

The Feature this week on page 7:

“The Success of NASA's Artemis Mission, and America's Future In Space Is Hanging By A Thread—Only A Change In Our National Priorities Will Save It”
(Artemis I Mission. Credit: NASA)

California Water and Infrastructure Report For January 18, 2024 (With expanded coverage of all the Western States) by Patrick Ruckert

Published weekly since July, 2014

An archive of all these weekly reports can be found at both links below:

<http://www.californiadroughtupdate.org>

<https://www.facebook.com/CaliforniaDroughtUpdate>

For a free subscription to the weekly report: Send me an email-- patruckert@gmail.com

A Note to Readers

More rain and snow this week has drenched the state, and more is to come this weekend.

But, the snowpack is still well below the level that is average for this time of the year. And while recent storms have helped, but avoiding another drought later in the year, much more will be necessary.

“Seven Billion for What?,” focuses on the price tag to save a bare 400,000 acre feet of water per year by the most unbelievable bureaucratic set of measures proposed in a new law passed by the Legislature. Three articles cover this insanity.

Keeping you updated on the Silicon Valley billionaire-backed plan for a Utopian city to be built in

Solano County, is this article: *“Billionaire-backed plan for new California city,” to be found under my title: “I Think What They Will Discover Is That Money Cannot Buy Everything.”*

On the Colorado River, recent storms, and a building snowpack in the Rocky Mountains, has allowed the two largest reservoirs in the country (Lake Mead and Lake Powell) to bring their water levels up out of the crisis level, but studies and reports from the *Bureau of Reclamation* forecast that this will only be temporary, and the reservoirs are expected to see the water levels decline significantly over the next two years.

The **Feature** this week is an article by my colleague Kesha Rogers on the Artemis Space mission, and how the Biden administration, while delaying the next manned mission to the Moon until 2026, ignores a larger problem with space policy, and why California and other regions of the country have continuous crisis with water supply and flooding:

There is no unified national mission. No mission like the *Apollo Project* during the Kennedy administration, and no national water infrastructure building mission, like that, also proposed during the Kennedy administration, the *North American Water and Power Alliance*.

Here are the first two paragraphs of Kesha's article:

“The United States needs to return to a unified national mission, based on the truly Promethean idea of mankind, scientific and technological progress, and creativity. The United States has not seen a return mission to the surface of the Moon in over fifty years, since the landing of the Apollo 17 mission in 1972. When President Trump entered the White House, he set forth the bold vision of the Artemis program, calling for sending the first woman and next man to the Moon for the first time in over 50 years. The Artemis program brought in commercial companies and international partners to work with NASA in collaboration towards building out America's permanent Lunar presence. Through resource utilization on the Moon, Artemis will build a platform for future settlements on the Moon and eventually Mars. As with all manned space missions, the direct benefits to all of humanity will be enormous—up to and including producing fusion power from the Moon's Helium-3.

“President Trump was not the first President to put forth a program to return America to the Moon, but he was the first in a very long time to understand that it was going to take the best of our skill and talent. He understood that we had to have this grand economic driver in place to build our national industry and make America a manufacturing superpower again.”

