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EXECUTIVE SUMMARY

NEVADA COVID-19 COORDINATED ECONOMIC RESPONSE PLAN: SUPPLY CHAIN ANALYSIS

PREPARED FOR THE:

GOED & OFFICE OF THE STATE TREASURER NEVADA

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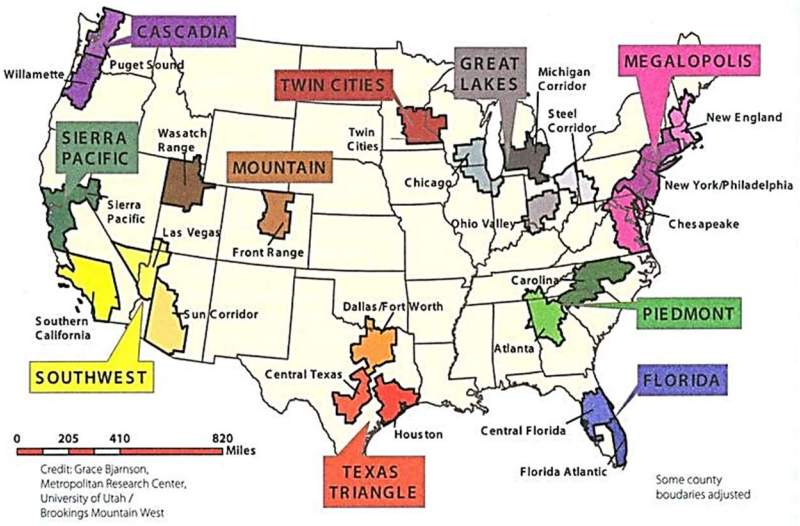
EXECUTIVE SUMMARY

One of the first items contained in the "Infrastructure Road Map" outline for the State of Nevada ("the state" or "Nevada") is: "Whole Nevada approach: integration and collaboration." This is a key element to Nevada's economic future. Nevada has always strived to act in a well-coordinated statewide economic development approach—and for good reason. The divide between North/South and Urban/Rural has persisted over the last few decades. While politics and the vast open spaces in Nevada have contributed to the lack of economic integration, current and historical spatial economics is the primary cause. The economic gravity exerted by Los Angeles, the Bay Area and Salt Lake City has been a challenge. Additionally, the lack of a well-developed transportation network throughout the state (e.g., the only way to fly into Elko on a scheduled airline is through Salt Lake City) has hindered Nevada's attempts to form a comprehensive state-wide integrated economic development policy and supply chain infrastructure. But it also offers an opportunity to the state. The growing recognition of the different out-of-state economic linkages driving Nevada's three primary regions—Northern Nevada, Rural Nevada and Southern Nevada—is a critical and promising part in making the state's economy more resilient.

Redefining Nevada's role in the Western U.S. macro-region (see the map below) is vital if the state is to develop an economic development strategy that plays to its strengths and does not expend resources pursuing projects that are not compatible with regional economic realities. First and foremost is to not redefine Nevada's role in the region, but rather accept it. To use the term "redefine" infers that Nevada can unilaterally decide its role in the Western U.S. economy.

California's economy, at $3.1T (2019) of annual gross state product, is not only the largest in the U.S. but would rank as the world's fifth largest economy if it were a sovereign nation as shown below. What Nevada can do is understand its role and develop strategies that complement the macro-regional economy and Nevada's competitive advantages. Being congruent with Southern and Northern California megaregions will provide Nevada with its most sustainable path to economic growth and supply chain development.

Megapolitan America/48 States

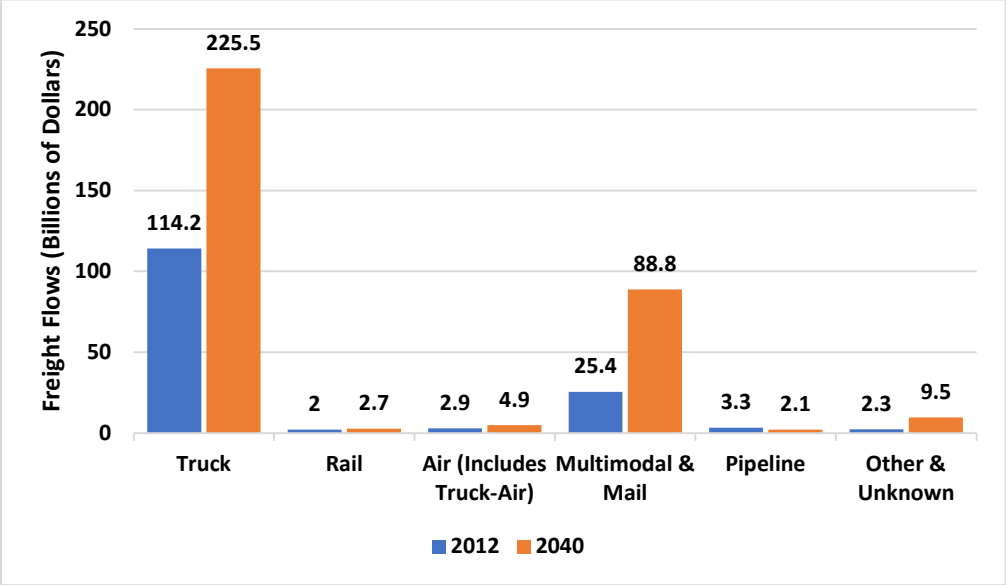


Source: Grace Bjarnson, Metropolitan Research Center, University of Utah, Brookings Mountain West

