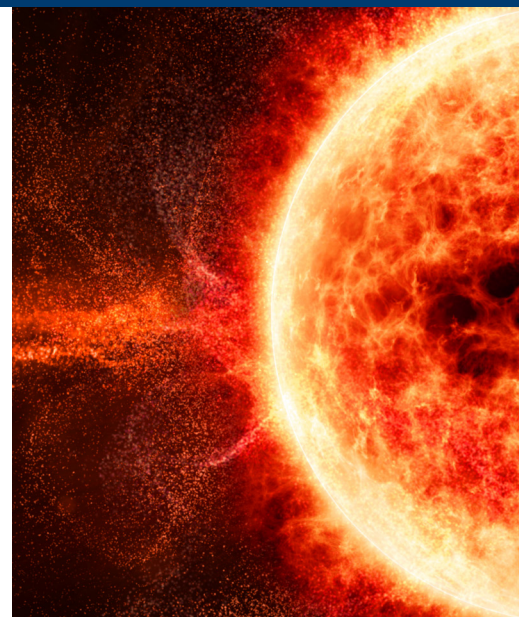


TEXAS DEFENSE



by Chuck DeVore

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Texas Public Policy
Foundation

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Texas Defense

Chuck DeVore

Introduction

In our federal system, the states are sovereign entities with constitutional powers. The national government, of course, has a set of powers and responsibilities as well. But the national government is laboring under increasing challenges, most of them self-inflicted. Examples of this breakdown include:

- Ceding control of the southern border to transnational criminal cartels;
- Borrowing and spending so much that interest expense exceeds defense expenditures, with credit rating firms downgrading the U.S. debt for the second time in history ([U.S. House of Representatives, Budget Committee, 2023a](#));
- Foreign policy fiascos such as the botched withdrawal from Afghanistan, weakness and equivocation that invited Russian aggression against Ukraine ([DeVore, 2021](#)), and active funding of Iran (the world's largest state sponsor of terrorism; [Mandel, 2023](#));
- The lack of serious consequences for the People's Republic of China's destructive behavior regarding COVID-19, stealing intellectual property, and setting up clandestine police stations on American soil, and other matters; and
- Regulatory capture that shapes federal policies toward special interests instead of the public interest, creating major vulnerabilities in areas such as finance, energy, and healthcare.

With this record of federal failure, it falls upon state policymakers to consider what prudent, constitutionally allowed steps they might take to secure liberty for their citizens, safeguard their residents, and preserve property. These include steps to secure the electrical grid and make it more resilient, stockpile vital medicines, and develop a gold-based financial exchange system under state authority.

A Scenario

The People's Republic of China (PRC) launches an attack on Taiwan, seeking to invade the self-ruled island democracy and “unify” China. Considering the U.S. a cobelligerent, China strikes American forces in Japan, Guam, and the Philippines, as well as ships at sea. Chinese exports of antibiotics and other key lifesaving drugs are immediately cut off while in America, much of the power grid fails, the internet goes down, and widespread damage is reported to utilities such as natural gas pipelines and water distribution. Federal authorities cannot give an estimate as to when critical services will be restored. But in Texas, where initial steps were recently taken, modest stockpiles of medicine and key

Key Points

- The federal government has abdicated its civil defense responsibilities—Texas should fill the gap.
- In the event of a major war or significant natural disaster affecting the nation, Texas may be on its own for a time.
- With a modest amount of preparation at a cost of less than \$100 million, Texas could largely mitigate probable risks in critical areas such as:
 - The electric grid.
 - The supply of vital medicines.
 - The financial network.
- Promoting individual preparedness among Texans should also be a priority.

components such as high voltage transformers are already being rushed out to maintain public health and restore basic services to wide areas of the Lone Star State.

Risk

People frequently process risk irrationally ([Gardner, 2009](#)). Commercial air travel is the safest form of travel based on passenger miles traveled, yet millions of people have a fear of flying ([Ingraham, 2015](#)). You are about 100 times more likely to perish in a car accident for every mile of travel than in a commercial jet, and more than 3,000 times more likely to suffer a fatal accident while on a motorcycle.

Similar challenges with risk calculations happen in our personal lives, whether to smoke, or have a drink “for the road.” In public policy, elected and appointed officials must balance competing demands of public safety versus taxation levels or liberty versus security—all in a climate of special interests and the public clamoring for action.

In this context, emergency preparedness and civil defense too often end up drawing little attention. Hurried reaction rather than prudent preparation is too often the norm.

Yet risk has been extensively studied. The policy challenge is to consider risks and determine what public policy responses are appropriate.

