to invest at any stage, from \$100,000 to \$100 million.

About Riskgaming

Riskgaming is a strategic simulation game that immerses players in complex scenarios reflecting real-world challenges and dynamics.

CHARACTER-DRIVEN STRATEGY

Players take on the role of richly-detailed characters who can strategically build or break trust with each other throughout the game.

EMERGENT BEHAVIOR

Players make strategic decisions influenced by personal and external incentives, allowing for spontaneity and surprise.

AUTONOMOUS DECISION-MAKING

All players select their actions independently of each other during a scenario, reflecting the autonomy of real-world decision-makers.

PROFOUND EXPERIENCES

Each scenario faithfully models the real world, allowing players to experience an alternative reality that informs our own.

About the Creator

Ian is the Founder of CSquared Partners and a Riskgaming Consultant with Lux Capital. He analyzes the interaction of geopolitics, innovation and corporate strategy with a focus on the gray-zones of societies: where traditionally accepted boundaries are actively changing. To understand these dynamics, he creates simulation games and executive experiences to confront the inherent tradeoffs in these interactions, and to expand individuals' paradigms around these pressing issues.

In addition to bespoke experiences, he also creates board games for the consumer market through his firm, CSquared Games.

Prior to starting his own firm, Ian was the Assistant Dean for International Projects in the W. P. Carey School of Business at Arizona State University (ASU), where he still has the pleasure to teach and support programs. He has lived and worked at the frontlines of geopolitics throughout his career, including nearly six years in Beijing. During his time there, he led policy and government affairs teams at the American Chamber of Commerce in China and coordinated closely with the U.S. Chamber of Commerce in Washington, DC. Ian has also worked and consulted with a variety of organizations on risk management, U.S.-Mexico trade relations and security, as well as organizational strategy. He has had the pleasure of serving on a number of boards.

Ian earned bachelor's degrees in History and Political Science from ASU, where he focused on Political Economy and wrote his thesis on the Soviet economic transition. He was then a Rotary Ambassadorial Scholar to Beijing, where he earned a Master's of International Relations from Peking University, researching strategic trust and alliance relationships in the Asia-Pacific. He also has an MBA from the W.P. Carey School of Business and is fluent in Mandarin Chinese and Spanish.

Acknowledgements

This scenario was inspired by the books *Cadillac Desert: The American West and Its Disappearing Water*, by Marc Reisner, and *The Future of the Suburban City: Lessons from Sustaining Phoenix*, by Grady Gammage. The article, "What Will Become of American Civilization?: Conspiracism and hyper-partisanship in the nation's fastest-growing city," by George Packer and published in *The Atlantic* was also an inspiration.

The resources at Arizona State University's Morrison Institute for Public Policy and the Kyl Center for Water Policy were invaluable for research. The author also expresses their gratitude for the beta-testers from around the world whose curiosity about gaming, water and technology in the American West helped develop this game.

"Go West Young Man, and Grow Up with the Country."
–Horace Greeley

Credits

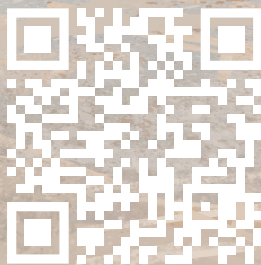
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HOW TO DOWNLOAD THE GAME

All materials for the game, including the spreadsheet that drives it, design notes and player handouts, are available on the Lux Capital website.

To download the game materials, please head to luxcapital.com/riskgaming or use this QR code.





Background and Context

Southwest Silicon is a Riskgaming scenario that simulates the complex interplay of economic security, state politics and climate change.

For more than a century, the Colorado River has been at the center of intense negotiations among America's Western states and Mexico. States along the river are organized into two regions. The Upper Basin states of Colorado, Wyoming, Utah, New Mexico and northern Arizona's tribal lands receive their share of water first, before the river heads west through Nevada, the rest of Arizona, California and finally Mexico — areas that make up the Lower Basin region.

Starting in the 1930s, the federal Bureau of Land Reclamation built massive dams and waterworks to redirect the river's waters to cities and farms. Given the limited urban population at the time, though, the structures were primarily designed to serve farmers, with communities developing and funding their own local irrigation projects. In total, 14 dams, two major canals serving Los Angeles and Central Arizona, and countless local distribution projects were built.

As part of the reclamation process, the federal government calculated how much water the system provided, and a series of complex negotiations ultimately led to a deal — still in place today — to allocate water to tribes, states and regions by formula. The primary beneficiary was California, which secured 29% of the water, followed by Colorado at 25% and Arizona at 18%. Underlying the headline percentages are complex seniority rules that go into effect in times of scarcity, with Arizona holding some of the most junior rights to its share of the Colorado River's water.

Unfortunately, the federal government made a critical error in its measurements of the river, since its survey came during an unusually wet period with significantly higher throughput than historical averages. Climate change has since reduced the amount of water that flows into the system even further. Most recently, as the United States continues to grapple with the legacy of American engagement with Indian tribes, numerous court cases have given greater water rights to the tribes along the Colorado River.

Today, the Colorado River is severely overused across hundreds of independent water markets encompassing states, tribes, cities and irrigation districts. Although water might be available at the right price, it remains a highly regulated product, with significant infrastructure required to serve different customers protective of their own specific water market.

Multiple government and semi-governmental entities are involved in overseeing and regulating the Colorado River. At the community level, different types of water districts were formed around each individual project under the Bureau of Land Reclamation, creating water prices based on the cost of the canals and dams required for that particular area. Meanwhile, state environmental and development agencies regulate externalities of water usage, and federal agencies handle interstate disagreements along the river.

As of this publication, the federal government is involved in two separate issues regarding the Colorado River.

First, as droughts continue across the West and the river produces less water than has been legally allocated, cuts must be made to bridge the difference. Because of the complex stakeholder interests at play, state governments have been unable to agree on any cuts, forcing the Department of the Interior to threaten mandatory cutbacks if the states do not reach their own agreement.

