

March  
2023

# Comparative Operating Costs for Food Processing



Prepared for:

City of Yuma, AZ  
Office of Economic Development



APPLIED ECONOMICS

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## EXECUTIVE SUMMARY

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The City of Yuma retained Applied Economics to prepare a comparative operating cost analysis for a 65-employee food processing facility. The analysis compares a location in Yuma, Arizona to an alternative location in Fresno, California. Estimated operating costs in each location over a 10-year period include wages, payroll taxes and benefits, real estate, property and sales taxes and utilities.

### Project Description

- The pro-forma food processing operation would employ 65 non-exempt workers in a single shift (**Figure 1**). They would employ a mix of machine operators and tenders, packers, inspectors and other production workers.
- They would build an 80,000 square foot facility on 8 acres, and purchase \$12.0 million of manufacturing equipment.
- Electricity usage is estimated at 180,000 kWh per month with a 65 percent load factor; 610,000 gallons of water and 410,000 gallons of sewer discharge per month are assumed.

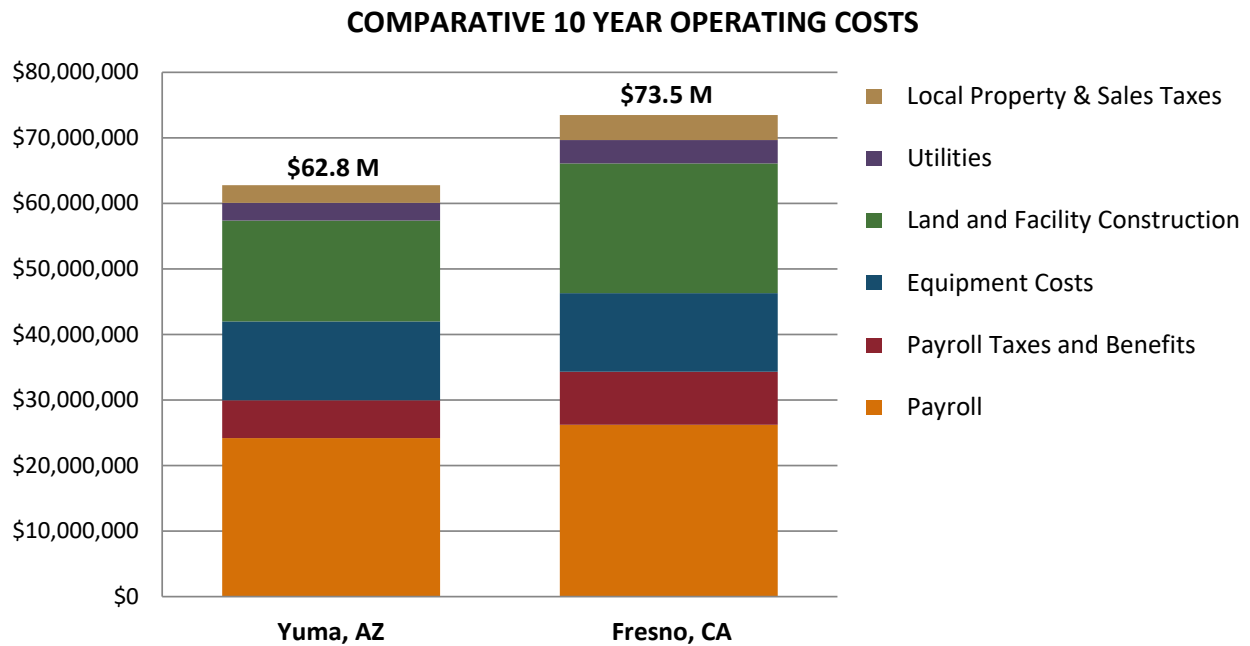
**FIGURE 1**  
**FOOD PROCESSING PRO-FORMA**

