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**August 20, 2019**

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**Re: Lewis, Young, Robertson & Burningham, Inc. ("LYRB") (June 2019) Economic Benefit Analysis (The "LYRB Report") (Briefing Book, folio page 88). The LYRB Report Overestimates Direct Job Benefits by 70% or a Factor of More than Three.**

**Comment with respect to: RDA Agenda Item (C)(3) – August 20, 2019 at 2pm regarding NWQ, LLC.**

Sirs:

The Bruno et al Staff Report dated August 20, 2019 in your Briefing Book states that the purpose of the NWQ, L.L.C. agenda item is to, "receive the information, review the third-party analysis, and consider if additional information is needed prior to potential action on August 27<sup>th</sup> (*id* at 1, Briefing Book, folio page 38). Core to your deliberations concerning proceeding forward the NWQ, L.L.C. Salt Lake Global Logistics Port are LYRB's claim that direct job benefits will include creating 2,900 jobs with undiscounted future wages over 20 years of 2.8 billion dollars. LYRB intentionally choose several biased, unrealistic economic assumptions in order to dramatically inflate claimed direct job benefits. The LYRB Report is an unreliable document that should be not the basis of any governmental decision making.

In summary, the Salt Lake Global Logistics Port design proposed by NWQ, LLC. needs a redesign reset. Before moving forward, the Redevelopment Agency ("RDA") should ask the developer to redesign the port consistent with a "Green Port" design. The January 2018 Master Development Agreement (MDA) should be amended to require the building of a "Green Port".

The RDA should ask for a revised economic analysis from its outside expert based on the scenarios where 60, 70, 80 and 90 percent of the warehouses will be totally automated without human intervention over the next 20 years and consistent with the direct job creation assumptions made below in this comment.

**I. LYRB USED AN INAPPLICABLE WORKER PER SQUARE FOOT ESTIMATE TO REACH A THE PREDICTED 2.8 BILLION IN WAGES OVER 20 YEARS.**

The LYRB Report's 2.8 billion USD in future wages for 2,900 newly created jobs is the key conclusion of their economic benefit analysis (*id.* at Table 3.15, Report at 12; Briefing Book at folio page 99). The direct job economic benefit analysis flows from a simple junior high school level mathematics computation: LYRB takes the total warehouse space of about 6M square feet and divides by an assumed warehouse industry average of 2,000 square feet of warehouse space to get an estimate of 2,900 job and multiplies by an average annual salary of \$43,584 (LYRB Report at 11; Briefing Book at folio page 99). The 2,000 square feet per work estimate is not supported by citation.

First, other studies indicate that the average warehouse square foot per worker is 2,700 sq. feet, not 2,000 square feet. The analyst is cherry-picking the low-ball number. As Ronderos (2010) concludes (at Fig. 3, p. 12), "Logistics buildings of less than 50,000 square feet have about 1,900 square feet by employee *while buildings more than 50,000 square feet have about 2,900 square feet per worker*" (emphasis added). As Ronderos notes, his warehouse data was collected during a pre-warehouse automation period.

The warehousing industry, like manufacturing, is undergoing rapid distributive change from automation. The Amazon Fulfillment Center that recently opened in Salt Lake City includes 2.3 million square feet of finished floor space. About 500 people per shift work in the automated warehouse. That is 4,600 sq feet per worker; not 2,000 sq ft per employee.

The LYBR Report used an inapplicable 2,000 square foot per worker metric from small warehouses to inflate long-term job direct economic benefits by thirty-one percent ( (2900-900)/2900).

**II. LYRB IGNORED INDUSTRY AUTOMATION TRENDS TO GET TO THE INFLATED 2.8 BILLION IN PREDICTED NEW JOBS WAGES OVER 20 YEARS.**

The LYRB ignores trends in automation in materials and warehouse handling. In 2017, only about 5 percent of warehouses are fully automated (Ronderos 2017). As one industry analyst put in 2012, the warehousing industry is rapidly moving towards totally automated "lights-out" facilities that have no or minimal human workers,

"Manufacturing has been moving toward lights-out automation for years—that's a factory that operates with minimal human intervention. Distribution systems are now moving in that direction as well", says Ross Halket, director of automated systems for Schaefer Systems International (Trebilcock).

Numerous popular and business videos illustrate examples of how robots and automation are advancing the warehouse industry's long-term labor objective to reach that "lights out" goal of minimal human intervention (NBC News 2019; Tech Insider (2019); Tech Insider (2018); Business Insider (2017); Fox News 2015). The LYRB Report ignores these obvious trends and bases their assumptions on an outdated view of the industry labor requirements over the

projected future 20 year lifespan of the proposal. Therefore, the LYRB overestimates the number of direct jobs that will be created by the proposal over a 20 year lifespan.

A more realistic modelling assumption would be that initial per worker estimates are 1,333 new direct jobs (6M sq. ft./4,500 square feet per worker) and those initial 1,333 new direct jobs would progressively decline by 60%, 70%, 80% and 90% over the next 20 years.

**III. THE ANALYST IGNORED WAGES AT THE EXISTING ELWOOD, ILLINOIS COMPARABLE INLAND PORT ARE ALL TEMP, PART-TIME 9 DOLLAR PER HOUR JOBS WITH HIGH TURNOVER. COMPARABLE EXISTING INLAND PORT WAREHOUSE JOBS ARE NOT CREATING 44,000 PER YEAR JOBS.**

The LYRB Report cites as support for the 43,584 dollar annual wage claim “BLS, Merit Medical & Lifetime Products” (*id.* at 11, Briefing Book folio page 98). *Real* workers at *real* existing inland ports – for example at the Elwood, Illinois Centre Point Inland Port - are extremely low paid temp workers with no benefits.

