

OK Site Certification Program Development Type Overview

Heavy Industrial Park

General Description

Heavy industrial locations are highly sought after economic development projects for most areas because of their great direct and indirect economic impact. New suppliers often locate near or adjacent to the new facility, and existing suppliers usually increase their business by a significant percentage.

Heavy industrial facilities also have a significant impact on the community infrastructure. Consider the vast amount of utilities required (i.e., water, wastewater, electricity, and natural gas), and the solid waste, air pollutants, and traffic increase that the facility creates. A community must examine its ability to meet the needs of a company over the long term while not overly burdening their existing infrastructure.

Manufacturing facilities vary depending on the raw materials used in the manufacturing process and the final product. Significant acreage is required, usually greater than 40 acres, and the building footprint can range from 200,000 square feet to over 1,000,000 square feet. The initial investment will likely be large, usually greater than \$100,000,000, and will probably be developed in distinct phases. As much as 80% of the cost of a project may be accounted for within the machinery and equipment budget. The site should account for buffering for noise and privacy as well as project expansion. Employees characteristically earn a wage or salary above the local average wage for new locations. Usually heavy industrial facilities employ greater than 300 people, and can employ 1,000 or more.

Market Analysis

Depending on whether the manufacturing process is weight-gaining or weight-losing, proximity to suppliers or customers can be crucial. In a weight-gaining industry, such as steel, manufacturers prefer to be closer to customers to reduce shipping costs. Manufacturers in a weight-losing process, such as the milling of paper, benefit from close proximity to suppliers. Other key elements factoring into a manufacturing location decision include wages, union presence, and the availability of a skilled workforce.

Over one-sixth (16.7 percent) of all manufacturing workers in Oklahoma depend on exports for their jobs. This is somewhat below the national-level share of manufacturing workers supported by exports (20.5 percent). Export-supported jobs account for an estimated 4.8 percent of Oklahoma's total private-sector employment (about one in every 21 jobs). This is below the national average of 6.5 percent (one of every 15 jobs). In 2002, majority-owned affiliates of foreign companies employed 36,500 workers in Oklahoma. Over 40 percent of these foreign-investment-supported jobs (40.3 percent, or 14,700 workers) were in the manufacturing sector in 2002. Oklahoma's leading manufactured export category is machinery manufactures, which alone accounted for \$846 million, or 32 percent, of Oklahoma's total export shipments in 2003.

Minimum site acreage

In order to accommodate the facility with adequate parking, ample truck staging, auxiliary facilities, proper buffering, and rail access greater than 40 acres is usually required. Future expansion projections should be considered.

Appropriate topography

Site topography should generally feature little elevation change and be outside the 100-year FEMA flood plain designation.

Site configuration should be square to slightly rectangular with little to no outparcel intrusions to effect site utilization.

Industrial sites of this size should not have major elevation changes to minimize site preparation. Site topography has a direct influence on up-front capital costs. Poor topography not only increases site preparation costs, but also can delay fast-track projects. Risk of cost overruns and potential construction delays due to poor topography can eliminate a site, or be a factor in choosing between two otherwise equal locations.

Utility needs

Utility needs vary by industry. The following are examples of what may be required:

Electricity

- Kilowatt (kW) demand: 20,000 kW
- Kilowatt Hour (kWh) Usage: 13,000,000 kWh/month
- Dual Feed Preferred

Natural Gas

- 90,000 mcf monthly average usage of natural gas

Water

- Usage up to 500,000 gallons/day
- Municipal System Preferred

Sewer

- Flow up to 400,000 gallons/day
- Municipal System Preferred

Telecommunications

- T-3 line minimum, Fiber Optic line preferred

Solid Waste Disposal

- Dry weight = 1,000 tons per month, or two semi-trucks full/day

Transportation requirements

Rail service and truck access are essential both for the delivery of input materials and distribution of the finished product. Sites with rail links and easy access to four-lane or interstate highways have a distinct advantage over those with less efficient distribution networks. Direct access to a four-lane, improved highway or interstate should avoid travel through highly congested commercial, retail or residential routes. At-grade crossings for site entry/exit should also be avoided.