<b><u>Labor and Payroll</u></b>	
Total Employees	65
Annual Payroll	
Yuma, AZ	\$2,418,457
Fresno, CA	\$2,622,737
<b><u>Capital Expenditures</u></b>	
Manufacturing Equipment	\$12,000,000
<b><u>Land and Building Cost</u> (80,000 SF on 8 acres)</b>	
Yuma, AZ	\$12,910,252
Fresno, CA	\$16,586,568
<b><u>Utilities</u></b>	
Electricity (65% Load Factor)	180,000 KWh per month/385 KW demand
Water	610,000 gallons/month, 2" Meter
Sewer	410,000 gallons/month



## Comparative Operating Costs

- Total operating costs are 15 percent lower in Yuma at \$62.8 million over 10 years, compared to \$73.5 million in Fresno, California.
- The most significant difference between the two locations is in land and construction costs. Land and construction costs combined are roughly \$4.4 million higher in Fresno than in Yuma.



- Average wages are also higher in Fresno. Based on prevailing industry wages for typical occupations in food processing, payroll costs are estimated at \$24.2 million over ten years in Yuma, versus \$26.2 million in Fresno.
- Finally, there are significant differences in payroll taxes and benefit costs between the locations. Unemployment, worker’s compensation, health insurance, Social Security and Medicare costs combined are 28 percent higher in Fresno at approximately \$8.1 million over ten years, versus \$5.7 million in Yuma. Some of these costs are a percentage of payroll like worker’s compensation, while other costs like health insurance are based on the number of employees.

# OPERATING COST DETAIL

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## Land and Construction

This analysis assumes that the company would purchase an 8-acre site and build an 80,000 square foot concrete tilt-up building. Land costs were obtained from listings data for industrial land in each location. An average cost per acre was computed based on the available properties. Typical industrial land costs are higher in Fresno at \$150,000 per acre, compared to \$110,000 per acre in Yuma (**Figure 3**).

Building construction costs are based on the 2023 average cost per square foot for a single-story manufacturing facility from Gordian, [Square Foot Cost Data](#) adjusted by the city cost index for each location. Construction costs for an 80,000 square foot building are estimated at \$12.0 million in Yuma, versus \$15.4 million in Fresno. Note that the total annual cost listed for each city in Figure 3 represents the estimated annual loan payment on a 10-year commercial loan at 8 percent interest with a 20 percent down payment.

**FIGURE 3  
REAL ESTATE COSTS**

*Assumptions: 80,000 SF manufacturing facility on an 8 acre parcel. Construction costs of \$120 per square foot, adjusted for local labor and materials cost index.*

<b>Yuma, AZ</b>	
Land	\$880,000
Building	\$12,030,252
Total Annual Cost <sup>1</sup>	\$1,539,207
<b>Fresno, CA</b>	
Land	\$1,200,000
Building	\$15,386,568
Total Annual Cost <sup>1</sup>	\$1,977,510

Sources: Loopnet industrial land listings, February 2023; Gordian 2023 Building Construction Cost and Square Foot Cost Data with R.S. Means data.  
<sup>1</sup>Total annual cost for new construction represents the annual payment on a commercial real estate loan for 10 years, at 8 percent interest, on 80 percent of the land and building cost.

## Payroll and Benefits

The manufacturer in this comparison would employ 65 people. Payroll estimates are based on occupational wages for ten occupations that are representative of the workforce mix for a food processing operation including packaging and filling machine operators and tenders, hand packers, production supervisors and managers, inspectors, maintenance workers, truck and tractor operators, material movers and machinery mechanics. In total, annual wages in Yuma are about 8 percent lower than in Fresno; differences are greatest for maintenance and repair workers, hand packers and truck and tractor operators. Annual payroll is estimated at \$2.4 million in Yuma and \$2.6 million in Fresno (**Figure 4**).