Map shows how recent storms impacted California's snowpack

Story by Jack Lee-- jack.lee@sfchronicle.com

The San Francisco Chronicle

January 17, 2024

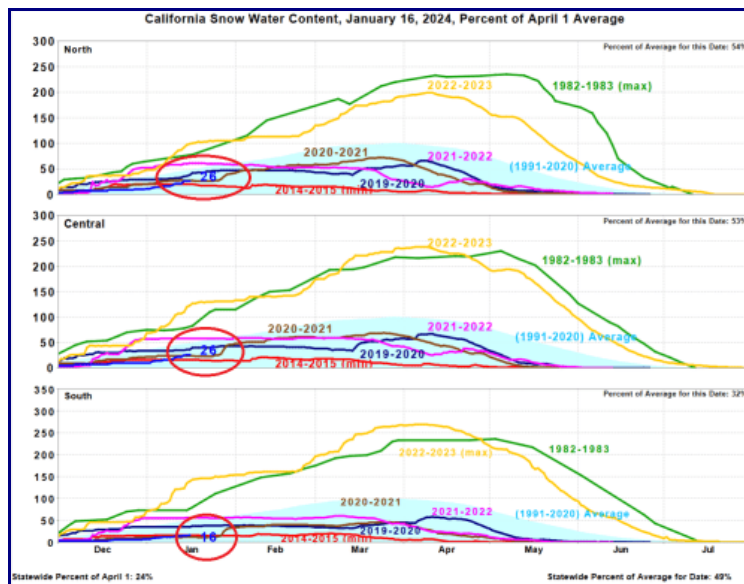
<https://www.msn.com/en-us/weather/topstories/map-shows-how-recent-storms-impacted-california-s-snowpack/ar-AA1n5qPb>

Storms have piled snow on the Sierra Nevada in recent weeks, with the [weekend storm](#) bringing a foot of snow to some [Tahoe](#) ski areas. Statewide, the [snowpack](#) is 49% of average for this time of year — a stark contrast to this time last year, when the Sierra snowpack was a whopping 257% of average.

But modest improvements since New Year's Day, when the snowpack was just 28% of average, have “moved the snowpack in the right direction,” said a spokesperson for California's Department of

Water Resources, by email. Snowpack plays a crucial role in California's water supply, melting during the spring and summer and feeding reservoirs.

These charts show snowpack conditions across the Sierra, based on automated readings of snow water content levels, the amount of water released when snow melts.



Recent storms have had their biggest impacts in the northern and central Sierra, where the snowpack is just over half of the normal amount.

By contrast, measurements in the southern Sierra were in the neighborhood of 2 inches, indicated in light green. The data in the map comes from the California Nevada River Forecast Center.

Statewide, reservoir levels are still 114% of average thanks to all the precipitation last year, said a DWR spokesperson by email.

Additional storms slated to bring rain to the Bay Area this week could bring additional snow to high elevations in the Sierra.

Seven Billion for What?

I ran this item in my report last week, but some readers missed it, so here it is again. The author, Edward Ring, I think, is the best of the California reporters on water and energy infrastructure.

Ringside: Water Rationing is the Worst Way to Build Resiliency

Surplus water equals climate resiliency

By Edward Ring, January 11, 2024 2:45 am

<https://californiaglobe.com/fr/ringside-water-rationing-is-the-worst-way-to-build-resiliency/>

When a public policy decision is flawed, and the reasons it is flawed are simple and obvious, and the consequences are huge and costly, the appropriate response for a concerned observer is to call attention to the looming debacle. Not just once, but over and over and over again. An example of an impending economic and environmental disaster is the special interest driven mad rush to deploy floating wind turbines off the California coast. It's insane, and we must return soon to the topic of

offshore wind in the context of California's overall energy strategy. In the meantime, let's take yet another look at an equally distressing policy disaster, the flawed implementation of a flawed piece of legislation, [SB 1157](#) by Sen. Bob Hertzberg (D-Los Angeles), otherwise known as urban water rationing.

The "rulemaking" phase of SB 1157 is now in the hands of the [State Water Resources Control Board](#) (SWRCB), which soldiers onward in what it might be fair to characterize as blithe indifference to the concerns of urban water agencies throughout the state. It's hard to imagine why water agencies would object to these new rules, if all they want are new ways to raise their rates, squeeze their customers, and build their empires. Because that's exactly what SB 1157 is going to do, and yet there is an ongoing and mighty chorus of executives and experts from these agencies who are putting the interests of their ratepayers first, and asking the SWRCB to back off.