Second, Congress continues to debate a bill that would allow Upper Basin tribes in Arizona to sell their excess water to customers in the Lower Basin region, a policy change that could be implemented relatively easily with new infrastructure.

Although the Colorado River supplies an immense amount of water to the region, it's not the only source. Rainfall flows into local rivers and lakes, known collectively as surface water. Surface water eventually feeds underground aquifers that can then be pumped. Despite the direct cycle between surface and ground water, though, they are often legally defined as two distinct sources, making it difficult to measure available supplies — and making overallocation almost guaranteed.

Pressure on all water sources is keen. The Southwest United States has added tens of millions of new residents over the past century, and the region remains one of the fastest-growing in the country. Even with a greater focus on irrigation efficiency, the expansion of farming has continued, with water-intensive crops like alfalfa and avocados growing in the heat of the desert. Finally, a new set of water-demanding industries have sprouted up in the region.

For example, the semiconductor manufacturing industry has been growing significantly along the Colorado River. Per the Semiconductor Industry Association, Southern California houses 34 microchip-related facilities and Arizona houses 42. Since the CHIPS and Science Act was signed by U.S. President Joe Biden in 2022, 20 new projects have been announced in Arizona.

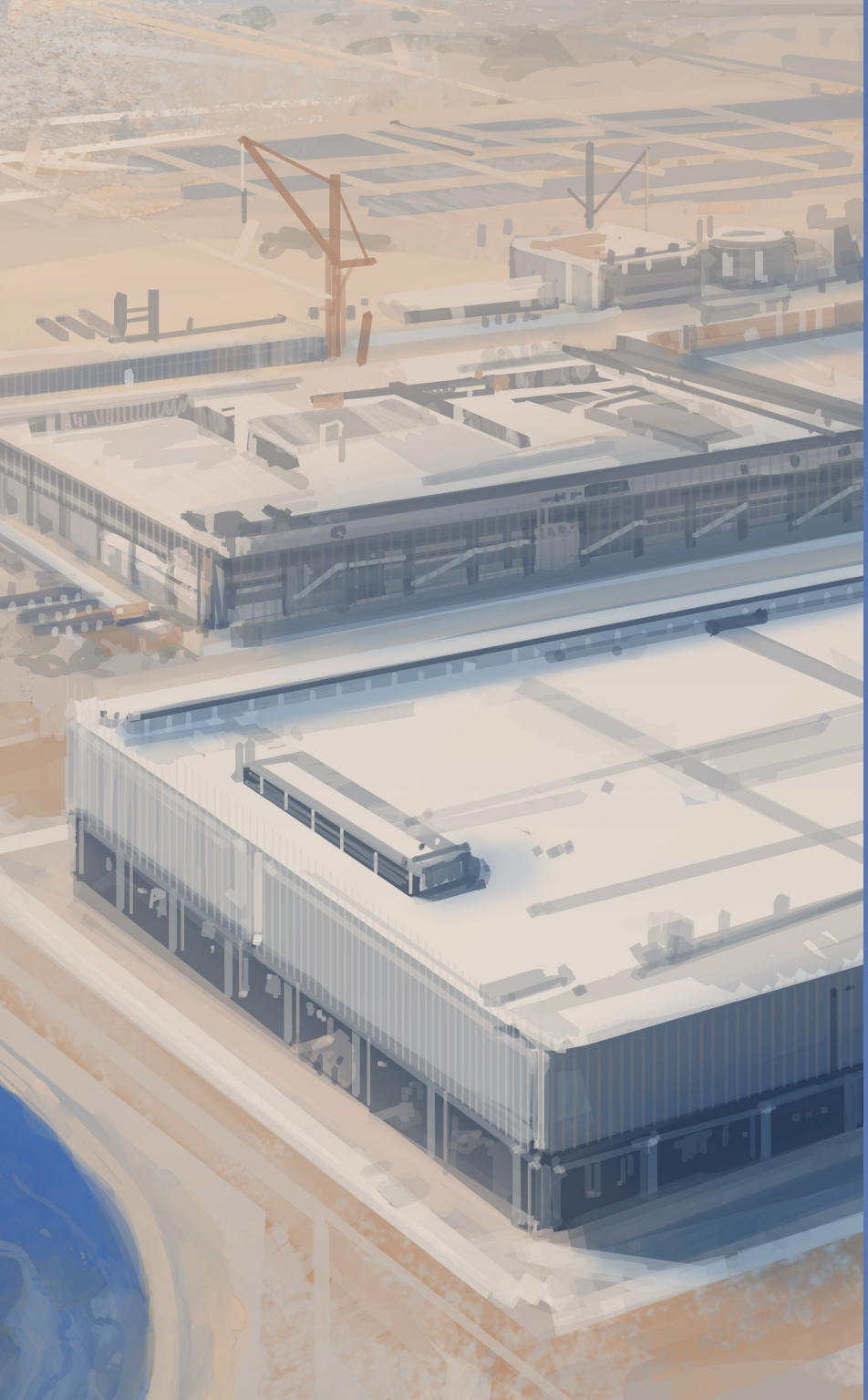
Chip fabs use a large amount of water to cool down their machinery as well as to wash silicon wafers of unwanted chemicals. TSMC is expected to use up to 16.4 million gallons of water per day across its three fabs, the equivalent of more than 100,000 average residents. Given the region's water shortages, the company hopes to bring

that figure down to 4.2 million net gallons through recycling and conservation efforts.

Importantly, there is a divergence in performance — and in water usage — between advanced and legacy chips. Thanks to Moore’s Law, the size of transistors on so-called leading-edge chips has now been reduced to under five nanometers. This has increased the value of each individual chip wafer by increasing its compute power and efficiency, but the advanced systems required to manufacture them generally require more water.

Yet legacy chips are still required for countless products including automobiles, televisions, sensors and fighter jets. These legacy chips, defined by the CHIPS and Science Act as those produced with 28 nanometer technology or larger, account for upwards of 88% of all chips produced by American companies, even though they account for only 40% of those companies’ revenue.