**FIGURE 4**  
**WORKFORCE ASSUMPTIONS AND TYPICAL WAGES**  
**FOOD PROCESSING**

SOC Code	Occupation Title	Employees	Annual Wages	
			Yuma, AZ	Fresno, CA
51-9111	Packaging and filling machine operators and tenders	25	\$30,655	\$34,780
53-7064	Packers and packagers, hand	9	\$26,860	\$30,673
51-9061	Inspectors, testers, sorters, samplers, and weighers	6	\$51,100	\$47,570
53-7051	Industrial truck and tractor operators	6	\$32,500	\$37,271
49-9041	Industrial machinery mechanics	4	\$59,040	\$55,077
51-9198	Helpers--production workers	4	\$28,694	\$30,846
53-7062	Laborers and freight, stock, and material movers, hand	4	\$33,600	\$35,006
49-9071	Maintenance and repair workers, general	3	\$37,220	\$45,236
51-1011	First-line supervisors of production and operating workers	3	\$67,970	\$76,253
11-3051	Industrial production managers	1	\$107,830	\$119,954
<b>Total Annual Payroll</b>		<b>65</b>	<b>\$2,418,457</b>	<b>\$2,622,737</b>

Source: Arizona Office of Economic Opportunity, 2021 Occupational Employment and Wage Estimates; California Employment Development Department, OES Employment and Wages 1Q 2021.

The differences in wage rates not only impact payroll costs, but also have an impact on benefit costs. Total annual benefit costs are estimated at \$579,000 per year in Yuma, or 24 percent of payroll versus \$807,000 in Fresno, or about 31 percent of payroll (**Figure 5**)

Benefits shown here include Social Security and Medicare, which are estimated at 7.65 percent of payroll in all locations. Health insurance costs represent state averages for the employer portion of the annual premium for employees enrolled in employer-based health plans. Health insurance costs per employee are based on data from the Kaiser Foundation.

Benefits also include unemployment insurance. In California, unemployment insurance applies to the first \$7,000 of wages and in Arizona it applies to the first \$8,000. Rates vary depending on individual employer experience. For this analysis, a new employer rate of 2.0 percent is applied in Arizona and 3.4 percent in California, based on state-specific information published by the U.S. Department of Labor.

Worker's compensation rates vary by occupation, but an average food manufacturing rate of 7.83 percent of payroll is applied for California and 2.17 percent for Arizona. These rates are based on survey information collected by the Oregon Department of Consumer and Business Services. California typically has some of the highest worker's compensation rates in the country.



**FIGURE 5  
PAYROLL TAXES AND BENEFITS**

*Assumptions: Unemployment insurance is based on the new employer rate: California 3.4% of first \$7,000 of wages, Arizona 2% of first \$8,000 of wages. Workers compensation is calculated as a percent of payroll: California 7.83%, Arizona 2.17%.*

<b>Yuma, AZ</b>	<b>\$579,263</b>
Social Security and Medicare	\$185,012
Health Insurance <sup>1</sup>	\$331,370
Unemployment Insurance	\$10,400
Worker's Compensation	\$52,481
 <b>Fresno, CA</b>	 <b>\$807,180</b>
Social Security and Medicare	\$200,639
Health Insurance <sup>1</sup>	\$385,710
Unemployment Insurance	\$15,470
Worker's Compensation	\$205,360

Source: Kaiser Foundation State Health Facts, 2021 data; U.S. Department of Labor, Significant Provisions of State Unemployment Insurance Laws, July 2022; Arizona Department of Economic Security, January 2023; Oregon Department of Consumer and Business Services, Worker's Compensation Premium Rate Ranking Study, 2022 - typical premium rates for manufacturers.

<sup>1</sup> Average annual single premium (employer portion) per enrolled employee for employer-based health insurance.

## Utilities

The manufacturing facility in this analysis is assumed to have monthly electricity consumption of 180,000 kWh and a 65 percent load factor, or 385 kW demand per month. Total electricity costs are estimated at \$239,000 per year in Yuma and \$335,000 per year in Fresno (**Figure 6**). Annual water cost estimates assume usage of 610,000 gallons per month and a two-inch meter, while sewer usage is assumed to be 410,000 gallons per month. In total, water and sewer costs are estimated to be \$32,000 per year in Yuma versus \$25,000 per year in Fresno. However, the differences in water and sewer costs are more than offset by lower electric rates with APS in Yuma versus PG&E in Fresno.

