RCG ECONOMICS

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Spatial Economic Concepts

Nevada Inland Ports Viability & Funding Study

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Executive Summary

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EXECUTIVE SUMMARY

Introduction

During the two decades preceding the advent of the Great Recession, Nevada either led the nation or was in the top 10 percent of states in terms of population growth. One of the consequences of this population growth was a rapid expansion of the state's economy. ~~A~~another validation of Nevada's success was its ongoing ranking in the top quartile of "best places to do business" in a myriad of publications and indices. All this seemed to point to prosperity to be enjoyed well into the future. Suddenly, in late-2007, like the rest of the nation, Nevada was blindsided by the second most devastating economic downturn in the modern era since the Great Depression. The state saw its fortunes plummet along with its population, economic, employment and housing growth rankings. Five years later Nevada still lingers at, or near the bottom of most economic indices.

One important effort to revitalize and reinvent the Nevada economy was the development and initiation of legislation in 2011 by the Nevada Legislature approved by Governor Brian Sandoval on May 31, 2011 that went in to effect on July 1, 2011. Assembly Bill No. 182 (as amended) was introduced in the Assembly on February 16, 2011 by the Committee on Commerce and Labor and relates to inland ports; the thought being that the potential economic benefits of having an inland port in the state could be significant. In March 2012, the Governor's Office of Economic Development ("GOED") retained the consultant team of RCG Economics, Dr. Alan Schlottmann of the University of Nevada Las Vegas Department of Economics and Spatial Economic Concepts to prepare this study to test the viability and funding options associated with developing in inland ports in Nevada.

This study titled *Nevada Inland Ports: Viability and Funding* is the culmination of our research.

Inland Port Benefits

As part of a comprehensive *strategy of economic development, facilitating regional goods movement offers an underlying attractive factor for future business expansion.*

The Nevada legislature, in the 2011 session, enacted AB182. Specifically, Assembly Bill No. 182 related to the creation of inland ports in the State of Nevada.

A successful inland port can generate direct economic benefits, as well as indirect benefits on a state's economic structure and development. To the extent that an inland port can offer a cost-effective alternative to existing methods of freight movement and storage, freight carriers and other logistics providers can experience lower per-unit costs and/or increased ease of delivery to important urban markets and population centers. Consumers, in turn, can benefit from the reduced logistics costs made possible by a nearby inland port since the cost-savings experienced by local retailers are passed on to consumers in the form of lower prices. As part of a comprehensive strategy of economic development, facilitating regional goods movement offers an underlying attractive factor for future business expansion.

Residents in the region immediately surrounding an inland port project also benefit from the economic development effects associated with such a facility. Inland port projects can bring hundreds of millions of dollars in infrastructure investment, and can lead directly to the hiring of thousands of construction workers, as well as for ongoing operations.

The Nevada legislature, in the 2011 session, enacted AB182. Specifically, Assembly Bill No. 182 related to the creation of inland ports in the State of Nevada. This bill was an essential first step in evaluating the viability of creating inland ports in Nevada in that it set forth the criteria that enables local jurisdictions, or consortiums of local jurisdictions to create an inland port authority.

The intent and purpose behind AB182, as an economic development tool, was further validated in an extensive study commissioned by GOED jointly prepared by SRI International and the Brookings Institution. This study entitled *"Unify, Regionalize, Diversify: An Economic Development Agenda for Nevada"*, and prepared in 2011, recommended seven industry clusters that were identified as target opportunities for Nevada. Of these seven clusters, four have impacts, to varying degrees, on the potential for inland ports in Nevada. These industry "clusters" are: 1) Logistics and Operations, 2) Mining Materials, and Manufacturing, 3) Business IT Ecosystems and 4) Aerospace and Defense.

One thing there is consensus on, however, is that the additional traffic directed through the Panama Canal will depend greatly on the ability of West Coast ports to handle additional Asia-Pacific containers.

The report went on to say the logistics cluster had the potential to create 11,000 jobs in the state over the next five years.

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The State of West Coast Ports

Pacific coast ports handled 27.8 million TEUs in 2011, a slight increase of 250,000 from 2010. Just eight ports — Vancouver, Seattle, Tacoma, Portland, Oakland, Los Angeles, Long Beach and Manzanillo — were responsible for 24.3 million, or 87.6 percent of these TEUs. That percentage has changed little in the last 22 years and is likely to remain so in the foreseeable future as these ports continue to expand their capacities to keep up with the demand for containerized goods.

More than half of the container volume handled by these ports flows through the two California ports of Los Angeles and Long Beach.

One thing there is consensus on, however, is that the additional traffic directed through the Panama Canal will depend greatly on the ability of West Coast ports to handle additional Asia-Pacific containers.

Unlike the wide array of definitions for an inland port, the reason for one is quite simple. "An inland port must permit economies of scale in inland distribution by being able to handle larger volumes at a lower unit cost. Otherwise, direct services from the maritime terminal are a better option."

Transportation costs account for over 50 percent of the total costs associated with logistics, followed by inventory costs, a distant second at 21.8 percent.

What Is An Inland Port?

The concept and functions of an inland port have been in existence for many years. Early commerce in Europe relied on inland waterways to transport primarily agricultural products between seaports in larger urban areas and the farming regions of the hinterland. With industrialization came freedom from waterways, and commercial modes and distribution centers were tied directly to rail transportation.

Any discussion as to the viability of an inland port must begin with the definition of an inland port and the characteristics of what makes one successful. An inland port is "A rail or a large terminal that is linked to a maritime terminal with regular inland transport services. An inland port has a level of integration with the maritime terminal and supports a more efficient access to the inland market both for inbound and outbound traffic."

Another definition is offered by Center for Transportation Research at the University of Texas. "An Inland Port is a physical site located away from traditional land, air and coastal borders with the vision to facilitate and process international trade through strategic investment in multi-modal transportation assets and by promoting value-added services as goods move through the supply chain."

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“An Inland Port is characterized by seven key attributes:
1. Access to major container seaport
2. Intermodal facility serviced by a Class I railroad
3. Minimum of 1,000 acres of total land
4. Foreign Trade Zone status
5. Strong local market access (e.g., near a major metropolitan area)
6. Nearby access to north/south and east/west interstate highways
7. Access to a strong local labor pool.”

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There are also a variety of models or concepts under which an inland port can develop. The most common of these are: Satellite Marine Terminals, Multi-modal Logistics Parks, Rail Intermodal Parks, Logistics Air Parks, Trade Processing Centers and a new concept termed Economic Development Initiative/Virtual Inland Port.

Attributes Of An Inland Port

While the concepts, models and reasons for inland ports that exist around the U.S. are as varied as their locations, the basic attributes of a successful inland port or logistics center are common to all. “According to a report produced by Heitman Real Estate Investment Management Firm, an Inland Port is characterized by seven key attributes:

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All of the successful inland ports in the U.S. have access to a major container seaport, via a Class 1 railroad. In addition, it should be noted that during the interview process there were those who were of the opinion that the optimal "model" contains two Class 1 railroads to provide for greater flexibility and cost effectiveness.

The largest determining factor for size and dimension is rail siding capacity. The land parcel dimension contiguous to the track has to be of sufficient length to come off the main line, which is usually 10,000 linear feet of siding capacity. Other factors that dictate size include: the number of trains serving the site; the volume of the freight that will be accommodated; the land uses included: manufacturing, warehousing, distribution or a function of all three; the consumption and market size of the local area; the amount of empty containers or other transportation equipment stored on site; etc.

Foreign Trade Zones ("FTZ") are a needed attribute agreed upon by all involved in logistics centers, yet it may be the least understood of the key factors. Because of this, it is important to understand FTZs and their benefits.

Strong local market access and demand is yet another attribute that has a significant impact on the location of inland ports. Some suggest, such as Hillwood, the developer of Alliance Texas, that a base population of 3 million is a critical need in the development of an inland port.

Nearby access to north/south and east/west Interstate highways is an attribute associated with an inland port's flexibility to distribute throughout entire sections of the country. The current "Hub & Spoke" concept of distribution, which is most prevalent in the U.S. today, because most supply chain linkages between retail and manufacturing depend on "just-in-time" truck delivery, would not be possible without a very strong highway system radiating out from the warehouse location.

Transportation cannot only be defined as the movement of people and goods as it was in the past. Success in the future global economy comes with an understanding that transportation also consists of ideas and information.

As global economies evolve, more emphasis is being placed on highway systems throughout North America. This is most easily seen in the designation and development of trade corridors (highway systems) within the North American Free Trade Agreement (NAFTA) directly linking Canada, the United States, and Mexico through a series of interstate highways.