The resulting gap is apparent: semiconductor fabrication requires more water for the advanced chips companies are incentivized to build, although countless industries still require legacy chips, which are increasingly supplied by Chinese manufacturers. Just as with the tensions over water rights of the Colorado River, we see similarly diverging incentives and complex negotiations among chip businesses. Whoever gets the water will be flush with profits.



Game Scenario

Set in the near future of 2027, Southwest Silicon simulates the tradeoffs of building a new microchip manufacturing plant in Arizona's Phoenix Valley despite ongoing water shortages from the Colorado River.

Over four Scenes — each representing one quarter of a year — eight to nine players will make critical decisions through negotiations with each other, keeping in mind their own incentives and the complexities involved in serving the region's goals.

Three players will take on the roles of the **Mayors of Chandler, Phoenix and Peoria**, all cities lying in the Phoenix Valley. As Mayors, each of the three will have to administer the water in their city to manage the current and future needs of their populations while meeting their own political goals. Two more politicians, the **President of the Arizona Senate** and the **U.S. Senator**, will also be managing their political futures as they vote on important pieces of legislation and persuade stakeholders on issues that impact the entire state. Meanwhile, two consultants, the **Managing Partner of AquaWest Solutions** and the **Founder of Cholla Advisory**, will help players understand their constraints and shape negotiations from two opposite perspectives: the former seeking commercial benefit from water markets and the latter seeking to support specific political victories. Finally, the **Governor of the Gila River Indian Community** will need to balance the tribe's access to excess water with its future goals, while the **Vice President of General Foundry** will have the ultimate decision on the future of the company's chip fab in the Valley.

All players have access to the starting **Public Metrics** from the briefing presentation, and their dossiers will include their own private **Intel** along with their unique **Victory Conditions**.

As the 2028 election approaches next year, the U.S. government continues to seek greater onshoring of microchip production, with Congress pursuing an expansion of the CHIPS Act to extend subsidies to legacy chips. Microchip production firm **General Foundry** is seeking a location for its next fabrication plant, and the company has zeroed in on Arizona for the site given the state's chip ecosystem, the depth of its talent pool and its cost-competitiveness. It has a critical decision to make: stick with just advanced chip fabrication or expand to legacy chips as well, which will require access to more water, given its bigger size.

While all players can benefit from the new chip fab in Arizona, General Foundry needs water guarantees to build it. Outside of the drought and overallocation of the Colorado River, there are a number of water sources that tribes, farmers, or even cities can offer to ensure the fab's future.

Yet water is a scarce resource. The Department of the Interior is deciding whether to require water cuts to handle overallocation of the Colorado River. If there are cuts, water owners will receive allocations in order of their **Seniority**, starting with **High** then **Medium** then **Low**. Many of the most populated areas in Arizona have low seniority, heaping pressure on local politicians to resolve the looming crisis. Unsurprisingly, concern among Arizona voters about water access has dramatically increased. As a result, there is growing interest in allowing local water districts to sell their water to faster-growing economic centers, where water risks are higher.

In fact, multiple laws are up for debate that will influence what water sales are permissible and other facets of the game. It's critical to negotiations and the future of the fab that the outcomes of those laws are in line with the strategies adopted by the players.

The laws are:

In Congress:

- **The CHIPS Act Expansion**, which would fund subsidies for legacy chips
- **The Tribal Water Sales Law**, which would allow the Gila River tribe to sell its water to Lower Basin cities such as Chandler, Phoenix and Peoria

In the Arizona state legislature:

- **The Corporate Tax Cut Law**, which would make General Foundry's operations in the state more profitable
- **The Farmer Tax Cut Law**, which would benefit farmers' profitability
- **The Farmer Water Sales Law**, which would make it legal for any farmer to sell water to other people in the state

With elections approaching, politicians must improve their **Political Polls** in spite of an increasingly unpredictable electorate. Public support is impacted not only by politicians' public engagements, but also by the opinions and preferences of 36 non-playable **Stakeholders**. These Stakeholders hold their own political views and opinions on important pieces of legislation, and players will have different Intel on each Stakeholder.

After four Scenes have been played, players will conduct **Final Scoring**, determining the winner out of a score of ten. Now, it's time to pump up the water — and pump up Arizona's high-tech future.



Water Economy

Although there are many facets to Southwest Silicon, the most important part of the game is the underlying water economy.

Certain players have access to more and higher seniority Water Rights, while other players like Mayors want to secure water for their growing populations. Through Water Deeds, players will negotiate with each other and ultimately trade this valuable resource in order to gain advantage in Final Scoring.

WATER RIGHTS AND SENIORITY

Water is the primary resource in the game, and each player will interact with it in different ways. Southwest Silicon simplifies the different real-world sources of water and legal arrangements guiding its use through the use of **Water Rights**. Each Water Right has a Seniority from strongest to weakest: **High**, **Medium** or **Low**. The more senior the Water Right, the higher likelihood it will be unaffected by mandatory water cuts from the Department of the Interior.

Each Seniority is represented by a currency of a different color, in amounts of 1, 5, and 10. High is blue, Medium is orange, and Low is yellow.

All Water Rights are measured in acre-feet, with each integer representing 1,000 acre-feet.

WATER PRICING

Each role involved in water management is given a water pricing chart at the beginning of the game which reveals the historical

prices for the different Seniority of Water Rights in their geography. These price charts can include their own prices for water, as well as other relevant roles or Stakeholder prices. These serve as an anchor in price negotiations with other players, as well as the prices that Stakeholders will buy or sell water at with the Water Broker. All Stakeholder prices are set and the Water Broker is unable to negotiate or change the prices for any Stakeholder deals.

WATER DEEDS: TRANSFERRING WATER

Any time a player seeks to transfer water they must use one of the **Water Deed** cards provided by the Game Leader at the beginning of the Scene. Importantly for Mayors, this rule also includes moving water on their own player boards.

The number of Water Deed cards is limited for each Scene, and they cannot be carried over. For a player to use a deed, either their role or the role of the other player with whom they are trading must already be listed on the deed in either the Water To or Water From sections.