A common way of looking at risk is to consider the probability of an event happening, as well as the severity of its impact. **Figure 1** shows one way risk may be displayed on a graph, in this case, with the X-axis displaying probability and the Y-axis, impact severity.

Thus, everyday events, such as auto accidents, may have a highly localized effect—to include fatalities—but do not generally affect many people beyond those directly involved in the wreck. Severe weather in the form of thunderstorms can cause power outages and damage property, but again, the effect is local or, at most, regional. Hurricanes can affect millions of people and cause billions of dollars in property damage, but unaffected areas are able to send help, both under the auspices of federal, state, and local government, as well as charities and private citizens—a great example of the latter being the “Cajun Navy” fleet of airboats and small craft that spontaneously organized from Louisiana to help Texans and Louisianans hit by Hurricane Harvey, a Category 4 storm that struck

in August 2017, killing more than 100 people ([Federal Emergency Management Agency, 2018](#)).

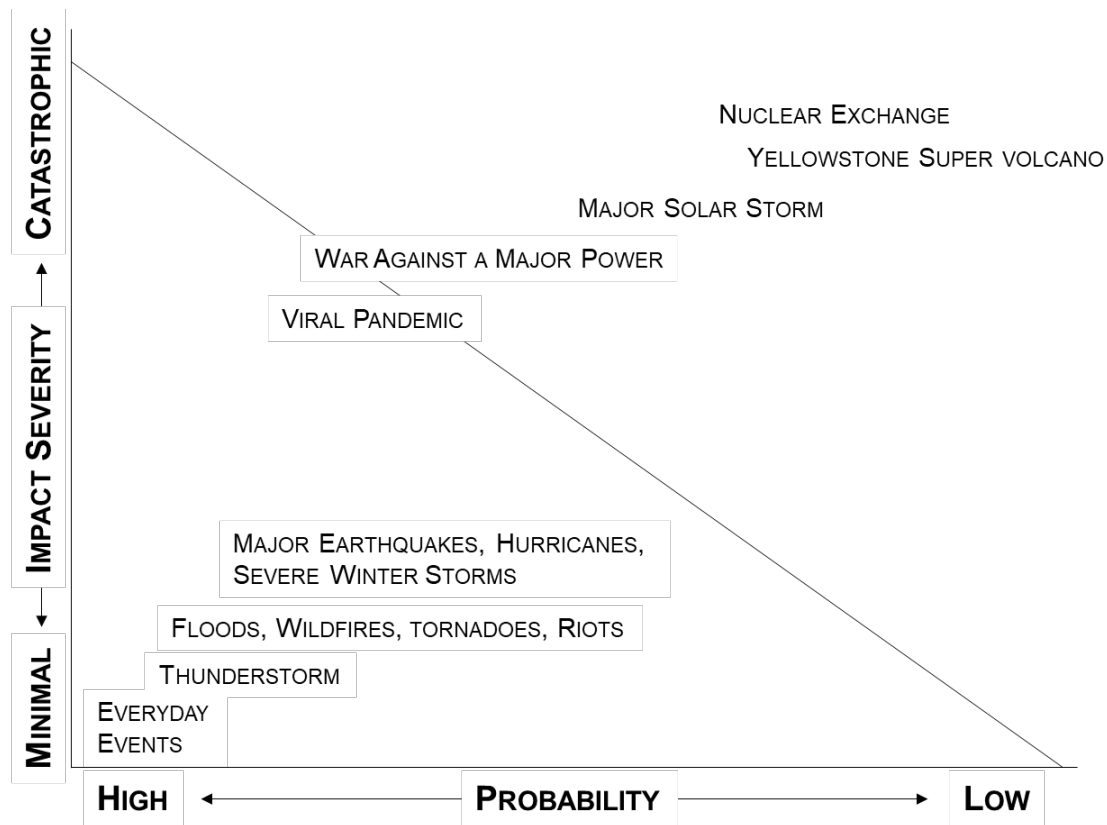
Catastrophes hitting on a national, continental, or global scale are a different matter. For instance, when COVID-19 was globally understood to be a viral pandemic, nations restricted the export of personal protective equipment (PPE) and other critical supplies, reserving important medical material for their domestic use. The People’s Republic of China even stocked up on medical supplies before telling the world about the nature of COVID-19, leaving the rest of the world short on lifesaving supplies ([Weissert, 2020](#)). Thus, in the event of a global supply disruption caused by a major war that included naval blockades, or a natural event, such as a extreme solar storm¹ causing power grids to collapse worldwide, there may be no “cavalry” riding to the rescue. We must assume that governments will be overwhelmed initially, and people will be left to fend for themselves for a time.