An inland port must be assured of a skilled and stable supply of labor, not only in the initial construction and start-up phases of the project, but in the subsequent growth stages as well. The amount of capital investment associated with development of an inland port will be significant by any standard, and it is inconceivable that the funds required for such as undertaking would be available without at least a statistical guarantee that the required trained labor force does exist.

In addition to the seven referenced key attributes, there are two more than can be considered essential to a successful inland port in today's global economy. The first and foremost is a willing political structure committed to a common goal: the quintessential public/private partnership.

The second is the "Presence of an information technology infrastructure that supports leading-edge information technologies required to facilitate the efficient

movement of goods into and out of the area. This includes telecommunications networks and information service providers that can readily meet the needs of the international trade and transportation community. Transportation cannot only be defined as the movement of people and goods as it was in the past. Success in the future global economy comes with an understanding that transportation also consists of ideas and information.

Logistics/Distribution Centers: Background for Nevada Policymakers

It is important to note that as part of an economic development strategy, reverse logistics can augment regional employment through repair and reship. The repair, repackaging for primary markets, secondary market sales and recycling functions add additional activities (and employment) not associated with traditional distribution.

The distribution of products to customers, whether to intermediate users or directly to end-users, is a key focus of any product or service company. The logistics of efficient goods distribution is a critical component of profitability within the overall movement of inputs and outputs of what is popularly termed “supply chain management”.

As outlined in the 2010 UPS supply chain survey, the three top priorities for future distribution systems reflect directly and indirectly cost concerns (UPS, 2010). These three focal points are an increased focus on achieving higher service levels (83 percent), aligning distribution needs with demand through improved planning (80 percent) and a management focus on the supply chain (74 percent).

In its most basic sense, fulfillment centers are warehouse and distribution facilities where incoming orders are received (electronically), operationally processed and then shipped to customers. Fulfillment centers are generally associated within retail trade or wholesale distribution by servicing potentially numerous locations or outlets.

One of the more important recent logistic trends is the establishment of dedicated reverse logistics centers. Reverse logistics to include repair, secondary market sales and recycling in high-tech electronics is a relatively new area of distribution development. Reverse logistics stresses the capture of value from company products as opposed to the traditional model of "return and discard".

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Nevada has a workforce with experience in specific occupations that can support future logistics development in the State.

E-Commerce

The growth of e-commerce has caused considerable change to the traditional fulfillment center in several ways. These changes are due primarily to the often huge number of items offered for sale and hence increased demands on efficient distribution management.

In order to function smoothly, all of these e-commerce activities require using information technology within the facility and from external customers and management. Hence, a region's workforce needs to be comfortable with use of information technology. Any economic development plan keyed to these e-commerce facilities without a technological capable workforce is likely not feasible.

Nevada appears to have a workforce with strong characteristics to meet the needs of all three types of distribution systems. It is well known that Nevada's dominant industry, the leisure and hospitality sector, has used computer technology

throughout its operations from front desk to food preparation. This has helped create a workforce culture in Nevada that is comfortable with information. Nevada has a workforce with experience in specific occupations that can support future logistics development in the State:

- The Nevada workforce has strong skills in materials handling and warehousing which support fulfillment centers.

What the data tell us is that, while rail will remain an important component of the state's logistics infrastructure network, it is the rapid growth in trucking that will drive the future of logistics in Nevada.

- The repair function and recycling function required in reverse logistics appear to be well-represented within occupations in Nevada.

- The functions of many well represented occupations in Nevada are associated with the use of both basic and advanced information technology as utilized in e-commerce distribution.

- A basic transferability of skills between industries in the Nevada workforce appears to be conducive to development of distribution facilities.

Nevada Freight Overview

According to the Freight Analysis Framework 3 ("FAF3") data tabulation tool, Nevada's rail freight decreased in value (2007 US dollar basis) by 51.85 percent between 1997 and 2010, even though tonnage increased by 79.42 percent. Between 2010 and 2040, the model predicts an increase in the value (2007 U.S. dollar basis) of rail freight of 7.27 percent and an increase in volume of 6.44 percent.

Compared to the relatively flat numbers for rail freight, Nevada truck freight showed impressive growth from 1997 to 2010 and is expected to continue to do so between 2010 and 2040. The FAF3 shows that the value of truck freight jumped by 91 percent from 1997 to 2010 and is predicted to increase a further 125.3 percent by 2040. Truck freight tonnage, meanwhile, rose by 101.79 percent from 1997 to 2010 and is projected to grow a further 72.76 percent by 2040.

What the data tell us is that, while rail will remain an important component of the state's logistics infrastructure network, it is the rapid growth in trucking that will drive the future of logistics in Nevada.

Because of Nevada's proximity to all major West Coast markets, and an established Interstate highway system to serve these markets, the State should target logistics clusters, which require the flexibility and predictability that truck transportation provides. Fulfillment centers and reverse logistics activities are two subgroups within the Logistics and Operations Cluster that are well-suited to take advantage of these attributes. From locations in Nevada, small parcels that characterize the outbound movement of fulfillment centers and the inbound movement of reverse logistics can easily be accommodated. Nevada has the capabilities to provide overnight and one-day delivery services, via truck, to and from the entire West.

Interviews: Overview

Process

The interview process was designed to elicit an open and free flowing dialogue with an absence of predetermined outcomes. This was accomplished through questions on: market demand, transportation capacities, and role of the State of Nevada in encouraging inland ports, organization of the ports and potential site locations. A standardized questionnaire was not utilized. This resulted in the interviews focusing on the priorities of the individual respondents and responses that were colored by those priorities.

However, this also resulted in discussions that allowed for comments and ideas to be introduced by the respondents that gave further insights into the logistics process and allowed for the flexibility to delve into details that assisted in the development of the conclusions, and recommendations sections in this report.

At the outset of each interview, the respondent(s) were informed that no quotes used in the report would be directly attributed to them, nor would any particular piece of information be attributed to an individual unless it was in support of a direct quote obtained through secondary research and referenced in the report. Consequently, responses provided below, while combined for brevity, are submitted in the words of the respondents to the greatest extent possible. However, because these are the opinions of the respondents', contradictions do occur; most notably on the economic impacts of the Panama Canal and I-11, as well as the level of rail service in the Reno area.

70 interviews were conducted, or numerous attempts with key organizations were attempted, with individuals representing more than 49 organizations.

The interviews were conducted over a three-month period and included a diverse cross section of the public and private sector. Though, because the primary objective of these interviews was to assess the market demand for an inland port, and the capacity of transportation systems to service that demand, an emphasis was placed on the private sector. 70 interviews were conducted, or numerous attempts with key organizations were attempted, with individuals representing more than 49 organizations. These organizations included: Northern, Southern and Rural Nevada economic development authorities, County and City officials, State government staff, rail companies, trucking companies, package delivery companies, manufacturers, warehousing operations, fulfillment centers, third party logistics companies, airports, real estate brokers, architects and business park developers.

Key Responses

The overwhelming responses indicated that Nevada has an excellent business environment that provides a foundation from which a variety of businesses can take root and grow. The state's proximity to California and other West Coast and western region markets makes it a good location from which to distribute products, as witnessed by logistics facilities developing on their own in both Northern and Southern Nevada. However, the concept of a traditional inland port, one that is connected to a deep water port via multi-modal transportation links, is not practical for Nevada in the short or medium-terms. This finding is based on three primary factors:

It was felt that a key logistics subgroup that Nevada can pursue with some success is that of e-commerce, fulfillment and/or reverse logistics centers. The state's telecommunication network, package delivery and airport infrastructure make this logistics segment a very good target on which to focus Nevada's resources.

1. The Ports of Long Beach, Los Angeles and Oakland are currently not functioning at anything approaching full capacity, and have, or are taking steps to alleviate port congestion in the near future, such as the Alameda Corridor in Southern California, which allows trains to be loaded right on the piers and efficiently moved directly to the main lines;

2. Alternatives to the California ports are being developed in Mexico, Canada and through the expansion of the Panama Canal and in the Gulf of Mexico and Eastern regions of the United States, lessening demand for overland transit through the Western United States to the East; and

3. Nevada is too close (less than the 500-mile limit "rule of thumb" used by Class 1 railroads such as UP and BNSF) to the ports for rail to be economically feasible, but too far for trucking to be competitive.

A concern in Nevada that has long-term impacts, but clearly must begin to be addressed immediately is development of additional infrastructure. Nevada needs to promote better highway access, such as I-11 from Phoenix to Las Vegas, and then on to Reno, the widening of I-15 between Las Vegas and Southern California, and the extension of State Route 805 from I-80 to U.S. 50. Utility infrastructure must also be addressed to open large tracts of land for future commercial development. The bright spot in the State's transportation infrastructure are McCarran and Reno/Tahoe International Airports. They are both first class facilities with capacity to increase air cargo operations.

