



# INLAND PORT ANALYSIS

*Prepared for the:*  
**New Mexico Economic Development  
Department & the Inland Port  
Advisory Committee**

**Prepared by:**



**JBA & ASSOCIATES**

# **INLAND PORT ANALYSIS**

*PREPARED FOR THE:*

**New Mexico Economic Development Department & the Inland  
Port Advisory Committee**

*PREPARED BY:*

**JBA & Associates**

**FINAL VERSION  
June 2015**

## TABLE OF CONTENTS

	<u>Page #</u>
Introduction	4
Data Collection & Compilation	7
Criteria for Site Recommendations	15
Analyze and assess of present and future market demand/market analysis; Analysis of existing conditions & Assessment of the workforce availability and preparation	37
Environmental and Cultural Review and Impact	77
Economic Impact Analysis	81
Assess and Report On Future Condition	89
Appendix	95

## **INTRODUCTION**

When developed, this Inland Port project is important to the Navajo chapter communities of Manuelito, Rock Springs, and Tsayatoh (The Navajo Chapters). It could create new jobs, add tax base, and create an opportunity to work better together.

Based on the contract, JBA & Associates (JBA) is presenting a report containing:

- Data collection & compilation
- Site recommendations
- Analysis and assessment of present and future market demand/market analysis, Analysis of existing conditions, & Assessment of the workforce availability and preparation
- Environmental and cultural review and impact
- Economic impact analysis.

The United States has become a major buyer of manufactured goods from around the globe. Consequently, our domestic manufacturing base is declining and imports are increasing. Even with this shift, industrial real estate demand continues to expand at a rate of 6 to 10 percent annually. This expansion is being driven by the real estate needs of importing companies, which must find strategic locations that can support the many functions of the new distribution patterns required for foreign-made goods.

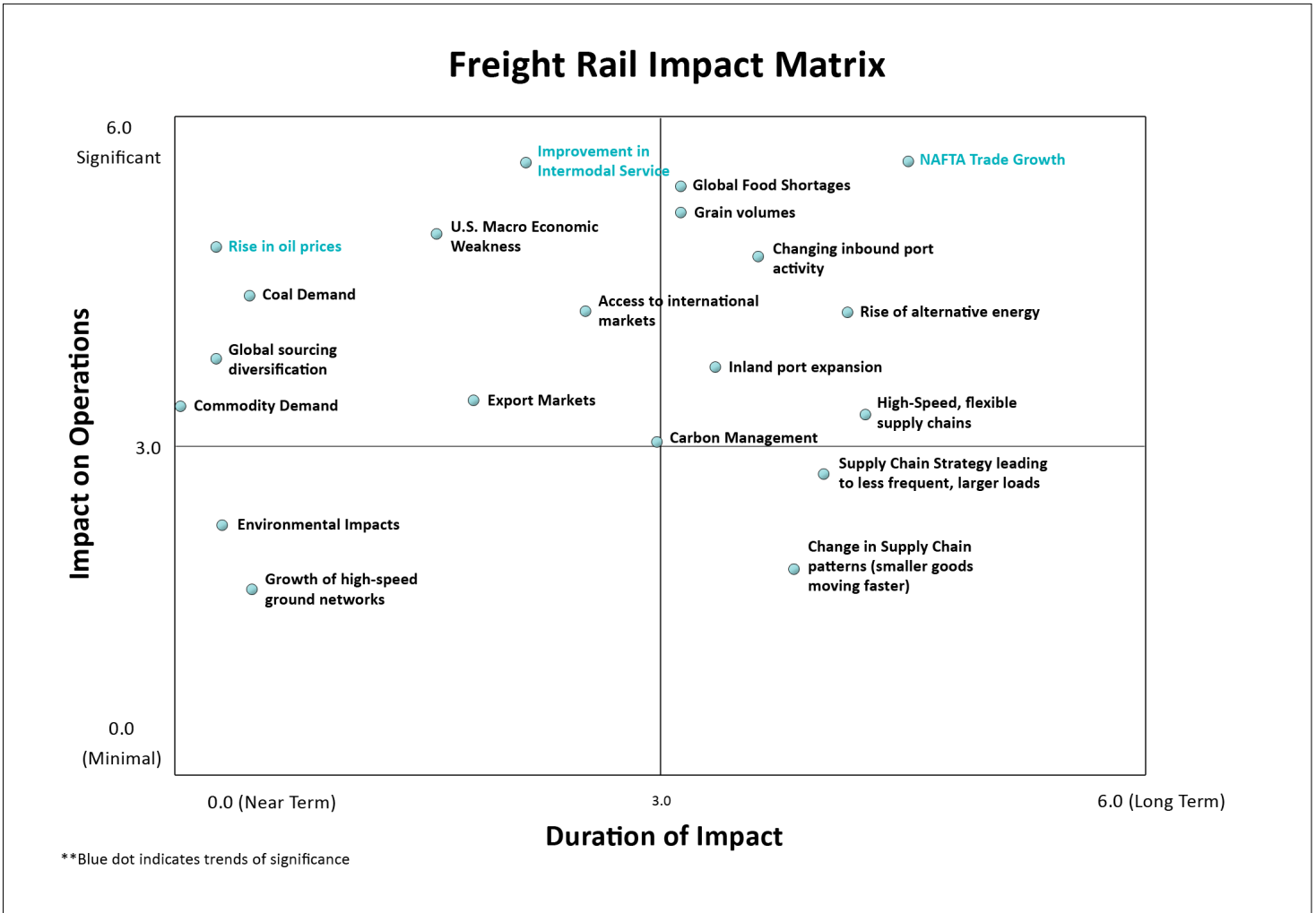
According to experts at TranSystems, Inc, in their Freight Rail Impact Matrix (see next page), a number of key inland port components are significant:

- Improvement in intermodal service
- Changing inbound port activity
- Inland port expansion.

According to the Center for Transportation Research, The University of Texas at Austin, an *inland port* is defined as:

*“A physical site located away from traditional 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.”*





As a result, our country's major ports are facing congestion as the inbound volume of goods manufactured abroad continues to rise. Projections for the next five years indicate that some ports will triple their containership capacity and freight throughput. To accommodate the rise in global imports, the industry is shifting more to an "inland port" model, where inbound goods are quickly off-loaded from ships and moved to inland distribution centers for subsequent handling and redistribution within the country.

The advantages are numerous. Ideal inland ports have efficient access to logistics services, transportation systems, and consumer markets; and may be in close proximity to a "traditional" port. Furthermore, the best locations also support large, flexible buildings and have extensive parking for containers and trailers, as well as easy access to mature transportation infrastructures.

Alternatives for the transport of oil/gas products are limited to pipeline, rail, and truck. Pipeline is, by far, the low cost alternative; but offers little flexibility as to where the

product goes (it flows from point A to point B). Trucking is the most flexible, but very expensive. Rail can offer both flexibility and competitive costs.

So, more and more, oil products are moving via rail today, and these volumes are growing rapidly. However, oil must be transloaded from truck to rail at strategic intermodal centers, like the Port of North Dakota. Important elements of a successful inland port/intermodal project include: 1) access to regional market commodities; 2) access to a railroad mainline or shortline connecting to a mainline; 3) physical ability/permission to spur off of the mainline with loop tracks; 4) good Interstate or 4-lane highway connections; 5) transloading equipment/infrastructure; and 6) fully improved industrial sites.

JBA also has vast experience in The Navajo Chapters Region, having conducted a number of corporate and economic development studies in recent years. Additionally, JBA has extensive experience with corporate projects throughout the state, region, and nation-wide. Recent regional projects and feasibility studies have focused on:

- Corporate site selection
- Corporate rail studies
- Corporate marketing
- Distribution analysis
- Target industry analysis
- Economic development assessment and marketing.

Three recent projects were very successful and will provide us with an excellent entre to this current study:

- Target Industry Analysis (December, 2012) – Identified regional target industries that now need to be refined and expanded
- Distribution Feasibility Analysis (September, 2013) – Provided research and marketing suggestions for intermodal development in the region, which now must be updated and expanded
- Gamerco Rail Master Plan (April 2013) – Identified and master-planned a regional opportunity for a rail-served business park in cooperation with Parkhill, Smith & Cooper.

## **DATA COLLECTION & COMPILATION**

JBA took a comprehensive and thorough approach in collecting and compiling data and information for this project. In fact, we conducted this task from a “site selector’s viewpoint,” meaning anything collected and compiled could easily be turned over to a prospect looking at your region for a new location/expansion.

## **Analysis and Assessment of Present and Future Market Demand/Market Analysis**

### **Introduction**

JBA assessed the market and potential usage of an inland port facility in the Navajo chapter communities of Manuelito, Rock Springs, and Tsayatoh (The Navajo Chapters); as well as economic development characteristics in the region necessary to compete for new jobs, capital investment, and new tax base now and into the future. We will use past reports, our internal data, and select fieldwork interviews to complete this assessment and analysis.

JBA carried out the following data review and collection elements in this study:

- Key elements that make the Inland Port successful
- Local organization (public-private partnerships; port authority incorporation, etc.)
- Federal port assets (Foreign Trade Zones – FTZ; U.S. customs programs; U.S. Customs and Border Protection; etc)
- Special features to serve new markets
- Understanding successful future markets and possible customers.

### **Navajo Nation Background**

The Navajo Nation includes 27,425 square miles of land that extends into New Mexico, Arizona, and Utah, and borders Colorado, which makes Navajo the largest geographic land base American Indian reservation in the United States<sup>1</sup>. Diné Bikéyah, or Navajoland, is larger than 10 of the 50 states in America.

### **Navajo Nation Government**

In 1923, a tribal government was established to help meet the increasing desires of American oil companies to lease Navajoland for exploration. Navajo government has evolved into the largest and most sophisticated form of American Indian government. The Navajo Nation Council Chambers hosts 24 council delegates representing 110 Navajo Nation chapters.

Reorganized in 1991 to form a three-branch system (executive, legislative and judicial), the Navajos conduct what is considered to be the most sophisticated form of Indian government. While the Council is in session, you'll likely hear delegates carry on the tradition of speaking in Navajo, providing a perfect example of how the Navajo Nation retains its valuable cultural heritage while forging ahead with modern progress. When the Council is not in session, legislative work is done by 12 “standing committees” of the Council. Inside the circular Council Chambers, the walls are adorned with colorful murals that depict the history of the Navajo people and the Navajo way of life.

---

<sup>1</sup> Navajo Population Profile – 2010 U.S. Census; December, 2013

## **Trust Land**

Land held by the United States for the use and benefit of American Indian tribes. Virtually all trust land is located in reservations. Tribes also have the ability to purchase land and to petition the federal government to hold it in trust, protecting the land from encroachment or seizure. Actions affecting title to trust lands, including sales, are subject to approval of the U.S. Secretary of Interior.

The different types of Navajo land are:

### 1. Tribal Trust Land

Land owned either by the tribe, the title to which is held in trust by the federal government. Most trust land is within reservation boundaries, but trust land can also be off-reservation, or outside the boundaries of an Indian reservation.

### 2. Fee Simple (Fee Land)

Land ownership status in which the owner holds title to and control of the property. The owner may make decisions about land use or sell the land without government oversight. Owner pays taxes.

### 3. Navajo Allotment Lands

Reservation land the federal government distributed to individual Indians, generally in 40-, 80-, and 160-acre parcels.

## Current Regional Population, Related Poverty and Unemployment<sup>2</sup>

The Navajo Chapters of Manuelito, Rock Springs, and Tsayatoh are located in the Eastern Region of the Navajo Nation near Gallup, NM. They are small Chapters with 2010 populations of:

- Manuelito – 264
- Rock Springs – 1086
- Tsayatoh – 658

An objective of this analysis is to develop future economic development and job growth. Low population growth, poverty and unemployment have hurt the region and the Navajo Nation.

McKinley County showed a negative population growth of 3.9 percent between 2000 and 2012, and the Navajo Nation showed a negative growth of 4.7.

In 2012, the proportion of families below the poverty level was 27.8 percent in McKinley County. The Navajo Nation had percentages of individual poverty (39.2 percent) greater than the state average (14.9). Similar trends occur for families below poverty level, with the Navajo Nation (35.2 percent) having much higher percentages of families below the poverty compared to the state average.

---

<sup>2</sup> Mancos-The Navajo Chapters RMPA/EIS Socioeconomic Baseline Assessment Report, 2014



Unemployment in 2012 was 8.7% in McKinley County, but over 9% in the Navajo Nation.

### Steering Committee

An ad hoc steering committee was formed and represents all interested parties involved with the Inland Port project. It was made up of three representatives from Manuelito, Rock Springs, and Tsayatoh Navajo Communities and staff from the chapter. The steering committee was able assist with incorporating local plans into the study and was able to assist JBA with key meetings and provide key data and information (see Appendix for a Committee list). The steering committee met five times during the course of the project, including during the kickoff, after each individual phase of the project, and for the final report. A list of members is found in the Appendix

### Potential Future Markets and Possible Customers

JBA analyzed the market and potential usage of an inland port in the Navajo chapter communities of Manuelito, Rock Springs, and Tsayatoh (The Navajo Chapters). This analysis will examine both the existing market and the potential future market from future investments in the Inland Port.

JBA assessed the present and future markets of the Southwest Region. Incorporated elements will be:

- Inland Port market activity and growth
  - a. BNSF and related flows/plans
  - b. Other competitors (Inland Empire; Phoenix; Albuquerque; Las Cruces)
  - c. Cost savings
- Commodity flows and projections
  - a. Regional commodities/growth
  - b. National commodities/growth
- Access to ocean ports
  - a. Container access/movement; etc.
  - b. Costs versus other plans.

### Inland Port Success Story – Minot, ND

JBA has good experience in the assessment of inland ports. Let's first look at our experience in Minot, ND—one of the most successful inland port projects in the country.

“It was a cold, snowy morning” in early 2005 in Minot, ND; members of the Minot Chamber of Commerce and the City of Minot had gathered to hear the results of an intermodal development feasibility study of which we were a part. Our advice to them had been to proceed with the development of the project, which would initially load and move regional grain products and other products such as oil—as the market would

warrant—to the West Coast ports of Seattle and Vancouver. They were nervous, asking, *'What else besides grain could be transloaded, and what will come back in?'* But they followed our recommendation and proceeded with the development of the new Port of North Dakota near Minot.

The rest is, as they say, history. The Port of North Dakota ([www.ndportservices.com](http://www.ndportservices.com)) has become one the most successful intermodal projects in the world, moving more oil-related products than any project of its size. It is located in the heart of the Bakken oil patch, one of the richest finds of shale oil ever discovered in North America. The mining of shale oil/gas using fracking technologies has transformed this industry, and the massive new volumes are rapidly helping lead America toward oil independence.

The Port has aggressive growth plans too. It had 72 employees in 2012, far more than the 40 employees that officials figured the Port would have four years into its operation. This year, the Port will have, in the neighborhood, of 200 to 250 employees. As the proposed expansion gets built out, that number will grow. Future employment is unknown, but could be as high as 2,000 workers. Plans call for increasing the Port's capacity to handle more business and larger trains. The Port would add about 3,000 acres to the north.

The flexibility of moving oil products via rail has become a Godsend; thanks to the community leaders in Minot, *showing that vision for success*, back on that “cold, snowy morning.”

### **Freight Cargo Profile**

JBA is providing a brief evaluation of freight related opportunities for the proposed Inland Port<sup>3</sup>. The rail-served inland park location potentially offers several thousand acres for development and is rail-served by the BNSF's transcontinental rail line. The potential Inland Port is situated near Interstate-40, which runs through The Navajo Chapters. The current site currently handles approximately 800,000 tons of coal annually, transloaded to railcars for shipment. Expansion strategy is focused on energy-related activities driven by oil, gas, and other activities in the San Juan Basin—an energy rich area primarily covering Northwest New Mexico.

JBA is providing:

- Economic and transportation industry trends that may impact on freight activity and opportunities in The Navajo Chapters Region. The findings are based on a review of industry literature and our recent project experience in the freight sector.
- A general profile of cargo flowing along the corridor between the Port of Los Angeles/Long Beach and Dallas/Fort Worth, based on commodity flow data from the Freight Analysis Framework (FAF), released by the Federal Highway Administration. A profile is also presented for cargo moving between the Port of Houston and New Mexico.

---

<sup>3</sup> Prepared with assistance from GKSF Global Research

- Industrial sector potential based on the market trends and goods/commodities profile, as possible, with a particular emphasis on the shale-oil/gas sector. We also draw on experience of similar types of inland port/site developments around the country.

### **Economic and Industry Trends**

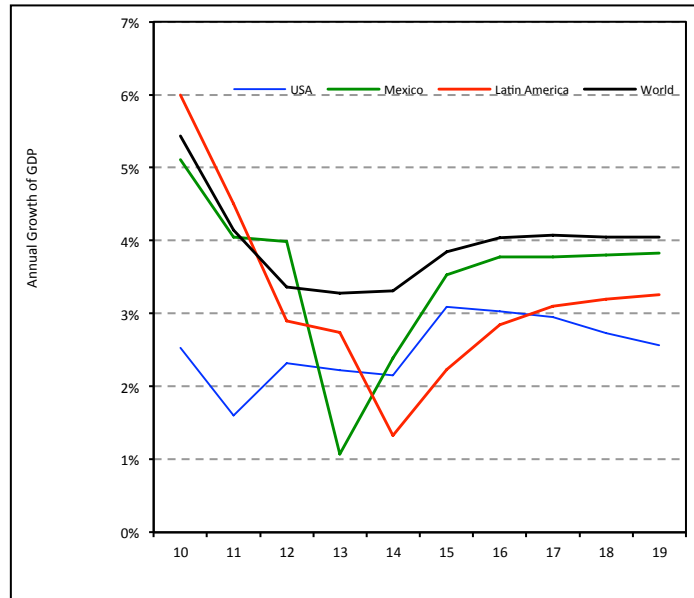
The overall economic climate is positive for New Mexico based on regional, national, and international trends:

- The U.S. economy is performing reasonably well, and annual growth is projected close to average 3.0 percent over the next five years. A sustained period of lower oil prices is likely to have an overall beneficial impact on the economy, boosting consumer goods consumption and lowering raw material costs for industry (e.g. chemicals). This is expected to more than offset negative impacts on economic growth from the energy sector, as energy companies cut back on production and capital spending in higher cost energy production areas (e.g., shale oil).
- The Southwest region (Arizona, New Mexico, Oklahoma and Texas)<sup>4</sup> has outperformed most other regions during the recovery from the Great Recession. Growth of this region is expected to remain healthy, apart from negative impacts from curtailment of oil production and investment. The Southwest region is the largest destination for New Mexico's outbound domestic freight, dominated by resource-based shipments.
- New Mexico has underperformed compared with neighboring states. New Mexico's resource-based sectors have contributed positively to recent economic growth in the State; however, construction, manufacturing, and service sectors have been a drag on the State's economic growth. Lower oil prices may curtail production and development of shale oil production in New Mexico (including in the San Juan Basin, but see further discussion later in the report) and dampen the State's economic growth over the next few years.
- Mexico is the largest export market for New Mexico, followed by Canada (based on a review of FAF tonnage data). Major export sectors by tonnage volume are agricultural commodities and food stuffs, coal, and manufactured goods (e.g., plastics, electronics, and machinery). Projected healthy economic growth in these overseas markets will be beneficial to the growth of New Mexico's economy.

---

<sup>4</sup> Regional definitions from the Bureau of Economic Analysis (BEA)

- New Mexico's population was at an estimated 2.1 million in 2013<sup>5</sup> showing very modest growth. This performance reflects the overall trend of higher population growth in Southwest and Western regions of the U.S. compared to the rest of the country. This trend is expected to continue and will support economic growth in New Mexico and surrounding areas.



**Figure 1: Historic and Forecast Annual Growth of GDP**



**Figure 2: New Mexico GDP Growth**

### **Port and Transportation Industry Trends**

Review of the FAF data shows the following gateways are important to New Mexico's international trade:

- Port of Houston for seaborne cargo with Europe and Latin America
- Los Angeles/Long Beach (LA/LB) for seaborne trade with Asia and other pacific trading partners

- Border crossings in Texas (El Paso and Laredo), New Mexico, and Arizona for cross-border trade with Mexico
- Border crossings in Illinois (Detroit), Montana, and Washington for cross-border trade with Canada.

<sup>5</sup> Source: Census Bureau. Shows general trends without dollar figures



Importers and exporters locating in New Mexico will evaluate these gateways for efficiency, cost, transit time, inland connections, and other factors. The selection of port gateway will reflect each shipper's supply chain requirements. Several industry trends will continue to impact on New Mexico's import and export sectors.

The recent congestion at LA/LB, the country's largest container port gateway, is due to equipment shortages (e.g., chassis), labor shortages and labor contract negotiations, and the challenge of adjusting terminal operations to larger container ships deployed in the transpacific trade. Ongoing congestion has raised the issue of shifting some cargo to alternate gateways. Options are available for New Mexico importers and exporters to use other U.S. West Coast ports, Mexican ports, and all-water services via the Panama Canal to Houston and other Gulf ports. However, all these options would likely be more costly and less timely (relative to normal conditions at LA/LB), and have their own challenges.

Mexican ports are facing growth of trade between Mexico and Asia, security concerns, and inefficiencies (e.g., custom broker influence on port selection). All-water service via the Panama Canal into Houston cannot match the transit time and service frequency offered over LA/LB, although recent port delays of over a week in some cases at LA/LB are making all-water service options more attractive. All-water service is more suitable for lower-value less time-sensitive goods rather than higher-value perishable products (e.g., refrigerated cargo, electronics, and seasonal consumer products).

For New Mexico shippers, other challenges include efficient inland connections, both rail and highway for the shipment of international containerized cargo. The selection of inland transportation mode is part of the supply chain decision process for shippers. In general, rail deliveries are considered to be a lower cost inland mode than trucking, but other factors (e.g. transit time and inventory stock requirements) drive the decision process. The highest cost portion of an international supply chain is the trucking to the final destination, or so-called "last-mile" transportation.

High frequency of intermodal rail<sup>6</sup> service is offered between LA/LB, and to a lesser extent Houston, and intermodal terminals in Phoenix (282 miles from The Navajo Chapters) and Dallas-Fort Worth (750 miles from The Navajo Chapters). These are the two major intermodal hubs in the region for international seaborne containerized cargo. BNSF also operates an intermodal yard in Albuquerque (140 miles from The Navajo Chapters) mainly for domestic intermodal cargo; and UP has intermodal terminals at Santa Teresa, NM (376 miles from The Navajo Chapters) and Tucson, AZ (383 miles from The Navajo Chapters) for domestic and international cargo. Trucking costs between The Navajo Chapters and these intermodal centers will have a bearing on the viability of The Navajo Chapters as a location for distribution and industry. Alternatively, cargo is trucked directly between the major port gateways and New Mexico (The Navajo Chapters are 650 miles from Los Angeles and 1,020 miles from Houston).

The intermodal rail sector has expanded over the past decade driven by increasingly competitive rail costs versus trucking, driver shortages in the trucking industry

---

<sup>6</sup> Intermodal rail is the transport of cargo in containers and trailers by railroad flat car. It involves the interchange of containers and trailers with over-the-road transport at intermodal rail terminals.

investments by the railroads, shipper willingness to incorporate rail into supply chain strategies, penetration of shorter haul corridors, and the growth of intermodal-friendly international container volumes. Important developments supportive of intermodal rail have been:

- Operating costs of over-the-road truck service have risen rapidly relative to rail and are expected to increase further, due to continued shortages of truck driver labor, hours of service rules and until recently, the high price of diesel fuel. The recent decline in fuel prices will likely not stop the truck-to-rail conversion in the short term, as persistent driver shortages are expected for the foreseeable future. The threat of a labor shortage is particularly prevalent in medium- and long-haul traffic lanes, and could create spot shortages of truck service, particularly in peak months. Location strategies for distribution centers and other warehouses to address these shortages are emerging, that reduce the need for long-haul trucking.
- Rail service (e.g., transit speed and reliability, terminal dwell times, service frequency and coverage of origin-destination pairs) continues to improve due to major rail investments in infrastructure, such as expanded terminal facilities and improved right-of-way. However, intermodal service performance has been negatively impacted by the strong growth of other rail business (e.g., oil shipments by rail).
- Investments are being made by railroads, industrial real estate companies, and shippers in the development and expansion of co-located intermodal rail yards and logistics facilities. These hubs act as regional distribution and consolidation points for international, cross-border, and domestic containerized cargo. Local and regional truck services connect the hubs with smaller markets. Intermodal hubs are typically located in major population centers along strategic rail corridors.

The supply of truck drivers has been the major constraint on the trucking industry over the last several years, and this remains a significant challenge for the industry, particularly in the medium- to long-haul lanes. Developments on the regulatory front continue to impede on the growth of the industry's capacity – for example, increased emphasis by the U.S. Department of Transportation (DOT) on safety and truck driver performance, and hours-of-service regulations. A further constraint is the more stringent financial requirements placed on borrowers, which particularly impacts poorly-capitalized firms and owner-operators in the long-haul segments of the market.

Rates have trended up in the trucking sector due to the supply constraints at the time of a growing economy. This has eroded some of the trucking sectors competitive position against rail service. The effect on shippers has varied by traffic lane and the lengths-of-haul, and the presence of viable competition from rail in a particular lane. In cases where rail competition exists, over-the-road service may continue to face eroding market share, especially as railroads continue to invest heavily in the infrastructure for intermodal.

Shortages of drivers and over-the-road equipment will put highway trucking at an increased disadvantage, particularly for longer length-of-haul traffic lanes and during

periods of peak seasonal demand. Rail competition will limit price increases in these lanes. For traffic lanes not well-served by rail, however, truckers will have significant pricing power and rates should rise.

### **Freight Profile**

A general profile of selected cargo flows moving over the I-40, other east-west highway and rail corridors was prepared from commodity flow data available from the Freight Analysis Framework (FAF). The profile is intended to give an indication of the types of commodities and transport modes moving through The Navajo Chapters, which is located on the I-40 and BNSF mainline. FAF integrates data from a variety of sources to create a profile of freight movement among states and major metropolitan areas by all modes of transportation.

Data is presented for 2007, the FAF base year, and estimates for 2012. A FAF forecast is presented for 2020 to illustrate near-term growth sectors. (Tables are found in the Appendix.) Cargo profiles by transport mode and commodity are presented for the following pairs:

- Los Angeles Combined Statistical Area (CSA) – New Mexico
- Houston CSA – New Mexico
- Los Angeles CSA – Dallas/Fort Worth CSA

The Los Angeles CSA covers the counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura; capturing not only the Port of Los Angeles/Long Beach but also the warehousing/distribution, transload and other cargo activities in areas surrounding the Port that process international and domestic freight. Similarly, the Houston CSA captures cargo flowing to and from the Port of Houston and Houston area logistics facilities.

## **CRITERIA FOR SITE RECOMMENDATIONS**

### **Introduction to Site Selection**

JBA is made up of well-seasoned site selection consultants. Because of the magnitude of expansion decisions, companies/developers seek an experienced site selection consultant, like us, to assist in making the most informed management decisions. JBA provides a concise, objective consulting methodology designed to assist with the selection of the optimal location. We propose current and future consulting assistance in logical, sequential steps to bring order to, what might otherwise be, a very disruptive experience.

JBA carefully analyzed five sites within the Navajo chapter communities of Manuelito, Rock Springs, and Tsayatoh. We recommended sites for the Inland Port based on the following and related criteria:

- Its location relative to existing rail lines
- Ease of access to main roadways

- Topography
- Zoning
- Access to site using existing at grade rail
- Proximity to utilities including broadband
- BNSF development and future investment plans
- Proximity to TransCon Corridor
- Proximity to Interstate 40 and other highways suitable for commercial traffic.

#### Inland Port Site Selection

JBA identified the top sites for the Inland Port project within the Navajo chapter communities of Manuelito, Rock Springs, and Tsayatoh through interviews/discussion and tours with Navajo Nation leaders.

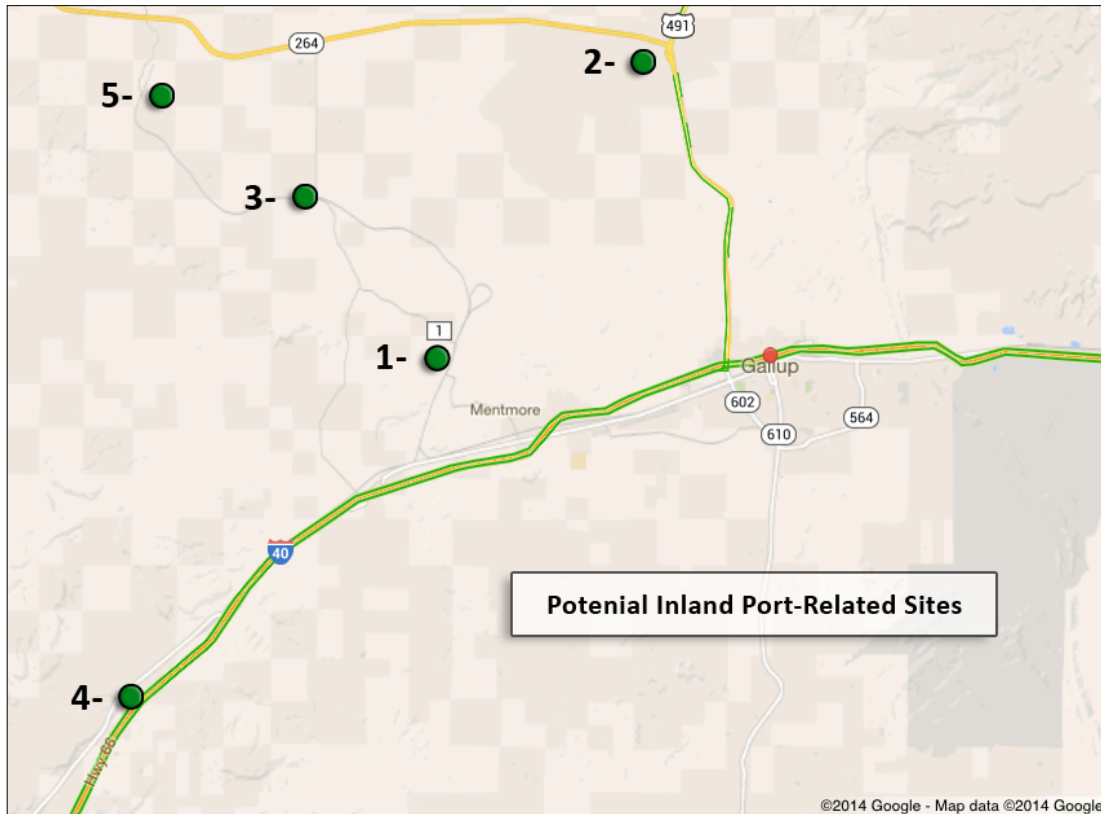
JBA used a professional site selection methodology for evaluating sites as a part of this study and rated sites from poor to excellent. The following criteria with *explanations* were evaluated:

- Its location relative to existing rail lines
  - *Distance to existing usable rail lines*
- Ease of access to main roadways
  - *Distance and accessibility to main roadways*
- Topography
  - *Potential buildable area*
- Size (50-100 acre minimum)
  - *Anything under 50 to 100 acres is not useable for this type of development*
- Zoning
  - *All sites are buildable under Navajo Nation criteria*
- Access to site using existing at grade rail crossing
  - *Any problems with access due to rail*
- Proximity to utilities including broadband
  - *Existing and planned*
- BNSF development and future investment plans
  - *BNSF plans for future use*
- Proximity to TransCon Corridor
  - *Access to East/West I-40/BNSF corridor*



- Proximity to Interstate 40 and other highways suitable for commercial traffic
  - *Direct or close access to I-40 and related highways.*

In the fall of 2014, JBA consultants toured, discussed with the Committee and evaluated five sites in The Navajo Chapters region (see map below)



#### **Site 1 Area: Loop Industrial Area (Tsayatoh Chapter)**

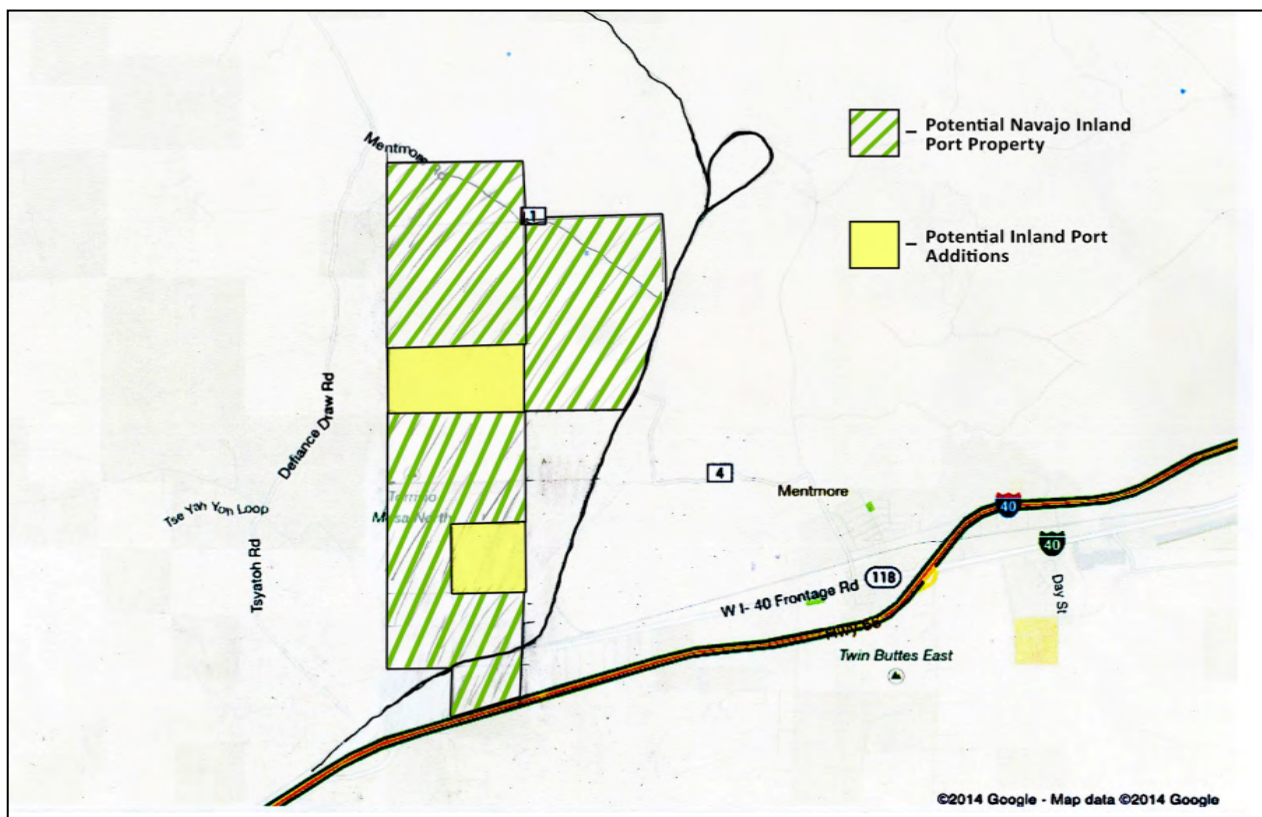
It was determined at the end of the review process that another site (Site 1A or Site 1B just North of 1A) should be added on the west side of the BNSF rail line on Tribal Fee land (Tribal Allotment for 1B) in order to avoid dealing with private owners and dealing with State of New Mexico ownership.