Delving a bit into the science of risk analysis, it is important to understand the role of probability in planning. For some events, such as hurricanes, we have records going back some 200 years that inform analysts of the likelihood of major hurricanes making landfall. But for other, likely more catastrophic events, calculations become less certain. For instance, geologists have found seven so-called supervolcanoes around the globe, three of which are in the continental U.S. and geologically recent: Yellowstone ([Yellowstone Volcano Observatory, 2023a](#)), straddling Wyoming and Montana; the Long Valley Caldera ([Pulvirenti et al., 2021](#)) in central eastern California; and the Valles Caldera ([Yellowstone Volcano Observatory, 2023b](#)) in north central New Mexico. Geologic evidence suggests that these explosive volcanic features spectacularly erupted four times in the past two million years, blanketing much of the American West with up to three feet of ash. Thus, in any given year, the probability of America experiencing a supervolcanic eruption is about 1 in 500,000, meaning that preparing for such an event is not a good use of resources since a person living to be 80 would only have a 1 in 6,250 chance of seeing a supervolcano erupt in their lifetime.

War is another matter. Warfare has been a constant among humans since even before recorded history. In making a point to skeptical college students, my Claremont McKenna College strategic studies professor Harold W.

¹ A major solar storm such as the ones striking earth in 1859 (the Carrington event) and 1921 (the Railroad Storm) would cause a nationwide collapse of our electric grid, including Texas. Based on the history of solar weather, the percentage chance that a major solar storm will strike earth is 100%—we just do not know when it will happen—necessitating that we protect our infrastructure against this hazard.

Figure 1
Risk Can Be Understood as a Combination of Probability and Severity, Aiding in Planning and Preparation



(Bill) Rood, a WW2 veteran of General Patton’s Third Army, would say, “There will always be war” as he brought a vintage British Lee-Enfield rifle to class, affixed a Pattern 1907 bayonet with a 17-inch blade to the lugs and issued forth a blood-curdling battle cry while stabbing the air in the direction of startled students.

With respect to the use of nuclear weapons, two have been exploded in warfare since 1945. Simply running the same probability to their subsequent use similar to the likelihood of a supervolcano eruption would mean that as of 2023, there is a 1 in 78 chance of the use of nuclear weapons in any given year. Of course, in 1945, only America had the ability to manufacture nuclear weapons. Now, nine nations are known to possess nuclear weapons: China, France, India, Israel, North Korea, Pakistan, Russia, the United Kingdom, and the United States, with a global nuclear

stockpile estimated at 13,000 warheads ([Arms Control Association, 2023](#)). This situation has created an uneasy standoff, known as nuclear deterrence, with nuclear-armed nations seeking to ensure that regardless of an opponent striking first, they would be able to deliver a crushing blow in response—known as Mutual Assured Destruction (MAD). This likely means that, even though nuclear weapons have proliferated, their use is probably restrained by expectation of retaliation—at least for “rational” actors. Unfortunately, Iran is either close to or already possesses nuclear weapons and North Korea has already conducted six successful tests (the last of which was specifically designed as a “super EMP weapon”²) and neither of the leaders running those dictatorships appear to operate on the same “rational” value system as America. For all these reasons, America should replace “MAD” doctrine with “SANE” doctrine —Strategically Assured National

² EMP, or Electromagnetic Pulse, from a nuclear detonation is the ionization of air molecules by gamma rays generated from the explosion. These gamma rays ionize the air, producing a pulse of energy, which produces a powerful electromagnetic field. EMP can also be produced from non-nuclear sources, such as electromagnetic bombs, or E-bombs and lightning. High-altitude nuclear detonations and electromagnetic bombs can generate EMP that has the potential to damage or destroy electronic devices over widespread areas. Electric power systems would also be at risk from surges produced by such weapons ([Washington State Department of Health, 2003](#)).

Existence—by hardening our infrastructures against attack and better preparing our population. Unfortunately, the federal government does not seem to be moving in that direction.

War without the use of nuclear weapons is a common global occurrence. Though a major war between large, peer powers is far less frequent. By that measure, depending on the definition used, the U.S. has only fought one or two conflicts with a nation possessing a large economy and well-developed armed forces since the end of WW2 in 1945: from 1950 to 1953 against the PRC in Korea; and from 1990 to 1991 against Iraq in the Gulf War (the subsequent Iraq war involved about a quarter of the U.S. troops as were committed in the Gulf War 12 years earlier). Other than those instances, Russia’s ongoing invasion of Ukraine also qualifies as a major war between peer powers. Thus, by that record, it is highly likely that the U.S. will find itself in another major war within the lifetime of an American now of the average age of 38.