We have observed over the years the belief by some in Nevada that the state can have a stand-alone economy that can be retooled without considering California, or other western states for that matter. This is not the case. Conversely, the concept of Nevada being a part of a much larger market area is what is readily accepted by the majority of economic development practitioners and regional economists in and out of the state. Most economic development marketing materials vigorously tout Nevada's proximity and accessibility to West Coast markets, usually in tandem with the state's low-cost business and tax climate. However, for example, no matter how low a state's tax burden is, it will not, in and of itself, be a determining factor in location selection if the state does not have direct and timely accessibility to large population centers and markets.

Based on these realities and our research, for Nevada to expand its supply chain infrastructure and position itself for future economic growth, the state should prioritize expanding transportation corridors between the major Nevada metros and their corresponding California metros as well as connecting the Las Vegas and Reno-Sparks Metropolitan Statistical Areas ("MSAs") by freeway, rather than focusing primarily on rail connections as evidenced in the bar chart below. That is not to say that the state should neglect its rail development goals and strategies. Just the opposite, Nevada should continue to explore expanding its rail infrastructure and assets, but it should work with its private-sector partners to do that using innovative public-private partnerships ("PPP").

Nevada's Growth in Freight Flow Value by Mode: 2012 – 2040



Source: Nevada State Freight Plan

Our research for this study has identified the infrastructure projects having the potentially largest impacts on the state's economy:

- the widening of I-15 from Las Vegas to Southern California
- the widening of I-80 between Reno and I-5
- the completion of I-11 from Phoenix to Reno

The map on the next page illustrates this point.

Nevada Roadmap

Source: Wikimedia Commons

These projects will all require a collaborative effort with the other Western states, especially California. To accomplish this, Nevada must find a way to engage California in a manner that benefits both states. As an intermediary step, an investigation should be undertaken to determine the economic impact Nevada's growth has on California. Knowing this impact (there may be a need for two inquiries, one for the north and one for the south) would arm GOED with the information necessary to devise a strategy that entices California to support the Nevada's efforts. Additionally, it is critical that Nevada engage other Western states in its sphere of influence.

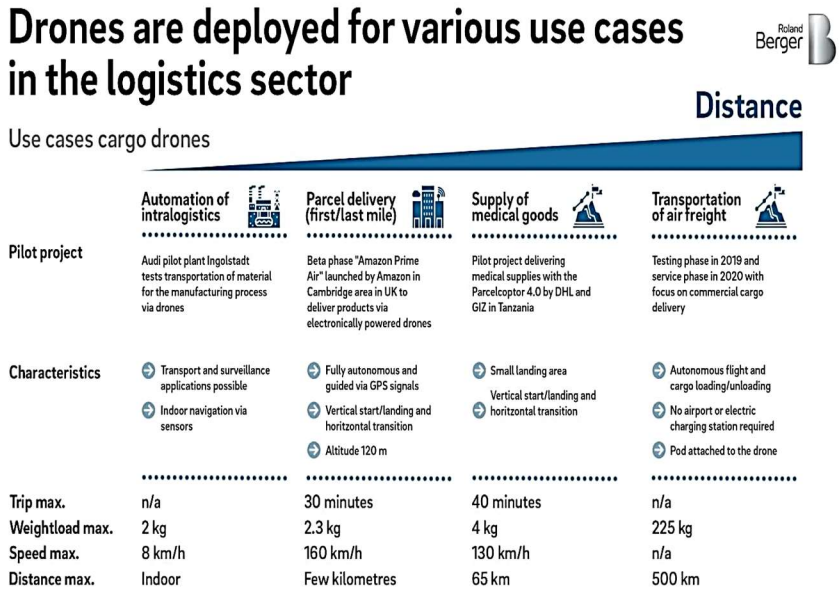
Nevada should also encourage private industry to test new technologies in the state to accelerate integration into the Nevada supply chain ecosystem as well as to create more high-tech, high-paying skilled jobs. The state has

already been relatively proactive in doing this, with autonomous vehicles already on the road[1] and unmanned aerial systems entering urban testing.[2]