Let's look at wages at the new Salt Lake City Amazon automated warehouse. Starting wages are about 11 per hour or 22k dollars per year. Premium night shift wages are 18.5 per hour or 33k dollars per year.

The 2018 *median* wage in Salt Lake County is 18.61 dollars per hour or a *mean* annual wage of 50,920 dollars (U.S. BLS). In Salt Lake County, the 2018 *median* wage for Packers and Packing Handlers (Occupation Code 53-7064) is 12.05 per hour or a *mean* annual wage of 26,010 dollars per year.

By using inapplicable occupational wages category (for all workers) instead of for the occupational wages for Packers and Packing Handlers (Occupation Code 53-7064), the LYRB Report inflates direct new job benefits by forty percent ((43,584-26,010)/43,584).

**IV. LRYB OVER-ESTIMATED WAGE BENEFITS BY 70%, OR A FACTOR OF MORE THAN THREE.**

A more accurate direct job direct benefit estimate is 44 million dollars per year, declining over the next 20 years, for a maximum of 880 million dollars over 20 years. 44 million dollars per year is 0.1% of total Salt Lake County 2018 earned wages.

Wages for lower and middle income American laborers have, adjusted for inflation, been flat for the last 20 years; hourly wage increases are exactly offset by inflation. This simplifies doing present value of discounted wages that will be paid to future SLC Global Logistics Port workers over 20 years. All that you have to do is to multiply the current year's estimate by 20.

Here, I will use a similar technique the LYRB Report to estimate future aggregate wages that might be paid to SLC Global Logistics Port workers over 20 years - but using different, more realistic assumptions:

Let's assume a generous average hourly wage of 15 dollars per hour or 33,000 dollars per year, 6 million square feet of warehouse space, 4,500 square feet of automated warehouse floor space per worker, over 20 years, with no declining utilization of human employment as humans are replaced by robots. The math is: 6 million divided by 4,500 times 33,000 times 20 = 44,000,000 of wages per year times 20 years = 880 million wages over 20 years.

Based on this more realistic estimate, the LYRB Report inflated the 20 year new job direct benefit by 70%  $((2.8B-0.88B)/0.88B)$ . The 44 million wages per year presented here is just as reasonable and just as defensible as LYRB's estimate that is larger by more than a factor of 3. This is an upper bound estimate because automation will probably reduce the number of human workers needed in a warehouse over time.

The 44 million per year in new warehouse worker wages should be considered in context. The 2018 *mean* annual wage in Salt Lake County is 50,920 dollars per year that were earned by 713,060 workers (U.S. BLS). In all of Salt Lake County, 2018 annual wages were about 36.4 billion dollars. The SLC Global Logistics Port's 44 million dollars in new job annual wages would add each year about 0.001 or 0.1% more to the County's earned gross wages. Of course, that 44 million would be a very significant benefit to those low-income laborers who need the employment, but in this context of the benefits of the Global Logistics Port to the entire city's or county's economy, the benefits of this single project are not that great.

**V. SINCE JANUARY 2018, COMMUNITY SENTIMENT HAS CHANGED TOWARDS A "GREEN PORT"; SALT LAKE GLOBAL LOGISTICS PORT DRAWINGS ARE CONCEPT DRAWINGS; AND THE CONCEPT DRAWINGS ARE NOT A "GREEN PORT".**

Since January 2018 and through 2019's mayoral primary election campaign, it became clear that the community desires the port to be designed as a "green port". Those considerations were not on the table in January 2018. Conspicuously absent from the 2018 concept drawings are any provision for truck parking with engine heaters and electrical outlets for parked trucks.

Long-haul diesel trucks are most polluting when truckers are parked while idling at facilities to receive loads or as drivers wait overnight to make or receive just-in-time runs. Just telling long-haul truckers to not idle is not an option. Long-haul trucks need significant warm up times before they can operate; long-haul drivers need to sleep in their cabins with adequate winter heating and summer cooling. One option to reduce slack time emissions are waiting stalls that incorporate engine block heaters and electrical outlets so truckers can wait without idling their engines.

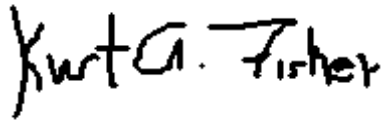
None of these common sense infrastructure items are included in the concept design or the MDA. The MDA does not include any provisions that require the investor NWQ to build a "Green Port". The MDA design should be reset and redesigned as a "green port" concept.

**CONCLUSION**

The Salt Lake Global Logistics Port design proposed by NWQ, LLC. needs a redesign reset. Before moving forward, the RDA should ask the developer to redesign the port consistent with a "green port" design. The MDA should be amended to require the building of a "green port". The RDA should ask for a revised economic analysis from LYRB based on the scenarios where 60, 70, 80 and 90 percent of the warehouses will be totally automated without human intervention over the next 20 years and the other assumptions stated above in this critique.

Please feel free to contact me with any questions that you may have.

Very Truly Yours

A handwritten signature in black ink that reads "Kurt A. Fisher". The signature is written in a cursive, slightly slanted style.

Kurt A. Fisher

## References

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