Though a traditional inland port may not be viable for Nevada for the foreseeable future, the responses still point to a bright future for a Logistics and Operations Cluster in the state. It was felt that a key logistics subgroup that Nevada can pursue with some success is that of e-commerce, fulfillment and/or reverse logistics centers. The state's telecommunication network, package delivery and airport infrastructure make this logistics segment a very good target on which to focus Nevada's resources. Additionally, Nevada workforce's skill set is reasonably aligned with these subsectors. This was presented in further detail in Section IV above.

More importantly, the majority of the respondents directly associated with the logistics industry expressed a willingness to work closely with the state's private and public sector economic development community in developing a strategy to make such an effort successful.

Interviews: Logistics Cluster

Distribution is customarily the first activity a company places in a remote location some distance from its manufacturing or administrative operations. Consequently, logistics is the "low hanging fruit" that can provide Nevada with the pathway that will attract the focused attention of corporate America on the state. It can allow Nevada to showcase its commercially-oriented attributes, both in terms of geographical location and political commitment, and prove its claims of being one of the most business friendly environments in the U.S. Companies can "experiment" with an initial investment in the state, thereby discovering first-hand its access to markets, labor productivity, regulatory procedures and quality of life.

Logistics is the "low hanging fruit" that can provide Nevada with the pathway that will attract the focused attention of corporate America on the state.

We must think of Nevada as a place from which to first serve the West and second to serve the Pacific Rim, logistically.

E-Commerce/Fulfillment Centers

There is a world-wide shift from retail to e-commerce. The importance of distribution is increasing. As one of the fastest growing business sectors in the world today and Nevada must provide a safe haven for the e-commerce company.

Reverse Logistics

Reverse logistics is rapidly becoming a component of many companies' supply chain strategies and can provide an excellent opportunity for Nevada to attract jobs that demand a skill set significantly above the average warehouse occupation.

Manufacturing Component

Light manufacturing is probably the best industry group to seek out. It customarily has shipping requirements that can take advantage of dead-heading opportunities,

(the discounting of commercial transportation to avoid non-revenue situations contributed to excess supply over demand), while matching the current education levels of a significant portion of Nevada's workforce.

Market Perspectives

Not only are the California ports no longer operating at full capacity, but new development in transportation systems, such as the widening of the Panama Canal, and increased investments into competing ports, such as those in Mexico and the Gulf Coast, as well as the increase in California regulatory oversight and associated costs of doing business, do not provide the opportunity for alternative port facilities in Nevada to be viable for the foreseeable future.

Nevada is in the middle of an 11-state western region that encompasses 73 million people, or 23 percent of the U.S. population. This central location makes Nevada a natural distribution hub.

CDW

CDW just completed an in-house location analysis and has indicated that if it had to make its decision today, it would still choose Southern Nevada.

Bally's Technologies

Bally sees rail as being unpredictable, while trucking allows it to keep a close eye on its product movements to the ports. Bally needs the predictability and precision that trucking offers. It must know that its products will arrive in time for the sailing of the designated ship.

Urban Outfitters

UO also had a great experience with local government and Economic Development Authority of Western Nevada ("EDAWN"), and found Nevada very easy with which to do business. So much so that UO is in the final stages of opening a new 495,000-square-foot fulfillment center, which will create 130 initial jobs. This building is also a purchase.

Interviews: Inland Ports

At first glance, Nevada's proximity to California, its deep water ports and market demand, presents a tempting target for the development of inland ports and the original concept on which this study is based. However, the interview responses to this concept contradict the notion that Nevada can serve as an inland port site. Not only are the California ports no longer operating at full capacity, but new development in transportation systems, such as the widening of the Panama Canal, and increased investments into competing ports, such as those in Mexico and the Gulf Coast, as well as the increase in California regulatory oversight and associated costs of doing business, do not provide the opportunity for alternative port facilities in Nevada to be viable for the foreseeable future.

There is also a general consensus by the "demand-side" interviews RCG conducted that one of Nevada's primary attributes for attracting business as being adjacent to California, with its large population, is actually detrimental to the development of an inland port in Nevada. This coupled with the relative isolation of Nevada's two urban/population centers from other larger Western U.S. centers, and the primary competition of the already established logistics centers of the Inland Empire, Phoenix and Salt Lake City, makes inland port development impractical in Nevada for the short- and mid-terms.

West Coast Ports

California has a very high cost for doing business. Fees associated with doing business are expensive. The California Environmental Protection Agency makes doing business difficult, especially around the ocean and bay fronts. General regulations are also obstacles for business. Labor costs are very high and the Longshoremen's Union is one of the most powerful labor organizations in the state; work stoppages at the ports are frequent. Because of this, transportation and shipping companies have been seeking alternatives to the Southern California ports for some time now.

Competition

Houston will be the strongest competition to the Southern California ports. Its labor and land costs are much less expensive, and there are significantly less government regulations than California. With the modifications to the Panama Canal it may be cheaper to rail containerized product all the way back to Southern California from Houston than from the Southern California ports, because of the costs of doing business in California.

Alameda Corridor

The Alameda Rail Corridor was constructed to relieve the Ports of Los Angeles and Long Beach, and is working well at this time. It currently handles about 10,600 TEUs per day from the two ports.

Transportation is the single largest variable, by a wide margin, in the site location process of a logistics facility. Yet, this piece of the puzzle is the most complicated and dynamic of all the components, changing its shape with fluctuations in the price of fuel and/or regulatory changes.

U.S. Inland Ports

Alliance Texas near Forth Worth, Texas is a massive development that is 15 years old, and encompasses thousands of acres of unprotected and relatively flat land. These physical and entitlement characteristics, allow for efficient development of large warehouse buildings, rail facilities and runways, topography and geography that Southern Nevada cannot easily replicate. Both the BNSF and UP railroads have mainline tracks running adjacent to Alliance Texas. Alliance Texas is located within one mile of I-35, which runs North and South from Mexico to Canada. The project is also a short distance from I-20 & I-30, which are major east-west highways crossing the country. This allows direct, multi-directional freight flow. Alliance Texas also has a large capacity, currently operating, non-commercial airport, which allows for unrestricted air cargo handling.

Inland Ports in Nevada

RCG's research indicates that there is a lack of such demand in Southern Nevada to justify an inland port for the foreseeable future. This is true, not only in the lack of demand, because of the size of the population and relative isolation from other population centers, but also in a lack of exports.

Nevada Competition

Salt Lake City and Phoenix are significantly ahead of Northern and Southern Nevada in the development of logistic centers and multi-modal facilities. The costs associated with trying to duplicate these facilities in Nevada are cost prohibitive.

The various modes of transportation are also complex. The costs associated with each mode: pipelines, water, rail, truck and air, are directly inverse to their flexibility. In other words: the more cost efficient a mode of transportation, the more rigid its spatial network.

Interviews: Transportation

Transportation is the single largest variable, by a wide margin, in the site location process of a logistics facility. Yet, this piece of the puzzle is the most complicated and dynamic of all the components, changing its shape with fluctuations in the price of fuel and/or regulatory changes. Not only does transportation react to market forces, but it is highly restricted by existing infrastructure. And, this infrastructure is primarily static and extremely expensive to develop, not only in terms of materials, labor, route selection and regulatory process, but also in the time it takes to complete a project from identifying a need to practical use.

The various modes of transportation are also complex. The costs associated with each mode: pipelines, water, rail, truck and air, are directly inverse to their flexibility. In other words: the more cost efficient a mode of transportation, the more rigid its spatial network.

The responses gathered during the interview process reflect this complexity. While the responses were universal that a large rail-served inland port or logistics center is not a viable option for Nevada, because of its near proximity to the California deepwater ports and lack of outbound rail demand, there were apposite views on the level of service and capacity of the state's rail systems.

While there were no negative responses to the capacity or service levels offered by the trucking industry in Nevada, it is also universally viewed that in this instance, Nevada is too distant from the California deep water ports to be viable as an inland port via drayage. However, it does appear that trucking offers the best opportunities, and options to develop and broaden Nevada's "Logistics and Operations" cluster.

The two international airports in the state, McCarran and Reno/Tahoe, are not operating anywhere near capacity for cargo movements, and may present significant opportunities to expand the logistics cluster in Nevada.

General Interview Comments

Transportation costs are the single largest factor to consider in the location of logistics facilities, and account for over 50 percent of total costs to the industry.

Rail Efficiencies

Sites in Northern and Southern Nevada are too close to the ports in California, and do not provide the railroads any real benefits as a logistics centers. An inland port only 200-300 miles away from California ports is difficult for the railroads to serve. It is not efficient for the railroads to stop and start so close to these ports. The UP is not likely put its efforts into establishing a facility 300 miles from the ports, especially when its business model, which utilizes Salt Lake City, is so efficient for them.