Risk experts use tools to consider risk in a more ordered fashion than shown in **Figure 1**. One useful way of visualizing risk is to use an adjusted risk likelihood table ([Witcher, 2021](#)). **Figure 2** shows the inputs for this exercise: two entries depicting impact severity in terms of the value of national damages and likelihood of occurrence

expressed as the probability of something happening over 30 years, with both on a logarithmic scale. **Figure 3** illustrates how these are then combined in a table showing both severity and likelihood.

Risks that are ascertained to have a costly impact severity—the rightmost portion of **Figure 3**—are those policymakers should consider in emergency preparedness or civil defense efforts, with risks that are unlikely to happen in spans of more than 30 years deferred if mitigation is deemed too costly. Risks on the leftmost portion of **Figure 3** are those risks that are not seen as costly, though low-cost risks that happen frequently (in the upper left of the table) might be mitigated by policies, rather than public expenditures. An example would be seatbelt laws that aim to reduce fatalities and injuries on the road. Fortunately, catastrophic events that happen with regularity on a human timescale do not happen—else life on planet Earth would be impossible.

Risk impact and severity can be visually combined in an adjusted risk likelihood table with costly risks trending toward the right inviting emergency preparedness and civil defense actions by the government while lower cost occurrences to the left might invite policy changes—for instance, seatbelt laws.

Figure 2
Risk Can Be Analyzed Using a Logarithmic Scale for Impact and Severity

Impact Severity		Likelihood of Occurrence	
Value of National Damages	Rating	Probability Over 30 Years	Rating
\$100 Trillion	7	Certain 100%	0
\$10 Trillion	6	Close to Certain 50%	-0.3
\$1 Trillion	5	Likely 10%	-1
\$100 Billion	4	Possible 1%	-2
\$10 Billion	3	Rare 0.1%	-3
\$1 Billion	2	Very Rare 0.01%	-4
\$100 Million	1	Extremely Rare 0.001%	-5
\$10 Million or less	0	Nearly Impossible 0.0001%	-6

Figure 3
Adjusted Risk Likelihood

		Adjusted Risk Likelihood Table						
		National Damages Rating						
		1	2	3	4	5	6	7
Probability Over 30 Years	0	1	2	3	4	5	6	7
	-0.3	0.7	1.7	2.7	3.7	4.7	5.7	6.7
	-1	0	1	2	3	4	5	6
	-2	-1	0	1	2	3	4	5
	-3	-2	-1	0	1	2	3	4
	-4	-3	-2	-1	0	1	2	3
	-5	-4	-3	-2	-1	0	1	2
	-6	-5	-4	-3	-2	-1	0	1

Considering Risks to Texas

While emergency preparedness and response has been formalized and, compared to U.S. practices before the Nixon administration, increasingly the responsibility of the federal government, civil defense is largely a forgotten function of government with most citizens only dimly aware of concepts such as fallout shelters or “duck and cover” exercises common in the early years of the Cold War.

Unfortunately, civil defense became politicized during the Cold War. “Duck and cover” exercises were mocked and deemed useless in the age of megaton thermonuclear warheads (Figure 4; Pruitt, 2019). Even so, it is useful to understand how we arrived at civil defense measures. A careful study of WW2 bombing (DiefenBunker, 2019), including the two nuclear bombs dropped on Japan, showed that flying glass leading to fatal blood loss was a major cause of death among those who lived in targeted cities. Further, careful examination of the survivors of Hiroshima and Nagasaki showed that small things contributed to survival. These factors, plus subsequent atmospheric testing of nuclear weapons, led to a range of measures designed to increase the likelihood of survival.

Figure 4
Duck and Cover drills were phased out by the 1970s



Thus, it was the practical knowledge gained in the wake of the widespread destruction of urban areas in Europe and Japan during WW2, and the consideration of the threat posed by nuclear weapons in the 1950s and 60s, that caused the U.S. to invest in civil defense.

Oddly enough, even as Americans pressured their government to cease civil defense preparedness—it caused nightmares among children, was one claim, and, what’s the use anyway? ([PBS, n.d.](#))—it is instructive to note that both the former Soviet Union and the PRC continued to invest heavily in civil defense measures. Both nations saw—and now with the Russian Federation—continue to see, nuclear war as winnable. Thus, they plan and build accordingly. Of note, civilians in Ukraine’s major cities are likely thankful for the Soviet-era civil defense planners who purposefully built the urban subway systems to be both deeper and capable of sheltering the civilian population during bombings ([Squires, 2022](#)). And, in Israel, every home built since the 1990s is required to have bomb shelter ([Seton, 2023](#)).