California's Office of Legislative Analyst – an office that is about as impartial as one may find within the massive Sacramento state bureaucracy, agrees. In a [report released on January 4, 2024](#), the LAO has determined SWRCB's proposed requirements as "too costly and too complicated," claiming the proposed requirements go "beyond what DWR recommended, thereby reducing suppliers' flexibility for how to achieve water use efficiency goals." The recommendations LAO makes include "allow alternative compliance pathways for suppliers," "simplify the process to apply for variances," "clarify who should collect landscape data," and to "align regulations with new law on nonfunctional turf" (to digress: There is no such thing as "nonfunctional turf").

[An independent study](#) found the estimated cost to implement SB 1157 is \$7 billion, to save an estimated 440,000 acre feet per year. You could desalinate 440,000 acre feet for that amount of money, and desalination is the most expensive option. You could also recycle urban wastewater, or invest in ways to harvest, store and treat urban storm runoff, and come up with 440,000 acre feet for far less than \$7 billion. According to the [Pacific Institute's own 2022 study](#), wastewater recycling could yield up to an additional 3 million acre feet per year, and urban runoff harvesting could yield up to another 770,000 acre feet in dry years, and up to 3.9 million acre feet per year in wet years. Put the money there.

Here is the article Mr. Ring references in his report:

"California's Proposed Water Conservation Rules Too Stringent and Costly, Analysts Say"

By Rachel Becker

Calmatters

January 5, 2024

<https://www.sanjoseinside.com/news/californias-proposed-water-conservation-rules-too-stringent-and-costly-analysts-say/>

And here is a more detailed report from the Legislative Analyst's Office (LAO)

"LAO Issues Report Criticizing the "Make Conservation a California Way of Life" Framework – Are Changes Coming?"

<https://www.nossaman.com/newsroom-insights-lao-issues-report-criticizing-the-make-conservation-a-california-way-of-life-framework-are-changes-coming>

01.16.2024

Nossaman eAlert

On January 4, 2024, the Legislative Analyst's Office (LAO) issued its statutorily-mandated report – “[Assessing Early Implementation of Urban Water Use Efficiency Requirements](#)” – analyzing the implementation of the “Make Conservation a California Way of Life” framework. That framework, which consists of statutory requirements and draft State Water Resources Control Board (State Water Board) regulations, sets out water use objectives (WUOs) for urban water agencies. The LAO’s report is critical of the framework both in regard to the statutory requirements and the State Water Board’s draft regulations. Whether this analysis has any impact at the legislative or agency level is something to watch for 2024.

I Think What They Will Discover Is That Money Cannot Buy Everything

Billionaire-backed plan for new California city gets its debut

The project long shrouded in secrecy could grow to 400,000 people — but would require voter approval first.

California Forever says it will be able to buy sufficient water for the project and pay its required share to widen the state highways that provide the only access to the area. | Godofredo A. Vásquez/AP

By [Lara Korte](#) and [Ben Fox](#)

01/17/2024 05:00 AM EST

<https://www.yahoo.com/news/billionaire-backed-plan-california-city-100000434.html>

After enduring months of criticism, [a company backed by billionaire tech moguls](#) has pulled back the shroud of secrecy on their proposal to build a new California city — outlining a plan to transform farmland northeast of San Francisco into a pedestrian-friendly community that could grow to 400,000 in the coming decades.

California Forever, which quietly bought 60,000 rural acres in Solano County, says now it hopes to build on about a third of that land — with a mix of apartments and townhouses that would stand apart from traditional suburban developments.

First, however, they need to get through the voters — and that may not be easy.

At a series of town halls in recent weeks, the public reaction has been overwhelmingly negative, with many people insisting that new development stay within existing cities as the orderly growth initiative requires.

