

ECONOMIC IMPACT ANALYSIS OF A PROSPECTIVE DATA CENTER DEVELOPMENT PROJECT IN MORROW COUNTY, OREGON

PREPARED FOR
Rowan Percheron, LLC
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I. INTRODUCTION

JOHNSON ECONOMICS was hired to prepare a third-party analysis of the economic impacts of the proposed Percheron Data Center development project in Morrow County, Oregon. The assumptions used in this analysis were built through research of third-party sources on data center development costs, employment, and direct and indirect impacts. The prospective developer of the data center has advised on the details of the proposed development itself, including preliminary site plan, number of buildings and approximate square footage, estimated costs, and necessary infrastructure.

The preliminary details of the proposed development may change at least somewhat through the planning and development process. The analysis is intended to provide rough-order-of-magnitude estimates of the likely economic impacts of a data center in this location, based on the best and most reasonable assumptions available at the time this analysis was completed.

This analysis considered the following categories of economic impact from the proposed development:

- A. **Economic Impacts:** Impacts on employment, payroll, and capital investment from the construction of the facility, and on-going operations. Direct, indirect, and induced impacts are considered.
- B. **Fiscal Impacts:** Projected impacts to local, state, and federal revenues from property and income taxes, fees, and system development charges.

This report focuses on the expected economic benefits of the proposed data center for Morrow County.

II. EXECUTIVE SUMMARY

Rowan Percheron, LLC is proposing to build Project Percheron, a 300 MW data center development located in Morrow County. The preliminary timeline for full operation of the data center in the first half of 2025, or roughly two years from the time of this report.

Projected impacts are summarized below:

- The build-out of the proposed 275-acre data center would entail a very high level of investment in real property and equipment over the coming years. Investment in these types of facilities is very high, at an estimated \$1,000 to \$1,200 per square foot of built space, or \$7 million per critical MW (“cMW”) or greater. For a facility of this size, only high-tech advanced manufacturing users rival this level of investment.
- As outlined in this report, the proposed development is projected to have a range of economic and fiscal benefits to Morrow County and the community. The impacts include new employment, payroll, spending with vendors on construction and operations, new tax revenue, and indirect and induced economic activity.
- The project is not anticipated to have any net *negative* economic impacts on the County as the development will pay for its own development and infrastructure.



- \$2.3B in direct investment in the data center over two years. \$680 M in additional indirect and induced economic output. Total projected economic output of the construction phase plus ten years of operation of over \$5B in local and regional impacts.
- **Construction Phase:** The high capital investment in the facility would translate into an estimated 2,500 direct full time equivalent (FTE) jobs over the construction period, assumed to be two years.
- Direct jobs during this phase would pay an estimated average wage of over \$62,000 per FTE, 40% higher than the median earnings of a Morrow County resident who is employed year-round and full-time: \$44,500 (Census).
- **Operations Phase:** The operations phase is expected to support roughly 120 jobs across the development, and economic output of \$195M per year. Employment includes the data center's operations, maintenance, security, and other property management functions. The spillover impacts are projected to support an additional 80 jobs in the county.
- Direct employment at the data center is expected to pay high employee compensation of approximately \$75,000 per FTE, well above than the median annual earnings of Morrow County residents with full employment (\$44,500).
- A potential \$280M in cumulative property tax revenue to local districts over 20 years, including 32% to Morrow County, and 32% to the school district (assuming use of five-year tax incentives and depreciation). Incentive packages can substantially change the tax generation of data center developments in the region.

The following report outlines these findings in more detail and the methodologies used. The forecast presented in this analysis is intended to provide rough-order-of-magnitude estimates of the likely economic impacts of a data center in this location, based on the best and most reasonable assumptions available at the time this analysis was completed.

III. PROJECT DESCRIPTION

This analysis evaluates the fiscal and economic impact profile of a proposed data center development on a site of an estimated 275 acres, located on Tower Road in north Morrow County, Oregon. The site is located roughly 11 miles to the Southwest of Boardman, Oregon and less than a quarter mile from the Space Age Industrial (SAI) zone in Morrow County . It is adjacent to the Carty Reservoir and generating station. The land uses to the west are generally agricultural.