The consultants toured and reviewed this area and made the following observations:

- 50 acres; potentially several hundred acres for future development; potentially three sites, Site 1, Site 1A and Site 1B. Site 1A and Site 1B are on the west side of the BNSF rail line
- Site 1A development costs are lowest: \$18.7 million for a 50 acre. The cost of leveling Site 1A is really not an issue and is already figured into the cost estimate

- Site 1B is flatter and may be better for industrial development; this property is allotment land and potential development will require the consent of the property owners only and not necessarily the tribe or chapter – potentially offering the possibility of expedited development. However, the following are concerns:
  - The power line corridor will impact development here.
  - The price for development is higher.
- Utilities
  - Water – NW of site; Plan 118 extension by 2015
    - *One of the best site choices for water extension – Amec Foster Wheeler*
  - Gas – North of this area
  - Sanitary Sewer – Septic initially; Defiance sub main just to the North; City plans to expand the sanitary sewer plant and bring it west to the area
  - Electric – City of Gallup line will come from the east to southern edge of new property
  - BNSF – Now in full agreement to assist adjacent GLP site. Service schedules are good due to GLP project.
- Tribal trust land here; easier to develop
- Development Ideas –
  - Initial development could accommodate onsite buildings of 85,000 square feet on the 50 acre site
  - Extend Route 1 to Carbon Coal Rd. for all industrial access
    - For County to develop Carbon Coal to Route 1 need developer/County agreement; developer funds
    - Allow North-South private road to close; all traffic out onto Carbon Coal for all industrial access
      - \* Carbon Coal development has GLP/County agreement
        - Private developer maintains; open to public
  - Extend Rock Springs Road from 264 South to new Carbon Coal Rd. to assist residents getting to work.
- Potential Environmental Issues – potential flood hazards; topography; and archeology finds (see Environmental & Cultural Review section)

- Total Cost of Development – Estimated at \$20.7 million for Site 1 and \$18.7 million for Site 1A for a 50 acre site. Site 1B is estimated at \$19.2 million. Needed: environmental studies; engineering/planning; grading; new bridges; fencing; clearing; bridge repair; road grading and development; water/sanitary sewer/gas/electric/broadband/drainage extensions (see Design, Engineering and Construction Costs section).
- Navajos residents in area stated: *“We want involvement; want to work with us and want kids to move back with jobs.”* (stated at Committee meeting 10/31/14)
- Mesa (high ground) to west blocks rail and road development.



#### Site 1, 1A and Site 1B Scoring

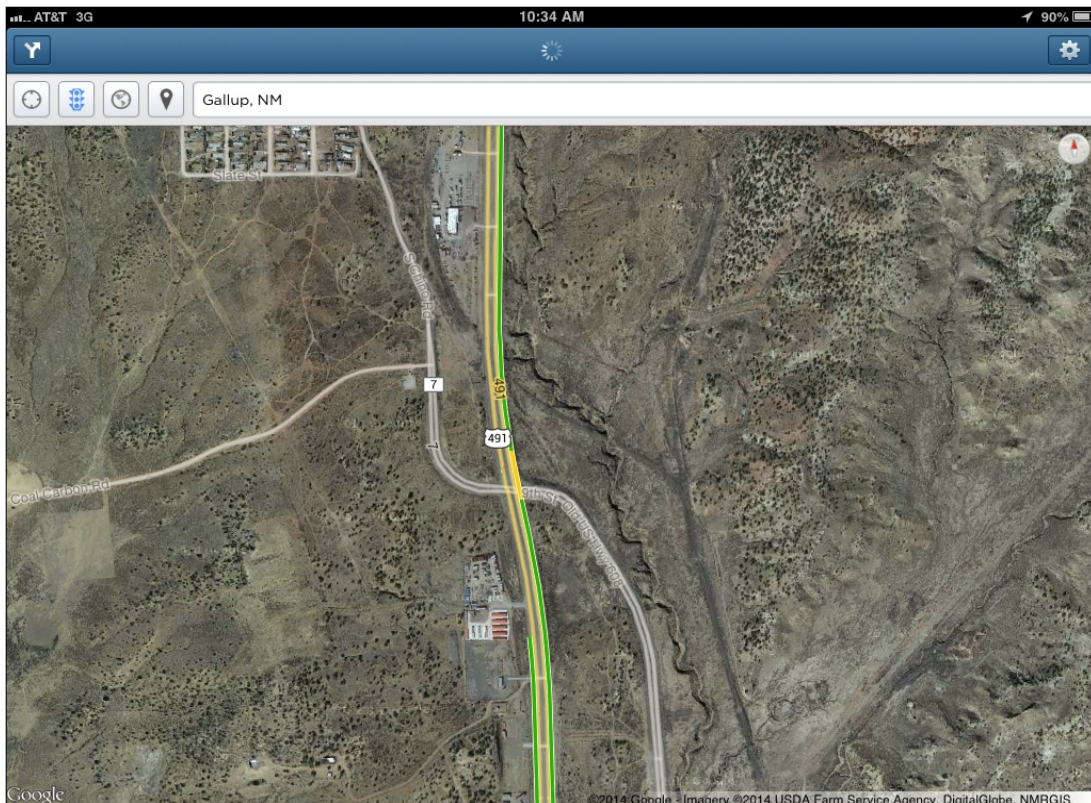
- Its location relative to existing rail lines: Excellent
- Ease of access to main roadways: Excellent
- Topography: Excellent in select areas
- Size (50-100 acre minimum): Excellent
- Zoning: Good
- Access to site using existing at grade rail crossing: Excellent

- Proximity to utilities including broadband: Excellent
- BNSF development and future investment plans: Excellent
- Proximity to TransCon Corridor: Excellent
- Proximity to Interstate 40 and other highways suitable for commercial traffic: Excellent (3.2 miles)
- **TOTAL: Excellent**

**Site 2: 491 Commercial Area (Rock Springs Chapter)**

The consultants toured and reviewed this area and made the following observations:

- Not a good commercial/industrial area
- Mostly private ownership – GLP
  - Only small area to NW is part of Navajo Nation
- New layout approved shows new light at 491 and Carbon Coal
- Good idea – provide residential access road from 264 South to new Carbon Coal Road
- Discussed an 80 acre site that could be industrial/commercial in future after drainage issues are addressed (N of 264 and Rock Springs Rd); no rail
- Rock Springs is reorganizing their Land Use Committee.





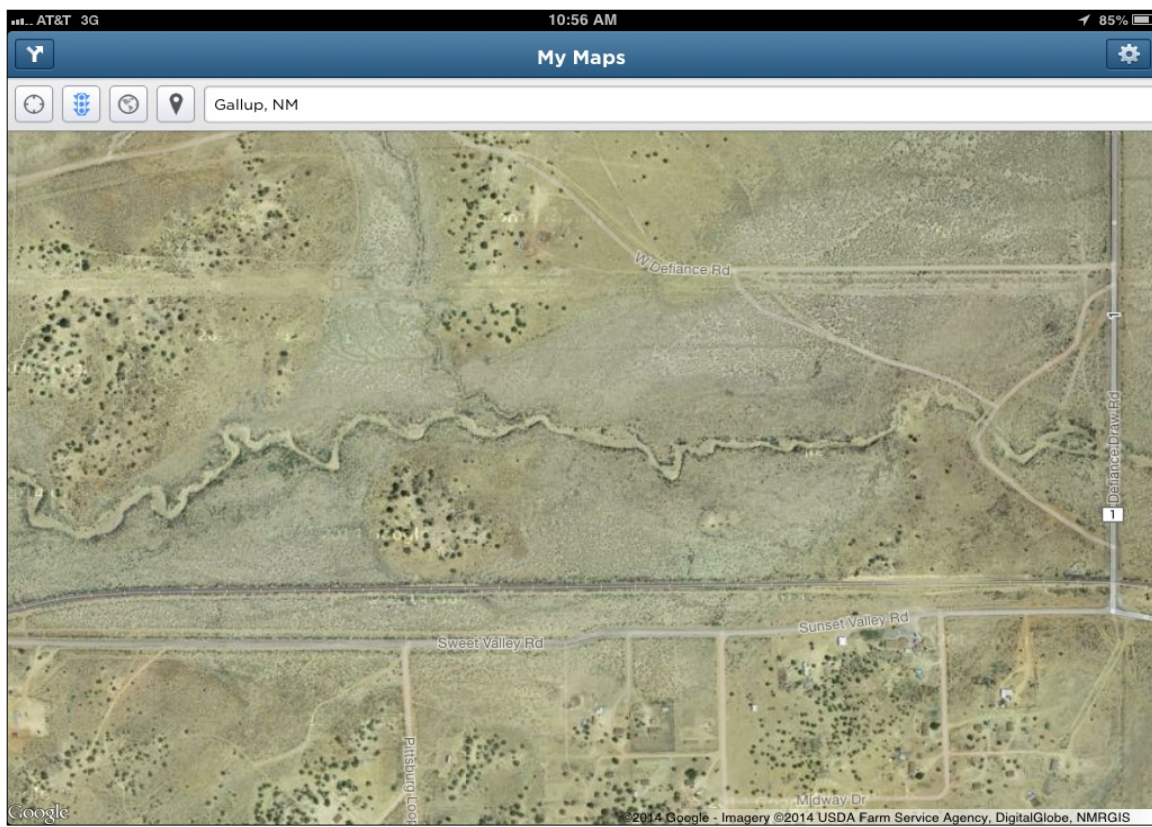
Site 2 Scoring

- Its location relative to existing rail lines: Poor
- Ease of access to main roadways: Excellent
- Topography: Good
- Size (50-100 acre minimum): Excellent
- Zoning: Good
- Access to site using existing at grade rail crossing: Poor
- Proximity to utilities including broadband: Excellent
- BNSF development and future investment plans: Poor
- Proximity to TransCon Corridor: Average
- Proximity to Interstate 40 and other highways suitable for commercial traffic: Average
- **TOTAL: Poor**

**Site 3: North Route 1 Industrial Area** (Tsayatoh Chapter)

The consultants toured and reviewed this area and made the following observations:

- Good area for industrial; metal recycler and tire manufacturer had past interest
- Good supplier industrial area
- Several hundred acres in size; Site close to 264
- Utilities
  - Sunset Valley Road has recently been graveled and chip/sealed, but not for industrial
  - Route 1 will need to be improved to Rt 264
  - Water – 5 miles north
  - Sanitary sewer – No
  - Electric and gas – High-end utilities on north end
  - Rail – BNSF track will remain along this area, but service schedules are unknown.



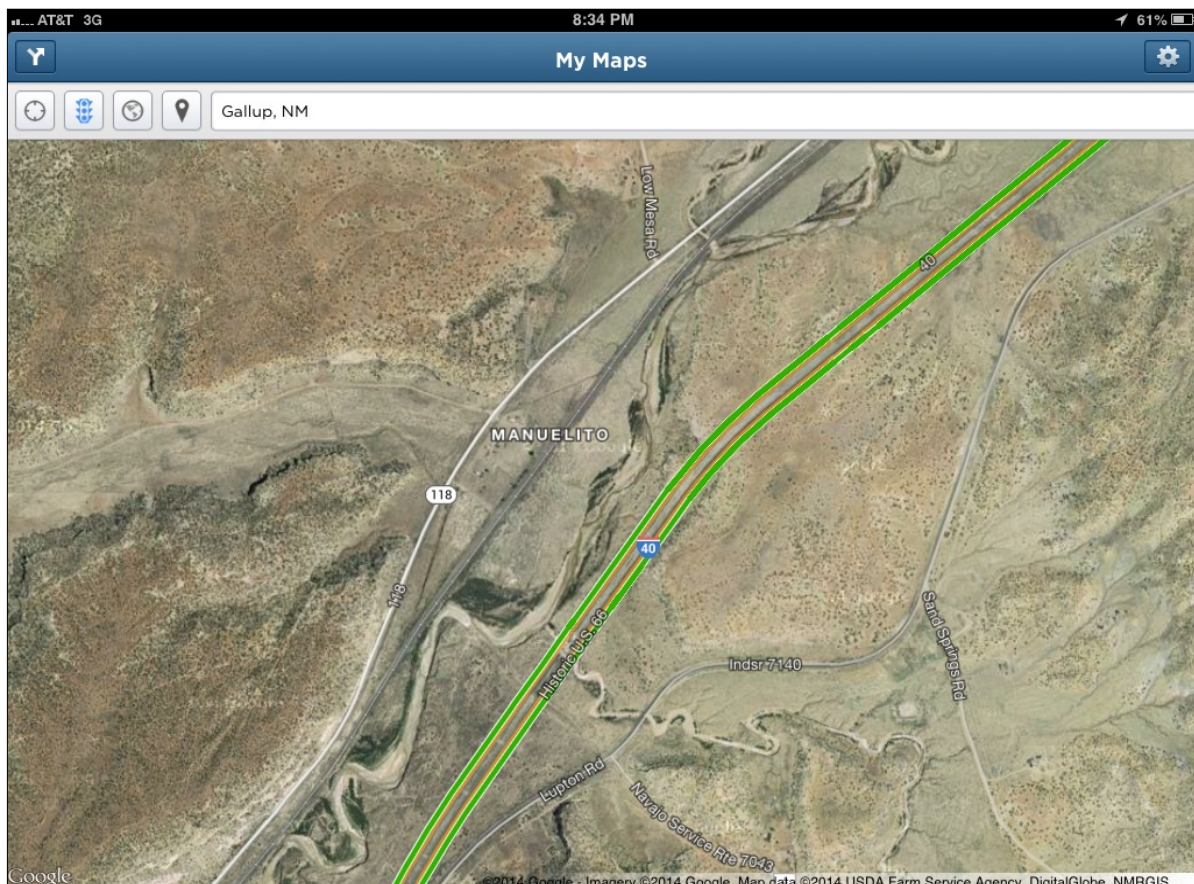
### Site 3 Scoring

- Its location relative to existing rail lines: Good
- Ease of access to main roadways: Above average
- Topography and soil: Good
- Size (50-100 acre minimum): Excellent
- Zoning: Good
- Access to site using existing at grade rail: Good
- Proximity to utilities including broadband: Average
- BNSF development and future investment plans: Average
- Proximity to TransCon Corridor: Good
- Proximity to Interstate 40 and other highways suitable for commercial traffic: Average
- **TOTAL: Good**

#### **Site 4: South Industrial Area (Manuelito Chapter)**

The consultants toured and reviewed this area and made the following observations:

- 16.3 acres
- Owner would like to sell to Navajos
- Near I-40 access off Rt.118
- Site not large enough for major distribution center (DC) or manufacturer
  - Only a small DC or plant could work.
- Old warehouse on Lupton Rd, but no rail access and poor road conditions
- Utilities
  - Highway – Near I-40 access off Rt.118
  - Water – 5 miles Northeast
  - Sanitary sewer – 5 miles Northeast
  - Electric – Small line onto property
  - Gas – 5 miles northeast
  - Rail – Direct BNSF frontage; say that there is an old spur here



#### Site 4 Scoring

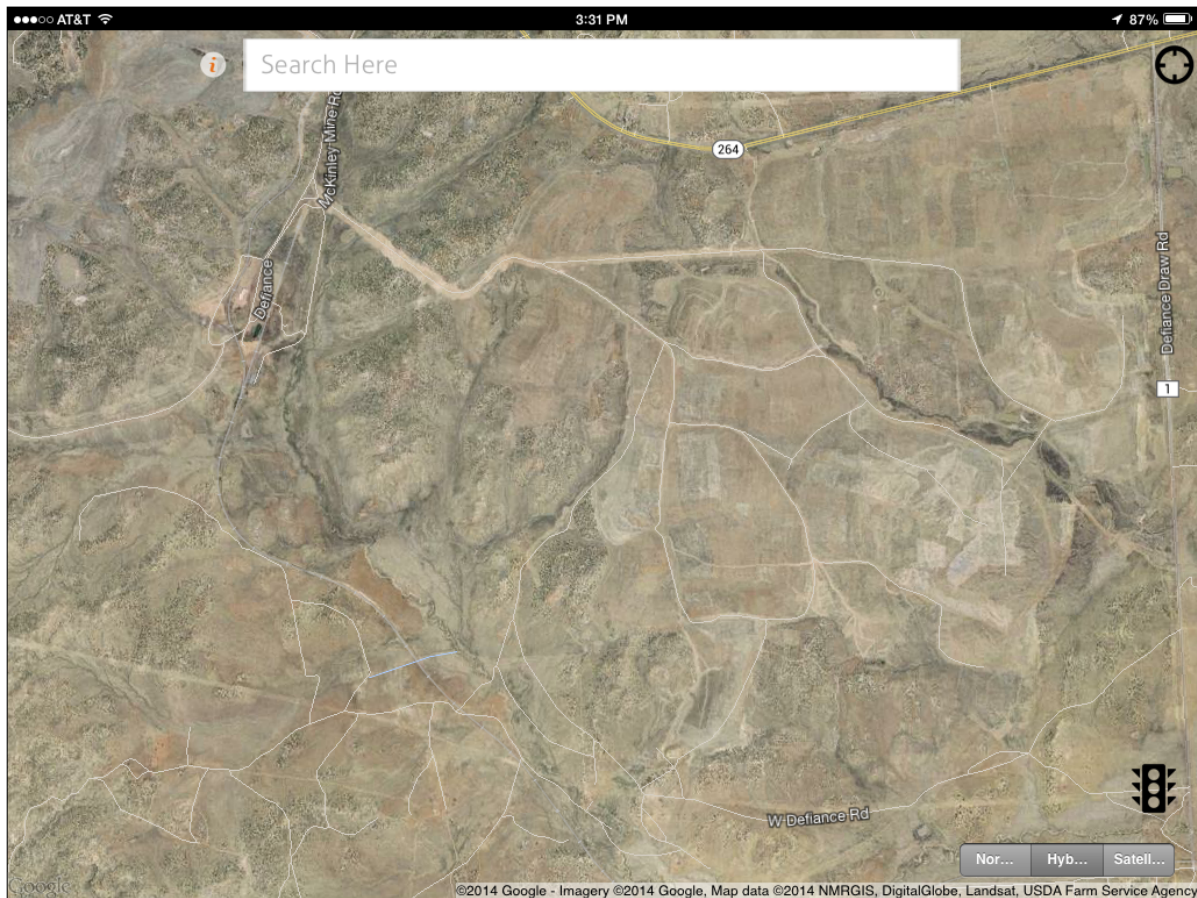
- Its location relative to existing rail lines: Excellent
- Ease of access to main roadways: Excellent
- Topography and soil: Very Good
- Size (50-100 acre minimum): Poor
- Zoning: Good
- Access to site using existing at grade rail: Average
- Proximity to utilities including broadband: Average
- BNSF development and future investment plans: Poor
- Proximity to TransCon Corridor: Excellent
- Proximity to Interstate 40 and other highways suitable for commercial traffic: Excellent
- **TOTAL: Average**

#### **Site 5: Section 17 Site** (Tsayatoh Chapter)

The consultants toured and reviewed this area and made the following observations:

- 50 acres; potentially 2,000 acres for future development
- Owned by Chevron, but process is underway to transfer it to the Navajo Nation; by Spring
- BNSF rail spur will remain; ends on site north boundary, but service schedules are unknown.
- All utilities on site, except sanitary sewer
  - Well to west of proposed site
  - Sanitary sewer – septic
  - Electric – 115 kv – NM Electric from east of proposed site
  - Gas – El Paso Gas
  - Cell tower on site
- Total Cost of Development – Estimated at \$26.7 million (plus additional \$17.8 million if road must be extended south) depending on the number of sites developed. Needed: environmental studies; engineering/planning; grading; new bridges; fencing; clearing; bridge repair; road grading and development; water/sanitary sewer/gas/electric/broadband/drainage extensions (see Design, Engineering and Construction Costs section).





### Site 5 Scoring

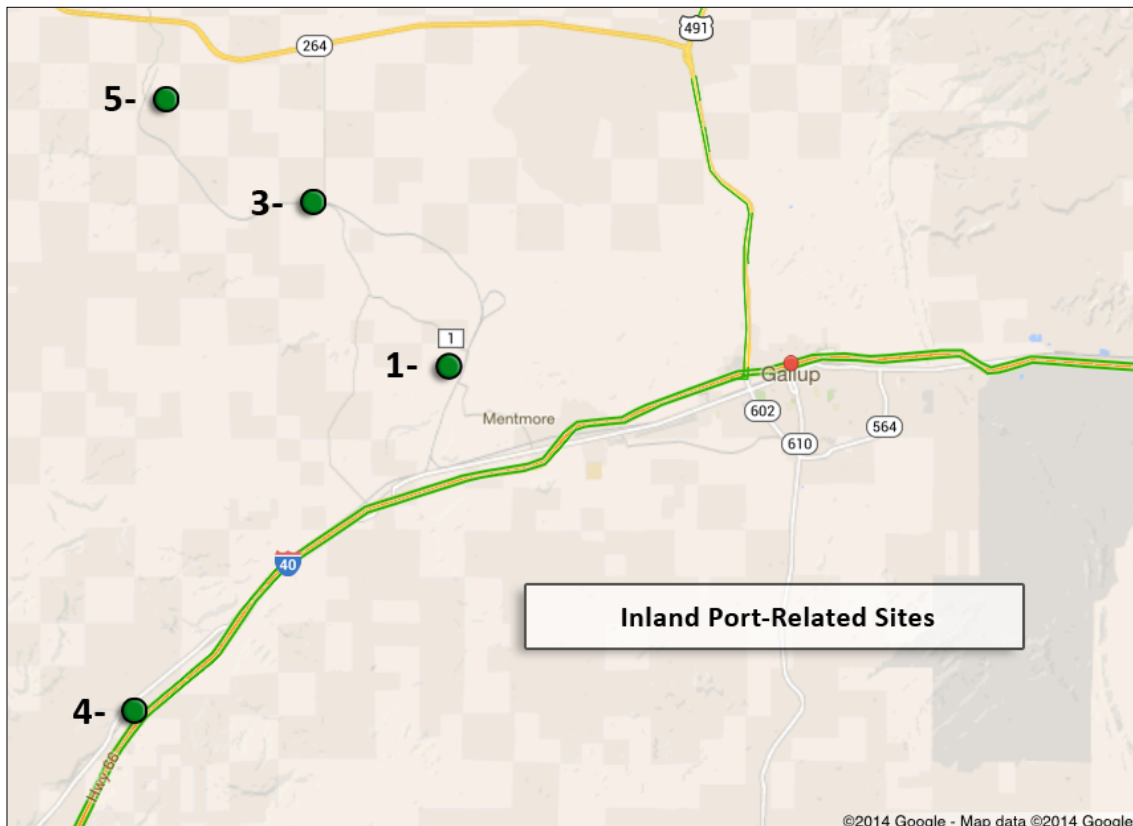
- Its location relative to existing rail lines: Good
- Ease of access to main roadways: Good
- Topography: Good
- Size (50-100 acre minimum): Excellent
- Zoning: Good
- Access to site using existing at grade rail: Good
- Proximity to utilities including broadband: Good
- BNSF development and future investment plans: Average
- Proximity to TransCon Corridor: Average
- Proximity to Interstate 40 and other highways suitable for commercial traffic: Average (21 miles)
- **TOTAL: Above Average-Good**

### **Final Site Selection Scoring**

Note that: site score times criteria importance rating determines the final score. High score is the best.

### **Site Score**

- **Site 1, 1A, and Site 1B: Excellent Loop Industrial Area** – is the best site for the initial Inland Port. Primary uses: manufacturing and warehouse/distribution (DC)
- **Site 5: Above Average – Good Section 17 Site** – could serve as an industrial supplier site and be a future Inland Port addition. Primary uses: manufacturing
- **Site 3: Above Average North Route 1 Industrial Area** – could serve as an industrial supplier site. Primary uses: manufacturing
- **Site 4: Average South Industrial Area** – could serve as an industrial supplier site. Primary uses: small manufacturing or DC
- **Site 2: Poor 491 Commercial Area** – should be eliminated as an industrial alternative



### **Design, Engineering, and Construction Costs**

JBA included associate Sakura Engineering to assist with the design, engineering, and construction costs for Sites 1 and 5. This work is summarized below.

**It helped to determine that Site 1 is the best site to develop first:**

- **Lower costs:**
  - Site 1: \$20,698, 651
  - Site 1A: \$18,689,988
  - Site 1B: \$19,240,788
  - Site 5: \$26,725,670 (plus possible road improvements to south of \$17,801,523)
- **Less distance to I-40**
  - Site 1: 3.2 miles
  - Site 5: 21 miles

The cost estimates were based on preselected sites by others and incorporate general items such as Water System (tanks, piping, pumps, and wells); Sewer System (waste disposal fields); Electric Service (transmission only); Roads (new, upgrades, bridges, culverts); Buildings, Site Improvements (fencing, grading, cut, fill, paving of 50% of area, and drainage needs); and Rail Improvements. The costs were gleaned from existing contracts, consultants, municipal entities, utility providers, and suppliers of materials and services.

Both estimates include the costs for a 50,000 square foot distribution center or manufacturing plant and a 35,000 square foot office facility. You may excuse these costs, as needed or they may be used in a speculative building estimate.

In preparing the estimates of the two sites we have determined two issues of concern and should be noted based on location of the two subject sites.

The first issue is the location to the major routes such as Interstate 40 to the south of both Sites 1 Area and 5. For example, presently a trucking company must haul their coal south on Hwy 491 to the freeway intersection of US I-40 and Hwy 491, through Gallup west to Mentmore, then north to where the coal is loaded onto rail at the railroad loop. The railroad loop is located on Gallup Land Partner's (GLP) property. Currently GLP and the Greater Gallup Economic Development Corporation (GGEDC) have implemented a preliminary engineering study for a haul road route on Carbon Coal Road (approximately 5.1 miles) for the unloading of coal and other products in the future. Both parties anticipate the use of Carbon Coal Road which intersects Hwy 491 north of Gallup at 9<sup>th</sup> Street intersection. When this project is completed the upgrades of this road would alleviate the impacts of large trucks at the intersection of Hwy 491 and US I-40 and central Gallup.

In the event Site 5 is chosen this would most definitely nullify the truck impacts by GLP and Gallup Economic Developments plans to mitigate impacts on the Gallup Business District.

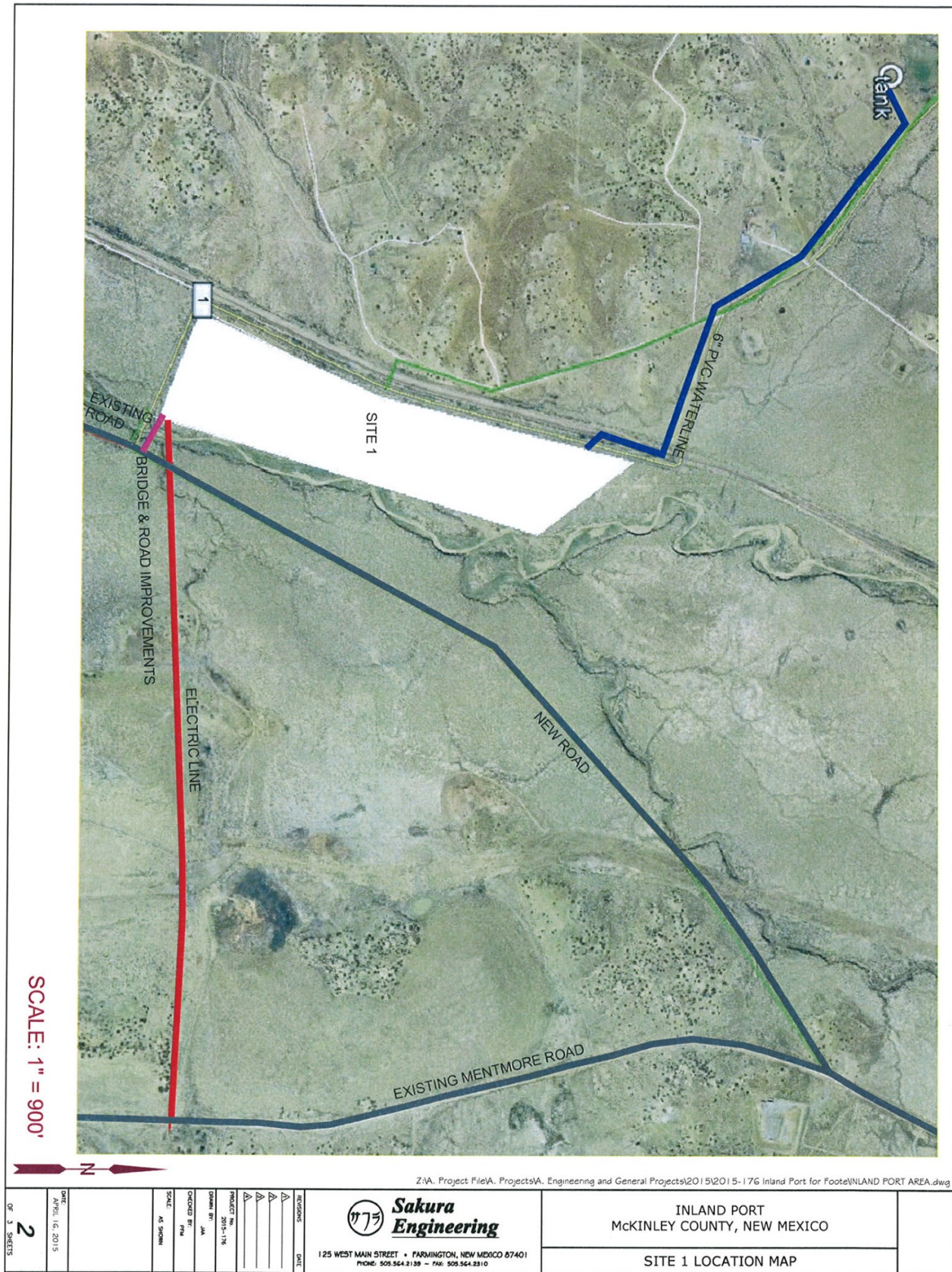
A related issue is the additional travel distance from Site 5 to any major routes which is much greater than from Site 1, Site 1A, or Site B. The distance from the Site 1 area to Hwy 491 is approximately 7.23 miles and Site 5 is over 13.0 miles. The travel distance to US I-40 from the Site 1 area is approximately 3.2 miles and the distance from Site 5 is approximately 21 miles. These issues may not seem to have an impact for the short term decision based on price, but they would definitely make an impact on fuel usage and cycle time on other industries.