If a player fails to complete and deliver the Water Deed to the Game Leader, then the transfer will not be recorded and is not valid for the game.

Example

If a player intends to transfer water from themselves to another player or Stakeholder, they would take an available and eligible Water Deed card and fill it out with the following details:

- *Water To*: Write down to whom the water will move
- *Water From*: Write down from whom the water is coming
- *Water Seniority*: Circle High, Medium or Low
- *Water Amount*: Write down how many acre-feet are being traded (they are assumed to be 1,000 each).

- *Price Per Acre-Feet*: Write down the price at which each unit of water is being sold. Note that when cities provide water to the Stakeholders in their own city, they do not complete this section.

Players may give Water Deed cards to the Game Leader at any time during the Scene; they do not need to be delivered at the end. For each deed brought to the Game Leader, the player conducting the transfer should have the appropriate water currencies in hand to ensure that the transaction is correct.

WATER ADMINISTRATION (MAYORS ONLY)

The Mayors of Chandler, Phoenix and Peoria must determine how to use water in their own cities. There are three types of **Water Use**: Available, In-Use, and Storage.

- Available represents the unused, unclaimed water owned by the city that can be given to city Stakeholders or traded to others
- In-Use represents the water that the city is actively using for residents and businesses
- Storage represents the amount of water that the city is required to hold for emergencies and other uses

As Mayors seek to gain an advantage from their different Water Rights or mitigate the impacts of water cuts instituted by the Department of the Interior, they will need to carefully choose how to use their water. Their Player Boards indicate the amount of water they need to have for either their In-Use or Storage needs.

As noted above, in order to change the use of water, Mayors must fill out a Water Deed card and deliver it to the Game Leader.

Example

If a Mayor intends to transfer water from one of their water uses to another, they would take an available and eligible Water Deed card and fill it out with the following details:

- *Water To:* Write down Available, In-Use or Storage
- *Water From:* Write down Available, In-Use or Storage
- *Water Seniority:* Circle High, Medium or Low
- *Water Amount:* Write down how many acre-feet are being traded (they are assumed to be 1,000 each).
- *Price Per Acre-Feet:* Leave blank — cities do not complete this when making internal transfers.

WATER CUTS

At crucial moments of the game, the Game Leader will announce **Water Cuts**. During a Water Cut, supplies of water will be reduced based on Seniority. Players and Stakeholders holding Low Seniority water will be more likely to lose their resources than players holding High Seniority water. Depending on their roles, players can face political or financial blowback for not having the water they thought they did.



Gameplay and Key Concepts

Each Scene consists of 15 minutes of open negotiation between players, who are free to talk with anyone they like. At the start of each Scene, players will receive a Decision Sheet listing their choices for that Scene.

Water Deeds as described in the previous section can be filled out and filed with the Game Leader at any time. At the end of the Scene, the Game Leader will announce any updated Public Metrics and also any events that have taken place.

DECISION SHEETS

At the start of each Scene, players will receive unique **Decision Sheets** that offer them the decisions available to their role for that Scene. The decisions available can change over time, requiring different strategies to handle each Scene's unique negotiations. Before the end of the Scene, players will circle their decisions and return their Decision Sheets to the Game Leader. There are four types of decisions:

- Managing the Chip Fab Investment Project
- Privately Persuading Stakeholders
- Making Public Statements and PAC Contributions
- Voting

Managing the Chip Fab Project (VP of General Foundry)

Each Scene, the Vice President will announce the size of the company's fab and the number of jobs expected at the site. This decision will impact both public expectations and the Stock Price for the firm.

When the Vice President is asked where to build the Fab, they must choose either Phoenix or Chandler.

Privately Persuading Stakeholders (Mayors, President of the Arizona Senate, U.S. Senator and Founder of Cholla Advisory)

All five Arizona politicians may persuade their relevant Stakeholders on any issue they like as listed on the Decision Sheet. Due to the nature of each political office, each role has relationships with only certain Stakeholders, limiting their influence.

Making Public Statements (Mayors, President of the Arizona Senate, U.S. Senator and Governor of the Gila River Indian Community)

Players can impact Political Polling by delivering their messages directly to the General Public. Players may communicate their stances on up to two issues.

Although politicians are able to make public statements for free, the Vice President of General Foundry is only able to do so by spending money through contributions to their political action committee (PAC).

Voting (President of the Arizona Senate and the U.S. Senator)

The two state politicians can cast their votes for or against the laws held before their respective legislative chambers. Both players are able to block individual laws from passing. However, in order to pass a law, a player must vote “Yes” and Political Polling must also provide enough support for the law.

PUBLIC METRICS

At the beginning of the game and at the end of each Scene, the Game Leader will announce updates to the **Public Metrics**. These metrics offer players key context about the game.

There are four types of Public Metrics: Political Polling, Laws Passed, Stock Price and Farmers Remaining. Each is discussed in turn.

Political Polling

The Game Leader will share the current **Political Polls** with all players at the beginning of the game and at the end of every Scene. There is a Political Poll for each of the four politicians who are up for re-election at the end of the game (the Mayor of Peoria is not up for re-election) as well as for each law up for vote. The exception is the expansion of the CHIPS Act, which is too niche of an issue to develop an accurate poll. The higher the Political Poll for a politician or issue, the more likely voters will be supportive.

Political Polls are affected by the **General Public** and the Stakeholders in the game. The General Public always begins with the same polling numbers, although their interests may change as the players make decisions to persuade them directly or as players fail to meet voters' basic expectations.

As noted before, Stakeholders represent influential organizations that have their own preferences for the issues in the game. At the end of each Scene, they will influence the outcome of Political Polls. Stakeholders can be swayed in three ways. First, a player can directly persuade an entire Stakeholder group on a specific issue. For example, a role with state-wide influence may decide to engage with the business interests across the state to persuade them to support the Corporate Tax Cut Law.

Second, by trading water with a Stakeholder, a player may potentially improve how the Stakeholder perceives that player. Third, certain Stakeholders have specific preferences about the issues in the game, and may be triggered to change their opinion toward a politician if the politician does not meet the Stakeholder's expectations.