The Colorado River

Lake Mead level rising, but a big drop is coming, projections show

by: [Greg Haas](#)

Posted: Jan 16, 2024 / 06:45 PM PST

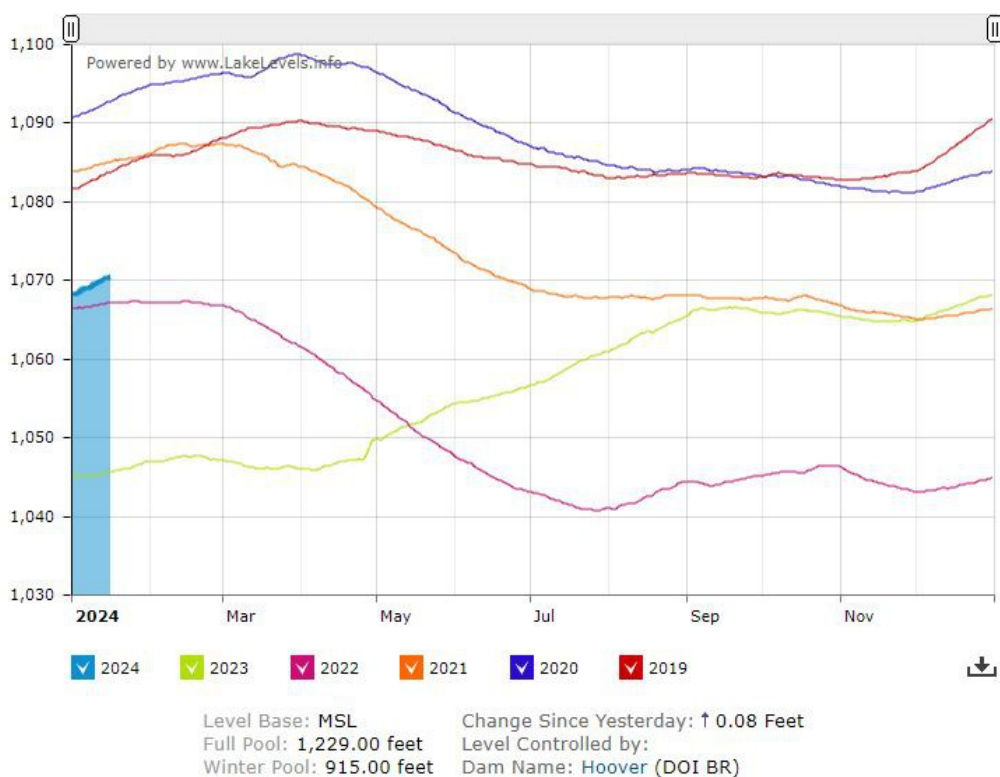
<https://www.8newsnow.com/news/local-news/lake-mead-level-rising-but-a-big-drop-is-coming-projections-show/>

LAS VEGAS (KLAS) — Lake Mead is higher than it’s been since early summer of 2021, and the level is expected to rise another 3 feet before the end of February, according to projections released Tuesday by the U.S. Bureau of Reclamation.

But then the lake will drop steadily over 2024, ending the year 17 feet lower by the end of December. And in 2025, the “most probable” projection puts Lake Mead just a few feet above the lowest it has been since the lake was filled in the 1930s. That amounts to a 29-foot drop over the next two years.

Here’s a look at the current level at Lake Mead, the largest reservoir in the country.

Lake Mead:



Lake Mead’s average level on Tuesday was around 1,070.31 feet above sea level, according to Bureau of Reclamation statistics. The blue line — just entering the graph on the left side — shows the current level in comparison with the five previous years.

On Tuesday, Lake Mead was at 1,070.31 feet. It is projected to rise to 1,073.32 feet by the end of February.

Projections contained in Reclamation’s 24-month study show the lake will drop to 1,056.19 feet by the end of December 2024. By the end of December 2025, Lake Mead will drop to 1,044.33 feet. On July 27, 2022, Lake Mead dropped to its [lowest level since it was filled](#): 1,041.71 feet above sea level.

[24mo-01162024Download](#)

Lake Powell is still at dangerously low levels—and the drought will keep making it worse

Low water puts a hydropower plant at risk and highlights volatility for an important form of clean energy.

By [Dan Gearino](#) 5 minute Read

This article originally appeared on [Inside Climate News](#) and is republished with permission. Sign up for the newsletter [here](#).