[1] Abuelsamid, S. Forbes. Feb 11, 2020. "Aptiv's Self-Driving Vehicles Top 100,000 Rides In Las Vegas." https://www.forbes.com/sites/samabuelsamid/2020/02/11/aptiv-self-driving-vehicles-top-100000-rides-in-las-vegas/?sh=1f41513c5439

[2] Schulz, B. Las Vegas Review-Journal. Jan 14, 2019. "Nevada chosen as drone test site for pilot program." https://www.reviewjournal.com/business/nevada-chosen-as-drone-test-site-for-pilot-program-1573504/

Drones Are Deployed for Various Use Cases in The Logistics Sector



Source: Roland Berger, DHL, Amazon, Elroy, Audi

Dirigibles or airships are another potential source of supply chain innovation and are making a comeback because technological advances. They are relatively slow, but like ships, airships could be used to carry large amounts of cargo.[3] This type of transportation mode could be especially benefit rural communities, which are often too remote for rail and too expensive for truck service.[4] These technologies can also help lower costs-relative to the "last-mile" problem.

Lockheed Martin LMZ1M Cargo Hybrid Airship

[3] International Airport Review. Accessed Dec 20, 2020. "The emergence of cargo airships: An opportunity for airports." https://www.internationalairportreview.com/article/37170/cargo-airships/

[4] Prentice, BE and Thomson, J. University of Manitoba. Nov 2, 2020. "Economics of Airships for Northern Re-supply." https://umanitoba.ca/faculties/management/ti/media/docs/AA04_airship_small1.pdf

Source: Lockheed Martin

In terms of freight rail, our main finding is that the private sector largely determines the direction of development and investment and that, up to now, there has been little that states could do to alter private sector plans. Since the industry's deregulation in 1980, the nation's freight rail has turned around, from a series of bankruptcies to a leading model of efficiency.

The number of rail-miles has been in decline ever since despite increasing freight volume and dropping costs. However, the leanness of the nation's freight rail infrastructure that has occurred due to this march toward efficiency has made it more difficult for many state and local governments to connect to the rail infrastructure. Instead, rail, particularly in the Western U.S., has transitioned toward a business model revolving around moving goods from California seaports to Midwestern population centers, as illustrated below, before those goods are distributed to the rest of the country by truck as illustrated here. This is the reality that Nevada must recognize. Such a reality leaves freight rail expansion limited to increasing current line capacity and possibly using short lines to connect mining operations to the main Class I lines in the state.

Tonnage of Flatcar Rail Intermodal Moves: 2016

Source: Bureau of Transportation Statistics

Relative to high-speed intercity passenger rail, Nevada has done a reasonably good job of catalyzing a Southern Nevada-Southern California connection. The state has worked with California authorities to assist the private sector in building the line. Both states helped Brightline secure rights to tax-free private activity bonds to reduce project costs and have helped navigate them through regulatory hurdles. Unfortunately, the COVID-19 pandemic appears to have stalled progress with respect to this project.[5] However, the state cannot be faulted for this. The best thing now would appear to be for Nevada and California to make their best efforts to keep the project alive by continuing communication with Brightline in the hopes that after the pandemic ends, there is still a desire on its part, due to investor interest, to move forward.

Regarding increasing its share of federal funds, especially for rail projects, the CT concludes that Nevada should look for innovative ways to partner with private industry to promote infrastructure development in the state. However, based on the evidence found in other states, there is only so much the state can do, and it will be the private sector that ultimately drives infrastructure investment. Still, using innovative methods to forge public-private partnerships could allow Nevada to find significant funding for the private sector that would design and build the infrastructure necessary to improve the state's supply chain.

[5] Las Vegas Review-Journal. Nov 18, 2020. "EDITORIAL: Vegas to Victorville rail line goes off the tracks." https://www.reviewjournal.com/opinion/editorials/editorial-vegas-to-victorville-rail-line-goes-off-the-tracks-2186330/

Technology also appears on the verge of mitigating last-mile issues relative to providing high-speed internet services to consumers and businesses. Satellite internet and 5G have transformative potential. This would likely help both urban and rural areas, a rare win for rural infrastructure. Widespread access to satellite internet is likely less than five years out, at the latest, which will blanket the nation with high-speed internet. SpaceX's Starlink subsidiary should do for internet what DirecTV did for cable, making broadband accessible to even the most remote locations in the state, and at lower costs thanks to federal subsidies.[6] Additionally, 5G will be a boon to both urban and rural consumers and businesses with its improvements in bandwidth and latency.[7] These technological advancements will mean fewer resources will be necessary to overcome last-mile concerns with laying fiber optics to expand internet access, particularly in remote areas.