The second issue is the development cost or upfront cost of both Sites 1, Site 1A, Site 1B, and 5. The cost estimate for Site 1 is \$20.7 million. Site 1B, due to the need for rail switches, is approximately \$19.2 million and Site 1A is \$18.7 million. Site 5 has two options for cost; the higher cost of \$26.7 million is based on two access points to the site, one being to the north where a mine road ties into Hwy 264 and the other being the proposed road to the south with upgrade to the existing paved road to US I-40. The second cost option is only for connecting into Hwy 264 at a cost of \$17.8 million.

The third issue is on Site 1A and 1B regarding families that may need to be relocated. This does not appear to be a critical issue.

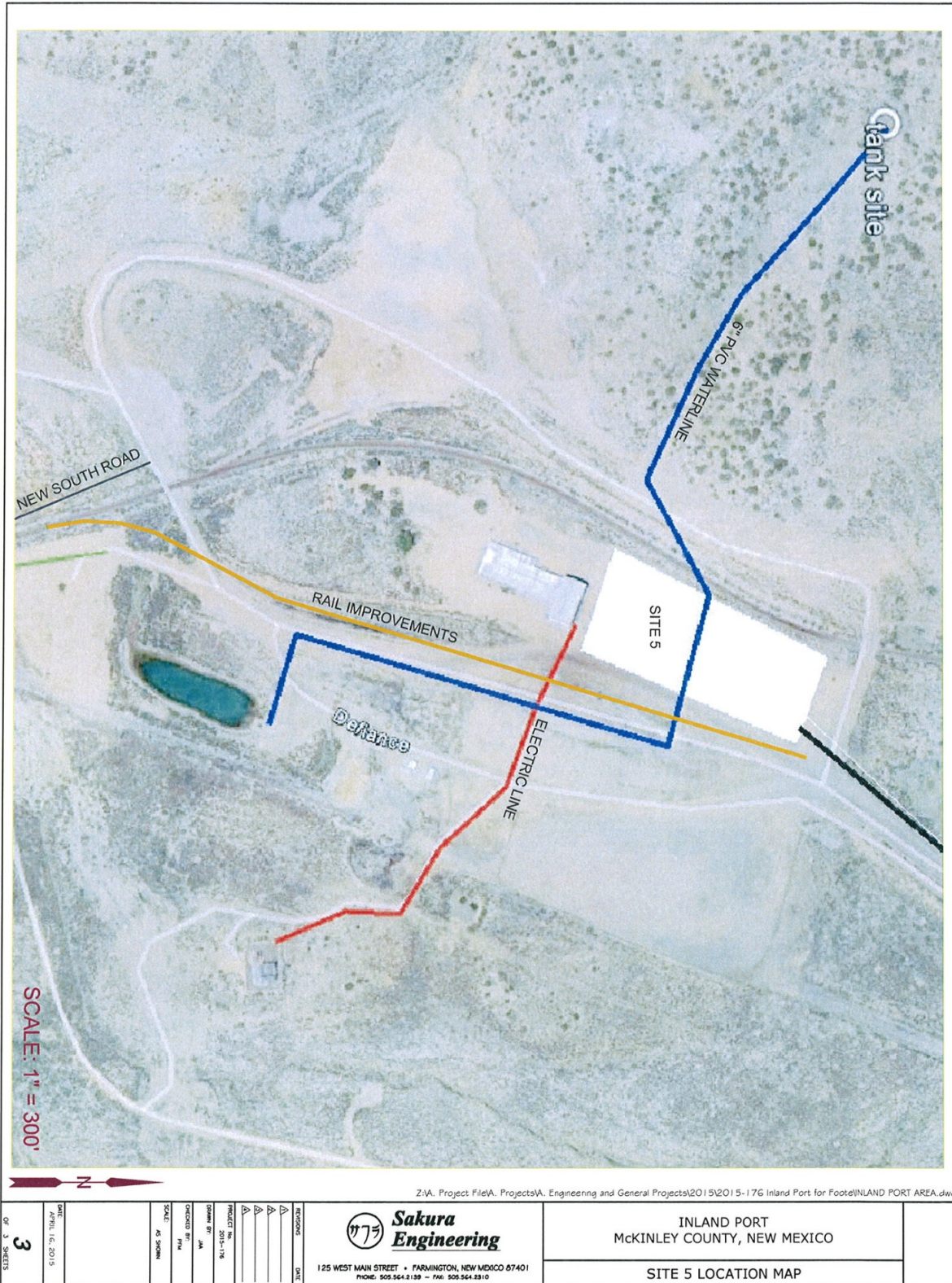
Sakura Engineering developed the cost analysis for Site 1, Site 1A, Site 1B, and Site 5 based on what each projected cost would be from an engineering point of view (see below). There may be other mitigating cost not addressed from the engineering perspective. The estimate attempted to show comparative costs for each site based on known line items required for development. The amounts may change due to time and development contract costs based on preliminary and final designs for each site in the future.





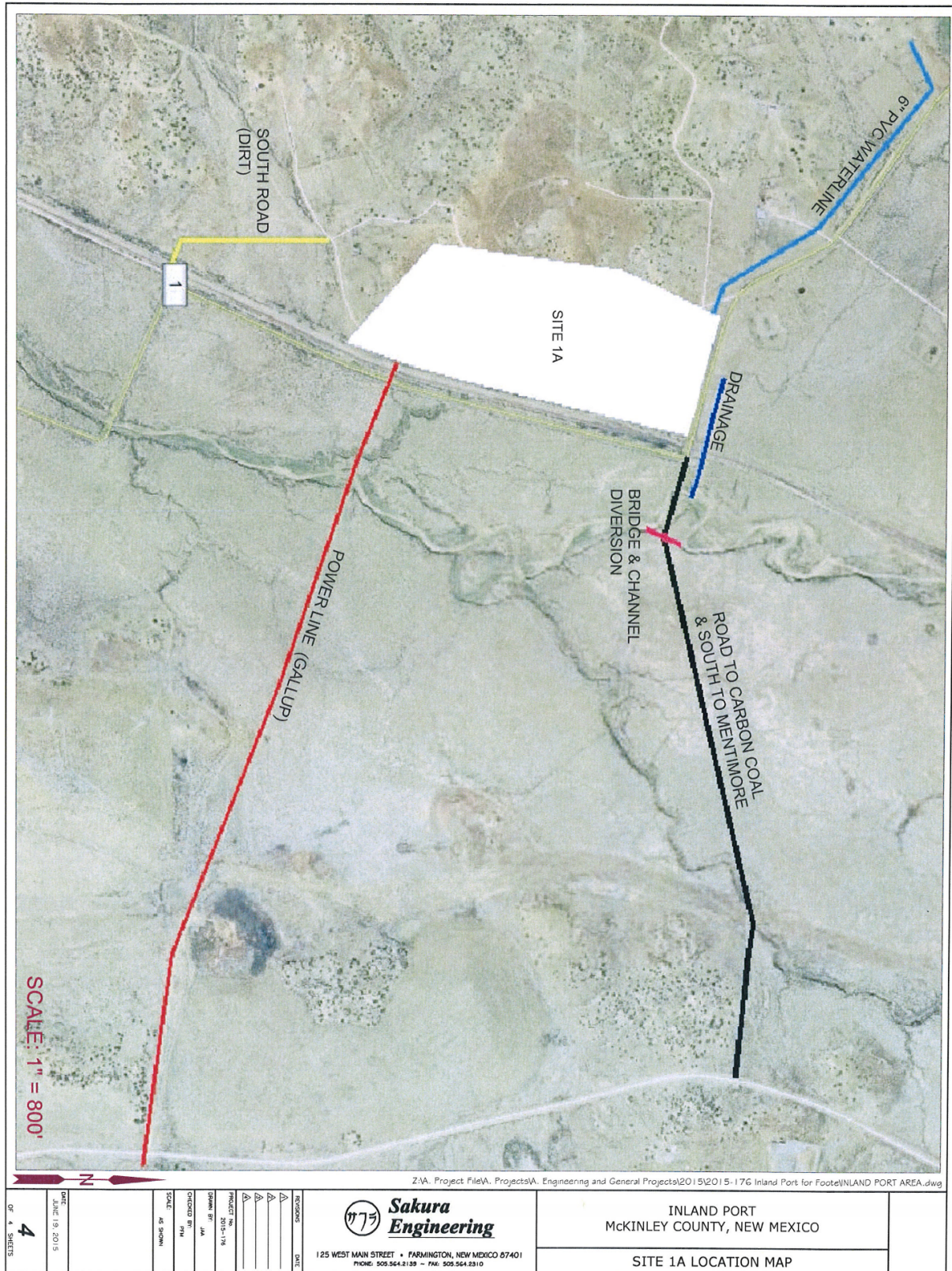
Cost Estimate for Inland Port Site "1"					
Item	Unit	Quantity	Unit Cost		Total Cost
Land	acre	50	\$ 10,000.00		\$ 500,000.00
Offsite Power for Transmission	Ls	1	\$ 60,946.97		\$ 60,946.97
Project Management	LS	2%	\$ 1,218.94		\$ 1,218.94
Onsite Water for Domestic Water (Well)	Each	1	\$ 75,175.00		\$ 75,175.00
Project Management	Ls	3%	\$ 5,714.67		\$ 5,714.67
SWPP	Ls	1	\$ 3,000.00		\$ 3,000.00
Water Line 6"	lf.	4573	\$ 18.00		\$ 82,314.00
Water Tank 50,000 gal.	Ls	1	\$ 30,000.00		\$ 30,000.00
Onsite Waste Water (septic)	Each	1	\$ 103,000.00		\$ 103,000.00
Project Management	Ls	3%	\$ 3,090.00		\$ 3,090.00
Onsite Building Cost 50,000 sf. \$106.00 sf	Ls	1	\$ 5,300,000.00		\$ 5,300,000.00
Onsite Office Building 35,000 sf. \$135.00 sf	Ls	1	\$ 4,375,000.00		\$ 4,375,000.00
Project Management	Ls	3%	\$ 396,759.53		\$ 396,759.53
Mobilization	Ls	2%	\$ 264,506.35		\$ 264,506.35
SWPP	Ls	1	\$ 3,000.00		\$ 3,000.00
Onsite Fencing	Lf	7243	\$ 22.50		\$ 162,967.50
Onsite Clearing	acre	50	\$ 3,785.00		\$ 189,250.00
Drainage 54" HDPE	Lf	540	\$ 170.00		\$ 91,800.00
Onsite subgrade Prep 50% area	sy	121000	\$ 2.30		\$ 278,300.00
Onsite Basecourse 6" Thickness	Ton	37000	\$ 25.00		\$ 925,000.00
Onsite Paving 3" Thickness	Ton	20000	\$ 95.00		\$ 1,900,000.00
OffSite Road Cost (South to 66) upgrades					
Project Management	Ls	3%	\$ 7,911.50		\$ 7,911.50
Mobilization	Ls	2%	\$ 5,274.34		\$ 5,274.34
SWPP	Ls	1	\$ 3,000.00		\$ 3,000.00
Subgrade Prep	sy	17416	\$ 2.30		\$ 40,056.80
Base Course-6", 2- 6' shoulder	ton	5224	\$ 25.00		\$ 130,600.00
side)	ton	948	\$ 95.00		\$ 90,060.00
Offsite Bridge (Hall Road)	Ls	1	\$ 492,000.00		\$ 492,000.00
Project Management	Ls	3%	\$ 14,760.00		\$ 14,760.00
OffSite Road Cost (To Mentmore Road northeast)					
Project Management	Ls	3%	\$ 63,025.27		\$ 63,025.27
Mobilization	Ls	2%	\$ 42,016.85		\$ 42,016.85
SWPP	Ls	1	\$ 3,000.00		\$ 3,000.00
Clearing	acre	9.85	\$ 3,785.00		\$ 37,282.25
Fencing	Lf	14300	\$ 22.50		\$ 321,750.00
Cut	Cy	48000	\$ 8.75		\$ 420,000.00
Fill	Cy	32000	\$ 4.00		\$ 128,000.00
Drain Pipe 36-inch HDPE	Lf	1430	\$ 87.00		\$ 124,410.00
Subgrade Prep	Sy	48000	\$ 2.30		\$ 110,400.00
Base Course-6"-60 ft wide	Ton	14300	\$ 25.00		\$ 357,500.00
Asphalt-3"-48 ft wide	Ton	6300	\$ 95.00		\$ 598,500.00
Rail Improvements					
Project Management	Ls	3%	\$ 16,800.00		\$ 16,800.00
Ballast and Rail Only	Lf	1800	\$200.00		\$360,000.00
Switches-2 each	Each	4	\$50,000.00		\$200,000.00
				SubTotal	\$18,317,389.96
Engineering	Total for All Items	3%	\$18,317,389.96		\$549,521.70
Contingency	Total for All Items	10%	\$18,317,389.96		\$1,831,739.00
				Grand Total	\$20,698,650.65





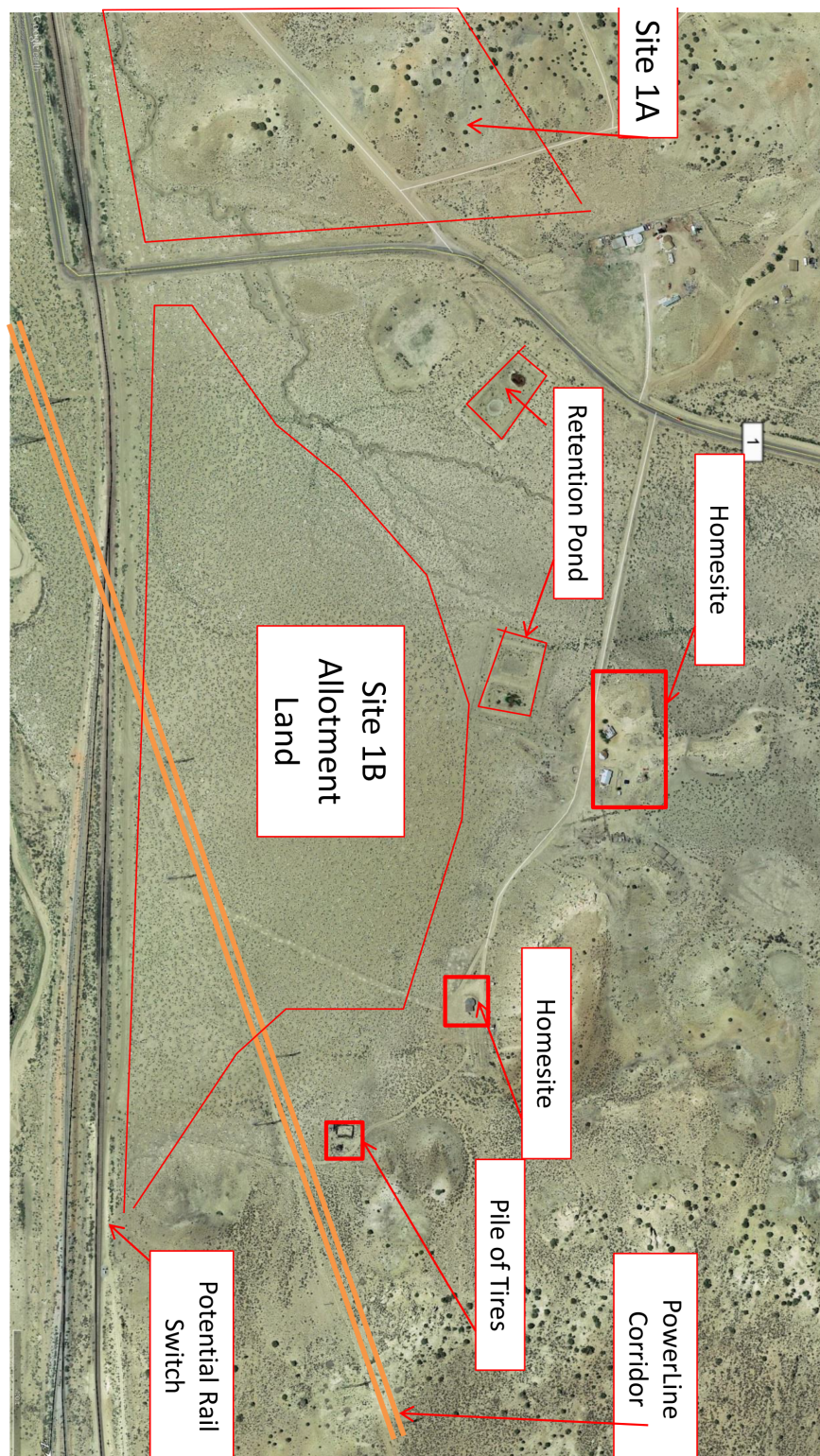
<b>Cost Estimate for Inland Port Site "5"</b>					
Item	Unit	Quantity	Unit Cost	Total Cost	
Land	acre	50	\$10,000.00		\$500,000.00
Onsite Power for Transmission	Ls	1	\$13,545.00		\$13,545.00
Project Management	LS	2%	\$270.90		\$270.90
Onsite Water for Domestic Water (Pump Station)	Each	1	\$58,000.00		\$58,000.00
Project Management	Ls	3%	\$4,304.64		\$4,304.64
SWPP	Ls	1	\$3,000.00		\$3,000.00
Water Line 6"	Lf	2916	\$18.00		\$52,488.00
Water Tank 50,000 gal.	Ls	1	\$30,000.00		\$30,000.00
Onsite Waste Water (septic)	Each	1	\$103,000.00		\$103,000.00
Project Management	Ls	3%	\$3,090.00		\$3,090.00
Onsite Building Cost 50,000 sf. \$106.00 sf	Ls	1	\$5,300,000.00		\$5,300,000.00
Onsite Office Building 35,000 sf. \$135.00 sf	Ls	1	\$4,375,000.00		\$4,375,000.00
Project Management	Ls	3%	\$394,005.53		\$394,005.53
Mobilization	Ls	2%	\$262,670.35		\$262,670.35
SWPP	Ls	1	\$3,000.00		\$3,000.00
Onsite Fencing	Lf	7243	\$22.50		\$162,967.50
Onsite Clearing	acre	50	\$3,785.00		\$189,250.00
Drainage 54" HDPE	Lf	0	\$170.00		\$0.00
Onsite subgrade Prep 50%area	sy	121000	\$2.30		\$278,300.00
Onsite Basecourse 6" Thickness	Ton	37000	\$25.00		\$925,000.00
Onsite Paving 3" Thickness	Ton	20000	\$95.00		\$1,900,000.00
OffSite Road Cost (North to 264) upgrades					
Project Management	Ls	3%	\$19,088.46		\$19,088.46
Mobilization	Ls	2%	\$12,725.64		\$12,725.64
SWPP	Ls	1	\$3,000.00		\$3,000.00
Subgrade Prep	sy	30653	\$2.30		\$70,501.90
Base Course-6",2- 6' shoulder	ton	9196	\$25.00		\$229,900.00
Asphalt 3"-4' wide (2' each side)	ton	3504	\$95.00		\$332,880.00
Intersection Improvements 264 and Haul	Ls	1	\$86,006.00		\$86,006.00
Project Management	Ls	3%	\$2,580.18		\$2,580.18
New Road south to Sun valley and upgrade to Mentmore					
Project Management	Ls	3%	\$225,642.90		\$225,642.90
Mobilization	Ls	2%	\$150,428.60		\$150,428.60
New Road Site 5 to Sun Valley	Ls	1	\$5,963,654.00		\$5,963,654.00
Upgrade to Defiance Draw Road	Ls	1	\$774,114.00		\$774,114.00
Upgrade to Mentmore	Ls	1	\$276,902.00		\$276,902.00
Bridge Haul Road	Ls	1	\$506,760.00		\$506,760.00
Rail improvements					
Project Management	Ls	3%	\$12,786.00		\$12,786.00
Ballast and Rail Only	Lf	1881	\$200.00		\$376,200.00
Switches-2 each	Each	1	\$50,000.00		\$50,000.00
				SubTotal	\$23,651,061.59
Engineering	Total for All Items	3%	\$23,651,061.59		\$709,531.85
Contingency	Total for All Items	10%	\$23,651,061.59		\$2,365,106.16
				Grand Total	\$26,725,699.60
Total less road and improvements to the south of Site 5					\$17,801,522.90





Cost Estimate for Inland Port Site "1A"					
Item	Unit	Quantity	Unit Cost	Total Cost	
Land	acre	50	\$10,000.00		\$500,000.00
Offsite Power for Transmission	Ls	1	\$67,179.00		\$67,179.00
Project Management	LS	2%	\$1,343.58		\$1,343.58
Onsite Water for Domestic Water (Well)	Each	1	\$75,175.00		\$75,175.00
Project Management	Ls	3%	\$4,653.03		\$4,653.03
SWPP	Ls	1	\$3,000.00		\$3,000.00
Water Line 6"	lf.	2607	\$18.00		\$46,926.00
Water Tank 50,000 gal.	Ls	1	\$30,000.00		\$30,000.00
Onsite Waste Water (septic)	Each	1	\$103,000.00		\$103,000.00
Project Management	Ls	3%	\$3,090.00		\$3,090.00
Onsite Building Cost 50,000 sf. \$106.00 sf	Ls	1	\$5,300,000.00		\$5,300,000.00
Onsite Office Building 35,000 sf. \$135.00 sf	Ls	1	\$4,375,000.00		\$4,375,000.00
Project Management	Ls	3%	\$329,248.86		\$329,248.86
Mobilization	Ls	2%	\$263,399.09		\$263,399.09
SWPP	Ls	1	\$3,000.00		\$3,000.00
Onsite Fencing	Lf	6283	\$22.50		\$141,367.50
Onsite Clearing	acre	50	\$3,785.00		\$189,250.00
Drainage 42" HDPE	Lf	863	\$67.25		\$58,036.75
Onsite subgrade Prep 50%area	sy	121000	\$2.30		\$278,300.00
Mobilization	Ls	2%	\$1,565.80		\$1,565.80
SWPP	Ls	1	\$3,000.00		\$3,000.00
Subgrade Prep	sy	5026	\$2.30		\$11,559.80
Base Course-6",2- 6' shoulder	ton	1508	\$25.00		\$37,700.00
Asphalt 3"-4' wide (2' each side)	ton	274	\$95.00		\$26,030.00
Offsite Bridge (Hall Road)	Ls	1	\$425,271.00		\$425,271.00
Project Management	Ls	3%	\$12,758.13		\$12,758.13
OffSite Road Cost (To Mentmore Road north east)					
Project Management	Ls	3%	\$40,217.44		\$40,217.44
Mobilization	Ls	2%	\$26,811.63		\$26,811.63
SWPP	Ls	1	\$3,000.00		\$3,000.00
Clearing	acre	6.11	\$3,785.00		\$23,126.35
Fencing	Lf	8882	\$22.50		\$199,845.00
Cut	Cy	30000	\$8.75		\$262,500.00
Fill	Cy	20000	\$4.00		\$80,000.00
Drain Pipe 36-inch hdpe	Lf	1430	\$87.00		\$124,410.00
Subgrade Prep	Sy	29600	\$2.30		\$68,080.00
Base Course-6"-60 ft wide	Ton	9178	\$25.00		\$229,450.00
Asphalt-3"-48 ft wide	Ton	3686	\$95.00		\$350,170.00
Rail Improvements					
Project Management with BNSF	Ls	100%	\$15,000.00		\$15,000.00
Ballast and Rail Only	Lf	0	\$200.00		\$0.00
Switches-2 each	Each	0	\$50,000.00		\$0.00
South access to home sites	Ls	1	\$26,000.00		\$26,000.00
				SubTotal	\$16,539,812.64
Engineering Total for All Items	3%		\$16,539,812.64		\$496,194.38
Contingen Total for All Items	10%		\$16,539,812.64		\$1,653,981.26
				Grand Total	\$18,689,988.28





Cost Estimate Note: All estimates include the costs for a 50,000 square foot distribution center or manufacturing plant and a 35,000 square foot office facility. You may excuse these costs, as needed or they may be used as a speculative building estimate.

### **Important Administration Guidelines**

There are a number of important points to consider in the administration of this inland port in the Site 1 Area. Cooperation and coordination with other local partners is paramount, particularly BNSF, local governments, and private developers. For the first three years a cooperative agreement with GLP will be needed for the hiring of:

- 3<sup>rd</sup> party rail switchers (BNSF will not switch but will only “hook and haul” product)
- Operators for different products (coal, oil, food, etc).

An annual budget in each of the first three years should be \$250,000.

In later years, there may be a need to hire a 3<sup>rd</sup> party freight consolidation team designed to manage a balance of flow of containers and related commodities. Important points include:

- Rail and ocean 3<sup>rd</sup> party consolidation experience
- Extensive domestic rail forwarding experience and will not compete with BNSF
- Sample 3<sup>rd</sup> parties to explore: BNSF Logistics and Watco Companies (Pittsburg, Kansas).

In later years, there may also be a need for 4-5 staff administrators (2 ramp, one sales, and one operations).



**ANALYZE AND ASSESS OF PRESENT AND FUTURE MARKET  
DEMAND/MARKET ANALYSIS; ANALYSIS OF EXISTING CONDITIONS &  
ASSESSMENT OF THE WORKFORCE AVAILABILITY AND PREPARATION**

**Introduction**

JBA is delivering the analysis and assessment of present and future market demand/market analysis; analysis of existing conditions & the assessment of the workforce availability and preparation in this section. It is delivered in a Strengths, Weaknesses, Opportunities, and Threats (SWOT) and Target Industry Analysis format which allow better analysis of development opportunities, in our opinion.

JBA has conducted many SWOT type analyses in the past. We conduct these from a site selector's viewpoint, which ensures the client that all location requirements will be assessed. These assessments may lead to more job and capital investment opportunities.

**Fieldwork Interviews**

Just like we would for an actual prospect, we traveled to The Navajo Chapters Region on five occasions in order to carry out careful site selection due diligence. There is a list of who was interviewed in the Appendix. The analysis consisted of on-site and telephone interviews with industry and development insiders, community leaders, education/training officials, Internet research, and information from the target industry analysis that FCG completed in early 2013.

The assessment included an analysis of the following:

- Sites Analysis and Scoring
- Workforce Availability and Preparation
  - Wages
  - Workforce Availability & Quality
- Training & Education
- Incentives
- Housing /Cost of Living/Quality of Life.

**Current Market Analysis**

The existing economic development market in the three Navajo Chapters is very limited. Currently there are a small number of small light manufacturing, wholesale, retail and home occupied businesses.

Around Site 1, there is a new development with an existing rail loop and with two more loops planned. This will help to spur rail needed development within Site 1, potentially manufacturing and distribution associated with the new target industries.

This analysis will help to analyze and assess present and future market demands/markets, help to assess workforce availability and help to understand economic impacts. The approach is designed to determine the best target industry fits for the Inland Port Area and to develop a strategy to help these targets locate and expand here.

The analysis was carried out in a multi-phased approach, including:

1. Preliminary Target Industry Assessment
2. Potential Freight/Logistics Analysis Additions
3. Community Assessment (Target Match Analysis)
4. Selection of the “Best Fit” Targets and Target Profiles

Targeting is well recognized as the best method of attracting economic development. We utilize a unique methodology designed to identify the best target industries. We maintain a database of actual, major private sector site locations/expansions<sup>7</sup>. For this analysis we looked at activity that occurred in 2013 and 2014.

This database assists us in predicting growth trends and we utilize this data for selecting the best initial communities for our site location clients and the best industries to explore for economic development clients. The methodology is sound and proven for the following reasons:

- Locations/expansions are driven by recent market conditions and these conditions will generally continue into the near future.
- Companies (and site selection consultants) select regions first and then communities within these regions with the best business climates. This may mean, for example, a good labor climate, good market proximity, good transportation, and the availability of incentives; all positive business conditions. This will result in clustering, a concentration of like companies due to favorable business conditions.
- Clustering is a “green light” for other similar companies to take a look. But they will only locate if the good business conditions remain. For example, they may find that the labor market for select skills depleted due to too much location/expansion activity. This is why we conduct careful fieldwork interviews with local companies for our site location clients, in order to help them to thoroughly understand the local business conditions.

We will review and analyze both regional growth cluster and sector projections in order to help you to understand which existing (and future) businesses will grow. It will also set the stage for the next portion of this assignment: understanding the needs of the most active, fastest growing company types. Cluster data is excellent for target planning because:

- It represents actual physical building activity (size and type of building).

---

<sup>7</sup> We use Conway Data information, which tracks major locations and expansions (At least \$1 million in capital investment, 50 new jobs or 20,000 square feet).

- It represents actual economic development (both capital investment and jobs).

### **Multi-State Regional Location/Expansion Activity (“Growth” Clusters)**

JBA explored location/expansion trends in the Inland Port Area’s four-state region (“Four Corners” – New Mexico, Arizona, Colorado, and Utah).

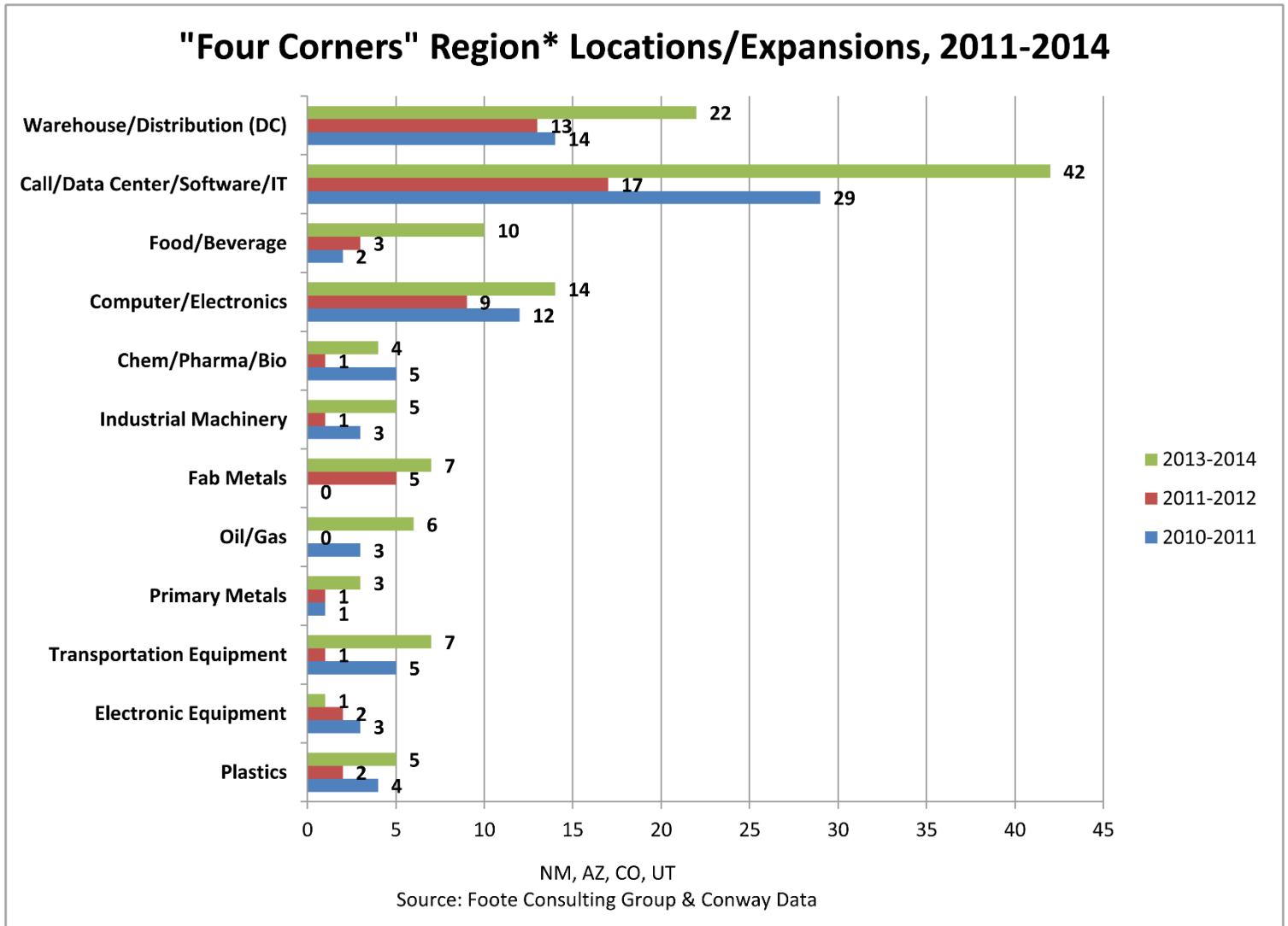
We first screened location/expansion data in order to identify which industries (by NAICS Code<sup>8</sup>) located/expanded the most facilities in a multi-state region during between 2010 and 2014 (4<sup>th</sup> quarter 2010 - 1<sup>st</sup> quarter 2014). We define these as “growth clusters”.