It is close to certain that there will be a major war involving the U.S. sometime in the next 30 years. A war with a peer power might see significant impacts on the U.S. homeland. Some of these can be forecast with near certainty, such as a cutoff of trade in critical materials and finished products. Other potential harm is more speculative, such as attacks against the electric grid and utilities or efforts to disrupt critical government functions.

So, what sort of risks should Texas policymakers consider and then plan to mitigate? Short of a formal exercise, likely best jointly led by the Military Department (the National Guard) and the Department of Emergency Management with input from the state’s electric grid operator, the Electric Reliability Council of Texas (ERCOT), the Department of Public Safety, and other key departments covering agriculture, health, transportation, and water, we can provide some suggestions here to spark discussion.

Figure 5 provides a summary of basic human needs and threats to them to aid in the analysis.

Of course, a lack of any one basic need is going to affect the remainder, likely compounding the emergency. Thus, a collapse of the U.S. electricity grid due to a deliberate EMP attack or a natural Carrington event could potentially kill hundreds of millions of people over several weeks due to lack of water and food since water systems would cease operation and, without refrigeration and transportation, food supplies would be quickly consumed. **Figure 6** cites the practical experience gained about EMP generated by a nuclear test in 1962. Nuclear-driven EMP weapons have advanced significantly since 1962, opening the possibility of their use in war to destroy an enemy nation’s electric grid while causing little to no direct casualties via blast, heat, and radiation.

The electrical system and critical medicines are likely the most vital needs to be addressed to safeguard Texans against the widest range of contingences.

Defining the Threats

Considering how key aspects of Texas’ civilian infrastructure might be damaged or rendered inoperable for a time aids in understanding how key systems might be protected, made redundant, or have plans in place to quickly restore service.

Threats to the Electrical System

The modern electrical grid is highly complex and, while designed to recover from local severe weather outages, the system is not built to withstand major shocks, as seen

Figure 5
Basic Needs and Threats

Basic need	System disrupted	Human threat	Natural threat
Water	Water systems	Sabotage	Severe weather
Food	Farm to market	Disease, invasive species	Disease, invasive species
Public health	Immune system	Bioweapon, lack of medicines due to war	Pandemic
Electricity	Grid, other systems	EMP, sabotage, lack of components due to war	Carrington event
Transportation	Fuel	Sabotage	Severe weather
Money	Banking	Hacking, financial attacks	Severe weather

Figure 6
Starfish Prime Nuclear Test



Starfish Prime was a test shot of a 1.4 megaton thermonuclear warhead detonated 250 miles high about 900 miles west-southwest of Hawaii in 1962. It generated a far larger electromagnetic pulse (EMP) than expected, causing damage to the electric grid in Hawaii, knocking out about 300 streetlights, damaging a telephone company microwave link, and damaging three satellites in low Earth orbit. Importantly, Hawaii in 1962 did not have a “grid” in the sense of transmitting power over distances while all the electronics were of the vacuum tube variety, with vacuum tubes being highly resilient to EMP. A similar detonation today would likely blackout the island for an extended time.

in Texas in 2021 during winter storm Uri, a 100-year storm that saw Texas contend with widespread blackouts for nearly a week. In that relatively short timeframe, the state tragically lost more than 240 of its citizens’ lives and suffered more than \$100 billion in economic losses ([Lee, 2022](#)).

Recent years have seen an uptick in attacks on electrical substations ([Law, 2023](#); [Vanvig, 2017](#)). These attacks, by unknown individuals, could be random vandalism, or might be connected with extremist groups or even foreign governments—the latter testing what response times might be. These attacks have featured individuals using rifles to puncture a high-voltage transformer casing resulting in the coolant leaking out of the transformer, which can subsequently overheat and catch fire or shut down.

According to Department of Energy data analyzed by the nonprofit Center for Security Policy, the number of physical attacks on the nation’s electric grid from January 2010 through March 2023 is 1,039—a rate of nearly 1.5 attacks per week (and those are only the events reported by the utilities that caused power outages; [Waller & Ellsworth, 2023](#)).

In addition, some 80% of the Large Power Transformers (LPTs), also known as high-voltage transformers, that

carry some 70% of America’s electricity on its three national grids—the Western Interconnection, the Eastern Interconnection, and ERCOT, the Texas grid—are imported ([Publication of a Report, 2021](#)). These imports, mostly from China, South Korea, and Germany, leave the U.S. vulnerable to a lack of access to these key components in the event of war or other disruption of the supply chain ([U.S. Department of Energy, 2017](#)).³

Furthermore, most substation transformers are not standardized, but are rather purpose-built for the substation, sometimes taking months to replace ([Vanvig, 2017](#)). These generally smaller transformers are largely manufactured in America, but with imported materials ([Publication of a Report, 2021](#)). Lead times for these transformers are now 2 to 4 years ([Waller, 2023](#)).