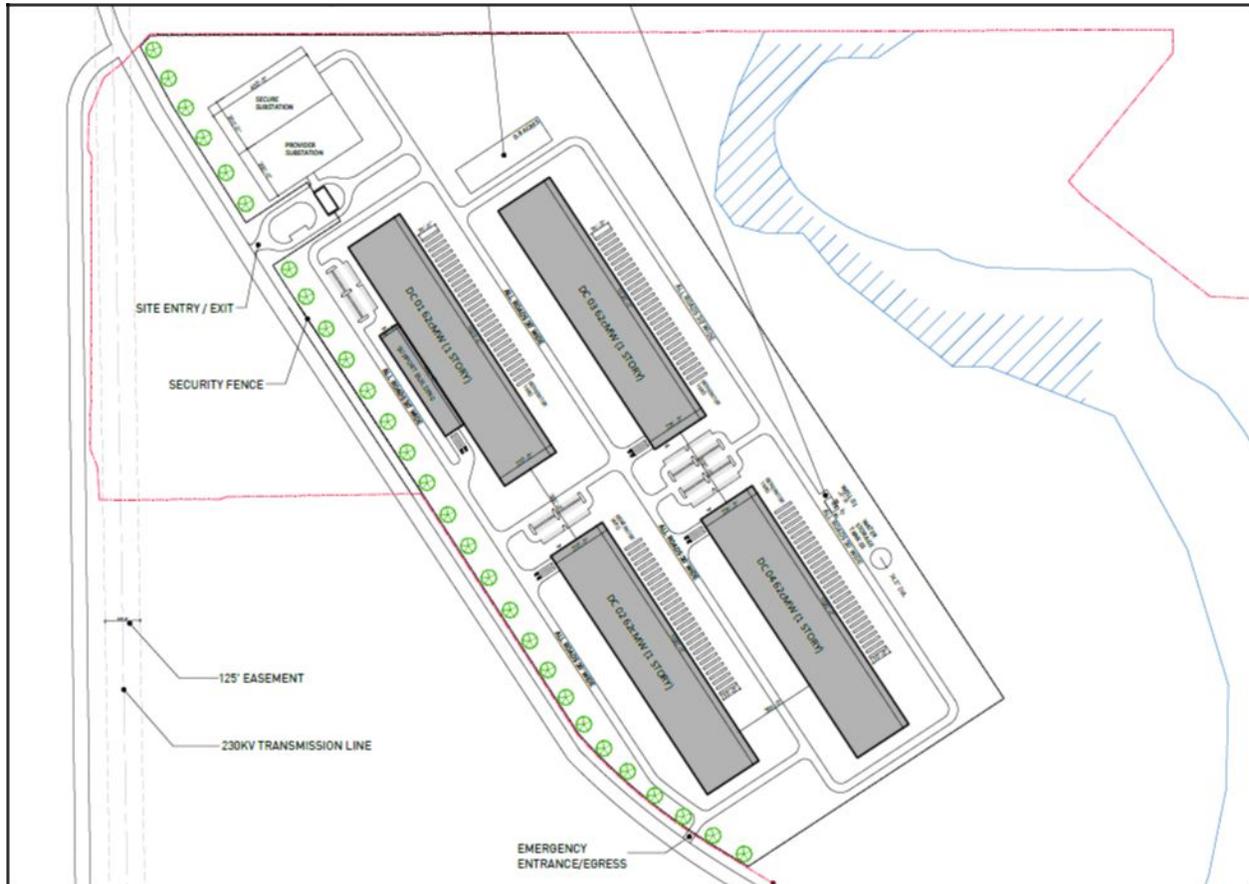
The preliminary site plan for the data center development proposes four buildings on the site with a total built space of nearly one million square feet. The data center would include parking/circulation, mechanical, HVAC, landscaping and stormwater management, and back-up power generation.

The data center plans for a total power capacity of up to 300 MW, if approved. Figure 1 presents the preliminary site plan for the proposed facility that serves as the basis of assumptions for this analysis. This site plan is subject to change during the planning process but is expected to be broadly representative of the ultimate development program at the site.



Development Timeline: The preliminary timeline for full operation of the data center in the first half of 2025, or roughly two years from the time of this report.

FIGURE 1: PRELIMINARY SITE PLAN, SUBJECT SITE



Source: Dotterweich, Carlson, Mehner Design, Inc., Rowan Percheron, LLC

ANTICIPATED CAPITAL INVESTMENT

Data centers are a very high-investment category of development due to the amount of infrastructure and equipment needed to run these specialized buildings, in addition to the high density of information technology that users install within them. On average, the cost of development and equipment for data centers exceeds the cost for traditional industrial uses and even most high-tech manufacturing uses.