<https://www.fastcompany.com/91010065/lake-powell-is-still-at-dangerously-low-levels-and-the-drought-will-keep-making-it-worse>

What do you call a situation that remains a crisis, but has ever so slightly improved?

I'm asking myself this as I look at the latest water level data for Lake Powell, the reservoir in Arizona and Utah that feeds the Glen <https://www.fastcompany.com/91010065/lake-powell-is-still-at-dangerously-low-levels-and-the-drought-will-keep-making-it-worse>

Canyon hydropower plant and is a conduit for drinking water for parts of several states.

The level last Monday was 3,568 feet above sea level, according to the Bureau of Reclamation, the federal agency that manages the reservoir and the power plant.

On the same day last year, the water was at 3,525 feet—a difference of 43 feet. That was close to the reservoir's lowest level since it was initially being filled in the 1960s.

Both the current level and last year's are much lower than is optimal, following years of drought and overallocation of the reservoir's water. But officials have some breathing room thanks to last year's wet winter, which led to an above average, and in some areas, record snowpack that helped replenish some of what had been lost.

Feature:

The Success of NASA's Artemis Mission, and America's Future In Space Is Hanging By A Thread—Only A Change In Our National Priorities Will Save It



By [Kesha Rogers](#)

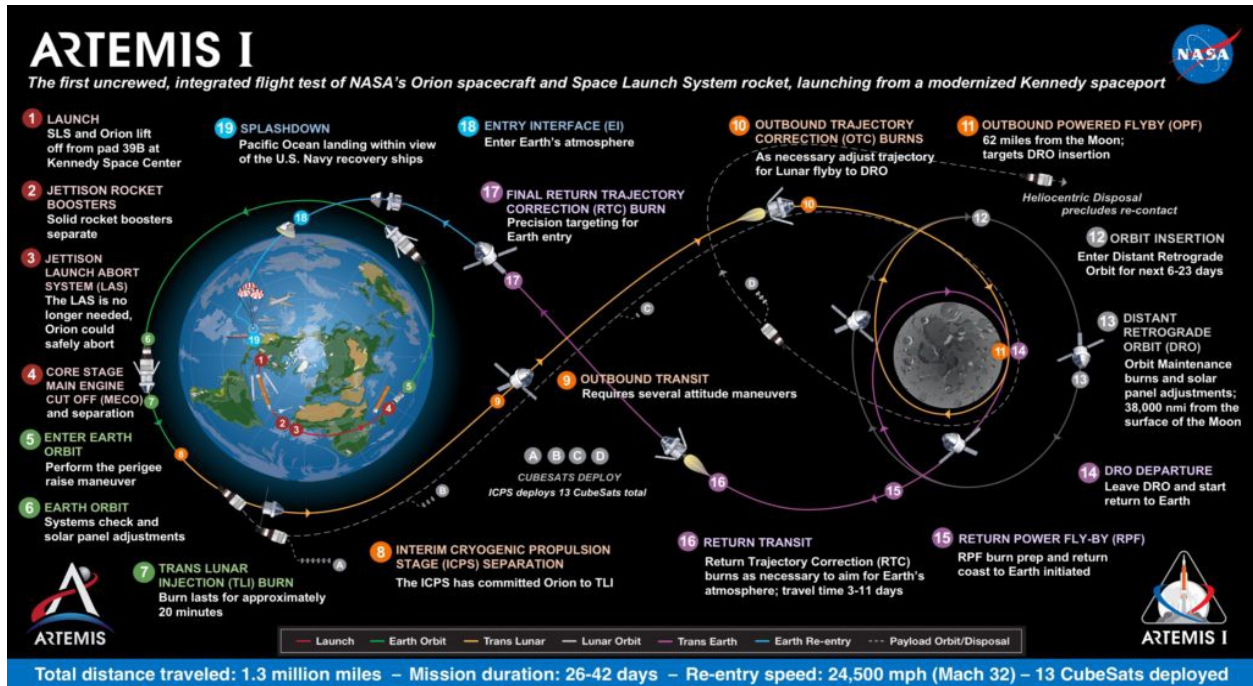
January 17, 2024

https://www.larouchepac.com/the_success_of_nasa_s_artemis_mission_and_america_s_future_in_space_is_hanging_by_a_thread_only_a_change_in_our_national_priorities_will_save_it