**FIGURE 6  
ANNUAL UTILITY COSTS**

### ANNUAL ELECTRIC COSTS

**Assumptions:** 180,000 kWh/month, 385 kW/month (65% Load Factor)

Yuma, AZ (APS)	\$238,926
Fresno, CA (PG&E)	\$334,969

Source: Arizona Public Service Rate Schedule E-32; Pacific Gas & Electric Rate Schedule A-10.

### ANNUAL WATER COSTS

**Assumptions:** 610,000 gallons/month, 2 " meter

Yuma, AZ (City of Yuma)	\$17,536
Fresno, CA (City of Fresno)	\$17,479

Source: City of Yuma, Commercial Water Rates (inside the City) effective 1/1/19; City of Fresno, Master Fee Schedule, Water Rates effective 7/1/22.

### ANNUAL SEWER COSTS

**Assumptions:** 410,000 gallons/month

Yuma, AZ (City of Yuma)	\$14,312
Fresno, CA (City of Fresno)	\$7,788

Source: City of Yuma, Non-Residential Sewer Rates (Inside the City) effective 1/1/19; City of Fresno, Master Fee Schedule, Low Industrial Wastewater Rates effective 7/1/22.



## Sales Taxes

Sales taxes can potentially apply to the purchase of machinery, utilities and construction materials. The taxability of these specific items varies by state. In Arizona, manufacturing equipment is exempt from sales and use tax, which saves the company an estimated \$1.0 million on a \$12.0 million equipment purchase. In California, manufacturing equipment is only exempt from the 3.9375 percent state tax, resulting in a savings of about \$473,000. Utilities are not subject to sales tax in California and the City of Fresno does not impose a local utility user tax. Electricity and water utilities are subject to sales tax in Arizona.

The total state and local sales tax rate is 8.412 percent in Yuma and 8.35 percent in Fresno. Total sales taxes over 10 years are estimated at \$874,000 in Yuma and \$1.4 million in Fresno due to the difference in manufacturing equipment exemptions (**Figure 7**).

**FIGURE 7  
LOCAL SALES TAX COMPARISON**

**Assumptions:** Sales and use tax calculation includes purchases of machinery, utilities and construction materials. Exemptions and tax rates vary by state. Analysis assumes 65% of construction cost is materials. Construction costs vary by location. Note that manufacturing equipment is exempt from all sales tax in Arizona and exempt from state sales tax (3.9375%) in California. Electricity, water and sewer are exempt from sales tax in California and no utility user taxes apply in the City of Fresno.

<b>Yuma, AZ</b>		8.412% effective state & local tax rate									
	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
no abatement	\$1,882,965	\$1,688,804	\$21,574	\$21,574	\$21,574	\$21,574	\$21,574	\$21,574	\$21,574	\$21,574	\$21,574
Mfg Exemptions	(\$1,009,440)	(\$1,009,440)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Net Tax Due</b>	<b>\$873,525</b>	<b>\$679,364</b>	<b>\$21,574</b>	<b>\$21,574</b>	<b>\$21,574</b>	<b>\$21,574</b>	<b>\$21,574</b>	<b>\$21,574</b>	<b>\$21,574</b>	<b>\$21,574</b>	<b>\$21,574</b>
<b>Fresno, CA</b>		8.350% effective state & local tax rate 0.00% local utility user tax									
	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
no abatement	\$1,837,106	\$1,837,106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mfg Exemptions	(\$472,500)	(\$472,500)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Net Tax Due</b>	<b>\$1,364,606</b>	<b>\$1,364,606</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

## Property Taxes

Property taxes apply to real and personal property in both states. In this analysis, the value of the land and building are multiplied by 70 percent to approximate limited property value in Arizona (which is generally less than market value) and 85 percent to approximate assessed value in California. The property tax estimates also incorporate the commercial and industrial assessment ratio for Arizona, which is scheduled to decline from a current rate of 17 percent to 15 percent by 2027 based on recent legislative changes. This assessment ratio applies to both real and personal property in Arizona.