The graph on the following page depicts this information which shows individual industry sectors.

- **Warehouse/distribution (DC)** showed good growth between 2013 and 2014 (69%). Interstate access, rail service and large regional markets are critical here.
- **Call/data centers/software/IT**, which includes many technology, IT, data center and office uses, showed excellent growth between 2013 and 2014 (147%).
- **Food processing** showed outstanding growth between 2013 and 2014 (233%).
- **Oil/gas** industry growth showed outstanding growth between 2013 and 2014 (600%)
- **Other manufacturing sectors** that showed positive growth between 2013 and 2014 included metals; chemicals/pharmaceuticals/biotech; plastics; transportation equipment; computer/electronics, industrial machinery, and data centers.

---

<sup>8</sup> The North American Industry Classification System (NAICS) was formerly the Standard Industrial Classification (SIC) system.



The trend will be toward more locations/expansions in these general categories and industry sectors into the near term. They all, therefore, represent potential targets for the Inland Port Area.

**Major New Manufacturing/Distribution Center Locations/Expansions in the 4 Corners, 2013-14**

<b><u>State</u></b>	<b><u>City</u></b>	<b><u>Company</u></b>	<b><u>Product</u></b>	<b><u>Jobs</u></b>	<b><u>SqFt</u></b>	<b><u>Type</u></b>
<b>UT</b>	Spanish Fork	Liberty Safe	Fab Metals	100	90,000	DC
<b>UT</b>	Salt Lake	Peterbilt	Truck & Bus	145	110,000	Mfg
<b>AZ</b>	Phoenix	WinCo	Groceries	300	200,000	DC
<b>CO</b>	Grand Junction	West Star Aviation	Aircraft	150	94,000	Mfg/DC
<b>UT</b>	Salt Lake	Master Control	Software	197		Mfg
<b>AZ</b>	Phoenix	JV Driver	Equipment	200		Mfg
<b>AZ</b>	Mesa	Apple	Glass	700	1,200,000	Mfg
<b>CO</b>	Denver	Colorado Petro	Petroleum		230,000	DC/HQ
<b>AZ</b>	Phoenix	Living Spaces	Furniture	250	440,000	DC
<b>UT</b>	Salt Lake	Varian	X-Ray Machines	1000	120,000	Mfg
<b>UT</b>	Mona	Houweling	Produce	280		Mfg
<b>AZ</b>	Phoenix	Power-One	Energy	105		Mfg
<b>UT</b>	Tooele	Cabela's	Sporting Goods	300	600	DC

**The Preliminary Targets**

Based on the previous analysis where we looked at regional location/expansion activity, we feel that the best preliminary targets for the Inland Port Area include (not by priority):

- **Oil/Gas/Mining Related**
  - Fracking sand (two types)
  - Pipe
  - Mining/industrial equipment
  - Water recycling equipment
  - Imaging equipment
  - Chemicals
  - Coal
- **Food Processing/Agricultural Products** (including “grain in a box” transload)
- **Chemicals/Biofuels**
- **Warehouse/Distribution** (rail related DCs)
- **Industrial Machinery/Fab Metal Products/Transportation Equipment** (including rail car manufacturing and repair)
- **Plastics Products**
- **Renewable Energy Production** (solar and wind).

Retail (i.e. restaurants/hotels) should not be considered a primary target industry. Retail will naturally follow the attraction of targets over time.

## **Target Match (Strengths And Weaknesses) Analysis**

### **Introduction**

In corporate site selection, we analyze communities in order to determine if they possess the attributes most important for our clients. Our objective in this phase of work is to:

1. Understand the general location needs of preliminary targets
2. Understand the strengths and weaknesses of the Inland Port Area
3. Match these strengths with the needs of the preliminary targets
4. Recognize the weaknesses of the Area.
5. Determine the “best fit” targets based on these factors and offer target profiles
6. Develop the economic development recommendations designed to help attract/expand the “best fit” targets.

### **The Location Needs of the Preliminary Targets**

#### **Introduction**

First, we will provide pertinent background information on each preliminary target. This includes a brief description and important trends. Next, based on our site selection experience, we have listed the top site selection criteria for each target and show the Inland Port Area’s strengths and weaknesses for each target.

#### **Trends & Criteria**

### **Oil/Gas/Coal & Mining-Related**

#### **Understanding the Sector**

#### **Shale Oil**

Shale oil drilling through fracking technologies is booming in many parts of the U.S., including planned increases in the San Juan Basin (Four Corners Region), an emerging oil play. Oil production is expected to rise from 7.3 million barrels a day in 2010, to 10.3 million barrels a day in 2020. That should be enough to slash imports about two-thirds by 2035, making America less dependent on oil from the volatile Middle East.

U.S. oil output in December, 2014 hit 9.14 million barrels a day, marking the highest American production on record since the U.S. Energy Information Administration started tracking it in 1983. The EIA is projecting that U.S. oil production will continue to rise to 9.3 million barrels a day during 2015, despite depressed crude-oil prices.

The recent drop in oil/gas prices may eventually hurt the oil industries, but according to some it is still profitable at lower prices. Fracking is ripe for technology gains that would help it weather further declines.

Three factors make it unlikely that the decline in oil prices will bring the shale revolution to an end. First, shale production is profitable at today's lower prices.

Second, shale production is getting more efficient, which means that profits are possible at prices even lower than today. Smart drilling techniques, horizontal drilling, hydraulic fracturing and information technologies that accurately locate where to place rigs and enable precise steering of the drill through meandering horizontal hydrocarbon (rich shales), are far more productive than when the boom started even though the world price stayed well over \$100.

The third factor is profound because of the enormous scale and diversity of America's hydrocarbon infrastructure. Many oil-producing nations have only a few big oil fields and a handful of companies, sometimes just one. The U.S. has dozens of world-class fields, thousands of production companies, tens of thousands of related businesses, and millions of miles of pipe and rail. Among the thousands of shale producers, you can guarantee there are pioneers just like those who started the shale revolution. As profit margins erode due to low or even lower future prices, the pioneers will try out the revolutionary new shale techniques that have yet to be tried.

The next-generation of shale technology is coming. These include automated drilling, micro drilling that allows for far faster deployment with a smaller rig footprint and new types of drills (some may use lasers soon), and big-data analytics to maximize yields by tapping into the surprising volume of data from complex shale operations. There is also nanotechnology to radically improve chemical formulations and safety, on-site water recycling and even water-free fracturing, and new classes of high-resolution subsurface imaging to radically improve exploration and production using real-time and microseismic imaging.

#### Shale Oil in the San Juan Basin (Four Corners area)

There are currently significant volumes of shale oil coming out the San Juan Basin, and oil producers are in need of cost saving means of





transporting crude to markets in California and the Gulf Coast. Rail will help provide this cost saving.

Recent exploration for Mancos shale oil in the Four Corners Area will lead to increased oil production. Successes appear to be limited, but exploration is in the early stages (the Bakken oil play in North Dakota was in an exploratory stage for three years before wide scale drilling began). There are mixed opinions on this subject, and it is still too early to predict future volumes, but companies are very optimistic about the region.

If exploratory success pans out for “wildcatters,” such as Encana and WPX, the larger companies with large lease holdings (i.e. ConocoPhillips controls 40% of land leases and 10,000 conventional wells currently) would likely follow into this market. Much will depend on the worldwide demand and price of oil and future of shale drilling. Key quotes:

- From Energen 10/14/14: *“The results coming from the Mancos formation oil play in the San Juan Basin continue to impress. We have a 50 percent non-operated working interest in four Mancos oil wells drilled this year in the south-central portion of the basin, and the results of wells three and four were even better than the first two.”*
- From Encana 11/14 about the San Juan Basin: *“We like it! Light, sweet oil play discovered, capable of producing 50,000 barrels per day; On pace to deliver 2014 production growth; significant well cost reductions achieved (drilling costs are 11% lower than 2013 averages); consistent well performance...”*
- From Wall Street Journal (4/15): *“Major oil company executives are calling for Congress to allow for exporting of oil which will force oil prices up.”* (Oil oriented intermodal/inland port projects serving west coast ports could benefit from this.)

As the Mancos shale oil market grows, more and more frac sand will be required for import (2 million lbs needed per well; one frac job needs 100,000 lbs). First stage sand is specialized and is currently imported from China via West Coast ports. Second stage sand comes from Eastern Arizona via truck. Rail will be a viable transportation alternative as demand rises.

Western Refinery buys much of the regional crude for refining (25,000 barrels/day) and distribution, however, they may be reaching capacity soon. Western owns a vacant pipeline, which would only be economical if oil prices were much lower.

Oil/gas/mining equipment manufacturing and distribution projects, looking for industrial sites with rail, are a possibility as shale oil activity grows. There is currently a growing need to build and repair oil carrying rail cars as supplies are very low.

According to the Gallup Land Partners Energy Logistics Park study of August 2014: *“...estimate(d) up to 30 billion barrels of oil are trapped the New Mexico portion of the Mancos Shale bed, which stretches into Colorado, Utah and Wyoming. They believe at least 5 percent, or about 1.5 billion barrels, can be economically recovered.”*

#### Current Market Conditions

- Oil production is steady and strong; nobody is slowing down yet.
- Companies are concerned with the fall of oil prices what might happen to business; now getting \$62/barrel.
- Many are selling to Western Refinery; some are going to rail.
- Changes may occur in 2015, depending on the price of oil. Fears include:
  - *If oil gets to \$50/barrel new drilling would stop?*
  - *Fracking may be hurt?*
  - *Winter is coming (slower activity).*

#### Employee Shortages

- Well operators
- Truck drivers
- Accountants.

#### Coal

High yield coal for the cement industry from the National King Coal Mine near Durango is currently being trucked (185 miles one-way), and transloaded onto the BNSF Railroad (400 cars per week—may increase to 500) at the The Gallup Partners (GLP) Site, next to Site 1. Some backhaul of limestone is also taking place.

Future coal movements will depend on the uncertain future of power plant production in the Four Corners region. Reduction or curtailment of production could necessitate the transportation of coal to export markets in Asia and elsewhere. Much depends upon the Navajo Nation and the economic viability of staying in the coal mining business. Transloading of coal to BNSF Rail and on to West Coast ports may be the viable alternative.

SR 491 (from Farmington to the GLP site) is currently the best/safer truck route for the transfer of oil and coal related products from the Farmington area. Extensive upgrades to SR 491 have been approved and construction has begun (estimated \$90 million).

Key Site Selection Needs (by priority) – Oil/Gas/Coal Pipe Supplier

1. Available labor – machining skills & quality
  - a. Key positions: machinist, maintenance mechanic, machine operator (CNC), and warehouse workers
2. Labor costs
3. Access to Western markets/transportation costs
4. Interstate highway access
5. Electric power (reliability & costs)
6. Improved sites and/or existing buildings
7. Rail access
8. Available training (and incentives)
9. Good access to suppliers
10. Good labor/management relations.

**Warehouse/Distribution (DC) – NAICS 421; 422; 484; 488; 492; and 493**

Understanding the Sector

The warehouse/distribution (DC for distribution center) sector has historically been one of the fastest growing and largest in regards to new locations/expansions of any industry sector nationally. The sector suffered during the recent recession as locations/expansions were slowed by lower consumer demand for retail products. However, growth in online or e-commerce retailing (i.e. Amazon) has spurred new activity for DCs over the last few years.

The DC sector comprises a number of NAICS codes, including: 421 & 422-wholesale distribution; 484-truck transportation; 488-transportation support; 492-couriers; and 493-warehouse/distribution.

The following are some key points regarding the state of logistics industry which affect DC projects today:

- Fuel prices may drive rates down if oil prices continue to fall.
- On the international side, port congestion is a major problem, particularly the West Coast ports of Long Beach and LA.
- There are some difficult problems:
  - Drastic driver shortages
  - Continued worry about the overall transportation infrastructure
  - Likely increase in security requirements, etc.
- With these challenging issues, there's a growing desire to optimize the network of distribution centers.

- With these in mind, the following national DC trends are significant:
  - Freight costs drive site selection decisions.
    - Along with labor costs they are either first or second in importance.
    - Access to customers; very specific and detailed freight modeling is done in order to optimize shipping costs and time.
  - Projects are very fuel cost sensitive – optimizing shipping distance
  - Regionalization is occurring; meaning the development of smaller boxes serving regional markets versus massive boxes serving larger national market area (speed to market, lower shipping costs).
  - Many companies are integrating rail – it will provide a cheaper shipping alternative in the future; if all else is equal, the prospect will choose the rail site over the non-rail site.
  - Direct highway access is often important – “5 to 55” (5 minutes to reach 55 miles per hour for trucks) means immediate access to limited access Interstate and major highways.
  - Many searches will start with available buildings, but most will end up with a build-to-suit since the buildings may not meet needed specifications.
  - Location activity has been up for online/e-commerce retail projects.
  - DCs are attracted to port sites (i.e. Long Beach, Houston, Charleston)
    - East Coast ports, with expansions to serve “Post Panamax” ships that can pass through the expanded Panama Canal starting in 2016; will likely grow faster in order to serve the larger population base in the East. Competitive between East Coast ports to capture this new traffic has been intense, but in our opinion, the Port of Charleston has the inside track as the port of choice.
  - DCs are attracted to intermodal (rail, truck, and/or air freight) sites (i.e. Phoenix, AZ; Albuquerque, NM; Joliet, IL; Kansas City, MO/KS; Alliance, TX; Minot, ND).
  - Every manufacturing project also has a warehousing component.
  - There is a general lack of understanding of freight modeling in the economic development community.

Key Site Selection Needs (by priority)

1. Access to market/transportation/freight costs
  - a. Access to intermodal freight terminals and ports growing in importance
2. Labor costs/availability
  - b. Key positions: material handlers, forklift drivers, and truck drivers
3. Electric power (costs/reliability)
4. Access to Interstate highways (“5 to 55” – ability to reach 55 miles per hour within 5 minutes)
5. Large sites (50 to 250 acres) or large buildings (40,000-square-foot plus)
6. Rail service for select operations
7. Incentives
  - c. Infrastructure
  - d. Training
8. Good labor/management relations

**Industrial Machinery/Metals/Transportation Equipment/Energy Products – NAICS 332, 333, & 336**

Understanding the Sector

Industrial machinery is a diverse sector covering the manufacturing and assembly of equipment used to aid and service other industrial sectors. Fab metals equipment is often closely connected. Examples of active regional segments include oil/gas equipment and transportation components (i.e. rail cars); renewable energy equipment; cable assemblies; turbines; construction machinery; and sheet metal.

Companies in this industry transform purchased metals into intermediate or end-use products by forging; stamping; bending; forming; welding; machining; and assembly. Major companies include Ball Corporation; Flowserve; Mueller Industries; Snap-On; and The Timken Company (all headquartered in the U.S.); as well as Jiangsu Guotai International (China), Schaeffler Technologies (Germany), and Toyo Seikan Kaisha (Japan). Because of the special manufacturing processes involved for individual parts, most companies make a limited range of products.

United States trends include:

- U.S. durable goods manufacturers' shipments of fabricated metal parts, an indicator of fabricated metal parts production, rose 1.6 percent year-to-date in March 2014 compared to the same period in 2013.
- U.S. steel mill product prices, an indicator of commodity steel costs for fabricated metal products manufacturers, rose 2.2 percent in April 2014 compared to the same month in 2013.

## Renewable Energy

New Mexico has significant potential for renewable energy production, particularly solar and wind. New Mexico ranks ninth in total solar electric capacity<sup>9</sup> in the nation and 18<sup>th</sup> in total wind energy installed capacity.<sup>10</sup> In 2013, New Mexico ranked fifth in the nation in utility-scale electricity generation from solar energy and renewable energy supplied 7.8 percent of the electricity generated in the state.<sup>11</sup>

New Mexico's Renewable Portfolio Standard requires that 20 percent of all electricity sold by investor-owned electric utilities, and 10 percent sold by cooperatives, come from renewable energy resources by 2020. U.S. domestic assembly and manufacturing for the renewable industry has expanded significantly over the past decade. In the Southwest, wind energy-related plants are heavily concentrated in California, Texas, and Arizona; with a small number in New Mexico.

These trends and requirements suggest opportunities to service renewable energy projects in Northwest Mexico. The wind sector, and to a lesser extent the solar sector, generates shipments of over-sized and heavy components during the construction phase of projects, from domestic and overseas sources. Access to a rail facility in reasonable proximity to the development site eases the supply chain challenge of moving large components – shipment by rail to rail facility, where components can be stored for delivery to the site by road. General requirements are rail siding, heavy lift equipment, and open storage area. Some components may be shipped by intermodal rail to regional intermodal ramps (e.g., BNSF at Albuquerque, NM and Phoenix, AZ; and UP at Santa Teresa, NM, Phoenix, AZ and Tucson, AZ) and then by truck to the staging area or project site.

Examples of the types of components for wind energy include<sup>12</sup>:

- Power transmission: wind turbines have a sizable and complex power transmission system, requiring bearings; couplings; gears; hydraulic systems; brakes; machined and fabricated components; and shafts, among other components.
- Electrical: the electrical system is a critical part of a wind turbine. Common components include power converters, controls, sensors and generator components.
- Structural: turbines use a huge number of fasteners, castings, and other steel products.
- Equipment: a variety of components, such as fall protection, turbine lighting and other systems are needed. Turbines also require unique construction and on-site equipment.

---

<sup>9</sup> Source: Solar Energy Industries Association

<sup>10</sup> Source: American Wind Energy Association

<sup>11</sup> Source: Energy Information Agency

<sup>12</sup> Source: American Wind Energy Association

- Materials: turbines are primarily composed of large amounts of steel, but other materials, such as composites, ductile iron, concrete, aluminum, copper, and adhesives are also used.

Key Site Selection Needs (by priority)

1. Available labor – machining skills & quality
  - a. Key positions: machinist; maintenance mechanic; machine operator (CNC); and warehouse workers
2. Labor costs
3. Access to Western markets/transportation costs
4. Interstate highway access
5. Electric power (reliability & costs)
6. Improved sites and/or existing buildings (minimum of 20,000 square feet)
7. Rail access
8. Available training (and incentives)
9. Good access to suppliers
10. Good labor/management relations.

**Chemicals/Plastics/Biofuels-Related – NAICS 325 & 326**

Understanding the Sector

This is a large and diverse sector which includes growth segments such as mining-related chemicals, plastics, and biofuels.

Biofuels – NAICS 325193

The market is broken down into first generation biofuels and other fuels. First generation biofuels currently dominate the market and generated \$37.1 billion in 2008. This is expected to decrease slightly to \$34.0 billion in 2013. However, booming shale oil and natural gas projects have hurt many biofuel efforts.

Biofuel is a solid, liquid, or gaseous fuel derived from recently dead biological material, as distinguished from fossil fuels derived from long dead biological material.

Theoretically, biofuels can be produced from any biological carbon source, though the most common sources are photosynthetic plants. Currently, the most common biofuels are liquid fuels used primarily in transportation applications.

A profitable biofuels market depends on a number of interrelated factors, including the price of oil, the ready availability of inexpensive feed materials, continued government support (financial and legislative), improvements in process technology that cut costs for



the next generation of biofuels, and competition from other alternatives to fossil-based products. The most critical factor is access to raw materials.

The price of crude oil today is making the economics of ethanol/biodiesel production much less feasible today. The most critical factor is access to raw materials. Biofuel companies such as LS9 and Amyris Biotechnologies have been using sugar cane syrup provided by nearby sugar cane mills as their primary feedstock. These firms are also using their facilities to test and optimize the use of cellulosic materials such as wood chips, agricultural residues, and sorghum in the production process. The end result will be a one-step fermentation process that converts renewable raw materials into renewable fuels and high-value chemicals.

Key Site Selection Needs for Biofuels (by priority)

- Local raw material stock supply (represents 65%-70% of total operating exp.)
- Highway access
- Rail access to isolated industrial site (70-acre minimum)
- Utility infrastructure (natural gas pipeline, electricity, water)
- Labor costs and availability
- Rural, remote, lower wage areas.

Plastics manufacturing is widespread and assists many industries. The key to good production is access to raw materials via rail service.

Key Site Selection Needs for Plastics Products (by priority)

1. Labor costs and unskilled/semiskilled availability
    - a. Key positions: machine operators, maintenance mechanics, and warehouse workers
  2. Electric power (reliability and costs)
  3. Fully improved sites and/or existing buildings (30,000-square-foot minimum)
  4. Access to market/transportation costs
    - b. Customers often require JIT delivery
  5. Rail service
    - c. Pellets are often brought in via hopper car
- Incentives (training and offsets for large capital equipment costs)
  - Good labor/management relation.

## **Food Processing – NAICS 311 & 312**

### Understanding the Sector

Food processing is a dominant sector in the West due to the direct access to an abundance of raw food materials, (including corn; beef; beans; wheat; barley; chicken; and rapidly growing organic products) and access to large consumer markets.

Food processing has had a difficult year nationally. For example, General Mills Inc. said its sales fell in the most recent quarter amid continued weakness in the U.S. food industry and slowing growth in emerging markets. Earnings for the period topped the company's outlook, reflecting a shift in the timing of expenses, while sales fell below analysts' projections.

The company has sought to reduce its costs by closing factories, cutting jobs and scaling back production to respond to lower consumer demand. Chief Executive Ken Powell said he believes the company is primed for growth in the second half of its fiscal year.

"The operating environment remains challenging but, as we move into the second half of our fiscal year, we expect to renew sales and profit growth," he said in a news release.

Companies in this industry manufacture and process a wide variety of foods, including meat; seafood; dairy products; fruits and vegetables; milled grains and oilseeds; baked goods; and candy. Major companies include U.S.-based Archer-Daniels-Midland (ADM); ConAgra Foods; Frito-Lay; Kellogg; Kraft Foods; Mondelez International; and Tyson Foods. International companies include, Grupo Bimbo (Mexico); Groupe Danone (France); JBS (Brazil); Maruha Nichiro Holdings (Japan); Nestlé (Switzerland); and Unilever (The Netherlands).

United States trends include:

- The consumer price index for food, an indicator of food product values, rose 1.9 percent in April 2014 compared to the same month in 2013.
- U.S. nondurable goods manufacturers' shipments of food products, an indicator of demand for food manufacturing, rose 4.9 percent year-to-date in March 2014 compared to the same period in 2013.
- U.S. retail sales for food and beverage stores, a potential measure of food demand, increased 2.8 percent in the first four months of 2014 compared to the same period in 2013.
- Total U.S. wholesale sales of nondurable goods, a potential measure of food demand, rose 7.4 percent in March 2014 compared to the same month in 2013.

The successful Navajo Agricultural Products Industries (NAPI) project near Farmington, NM helps make food processing, warehousing and transport a potential target locally. The lack of a number of traditional site selection needs near Farmington and NAPI (i.e. Interstate highway and rail) enhances industrial rail site opportunities in the The Navajo Chapters Area. Beef, potato, bean and other vegetable products for regional consumption

may be possible including locally grown/processed “farmers market” products. Their revenue is steady at \$12-\$13 million per year.

NAPI officials feel that the best future opportunities may lie in containerized agricultural products via rail (the “food in a box” concept). This concept has been successful at the intermodal operation near Minot, ND, and the Bakken shale fields where oil/gas equipment is imported via rail containers and ag commodities are exported via containers.

NAPI did make limited use of Thoreau, but they are concerned with the poor conditions of SR 371. They have attempted to lease space at the The Navajo Chapters Land Partners (GLP) loop in the past, unsuccessfully (due to past ownership), but this will change with the new owners.

Food product manufacturing and distribution projects, looking for industrial sites with rail, are a possibility in the future.

#### Key Site Selection Needs (by priority)

1. Available labor skills
  - a. Key positions: machine operators (cutting, blending & PLC<sup>13</sup>); food technicians; maintenance mechanics; and warehouse workers)
2. Labor costs
3. Access to markets & raw materials/transportation costs
4. Good water and sanitary sewer capacities
5. Electric power costs/reliability
6. Fully improved industrial sites/specialized buildings (may require rail service)
7. Incentives
  - b. Equipment tax exemptions (large capital investment)
  - c. Infrastructure
  - d. Training
8. Good highway access
9. Good labor/management relations.

---

<sup>13</sup> PLC – Programmable Logic Control

## **Inland Port Area's Key Economic Development Strengths & Weaknesses**

### **Introduction**

JBA examined key site selection criteria prevalent in all the preliminary targets as they relate to the Inland Port Area. Each is rated from poor to excellent. Criteria include:

- Transportation/Logistics
- Labor Costs
- Labor Availability & Quality
- Industrial Sites
- Utilities
- Quality of Life/Cost of Living/Education

The analysis included fieldwork interviews with company, training/education, and development officials. We benchmarked the Inland Port Area against several competitor and source<sup>14</sup> cities for select criteria:

- Albuquerque, NM
- Denver, CO
- San Bernardino, CA
- Phoenix, AZ
- Tucson, AZ

### **Transportation/Logistics**

**Excellent**

The ability of a company to receive and deliver goods economically is often a determining site selection factor. The Inland Port Area has a number of key strengths from a transportation/logistics standpoint:

- I-40 Interstate highway access
- BNSF Class 1 mainline rail with an existing spur loop near Site 1
- Industrial sites with excellent access
- Adequate air carrier service (i.e. UPS/FedEx), but no commercial air service nearby.

***Key Conclusion:*** *The Inland Port Area is an excellent location from a transportation/logistics viewpoint to serve western regional markets (i.e. Albuquerque, Denver, Phoenix, Dallas/Fort Worth and Los Angeles). Freight modeling will help to document freight cost advantages.*

---

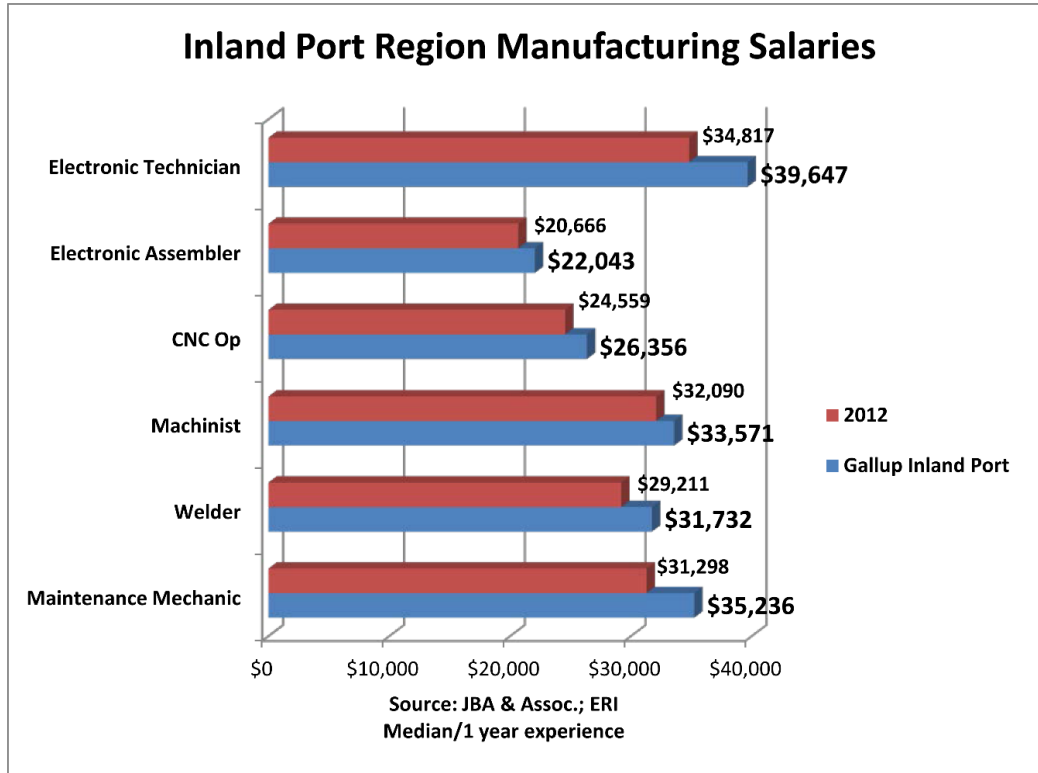
<sup>14</sup> Large metro areas where target company headquarters may be located.

***Labor Costs***

***Excellent***

Wage rates and salaries are the single most important labor factor both affecting the availability of good quality workers in a marketplace and affecting a company's competitive position. Up to 80% of the annual operating costs of a project can be labor.

Select wages follow. We utilized wage data from our Economics Research Institute (ERI) database, <sup>2nd</sup> Quarter 2014. Wages are for workers with one-year experience, median without benefits.



- **Manufacturing salaries/wages have risen in the Inland Port Region approximately 9.2% between 2012 and 2014.**
- **Inland Port Region salaries are currently lower than those in all other comparison communities (accept machinist is lower in Phoenix).**

***Key Conclusions:*** *Regarding salaries/wages, by locating in the The Navajo Chapters/Inland Port Area, target employers would:*

- *Save 7.8% over Albuquerque*
- *Save 19.1% over Denver*
- *Save 17.2% over San Bernardino*
- *Save 1.5% over Phoenix*
- *Save 7.2% over Tucson.*

***Labor Availability***

***Above Average to Good***

A good labor force exists near the project area<sup>15</sup>. The data below shows labor numbers within a 20 to 30 mile radius using the OnTheMap program.

The Longitudinal Employer Household Dynamics (LEHD) program is part of the Center for Economic Studies at the U.S. Census Bureau. The LEHD program produces new, cost effective, public-use information combining federal, state and Census Bureau data on employers and employees under the Local Employment Dynamics (LED)

Partnership. OnTheMap is an LEHD program is an online mapping and reporting application showing where workers are employed and where they live with companion reports on worker characteristics and optional filtering by age, earnings, or industry groups.

By using the On the Map tool JBA was able to pinpoint the number of workers within a 20 and 30 mile radius of the preferred site. By doing this we can examine what industries those workers are employed in and around The Navajo Chapters. The point in which we triggered the analysis is exactly at Site #1. Even though this doesn't exactly tell you how many are working from the three chapter area it does tell you the labor force draw from the site. A Home/Work Analysis determines whether the selection area is analyzed on where workers live ("Home") or where workers are employed ("Work").

A work area profile shows the following:

<b>TOTAL PRIMARY JOBS</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Total Primary Jobs	15,404	100.0%
<b>Jobs by Worker Age</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Age 29 or younger	3,107	20.2%
Age 30 to 54	8,779	57.0%
Age 55 or older	3,518	22.8%
<b>Jobs by Earnings</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
\$1,250 per month or less	3,270	21.2%
\$1,251 to \$3,333 per month	7,372	47.9%
More than \$3,333 per month	4,762	30.9%

<sup>15</sup> 2011 "On The Map" analysis.