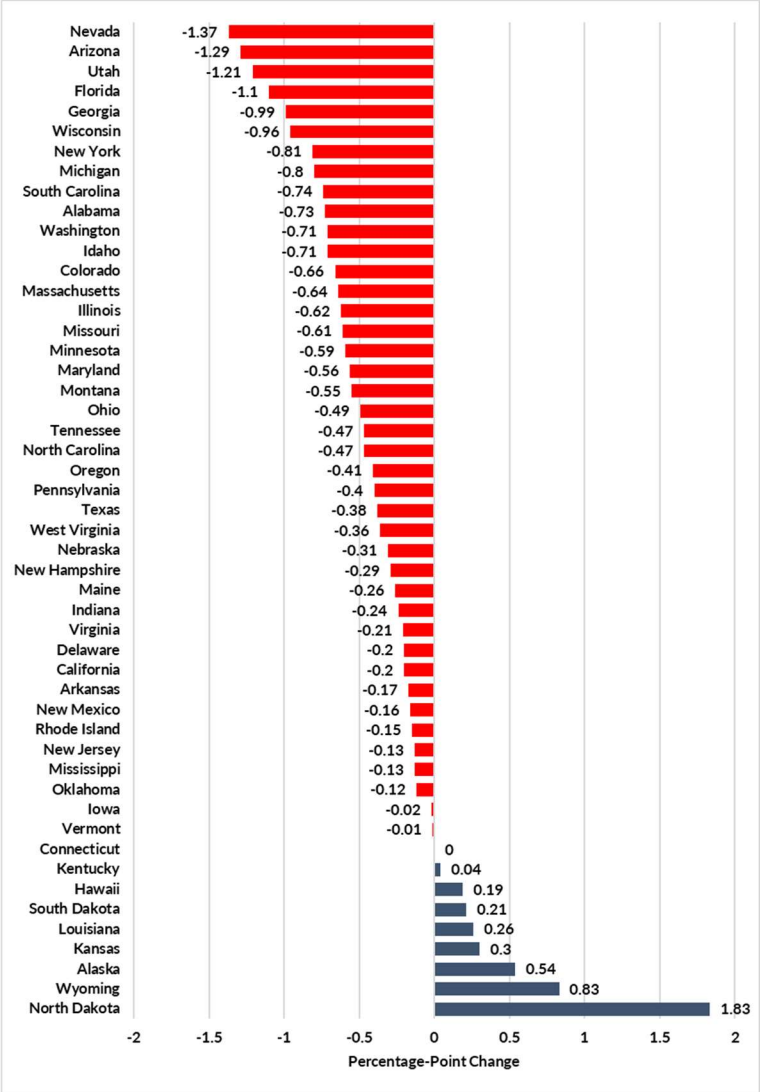
Nevertheless, the chart below shows why Nevada must find new funding sources to address its current and future infrastructure needs. This was perhaps the primary impetus in passing the Nevada infrastructure bank legislation in 2017. It is imperative that Nevada be creative and flexible to take advantage of any and all future funding opportunities to address its infrastructure needs, wherever they might originate. Even though State Infrastructure Banks ("SIB") have a checkered history of ongoing success, Nevada must take the immediate steps necessary to implement and fund its SIB. The key will be adopting the practices and processes that have worked in other states while avoiding what has not worked. This specific recommendation was offered in ASCE's Nevada 2018 Infrastructure Report Card.[8]

[6] Brodkin, J. Ars Technica. Dec 7, 2020. "SpaceX gets $886 million from FCC to subsidize Starlink in 35 states." https://arstechnica.com/tech-policy/2020/12/spacex-gets-886-million-from-fcc-to-subsidize-starlink-in-35-states/

[7] AT&T Business. Accessed Dec 24, 2020. "What 5G means for business." https://www.business.att.com/learn/top-voices/what-5g-means-for-business.html

[8] "Nevada 2018 Infrastructure Report Card" Nevada Section of the American Society of Civil Engineers, Infrastructurereportcard.org/Nevada, 2018.

Percent-Point Change in State & Local Infrastructure Spending as Share of GDP: 2002 – 2016



Source: U.S. Census Bureau, BEA

Should federal funding become available within the next six to 18 months, it is critical for Nevada to establish an operational entity to receive and distribute the funds in a timely manner. Should a mechanism not exist in the state when federal funding may be disbursed, then Nevada will once again "miss out" as it had in the late 1990's when it did not avail itself of the pilot infrastructure bank funding.

Finally, as transportation and communications continue to evolve and emerge, Nevada should move beyond viewing infrastructure as traditional transportation systems, but rather as a complex, multi-level and integrated system to move people, goods, ideas and information. The bottom line is that Nevada must pursue every avenue

to assist it in securing funding for its present and future infrastructure needs. While organizing the Nevada Infrastructure Bank and making it operational may not guarantee success, not taking the necessary steps to do so will become a major impediment to Nevada meeting its economic resiliency needs through failing to take advantage of new or expanded infrastructure and supply chain funding strategies and programs in the future.

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