If a Stakeholder is removed from the game, they will no longer have any impact on the Political Polls.

Laws Passed

As certain roles have the opportunity to vote on laws during a Scene, the outcome will be displayed to the players at the end of the Scene. Due to the need for public support and a successful vote, a player's vote on the law does not guarantee its passage.

Stock Price

The Game Leader will provide players with the updated Stock Price for General Foundry at the end of each Scene. The Stock Price is influenced by a number of factors in the game, fully known only by the Vice President of General Foundry. Other players may benefit from the Stock Price as well, given the company's role in the economic development of the Phoenix Valley.

Farmers Remaining

At the end of each Scene, the Game Leader will also display the percentage of farmers remaining in the state, to update players on the impact the search for water is having on the state's economy.

VICTORY POINTS

Each of the roles have an opportunity to win the game by earning the most **Victory Points** by meeting their unique **Victory Conditions**. Each role has multiple conditions that provide Victory Points, and part of the game's challenge is balancing these different priorities.

Some conditions provide a **Victory Point Ratio** where a player can attain more points up to a cap by maximizing their:

- Stock Price (Vice President of General Foundry)
- Revenues (Managing Partner, Aqua West and Governor of the Gila River Indian Community)
- Number of Farmers (President of the Arizona Senate)



Game Leader Guide

GAME LEADER SPREADSHEET

The **Game Leader Spreadsheet** has ten worksheets to help them facilitate the game:

- 4 Scene Sheets, one for each Scene of the game
- 1 Pol & Econ Calculations Sheet
- 1 Persuasion Calculations Sheet
- 1 Water Calculations Sheet
- 1 Stakeholders Sheet
- 1 Metrics Sheet
- 1 Scores Sheet

The Game Leader only needs to input data into the Scene Sheets. The Metrics Sheet will be used at the end of each Scene to update the players on Public Metrics. The Scores Sheet will only be used once the game is over to reveal final scores to all players and identify the winner of the game.

Scene Sheets

The **Scene Sheets** are the dashboard for the Game Leader, presenting requirements for each Scene and spaces to record players' decisions. All Decisions Sheets in the game offer numerical codes that should allow the Game Leader to easily input each player's decisions.

Inputting Water Deeds

The Water Deeds are found on Scene Sheets 2, 3 and 4. As players complete their Water Deed cards and deliver them to the Game Leader, the cards should be filled out in the worksheet.

PRINTOUTS

Prior to the game, the Game Leader should have the following files printed, single-sided, for players to use:

- Player Decision Sheets: Scenes 1-4 for all players (32 Pages for 8 players or 36 Pages for 9 players)
- Player Boards & Backgrounds: (8 or 9 players) (16 Pages)
- Scene Injection Letter: Used for Scene 3 (1 Page)
- Scene Water Cuts: 5 Pages each for Scenes 2 and 4 (10 Pages)
- Stakeholder Icons: 36 Total
- Arizona Map: 5 Pages
- Water Price Charts: 7 Total
- Water Resources: 144 Total
- Water Deeds: 44 Total
- Stakeholder Knowledge: 7 Pages

TABLE STRUCTURE

The table should be set with all players surrounding the Arizona map with the Stakeholder icons in their corresponding spaces. The players should begin the game with their Player Boards & Backgrounds and their Scene 1 Decision Sheets ready for use.

The recommended seating for the game, in clockwise order, is: Vice President, General Foundry; U.S. Senator; Mayor of Phoenix; Mayor of Peoria; Managing Partner of AquaWest; President of the Arizona Senate; Governor of the Gila River Indian Community; Mayor of Chandler; Founder of Cholla Advisory.

SCENE GUIDES

Each Scene is 15 minutes long. At the discretion of the Game Leader, a specific Scene can be made shorter or longer with notice to the players.

Scene 1 (2027 Q4)

1. All players announce their support or opposition to three issues:
 - Desired size of the chip fab (Small — only producing advanced chips — or Big — producing both advanced and legacy chips)
 - Expansion of the CHIPS Act
 - Farmer Water Sales Law
2. Outcomes:
 - In this introductory scene, player actions set the tone for the rest of the game (players who meet the general expectations of their parties will gain political support)
 - All roles impact General Foundry's Stock Price in different ways (more support for the different laws and size of the fab increases their Stock Price)
 - All Public Metrics are updated

Scene 2 (2028 Q1)

1. The Game Leader announces the first Water Cuts
2. All recurring decisions available
3. The Tribal Water Sales Law Update:
 - No congressional movement
4. Votes:
 - President of Arizona Senate: Corporate Tax Cut Law
5. Outcomes:
 - Players start pursuing their goals and building strategies
 - Cities and the Gila River Indian Community need to meet the demands for their different Water Uses
 - If the Mayors fail to meet demand, they will face political blowback
 - All Public Metrics are updated

Scene 3 (2028 Q2)

1. The Game Leader announces the second Water Cuts are coming at the beginning of Scene 4
2. The Tribal Water Sales Law Update:
 - No congressional movement
3. Votes:
 - President of Arizona Senate: Farmer Water Sales Law
 - President of Arizona Senate: Farmer Tax Cut Law
4. Vice President of General Foundry: May decide location of chip fab
5. Halfway through the Scene, the Game Leader gives a medical note to the President of the Arizona Senate
6. Outcomes:
 - All Public Metrics are updated
 - **Secret** The President of the Arizona Senate receives an update on goals halfway through the Scene. It may dramatically change the senator's strategy

Scene 4 (2028 Q3)

1. The Game Leader executes the second Water Cuts announced in Scene 3
2. The Tribal Water Sales Law Update:
 - No congressional movement
3. Report on fab progress:
 - If the Vice President of General Foundry changed the number of expected jobs each Scene, their Stock Price is hit
4. Votes:
 - U.S. Senator: Expansion of the CHIPS Act
 - President of the Arizona Senate: Farmer Water Sales Law
 - President of the Arizona Senate: Farmer Tax Cut Law
 - President of the Arizona Senate: Corporate Tax Cut Law