In the case of electrical components imported from China, there have been increasing concerns in recent years that such critical equipment has been infected with malware and trojan horse back doors that would allow China to damage or destroy such equipment on command ([The Economic Times, 2020](#)). Indeed, at least one Chinese-manufactured transformer was seized by the federal government and inspected by Sandia National Laboratories ([Jekielek & Minick, 2023](#)). Shortly after, the Trump administration declared a “grid security emergency” and

³ The DOE’s Strategic Transformer Reserve study noted the weak domestic capacity to produce Large Power Transformers (LPTs) and the extreme dependence on foreign suppliers, especially for high-voltage transmission (>345 kV).

A recently discovered Chinese malware known as “Volt Typhoon” appears to have been designed specifically for the purpose of inflicting damage to critical infrastructures.

passed an executive order titled “Securing the Bulk Power System” ([U.S. Department of Energy, 2021](#)) to end the importation of critical electrical components from China. Speculation has been that the seized transformer contained a hardware backdoor that could allow a foreign adversary to turn off or damage the equipment. But the Trump executive order was suspended on the first day of the Biden administration. Grid security researchers now believe that there are more than 400 Chinese transformers in the U.S. grid ([Michael Mabee, 2023](#)).

Foreign-controlled power generation assets, such as wind farms or traditional thermal power stations, might even be used to damage the grid by purposefully fluctuating power output. A recently discovered Chinese malware known as “Volt Typhoon” appears to have been designed specifically for the purpose of inflicting damage to critical infrastructures ([Mills, 2023](#)).

Finally, the power grid remains extremely vulnerable to a high-altitude nuclear EMP attack or a naturally occurring solar storm such as the 1859 Carrington event despite the existence of cost effective and proven solutions to both threats. Protecting the nation’s most high-risk transformers against solar weather (with proven and available technologies) would cost just over \$4 billion, which is less than one-third of one percent of the \$1.2 trillion bipartisan “Infrastructure Investment and Jobs Act” ([Waller, 2022](#)). Some of the most innovative technologies developed to protect the power grid were invented in the Lone Star State by CenterPoint Energy working alongside SIEMENS and using world-renowned experts on the EMP threat ([Clarion Energy, 2020](#)). Unfortunately, a widespread lack of financial incentives at either the federal or state level for utilities to invest in these solutions has meant little to no action on this front—why would a utility purchase spare LPTs for millions each only to have them sit around, and in Texas’ case, be taxed as real property?

Threats to the Supply of Medicines

When drugs are manufactured, they are, in effect, assembled from a supply chain. At the foundation are what are known as key starting materials (KSMs). These form the building blocks for active pharmaceutical ingredients (APIs), typically with 8–15 KSMs needed to make an API. APIs are then built up into drugs.

According to Rosemary Gibson (2018), the author of *China Rx*, whom the author of this report interviewed, some 90–95% of KSMs used in manufacturing drugs originate in China. This fundamental fact has been obscured both willfully, by the pharmaceutical industry, and through a lack of curiosity and diligence, by federal authorities.

Regarding the latter, the FDA indicated in congressional testimony in October 2019 that, “As of August 2019, only 28 percent of the manufacturing facilities making APIs to supply the U.S. market were in our country. By contrast, the remaining 72 percent of the API manufacturers supplying the U.S. market were overseas, and 13 percent are in China” ([Woodcock, 2019, para. 2](#)). But, the FDA admitted, other than the facility count, they really did not know how much the U.S. relied on China for drugs ([Palmer, 2020](#)).

As for pharma, they make money by importing cheap drugs from China and India, though many of those drugs are neither pure, effective, or consistent, putting consumers at risk of getting improper doses that fail to address the underlying condition for which those drugs are being taken ([Mosbergen, 2023](#); [U.S. House of Representatives, 2023b](#)).

The US–China Business Council, that advocates for more trade with China, has tried to smooth over concerns over China’s dominance of the drug manufacturing market, claiming that,

Statistics on Chinese APIs are misleading. Congressional testimonies and publications often cite that “80 percent of APIs used in US drugs are sourced from China.” However, this statistic misrepresents findings from Food and Drug Administration (FDA) reports on the location of API manufacturing facilities, not their production. The FDA has since acknowledged it “[does] not know whether Chinese facilities are actually producing APIs, how much they are producing, or where the APIs [are] distributed.”