Investment per MW: This analysis applied a cost-per-cMW (Critical MW) approach to estimate capital investments in the property for this data center development.¹ The cost-per-cMW approach is favored by the industry. The cost of building a data center development can vary widely depending on size, location, and specifications of the facility.

Industry sources have cited costs of anywhere from \$7M to \$12M per cMW. However, in recent years, development costs have escalated due to inflation in the costs of energy, materials and labor, supply chain disruptions, and other factors.

¹ The power capacity of a data center is discussed in terms of total "utility MW" or the total available power to run all aspects of the property (300 MW in this case), and the "critical MW" (cMW) which is the power load required to maintain the critical IT functions of the data center business (248 cMW in this case.)



Based on the expected specifications of the Percheron development, and best available information on other data centers in Morrow and Umatilla County, this analysis finds a conservative cost estimate of \$9M per cMW. For comparison, the most recent global survey of data center cost trends by Turner and Townsend² estimated an average cost in the Portland market of \$10M per MW as of 2022. Data centers in the Morrow County area were not included in this survey but are likely to face comparable costs, balancing cheaper land with greater labor and material constraints.

Total Capital Investments: The proposed Percheron data center is planned to support a load of 300 total utility MW, or 248 critical MW (see footnote).

- At a cost of \$9M per cMW, the **total estimated investment in this facility would be roughly \$2.25 billion**, including land, infrastructure and facilities improvements.
- Due to the variation in costs for data centers, and unforeseen market factors over coming years, we estimate a potential range of \$1.9B to \$2.4B in total investment.

IV. ECONOMIC IMPACTS – MORROW COUNTY

The construction and ongoing business operations of the data center will have significant economic benefits to the local and regional economy. To model the economic impacts of various activities, Johnson Economics utilized the IMPLAN (IMPact for PLANning)³ economic multiplier model. IMPLAN is an economic impact model designed for analyzing the effects of industry activity (employment, income, or business revenues) upon all other industries in an economic area.

A. IMPLAN MODELING METHODOLOGY

IMPLAN models the magnitude and distribution of economic impacts, and measure three types of effects. These are the direct, indirect, and induced changes within the economy. The following is a brief definition of the three impact types:

Direct Impacts: The actual change in activity affecting a local economy. For example, if a new industrial building is constructed, direct economic impacts represent the value-added output for that firm/user, as well as the jobs required for development and the labor income paid.

Indirect Impacts: Indirect impacts reflect the response of all other local businesses within the geographic area to the direct impact. Continuing the previous example, indirect impacts of a new institutional user would comprise revenues for related vendors (e.g., real estate services, vendors, etc.), and the jobs and labor income thereby generated.

Induced Impacts: These reflect the response of households within the geographic area affected by direct and indirect impacts. In the given example, induced impacts would be the increase in all categories of spending by households in the geography directly or indirectly employed by the businesses' activities.

²Data Center Cost Index 2022, <https://reports.turnerandtownsend.com/dcci-2022/data-centre-cost-trends>

³ Minnesota IMPLAN Group (MIG), Stillwater, Minnesota



Our analysis evaluated the Jobs, Labor Income, and Value-Added Output of our estimated direct industry change and commodity change activities. (Value Added Output is the difference between an industry's or an establishment's total economic output and the cost of its intermediate inputs.)

Geographic Level

Impact analysis has varying degrees of geographic coverage. Specifically, vendors who provide goods and services in response to modeled impacts are in a range of locales. For this analysis, we focused on impacts retained in Morrow County. That is, indirect and induced impacts which leak outside of the county are not included. The degree to which indirect and induced impacts are captured within Morrow County and the surrounding region will be a function of how well local businesses capitalize on the opportunities associated with the facilities.

