

## Food Processing

### Food Processing Location Trends

31 Dec, 2009

By: [Dennis J. Donovan](#)

This article examines locational trends influencing the geographic deployment of food processing manufacturing plants. It will address the following:

1. Industry definition/composition/issues
2. Geographic clustering
  - Entire industry
  - Vegetables, nuts, fruits, snack foods, prepared foods
3. Operating requirements/criteria
4. Site selection process
5. Concluding remarks



The primary objective of the article is to widen understanding of the dynamics that are shaping location decisions for food processing enterprises. While there are exceptions, the article focuses on generally applicable precepts relative to food processing site selection.

#### Definition/Composition/Issues

Food manufacturing (or processing) involves the transformation of agricultural crops, livestock and seafood into products destined for intermediate use or final consumption. The industry embraces the following major segments.

Segment	NAIC (Industry Code)
<b>Animal Food (E.G. Pet Food)</b>	<b>3111</b>
<b>Grain/Oil Seed Milling</b>	<b>3112</b>
<b>Sugar/Confectionary Products</b>	<b>3113</b>
<b>Fruits/Vegetables</b>	<b>3114</b>
<b>Dairy Products</b>	<b>3115</b>
<b>Animal slaughtering</b>	<b>3116</b>
<b>Seafood Preparation</b>	<b>3117</b>
<b>Bakeries/Cookies/Crackers/Pasta, Tortilla</b>	<b>3118</b>
<b>Miscellaneous</b> (e.g., snacks, nuts, coffee/tea, syrup, seasonings, salad dressing, mayonnaise, perishable prepared food)	<b>3119</b>

Processed food accounts for 10 percent of all U.S. manufacturing shipments. The industry is dominated by small- to mid-size operations which account for about 2/3 of industry employment. Large, multi-national corporations employ roughly 1/3 of the industry's workers.

The industry employs 1.5 million people working in 28,000 establishments. Annual sales approximate \$550 billion. Sales among the top 100 producers range from \$415 million (Ruiz) to \$26.5 billion (Nestle).

The entire sector has seen a wave of consolidations. Driving forces have included product synergy, product mix rationalization, market penetration, economies of scale and cost containment. In recent years there have been 80-100 consolidations per annum. Examples include the following:

<b>Acquiring Company</b>	<b>Acquired Company</b>
<b>Mars</b>	<b>Wrigley</b>
<b>JM Smucker</b>	<b>Folgers (from Procter &amp; Gamble)</b>
<b>Grupo Bimbo (Mexico)</b>	<b>George Weston U.S. Subsidiary</b>
<b>Ralcorp</b>	<b>Post (from Kellogg)</b>
<b>Highliner Food</b>	<b>FPI</b>
<b>Sun Capital Partners</b>	<b>Sunrise Growers Frosun Food</b>
<b>Cargill</b>	<b>Willow Brook Foods &amp; Carneco Foods</b>
<b>Tyson</b>	<b>IBP</b>
<b>McCormick</b>	<b>Lawry's (from Conopco)</b>

There are several dynamics influencing both growth and performance of the industry. These include the following:

<b>Issue</b>	<b>Site Selection Implication</b>
<b>Steady Population Growth</b>	<b>More production facilities</b>
<b>Ethnic Diversity</b>	<b>More facilities producing specialty products</b>
<b>Food Safety</b>	<b>Increased compliance costs</b>
<b>Dual income families</b>	<b>More convenience food plants</b>
<b>Aging/obesity</b>	<b>More nutritionally sound products/plants</b>
<b>Greening/sustainability</b>	<b>More organic production</b>
<b>Buy local</b>	<b>More produce local plants</b>
<b>Technology (automation such as distributed control systems, lean mfg., RFID)</b>	<b>Reduction of labor content and increased capital investment for new facilities</b>
<b>Cost (e.g., rising commodity prices, increasing energy costs, added transportation costs)</b>	<b>Location in lower cost areas including those closer to the supply chain (raw materials and markets)</b>