5. Vice President of General Foundry: Must decide location of the chip fab
6. Vice President of General Foundry: Must confirm size of the chip fab
7. Outcomes:
 - Cities and the Gila River Indian Community need to meet the demands for their different Water Uses
 - If the Mayors fail to meet demand, they will face political blowback
 - All Public Metrics are updated

Final Scoring & Game End

Final Scores calculated

- Election outcomes
- Final Stock Price of General Foundry
- Revenue goals for Gila River Indian Community and AquaWest
- Other player goals



Game Characters

Vice President of General Foundry: Saachi/Sankalp Chen-Chowdhury

Chen-Chowdhury is a global citizen driven by the relentless pursuit of technological excellence. Born and raised in Singapore, they developed a deep appreciation for the power of engineering to shape the future. This passion led them to the Massachusetts Institute of Technology (MIT), where they did their undergrad in the famed Course 6 before earning a PhD in Materials Engineering. For their PhD, they specialized in the intricate science behind advanced semiconductors. This academic rigor provided the bedrock for a career at the cutting edge of chip design and manufacturing.

Chen-Chowdhury's 13-year tenure at Intel was a masterclass in the complexities of the semiconductor industry. They rose through the ranks, from process engineer to senior operations director, gaining invaluable experience in managing large-scale operations, driving innovation and navigating the ever-evolving landscape of chip manufacturing.

In 2019, Chen-Chowdhury joined General Foundry, eventually taking the helm of the company's \$20 billion semiconductor expansion project in Arizona. This isn't just a job, but a chance to shape the future of the American semiconductor industry and contribute to the economic development of Arizona and a region grappling with complex resource challenges.

The success of this project hinges on Chen-Chowdhury's ability to secure not only the right amount of water for General Foundry's new chip fab, but also water with high Seniority, a task that demands a deep understanding of local water politics. Chen-Chowdhury will need to decide between Phoenix and Chandler for the site of the fab and will also need to determine the ultimate size of the plant and its number of employees. These decisions give them a degree of leverage in local politics. They are not merely overseeing a project; they are shaping the technological landscape of the state, and ensuring it's done sustainably.

Party Affiliation

None

Intel

Stock Price Inputs

Scene 1:

- Market expectations for the general support for CHIPS Expansion, Stopping Arizona Restrictions on Water Sales and the size of the Chip Fab

Scenes 2-4:

- Number of Jobs at the Plant for planned Chip Size
- Corporate Tax Rate
- CHIPS Expansion for Big Plant
- Money Spent on Water & Super PAC

Victory Point Conditions

- Stock Price (Max 7 Points)
- 70% of water with High Seniority Rights (1 Point)
- 100% of water with High Seniority Rights (2 Points)

Governor, Gila River Indian Community: Alexis/Alex Lewis

A Georgetown Law graduate, Lewis returned home to serve their community after practicing environmental law at Williams & Connolly in Washington, DC. Now in their third term as governor, they have pioneered innovative water-rights agreements while expanding the Gila River Indian Community's economic development.

The Gila River Indian Community has a long and complicated history with water and the U.S. federal government in the Phoenix Valley. After local farmers dammed the Gila River in the Arizona Territory's early history, the tribe has since won back many water rights to its historical river through the courts. As such, the community now has some of the most senior water rights available, and has too much water for its own needs. Selling the water for agriculture not only benefits farming communities throughout the region, but also meets the spiritual and moral desires of the tribe to rejuvenate the desert regions around the Gila River. As such, Lewis must walk a fine line to leverage the water to grow opportunities for their people, while also ensuring the tribe's cultural goals are met.

Given the tribe's location next to Chandler, General Foundry's option of investing in their neighbor could bring a number of economic and political benefits. If Lewis leverages the community's water rights accordingly, they could gain significantly from both the water sale and future community benefits.

Party Affiliation

Democrat

Intel

- The Gila River Indian Community has historically provided a large amount of the water that both the state and cities use for their own Storage and In-Use needs. This may give you leverage in the future
- Congress passing the Tribal Water Law will significantly increase competition for the water markets in Arizona

Victory Point Conditions

- Revenues (Max 3 Points)
- Save 50K acre-feet for Gila River restoration (3 Points)
- Chandler gains chip fab (2 Points)
- Farmer Tax Cut Law passes (2 Points)

Managing Partner, AquaWest Solutions: Victoria/Victor Palmer

Palmer's desire to disrupt Arizona's water rights landscape wasn't born from mere ambition, but from a deep frustration with systemic inefficiency. After earning a specialized JD in water rights from the University of Colorado Boulder, they joined a local law firm, expecting to apply their expertise to meaningful legal work. However, they quickly realized that the existing system was a labyrinth of red tape, hindering progress and innovation. This realization wasn't merely a professional observation; it was a personal call to action. Palmer's decision to co-found Arizona's largest water brokerage firm was a bold move, fueled by a desire to unlock the state's water potential.

After moving back to Arizona, Palmer fell in love with another local Arizonan with a rich history in the state, and became an extended member of the politically influential Leighton family, which claims Mayor Leighton of Chandler as well.

Their unique academic background, combined with a keen understanding of market dynamics, allowed Palmer to build a business that not only thrives, but also reshapes the industry. Their appointment to Arizona's Water Augmentation Council and their role as a lecturer at ASU's Watts College of Public Service and Community Solutions reflects their status as a thought-leader in the state, shaping the next generation of water policy leaders.

Palmer is not just seeking to grow their firm, but create momentum to get water to those who need it the most. Via Chandler Mayor Leighton, Palmer has gotten immense support from the close-knit family as they've grown their career in Arizona. There is no doubt that helping their in-law's career in Chandler will benefit their own ambitions down the road.