<b>Jobs by NAICS Industry Sector</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Agriculture, Forestry, Fishing and Hunting	32	0.2%
Mining, Quarrying, and Oil and Gas Extraction	653	4.2%
Utilities	349	2.3%
Construction	522	3.4%
Manufacturing	313	2.0%
Wholesale Trade	202	1.3%
Retail Trade	1,422	9.2%
Transportation and Warehousing	180	1.2%
Information	62	0.4%
Finance and Insurance	132	0.9%
Real Estate and Rental and Leasing	51	0.3%
Professional, Scientific, and Technical Services	103	0.7%
Management of Companies and Enterprises	14	0.1%
Administration & Support, Waste Management and Remediation	557	3.6%
Educational Services	2,685	17.4%
Health Care and Social Assistance	2,587	16.8%
Arts, Entertainment, and Recreation	633	4.1%
Accommodation and Food Services	1,812	11.8%
Other Services (excluding Public Administration)	126	0.8%
Public Administration	2,969	19.3%
<b>Jobs by Worker Race</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
White Alone	7,042	45.7%
Black or African American Alone	228	1.5%
American Indian or Alaska Native Alone	7,576	49.2%
Asian Alone	228	1.5%
Native Hawaiian or Other Pacific Islander Alone	15	0.1%
Two or More Race Groups	315	2.0%
<b>Jobs by Worker Ethnicity</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Not Hispanic or Latino	10,368	67.3%
Hispanic or Latino	5,036	32.7%

<b>Jobs by Worker Educational Attainment</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Less than high school	1,881	12.2%
High school or equivalent, no college	3,778	24.5%
Some college or Associate degree	4,247	27.6%
Bachelor's degree or advanced degree	2,391	15.5%
Educational attainment not available (workers aged 29 or younger)	3,107	20.2%
<b>Jobs by Worker Sex</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Male	6,920	44.9%
Female	8,484	55.1%

A 20 mile home area profile shows the following:

<b>TOTAL PRIMARY JOBS</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Total Primary Jobs	30,311	100.0%
<b>Jobs by Worker Age</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Age 29 or younger	6,482	21.4%
Age 30 to 54	17,371	57.3%
Age 55 or older	6,458	21.3%
<b>Jobs by Earnings</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
\$1,250 per month or less	7,289	24.0%
\$1,251 to \$3,333 per month	13,989	46.2%
More than \$3,333 per month	9,033	29.8%
<b>Jobs by NAICS Industry Sector</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Agriculture, Forestry, Fishing and Hunting	222	0.7%
Mining, Quarrying, and Oil and Gas Extraction	939	3.1%
Utilities	570	1.9%
Construction	1,650	5.4%
Manufacturing	877	2.9%
Wholesale Trade	643	2.1%
Retail Trade	3,139	10.4%

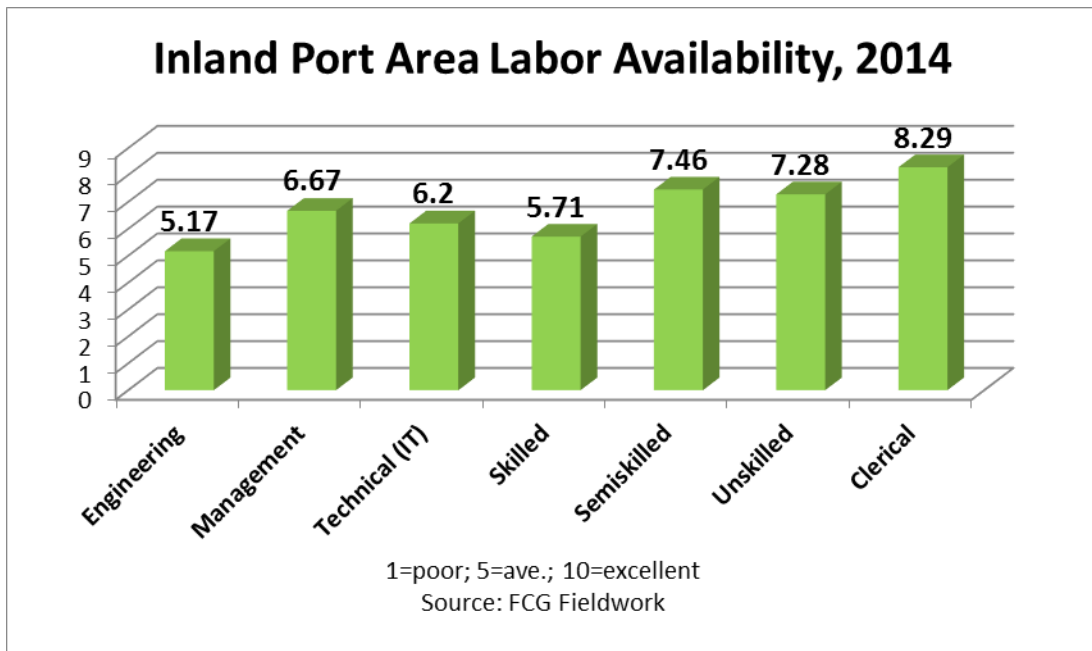


Transportation and Warehousing	488	1.6%
Information	271	0.9%
Finance and Insurance	442	1.5%
Real Estate and Rental and Leasing	279	0.9%
Professional, Scientific, and Technical Services	612	2.0%
Management of Companies and Enterprises	119	0.4%
Administration & Support, Waste Management and Remediation	1,175	3.9%
Educational Services	3,930	13.0%
Health Care and Social Assistance	5,225	17.2%
Arts, Entertainment, and Recreation	936	3.1%
Accommodation and Food Services	2,949	9.7%
Other Services (excluding Public Administration)	523	1.7%
Public Administration	5,322	17.6%
<b>Jobs by Worker Race</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
White Alone	12,261	40.5%
Black or African American Alone	353	1.2%
American Indian or Alaska Native Alone	16,740	55.2%
Asian Alone	409	1.3%
Native Hawaiian or Other Pacific Islander Alone	38	0.1%
Two or More Race Groups	510	1.7%
<b>Jobs by Worker Ethnicity</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Not Hispanic or Latino	21,666	71.5%
Hispanic or Latino	8,645	28.5%
<b>Jobs by Worker Educational Attainment</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Less than high school	3,610	11.9%
High school or equivalent, no college	7,379	24.3%
Some college or Associate degree	8,548	28.2%
Bachelor's degree or advanced degree	4,292	14.2%
Educational attainment not available (workers aged 29 or younger)	6,482	21.4%
<b>Jobs by Worker Sex</b>		
	<b>2011</b>	
	<b>Count</b>	<b>Share</b>
Male	13,551	44.7%
Female	16,760	55.3%

Therefore, there is a substantial workforce that is living in the radius but not working within the radius. These are all primary job holders that can add value to The Navajo Chapters if employed in the radius. As you can see from the data, a majority of the workforce is Native American.

The ability to attract the right skills is critical to the success of a project. We use the *FCG Availability Index*, which measures labor availability on a one to ten point scale (1=very poor; 5=average; and 10=excellent). We use the same index in all of our labor market analysis nation-wide and this gives a true “apples-to-apples” comparison of different communities. Generally, scores of 0 to 3 are “poor”; 3 to 4 are “below average”, 4 to 6 are “average”; 6 to 7 are “above average”; 7 to 8 are “good”; and 8 to 9 are “very good”, and 9 to 10 are “excellent”.

Based on regional interviews, the following chart depicts labor availability:



- Overall 2014 score is “above average”: 6.68
- The availability of skilled workers, such as welders and maintenance mechanics is now rated “above average”.
- Semiskilled, unskilled, and clerical availability is “above average to “very good”.
- IT, management, and engineer availability are “average”.

**Key Conclusion:** *Companies will generally be pleased with the labor availability in the Inland Port Region.*

## Labor Quality

**Good**

The ability to find quality workers will be critical to the success of any target company project. Through interviews with the local employers we were able to determine current labor quality in The Navajo Chapters/Inland Port Area market.

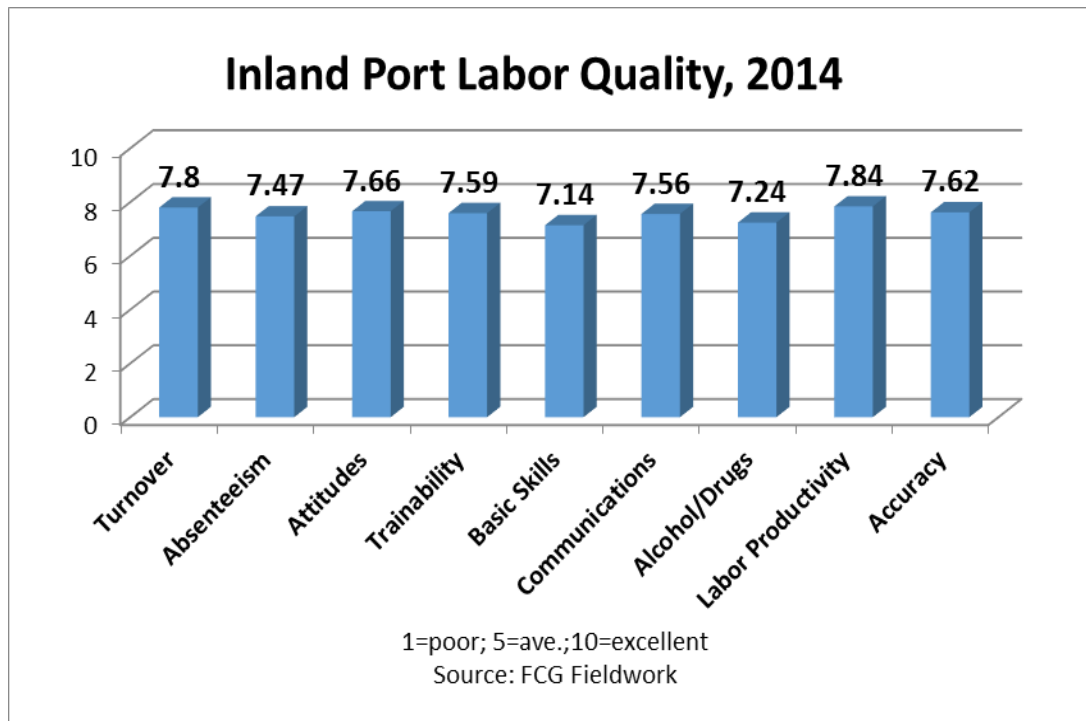
We use the *FCG Quality Index*, which measures labor quality on a one to ten point scale (1= very poor; 5=average; and 10=excellent). We use the same index in all of our labor market analysis nation-wide and this gives a true “apples-to-apples” comparison of different communities. Generally, scores of 3 to 4 are “below average”, 5 to 6 are “high average”; 6 to 7 are “above average”; 7 to 8 are “good”; 8 to 9 are “very good”; and 9 to 10 are “excellent” (see below).

Labor quality characteristics include:

- Turnover
- Absenteeism
- Attitudes – on-the-job
- Trainability – employees response to training
- Basic skills – math, English, grammar, blue print reading, etc. of applicants
- Communications – Employer/employee and employer/employee on-the-job
- Alcohol/drugs – Perceived situation
- Productivity – Employer’s measure.

The following page shows the labor quality ratings for both 2014 and 2012.

- Overall labor quality is rated good (7.55), with no weak spots.



***Key Conclusion:*** *Companies will be pleased with the labor quality in the Inland Port Region.*

***Industrial Sites***

***Excellent***

Good products (sites and buildings) must be available in order to attract economic development. As depicted earlier, the Navajo chapter communities of Manuelito, Rock Springs, and Tsayatoh offer good opportunities for an initial inland port project.

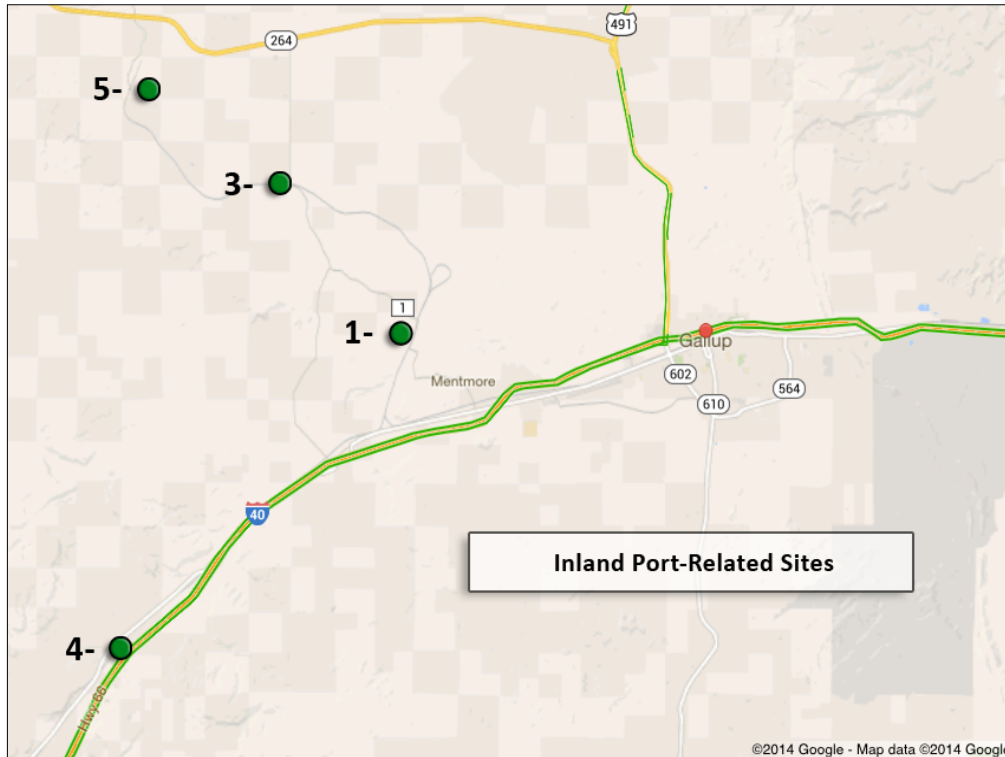
BNSF is promoting regional transload as a part of their “outpost” concept. The “outpost” would collect regional commodities for transfer to unit trains. They are seeking new anchor tenants besides coal hauling, which already goes on near Site 1 – Loop Industrial Area, and oil transloading. As shown earlier, sites priorities include:

***Final Site Selection Scoring***

Site score times criteria importance rating determines the final score. High score is the best.

- **Site 1 Area – Loop Industrial Area** – is the best site for the initial Inland Port
- **Site 5 – Section 17 Site** – could serve as an industrial supplier site and be a future Inland Port addition
- **Site 3 – North Route 1 Industrial Area** – could serve as an industrial supplier site
- **Site 4 – South Industrial Area** – could serve as an industrial supplier site.

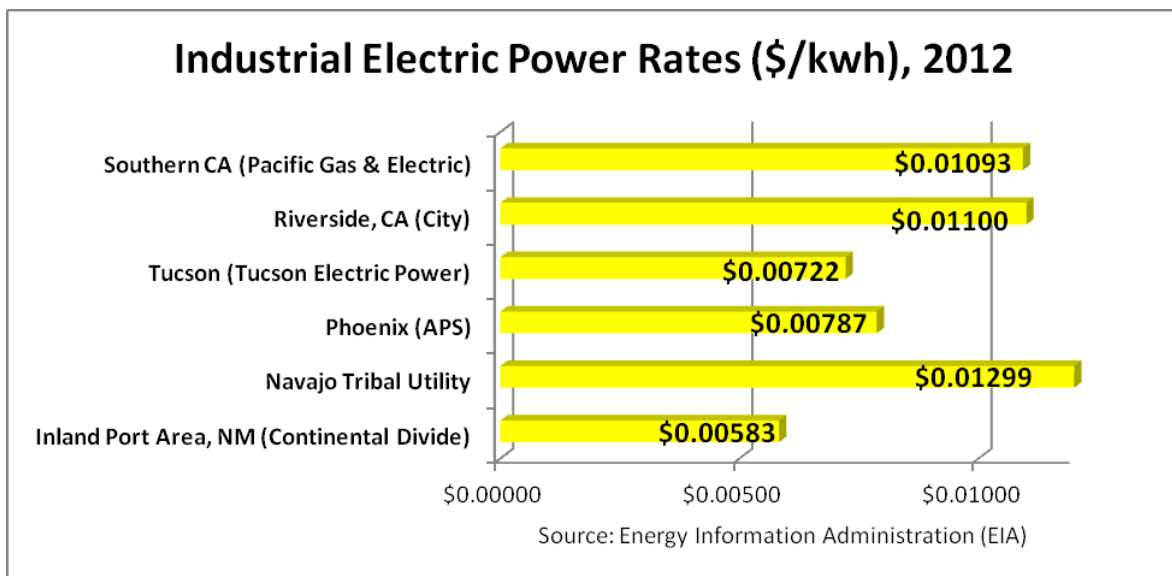
***Key Conclusions:*** *The Navajo chapter communities of Manuelito, Rock Springs, and Tsayatoh are a good location for an inland port and has good site options that will attract transload rail and other users. There are no good existing industrial buildings in the area, so “spec” options at the parks should be explored.*



### ***Electric Power***

***Excellent***

Electric power costs and reliability are critical site selection factors in almost all projects. The potential electric power rates in the Inland Port Area (Continental Divide) look very favorable for new industrial development.



***Key Conclusion:*** Industrial prospects will be pleased with local electric rates.

### **Utilities**

Proper utilities are needed to attract development. Below is a utilities briefing on each available site:

- **Site 1 Area – Loop Industrial Area**
  - Water – NW of the site
  - Gas – north of this area
  - Sanitary Sewer – Septic initially; Defiance sub main just to the North; City plans to expand the sanitary sewer plant and bring it west to the area
  - Electric – City of Gallup line will come from the east to new properties
- **Site 5 – Section 17 Site**
  - Well to west of proposed site
  - Sanitary sewer – septic
  - Electric – 115 kv – NM Electric from east of proposed site
  - Gas – El Paso Gas
  - Cell tower on site
- **Site 3 – North Route 1 Industrial Area**
  - Water – 5 miles north
  - Sanitary sewer – no
  - Electric and gas – high utilities on North end
- **Site 4 – South Industrial Area**
  - Water – no
  - Gas – no
  - Sanitary Sewer – no
  - Electric – nearby.

***Key Conclusion:*** *Site 1 Area and Site 5 offer the best current and future utility opportunities for development.*

### **Taxes**

***Good***

Even though taxes are generally a relatively minor portion of the annual operating costs for a project (generally 10% to 15%), they are typically compared in a site selection project. The report from the Tax Foundation and KPMG, *Location Matters*, was released in 2012.

The report's study accounts for all business taxes: corporate income taxes; property taxes; sales taxes; unemployment insurance taxes; capital stock taxes; inventory taxes; and gross receipts taxes by state. It compares overall taxes for select new and mature project types: Headquarters; Research & Development (R&D); Call Center; Distribution Center;

Capital-Intensive Manufacturing (such as a steel plant); and Labor-Intensive Manufacturing (such as a truck plant).

The results allow site selection experts to screen states more accurately and quickly for consideration by their clients. We used this for making tax comparisons for a new Labor-Intensive Manufacturing location (as opposed to a mature expansion) in Arizona, California, New Mexico, and Texas versus all other states.

#### Navajo Nation Tax Incentives

At this time, the Navajo Nation does not tax corporate income, inventories, and personal income. Additionally, the Nation does not have property or unemployment tax (although this is subject to change).

In general, taxation on the Navajo Nation is lower in comparison to other places in the United States. This is particularly true for businesses which are newly established or which have expanded their operation onto the Navajo Nation. There are a number of federal and state tax incentives currently in place.

#### Overall National Rank of the Three (3) States for New Firms

Arizona: 17

California: 45

**New Mexico: 14**

Texas: 42

#### New Labor-Intensive Manufacturing

Arizona: 39

California: 49

**New Mexico: 35**

Texas: 43

***Key Conclusion:*** *New Mexico rates well for a regional labor-intensive manufacturing operation. And taxes will be lower in the Navajo Nation.*

#### Incentives

***Good***

Incentives are the deal closer when all other key factors are equal. The following matrix compares incentives we feel are the most important of all of the comparison communities.

Economic development incentives are usually not a top location criteria. However, they are critical when a company is down to a few finalist communities and everything else is equal. They are often the tie breaker. Following are New Mexico and Navajo Nation alternatives:

**The Job Training Incentive Program (JTIP)<sup>16</sup>:** New Mexico has one of the most generous training incentive programs in the country. The Job Training Incentive Program (JTIP) funds classroom and on-the-job training for newly-created jobs in expanding or relocating businesses for up to six months. The program reimburses 50-75 percent of employee wages. Custom training at a New Mexico public educational institution may also be covered.

**High-Wage Jobs Tax Credit:** Employers can receive a tax credit for each new high-wage economic-base job. The credit amount equals 10% of the wages and benefits paid for each new economic-base job created. Qualified employers can take the credit for 4 years. The credit can be applied to the state portion of the gross receipts tax, compensating tax, and withholding tax.

**Rural Jobs Tax Credit:** This credit can be applied to taxes due on (state) gross receipts, corporate income, or personal income tax. Company eligibility:

- Companies that manufacture or produce a product in New Mexico
- Non-retail service companies that export a substantial percentage of services out of state (50% or more revenues and/or customer base)
- Certain green industries.

The rural areas are divided into two tiers:

- Tier 2: Non-metro area municipalities that exceed 15,000 in population: Alamogordo; Carlsbad; Clovis; The Navajo Chapters; and Hobbs
- Tier 1: Everywhere else in a rural area.

The maximum tax credit amount with respect to each qualifying job is equal to:

- Tier 2: 12.5% of the first \$16,000 in wages paid for the qualifying job (may be taken for two years)
- Tier 1: 25% of the first \$16,000 in wages paid for the qualifying job (may be taken for four years).

A qualifying job is a job filled by an eligible employee for 48 weeks in a 12-month qualifying period. The credit may be carried forward for up to 3 years.

**Locomotive Fuel Gross Receipts & Compensating Tax Exemption:** Receipts from the sale of fuel to a common carrier to be loaded or used in a locomotive engine are exempted from the gross receipts and compensating taxes. “Locomotive engine” is defined as a wheeled vehicle consisting of a self-propelled engine that is used to draw trains along railway tracks.

**Local Economic Development Act:** More than 62 New Mexico cities and counties, including The Navajo Chapters and McKinley Counties, have passed this act, in which a governing body has the power to finance the purchase of land, buildings, or

---

<sup>16</sup> New Mexico Economic Development web site.



infrastructure. This includes the ability to issue industrial revenue bonds for the purchase of allowing for tax abatements on equipment and real estate.

**Collateral Support Participation Program:** Through this program, the New Mexico Finance Authority is able to partner directly with banks to provide capital to credit worthy businesses seeking to expand, create or retain jobs by offering an efficiently lower the interest rate paid by the business. To mitigate the bank's risk by purchasing a portion of the bank's loan, often in a subordinated collateral position.

**Navajo Nation Incentives:** The Navajo Nation offers a variety of opportunities to individuals and organizations who want to do business on the reservation. Incentives such as the Indian Investment and Employment Tax, and the Indian Employment Credit Act are both available to small and large businesses. Other incentives include lower operating costs in regards to utilities, labor wage, and employment training programs that can benefit your business's return on investment (ROI).

Additional information regarding the Indian Incentive Program from the US Department of Defense Office of Small Business is found I the Appendix.

We feel today the most important incentives are (in order of priority):

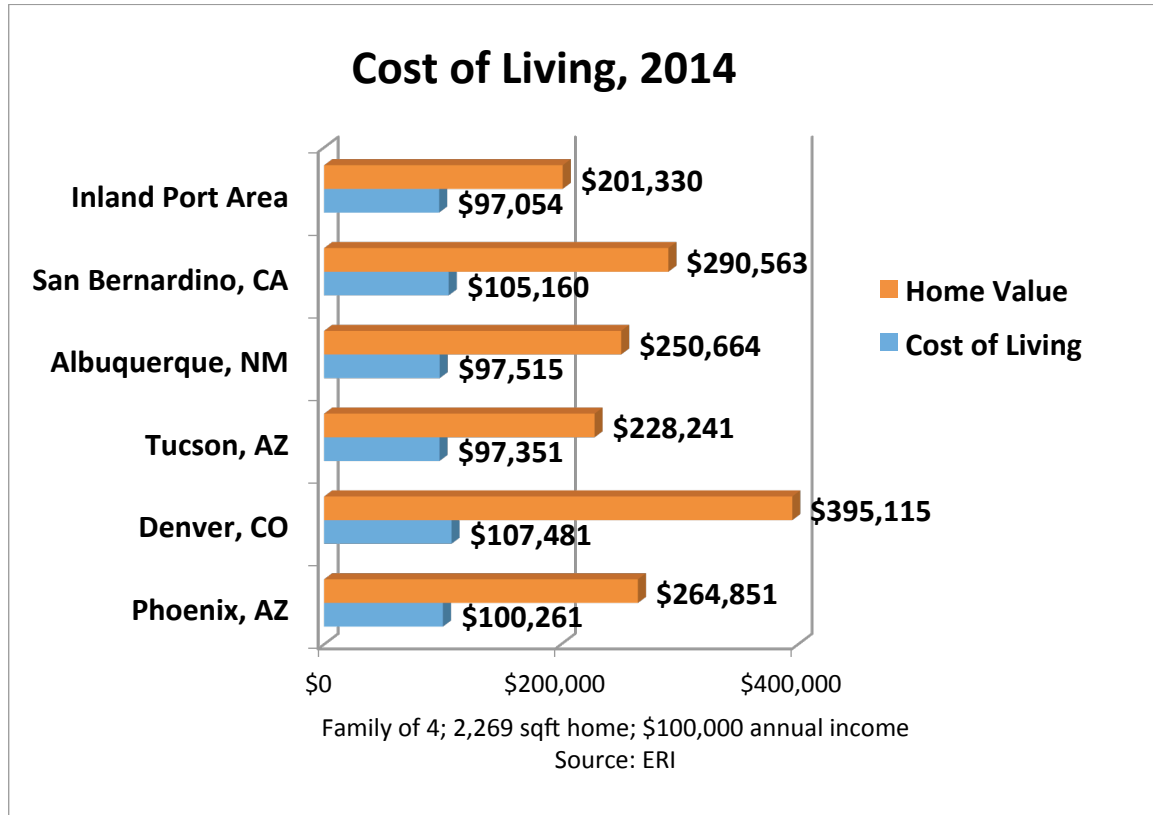
1. Training related – with flexibility
2. Tax credits tied to job creation
3. Site infrastructure assistance
4. Property tax relief
5. Building/site financing
6. Project financing

**Key Conclusion:** *The Inland Port Area should be able to compete effectively with the state, local, and Navajo Nation incentives available.*

**Cost of Living**

**Excellent**

Cost of living<sup>17</sup> is important for attracting investment and in hiring, relocating, and retaining employees.



- Inland port area cost of living is slightly below the national average and the lowest of all comparison areas.
- Executive home prices lower than all comparison locations.

**Key Conclusions:** *The area's cost of living will be attractive to relocating officials and for maintaining a good workforce.*

<sup>17</sup> All data comes from our ERI Relocation Assessor database. Cost of living items include: consumables; transportation; health services; housing/utilities/property taxes; and miscellaneous items.

**Education/Training**

**Below Average to Good**

Today's students are tomorrow's workforce. Prospects are therefore most concerned about higher education and the flow of skills into the work place. Longer term they are concerned with the quality of the secondary schools.

**Higher Education**

**Two institutions offer higher education opportunities in The Navajo Chapters region, Navajo Technical University and UNM Gallup.** The Navajo Technical University in Crownpoint (with affiliated campuses in Arizona), offers a variety of programs and course works. They have a new campus on the outskirts of The Navajo Chapters which offers:

- Has continued growth plans and are building now and have strong 5-year plan in Science, Technology, Engineering, and Math.
- STEM Enrollment at the Navajo Technical University (with B.S. degrees possible in Industrial Engineering, Industrial Engineering, Environmental Engineering and Natural Resources) has grown substantially within the last five years increasing enrollment from 56 to 250.
- In the summer of 2012, the Navajo Nation Council approved an unprecedented increase in annual funding from \$1.5 million to \$3.5 million to meet increasing enrollment needs.

The above efforts are supplemented with partnerships built with TeraGrid, a high-performance network using high-performance network connections to integrate high-performance computers, data resources, tools, and high-end experimental facilities around the country; the University of New Mexico's Center for High Performance Computing, and national laboratories. Integrated into all of this is an effort to create a technology knowledge transfer model designed to spin enterprises that can compete in niche and national markets into remote communities, allowing the Navajo people to become leaders in diverse fields ranging from arts and crafts to technological and scientific innovation.

These efforts by Navajo Technical University complement well with potential increase needs in the computerization of logistics and distribution.

UNM Gallup offers a number of diverse programs to meet the needs of the McKinley County population:

- New Mexico's first Middle College High School, a rigorous academic and career focused program for high school students in which they take college classes and receive credit for both high school and college. The program entails group seminars, tutoring, professional mentoring, job shadowing, service learning and work-study.
- A career vocational program, Center for Career and Technical Education, which draws students from local high schools.

- Adult Basic Education, which encompasses earning a GED, basic skills, English as a second language, life skills, workplace skills, and citizenship.
- Community Education; and a Transitional Studies Department, which targets the success of minority students and under-served students by emphasis on developmental Math, Reading, and English skills.

**There appears to be some working relationships, between the business community The Navajo Chapters and UNM Gallup, but more work is needed.** A workforce development program was started at the University of New Mexico Gallup, yet no one in the community was aware of any progress other than a workshop held in early 2014. Any company or agency interested in Workforce Development can contact UNM Gallup Community Based Education and Workforce Development (CBEWD). CBEWD will work with all agencies to develop qualified workforce to fill the job need of the local service area.

**Through Associated General Contractors of New Mexico (AGC) – New Mexico is re-defining roles and partnerships to add job creation through workforce development training in The Navajo Chapter’s changing construction market.** Because of local leadership in The Navajo Chapters, the Greater Gallup Economic Initiative encouraged industry colleagues to join The Navajo Chapters business leaders in developing a strategy to link the railway regional transload outpost development of BNSF Railway with AGC: New Mexico's national and local award winning workforce development program. The AGC program has been a model for the state, and, the goal has been to develop a program like to a full scale program like the ACE high school in Albuquerque.

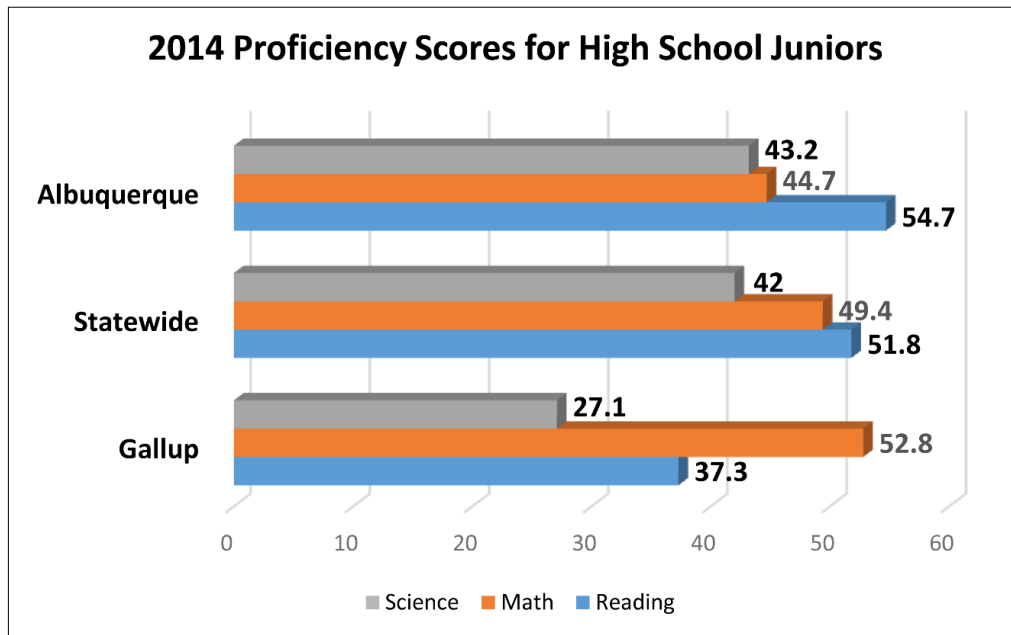
**UNM Gallup does not have programs designed tailored to manufacturing and processing** like computer aided design, computer numerical control equipment, metal fabrication, and programmable logic control. The AGC program is a good start in obtaining materials and equipment.