B. ECONOMIC IMPACTS OF CONSTRUCTION ACTIVITY & OPERATIONS

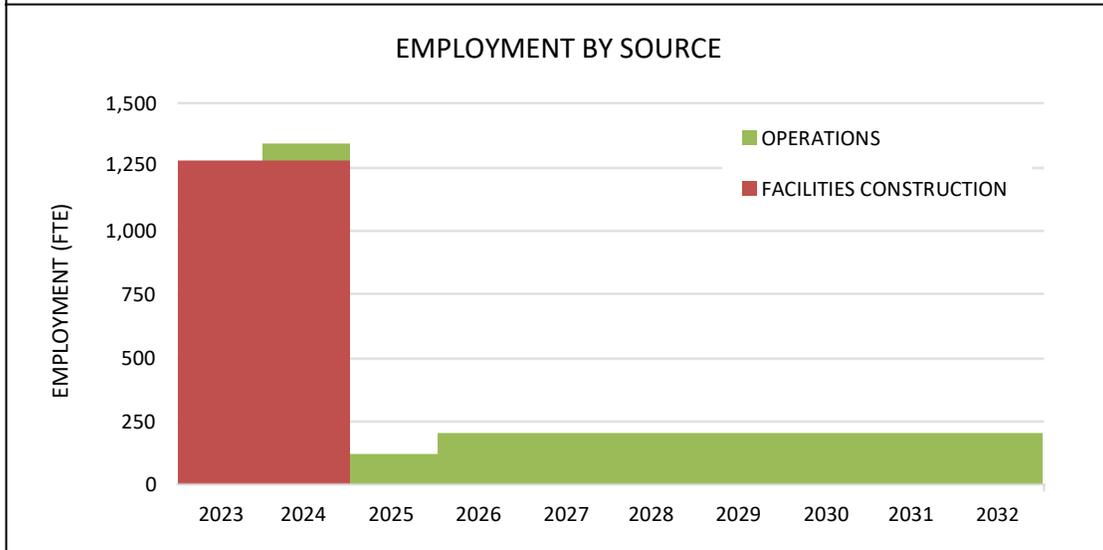
Figure 2 presents an estimate of the economic impacts from the the temporary construction period of the proposed development, as well as on-going operations of the facility. The total number of jobs is expected to be higher during the construction period given the size of the project, and provide over one hundred on-going high-wage jobs upon completion.

- **Construction Phase:** The high capital investment in the facility would translate into an estimated 2,500 direct full time equivalent (FTE) jobs over the construction period, assumed to be two years. Because the development period is estimated to extend over two years, the total estimated construction jobs likely represent some of the same employees, employed over the project lifecycle.
- Direct jobs during this phase would pay an estimated average wage of over \$62,000 per FTE. Benefits average 30% in the construction industry (via BLS), indicating average total wages and benefits of \$90,000 per FTE. The average wage of \$62,000 would be 40% higher than the median earnings of a Morrow County resident who is employed year-round and full-time: \$44,500 (Census).
- The direct economic impact (\$2.3B development cost) is joined by over \$680 million in indirect and induced impact, for an estimated total impact of \$2.9 billion in total economic impacts from the construction phase.
- **Operations Phase:** Upon completion, the facility is projected to support approximately 120 FTE employees. Employment at the site would include employees of the data center's operations, maintenance, security, and other property management functions. Indirect and induced employment supported by ongoing operations would support an additional 80 employees in Morrow County, including vendors, commercial services, and beneficiaries of spending in the community from operations and employees at the site.
- Direct employment at the data center is expected to pay high employee compensation of approximately \$107,000 per FTE (wages and benefits). Excluding the value of benefits, the average direct job provided is projected to have an average wage of \$75,000, well above than the median annual earnings of Morrow County residents with full employment (\$44,500).
- Annual economic output from operations is projected to be \$195 million, with a large share being the cost of power, maintenance, and staffing. Total economic impact to the County, including indirect and induced impacts is projected to be \$218 million annually.



FIGURE 2: SUMMARY OF TOTAL ECONOMIC IMPACTS (CONSTRUCTION AND OPERATIONS)

PROJECTED IMPACTS, MORROW COUNTY (2023 \$s)				
	Employment	Labor Income	Value Added	Output
FACILITIES CONSTRUCTION				
Direct Effect	2,550	\$159,200,000	\$923,900,000	\$2,267,000,000
Indirect Effect	1,000	\$50,500,000	\$291,200,000	\$523,300,000
Induced Effect	1,050	\$48,300,000	\$99,000,000	\$160,900,000
Total Effect	4,600	\$258,000,000	\$1,314,100,000	\$2,951,200,000
OPERATIONS				
Direct Effect	120	\$9,100,000	\$87,900,000	\$195,000,000
Indirect Effect	70	\$1,910,000	\$8,800,000	\$17,100,000
Induced Effect	10	\$240,000	\$4,000,000	\$6,400,000
Total Effect	200	\$11,250,000	\$100,700,000	\$218,500,000



SOURCE: Johnson Economics and Minnesota IMPLAN Group, Inc.