Current Rail Capacity in Nevada

The lack of rail facilities is the biggest obstacle to inland ports in Nevada.

Rail Demand

Nevada is a consumption-based market, not an export-based market. By example, the Tucson/Phoenix area exports some amount of agricultural product predominantly by truck. Salt Lake City, which has been a consistent market for UP, is served by Class 1 rail from all the deep water ports on the West Coast. It also has an excellent North/South/East/West interstate system. For these reasons, it is one of many inland hubs for UP for domestic shipments from the East. However, the UP does not currently provide intermodal service from the East Coast.

Rail Facilities

A trans-load facility was recently developed in Elko and has had a significant economic impact on the economic diversification of the region. The Elko trans-load facility is primarily utilized for bulk items. Fuels, recycling and meals are chief inbound products, with mining equipment and pipes for the major pipeline project as well. Outbound is primarily mined materials.

Future Rail Efforts

The State needs to investigate the demand-side of rail of rail services. Prior to this investigation, the State of Nevada should engage the UP and BNSF to determine exactly what information the railroad requires to make decisions on type and frequency of service.

Truck Efficiencies

There is a 10-hour limit for over-the-road truckers, which is a negative factor for both the Las Vegas and Reno areas. This time-limit does not allow a truck to load at the California ports, travel to Las Vegas/Reno, unload and get back to home-base in California. Truck companies do not like, and probably will not pay overnight wages for drivers. And, this 10-hour limit may be reduced to 8 hours in the near future.

Truck Costs

The cost of drayage (moving containers by truck from a seaport to its final destination) is an impediment to logistics growth in Nevada. This is the number/cost barrier between Nevada and California. Drayage costs from the Port of Oakland to Reno are $1,000/container, but only $400 to Lathrop (essentially, Stockton, California). Drayage from the Port of Los Angeles to Las Vegas is $800/container, but only $175-$275 to the Inland Empire.

Trucking: General Interview Comments

Mexico will be able to capture much of the West Coast shipping from deep water ports, but there is problem with the current crime situation in the country. Many trucking companies will only send “stripped down” versions of their trucks into Mexico so as not to have parts stolen, and drivers must stay with their trucks at all times.

Air Capacity

Both McCarran and the Reno/Tahoe airports have a FTZ designations, 24/7 customs ability, with capacity for their operation to grow. Both airports integrate parcel delivery companies like FedEx, UPS and DHL into their operations.

McCarran International Airport

Most inbound and outbound cargo travel is in the belly of passenger planes. Inbound is primarily fresh food and flowers, and the single largest outbound is mail order prescription medicine sales (i.e., Medco). Because McCarran has many direct flights to markets all over the world, it is ideal for high-value, low-weight and volume products that can be accommodated forward fulfillment centers and reverse logistics facilities.

Reno/Tahoe International Airport

Reno/Tahoe has developed statistics and a presentation as to its capabilities and the cost savings associated with air cargo utilizing Reno as a cargo hub over LAX, which currently handles the vast majority of dedicated cargo aircraft with good

bound for the West Coast. RNO is currently is an official diversion airport for Air China Cargo. Its efforts have resulted in negotiations with an airfreight company to bring in dedicated cargo planes direct from China.

Interviews: Infrastructure

Infrastructure, though not glamorous, is the life blood of economic development both at the micro- and macro-levels. Without the correct types and capacities, the best laid plans to attract private capital investment and employment opportunities will never be realized. Land values, and consequently, government revenues, are a direct function of infrastructure location. Yet this component, which holds the key to an area's or region's economic prosperity, and should be designed and implemented with the highest levels of intergovernmental cooperation and coordination, is often the most politicalized. Perhaps one reason for this is the cost of infrastructure, which can be daunting, especially for a public sector with limited resources.

Land values, and consequently, government revenues, are a direct function of infrastructure location. Yet this component, which holds the key to an area's or region's economic prosperity, and should be designed and implemented with the highest levels of intergovernmental cooperation and coordination, is often the most politicalized.

Though the interview responses were at times diametrically opposed on specific components of infrastructure, such as the benefit associated with the construction of I-11, there was a consensus that one of the biggest hurdles facing Nevada's quest for economic diversification is the lack of sufficient infrastructure. In addition, political infighting and regional power struggles were seen as standing in the way of any meaningful advancement in addressing the state's infrastructure needs. It was thought that transportation-related infrastructure, primarily highway and rail, needs to be addressed at the State-level, while roadways and utilities must be wrestled with locally, but include multi-jurisdictional coordination.

General Interview Comments

Infrastructure or the lack thereof, is the single biggest physical impediment to economic development in Nevada.

Highways

I-11 must be completed to give Nevada a competitive edge in logistics and manufacturing. It is the only missing segment in the Canamex Corridor, which runs along I-15 and I-17.

To compound matters, the interview responses point to a "chicken and egg" cycle in which no new speculative buildings are being constructed, yet potential economic expansion from companies exploring a location in the state is stymied due to a lack of readily available commercial space suited to the requirements of these companies.

Rail

The cost of rail infrastructure is very expensive: approximately $110/linear foot, not including the cost of land, $250,000 for main line switch and $15,000-$25,000 for regular switch.

Interviews: Real Estate

To compound matters, the interview responses point to a "chicken and egg" cycle in which no new speculative buildings are being constructed, yet potential economic expansion from companies exploring a location in the state is stymied due to a lack of readily available commercial space suited to the requirements of these companies.

A state such as Nevada with large amounts of open space can identify many locations with enough land to permit the development of even the largest inland ports, logistics centers or distributions centers. From a real estate standpoint, at issue is identifying those locations that have all, or the majority of, the key attributes identified in previous sections of the report. RCG's interviews identified a

handful of locations in both Northern and Southern Nevada, which have the potential to become significant logistics centers.

Buildings Demand

The last big box speculative building in the Las Vegas Valley was built in 2008. There are no speculative buildings being built in the Reno area today. The last to be built was in 2008. There is no one in the real estate industry today that would advise clients to build a speculative building of any size in Nevada.

Inland Port Requirements

There are many attributes that are required for a large rail-served inland port, logistics or manufacturing center, the most important of which are: the land parcel dimension contiguous to the track has enough length for the intermodal train to completely clear the main line (which is usually 10,000 feet of siding capacity); highway access, preferably within a short distance of an interstate highway; that portion of the site, which will contain rail access, should not have more than a One-percent grade; and the site must be environmentally and politically acceptable.

Interviews: Workforce Development/Education

The overall comments made during the interviews were very positive about the workforce in Nevada, though as noted earlier, there is a perception, both in the North and South that the logistics workforce in Reno is of a higher quality than that in Las Vegas. However, the general consensus was that the State of Nevada should do more to promote the quality of the workforce in Nevada to prospective companies, or highlight its benefits in targeted marketing campaigns. There was also a general feeling that the State does not understand the benefits or impacts that logistics have on the Nevada economy.

Lamenting the demise of the Supply Chain Management Program at the University of Nevada-Reno was universal in the North and South. Depending on who you spoke with, the program was ranked either the third or fifth best logistics program in the country, and emotions ran high about how inconceivable was its termination. The Supply Chain Program at Truckee Meadows Community College is viewed favorably.

The general consensus was that the State of Nevada should do more to promote the quality of the workforce in Nevada to prospective companies, or highlight its benefits in targeted marketing campaigns.

General Comments

The State should stop downplaying logistics jobs. These jobs still represent corporate America making investments in Nevada.

Impact of Logistics Jobs

As a rule of thumb, 60-65 jobs are created for every 200,000 square feet of building in the logistics sector. When the 450,000-square-foot mark is reached, the jobs increase to 150.

Workforce Training

Logistics primarily needs technical skills. Entry level engineers, TLC logic people, control systems, basic technicians to work on the material handling machines, etc., which means a focus on community college curriculums.

Higher Education

It is especially important that the State align higher education with what is required to achieve the Governor's Office of Economic Development's stated goals. Higher education funding should be tied to how well it brings jobs to Nevada and educating the workforce required to do those jobs.

Interviews: Nevada Government

There were no interviewees that thought working with State of Nevada was a burden. High praise was given for the state's regulatory environment and the ease with which business is conducted. These comments came from established companies, companies which have recently moved to the state, or are in the process of moving to the state, and perhaps most important of all, existing companies, which have made a decision to make a substantial additional investment in Nevada that will result in job creation. Statements were made that Nevada must remain vigilant not to lose its edge.

High praise was given for the state's regulatory environment and the ease with which business is conducted.

Among local governments Storey County is taking a leadership role relative to "business friendliness" according to several of the interviewees from the Northern Nevada. Storey County was cited for not only having an attitude that promotes public/private sector cooperation, but policies and regulations that act as important incentives in bringing companies to the Reno area.