What we know: A study of US pharmaceutical production estimates that 54 percent of APIs used to manufacture finished pharmaceutical goods

consumed in the United States are produced here; only 6 percent are sourced from China. Only 7 percent of total US API imports come from China. After accounting for indirect imports, like finished pharmaceutical products from India that are made using APIs from China, **China is responsible for 12 percent of foreign-sourced APIs** [emphasis added]. ([The U.S.-China Business Council, n.d.](#))

Note the emphasis on APIs in the statement above, all of which may be true—but ignoring Gibson’s claim that 90–95% of the KSMs used to manufacture those APIs, even in America, are sourced from China. Other experts admit to not knowing the extent of the dependence on China, with one report noting that, “Currently there’s a severe deficit of data on KSM and even APIs: 90% of API manufacturing for the top 30 generic drugs used in the US are unreported and largely unknown” ([Wiesenthal & Dolman, 2023, “Repatriation” section](#)). Thus, were the supply of KSMs out of China to cease, most medicines, after initial stocks were exhausted, would be unavailable for months if not years until basic chemical manufacturing could be restarted.

Further, there are increasing concerns about the purity of drugs sourced from overseas, especially China and India ([Lardieri, 2023](#)) with cancer-causing chemicals found in common medications sourced from those two nations.

Lastly, even with finished drugs, China is seeing a rapid expansion of market share to America. Up through 2021, China’s share of U.S. pharmaceutical imports hovered around 1%; by 2022, that figure had grown to 9.6%, with China economy expert at the Atlantic Council, Niels Graham, observing that “The largest contributing factor to China’s market share growth has been domestic policies China has implemented with the goal of building a world-class advanced pharmaceutical manufacturing industry” (quoted in [Tobita, 2023, para. 7](#)). In other words, China’s mercantilist policies set the goal and they are making it.

Depending on overseas suppliers for medicines has practical consequences, even in times of peace without supposed COVID-driven supply chain disruptions. For instance, the U.S. has been grappling with a shortage of the common antibiotic amoxicillin—with most of our supplies imported ([Gibson, 2023](#)).

Disruption to the supply of basic antibiotics is a serious public health risk. It is entirely possible that, in the first few

months of a potential conflict with China, more civilians could perish from a lack of access to medicine than service-members lost in the actual conflict.

Threats to the Financial System

Modern financial systems are not subject to the same dramatic collapses that were common before the advent of the Federal Reserve System when bank runs, often started on a rumor, would literally empty a bank’s vault of its deposits and cause its collapse, even when it had plenty of assets in the form of issued loans.

Today’s threats are twofold: electronic attack, either due to the internet itself being taken down, malware, or specific attacks targeting financial institutions by using fraudulent means to shift funds to inappropriate accounts; and, at the macro level, with nations warring against the U.S. dollar or, due to ongoing deficit spending, the dollar itself being further devalued through debt monetization leading to a bout of hyperinflation.

Mitigating Texas Vulnerabilities

Building off the basic needs summarized in **Figure 5**, there are three areas where Texas could move quickly and for little expense to mitigate risks and reduce the likelihood of death and injury among residents of the state. They are safeguarding the electric grid, ensuring the supply of critical medicines, and developing a state-based currency and method of exchange as authorized in the Constitution.

Mitigating Threats to the Electrical System

The quickest and simplest way to provide a rapid response to repair at least some of Texas’ electric grid would be to store the needed repair components on site in Texas. The reason that is not done today is that costly items such as an LPT can range in price from \$1.5 million to \$2.5 million with a specialty phase shifter going for \$4 million or more ([PEguru., n.d.](#)). Since Texas levies a property tax on inventories, assuming a power distributor even wanted to maintain enough spare LPTs in state to restore a region, the yearly property tax alone could amount to \$400,000 or more.⁴

To bypass the property tax disincentive, the state could set up a series of climate-controlled warehouses at Texas National Guard properties that could securely store spare transformers as well as vital medicines (see next section). In addition, the state might need to underwrite the cost of money to incentivize power distribution companies to store

⁴ Calculated at 2.6% of inventory cost, the approximate property tax rate paid by the author.

Encouragingly, there have already been tentative steps taken to make Texas' grid more resilient in the face of damage from EMP, whether the result of an act of war or terrorism or a solar event.

a certain number of smaller transformers and other electrical grid equipment on site.

Taking matters a step further, after examining the supply chain, Texas could incentivize the construction and operation of facilities that would manufacture key grid components.

Encouragingly, there have already been tentative steps taken to make Texas' grid more resilient in the face of damage from EMP, whether the result of an act of war or terrorism or a solar event. In San Antonio in 2021, San Antonio-Electromagnetic Defense and Joint Base San Antonio-Electromagnetic Defense Initiative worked with the Alamo Area Council of Governments and the state of Texas to develop a strategy to ensure continuity of military operations in San Antonio in a post-EMP environment ([Bultman, 2021](#)). This effort was boosted by Texas Gov. Greg Abbott with a \$5 million award from the Texas Military Preparedness Commission in April 2020. The effort includes electrical substation protection projects worth \$8.4 million. However, critics are concerned that the state government is not adequately taking advantage of the lessons learned in San Antonio to expand them elsewhere throughout Texas to increase the state's resilience to these threats ([Waller, 2023](#)).