The United States needs to return to a unified national mission, based on the truly Promethean idea of mankind, scientific and technological progress, and creativity. The United States has not seen a return mission to the surface of the Moon in over fifty years, since the landing of the Apollo 17 mission in

1972. When President Trump entered the White House, he set forth the bold vision of the Artemis program, calling for sending the first woman and next man to the Moon for the first time in over 50 years. The Artemis program brought in commercial companies and international partners to work with NASA in collaboration towards building out America's permanent Lunar presence. Through resource utilization on the Moon, Artemis will build a platform for future settlements on the Moon and eventually Mars. As with all manned space missions, the direct benefits to all of humanity will be enormous—up to and including producing fusion power from the Moon's Helium-3.

President Trump was not the first President to put forth a program to return America to the Moon, but he was the first in a very long time to understand that it was going to take the best of our skill and talent. He understood that we had to have this grand economic driver in place to build our national industry and make America a manufacturing superpower again.



Artemis I Mission. Credit: NASA

Since the removal of President Trump from office, the program has not been the same. The Biden/Harris administration has set back the Artemis program tremendously. But as much as I would love to put all the blame on the senile Avatar Joe Biden, and his insane focus on climate change and gender identity politics, Congressional leaders also share a lot of the blame. Many in Congress are prioritizing insane endless wars, and open borders to illegals over building up our manufacturing and industry. Democrats have openly opposed and perverted the Artemis Program simply to prevent Trump from “having a win.” And both parties look for monetary shortcuts when it comes to funding our space program, even though it is critical to the economic and scientific progress of our nation. Such shortsightedness inevitably leads to economic disaster, and technical problems with the program itself.

Not only this, but people are always saying whatever NASA can't do, leave it to the private sector. I'm all for bringing in the private sector, but companies are failing because they are depending on funding from Special Purpose Acquisition Companies (SPACs) in a collapsing and rigged system that prioritizes war and short term speculative investments, not long term technological growth. Many of the companies awarded funding under NASA's Commercial Lunar Service Program (CLPS), such as Intuitive Machines, are dependent upon capital brought in by SPACs, but just aren't securing the funding needed.

So what if NASA throws a few million dollars in funding at these companies? This seed money comes

with high demands and strict timelines to meet NASA's scientific and launch requirements. But with the economy in such terrible shape under Bidenomics, the proverbial seed is planted in infertile soil, so it fails to grow. This puts massive strain not just on the commercial company launching the mission, but the entire space program. Congress then looks at failures caused by technical mishaps or missed timelines and wrongly concludes the answer is even less funding for space. That just does not and will not work. Adequate funding of human spaceflight requires guaranteed and robust investment over years, as during the height of the Apollo program.

Look at the setbacks we have seen getting the Artemis program off the ground with the ongoing cuts in funding and schedule changes on the SLS rocket, and Orion spacecraft. Remember, the development of the SLS rocket started in 2011 as a replacement for the Space Shuttle program. After 11 years, it was finally time to launch in November 2022 with the uncrewed Artemis I mission, after being delayed several times due to a hydrogen leak. Since then, NASA has repeatedly announced further delays in the Artemis program. The Artemis Crew II mission scheduled to fly this year is being pushed back to 2025 due to heat shield concerns and hardware readiness. The Artemis III human landing mission, already pushed back several years from Trump's original schedule of 2024, will not launch earlier than September 2026, if not later.