Generally, opinions from both Northern and Southern Nevada interviewees were that there is urgency regarding modifying the State of Nevada's incentive programs. First and foremost one recommendation is to base incentives not on a statewide wage average, but those wages pertinent to specific clusters. Criteria should also be developed that will provide incentives for wages in an individual industry cluster to rise steadily over time, and reward companies based on their total economic impact to Nevada.

General Comments

A political structure that is accessible is unique and sets Nevada apart from its competition.

Inland Port Administration

Some public authority has to oversee the process of establishing an inland port designation, but there should not be just one authority for the whole State. Port authorities should be structured to function on a localized basis, because local businesses and community leaders know what they need.

Regulations

Some interviewees felt very strong about taxing e-commerce. The forthcoming Nevada tax on e-commerce will be a detriment to the state's ability to compete with surrounding states. It will kill job growth in this sector. Even California, which has an e-commerce tax, negotiated a deal with Amazon to waive the tax for them, which resulted in Amazons decision to expand in California with 600 jobs. Amazon was looking at both Northern and Southern Nevada, but will now stay in California. Nevada must study the effects the new tax will have on our ability to recruit jobs to Nevada in this fast growing sector. It will only drive companies away, and Nevada will forfeit any leadership in this sector if we tax e-commerce. The State should not try to tax a global economic entity like e-commerce on a regional basis. This should be done at the federal level.

Storey County

Storey County moves the construction process along relatively quickly. A company can get a building permit in 30 days, and know all its costs up front. The County redesigned the elements of a special use permit and made it a component of the business license. The county offers on-line plan reviews; phases all stages of the construction process for large building developments; will process special use permits within 30-45 days and will send County staff, Planning, Fire, Engineers, etc., to visit an existing facility, regardless of where it's located, at the company's expense, to better understand the type of facility to be built. This creates a much better understanding, and better working relationship, than just reviewing plans and construction documents. A good example of its effectiveness is the Wal-Mart facility, 2/3 of which is refrigerated and freezer space: it took only six months to

complete all County permits and complete construction from the close of escrow on the raw land to receiving the first food delivery.

Incentives

The State of Nevada should reward companies for achieving milestones, not try to pick winners on criteria, based on today's benchmarks. The State must develop a comprehensive plan and incentives that align to achieve the goals that will be set out. Must be aligned to the interests of the people.

The good news is that many of the companies interviewed showed an eagerness to actively participate with the State in future efforts to develop and promote the logistics cluster.

Nevada must protect against special interests groups having their own agendas. The State of Nevada cannot allow for special interests that might have a negative impact on job creation, because they do not want competition.

Interviews: Collaborations

Interview responses in this section look to a future that would bring together the public and private sectors in advancing a common goal within Nevada. It starts with the most basic step toward developing a comprehensive economic development strategy: objective research. The majority of those interviewed felt that the State of Nevada could do a much better job in the collection, analysis and most important of all, dissemination of data and information. It was surprising to find out how many companies found it difficult to obtain reliable and easy-to-use information from many of the State of Nevada's agencies.

The good news is that many of the companies interviewed showed an eagerness to actively participate with the State in future efforts to develop and promote the logistics cluster. Several respondents wondered why the State had not already reached out to the logistics community in light of its knowledge and expertise on

the subject. It also came as a surprise that parcel delivery companies, like FedEx and UPS, have the depth of service to conduct logistics studies for significant customers. In this scenario, these companies can take on the role of a site location consultant.

In terms of marketing, the majority of interviewees felt that the State of Nevada was missing the mark on telling its story, though as with other broad issues, opinions differed on the best methods to accomplish the desired results. For example, some felt the State should reinforce its efforts the competitive disadvantages of California in order to attract disgruntled companies from that state, while others saw that that strategy was short-sighted and insisted Nevada's focus should be targeted toward promoting its strengths, while focusing on global opportunities. Most interviewees were in agreement that a marketing emphasis should be placed on the companies already located within Nevada.

Research

Nevada should realistically focus on the specific companies that are a good fit for the state and then develop a target market campaign around that information.

Partnerships

One company stated that existing logistics companies in Nevada have resources, such as knowledge and expertise about the logistics sector, as do industrial engineers and transportation engineers that can help the State, but have never been asked to participate in economic development discussions until this year.

Strategies

Nevada can create a business environment to attract designated clusters. We have done it in the past with gaming. It just takes a total and focused commitment by both the public and private sectors. Legislation must be created to help foster a fledgling industry, not stand in its way with regulations. Follow the blueprint that

was created with the resort industry that made Las Vegas the gaming capitol of the world.

Marketing

The State of Nevada needs to better market the companies that are already in Nevada. Companies considering moving to Nevada will often investigate which companies are already in the state and then explore a location here, because they think there must be good reasons for their competition to be operating here.

The basis for any business venture is to address a need or demand in the marketplace. Without this demand no reasonable amount of government support or financial incentive will lead to long-term sustainable business activity, which is essential to attract private sector capital investment and employment creation.

Nevada is in a global battle. The State of Nevada should not be comparing itself to California, but to places like Ireland, Singapore, Vietnam, etc. This is the competition of the future. Additionally, if the California economy doesn't do well, then Nevada's economy doesn't do well either.

Conclusions & Recommendations

Demand

The basis for any business venture is to address a need or demand in the marketplace. Without this demand no reasonable amount of government support or financial incentive will lead to long-term sustainable business activity, which is essential to attract private sector capital investment and employment creation.

Preliminary research conducted for this study found that the Ports of Los Angeles, Long Beach and Oakland ranked #1, #2 and #7 in North America, respectively, in terms of port volumes in 2010. Further, our research revealed that, while the top 11 ports in the world grew by an average of 14.7 percent between 2009 and 2010,

the Ports of Los Angeles and Long Beach combined grew by only 8.1 percent, with Port of Oakland growing by 13.6 percent. When compared to Seattle, which grew by 36.8 percent during the same time period, it seems reasonable to speculate that the relatively low growth for the California ports was due to congestion; indicating a potential for inland services in both Northern and Southern Nevada.

However, the interviews conducted for this study, coupled with additional secondary research, concluded; an inland port in Nevada was not viable in the near- and intermediate-terms.

For rail to be cost-effective it must move at least 500-600 miles or the cost of loading and unloading trains makes trucks the more effective mode of transportation.

Paradoxically, Las Vegas and Reno are both too far from the California ports to make trucking containers from those areas feasible as well.

Capacity

Because transportation costs are the single largest expense for inland ports/logistics centers, accounting for over 50 percent of total costs, this factor becomes the most vital component in the site location analysis. While Nevada has a transportation network that has allowed the logistics cluster to take root in the state, both primary and secondary research indicates it is not at a level to support an inland port, or large logistics center at this time.

Rail, the most cost effective method to move large amounts of goods inland from the seaports, does not view either Northern or Southern Nevada competitive from a transportation cost perspective. Nevada's two large population centers, Las Vegas and Reno, are too close to the Ports of Los Angeles/Long Beach and Oakland, respectively. For rail to be cost-effective it must move at least 500-600 miles or the cost of loading and unloading trains makes trucks the more effective mode of transportation. Furthermore, large logistics centers prefer to locate where several Class 1 rail

mainlines converge, offering North/South and East/West access; preferably operated by multiple railroad companies.

Paradoxically, Las Vegas and Reno are both too far from the California ports to make trucking containers from those areas feasible as well. The costs of drayage (moving containers from the port to the final destination) are made more costly to inland centers in Nevada than the established logistics areas in California. For example, drayage from the Port of Oakland to Reno is $1,000 per container, while the cost to Stockton is only $400. From the Southern California ports to Las Vegas, the drayage is $800, but the cost to the Inland Empire is only $175 to $275. The Interstate highway system in Nevada is yet another hurdle to overcome. As with railroad networks, inland ports and large logistics centers locate where there is a convergence of Interstate highways that lead to all four points of the compass. Both interstates (I-80 and I-15) in Nevada traverse in an East/West direction only. This is less of an issue in the Reno area, because I-5, the Interstate spine that provides access to every West Coast market from Seattle to San Diego, is just over 100 miles from Reno via I-80. This I-80/I-5 system allows one-day package delivery and second-day truck service to a population of over 50 million. This is the primary reason Reno has a developing, but dispersed logistics cluster with no strong central focus today.

There are many attributes in the state that can prove to be strong magnets to sub-groups within the larger cluster.