**Education and training is needed to serve the inland port and associated logistics users.** Transloading specialists, machine operators, and welders will all be needed.

**There appears to be only a few internship agreements between the business community and UNM Gallup.** Information technology graduates at UNM Gallup did not receive strong grades from the employers interviewed. Internships would have helped in transitioning the student to the workplace. The AGC program appears to be a change in this direction.

**Scores at McKinley schools’ scores are lower than the state average but getting much better from two years ago.** These are proficiency scores given statewide, and evaluating high school juniors is recommended by site selectors. Proficiency scores are a few points less than the state average but outperform Albuquerque. The Navajo Chapters still lack in math and science.

**Graduation rates are close to the state average and stronger than Albuquerque in 2011 four year cohort** (see below). But, more than 24% of young adults are unprepared to enter the workforce and to enter post-secondary schools.



**The Navajo Chapters and McKinley County do not have a program to “track” the graduating students from their high schools.** Therefore, it is difficult for prospect companies to analyze where their potential workforce might be.

**The school district has very little in the way of vocational technical training.** There is very little ability for young people to get any training for future work in the community.

**A common problem between the school district and the Native American population is the continual movement of young children in and out of the school districts,** or changing from public schools to Native American schools. This causes problems in the progress of the children in the two different learning environments.

**The SUN PATH project was awarded to the New Mexico group as part of an application that emphasizes allied health care and cybersecurity career pathways.** The Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant is intended to provide job training to veterans and employees who have lost their jobs due to work being outsourced internationally, and low-skilled adults. TAACCCT grants are provided to community colleges and other institutions of higher education to expand and improve the delivery of career training programs that can be completed in two years or less and prepare participants of the program for employment in high skill and high wage occupations. UNM-Gallup is part of an 11-school consortium that was recently awarded the Department of Labor Trade Adjustment Assistance Community College and Career Training Grant.

**Non-credit classes, seminars, and workshops are offered through the Community Based Education and Workforce Development Division.** Designed to meet the needs of the widest possible cross-section of the community, these classes provide opportunities to improve upon or learn new skills in personal, interpersonal, professional, career, and creative areas. Community Education instructors are chosen for their expertise in particular fields of interest. The goal is to create a stimulating and comfortable environment that encourages exploration of new ideas and experiences for kids, teens, adults, and families. These programs are designed to accommodate the ever changing needs and interests of the local population include College for Kids (a successful summer program consisting of diverse and challenging activities) and Drivers Training (Commercial Drivers License). Community Education also offers unique classes that invite family participation and encourage parental involvement in classes for kids.

**Inland Port Area's Strengths & Weaknesses Versus Preliminary Target Needs**

We next assessed the Inland Port Area's strengths and weaknesses against the preliminary target location needs.

<i>Inland Port Area <b>Strengths</b></i>	<i>Inland Port Area <b>Weaknesses</b></i>
<b>Oil/Gas/Mining Equipment &amp; Service</b> <ul style="list-style-type: none"><li>• Labor availability</li><li>• Labor costs &amp; quality</li><li>• Market access/ (LA to Dallas/Chicago)</li><li>• I-40 access</li><li>• Electric power cost &amp; reliability</li><li>• Sites with rail near existing coal transloading</li><li>• Future container transload capability</li><li>• Incentives</li><li>• Access to suppliers</li><li>• Labor/management relations</li><li>• Regional locations</li><li>• Presence of other local operations</li></ul>	<ul style="list-style-type: none"><li>• Some management &amp; skilled labor availability</li><li>• Specialized training programs</li><li>• Price of oil</li></ul>
<b>Warehouse/Distribution (DC)</b> <ul style="list-style-type: none"><li>• Market access to West</li><li>• Intermodal access</li><li>• Future container transload capability</li><li>• Labor costs</li><li>• Unskilled labor availability/quality</li><li>• Electric power cost &amp; reliability</li><li>• I-40 access</li><li>• Large sites with rail</li><li>• Incentives (training)</li><li>• No inventory tax</li><li>• Labor/management relations</li><li>• Regional location activity</li></ul>	<ul style="list-style-type: none"><li>• Freight costs to large consumer markets Regional intermodal container hub nearby (i.e. ABQ is nearest)</li></ul>

<i><b>Inland Port Area Strengths</b></i>	<i><b>Inland Port Area Weaknesses</b></i>
<b>Industrial Machinery/Metals/Energy Manufacturing</b> <ul style="list-style-type: none"> <li>• Labor availability</li> <li>• Labor quality</li> <li>• Labor costs</li> <li>• Market access to West</li> <li>• I-40 access</li> <li>• Electric power availability/quality</li> <li>• Sites with rail</li> <li>• Incentives</li> <li>• Access to suppliers</li> <li>• Labor/management relations</li> <li>• Regional locations</li> <li>• Presence of other local operations</li> </ul>	<ul style="list-style-type: none"> <li>• Some skilled labor availability</li> <li>• Specialized training programs</li> <li>• Access to some suppliers</li> </ul>
<b>Plastics Products</b> <ul style="list-style-type: none"> <li>• Labor costs</li> <li>• Unskilled/semiskilled availability</li> <li>• Electric power availability/quality</li> <li>• Sites with rail</li> <li>• Access to market/transportation costs/I-40</li> <li>• Future container transload capability</li> <li>• Incentives (training and offsets for large capital equipment costs)</li> <li>• Labor/management relations.</li> </ul>	<ul style="list-style-type: none"> <li>• Some skilled labor</li> <li>• Existing buildings</li> <li>• Presence of other local operations</li> </ul>
<b>Biofuels (Ethanol)</b> <ul style="list-style-type: none"> <li>• Highway access</li> <li>• Rail site</li> <li>• Utility infrastructure (natural gas pipeline, electricity)</li> <li>• Labor costs and unskilled availability</li> <li>• Rural, remote, lower wage areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Raw materials</li> <li>• Water/sewer excess capacities</li> <li>• Local raw material stock supply</li> <li>• Market due to low natural gas and oil prices</li> </ul>
<b>Food Processing</b> <ul style="list-style-type: none"> <li>• Market access/I-40</li> <li>• Labor costs &amp; quality</li> <li>• Electric power cost/reliability</li> <li>• Sites with rail</li> <li>• Future container transload capability</li> <li>• Incentives</li> <li>• Regional location activity</li> <li>• NAPI presence</li> </ul>	<ul style="list-style-type: none"> <li>• Weak national growth</li> <li>• Excess water/sewer capacities</li> <li>• Specialized training programs</li> </ul>

### **The “Best Fit” Target Industries**

JBA has identified the “best fit” targets (and best NAICS codes) for the Inland Port Area (by priority):

- **Oil/Gas/Mining Equipment & Services** – NAICS 211; 332; 324; 325; 484
- **Food Processing/Distribution** – NAICS 311 & 312
- **Industrial Machinery/Metal Fabrication/Transportation Equipment/Energy Manufacturing** – NAICS 333; 333; 332; 336; 541
- **Plastics Products** – NAICS 326
- **Warehouse/Distribution (DC)** – NAICS 444; 453; 484; 488; 492; 493.

### **“Best Fit” Target Profiles**

#### **Oil/Gas/Mining Equipment & Services**

- Direct access to I-40 and an existing spur off of the BNSF main line make Site 1 unique
- Access to Four Corners Region oil/gas/mining operations including the coal mine in Farmington (not served by rail)
- Existing transload operation at GLP Project and potential of future transloading
- Strong potential subsectors:
  - Fracking sand (Chinese specialized sand and domestic sand)
  - Pipe
  - Mining/industrial equipment
  - Turbines
  - Coal
  - Chemicals
  - Trucking/hauling
- Good labor availability, but some skilled labor concerns
- A need for more specialized technical training
- Good sites with rail.

An industry cluster is a concentration of interconnected business within a common sector, such as the oil and gas. Opportunities to co-mingle companies that would create demand for various shared services require space to expand. Services that are able to cater to multiple on-site tenants and industry sectors should be considered. On-site suppliers and services address important manufacturing challenges, such as establishing reliable, expedient, and low cost raw materials delivery. Proximity of vendors and customers also increases the likelihood of establishing strong commercial partnerships. The Navajo



Chapters Inland Port site's value may increase depending on the types of industry clusters that form, and as shared services generate opportunities.

Specific opportunities suited to promoting industry clusters are:

- Raw material distributors to site tenants
- Shared services, such as freight forwarders or other cargo consolidation services
- Local companies looking for larger facilities
- Part or component distributors or manufactures
- Manufacturers of heavy or oversized goods.

#### Industrial Machinery/Metals/Transportation Equipment/Energy Manufacturing

- Good potential for many types of manufacturing operations, particularly tied to mining, solar/wind energy related manufacturing (nacelle units: gearbox, generator, and transformer components & blade assembly)
- Good labor availability, but some skilled labor concerns
- A need for more specialized technical training
- Good sites with rail
- Need for more rail cars to transport oil.

#### Plastics Products

- Good availability of unskilled workers
- Good site with rail for transport of plastic pellets and I-40 direct access.

#### Food Processing

- Access to NAPI and lack of rail in Farmington
- The best intermodal site in the region currently
- Potential of “food in a box” containerization and transload at rail sites
- Water and wastewater excess capacities are a concern right now, but are being addressed
- A need for more specialized technical training
- Weak national growth.

#### Warehouse/Distribution (DC)

- Direct access to I-40 and an existing spur off of the BNSF main line make Site 1 unique for large item DCs
- Market access to the West and access to Four Corners Region oil/gas/mining operations
- May not be right for retail or e-commerce DCs due to distance to large metro areas

- Good unskilled labor availability and low wages.

Domestic and international intermodal containerized rail shipments have had significant growth over the past several decades due to the growth of international containerized trade, domestic trade growth, and conversion of over-the-highway truck traffic to intermodal rail service. The Class I railroads (e.g., BNSF) have designed their intermodal networks and service strategies for both international and domestic containerized cargo at large and well rail-positioned markets (e.g., Phoenix, Dallas), and at selected smaller locations for mainly domestic freight (e.g., BNSF in Albuquerque).

These locations function as regional distribution centers for their surrounding hinterland. Local and regional delivery is handled by truck drayage of containers or transloading of freight from containers into trailers. These intermodal hubs attract much of the investment in warehouse distribution facilities.

Locations such as the Inland Port Area are unable to match the attributes of these locations for the development of intermodal container facilities and large-scale distribution warehousing. Warehouse/distribution activities will focus on assistance with shale oil, food, coal operations and related operations.

### **Potential Future Targets**

Based on the freight profiles attached, a number of products (alphabetically) show good projected growth from 2012 to 2020 including:

- |                         |                         |
|-------------------------|-------------------------|
| • Base metals/articles  | • Motorized vehicles    |
| • Building stone        | • Other ag products     |
| • Chemicals             | • Other food stuffs     |
| • Electronics           | • Plastics/rubber       |
| • Fertilizers           | • Precision instruments |
| • Furniture             | • Sand                  |
| • Machinery             | • Textiles/leather      |
| • Meat/seafoods         | • Waste scrap           |
| • Milled grain products | • Wood product          |

## **ENVIRONMENTAL AND CULTURAL REVIEW AND IMPACT**

JBA is providing a preliminary analysis of the environmental impact of an inland port in the Navajo chapter communities of Manuelito, Rock Springs, and Tsayato, and describing the further environmental due diligence that will be required before the project can be implemented. JBA toured and assessed all five sites with Navajo officials and following depicts our findings.

Some needed environmental impact items and costs for Sites 1 are found in the Design, Engineering, and Construction Costs section. Engineering costs would run \$40,500.

The identified corridors are being assessed to determine environmental and cultural concerns such as:

### **Existing Development**

This section explains regional development efforts underway or planned and existing and planned development in the Site 1 area. Four Corners Intermodal Transloading Equinox (4CITE)<sup>18</sup> points out a number of area improvements which will assist this development. Our regional business environment has been made fertile due to series of well-planned factors of production, strategic investments, and market forces, notably:

1. **Interstate 491 Highway Expansion:** Several decade-long effort to improve what is rated by the August 2013 TRIP Report as New Mexico's top economic corridor of US491 (approximately \$220M), with the final commitment of \$78M to finish this project. This creates a vital economic corridor linking Four Corners assets and products to major east-west transportation connections (I-40 and BNSF TransCon line) and global markets.
2. **Water:** Federal commitment and funding to complete the **Navajo-Gallup Water Supply Project** (\$1B), which includes a pipeline to convey surface water from the San Juan River to Gallup – securing for over 40 NM communities one of the only long-term water supplies in the Southwest.
3. **Land:** After over a half-century, 26,000 acres of private land was sold to the Gallup Land Partners (GLP), who are focused on a three-zone development plan that includes (a) a mega-site industrial park with rail service, (b) major big-box retail expansion, and (c) future all-stock housing and subdivision developments. GLP is investing \$2.5M into planning, readiness, and design efforts.
4. **Rail & Freight:** Burlington Northern-Santa Fe (BNSF) Railway has been working its TransCon line to develop commercial, industrial, and shipping opportunities. Two major projects are planned for the Gallup Metro area (north of I-40 and west of US491), including a potential Navajo Nation Inland Port.

---

<sup>18</sup> The Four Corners Intermodal Transloading Equinox Work Plan, 2014

**5. Accessible and Infrastructure Upgrades:** Through the site planning efforts of the Greater Gallup Economic Development Corporation, there are several infrastructures components that need to be enhanced and/or upgraded, including broadband connectivity and redundancy, water and wastewater infrastructure, and road connectors. The later piece has already included State and local road input and planning including:

- **State DOT (District 6):** official request and work on a deceleration lane at the intersection of US491 and Chino Loop Road/9th Street, just north of The Navajo Chapters City limits.
- **McKinley County Road Department:** review of Carbon Coal Road, a currently private haul road (gravel/dirt), for consideration of deeding into public domain and agreement on upgrade and maintenance. Currently, working on an US Economic Development grant application to improve this access road for heavy trucking to the Gallup Industrial Park with Rail Service.
- **Allison Bridge & Road Corridor:** Another top priority in the TRIP Report and top funding commitment of the City (Bridge Replacement) and State (STIP-Corridor Development) TIGER grant applications The City did re-submit a TIGER application during round #6 for the bridge component of this project. The project and TIGER application become drastically more competitive and hold national merit when tied to the strategic build-out of 4CITE and long-term congestion relief to Munoz Overpass (US491/I-40).

4CITE will conduct a new comprehensive transportation plan. Our associate Sakura Engineering will be conducting this study. This plan will be assisted by this Inland Port Analysis and will provide assistance to the future engineering/planning efforts. Some of their primary project objectives include:

1. Provide an understanding of 4CITE study area and transportation planning issues in the multi-jurisdictional “checkerboard” lands.
2. Assist in the gathering of land use, environmental, population, socio-economic data as a component for transportation and site development planning.
3. Assist with forecast of future conditions, evaluate impacts of growth, and identify future transportation system improvement needs within the 4CITE study area.
4. Analysis current and projected traffic, freight, and rail counts from which to model and build scenarios of land use and transportation system impact. Provide visual models through video, mapping, and other visual mediums.
5. Evaluate the existing inland ports and BNSF “rural outposts” and transportation systems with respect to current and future demand and the infrastructure necessary to handle expected future growth. Review public and private agreements regarding the development and maintenance of road and bridge infrastructure within the defined boundaries of these facilities.

6. Develop a comprehensive and prioritized assessment of transportation needs in the 4CITE study area, including BNSF switching yard in Downtown, Navajo Chapters and subsequent active rail spurs, The Gallup Industrial Park with Rail Service, and Navajo Nation Inland Port.
7. Develop and implement a framework for ranking & prioritizing short-, mid-, and long-term projects (e.g., roads, highways, & railways).
8. Provide a detailed financing plan for projects identified and prioritized both for planning, design, construction and maintenance, including Public-Private partnerships (P3) and tenant lease payments for ongoing upkeep, maintenance, and eventual replacement.
9. Recommend “comprehensive solutions” to address the multi-jurisdictional issues, shortfalls in revenue for maintenance and expansion of the transportation infrastructure, traffic management and control. Options may include: agreements between jurisdictions, the creation of a special transportation or port district, or other innovative solutions.
10. Design a stakeholder/public involvement process that is inclusive and that ensures the participation of all agencies, interested parties and others affected by 4CITE projects and the transportation infrastructure serving the 4CITE study area.
11. Foster consistency between the planning processes of different agencies in order to create a mechanism for updating the plan on a regular basis and making it a living document.
12. Collaborate, share information, and work in concert with past planning products and JBA & Associates, developing the Navajo Nation Inland Port feasibility study.
13. Ensure that the 4CITE Plan process is accepted and embraced by stakeholders throughout the 4CITE study area.
14. Project milestones shall be developed, tracked, and reported using MS Project, Panoramic and/or other software and updates and status reports shall be provided to the NWRTPPO, stakeholders, and Study Team.
15. Ensure that the 4CITE Master Plan both reflects and is incorporated as a component of Federal, State, and local plans (including NMDOT’s 2040 Statewide Long Range Multimodal Transportation Plan).
16. Establish a process to ensure dialogue among federal, state, regional, tribal, and local stakeholders in the 4CITE study area to identify future site needs and connecting transportation infrastructure needs and to coordinate projects and update the plan on a regular cycle (e.g., every 3 to 5 years).

Existing (and planned) development is taking place near Site 1. The adjoining loop area has considerable development planned, some starting in 2015, including:

- Two new intermodal loops
- Carbon Cliff Road and Route 1 improvements
- Route 491 improvements (estimated to be \$78 million)
- Utility extensions.

JBA also reviewed EPA's My Environment<sup>19</sup> web site in order to determine any major environmental hazards within the project area. We found none. The site showed us:

- Two energy facilities in the area: a natural gas site in Mentmore and a coal facility near Thoreau
- Air quality is 100%; "good"
- Cancer Risk is low (20 per million)
- Infant Mortality Rate is low and Low Birth Weight Rate is normal (2004)

Environmental Sites:

- Superfund Sites (CERCLIS) in Gallup: 1) Gallup Radiation Site and 2) La Linda Texaconear
- Hazardous Waste (RCRA) Sites in West Gallup: 1) Hamilton Brothers, 2) Tsa near The Gallup Municipal Airport, and 11 other commercial sites
- Brownfield Properties (ACRES) in Gallup: Kachina Packing Plant; Lexington Hotel; Rico Ranch; Pinon Plaza; and five other sites.

### **Protected Species**

JBA determined that there could be potential issues on Site 1 including: topography/grading; flooding; wildlife and artifacts. Future development in the Site 1 area will require a number of environmental studies designed, in part, to protect existing species, including:

- Environmental Site Assessment (ESA)
- Rare, Threatened, or Endangered Species Analysis
- Archeological/Historical Review
- Topographic Analysis.

---

<sup>19</sup> My Environment, EPA web site (<http://www.epa.gov/myenv/MyEnergy.html>)



### **Air and Groundwater Quality**

JBA determined that there could be potential issues on Site 1 including: flooding/wetlands; soil borings, and air quality. Future development in the Site 1 area will require a number of environmental studies, including:

- Hydrologic /Wetland Delineation
- Air Quality Analysis
- Geotechnical Study
- Flood Control Planning and Analysis.

### **Increased Population and Associated Impacts**

Growth in the Inland Port Region will be substantial in the first few years of development. In year one, we are assuming (see next section – Economic Impact Analysis) that:

- 70 new permanent jobs will be created; most will be existing workers
- Possibly five to ten will relocate from other areas
- Over 200 construction jobs may occur
- Taxes generated will be significant.

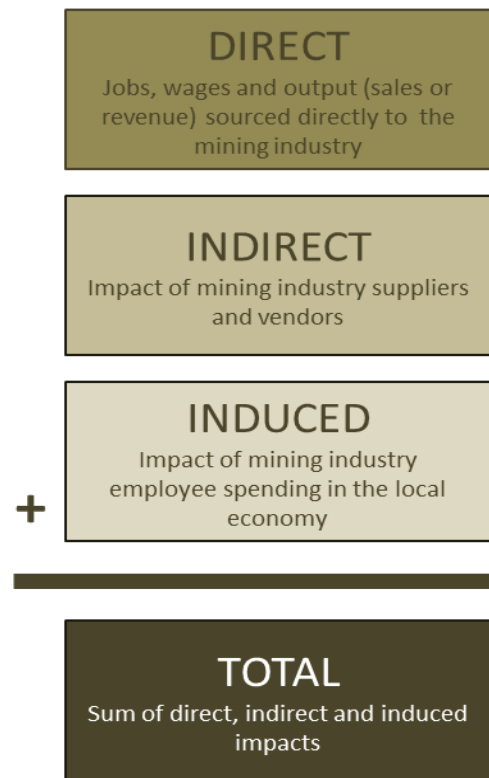
We would anticipate the need for some new housing and commercial development in the region due to continuation of this growth.

### **ECONOMIC IMPACT ANALYSIS**

#### **Introduction**

JBA has provided an economic impact analysis of an inland port of entry (POE; further information is found in the Appendix) to include:

- A breakdown of the costs associated with developing the POE and all necessary infrastructure and services
- A breakdown of the operational costs of the inland POE
- Direct effects – new jobs and investment created by the Inland Port and companies located in the region as a result of the new Port, including all construction activities
- Indirect effects – new jobs and investment created by the added revenue attributed to the Inland Port and associated business development



**Figure 3: Economic Impact Components**

- Induced effects – changes in the local business activity resulting from personal household spending for goods and services, including employees of directly and indirectly affected businesses
- An estimate of the economic benefit to the Navajo chapter communities of Manuelito, Rock Springs, and Tsayatoh from investment in the Inland Port facility, reflecting additional employment and population, economic activity, and taxation
- An estimate of the number of potential new direct, indirect and induced jobs associated with the Inland Port
- An estimate of potential new revenue to the State of New Mexico.

According to our experts at Northern Illinois University, this information is provided by County only. County is best since it covers a good percentage of economic activity taking place. Providing information via Chapters would not cover all of the economic activity taking place in the region since the Chapter population is very low.

### Methodology

The economic activity of an industry is linked with other industries in the general economy. Employment and payroll figures only illustrate a portion of the importance of an industry or individual facility to the local economy. Indirect effects in the regional economy are created by the project's purchases of goods and services such as office supplies, accounting services and marketing materials. Induced effects result from the Company's employees spending their income in the local economy. Additional impacts result from businesses-to-business purchases of goods and services such as fuel; food; equipment; and services from other local and regional firms. These purchases lead to further inter-industry activities that represent the indirect impact (Figure 3; previous page)<sup>20</sup>.

Input-output analysis generates estimates of indirect economic impacts commonly referred to as "multiplier effects." Multiplier effects measure the impacts on output, income, and employment that result from an increase in final demand. An increase in final demand (an additional dollar of output or employee compensation, or one additional job in the sector) results in a total increase in output, value-added, or employment in the economy equal to its multiplier. That is, multipliers estimate the amount of direct, indirect, and induced effects on income or employment that result from each additional dollar of output, additional job, and additional dollar of employee compensation in a sector.

JBA completed an analysis of the impacts of the construction and operation of service facilities for an inland port on the economy of The Navajo Chapters/McKinley County, New Mexico. The analysis was completed using the IMPLANPro input/output model developed by Implan group. The model is unique in that the I/O coefficients are based on 2013 county specific patterns and include both industry specific direct and indirect costs.

---

<sup>20</sup> Center for Governmental Studies at Northern Illinois University

The analysis consists of two parts. The first deals with the one-time impacts generated by the construction of new facilities and related infrastructure. It is assumed for the purposes of this analysis that all construction takes place during the 2015 calendar year. The second part concerns the impacts of facility operations in terms of employment, output (sales), and value-added (employee compensation, rent, taxes, and profit paid or earned, etc.). These are assumed to be annually recurring impacts as long as employment and other factors remain stable.

The economic impact of the project is based on the following assumptions:

- The study area for this analysis is McKinley County, New Mexico which includes The Navajo Chapters, near where the project is to be located. It does not include any economic impacts on surrounding counties related to this project.
- The project calls for the construction of two industrial facilities at an estimated cost of \$7,225,000 with an additional \$20,000,000 expenditure for related site preparation and infrastructure development. It is assumed that all construction will take place during the 2015 calendar year.
- Analysis for the construction impact analysis is based on the North American Industrial Classification Codes (NAICS) 237310 (Highway, Street, and Bridge Construction) and 236210 (Industrial Building Construction), which are the finest level of detail available.
- The operations of the new facilities create 140 new positions with an estimated annual employee compensation (including benefits) of \$3,500,000.
- Analysis for the facility operations is based on the North American Industrial Classification Code (NAICS) 493110 (General warehousing and storage) which is the finest level of detail available.
- The baseline information for this analysis was provided by the project's business consultant, JBA & Associates (see below).

### **Inland Port Costs/Year 1 Assumptions**

Based on our knowledge of the project, JBA has made certain assumptions. These include:

- A description of the primary business activity
  - *Services to assist an inland port near The Navajo Chapters*
- Output/gross sales
  - *Food processing/warehousing: \$18,000,000*
  - *Shale Oil: \$171,000,000 (assume 15 wells with 190,000 barrels @ \$60/barrel)*
  - *Frac sand: \$18,750, 000 (assume 15 wells with 2,500 tons @ \$7,500/ton)*
  - *Coal: \$208,208,000 (assume 26,000 cars/year @ \$8,008/car)*

- Estimated employment/compensation (year; assume 2 facilities)
    - 15 laborers/\$20,000
    - 20 production/\$30,000
    - 30 warehouse/\$20,000
    - 5 management/\$50,000
  - Employee compensation – *see above*
  - Total estimated construction costs and, if possible, costs by categories:
    - Equipment and engineering from design plan: \$20,000,000 (environmental, roads, bridges, utilities, etc.)
    - Land: \$500,000 (assume 2 sites totally 50 acres @ \$10,000/acre)
    - Buildings: \$7,225,000 (assume \$85 psf @ 50,000 sqft and 35,000 sqft facilities)
  - Estimated annual coal consumption in tons approximate cost per ton – *see above*
- Other local consumption impacts for instance, other reports have included impacts based on local production that would otherwise be imported into the state – *see above*.

### **Impact Of Facility Construction**

The economic impacts of business operations differ from capital investment projects in that company operations are assumed to be recurring so long as employment, output and spending remain stable, whereas the impacts of construction projects are experienced during a defined period of time. The project calls for the construction of two facilities (50,000 square feet and 35,000 square feet) at a cost of approximately \$27,225,000 (\$20,000,000 for site preparation and infrastructure and \$7,225,000 for building construction). Below is a summary of the projected economic impacts of the planned construction spending in 2015 (Figures 4 & 5).

<b>Figure 4. Estimated Impacts of Facility Construction (2015)</b>					
<b>McKinley County, New Mexico</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>	<b>Multiplier</b>
Employment	162	37	40	239	1.48
Output (\$millions)	\$27.2	\$6.6	\$4.4	\$38.2	1.40
Value-added (\$ millions)	\$8.2	\$2.4	\$2.3	\$12.9	1.58
Employee Compensation (\$ millions)	\$7.7	\$1.0	\$1.1	\$9.8	1.27
<i>Source: IMPLAN, 2013.</i>					

### **Summary of Employment Impacts**

Construction of the Port service facilities will directly create 162 full- and part-time jobs over the duration of the construction project. Indirect and induced employment of 77 full- and part-time jobs will also be created in McKinley County as a result of the construction project.

- Indirect and induced employment will have the greatest impact in the following industries:
  - 9 in wholesale trade
  - 4 in full-service restaurants
  - 4 in limited-service restaurants
  - 3 in retail clothing and clothing accessories stores
  - 3 in hospitals
  - 3 in truck transportation
- For every 10 jobs created or supported by the construction of these facilities, another 5 jobs will be created or supported in other business sectors in the area.

### **Summary of Output Impacts**

Output represents the value of an industry's business activities including sales and is used as a measure of overall industry productivity. Construction of the facilities will generate \$38.2 million in direct and indirect economic activity (sales and output) over the duration of the construction project. The construction project itself will result in \$27.2 million in direct, in addition to \$11.0 million in indirect and induced output.

- Industries with the highest indirect and induced output impacts include:
  - \$2.3 million in petroleum refineries
  - \$1.4 million in wholesale trade
  - \$844,000 in owner-occupied dwellings
  - \$437,000 in truck transportation
  - \$382,000 in hospitals
  - \$370,000 in commercial and industrial machinery and equipment rental/leasing
- For every million dollars of output generated during by the construction of the facilities, an additional \$403,000 in output will be generated in other business sectors in the County.

### **Summary of Value-Added (Wealth) and Employee Compensation Impacts**

Value-added is a measure of wealth created by business in terms of total of employee compensation, rent, interest, taxes, and profit paid or earned, and is an important indicator of the industry's productivity and regional sector strength. Employee compensation includes wages and employee benefits.

- Construction of the Port service facilities will increase the value added (wealth) of the County by \$12.9 million over the duration of the construction project, \$8.2 million will be from construction project directly and \$4.7 million from indirect and induced impacts on other industries.
- Direct and indirect employment from the project will result in a total employee compensation impact of \$9.8 million being paid by employers over the duration of the construction project, \$7.7 million directly as a result of the construction of the facilities, and an additional \$2.1 million from indirect and induced impacts on other industries.
- Indirect and induced employee compensation impacts will be greatest in the following industries:
  - \$173,000 in hospitals
  - \$134,000 in truck transportation
  - \$85,000 in wholesale trade
  - \$78,000 in full-service restaurants
  - \$73,000 in retail clothing and clothing accessories stores
- For every million dollars of employee compensation paid to construction workers during the construction of the facilities, other businesses in the County will pay an additional \$270,000 in employee compensation.

### **State and Local Tax Impacts**

Construction of the Port services facilities will generate over \$2.0 million in federal taxes and \$1.2 million in state and local taxes over the duration of the construction project. Local tax generation includes \$571,000 in sales tax revenue and \$204,000 in property tax revenue over the duration of the construction project.

### **Impact of Business Operations**

The economic impacts in this analysis were developed based on the operation of two production/warehousing facilities with total employment of 140 permanent workers with an estimated annual employee compensation of \$3,500,000. Analysis was developed based on the North American Industrial Classification Code 493110 (General warehousing and storage), which is the finest level of detail available. Figure 5 illustrates the estimated impacts of facility operations in McKinley County based on the employment and compensation figures provided.



**Figure 5.  
Estimated Impacts of Facility Operations (2015)**

<b>McKinley County, New Mexico</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>	<b>Multiplier</b>
Employment	140	14	21	175	1.25
Output (\$millions)	\$14.2	\$2.2	\$2.3	\$18.7	1.31
Value-added (\$ millions)	\$5.4	\$1.1	\$1.2	\$7.7	1.42
Employee Compensation (\$ millions)	\$3.5	\$0.4	\$0.6	\$4.5	1.28

*Source: IMPLAN, 2013.*

### **Summary of Employment Impacts**

The operation of the Port service facilities will directly create 140 full- and part-time jobs. An additional 35 full- and part-time jobs will also be created or supported in McKinley County by the purchase of goods and services by the business (indirect impacts), as well as the household spending by employees (induced impacts).

- The greatest indirect and induced employment impacts are expected to occur in the following industries:
  - 2 in real estate
  - 2 in full-service restaurants
  - 2 in limited-service restaurants
  - 2 in hospitals
- For every 10 jobs created or supported by the operation of these facilities, another 3 jobs will be created or support an in other business sectors in the area.

### **Summary of Output Impacts**

Output represents the value of an industry's business activities including sales and is used as a measure of overall industry productivity. The operation of the facilities is expected to generate \$18.7 million in direct and indirect economic activity (sales and output) per year, \$14.2 million directly from the facilities and an additional \$4.5 million in indirect and induced impacts.