Party Affiliation

Republican

Intel

- Congress passing the Tribal Water Law will significantly increase competition for the water markets in Arizona
- You are the only player able to see every Stakeholder's water supply and demand
- You are the only player able to purchase and sell water with any able stakeholder on the map
- Attempting to conduct a water deal with stakeholders that are legally unable to do so, will result in a fine and significantly decrease your revenues

Victory Point Conditions

- Revenue (Max 8 Points)
- Chandler Mayor reelected (2 Points)

Founder, Cholla Advisory: AJ Brooks

A native Arizonan, Brooks carries a unique blend of local insight and national political acumen. After graduating from Arizona State University, they pursued a master's degree in international relations at George Washington University, immersing themselves in the complexities of global politics. This academic foundation, however, was just the beginning. Brooks quickly made it to the heart of Washington's political scene, spending 12 formative years on Capitol Hill. They served as a staffer for various Arizona congressmen, gaining firsthand experience in the legislative process and building a powerful network of connections. It wasn't just a job; it was a masterclass in political strategy, negotiation and the nuances of Arizona's specific political challenges.

However, life took an unexpected turn when Brooks returned to Arizona to care for their ailing mother. This period of personal reflection sparked a realization: the disconnect between local politicians and their constituents was a significant barrier to effective governance. Brooks saw a need for a firm that could bridge this gap, offering strategic communication and campaign expertise tailored to the unique dynamics of Arizona's political landscape.

Brooks founded Cholla Advisory, a venture built on their deep understanding of both national and local politics. Their firm quickly became a Republican powerhouse, renowned for its strategic insights and ability to craft compelling narratives that resonate with Arizona voters. Brooks's success isn't just a product of their political acumen, but also a commitment to their home state and a desire to empower local politicians with the tools needed to succeed. Brooks wants to build up a new and more dynamic base of Republican politicians, and knock a few Democrats out of office to boot.

Party Affiliation

Republican

Intel

- You can see all Stakeholders' starting political stances
- When all Republicans take the same public stance, it will have greater total impact on the general public, though embolden the positions of Democratic stakeholders
- Different Stakeholders will have dramatic changes in their positions based on their unique issue preferences
- Republican Stakeholders will have less of a negative response when Republicans do not take their preferred stance, than Independent and Democrats Stakeholders

Victory Point Conditions

- U.S. Senator loses re-election (5 Points)
- Chandler Mayor re-elected (3 Points)
- Phoenix Mayor loses re-election (2 Points)

Mayor, City of Chandler: Briana/Ben Leighton

Born at Chandler Regional Medical Center, Leighton's connection to Chandler runs deep. A scion of a major political dynasty, they watched as the city transformed into a regional tech hub while growing up. Their undergraduate studies in Symbolic Systems at Stanford provided a crucial link to Silicon Valley, shaping their understanding of the economic potential of innovation ecosystems.

Returning to Chandler after graduation, Leighton quickly became a key player in the city's economic development, serving on the Economic Development Advisory Board. Afterward, their experience leading the Sun Valley Technology Council further solidified their reputation as a champion of technological advancement. Through a marriage in the broader Leighton clan, Managing Partner, AquaWest Solutions Palmer became an in-law, and a deeply helpful contact. With Chandler's mayor departing office and leaving behind a vacancy, Leighton saw an opportunity to run for office as a builder. They won despite the interference of Phoenix Mayor Begay in the race.

Leighton's administration has focused on sustainable tech development, implementing innovative water recycling programs to support industrial job growth. Chandler, home to a national champion chip plant, is strategically positioned to attract further investment, and Leighton is determined to leverage this advantage. Their ability to bridge the gap between technology and sustainable development positions them as a key architect of Chandler's future as a tech hub. Leighton is not just a mayor; they are a tech visionary, driving Chandler's innovation. If they can do so while pushing Begay out of office, it would be even sweeter.

Party Affiliation

Republican

Intel

- You can see all Chandler stakeholders' starting political stances and water rights, and all Republican stakeholders' political stances
- If you fail to meet the water needs of Chandler's stakeholders, you will face significant public political backlash
- If you pay too much, or charge too little more for water outside of their normal district pricing for Chandler, it will create a public political backlash
- Providing water to a Chandler stakeholder who needs it will boost their support for you
- If AquaWest sells water to a stakeholder before you do, you can no longer sell to them

Victory Point Conditions

- Reelection (6 Points)
- Chandler gains chip fab (3 Points)
- Phoenix Mayor loses re-election (1 Points)

Mayor, City of Phoenix: Michael/Michele Begay

Begay's commitment to urban development stems from a deep-rooted belief in the power of community-driven solutions. Their undergraduate studies in Urban Planning at Arizona State University provided a theoretical framework, while their MBA from the Thunderbird School of Global Management honed their practical business skills. Before entering politics, Begay founded Begay Urban Solutions, a firm that focused on multi-use urban development and local educational initiatives — a testament to their commitment to building sustainable communities. This experience shaped their approach as Mayor of Phoenix, where they prioritized transit development, public safety and balanced growth.

While Phoenix boasts more available water supply than other cities in the valley, Begay faces significant local pushback on water management issues, demanding a delicate balance of Stakeholder engagement. Their ability to navigate these complex challenges underscores their commitment to balancing growth with sustainability, a crucial task for Phoenix's rising future.

The key will be securing new industries for the future, one of which will be General Foundry's new chip fab. Begay knows that the competition is between Phoenix and Chandler, with Chandler Mayor Leighton a bitter rival in the internecine local politics of the Phoenix Valley. Nothing would be more exhilarating — or politically beneficial — than taking that fab from Leighton and forcing them out of politics.

Party Affiliation

Democrat

Intel

- You can see all Phoenix stakeholders' starting political stances and water rights, and all Democratic stakeholders' political stances
- If you fail to meet the water needs of Phoenix's stakeholders, you will face significant public political backlash
- If you pay too much, or charge too little for water outside of its normal pricing for Phoenix, it will create a public political backlash.
- Providing water to a Phoenix stakeholder who needs it will boost their support for you
- If AquaWest sells water to a stakeholder before you do, you can no longer do so

Victory Point Conditions

- Reelection (6 Points)
- Phoenix gains chip fab (3 Points)
- Chandler Mayor loses re-election (1 Point)

Mayor, City of Peoria: Kristy/Kraig Moore

Moore's political ambitions were evident from their early career in local government, showcasing a drive that extended beyond the confines of Peoria. Their undergraduate studies in business laid the groundwork for their strategic approach to city budgeting and economic growth. Upon graduation, they quickly leveraged the experience they gained by watching their parents' restaurant business in order to become a franchise owner of "Frank's Subs," a rising sandwich chain in the Phoenix Valley. After successfully building and running four stores, Moore grew tired of the red tape and the constant turnover of employees and entered politics.