Southern Nevada's situation is even less convenient for truck transport. While I-15 provides a direct link to the Southern California markets with overnight service, it is nearing capacity, and at times surpassing it, resulting in stop and go traffic at key chokepoints. And, Southern California is the only market that can be easily reached. Trucks must travel long distances from the Las Vegas area via the interstate system before they can travel to the South-central and Southeast markets in the country. That said, Federal legislation is currently moving forward on

the planning for the I-11 connection between Las Vegas and I-40 and I-10, but it will be some time before such a link is funded/realized.

There are many attributes in the state that can prove to be strong magnets to sub-groups within the larger cluster.

Recommendations

The Economics

A key component of a successful logistics center is achieving a balance between inbound and outbound shipments. Too much of an imbalance results in higher transportation costs, because whatever mode being utilized, rail, truck or air, is only producing cash flow in one direction.

The State should consider revamping its seven key clusters by combining manufacturing and logistics into a single supply chain strategy.

This concept was referenced time and time again throughout the interview process. Many of those interviewed commented that Nevada and especially the Las Vegas area, produces very little, and therefore has very little outbound traffic. This is a limiting factor in attracting a logistics center that would create even more inbound traffic and, thereby, adding to the imbalance.

To truly understand the potential of these two clusters, logistics and manufacturing, they must be studied and viewed as a continuum in the supply chain from raw material to market. The State should consider revamping its seven key clusters by combining manufacturing and logistics into a single supply chain strategy. While this concept broadens the field and multiplies the variables that must be addressed, it will allow GOED to focus on subsectors that would play to Nevada's strengths. For example, "value added" manufacturing is an important subgroup for further investigation.

Bally's is at the center of a worldwide inbound and outbound logistics chain, but because of the value and uniqueness of its products, it is insulated from the transportation costs of a Southern Nevada location. Even though the company is at the center of this logistics chain, and incurs significant transportation costs, it does not even begin to approach the average 50 percent share of total costs experienced by the logistics industry as a whole. For Bally's taxes and regulatory costs, as well as labor and real estate costs, play a much larger role in their total costs; items that favor Nevada as a location.

According to the interview respondents, e-commerce is the fastest growing segment of the retail sector with a very strong growth potential. And the most important factors to this segment of retail are the strong telecommunications network and a low tax environment that Nevada offers.

E-commerce and fulfillment centers are another subgroup in the supply chain concept that plays to Nevada's competitive advantages. Once again, the goal is to identify groups or individual companies for which transportation costs are not the single largest factor in the location-decision process. According to the interview respondents, e-commerce is the fastest growing segment of the retail sector with a very strong growth potential. And the most important factors to this segment of retail are the strong telecommunications network and a low tax environment that Nevada offers.

Fulfillment centers also require more labor than typical warehouse operations, because of the personalized nature of the distribution process.

Fulfillment centers may provide Nevada with one of the best opportunities to attract capital investment and employment opportunities that are directly associated with e-commerce. Because these centers' outbound products are "zip code oriented", relatively small parcels, they too are less sensitive to transportation costs. The speed of delivery is more important than the cost of that

delivery. Fulfillment centers also require more labor than typical warehouse operations, because of the personalized nature of the distribution process.

In many instances, the mode of transportation utilized by these centers also play to another of Nevada's strengths; international airports. Distribution of high-value, low-weight and volume products are excellent commodities to ship by air and are less sensitive to transportation costs. Examples of successful companies using this business model in Nevada are Apple in the North, which distribute consumer electronics and Medco in the South, which supplies prescription medicines throughout the country. Additionally, both McCarran and Reno/Tahoe International Airports have significant capacity to expand their cargo operations.

To provide for a synergy of ideas and shared information, a task force should be established within the next several months and be initially comprised of companies directly involved in manufacturing and distribution of product.

It would also be worth the effort to investigate the potential to segment further into subgroups within the fulfillment center segment of the supply chain. Perhaps outbound operations in the North could focus on trucking as its primary mode, because of its central location in the 11-state western region and strong highway connections to the entire West Coast market. In the South, the focus could be on air, because of the superior number of direct flights to most major markets in the United States, and the ever expanding direct flights to Asia, Europe and Latin America.

Near-Term – Task Forces

The people who work and whose livelihood depends on supply chain management need to be sought out and their experience and expertise advanced to the greatest extent possible. To provide for a synergy of ideas and shared information, a task force should be established within the next several months and be initially comprised of companies directly involved in manufacturing and distribution of

product. This would include manufacturers, manufacturer distribution centers and 3PL companies.

After several meetings to organize goals and objects, transportation companies and education organizations, including workforce development (e.g. DETR), should be involved (Note: While the transportation sector should be represented by a sample of companies from the various modes, such as trucking and freight forwarders, it cannot be stressed enough the importance of bringing in every single package delivery company, FedEx, UPS, DHL, USPS, etc. Finally, the real estate community, brokers and developers and local governments should be added to the task force.).

It is also highly recommended that a Northern Nevada and a Southern Nevada "logistics/supply chain task force" be initiated. The economic spheres of influence, transportation systems, workforce composition, and even culture identity are of enough difference that one size does not fit all in Nevada's supply chain industry.

The most fundamental objective in the establishment of these task forces is to instill motivation within each individual member.

It is also highly recommended that a Northern Nevada and a Southern Nevada "logistics/supply chain task force" be initiated. The economic spheres of influence, transportation systems, workforce composition, and even culture identity are of enough difference that one size does not fit all in Nevada's supply chain industry. And though this organization might put some additional strain on the GOED's budget, it is also paramount, for the purpose of continuity, that the same member of the agency's staff coordinate with and potentially attend all meetings, north and south. All future efforts the State undertakes in promoting the supply chain cluster will emanate from the ground work laid by these task forces.

The most fundamental objective in the establishment of these task forces is to instill motivation within each individual member. Getting key individuals to attend the first meeting, especially if,

as recommended above, it is convened by the Governor, will be easy. Much more difficult, will be to keep these individuals engaged until the successful completion of the process. The management of these task forces by GEOD staff, or other designated party, must include outputs that not only allow the individual members a personal satisfaction of accomplishment, but also will directly benefit their business. The following list of topics, which the task forces can begin tackling are:

- Data Collection, Analysis and Dissemination
- Transportation Requirements
- Target Markets
- Regulatory Requirements
- Channels of Communication

It is also important to note that during the next year potential logistics center sites of 1,000 acres or more around the state should be identified and prioritized, and kept initially confidential.

Potential Site Identification

It is also important to note that during the next year potential logistics center sites of 1,000 acres or more around the state should be identified and prioritized, and kept initially confidential. Because of the type of geographic features prevalent in Nevada, it should be possible to identify a variety of potential sites of 1,000 acres or more. Consequently, a process must be developed to prioritize the sites.

The first step would be to utilize criteria and attributes identified by the task forces comprised of supply chain and transportation companies. Next would come a cost/benefit analysis of the six or seven top ranked sites in the North and South utilizing the criteria developed in the first step. This would not be a full feasibility study, (this would come at a later stage), but rather a review as to the sites' attributes (e.g., entitlements, master plan, preliminary offsite infrastructure, cost, potential private investment and employment creation).

Transportation Requirements

Based on the task forces' work, a priority list of transportation infrastructure and facilities would be established, along with the information required to develop an accurate picture of what the market demand might be for these facilities. For example, the railroad, as a member of the task forces, would be engaged to specifically delineate the exact information required to determine whether unit trains from the deep water ports in California to locations in Nevada, or if the development of a state-of-the art multi-modal facilities are feasible.

Even more critical to the future growth of the Reno-Carson City Metropolitan area is the construction of an interstate bypass around Downtown Reno.

In the North, air cargo companies should be engaged to determine the information required that would allow Reno/Tahoe International to become the pre-eminent inbound cargo airport in the Western United States. Even more critical to the future growth of the Reno-Carson City Metropolitan area is the construction of an interstate bypass around Downtown Reno. The vast majority of future growth resulting in increased commercial truck traffic whether taking place at the airport, Sparks, Stead area, TRIC, Fernley, Carson City, or beyond, will connect to I-80 East of the Downtown area. Despite the current improvements underway on I-80 through the Downtown area, the current freeway is likely to become a major bottleneck to the detriment of economic growth in Northern Nevada. Perhaps, the most feasible route for the bypass would be to the north of the City.

In Southern Nevada, the formation of a working coalition should be considered to include the States of Montana, Idaho, Utah and Arizona that would ensure timely funding for the proposed I-11 Interstate. This is important, not just because this roadway would link the only two metropolitan areas over 1 million populations not currently connected by an interstate, but because that segment is the missing piece of the Canamex Trade Corridor, and all communities and economies along the I-15, I-11 and I-17 corridors would greatly benefit from its completion.

Target Markets

With assistance from the task forces, a marketing campaign would also be formulated in this intermediate-term phase. Specific marketing activities and media outreach programs, which focus on the target markets that are identified and prioritized would be initiated at this step. Of course, a more simplified marketing program could take place early on in the process, based on the numerous comments during the interviews, that a program highlighting the existing companies in the state could prove most effective in attracting like companies.