Mitigating Threats to the Supply of Medicines

Vital, lifesaving medicines could also be stored and rotated out of climate-controlled warehouses situated on National Guard properties. The purpose here would be to provide a bridge of doses that would allow the public to survive until domestic manufacturing ramped up.

Going further, Texas might seek to emulate the Commonwealth of Virginia. There, in Petersburg, a "drug hub" has been developed to manufacture affordable generic drugs ([Hausman, 2022](#)). Virginia coordinated the effort by

creating the Alliance for Building Better Medicine to foster the new manufacturing capacity.

Other, less direct methods might also be used to ensure the supply of high-quality drugs. In recent years Kaiser Permanente, which operates in eight states (Hawaii, Washington, Oregon, California, Colorado, Maryland, Virginia, Georgia) and the District of Columbia with 39 hospitals and more than 300,000 employees, required all drug manufacturers who bid to supply them to submit to independent testing at the drug suppliers' cost. The facility, Valisure in Connecticut, tests drugs used by the Kaiser system for purity and effectiveness ([Edney & Griffin, 2023](#)). After Kaiser implemented the new requirement, several of their suppliers that relied on lower quality drugs made in China and India ceased bidding to supply Kaiser, fearing that their drugs would fail testing (R. Gibson, personal communication, August 1, 2023). Texas might consider employing this purchasing strategy with hospitals that treat Medicaid recipients or other state-managed health systems to ensure the supply of drugs produced by responsible companies in reliable nations.

Mitigating Threats to the Financial System

Attacks against a nation's currency and financial system are a standard strategy in warfare. The British counterfeited Continental dollars in the Revolutionary War, the Union encouraged the counterfeiting of Confederate currency, and both Allies and Axis powers sought to counterfeit their opponents' paper money ([Rhodes, 2012](#)).

Seeking a painless—non-tax—solution to fiscal needs, some states printed their own currency during the Revolutionary period. Rhode Island was particularly aggressive in this regard. That is one reason why the Constitution forbids states from coining money in Article I, Section 10. But Article I, Section 10, does allow states to use gold or silver coin as a form of payment. This, along with the creation of the Texas Bullion Depository ([The Texas Bullion Depository, n.d.](#)) in Leander, 27 miles north of Austin, and the advent of digital currency, opens an interesting possibility: the creation of a gold- and silver-backed fractional digital currency (K. Freeman, personal communication, August 3, 2023). Were such a system up and running prior to an emergency, it could serve as a legal avenue for the state to develop a redundant system of payment in the event of financial chaos at the national level. For instance, if the state needed to procure fuel or other supplies, it could be possible to process payment to a supplier for the needed material.

Summary

With the federal government largely abdicating its responsibilities for civil defense, proactive national security policymakers have argued that the responsibility now falls on states and local communities to implement their own measures to protect their own people ([Shideler & Waller, 2022](#)). The Texas Public Policy Foundation has long considered that Texans are the best people to determine what must be done to protect the Lone Star State—and now is the time for us to act. The most important vulnerabilities to address in the immediate future are the electric grid, the supply of drugs, and the financial system. A significant amount of preparedness could likely be purchased at the cost of a half-dozen climate-controlled warehouses and the personnel to guard them situated at National Guard properties across the state along with incentives for corporations to store supplies in them—about \$60 million for six 2.5-acre facilities ([Rider, 2022](#)).

But storage should be considered just a stopgap measure. To maintain civil defense resiliency, Texas should consider encouraging manufacturing of key items in state, whether transformer components, key starting materials for drugs, or other items. The challenge with China's mercantilist policies is that they will seek to use any tool available, including illegal dumping, to put competitors out of business and make entire nations vulnerable to economic blackmail.

Individual Texans also have a role in preparedness—maintaining a sensible amount of cash on hand should banking systems go offline, prudent supplies of gasoline, water, and food, are all useful so a citizen does not quickly become a burden during a crisis.

Finally, these topics may cause the reader to want to just invest their time and treasure in a far-away ranch property to be ready to “run to the frontier.” We should remember that the Founders of America had an infinite frontier to run to, but instead they turned and fought tyranny, and won.

Rather than just preparing ourselves for the coming crises, Texans should fight the “tyranny of inaction” and strive to promote solutions to today's national security challenges by building “Texas Defense.” ★

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