Close proximity to a hub or regional airport is required. A site within 90 miles of a commercial service airport with direct service to a hub is preferred.

Labor/Workforce needs

A typical plant would employ approximately greater than 100 people, roughly 70% hourly production workers, 25% salaried (supervisors, and multi-skilled maintenance) and 5% salaried management. High-tech manufacturing facilities or industries requiring an especially skilled labor force may have more salaried personnel and necessitate a workforce with higher education levels, specific skills, and training levels.

The entry-level workforce can be described as being composed of employees with very limited skills and/or training and little or no manufacturing experience. Plants may also employ semi-skilled employees with an associate's degree in a manufacturing related field or two to three years of experience working in a manufacturing operation. Experience with CNC equipment or maintaining machinery is helpful. Skilled employees include employees with extensive experience in CNC equipment or machine maintenance.

Heavy industrial facilities commonly are developed in phases and may start with a limited number of employees. A community can expect the facility to grow to full capacity over the first two years, and increase wages gradually for every three month period during that time. Starting wages may not reflect what the average wage will be after the facility has been in operation from 3-5 years.

The following table shows the typical occupations that may be found in a heavy industrial facility. The table compares 2004 Oklahoma mean hourly wages with 2004 national mean hourly wages. *Please refer to the Application Package for the detailed "Comparison of Wages" and "Description of Occupations" sections.*

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Heavy Industrial		OK	National
SOC Code 17-3023	Electrical and Electronic Engineering Technicians	\$20.22	\$22.26
SOC Code 17-3026	Industrial Engineering Technicians	\$25.16	\$20.96
SOC Code 17-3027	Mechanical Engineering Technicians	\$17.53	\$20.87
SOC Code 51-4012	Numerical Tool and Process Control Programmers	\$18.76	\$19.31
SOC Code 43-9012	Word Processors and Typists	\$11.12	\$13.48
SOC Code 49-9041	Industrial Machinery Mechanics	\$16.27	\$18.78
SOC Code 49-9043	Maintenance Workers, Machinery	\$15.49	\$15.79
SOC Code 49-9042	Maintenance and Repair Workers, General	\$12.54	\$14.77
SOC Code 47-2111	Electricians	\$18.31	\$20.33
SOC Code 51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$11.35	\$14.06
SOC Code 51-4193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	\$15.29	\$12.96
SOC Code 51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	\$14.42	\$14.75
SOC Code 51-2099	Assemblers and Fabricators, All Other	\$9.12	\$11.90
SOC Code 51-2022	Electrical and Electronic Equipment Assemblers	\$12.16	\$11.68
SOC Code 53-7051	Industrial Truck and Tractor Operators	\$11.62	\$12.78
SOC Code 53-7064	Packers and Packagers, Hand	\$7.52	\$8.25

Proximity of support facilities

Depending on the industry, proximity of support facilities may be a critical factor in a siting decision. Basic support facilities for a manufacturing facility include tool & dye shops, machine shops, industrial maintenance and janitorial contractors, temporary staffing services, and waste disposal facilities.

Site development barriers & issues

Access to environmental information about the site is essential. Environmentally sensitive areas should be avoided.

Community emissions standards are normally a concern. Access to wastewater treatment and solid waste disposal facilities are also factors. Most heavy industrial manufacturers use large amounts of electricity.

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Site ownership vs. lease

This is a management decision, although most large manufacturing plants are corporate-owned. However, some industries, such as auto components, lease to remain flexible.

Surrounding land use issues

Residential, commercial, or retail areas should be buffered from facility/park. Proximity to landfills, sewage lagoons, or wastewater treatment plants, etc. should be avoided.

Other critical criteria

Refer to project evaluation criteria (musts & wants) which follow.