- Industries with the highest indirect and induced output impacts include:
  - \$437,000 in owner-occupied dwellings
  - \$410,000 in real estate
  - \$352,000 in other local government enterprises
  - \$219,000 in petroleum refineries
  - \$216,000 in electric power transmission and distribution
  - \$197,000 in electric power generation
  - \$196,000 in hospitals

- \$162,000 in wholesale trade
  - \$142,000 in local government utilities
  - \$114,000 in automotive repair and maintenance
- For every million dollars of output generated during by the construction of the facilities, an additional \$313,000 in output will be generated other business sectors in the County.

### **Summary of Value-Added (Wealth) and Employee Compensation Impacts**

Value-added is a measure of wealth created by business in terms of total of employee compensation, rent, interest, taxes, and profit paid or earned, and is an important indicator of the industry's productivity and regional sector strength. Employee compensation includes wages and employee benefits.

- The operation of the Port service facilities is expected to increase the value-added (wealth) of the County by \$7.7 million per year, \$5.4 million will be from facility operations directly and \$2.3 million from indirect and induced impacts on other industries.
- Direct and indirect employment from the facilities will result in a total employee compensation impact of \$4.5 million being paid by employers per year, \$3.5 million directly as a result of the construction of the facilities, and an additional \$1.0 million from indirect and induced impacts on other industries.
- The greatest indirect and induced employee compensation impacts are expected to occur in the following industries:
  - \$89,000 in hospitals
  - \$81,000 in other local government enterprises
  - \$46,000 in real estate
  - \$34,000 in full-service restaurants
  - \$32,000 in automotive repair and maintenance
  - \$30,000 in office administrative services
- For every million dollars of employee compensation paid to workers in the facilities, other businesses in the County will pay an additional \$284,000 in employee compensation.

### **State and Local Tax Impacts**

The economic impacts of facility operations are annual impacts that apply to the initial year of operation (2015). These impacts will grow as output and profits increase over time. Results may vary depending on depreciation of plant and equipment allowed and taken. The operation of the Port services facilities is expected to generate over \$1.1 million in federal taxes and \$508,000 in state and local taxes annually. Local tax generation includes \$221,000 in sales tax revenue and \$79,000 in property tax revenue per year.

## **ASSESS AND REPORT ON FUTURE CONDITIONS**

### **Introduction**

Using the rail and freight forecasts, and considering the conditions present, JBA has assessed and reported on the expected future conditions that will exist in the study area that will influence, impact and affect the potential rail line corridors. In addition to the same criteria reported on for current conditions, JBA has addressed the following:

### **Future commercial/industrial development**

As shown above in the economic impact analysis, the initial success of Site 1 development in the first year or so will lead to future (next 5 years) commercial/industrial development in the area. These could include:

- 10 to 15 industrial projects (2 to 3 per year; potentially 50 to 60 projects in 30 years) and potentially 600-700 jobs
- New service commercial near the project and around the community (restaurants, auto/truck suppliers, health services, etc.)
- Potentially economic impact output of \$60-\$70 million.

### **Change in future land use with the proposed rail line in place**

Land uses pertaining to rail users will occur, including plant development; spur development; truck access/egress; parking; and outside storage.

### **Opportunities for economic development**

#### **Economic Development Marketing**

The following are designed as general guidelines to approach target marketing. The initial program should be three (3) years in length. JBA recommends that the Inland Port Committee pursue the following:

#### **1. Aggressively pursue the “best fit” targets**

A suitable strategy for attraction of an industry cluster is required and should include:

- Develop a list of target companies that would likely consider locating at the Inland Port Area given the market sector (e.g., energy) under consideration.
- Evaluate existing area raw materials inputs, and finished goods outputs to identify companies that might benefit from co-location with suppliers and vendors within the Inland Port Area. Suppliers and manufacturers that ship over-sized or heavy items are likely candidates. On-site steel and drilling component distribution facilities may be a key consideration for the energy sector.
- Marketing efforts promoting the Inland Port should illustrate the benefits of attracting shared services, thereby increasing the Inland Port Area’s value from the perspective of potential future tenants.

- Create company profiles that can be used for a local, national, or international search. Ideally, manufacturers and suppliers would be recruited simultaneously; however, the order in which tenants locate at the development will contribute to its overall success.
- Manufacturers will want to have high confidence that suppliers are also likely to relocate to the new location if they intend to take advantage of cost and time savings advantages of on-site vendors.

## **2. Develop research materials on the targets**

The Inland Port Committee should develop research materials on all of the “best fit” targets:

- Lead Lists – Excel-based, include contacts, phone, e-mails, products, sales, etc.
- Cost Comparison Reports – provide detailed cost comparisons of the Inland Port Area versus select competitors for each target industry based on a hypothetical target project.
- Freight/logistics modeling – to help determine your competitive position in regards to manufacturing and distribution center (DC) freight costs and to provide good marketing materials.
- Conduct more in-depth workforce analysis
  - Resident survey to pinpoint education levels, skills, and commuting patterns
  - More extensive employer interviews to determine availability quality and costs
  - Work to analyze and improve target technical training needs.
- Assist in the development and improvement of educational/training opportunities (see education section above). Develop a Workforce Roundtable that will help Native, public and private groups work together to address these issues.

## **3. Conduct Prospecting Missions**

The Inland Port Committee should organize and participate in select target industry prospecting missions to:

- |                           |                            |
|---------------------------|----------------------------|
| ○ Houston, Texas          | ○ Dallas/Fort Worth, Texas |
| ○ Los Angeles, California | ○ Chicago, Illinois        |
| ○ Denver, Colorado        |                            |

- 4. Attend Select Trade Shows;** possible opportunities are listed in the Appendix.
- 5. Partner with the NM Partnership on trip opportunities.** Also regularly attend International Asset Management Council (IAMC) and CORENET

- **Certify the industrial sites.** A professional site selector led certified site or “shovel ready” process will assure improved industrial site availability. Prospects and site selectors seek certified sites to insure availability, ready status (all permits in place) and speed to market, all which saves time and money.

#### **Opportunities for short rail line for import/export & facilities and infrastructure needed to meet demand**

More BNSF use and development will occur in the early years near Site 1 and in subsequent years near Site 3 and Site 5. This will be due to more industrial activity with the need for rail service.

#### **Potential changes in homeland security**

As economic activity increases and a need for tighter security increases, Homeland Security may become an active player. This will be a critical need if a high security Federal installation is attracted to the area.

In addition, the truck check point (Port of Entry; mile marker 12) along I-40 to the east of The Navajo Chapters could be beneficial to a high security operation.

#### **Potential builders, owners, and operators of the rail line**

It is likely in the early years that BNSF will remain the primary rail provider. It is possible in the future that a short line may be needed and this would require new builders, owners and operators to enter the scene.

#### **Potential for low backhaul rates**

Lower back haul rates could be anticipated as project demand pushes outbound activity and initially fewer goods return to the facility. Eventually backhaul rates will rise as inbound-outbound activity even out.

With the knowledge of both current and future conditions affecting and impacting the proposed rail line, JBA has identified infrastructure requirements for both the initial construction and for the 30 year planning horizon. JBA has determined the general right of way needs for the long range plan. Facilities and infrastructure needs will include, at a minimum, the following:

#### **Rail line(s), connection areas and required sidings (for inspection and other purposes)**

Rail line improvements and upgrades will be needed from BNSF: 1) first in the Site 1 area, 2) next in the Site 3 Site, and 3) finally in the Site 5 area in order to meet industry needs. This may include new spur developments, connections and sidings as industries locate and expand.

### **Foreign Trade Zone, U.S. Customs services, and Port of Entry facilities**

Many inland port projects offer the benefits available through the Foreign Trade Zone (FTZ) program. Distribution center sites that have FTZ program benefits offer significant advantages over non-FTZ sites. For example, in an FTZ, the importer (or the importer's logistics provider) may consolidate the U.S. Customs and Border Protection entries into a single weekly filing. This change alone has the potential to save large tenants hundreds of thousands of dollars annually. Furthermore, inland ports are located in "second-tier" nonurban markets and overall labor and property costs are lower.

General Purpose Foreign Trade Zones (FTZ) and subzones have been growing in importance in recent years. They have become one of the prerequisites for successful inland ports and many industrial parks due to their customs duty savings capabilities. FTZs are secure areas under supervision of U.S. Customs and Border Protection (CBP) that are considered *outside* the customs territory of the United States for the purposes of duty payment. The U.S. Foreign Trade Zones Board lists two FTZs in New Mexico – Albuquerque and Santa Teresa. FTZ status for the The Navajo Chapters Inland Port would be expected to enhance the marketability of the project.

Duty deferral occurs since customs duty is not due until the merchandise enters the commerce of the United States. This allows sellers to store merchandise for as long as it takes to sell the product without having to carry the cost of import duty.

Manufacturers can assemble lower-duty imported components into final products, thus saving on duty costs. Additionally, no Customs duty is ever due on imported merchandise that is exported back out of the country without entering the U.S. commerce. The same principle applies on duty exemption on waste. Imported materials that are lost or destroyed in the production process never reach the commerce of the U.S. and therefore are exempt from duty fees.

FTZ regulations and paperwork are complex, and expertise is required to fully realize allowable cost savings; however, proper understanding and use of a FTZ within the confines of the site may attract certain manufacturers and distributors that are able to take advantage of FTZ benefits. The Santa Teresa, New Mexico model may be a good one to follow.

### **Intermodal facility and container yard**

As progress continues and volumes grow, more intermodal and container will take place. Much depends on the U.S. national economy, prices associated with the major targets and marketing done by the Committee and the Navajo Nation.

### **Intersection upgrades with Interstate 40 and highway upgrades necessary to serve the Inland Port Site**

Intersection and highway upgrades will be needed, but should be addressed of the Four Corners Intermodal Transloading Equinox work plan soon to be bid out.



### **Utilities and broadband to serve the Port and associated business development**

Utilities and broadband serve will be an important part of the new design plan and the Four Corners Intermodal Transloading Equinox work plan. This plan generally outlines the economic impact analysis which includes these elements.

### **Conclusions**

This Inland Port Analysis has shown that the Navajo Chapters Region is a good location for an inland port development.

**Site 1A appears to be the best location for the initial development** due to:

- Best meets all site selection criteria – Rated *Excellent* (versus *Above Average* – *Good* for Site 5)
- Being least expensive
- Easy to acquire – Navajo Fee Land
- Close proximity to Gallup Land Partners rail loop which is fully supported by BNSF
- Good potential for an initial 50 acre site development and future area development.

**A portion of Site 1B may also work for development.**

- Best meets all site selection criteria – Rated *Excellent* (versus *Above Average* – *Good* for Site 5)
- On Navajo Allotment Land making it easiest to acquire. Potential development will require the consent of the property owners only and not necessarily the tribe or chapter – potentially offering the possibility of expedited development.
- Flatter site for development
- Close proximity to Gallup Land Partners rail loop which is fully supported by BNSF
- Good potential for future area development.

However, there are some areas for concern, including:

- A utility easement crosses the site making some of it undevelopable
- It is more expensive to develop.

### **Next Development Step Recommendations**

The Inland Port Committee should begin planning the next development steps. Key items may include:

- **Create a Chapter Site Planning/Environmental Review Committee to move ahead**
- **Secure proper Chapter and cooperative development agreements.**
- **Prepare a more detailed design/cost plan for Site 1A (and possibly Site 1B),** including: cooperative engineering/planning, land use and utility design elements of the project. Prepare this in cooperation with the transportation/design plan currently underway. We recommend Sakura Engineering who assisted JBA with preliminary costs here and is assisting the GLP project.
- **Prepare a finance plan and seek development funding.** Funding sources may include:
  - Department of Interior grant to Navajo Nation
  - Percent of diesel fuel sold in McKinley Co. (\$800,000 per month)
  - Economic Development Administration (EDA)
  - Permanent Trust Fund (like Southern Ute Growth Fund type model)
- **Prepare a Foreign Trade Zone (FTZ) plan.** Use Santa Teresa as a model.
- **Work broadband improvements in the region into your plan.**
- ***Show your vision for success...Move It Forward!***

*JBA is available to assist with further planning.*

***For More Information Regarding This Report, Please Contact:***

**Mr. Jack Allston  
Principal  
JBA & Associates  
(505) 377-8452  
[jallston@csonline.net](mailto:jallston@csonline.net)**

## **APPENDIX**

### **Economic Impact Analysis**

To understand the full effect that a firm or industry has on the economy, including its impact on other sectors, input-output analysis is employed. Input-output analysis is based on the principle that industries are interdependent. One industry purchases inputs from other industries and households (i.e., labor) then sells its output to other industries, households, or the government. Additional induced impacts occur when workers involved in direct and indirect activities spend their wages on consumer goods produced or sold in the region and local economy. Therefore, economic activity in one sector impacts other sectors.

- ***Direct Economic Impacts*** are created by the operations of the facility itself or of a particular project (such as building construction or renovation), primarily the employment, payroll, and local expenditures.
- ***Indirect Economic Impacts*** refer to additional jobs and payroll created in the surrounding economy as a result of the purchase of inputs by the facility. This might be goods such as food, office supplies and computer equipment or services such as accounting and legal services.
- ***Induced Economic Impacts*** are the additional impact that results from the employees spending their income in the local economy.

For reporting purposes, the indirect and induced impacts are commonly combined into a single figure and reported as indirect impacts. This is the case in this report. All discussion of indirect impacts includes both the induced and indirect impacts as discussed above. The economic variables referred to in this report are as follows:

- ***Employment (Jobs)***: For the purposes of this analysis an employee is defined as a person that enters into an agreement with an enterprise which may be formal or informal, with a business to perform work in return for compensation in cash or in kind. In IMPLAN, jobs are equivalent to the annual average of monthly jobs in that industry (the same definition used by Quarterly Census of Employment and Wages, the Bureau of Labor Statistics, and the Bureau of Economic Analysis nationally). Thus, 1 job lasting 12 months = 2 jobs lasting 6 months each = 3 jobs lasting 4 months each. A job can be either full-time or part-time.
- ***Output*** represents the value of an industry's production. For manufacturers this would be sales plus or minus any change in inventory. For service sectors production it would be analogous to sales. For retail and wholesale trade, output equals gross margin.
- ***Value-added*** is a measure of the study area's economic output similar to "Gross Domestic Product" or "GDP". It represents the difference between the value of goods and services purchased as production inputs and the value of the goods and services produced.

- **Employee Compensation** is a component of the value-added variable and represents the total payroll cost of the employee paid by the employer. It includes wage and salary, all benefits (health insurance, retirement, etc.), and employer paid payroll taxes (employers portion of social security, unemployment insurance, etc).

**Steering Committee Members**

<b>INLAND PORT FEASIBILITY STUDY STEERING COMMITTEE</b>	
<b>Colbert Sherman</b>	President, Rocksprings Chapter
<b>David Lee</b>	President, Tsayatoh Chapter
<b>Milton Davidson</b>	President, Manuelito Chapter
<b>Percy Anderson</b>	Community Land use Planning Committee
<b>David Silversmith</b>	Community Land use Planning Committee
<b>Albert Lee</b>	Navajo Nation Project Development Office
<b>Zander Shirley</b>	
<b>Jeff Irving</b>	Road Superintendent, McKinley County
<b>Genevieve Jackson</b>	McKinley County Commission
<b>Jeff Keily</b>	Northwest NM Council of Governments
<b>Jake Bracken</b>	The Gallup Land Partnership
<b>Aaron Kowalski</b>	The Gallup Land Partnership
<b>Patty Lundstrom</b>	Greater Gallup EDC
<b>Michael Sage</b>	Greater Gallup EDC
<b>Leslie Kedelty</b>	New Mexico Economic Development Dept
<b>Ruben Fragoso</b>	New Mexico Economic Development Dept
<b>Elizabeth Davis</b>	New Mexico Economic Development Dept
<b>Jack Allston</b>	Contractor
<b>Deane Foote</b>	Contractor

**Potential Target Industry Trade Shows**

**Oil and Gas/Mining Equipment Related**

- **Oil Sands Trade Show**, Sept. 15-16, 2015, Ft. McMurray, Alberta, Canada  
<http://oilsandstradeshow.com>
- **Society for Mining, Metallurgy & Exploration**, Feb. 15-18, 2015, Denver, CO,  
<http://www.smeannualconference.com/>
- **Global Petroleum Show**, June 9-11, 2015, Calgary, Alberta, Canada  
<http://globalpetroleumshow.com>

#### Warehouse/Distribution

- **Warehouse Education & Research Council (WERC)**, May 3-6, 2015, Orlando, FL, <http://www.werc.org>
- **Eastpak**, June 9-11, 2015, NY, NY, <http://www.biztradeshows.com/trade-events/east-pack.html>
- **Promat 2015**, March 23-26, 2015, Chicago, IL, <http://www.promatshow.com>

#### Plastics

- **Plastecwest**, February 10-12, 2015, Anaheim, CA, <http://www.plastecwest.com>
- **Plast-Ex**, June 16-18, 2015, Toronto, Canada, <http://www.plast-ex.org>
- **The International Plastics Showcase**, March 23-27, 2015, Orlando, FL, <http://www.npe.org>
- **FABTECH**, November 9-12, 2015, Chicago, Illinois, <http://www.fabtechexpo.com>

#### Industrial Machinery

- **Houstex Expo**, February 24-26, 2015, Houston, TX, <http://www.houstexonline.com>
- **Precision Machining Technology Show (PMTS)**, April 21-23, 2015, Columbus, OH, <http://www.pmts.com>
- **International Manufacturing Technology Show (IMTA)**, September 12-17, 2016, Chicago, <http://www.imts.com>
- **WESTEC Exposition**, October 15-17, 2015, Los Angeles, CA, <http://www.westeconline.com>

#### Food Processing

- **IFT Show and Expo**, July 11-14, 2015, Chicago, IL, <http://www.am-fe.ift.org/cms>
- **19th Americas Food & Beverage Show**, October 26-27, 2015, Miami Beach, FL, <http://www.americasfoodandbeverage.com>
- **Dairy-Deli-Bakery Association**, June 7-9, 2015, Orlando, FL, <http://www.iddba.org>
- **FISA Annual Conference**, October 10-13, 2015, Austin, TX (Members serve customers in food, beverage, personal care, pharmaceutical, Bio-Pharm and other high purity industries), <http://www.fisanet.org/meetings.html>
- **Process Expo**, September 15-18, 2015, Chicago, IL, <http://www.myprocessexpo.com>

### **Interviewed for the Project**

The following companies/organizations were interviewed (alphabetically) for this project:

- Allied Energy Services
- Aztec Well Services
- Blue Horse Energy
- BNSF Railroad
- BP Petroleum
- Chevron
- City of Gallup
- Conoco-Phillips
- Continental Divide Electric Cooperative
- Dash Hot Shot
- Dugan Production
- Eastern Navajo Land Commission
- Elroy Drake
- Escalante Generating
- Four Corners Economic Development, Inc.
- Gallup Land Partners
- GKSF Global Research
- Greater Gallup EDC
- Lee Ranch Coal Mine
- M&R Trucking
- Manuelito Chapter
- McKinley County
- NAPI
- Navajo Business Incubator
- Navajo Gaming
- Navajo Nation
- Navajo Technical University
- Navajo-Gallup Water Supply Project
- New Mexico Gas
- Northern Illinois University
- NM State Transportation Commission
- NW New Mexico Council of Governments
- Parkhill, Smith & Cooper
- Port of North Dakota
- Robert Bayless Producer
- Rock Springs Chapter
- Sakura Engineering
- San Juan College
- State of New Mexico
- Tiebard Board of Investment
- Tsayatoh Chapter
- UNM Gallup
- Western Refining

## **Freight Profile**

A general profile of selected cargo flows moving over the I-40, other east-west highway, and rail corridors was prepared from commodity flow data available from the Freight Analysis Framework (FAF). The profile is intended to give an indication of the types of commodities and transport modes moving through The Navajo Chapters, which is located on the I-40 and BNSF mainline. FAF integrates data from a variety of sources to create a profile of freight movement among states and major metropolitan areas by all modes of transportation. Data is presented for 2007, the FAF base year, and estimates for 2012. A FAF forecast is presented for 2020 to illustrate near-term growth sectors. Cargo profiles by transport mode and commodity are presented for the following pairs:

- Los Angeles Combined Statistical Area (CSA) – New Mexico
- Houston CSA – New Mexico
- Los Angeles CSA – Dallas/Fort Worth CSA

The Los Angeles CSA covers the counties of Los Angeles; Orange; Riverside; San Bernardino; and Ventura, capturing not only the Port of Los Angeles/Long Beach but also the warehousing/distribution, transload, and other cargo activities in areas surrounding the Port that process international and domestic freight. Similarly, the Houston CSA captures cargo flowing to and from the Port of Houston and Houston area logistics facilities.

### **Los Angeles CSA – New Mexico**

A profile of domestic and international cargo by transport mode and commodity moving between the Los Angeles CSA and New Mexico is presented in Tables Figures 6 to 9 (beginning on the following page). Truck is the dominant transport mode, excluding pipeline movements of coal slurry fuel. The dominance of truck reflects the commodity mix (e.g., furniture, consumer products, etc.), the proximity to Los Angeles (1 to 2 days truck-drive window), and the low freight volume of the lane that makes it less favorable for intermodal rail. Another factor is that New Mexico-related freight could also be moving over intermodal rail hubs in other states (e.g., Phoenix), thus understating the presence of rail activity in New Mexico freight movement.

**Figure 6: Los Angeles CSA – New Mexico Cargo by Mode**

<b>Mode</b>	<b>2007 000 Tons</b>	<b>2012 000 Tons</b>	<b>2020 000 Tons</b>
<b>LA CSA to New Mexico</b>	<b>800.7</b>	<b>854.7</b>	<b>748.1</b>
Truck	595.2	632.7	580.4
Multiple Modes* & Mail	198.7	214.5	162.2
Pipeline	4.5	5.0	3.1
Other and Unknown	1.3	1.5	1.3
Air (include truck-air)	1.0	1.0	1.0
<b>New Mexico to LA CSA</b>	<b>1,113.6</b>	<b>1,228.1</b>	<b>1,037.0</b>
Pipeline **	774.4	870.1	597.4
Truck	328.5	349.7	430.9
Multiple Modes* & Mail	20.7	28.2	33.2
Rail	10.0	9.1	9.3
Air (include truck-air)	0.0	0.0	0.0
Other and Unknown	0.0	0.0	0.0

\* Multiple modes are defined in the FAF3 database as truck-rail, truck-water, and rail-water shipments involving one or more end-to-end transfers of cargo between two different modes.

\*\* Coal slurry fuel moving by pipeline.

*(Source: FAF)*



**Figure 7: Los Angeles CSA – New Mexico Cargo by Commodity**

Commodity	2007 000 Tons	2012 000 Tons	2020 000 Tons	2007 Share	2012 Share	2020 Share
<b>LA CSA to New Mexico</b>	<b>800.7</b>	<b>854.7</b>	<b>748.1</b>			
Coal	253.5	284.8	178.2	31.7%	33.3%	23.8%
Furniture	120.5	113.4	99.1	15.0%	13.3%	13.2%
Other foodstuffs	50.1	55.3	54.6	6.3%	6.5%	7.3%
Plastics/rubber	54.5	53.7	75.7	6.8%	6.3%	10.1%
Gasoline	43.0	48.3	42.6	5.4%	5.7%	5.7%
Mixed freight	42.6	47.5	42.5	5.3%	5.6%	5.7%
Machinery	35.1	38.1	56.0	4.4%	4.5%	7.5%
Motorized vehicles	22.5	25.2	19.0	2.8%	3.0%	2.5%
Printed prods.	21.2	23.2	12.8	2.6%	2.7%	1.7%
Nonmetal min. prods.	20.8	23.1	16.5	2.6%	2.7%	2.2%
Milled grain prods.	15.1	17.0	5.2	1.9%	2.0%	0.7%
Wood prods.	15.7	16.9	21.2	2.0%	2.0%	2.8%
Basic chemicals	15.1	16.9	21.8	1.9%	2.0%	2.9%
Misc. mfg. prods.	15.7	14.9	13.9	2.0%	1.7%	1.9%
Chemical prods.	13.1	12.5	14.5	1.6%	1.5%	1.9%
Electronics	11.5	11.6	13.2	1.4%	1.4%	1.8%
Base metals	7.5	8.6	5.4	0.9%	1.0%	0.7%
Paper articles	9.1	8.5	12.7	1.1%	1.0%	1.7%
Articles-base metal	5.6	6.0	5.4	0.7%	0.7%	0.7%
Textiles/leather	5.0	5.0	4.2	0.6%	0.6%	0.6%
Others	23.7	24.0	33.5	3.0%	2.8%	4.5%
<b>New Mexico to LA CSA</b>	<b>1,133.6</b>	<b>1,257.2</b>	<b>1,070.8</b>			
Coal	774.6	870.3	597.5	68.3%	69.2%	55.8%
Newsprint/paper	187.5	202.8	173.5	16.5%	16.1%	16.2%
Other foodstuffs	45.4	42.1	53.3	4.0%	3.3%	5.0%
Milled grain prods.	27.9	31.8	129.6	2.5%	2.5%	12.1%
Other ag prods.	9.8	13.9	19.9	0.9%	1.1%	1.9%
Waste/scrap	12.1	13.7	15.0	1.1%	1.1%	1.4%
Chemical prods.	11.0	10.5	14.3	1.0%	0.8%	1.3%
Animal feed	6.8	8.7	4.7	0.6%	0.7%	0.4%
Misc. mfg. prods.	10.0	8.7	4.6	0.9%	0.7%	0.4%
Paper articles	8.0	8.3	0.3	0.7%	0.7%	0.0%
Nonmetallic minerals	5.7	7.8	6.3	0.5%	0.6%	0.6%
Nonmetal min. prods.	6.4	7.2	8.7	0.6%	0.6%	0.8%
Textiles/leather	6.0	6.2	12.2	0.5%	0.5%	1.1%
Cereal grains	3.7	5.1	3.2	0.3%	0.4%	0.3%
Machinery	4.3	4.9	5.2	0.4%	0.4%	0.5%
Articles-base metal	4.1	3.7	8.9	0.4%	0.3%	0.8%
Fertilizers	3.2	3.5	1.4	0.3%	0.3%	0.1%
Mixed freight	1.1	1.2	1.1	0.1%	0.1%	0.1%
Meat/seafood	1.0	1.2	4.5	0.1%	0.1%	0.4%
Pharmaceuticals	1.0	1.1	1.1	0.1%	0.1%	0.1%
Others	4.0	4.6	5.6	0.4%	0.4%	0.5%

(Source: FAF)

**Figure 8: Los Angeles CSA – New Mexico Cargo by Truck**

<b>Direction and Commodity</b>	<b>2007 000 Tons</b>	<b>2012 000 Tons</b>	<b>2020 000 Tons</b>	<b>2007 Share</b>	<b>2012 Share</b>	<b>2020 Share</b>
<b>LA CSA to New Mexico</b>	<b>595.2</b>	<b>632.7</b>	<b>580.4</b>			
Coal	116.8	131.3	82.2	19.6%	20.8%	14.2%
Furniture	105.8	99.7	87.4	17.8%	15.8%	15.1%
Plastics/rubber	52.6	52.0	73.0	8.8%	8.2%	12.6%
Other foodstuffs	44.5	49.3	48.8	7.5%	7.8%	8.4%
Gasoline	43.0	48.3	42.6	7.2%	7.6%	7.3%
Mixed freight	41.2	46.3	41.1	6.9%	7.3%	7.1%
Machinery	28.1	31.5	45.0	4.7%	5.0%	7.8%
Nonmetal min. prods.	20.2	22.4	16.1	3.4%	3.5%	2.8%
Printed prods.	19.0	21.3	11.5	3.2%	3.4%	2.0%
Wood prods.	15.5	16.7	20.9	2.6%	2.6%	3.6%
Milled grain prods.	14.5	16.3	5.0	2.4%	2.6%	0.9%
Motorized vehicles	14.3	16.1	12.2	2.4%	2.5%	2.1%
Basic chemicals	11.6	12.6	16.7	1.9%	2.0%	2.9%
Chemical prods.	11.7	11.4	13.0	2.0%	1.8%	2.2%
Misc. mfg. prods.	11.1	10.9	9.8	1.9%	1.7%	1.7%
Electronics	9.7	9.8	11.1	1.6%	1.6%	1.9%
Paper articles	6.5	6.1	9.1	1.1%	1.0%	1.6%
Base metals	4.0	4.9	3.0	0.7%	0.8%	0.5%
Articles-base metal	4.4	4.7	4.3	0.7%	0.7%	0.7%
Alcoholic beverages	4.2	4.7	3.7	0.7%	0.7%	0.6%
Others	16.5	16.4	24.0	2.8%	2.6%	4.1%
<b>New Mexico to LA CSA</b>	<b>328.5</b>	<b>349.7</b>	<b>430.9</b>			
Newsprint/paper	177.4	193.6	164.1	54.0%	55.4%	38.1%
Other foodstuffs	45.0	41.4	52.5	13.7%	11.9%	12.2%
Milled grain prods.	27.9	31.8	129.6	8.5%	9.1%	30.1%
Waste/scrap	11.9	13.4	14.4	3.6%	3.8%	3.3%
Chemical prods.	10.4	9.9	13.5	3.2%	2.8%	3.1%
Paper articles	8.0	8.3	0.3	2.4%	2.4%	0.1%
Misc. mfg. prods.	9.5	8.2	4.3	2.9%	2.4%	1.0%
Nonmetal min. prods.	6.4	7.2	8.6	1.9%	2.1%	2.0%
Animal feed	5.3	6.5	2.8	1.6%	1.9%	0.6%
Textiles/leather	5.0	4.9	9.8	1.5%	1.4%	2.3%
Nonmetallic minerals	3.6	4.7	4.2	1.1%	1.3%	1.0%
Machinery	3.5	3.9	4.2	1.1%	1.1%	1.0%
Fertilizers	3.2	3.5	1.4	1.0%	1.0%	0.3%
Articles-base metal	3.8	3.3	8.2	1.1%	0.9%	1.9%
Other ag prods.	2.3	2.9	3.5	0.7%	0.8%	0.8%
Meat/seafood	1.0	1.2	4.5	0.3%	0.3%	1.0%
Mixed freight	0.9	1.0	0.9	0.3%	0.3%	0.2%
Pharmaceuticals	0.7	0.8	0.8	0.2%	0.2%	0.2%
Unknown	0.7	0.7	0.8	0.2%	0.2%	0.2%
Gravel	0.4	0.4	0.6	0.1%	0.1%	0.1%
Others	1.6	1.9	2.0	0.5%	0.5%	0.5%

(Source: FAF)

**Figure 9: Los Angeles CSA – New Mexico Cargo by Multiple Modes**

<b>Direction and Commodity</b>	<b>2007 000 Tons</b>	<b>2012 000 Tons</b>	<b>2020 000 Tons</b>	<b>2007 Share</b>	<b>2012 Share</b>	<b>2020 Share</b>
<b>LA CSA to new Mexico</b>	<b>198.7</b>	<b>214.5</b>	<b>162.2</b>			
Coal	132.2	148.5	92.9	66.5%	69.2%	57.3%
Furniture	14.5	13.6	11.6	7.3%	6.3%	7.2%
Motorized vehicles	7.9	8.9	6.7	4.0%	4.1%	4.1%
Machinery	6.7	6.2	10.3	3.4%	2.9%	6.3%
Other foodstuffs	5.6	6.0	5.8	2.8%	2.8%	3.6%
Basic chemicals	3.5	4.3	5.1	1.8%	2.0%	3.1%
Textiles/leather	4.1	4.1	3.3	2.1%	1.9%	2.1%
Misc. mfg. prods.	4.3	3.8	3.8	2.2%	1.8%	2.4%
Base metals	3.4	3.7	2.5	1.7%	1.7%	1.5%
Paper articles	2.6	2.5	3.7	1.3%	1.1%	2.3%
Precision instruments	2.5	2.4	4.9	1.3%	1.1%	3.1%
Printed prods.	2.2	1.9	1.3	1.1%	0.9%	0.8%
Electronics	1.8	1.7	2.1	0.9%	0.8%	1.3%
Plastics/rubber	1.9	1.6	2.6	1.0%	0.8%	1.6%
Mixed freight	1.4	1.3	1.4	0.7%	0.6%	0.9%
Others	4.0	4.1	4.2	2.0%	1.9%	2.6%
<b>New Mexico to LA CSA</b>	<b>20.7</b>	<b>28.2</b>	<b>33.2</b>			
Other ag prods.	7.5	10.9	16.4	36.1%	38.7%	49.5%
Cereal grains	3.6	4.9	3.1	17.3%	17.3%	9.2%
Nonmetallic minerals	2.1	3.1	2.1	10.2%	11.0%	6.4%
Animal feed	1.6	2.2	1.9	7.5%	7.9%	5.9%
Textiles/leather	0.9	1.4	2.4	4.5%	4.9%	7.1%
Machinery	0.9	1.0	1.0	4.1%	3.4%	3.2%
Electronics	0.9	0.8	0.6	4.2%	2.9%	1.8%
Chemical prods.	0.6	0.7	0.8	2.9%	2.3%	2.5%
Other foodstuffs	0.5	0.6	0.8	2.2%	2.2%	2.3%
Misc. mfg. prods.	0.5	0.4	0.2	2.4%	1.5%	0.7%
Articles-base metal	0.3	0.4	0.7	1.6%	1.3%	2.1%
Basic chemicals	0.2	0.3	0.3	0.9%	0.9%	0.8%
Pharmaceuticals	0.3	0.3	0.3	1.4%	0.9%	1.0%
Waste/scrap	0.2	0.2	0.7	0.8%	0.9%	2.0%
Others	0.8	1.1	1.9	4.0%	3.7%	5.7%

*(Source: FAF)*

**Houston CSA – New Mexico**

A profile of domestic cargo by transport mode and commodity moving between the Houston CSA and New Mexico is presented in Figures 10-14 (please see following page). Truck is the dominant transport mode, excluding pipeline movements of petroleum products and coal slurry fuel. The dominance of truck reflects the commodity mix (e.g., furniture, consumer products, etc.) and the relative low freight volumes in the Houston-New Mexico lane that makes it less favorable for intermodal rail service.