After two terms as mayor, they know political momentum is crucial, and so Moore is focused on securing significant wins in their final year. As such, they want to ensure the General Foundry chip fab lands in Phoenix to attract the growth needed for Peoria's continued development, while undermining the momentum of current Phoenix Mayor Begay. Moore was forced to sit out the election for House of Representatives in favor of the sitting Republican candidate this year, and knows that Begay will almost certainly be their political rival for the House seat Moore will pursue after taking some time for their own family.

Years of navigating the complex interplay of local politics have taught Moore that in Arizona, water resources and economic development are intertwined with political influence. Their ambition is palpable, and their understanding of the intricate dance between these elements is a testament to their political acumen. Moore is not just a politician; they are a strategist, positioning themselves for national influence with a squeaky clean record as mayor.

Party Affiliation

Republican

Intel

- You can see all Peoria stakeholders' starting political stances and water rights, and all Republican Stakeholders' political stances
- If you fail to meet the water needs of Peoria's stakeholders, it will create a Water Scandal
- If you pay too much or charge too little for water outside of its normal pricing for Peoria, it will create a Water Scandal
- If AquaWest sells water to a stakeholder before you do, you can no longer do so

Victory Point Conditions

- Ensure all Stakeholders in Peoria meet their water demands (5 Points)
- Phoenix Mayor loses re-election (3 Points)
- No water scandals (2 Points)

President of the Arizona Senate: Dania/David Hawkins

Hawkins holds a deep connection to Arizona's agricultural heartland, stretching back four generations. Born and raised on the family-owned Smith & Montgomery Ranch, they inherited not just land, but a profound understanding of the delicate balance between nature and livelihood. They went on to earn a degree in agricultural economics at the University of Arizona, where they blended practical experience with theoretical knowledge.

Their career is rooted in a genuine desire to serve the community that shaped them. After building a family of five children with their partner while managing the ranch, Hawkins felt a calling to extend their impact beyond the gates.

Now serving their seventh term in the legislature — and third as Senate President — Hawkins has become a pillar of Arizonan politics and hopes their leadership is defined by a genuine commitment to serving the people and earth of the state. Amidst a growing debate around what to do with water shortages, they continue to believe that water is the lifeblood of Arizona's agriculture. Hawkins' advocacy isn't just about policy; it's about preserving a way of life and America's own agricultural independence. It's a complex issue though: businesses in their small town depend on the local farming industry to survive, while many farmers increasingly hope to sell their Water Rights for more profitable ventures and leave the fields entirely.

While retirement looms on the horizon, Hawkins focuses on helping their farming constituents guard a way of life that defines the heart of Arizona. The prospect of returning to the ranch house surrounded by grandchildren to let others work the farm is a cherished dream, but it's a dream that can wait until their work is done.

Party Affiliation

Republican

Intel

- Passage of The Farmer Water Sales Law will decrease the number of farmers in the state
- Some Stakeholders will have dramatic changes in their positions based on their unique issue preferences
- You are able to see the political stances as well as the water demands and supplies of all Stakeholders in your district and all farmer Stakeholders. In addition, you can see all Republican Stakeholder political stances
- The number of farmers lost in the game is connected to actions by other players as well as natural economic forces elsewhere in Arizona. You can lose up to 5 percent of the farms in the state and keep your legacy intact.

Victory Point Conditions

- Reelected (6 Points)
- Number of farmers (Max 4 Points)

U.S. Senator, Arizona: Cynthia/Cesar Martinez

A former Maricopa County supervisor and state attorney general, Martinez has carved out a unique political path in Arizona. Growing up in a vibrant, multicultural setting just outside Los Angeles, they were exposed early to the complexities of diverse communities and the importance of bridging cultural gaps. This experience shaped their decision to move to Arizona and pursue a law degree at Arizona State University's Sandra Day O'Connor School of Law. They excelled there, developing a deep understanding of the state's legal and social fabric.

Martinez's career as a state attorney general solidified their reputation as a pragmatic problem-solver, adept at forging alliances across ideological divides. Their rise to the senate was built on a foundation of understanding for Arizona's diverse demographics, enabling them to build strong ties with both agricultural and urban constituencies, particularly with their political ally Phoenix Mayor Begay. This ability to unite disparate voices has given them a surprising amount of sway in a swing state known for its complex political perspectives.

Martinez has consistently supported the efforts of Arizona's northern tribes to liberalize their water markets, recognizing the economic lifeline this represents for the state. Their stance on the issue is informed by a nuanced understanding of Arizona's historical water rights battles. As the potential for the CHIPS Act expansion brings new economic possibilities, Martinez's nuanced understanding of Arizona's political ecosystem will be their greatest asset. The senator will need to navigate their upcoming votes appropriately to ensure they support the economy while meeting the expectations of their swing state.

Party Affiliation

Democrat

Intel

- You can see all Stakeholders' starting political stances and have the most impact on them than any other role.
- When all Democratic roles take the same public stance, it will have a greater impact on the General Public, although it will embolden the positions of Republican Stakeholders.
- If General Foundry's Stock Price increases at the end of a Scene, you will receive a polling boost from the general population
- Some Stakeholders will have dramatic changes in their positions based on their unique issue preferences
- Democratic Stakeholders will have less of a negative response when Democrats do not take their preferred stance, than Independent and Republicans Stakeholders.

Victory Point Conditions

- Reelected (6 Points)
- Gain big chip fab (3 Points)
- Phoenix Mayor reelected (1 Point)



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