For this process to work, open communication between the public and private sectors is most important.

Regulatory Requirements

For this process to work, open communication between the public and private sectors is most important.

Without a dedicated funding source, much like the Leisure and Hospitality Industry's room tax, any advances in economic development and diversification will be less effective and sustainable over the long-term.

Funding Requirements

Before meaningful progress can be made in the Logistics and Operations Cluster, or any of the State's economic development efforts for that matter, a reliable and stable source of funding must be identified for these activities. Economic diversification does not take place in the short-, or even intermediate terms, and even when stated goals and objectives are realized, the dynamics of the process requires an ongoing vigilance regarding future opportunities and threats.

Without a dedicated funding source, much like the Leisure and Hospitality Industry's room tax, any advances in economic development and diversification will be less effective and sustainable over the long-term. To ensure a competitive footing with our neighbors in Arizona and Utah, the State of Nevada should identify

how other programs throughout the country fund their economic development activities, and adopt the most applicable here in Nevada.

Long-Term

A very critical need identified during the interview process with both public and private sectors representatives, was infrastructure development. No matter how good the business environment, or the proximity to major markets, economic growth cannot take place effectively without an efficient and modern infrastructure. Infrastructure is a critical incentive and planning tool. It allows government to determine where and when development takes place in order to provide needed services in an efficient manner. And it can create or destroy the value of any particular parcel of land.

Nevada must develop a comprehensive understanding of what its future infrastructure requirements will be, based on strategies developed within the key industry clusters.

Nevada must develop a comprehensive understanding of what its future infrastructure requirements will be, based on strategies developed within the key industry clusters.

The supply chain cluster has already taken root on its own due to the market factors outlined in this report. With a concerted effort and a focus of public and private sector resources, it can become one of the cylinders in Nevada's economic development engine.

Final Thoughts

Nevada has a long but not insurmountable road ahead to sustained economic development. It has already taken the preliminary steps in identifying the key industry clusters to pursue. The "supply chain cluster" has already taken root on its own due to the market factors outlined in this report. With a concerted effort and a focus of public and private sector resources, it can become one of the cylinders in Nevada's economic development engine.

As was noted in interviewee comments both North and the South: Nevada has experience in developing a business environment to attract and grow designated clusters. A total and focused commitment by both the public and private sectors has resulted in Nevada becoming the leisure and hospitality capitol of the world. We can use the same techniques to attain equally successful results in developing a vibrant Logistics and Operations Cluster.

Inland Port Financing Options

While the viability of an inland port, as described herein, remains in question in Nevada in the short and intermediate terms, we still thought it would be beneficial to GOED to understand the variety of funding options that are available for economic-development-related transportation (single-modal and multimodal projects. Some of the funding options are private, while others are public (federal and state). And some maybe more applicable and/or more effective than others in providing the needed infrastructure to support a healthy supply chain cluster in Nevada.

Factors Influencing Private-Sector Investment

The most direct beneficiaries to an inland port project are typically the private-sector logistics providers—including commercial railroads, trucking agencies, airfreight carriers, etc.—who will be housed in the new facility. A well-planned inland port should improve the logistical infrastructure available to these firms while lower their shipping, storage and processing costs on a per-container basis. As such, it might seem intuitive that private investment would be immediately forthcoming from these stakeholders to finance the continued development of inland ports along all high-capacity corridors with dedicated links to traditional ports of entry.

The development of inland ports has accelerated, particularly since the 1970s[1] for a number of reasons. First, inland ports and other inter-modal hubs have become an

integral component of an increasingly integrated and capital-intensive national network of freight movement. In addition to streamlining trans-national freight movement, these hubs allow goods to be transferred from high-capacity shipping modes, including air and rail, to lower-capacity modes, like trucking, for local delivery in the region of a targeted market.

In short, private logistics companies have viewed inland port development as a way to remotely, and cost-effectively, maximize the freight capacity of traditional ports of entry.

Among the factors that private actors must consider when deciding on infrastructure investment is which form of investment will produce the greatest return for the marginal dollar.

Second, as the traffic at freight harbors and other traditional ports of entry has begun to meet capacity limitations, logistics providers have looked to inland ports as a means of outsourcing certain value-added port functions to remote locations. With an inland port, logistics providers can offload shipping containers at the harbor or other point of entry and ship them by rail to the inland port for processing, storage and further distribution. In simple terms, an inland port offers the opportunity to serve as the ultimate "satellite terminal."

The research demonstrate that inland ports are typically located in outlying locations that are along existing commercial shipping routes and are within close proximity to major urban markets. A common characteristic of these sites is that land acquisition prices are significantly below those of the coastal real estate adjacent to a freight harbor that would be required for harbor expansion. By expanding freight capacity with an inland port, as opposed to harbor expansion, logistics providers can also avoid additional dredging and port maintenance charges.

In short, private logistics companies have viewed inland port development as a way to remotely, and cost-effectively, maximize the freight capacity of traditional ports of entry.

Among the factors that private actors must consider when deciding on infrastructure investment is which form of investment will produce the greatest return for the marginal dollar.

Key to determining a firm's potential return on investment is the quality of infrastructure already in place:

How serviceable is the existing high-capacity rail line?

Will it require repairs in the near future?

How serviceable are the neighboring highway network and access routes?

Are electric and water connections readily available?

To determine an appropriate mix of user fees and/or special tax assessments that should be dedicated to financing an inland port project, Nevada policymakers will first need to delineate the level of public versus private benefit associated with a proposed project.

This recognition presents Nevada policymakers with a challenge: While clear public benefits can result from the construction of an inland port, and while policymakers may rightfully want to encourage this type of infrastructure investment, signals that policymakers will make public dollars available to help finance the cost of an inland port may affect the financial commitment of private investors.

A typical method for state and local governments to recoup the publicly borne development costs from private beneficiaries, for instance, is to charge user fees to facility occupants. More than 80 percent of the $2.4 billion in construction costs for Southern California's Alameda Corridor project, for instance will eventually be paid through per-container fees assessed on the facility's users ($30 per 40-foot full container, $15 per 20-foot full container and $8 per empty container moving

through between the Port of Long Beach and the inter-modal yard in downtown Los Angeles). These fees will be used to retire nearly $1.2 billion in bond issues, $400 million in federal loans and $394 million in port authority contributions.[2]

In some highly competitive freight transportation regions, however, port authorities have been reluctant to pass development costs onto facility users for fear of damaging the facility's commercial viability.

When the potential benefit to private actors is judged to outweigh the public benefits of a project, then it will be appropriate to rely more heavily on user fees or special tax assessments, such as truck registration fees, that apply more narrowly to the population of benefit.

In other cases, construction costs have been recouped through special tax assessments instead of user fees.

To determine an appropriate mix of user fees and/or special tax assessments that should be dedicated to financing an inland port project, Nevada policymakers will first need to delineate the level of public versus private benefit associated with a proposed project. If policymakers determine that the public benefits accruing from economic development, improved air quality or reduced traffic congestion outweigh the project's potential benefit to private entities, then it will be more appropriate to rely on public options, such as a local sales-tax levy. Such public options also require significant acceptance by public stakeholders including the local community.

When the potential benefit to private actors is judged to outweigh the public benefits of a project, then it will be appropriate to rely more heavily on user fees or special tax assessments, such as truck registration fees, that apply more narrowly to the population of benefit.

Federal Funding Sources

Legislative History*

As noted, federal funding has historically been an important element of both inland port and major transportation project development. Thus, not all of a project's financing costs need be provided by private sources or state and local governments. Over the past two decades, federal policymakers have taken an increasingly active role in supporting inland port development with federal dollars. Beginning with the Intermodal Surface Transportation Efficiency Act of 1991, federal grants became available to help finance a variety of inter-modal projects, including those for passengers and freight.

It is important for Nevada policymakers to note that separate proposals to replace SAFETEA-LU with a new multi-year surface transportation bill have emerged in the House of Representatives and the Senate. In March 2012, the Senate voted in favor of the Moving Ahead for Progress in the Twenty-First Century Act ("MAP-21+, or "S. 1813") while, a month later, the House approved the American Energy & Infrastructure Jobs Act (H.R. 7).