Under President Trump's leadership, in 2018 NASA awarded funding to nine companies through its Commercial Lunar Service Program (CLPS), to deliver science and technology to the lunar surface ahead of NASA's Space Launch System (SLS) and Orion Artemis mission landings. This past week, the first company awarded under the CLPS program, Astrobotic, launched its first NASA payload to the Moon aboard its Peregrine Lander. Last week Peregrine launched atop the new ULA Vulcan Centaur rocket. This was a major breakthrough in spaceflight for the United Launch Alliance and the premier launch of its Vulcan rocket. The booster that carried the Astrobotic Peregrine Lunar lander was powered by a pair of Blue Origin BE-4 engines and two Northrop Grumman Graphite Epoxy Motor 63 XL solid rocket boosters. The Vulcan has replaced the Atlas V. Atlas will continue to fly for its remaining seventeen launches that have already been sold. Most who watched the launch of Peregrine Mission One aboard the 200-foot-tall rocket, carrying some five NASA payloads and fifteen additional payloads flying for a number of commercial customers, research organizations, and other space agencies, were absolutely amazed by the nearly picture perfect launch.

Not more than 24 hours after the mission was on its way to the Lunar surface, an update was issued that the Peregrine Lunar Lander was suffering an anomaly. According to Astrobotic, a "failure within the propulsion system was causing a critical loss of propellant," and it did not look like the mission would go forward as planned. Since then, further updates have come out indicating that the spacecraft's leak was slowing and that there was still enough propellant left to prepare the payloads onboard to be deployed. Unfortunately the latest update from the Astrobotics team has finally confirmed that the Peregrine Mission will not be making a soft landing on the Moon, afterall, but will be colliding with the Earth.

We will have to keep following this mission to find out what the final conclusion will be. In the meantime, the next CLPS mission, Intuitive Machine's NOVA C, is scheduled to launch aboard a SpaceX Falcon 9 Rocket next month and make a landing on the Lunar South Pole not long after. This mission has also been rescheduled a number of times. The rescheduling is not really the problem. The real concern is how the entire program is being conceived. Is Artemis a unified national mission or an array of piecemeal projects? Only the unified mission approach will work. Next week on January 17th, Congress is holding a Space and Aeronautics Subcommittee Hearing entitled "Returning to the Moon: Keeping Artemis On Track." This is the very question at hand.

In considering the collapse of our nation's productive economy, the loss of manufacturing, and the impact of outsourcing, look at the impact that it has had on Boeing, our nation's number one aerospace

company, and leader, until recently. I'm sure everyone saw the horror story about the door plug on the Boeing Max 9 aircraft blowing off. This is not the first time Boeing has had problems. [An article written in The Wall Street Journal](#) details what has happened as a result of Boeing outsourcing its production and components to other companies within the United States and other countries. The article [highlights a white paper written in 2001 by a Boeing aerospace engineer](#) warning others in the company about subcontracting and outsourcing and the adverse impact it would have. Hundreds of Boeing 737s have been grounded due to the change in production policies and outsourcing. This has resulted in major issues with their aircraft models, including unsafe fuselages, misdrilled holes, loose rudder bolts, and the recent door plug blowout.

Now if that is happening with Boeing aircraft, what do we need to be concerned about with Boeing's involvement in rocket production? Boeing is the prime contractor for the design, development, test, and production of the Space Launch System, (SLS) rocket core stage, and upper stage. Boeing is currently building the core stage for Artemis II, III and IV. Maybe this is another reason NASA is further postponing Artemis launches.

People have heard the story multiple times of how under the Apollo program for every dollar that went into the space program we saw 14 dollars in return. This was not money being launched into space and returning fourteen-fold to earth; the returns we were generating were coming from the spinoffs from the space program that were applied everywhere throughout our economy. It is very hard to find an industrial sector not improved by human space exploration. Since before the 1969 Moon landing, the United States has pushed investment in our space program to near the bottom of the national budget. Despite its centrality to human progress, Congress has only allocated about \$25 billion dollars on the space program, about 0.5% of the total budget. Well over 4 times this amount has been wasted pretending to defend democracy in Ukraine. What do we have to show for that? New medicines? New technologies? New understanding of physics? Of course, none of the above.