For personal property, the \$12.0 million of equipment is depreciated based on a 10-year schedule that would apply to food processing equipment in each state. In Arizona, depreciation for all equipment is set at a rate of 2.5 percent in all years, resulting in a negligible amount of personal property tax. In California, the depreciation schedule used in this analysis ranges from 90 percent of original cost in the first year to 23 percent in the tenth year.

The total effective tax rate is approximately 2.16 percent in Yuma and 1.14 percent in Fresno. Real and personal property taxes total \$1.8 million over 10 years in Yuma versus \$2.5 million in Fresno (**Figure 8**).

**FIGURE 8  
PROPERTY TAX COMPARISON**

*Assumptions: Value of New Machinery: \$7.2 million; facility value varies by location. Machinery and equipment is depreciated on a 10 year schedule. Real property has not been depreciated in this example. No replacement equipment purchases are assumed. Effective Tax Rates: Yuma 2.16%, Fresno 1.14%.*

<b>Yuma, AZ</b>											
	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Real Property	\$1,780,761	\$195,309	\$189,565	\$183,821	\$178,076	\$172,332	\$172,332	\$172,332	\$172,332	\$172,332	\$172,332
Personal Property	\$55,811	\$5,599	\$5,595	\$5,592	\$5,588	\$5,584	\$5,580	\$5,575	\$5,571	\$5,566	\$5,562
<b>Total</b>	<b>\$1,836,572</b>	<b>\$200,908</b>	<b>\$195,160</b>	<b>\$189,412</b>	<b>\$183,664</b>	<b>\$177,915</b>	<b>\$177,911</b>	<b>\$177,907</b>	<b>\$177,903</b>	<b>\$177,898</b>	<b>\$177,894</b>

<b>Fresno, CA</b>											
	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Real Property	\$1,619,786	\$161,979	\$161,979	\$161,979	\$161,979	\$161,979	\$161,979	\$161,979	\$161,979	\$161,979	\$161,979
Personal Property	\$831,344	\$124,081	\$125,074	\$118,442	\$104,283	\$91,338	\$77,647	\$64,522	\$52,376	\$42,174	\$31,406
<b>Total</b>	<b>\$2,451,130</b>	<b>\$286,060</b>	<b>\$287,052</b>	<b>\$280,421</b>	<b>\$266,262</b>	<b>\$253,316</b>	<b>\$239,626</b>	<b>\$226,501</b>	<b>\$214,355</b>	<b>\$204,152</b>	<b>\$193,385</b>

## SUMMARY OF RESULTS

Yuma offers a significantly lower cost location for food processing than Fresno. Over a ten-year period, the cost of a location in Yuma would be about \$10.7 million less than a location in Fresno (**Figure 9**). Payroll accounts for 35 to 40 percent of total operating costs, and occupational wages for food processing in Yuma average about 8 percent less than in Fresno. The combination of lower wages and lower payroll tax rates also results in payroll taxes and benefits that are about 39 percent higher in Fresno. Finally, there are significant advantages to a location in Yuma based on real estate costs, due to both the difference in the cost of land and differences in construction costs, that combined are about 29 percent lower in Yuma.

**FIGURE 9**  
**SUMMARY OF COMPARATIVE OPERATING COSTS FOR FOOD PROCESSING**

	Yuma, AZ	Fresno, CA	Percent Difference
<b>Operating Costs - 10 Year Total</b>	<b>\$62,787,089</b>	<b>\$73,492,362</b>	17%
Payroll	\$24,184,572	\$26,227,366	8%
Payroll Taxes and Benefits	\$5,792,625	\$8,071,796	39%
Equipment Costs	\$12,000,000	\$12,000,000	0%
Land and Facility Construction*	\$15,392,066	\$19,775,102	28%
Utilities (Electric, Water & Sewer)	\$2,707,728	\$3,602,362	33%
Local Property & Sales Taxes	\$2,710,097	\$3,815,736	41%

\*Facility cost represents 10 years of annual payments on commercial real estate loan.