It's worth noting that the share of federal funding available through most federal transportation programs is higher for Nevada than other states due to the high concentration of federally controlled land within the state. As a result, federal financing is available to cover 95 percent of project costs through many programs, whereas the standard federal contribution is only 80 percent.[3]

Evaluating the Options

Based on the above review of the many federal surface transportation funding programs and their requirements, it appears that few funding programs can be

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* ***Note:*** *This section was written to reflect the state of legislative affairs at the time of drafting this report. However, in the time since, MAP-21 has been signed into law and provides a new, multi-year authorization for all federal surface transportation programs. The final version of that legislation varies slightly from the version outlined in this analysis and, due to these facts; its implementation will alter the outline of federal funding programs offered in this report.*

applied as specifically directed inland port sources. However, several programs can be applied and have been applied as individual components within a well-planned and comprehensive inland port project.

If, for example, a proposed inland port project is to include freight capacity improvements at an airport included in the National Plan of Integrated Airport Systems ("NPIAS"), then that component of the project might be eligible for a grant from the Federal Aviation Administration's Airport Improvement Program ("AIP"). If rehabilitation of a neighboring rail yard is included within the inland port project's master plan, then no portion of the AIP grant money can be applied toward that purpose. However, subsidized loans and/or loan guarantees might be available for the rail yard component through the Rail Rehabilitation and Improvement Financing ("RRIF") program.

It is particularly important for Nevada policymakers to note that Congress created a highly flexible new funding mechanism for multi-modal developments, including inland ports, when the Transportation Investment Generating Economic Recovery ("TIGER") program was included as a provision of the American Recovery and Reinvestment Act of 2009.

Surface Transportation Program ("STP") grants can be applied broadly towards an inland port project, but these funds are apportioned to the states according to a statutory formula and are intended to fund all Title 23-eligible transportation projects. Hence, the use of STP grants for an inland port project will leave fewer federal resources available for roadway improvements and other needed projects.

Subsidized financing and loan guarantees available through TIFIA can be applied broadly to an inland port project and offer flexible repayment terms. Moreover, through both prospective, new, multi-year transportation bills, Congress has signaled a willingness to significantly expand the funding for this program.

However, TIFIA loans can only be used to finance up to 33 percent of a project's costs.

It is particularly important for Nevada policymakers to note that Congress created a highly flexible new funding mechanism for multi-modal developments, including inland ports, when the Transportation Investment Generating Economic Recovery ("TIGER") program was included as a provision of the American Recovery and Reinvestment Act of 2009.

Each federal funding program carries a unique set of conditions and limitations, as well as a unique application process and evaluation criteria. If Nevada policymakers are to pursue federal participation in a proposed inland port project within the state, they should carefully evaluate these limitations in order to come up with a total funding package that is appropriate to the project's purpose and its perceived benefits to public and private parties.

A critical advantage of SIB financing is that discretion is given to state policymakers to determine which projects are among the highest priority to receive financing within their state. State authorizing legislation is required to create an SIB.

Leveraging State Transportation Dollars

Beyond traditional financing instruments, such as revenue bonds, a wide variety of innovative financing techniques is available to states for infrastructure development. Some available options, which have been authorized by Congress, allow states to further leverage their transportation investment dollars with federal and private resources.

Most states, for instance, have created state-infrastructure banks. These are revolving funds designed to offer flexible financing and loan support options at subsidized interest rates for transportation-related infrastructure projects, including inland ports.

A critical advantage of SIB financing is that discretion is given to state policymakers to determine which projects are among the highest priority to receive financing within their state. State authorizing legislation is required to create an SIB.[4]

Policymakers in some states have considered the SIB finance mechanism so advantageous that they have created accounts within their SIBs to be capitalized entirely with state dollars. Florida, Georgia, Kansas and Ohio all operate state-capitalized SIB accounts. The advantage of state-capitalized SIBs is that they allow policymakers to leverage state transportation dollars with private capital free of all federal requirements or limitations.[5]

Among the most important decisions to be made by Nevada policymakers concerning a potential inland port project is how the project will be conceived, managed and executed, from birth to completion.

Another federally approved infrastructure financing instrument for states is the Grant Anticipation Revenue Vehicle ("GARVEE"). GARVEEs were authorized by the National Highway System Designation Act of 1995 to allow states or SIBs to bond against future expected federal-aid apportionments in order to provide up-front capital for any Title 23-eligible transportation project. In the context of an inland port, issuance of a GARVEE would provide up-front capital that would be repaid, over a period of years, with a dedicated portion of the State of Nevada's annual STP apportionment.

Existing State- and Local-Government Finance Mechanisms

The Nevada Department of Transportation ("NDOT") offers financing, through a number of programs, which might be applicable to an inland port project. First, the *Project Submittal Program* offers discretionary grants to projects that may not meet the requirements for federal funding or that have difficulty securing federal funding. Projects are considered on an *ad hoc* basis and are subject to budget limitations.

Second, the *Highway Safety Improvement Program* can consider safety improvement projects at grade crossings—a likely component of any proposed inland port project—for inclusion into the State's *Annual Work Program*.

Third, the *Local Public Agency Program* allows local government entities that administer transportation projects with federal funding to complete such work on a reimbursement basis, with NDOT oversight. If an inland port project is administered by a local government agency, such as a port/airport or transit authority, and receives federal funding, this program could be used to provide important administrative flexibility.

Project Planning and Institutional Coordination

Indeed, an important lesson for policymakers is that, as with project finance, there is a high degree of flexibility with regard to project planning and execution.

Project Sponsorship

Among the most important decisions to be made by Nevada policymakers concerning a potential inland port project is how the project will be conceived, managed and executed, from birth to completion.

As with financing, there is no single paradigm regarding which organization should serve as the lead sponsor of a project. A review of the case studies shows that port or airport authorities, state departments of transportation, regional transportation agencies or metropolitan planning organizations, regional governments, as well as private companies have served as the primary sponsoring organization for all or parts of an inland port project.

Indeed, an important lesson for policymakers is that, as with project finance, there is a high degree of flexibility with regard to project planning and execution. While projects are most easily executed when a single organization acts as lead sponsor, responsibility for particular components of a project can be delegated to cooperating organizations, based on their expert knowledge and expertise.

In the majority of cases, the lead sponsor of inland port projects has been a public agency. However, in some cases where private interests have been the driving force for an inland port project, private firms have served as the lead sponsor and overseen projects from birth to completion.

Successful project planning should not only seek to address the concerns of direct stakeholders, it should also evaluate how the project fits within the long-term needs of the surrounding community.

If policymakers can positively address some or all of these questions—thereby broadening the objectives of each component to meet multiple public needs—it will be more likely for the project to gain wide public acceptance and earn a higher priority from many funding sources.

Project Planning: Best Practices[6]

There are many ways to approach the planning phase of an inland port project. Many unsuccessful projects, however, failed to reach completion precisely because the planning phase failed to produce a proposal that addressed the needs of all stakeholders and financiers. Therefore, it will be instrumental for Nevada policymakers to note the planning processes that successful projects have in common. There appear to be four major elements that can be identified, which are critical for successful planning. Each of these four elements is discussed below in turn. Successful project planning should not only seek to address the concerns of direct stakeholders, it should also:

1. Evaluate how the project fits within the long-term needs of the surrounding community.

2. Establish a public-private task force or coordinating committee.

3. Compartmentalize the project. into distinct phases to assist project coordination and community involvement.

4. Identify each phase's contribution to related public policy objectives.

If policymakers can positively address some or all of these questions—thereby broadening the objectives of each component to meet multiple public needs—it will be more likely for the project to gain wide public acceptance and earn a higher priority from many funding sources.

Indeed, an important lesson for policymakers is that, as with project finance, there is a high degree of flexibility with regard to project planning and execution.

It will be essential that policymakers remain flexible with the project design and execution so as to foster widespread support for the project from among the primary stakeholders.

Endnotes

[1] Jean-Paul Rodrigue et al., "Functions and Actors of Inland Ports: European and North American Dynamics," Department of Global Studies & Geography, Hofstra University and French National Institute for Transport and Safety Research, 2010, Available: http://people.hofstra.edu/jean-paul_rodrigue/downloads/Actors_Functions_Inland_Ports.pdf.

[2] *Op cit*., note 2, Appendix C, pp. C1-C9.

[3] U.S. Code, Title 23, Chapter 1, § 120, http://www.gpo.gov/fdsys/pkg/USCODE-2011-title23/pdf/USCODE-2011-title23-chap1-sec120.pdf; See also, U.S. Department of Transportation, Federal Highway Administration, "Financing Federal-aid Highways," Publication No. FHWA-PL-07-017, March 2008, Appendix H: Federal Share and Period of Availability for Selected Programs, http://www.fhwa.dot.gov/reports/financingfederalaid/apph.htm#1b.

[4] A primer on state infrastructure banks (SIBs) is available from the American Association of State Highway and Transportation Officials (AASHTO), at: http://www.transportation-finance.org/funding_financing/financing/credit_assistance/state_infrastructure_banks.aspx.

[5] *Ibid.*

[6] *Op cit.*, note 2, pp. 60-84.