After completion of the development and one year of operations, the total impact of the development (direct, indirect, and induced) is estimated to be over \$3 billion to the local and regional economy. After ten years of operation, it is estimated to be over \$5 billion to the local and regional economy.

V. FISCAL IMPACT

In addition to economic impacts, the data center development will have potential fiscal implications for the County, Port, other local service providers and the State of Oregon. These impacts include property taxes, income and business taxes, and development charges and fees.

Given the very high level of anticipated investment, the likely Real Market Value (RMV) of the property after completion will be commensurately high (\$2.3 billion in investment over two years, depreciated over 31 years).



Data center developments in Morrow County and nearby counties typically apply for a package of tax incentives that may defer taxes of the property for five to as many as fifteen years. Given this likelihood, a firm estimate of Taxable Assessed Value (TAV) from the property, and the resulting tax revenue, is difficult to generate.

For this analysis, tax projections were generated assuming a five-year tax exemption on improvements, with return of the remaining value (after depreciation) in the sixth year. Even given this assumption, the long-term tax generation potential from these large projects is high.

- Based on these assumptions, the taxable value of the facility is expected to remain very high despite some depreciation of the real property. At its peak, upon return to the tax roll, the annual property tax revenue (to all taxing jurisdictions) could exceed \$24.5 million annually.
- By the 20th year, total cumulative tax revenue is projected to total over \$280 million dollars.
- Figure 3 shows this projected revenue by local taxing jurisdiction over ten and 20-year periods. Benefits to the County, school district, and other districts are projected to be in the tens of millions of dollars over these periods.

FIGURE 3: PROJECTED TAX REVENUE BY DISTRICT (2022/23 RATES)

Tax Code 2511 Taxing District	Tax Rate (per \$1,000 of TAV)				10-Year	20-Year
	Education	Government	Bond	Total	(2023 - 2032)	(2023 - 2042)
Morrow County		4.1347		4.1347	\$30,948,332	\$91,276,514
UMA-Morrow Radio District		0.1700		0.1700	\$1,272,454	\$3,752,874
Health District		0.6050	0.3900	0.9950	\$7,447,600	\$21,965,350
Port of Morrow		0.0841		0.0841	\$629,491	\$1,856,569
Boardman RFD		0.7464	0.1586	0.9050	\$6,773,947	\$19,978,534
Unified Recreation District		0.4560		0.4560	\$3,413,171	\$10,066,532
Morrow School District	4.0342			4.0342	\$30,196,087	\$89,057,904
Intermountain ESD	0.6156			0.6156	\$4,607,781	\$13,589,818
BMCC	0.6611		0.1886	0.8497	\$6,360,026	\$18,757,746
Vector Control		0.1899	0.1000	0.2899	\$2,169,909	\$6,399,754
Oregon Trail Library		0.2536		0.2536	\$1,898,202	\$5,598,405
Total Tax Rate	5.3109	6.6397	0.8372	12.7878	\$95,717,000	\$282,300,000

Source: Morrow County, Johnson Economics

- Of the total millage rate, Morrow County receives over 32% of revenue, and the Morrow School District receives just under 32%. The health district receives nearly 8% of revenue, and the fire district receives 7%.
- Total projected tax revenue to the County could exceed \$30 million over 10 years, and over \$90 million over 20 years. Total projected tax revenue to the school district would be similar (Figure 3).

As noted, tax benefits to local jurisdictions will be highly dependent on any tax incentives applied to this project.



VI. SOURCES

The analysis presented in this report is based on many assumptions drawn from a range of sources. Every real estate development is unique, with unique cost factors based on location, local land prices, availability of construction labor and materials, power resources and countless other factors. The following is a partial list of sources relied upon to generate the best assumptions of cost, economic and fiscal impacts:

- Rowan Digital Infrastructure (proposed site developer)
- Business Oregon
- Morrow County
- Data Center Institute (AFCOM)
- Digital Realty
- IMPLAN (Minn. IMPLAN Group)
- Oregon Employment Department
- Oregon Transparency
- Port of Morrow
- Port of Umatilla
- RSMeans
- S&P Global
- Turner & Townsend Data Centre Cost Index
- Uptime Institute
- US Chamber of Commerce Technology Engagement Center