**Figure 10: Houston CSA – New Mexico Cargo by Mode**

<b>Mode</b>	<b>2007 000 Tons</b>	<b>2012 000 Tons</b>	<b>2020 000 Tons</b>
<b>Houston CSA to NM</b>	<b>1,723.9</b>	<b>1,906.8</b>	<b>1,835.9</b>
Pipeline	1,246.6	1,400.8	1,053.3
Truck	319.2	344.7	315.7
Rail	71.4	80.2	329.9
Other and Unknown	68.0	61.7	62.0
Multiple Modes* & Mail	18.6	19.4	75.0
Air (include truck-air)	0.0	0.0	0.0
<b>NM to Houston CSA</b>	<b>1,837.2</b>	<b>2,083.0</b>	<b>1,628.7</b>
Pipeline	1,699.6	1,909.8	1,473.8
Truck	110.4	146.1	130.6
Rail	23.5	22.9	18.5
Multiple Modes* & Mail	3.7	4.3	5.8

\* Multiple modes are defined in the FAF3 database as truck-rail, truck-water, and rail-water shipments involving one or more end-to-end transfers of cargo between two different modes.

(Source: FAF)

**Figure 11: Houston CSA – New Mexico Cargo by Commodity**

<b>Direction and Commodity</b>	<b>2007 000 Tons</b>	<b>2012 000 Tons</b>	<b>2020 000 Tons</b>	<b>2007 Share</b>	<b>2012 Share</b>	<b>2020 Share</b>
<b>Houston CSA to NM</b>	<b>1,723.9</b>	<b>1,906.8</b>	<b>1,835.9</b>			
Crude petroleum	815.2	916.0	542.9	47.3%	48.0%	29.6%
Coal	470.0	528.1	555.2	27.3%	27.7%	30.2%
Basic chemicals	154.0	161.1	137.2	8.9%	8.4%	7.5%
Waste/scrap	107.6	120.9	16.3	6.2%	6.3%	0.9%
Articles-base metal	40.0	37.6	42.5	2.3%	2.0%	2.3%
Alcoholic beverages	27.8	31.4	32.3	1.6%	1.6%	1.8%
Base metals	30.0	30.7	21.4	1.7%	1.6%	1.2%
Fertilizers	25.0	24.9	422.5	1.4%	1.3%	23.0%
Plastics/rubber	16.8	17.3	13.8	1.0%	0.9%	0.8%
Nonmetal min. prods.	7.7	8.4	10.9	0.4%	0.4%	0.6%
Machinery	6.3	6.6	17.9	0.4%	0.3%	1.0%
Misc. mfg. prods.	6.1	5.9	3.2	0.4%	0.3%	0.2%
Mixed freight	3.5	4.0	3.7	0.2%	0.2%	0.2%
Chemical prods.	4.1	3.7	5.4	0.2%	0.2%	0.3%
Other foodstuffs	1.4	1.5	1.6	0.1%	0.1%	0.1%
Wood prods.	1.4	1.3	1.5	0.1%	0.1%	0.1%
Nonmetallic minerals	1.0	1.2	1.0	0.1%	0.1%	0.1%
Milled grain prods.	1.1	1.1	1.0	0.1%	0.1%	0.1%
Furniture	0.9	0.9	0.8	0.1%	0.0%	0.0%
Electronics	0.8	0.8	0.6	0.0%	0.0%	0.0%
Others	3.3	3.4	4.3	0.2%	0.2%	0.2%
<b>NM to Houston CSA</b>	<b>1,837.2</b>	<b>2,083.0</b>	<b>1,628.7</b>			
Coal	1,684.8	1,893.1	1,456.2	91.7%	90.9%	89.4%
Milled grain prods.	18.5	47.4	27.4	1.0%	2.3%	1.7%
Other foodstuffs	25.2	26.6	36.1	1.4%	1.3%	2.2%
Basic chemicals	21.3	23.7	23.1	1.2%	1.1%	1.4%
Fertilizers	24.9	22.7	1.1	1.4%	1.1%	0.1%
Crude petroleum	14.9	16.7	17.7	0.8%	0.8%	1.1%
Coal	9.0	10.1	13.4	0.5%	0.5%	0.8%
Misc. mfg. prods.	9.0	9.2	5.5	0.5%	0.4%	0.3%
Base metals	6.0	6.8	22.2	0.3%	0.3%	1.4%
Motorized vehicles	5.7	5.8	2.2	0.3%	0.3%	0.1%
Articles-base metal	3.1	3.8	8.0	0.2%	0.2%	0.5%
Nonmetallic minerals	2.6	3.1	0.9	0.1%	0.1%	0.1%
Other ag prods.	1.8	2.3	3.9	0.1%	0.1%	0.2%
Paper articles	2.0	2.3	0.1	0.1%	0.1%	0.0%
Waste/scrap	1.6	1.9	2.3	0.1%	0.1%	0.1%
Animal feed	1.3	1.4	0.9	0.1%	0.1%	0.1%
Mixed freight	1.3	1.2	1.6	0.1%	0.1%	0.1%
Furniture	0.9	1.1	1.5	0.1%	0.1%	0.1%
Electronics	0.6	0.6	0.6	0.0%	0.0%	0.0%
Others	2.6	3.1	4.1	0.1%	0.1%	0.2%

(Source: FAF)

**Figure 12: Houston CSA – New Mexico Cargo by Truck**

<b>Direction and Commodity</b>	<b>2007 000 Tons</b>	<b>2012 000 Tons</b>	<b>2020 000 Tons</b>	<b>2007 Share</b>	<b>2012 Share</b>	<b>2020 Share</b>
<b>Houston CSA to NM</b>	<b>319.2</b>	<b>344.7</b>	<b>315.7</b>			
Waste/scrap	107.6	120.9	16.3	33.7%	35.1%	5.2%
Coal	37.0	41.6	43.7	11.6%	12.1%	13.8%
Basic chemicals	37.0	40.3	33.0	11.6%	11.7%	10.5%
Articles-base metal	39.2	36.8	41.7	12.3%	10.7%	13.2%
Alcoholic beverages	27.8	31.4	32.3	8.7%	9.1%	10.2%
Base metals	29.4	30.1	21.0	9.2%	8.7%	6.7%
Nonmetal min. prods.	6.4	7.0	9.1	2.0%	2.0%	2.9%
Machinery	5.9	6.2	16.8	1.8%	1.8%	5.3%
Plastics/rubber	5.6	6.0	4.6	1.7%	1.7%	1.5%
Misc. mfg. prods.	5.9	5.7	3.1	1.8%	1.7%	1.0%
Fertilizers	4.7	5.3	80.0	1.5%	1.5%	25.3%
Mixed freight	3.5	4.0	3.7	1.1%	1.2%	1.2%
Other foodstuffs	1.4	1.5	1.6	0.4%	0.4%	0.5%
Wood prods.	1.4	1.3	1.5	0.4%	0.4%	0.5%
Nonmetallic minerals	1.0	1.2	1.0	0.3%	0.3%	0.3%
Milled grain prods.	1.1	1.1	1.0	0.3%	0.3%	0.3%
Electronics	0.8	0.8	0.6	0.2%	0.2%	0.2%
Chemical prods.	0.7	0.7	1.0	0.2%	0.2%	0.3%
Precision instruments	0.7	0.6	1.4	0.2%	0.2%	0.4%
Building stone	0.6	0.6	0.8	0.2%	0.2%	0.3%
Others	1.5	1.7	1.5	0.5%	0.5%	0.5%
<b>NM to Houston CSA</b>	<b>110.4</b>	<b>146.1</b>	<b>130.6</b>			
Milled grain prods.	18.5	47.4	27.4	16.8%	32.4%	21.0%
Other foodstuffs	24.8	26.1	35.5	22.5%	17.9%	27.2%
Basic chemicals	21.3	23.7	23.1	19.3%	16.2%	17.7%
Coal	9.0	10.1	13.4	8.1%	6.9%	10.3%
Misc. mfg. prods.	8.5	8.7	5.1	7.7%	6.0%	3.9%
Fertilizers	6.7	5.7	0.3	6.0%	3.9%	0.2%
Motorized vehicles	5.1	5.2	2.0	4.6%	3.6%	1.5%
Articles-base metal	3.0	3.7	7.7	2.7%	2.5%	5.9%
Nonmetallic minerals	2.6	3.0	0.9	2.3%	2.1%	0.7%
Paper articles	2.0	2.3	0.1	1.8%	1.6%	0.1%
Waste/scrap	1.6	1.9	2.3	1.4%	1.3%	1.8%
Base metals	1.2	1.4	4.6	1.1%	0.9%	3.5%
Animal feed	1.2	1.3	0.8	1.0%	0.9%	0.6%
Other ag prods.	0.9	1.3	2.2	0.9%	0.9%	1.7%
Mixed freight	1.3	1.2	1.5	1.2%	0.8%	1.2%
Furniture	0.9	1.0	1.4	0.8%	0.7%	1.1%
Electronics	0.5	0.5	0.4	0.4%	0.3%	0.3%
Unknown	0.3	0.4	0.3	0.3%	0.3%	0.3%
Textiles/leather	0.2	0.3	0.5	0.2%	0.2%	0.4%
Others	0.9	1.0	1.0	0.8%	0.7%	0.7%

(Source: FAF)

**Figure 13: Houston CSA – New Mexico Cargo by Rail**

Direction and Commodity	2007 000 Tons	2012 000 Tons	2020 000 Tons	2007 Share	2012 Share	2020 Share
<b>Houston CSA to NM</b>	<b>71.4</b>	<b>80.2</b>	<b>329.9</b>			
Basic chemicals	52.4	62.1	46.7	73.4%	77.4%	14.1%
Fertilizers	16.6	15.5	281.0	23.3%	19.3%	85.2%
Crude petroleum	1.6	1.8	1.1	2.2%	2.2%	0.3%
Others	0.8	0.9	1.1	1.1%	1.1%	0.3%
<b>NM to Houston CSA</b>	<b>23.5</b>	<b>22.9</b>	<b>18.5</b>			
Fertilizers	18.3	17.0	0.8	77.8%	74.4%	4.3%
Base metals	4.7	5.3	17.4	20.1%	23.3%	94.2%
Motorized vehicles	0.4	0.4	0.1	1.5%	1.6%	0.7%
Animal feed	0.1	0.1	0.1	0.3%	0.4%	0.3%
Others	0.1	0.1	0.1	0.2%	0.3%	0.4%

(Source: FAF)

**Figure 14: Houston CSA – New Mexico Cargo by Multiple Modes**

Direction and Commodity	2007 000 Tons	2012 000 Tons	2020 000 Tons	2007 Share	2012 Share	2020 Share
<b>Houston CSA to NM</b>	<b>18.6</b>	<b>19.4</b>	<b>75.0</b>			
Plastics/rubber	11.3	11.4	9.1	60.4%	58.7%	12.2%
Fertilizers	3.6	4.1	61.4	19.5%	21.1%	81.9%
Articles-base metal	0.8	0.8	0.8	4.0%	4.4%	1.1%
Furniture	0.6	0.6	0.6	3.1%	3.2%	0.8%
Nonmetal min. prods.	0.6	0.6	0.8	3.0%	3.1%	1.0%
Base metals	0.6	0.6	0.4	3.1%	3.0%	0.6%
Pharmaceuticals	0.4	0.4	0.2	2.2%	2.1%	0.3%
Machinery	0.4	0.4	1.1	2.1%	2.0%	1.5%
Misc. mfg. prods.	0.2	0.2	0.1	1.0%	0.9%	0.1%
Others	0.3	0.3	0.4	1.5%	1.6%	0.5%
<b>NM to Houston CSA</b>	<b>3.7</b>	<b>4.3</b>	<b>5.8</b>			
Other ag prods.	0.8	1.1	1.7	21.9%	25.4%	29.7%
Misc. mfg. prods.	0.5	0.5	0.3	14.4%	12.0%	5.6%
Other foodstuffs	0.4	0.4	0.6	10.0%	10.3%	10.1%
Chemical prods.	0.3	0.3	0.5	7.9%	8.0%	9.4%
Motorized vehicles	0.3	0.3	0.1	7.2%	6.4%	1.8%
Machinery	0.2	0.2	0.2	5.2%	5.8%	3.8%
Alcoholic beverages	0.2	0.2	0.4	6.3%	5.5%	6.5%
Pharmaceuticals	0.2	0.2	0.5	5.2%	4.7%	8.4%
Electronics	0.2	0.2	0.2	4.7%	4.1%	2.7%
Others	0.6	0.8	1.3	17.4%	17.9%	21.9%

(Source: FAF)

## Los Angeles CSA – Dallas-Fort Worth CSA

A profile of domestic cargo by transport mode and commodity moving between the Los Angeles CSA and the Dallas-Fort Worth CSA is presented in Figures 15-19. Excluding pipeline movements, truck is the leading transport followed by a significant volume classified as Multiple Modes. The large amount of Multiple Modes cargo reflects the frequent intermodal rail service between the Port of Los Angeles/Long Beach and Dallas-Fort Worth.

**Figure 15: Los Angeles CSA – Dallas-Fort Worth CSA by Mode**

<b>Mode</b>	<b>2007 000 Tons</b>	<b>2012 000 Tons</b>	<b>2020 000 Tons</b>
<b>LA CSA to Dallas-Fort Worth CSA</b>	<b>4,104</b>	<b>4,391</b>	<b>5,983</b>
Truck	2,497	2,673	3,525
Multiple modes & mail	1,397	1,496	2,251
Pipeline	83	93	54
Other and unknown	66	64	74
Rail	56	60	74
Air (include truck-air)	4	4	5
<b>Dallas-Fort Worth CSA to LA CSA</b>	<b>3,548.7</b>	<b>4,180.8</b>	<b>5,648.0</b>
Pipeline	1,610.9	1,810.1	1,243.6
Truck	1,146.7	1,339.5	2,185.9
Multiple modes & mail	532.0	744.6	1,863.2
Rail	238.1	260.9	328.3
Other and unknown	19.7	24.2	25.1
Air (include truck-air)	1.3	1.5	1.9

\* Multiple modes are defined in the FAF3 database as truck-rail, truck-water, and rail-water shipments involving one or more end-to-end transfers of cargo between two different modes.

*(Source: FAF)*



**Figure 16: Los Angeles CSA – Dallas-Fort Worth CSA Cargo by Commodity**

Direction and Commodity	2007 000 Tons	2012 000 Tons	2020 000 Tons	2007 Share	2012 Share	2020 Share
<b>LA CSA to Dallas-Fort Worth CSA</b>	<b>4,104.0</b>	<b>4,390.8</b>	<b>5,982.9</b>			
Plastics/rubber	476.5	501.2	698.0	11.6%	11.4%	11.7%
Nonmetal min. prods.	416.1	463.1	556.4	10.1%	10.5%	9.3%
Furniture	418.3	446.7	774.8	10.2%	10.2%	13.0%
Misc. mfg. prods.	344.2	365.6	438.8	8.4%	8.3%	7.3%
Articles-base metal	311.2	335.4	385.8	7.6%	7.6%	6.4%
Electronics	292.2	309.1	413.8	7.1%	7.0%	6.9%
Machinery	275.7	297.9	881.7	6.7%	6.8%	14.7%
Textiles/leather	245.9	265.3	319.9	6.0%	6.0%	5.3%
Other foodstuffs	166.2	182.7	213.5	4.0%	4.2%	3.6%
Motorized vehicles	163.2	177.3	184.7	4.0%	4.0%	3.1%
Wood prods.	143.7	154.6	77.5	3.5%	3.5%	1.3%
Chemical prods.	107.4	109.8	130.9	2.6%	2.5%	2.2%
Base metals	97.9	107.0	121.4	2.4%	2.4%	2.0%
Coal	86.4	97.0	58.2	2.1%	2.2%	1.0%
Other ag prods.	90.1	90.4	113.5	2.2%	2.1%	1.9%
Building stone	70.7	77.3	111.1	1.7%	1.8%	1.9%
Newsprint/paper	68.6	71.1	73.7	1.7%	1.6%	1.2%
Milled grain prods.	72.3	69.0	66.7	1.8%	1.6%	1.1%
Meat/seafood	57.2	59.8	83.9	1.4%	1.4%	1.4%
Basic chemicals	42.1	44.1	62.4	1.0%	1.0%	1.0%
Other	158.2	166.3	144.2	3.9%	3.8%	2.4%
<b>Dallas-Fort Worth CSA to LA CSA</b>	<b>3,548.7</b>	<b>4,180.8</b>	<b>5,648.0</b>			
Coal	1,612.4	1,812.2	1,247.0	45.4%	43.3%	22.1%
Waste/scrap	370.9	550.0	1,858.2	10.5%	13.2%	32.9%
Other ag prods.	201.0	263.8	407.8	5.7%	6.3%	7.2%
Nonmetal min. prods.	229.6	260.2	377.4	6.5%	6.2%	6.7%
Newsprint/paper	133.3	161.5	189.2	3.8%	3.9%	3.3%
Other foodstuffs	133.9	121.0	201.1	3.8%	2.9%	3.6%
Plastics/rubber	96.3	115.3	143.0	2.7%	2.8%	2.5%
Animal feed	67.7	99.8	141.5	1.9%	2.4%	2.5%
Natural sands	76.1	85.6	130.4	2.1%	2.0%	2.3%
Electronics	71.8	75.7	71.6	2.0%	1.8%	1.3%
Chemical prods.	59.3	74.7	105.5	1.7%	1.8%	1.9%
Misc. mfg. prods.	76.5	73.5	161.3	2.2%	1.8%	2.9%
Base metals	64.2	73.2	53.7	1.8%	1.8%	1.0%
Basic chemicals	44.0	62.6	83.8	1.2%	1.5%	1.5%
Mixed freight	52.9	59.4	65.1	1.5%	1.4%	1.2%
Furniture	43.0	46.8	33.8	1.2%	1.1%	0.6%
Machinery	41.6	43.1	73.7	1.2%	1.0%	1.3%
Articles-base metal	28.7	34.1	38.0	0.8%	0.8%	0.7%
Textiles/leather	22.6	26.9	34.8	0.6%	0.6%	0.6%
Printed prods.	26.5	25.7	17.1	0.7%	0.6%	0.3%
Other	96.3	115.6	213.8	2.7%	2.8%	3.8%

(Source: FAF)

**Figure 17: Los Angeles CSA – Dallas-Fort Worth CSA Cargo by Truck**

Direction and Commodity	2007 000 Tons	2012 000 Tons	2020 000 Tons	2007 Share	2012 Share	2020 Share
<b>LA CSA to Dallas-Fort Worth CSA</b>	<b>2,497.1</b>	<b>2,672.7</b>	<b>3,524.9</b>			
Plastics/rubber	324.0	339.3	476.7	13.0%	12.7%	13.5%
Nonmetal min. prods.	278.7	315.4	369.5	11.2%	11.8%	10.5%
Furniture	257.1	273.2	458.7	10.3%	10.2%	13.0%
Electronics	186.4	196.7	258.8	7.5%	7.4%	7.3%
Misc. mfg. prods.	176.3	187.8	219.5	7.1%	7.0%	6.2%
Textiles/leather	156.4	169.3	200.1	6.3%	6.3%	5.7%
Articles-base metal	142.9	154.9	178.0	5.7%	5.8%	5.0%
Machinery	135.9	148.1	416.5	5.4%	5.5%	11.8%
Other foodstuffs	125.1	140.8	144.8	5.0%	5.3%	4.1%
Motorized vehicles	91.3	100.2	95.1	3.7%	3.7%	2.7%
Wood prods.	85.1	91.6	49.2	3.4%	3.4%	1.4%
Other ag prods.	82.6	82.8	102.3	3.3%	3.1%	2.9%
Chemical prods.	77.8	80.0	92.7	3.1%	3.0%	2.6%
Base metals	66.3	73.4	83.8	2.7%	2.7%	2.4%
Building stone	53.0	58.1	83.2	2.1%	2.2%	2.4%
Milled grain prods.	60.8	57.5	51.3	2.4%	2.2%	1.5%
Mixed freight	33.2	37.3	34.9	1.3%	1.4%	1.0%
Meat/seafood	36.3	37.2	56.4	1.5%	1.4%	1.6%
Newsprint/paper	36.5	36.4	41.7	1.5%	1.4%	1.2%
Printed prods.	27.5	26.1	22.6	1.1%	1.0%	0.6%
Other	64.0	66.7	89.1	2.6%	2.5%	2.5%
<b>Dallas-Fort Worth CSA to LA CSA</b>	<b>1,146.7</b>	<b>1,339.5</b>	<b>2,185.9</b>			
Other ag prods.	161.7	205.7	316.2	14.1%	15.4%	14.5%
Waste/scrap	110.5	163.0	546.0	9.6%	12.2%	25.0%
Newsprint/paper	105.5	120.1	123.1	9.2%	9.0%	5.6%
Other foodstuffs	103.2	91.5	154.1	9.0%	6.8%	7.1%
Natural sands	76.1	85.5	128.9	6.6%	6.4%	5.9%
Nonmetal min. prods.	57.2	64.8	94.0	5.0%	4.8%	4.3%
Animal feed	41.3	60.6	85.7	3.6%	4.5%	3.9%
Mixed freight	52.4	58.9	64.5	4.6%	4.4%	3.0%
Misc. mfg. prods.	63.0	58.7	132.8	5.5%	4.4%	6.1%
Plastics/rubber	47.2	55.1	67.7	4.1%	4.1%	3.1%
Chemical prods.	43.4	53.1	75.2	3.8%	4.0%	3.4%
Basic chemicals	36.1	50.8	67.8	3.1%	3.8%	3.1%
Electronics	41.8	43.5	40.7	3.6%	3.2%	1.9%
Machinery	37.2	37.3	64.5	3.2%	2.8%	3.0%
Furniture	26.8	28.5	20.9	2.3%	2.1%	1.0%
Articles-base metal	23.0	26.7	29.3	2.0%	2.0%	1.3%
Printed prods.	24.5	23.8	15.7	2.1%	1.8%	0.7%
Paper articles	12.1	14.6	9.3	1.1%	1.1%	0.4%
Base metals	12.3	14.3	10.7	1.1%	1.1%	0.5%
Motorized vehicles	13.3	13.3	21.4	1.2%	1.0%	1.0%
Other	58.3	69.8	117.6	5.1%	5.2%	5.4%

(Source: FAF)

**Figure 18: Los Angeles CSA – Dallas-Fort Worth CSA Cargo by Rail**

<b>Direction and Commodity</b>	<b>2007 000 Tons</b>	<b>2012 000 Tons</b>	<b>2020 000 Tons</b>	<b>2007 Share</b>	<b>2012 Share</b>	<b>2020 Share</b>
<b>LA CSA to Dallas-Fort Worth CSA</b>	<b>56.1</b>	<b>60.1</b>	<b>73.9</b>			
Articles-base metal	22.1	23.8	27.4	39.5%	39.6%	37.1%
Misc. mfg. prods.	15.1	16.4	19.2	26.9%	27.3%	26.0%
Basic chemicals	9.9	10.6	15.2	17.7%	17.7%	20.6%
Chemical prods.	4.1	4.2	4.8	7.4%	6.9%	6.4%
Building stone	2.2	2.4	3.5	4.0%	4.1%	4.7%
Motorized vehicles	0.8	0.9	0.9	1.4%	1.4%	1.2%
Plastics/rubber	0.6	0.7	0.9	1.1%	1.1%	1.2%
Other foodstuffs	0.7	0.6	0.8	1.2%	1.0%	1.0%
Base metals	0.2	0.3	0.3	0.4%	0.4%	0.4%
Waste/scrap	0.1	0.1	0.9	0.2%	0.2%	1.2%
Other	0.1	0.1	0.1	0.2%	0.2%	0.1%
<b>Dallas-Fort Worth CSA to LA CSA</b>	<b>238.1</b>	<b>260.9</b>	<b>328.3</b>			
Nonmetal min. prods.	137.8	155.1	223.7	57.9%	59.5%	68.2%
Base metals	50.1	56.5	41.1	21.1%	21.7%	12.5%
Other foodstuffs	23.6	21.7	35.2	9.9%	8.3%	10.7%
Plastics/rubber	20.5	19.8	20.1	8.6%	7.6%	6.1%
Furniture	3.5	3.9	2.7	1.5%	1.5%	0.8%
Animal feed	2.3	3.4	4.9	1.0%	1.3%	1.5%
Basic chemicals	0.2	0.3	0.4	0.1%	0.1%	0.1%
Other	0.1	0.1	0.2	0.0%	0.0%	0.1%

*(Source: FAF)*

**Figure 19: Los Angeles CSA – Dallas-Fort Worth CSA by Multiple Modes**

Direction and Commodity	2007 000 Tons	2012 000 Tons	2020 000 Tons	2007 Share	2012 Share	2020 Share
<b>LA CSA to Dallas-Fort Worth CSA</b>	<b>1,397.5</b>	<b>1,495.9</b>	<b>2,250.7</b>			
Furniture	157.5	169.4	313.1	11.3%	11.3%	13.9%
Plastics/rubber	146.6	156.3	212.4	10.5%	10.4%	9.4%
Articles-base metal	145.2	155.7	179.1	10.4%	10.4%	8.0%
Misc. mfg. prods.	140.8	149.1	187.4	10.1%	10.0%	8.3%
Machinery	138.4	148.5	462.5	9.9%	9.9%	20.5%
Nonmetal min. prods.	137.5	147.6	186.9	9.8%	9.9%	8.3%
Electronics	104.2	110.6	153.1	7.5%	7.4%	6.8%
Textiles/leather	88.3	94.6	118.2	6.3%	6.3%	5.2%
Motorized vehicles	69.0	74.0	87.0	4.9%	4.9%	3.9%
Wood prods.	58.5	62.8	28.2	4.2%	4.2%	1.3%
Newsprint/paper	32.1	34.7	32.0	2.3%	2.3%	1.4%
Base metals	28.2	29.9	33.2	2.0%	2.0%	1.5%
Other foodstuffs	27.0	29.4	53.9	1.9%	2.0%	2.4%
Meat/seafood	20.9	22.6	27.4	1.5%	1.5%	1.2%
Building stone	15.1	16.2	23.7	1.1%	1.1%	1.1%
Other	88.3	94.4	152.6	6.3%	6.3%	6.8%
<b>Dallas-Fort Worth CSA to LA CSA</b>	<b>532.0</b>	<b>744.6</b>	<b>1,863.2</b>			
Waste/scrap	260.4	387.0	1,312.2	48.9%	52.0%	70.4%
Other ag prods.	39.4	58.1	91.7	7.4%	7.8%	4.9%
Newsprint/paper	27.8	41.4	66.1	5.2%	5.6%	3.5%
Nonmetal min. prods.	34.4	40.0	59.1	6.5%	5.4%	3.2%
Plastics/rubber	26.5	37.2	51.1	5.0%	5.0%	2.7%
Animal feed	24.1	35.8	50.9	4.5%	4.8%	2.7%
Electronics	29.6	31.6	30.3	5.6%	4.3%	1.6%
Textiles/leather	20.7	24.9	32.0	3.9%	3.3%	1.7%
Chemical prods.	15.5	21.2	29.9	2.9%	2.8%	1.6%
Misc. mfg. prods.	13.1	14.5	27.7	2.5%	1.9%	1.5%
Basic chemicals	7.6	11.3	15.4	1.4%	1.5%	0.8%
Other foodstuffs	7.0	7.9	11.8	1.3%	1.1%	0.6%
Metallic ores	4.3	6.4	37.4	0.8%	0.9%	2.0%
Unknown	3.3	4.8	20.0	0.6%	0.6%	1.1%
Paper articles	2.7	3.7	3.8	0.5%	0.5%	0.2%
Other	15.6	18.8	24.0	2.9%	2.5%	1.3%

(Source: FAF)

## **Indian Incentive Program from the US Department of Defense Office of Small Business**

### **Legislative actions and policy governing the Program**

The Indian Incentive Program (IIP) is a congressionally sponsored program that provides a 5% rebate back to the prime contractor on the total amount subcontracted to an Indian-Owned Economic Enterprise or Indian Organization, in accordance with DFARS Clause 252.226-7001. Through the generation of subcontracts to the above mentioned entities, the IIP fulfills its purpose as an economic multiplier for Native American communities. Department of Defense (DoD) prime contractors, regardless of size of contract, that contain the above referenced clause(s) are eligible for incentive payments. DoD prime contractors with a contract of \$500,000.00 or more, that contain the above referenced clause(s), are eligible for incentive payments.

Native Americans have a long history of patriotically contributing to the U.S. Military. Today, Native American small businesses in the fields of engineering, construction, IT, and other areas, continue to supply the Department of Defense (DoD) with dependable high-quality supplies and services.

Despite recent upward trends in economic activity, Indian reservations and Alaska Native Villages still suffer some of the worst poverty in the country. In an effort to boost Native American economic development, Congress has authorized Federal contracting agencies to “encourage” the use of Native American owned subcontractors. The Department of Defense (DoD) Indian Incentive Program (IIP) is a viable example of this encouragement.

The DoD IIP motivates prime contractors to utilize Indian organizations and Indian-owned economic enterprises by providing a 5% rebate to prime contractors on subcontracted work performed by an Indian organization or on subcontracted commercial products manufactured in whole or in part by an Indian organization. For actions after 13 September 2001, sub-tier contractors who subcontract to an Indian-owned firm are also eligible for incentive payments.

The Indian Incentive Program has certain eligibility requirements administrated by the Office of the Secretary of Defense (OSD) Office of Small Business Programs (OSBP), the Indian Incentive Program (IIP) makes every effort to provide added value to the federal government, in that this program is funded independently by the OSD and is not supported by the funds of the contracting agency.

These contracts require contractors to use their best efforts to give Indian organizations and Indian-owned economic enterprises the maximum practicable opportunity to participate in subcontracts awarded to the fullest extent consistent with efficient performance of the contract(s). Contracting officers, subject to the terms and conditions of the contract, shall authorize an incentive payment of 5 percent of the amount paid to subcontractors that are Indian organizations or Indian-owned economic enterprises.

Under certain circumstances, commercial products are eligible for rebate. For more information, please read the related.

The FY 2009 Appropriations Act makes \$15 million available for incentive payments to prime contractors and to small businesses that use Indian-owned businesses or enterprises as subcontractors at any tier.

**Attention:** Due to considerable interest shown in the program, there will be a delay between rebate submittal and rebate payment. As long as the Indian Incentive funds are authorized in each year's Defense Appropriations Act, and if the contract of the request remains open, each eligible request will be eventually funded, though not necessarily in the same fiscal year that the request is submitted.