## Geographic Clustering

The industry tends to agglomerate near either a raw material base and/or market (customer) proximity. Consequently, as measured by industry employment, it is not surprising that California is the leading food processing state due to raw material base and market size. In fact, nine of the top 10 states represent both dense concentrations of raw materials and consumers within reasonable proximity (e.g., within 400-500 miles). The leading food processing states are as follows:

	<b>State</b>	<b>Employment</b>
<b>1.</b>	<b>California</b>	<b>151,500</b>
<b>2.</b>	<b>Washington</b>	<b>87,600</b>
<b>3.</b>	<b>Illinois</b>	<b>77,800</b>
<b>4.</b>	<b>Texas</b>	<b>67,900</b>
<b>5.</b>	<b>Florida</b>	<b>66,900</b>
<b>6.</b>	<b>Ohio</b>	<b>60,000</b>
<b>7.</b>	<b>Pennsylvania</b>	<b>53,900</b>
<b>8.</b>	<b>New York</b>	<b>53,700</b>
<b>9.</b>	<b>Oregon</b>	<b>50,600</b>
<b>10.</b>	<b>North Carolina</b>	<b>49,900</b>

When we examine five year employment growth, a different picture emerges. Only two of the top 10 states (North Carolina and Oregon) are among the fastest growing (2003/2008) food processing states. This is attributable to both shifting demographics and agricultural production. Among the fastest growing states are Michigan, North Carolina, Indiana, Oregon, Missouri, Georgia, Iowa, Kentucky and Nevada.

For this article, we also looked at industry segments that were tied to either raw materials or markets. The analysis was confined to vegetables, fruits, nuts, snack foods and prepared foods (including frozen).

The leading states parallel the entire sector with one exception. Wisconsin makes the top 10 in 'market oriented.' The top 10 states for 'raw material oriented' and market proximity areas follow:

<b>Market Oriented</b>	<b>Raw Material Oriented</b>
<b>1. California</b>	<b>1. California</b>
<b>2. Illinois</b>	<b>2. Washington</b>
<b>3. Ohio</b>	<b>3. Illinois</b>
<b>4. Texas</b>	<b>4. Texas</b>
<b>5. Pennsylvania</b>	<b>5. Florida</b>
<b>6. New York</b>	<b>6. Ohio</b>
<b>7. Washington</b>	<b>7. Pennsylvania</b>
<b>8. Wisconsin</b>	<b>8. New York</b>
<b>9. Oregon</b>	<b>9. Oregon</b>
<b>10. New Jersey</b>	<b>10. North Carolina</b>

However when examining growth (e.g., employment change) we see that both raw material based and consumer based food processing is geographically diversifying. The states with the greatest employment gains are listed below.

<b>Market Oriented</b>	<b>Raw Material Oriented</b>
<b>1. Maryland</b>	<b>1. California</b>
<b>2. New Jersey</b>	<b>2. Washington</b>
<b>3. Iowa</b>	<b>3. Oregon</b>
<b>4. Idaho</b>	<b>4. Georgia</b>
<b>5. Massachusetts</b>	<b>5. North Dakota</b>
<b>6. New Mexico</b>	<b>6. Minnesota</b>
<b>7. Mississippi</b>	<b>7. Maryland</b>
<b>8. Michigan</b>	<b>8. North Carolina</b>
<b>9. Alabama</b>	<b>9. New Jersey</b>
<b>10. North Dakota</b>	<b>10. Tennessee</b>

ConAgra's sweet potato processing plant in Delhi, Louisiana is illustrative of a location decision that was heavily influenced by raw material proximity. An example of a company that sited a new facility near customers is Nestle (Nesquik & CoffeeMate) in Anderson, Indiana. Logistics/transportation costs weighed heavily in both site selections. Following a greening/sustainability trend both new facilities will be LEED certified. Examples of other recent new facility announcements in the food processing sector appear in Chart 1.

#### **Location Criteria**

As noted above, access to either raw materials and/or customers dominates location choice for food processing operations. On balance, the following factors assume primacy in food processing location decision-making.

<b>Factor</b>	<b>Relative Importance (1 lowest, 10 highest)</b>
<b>Logistics</b>	<b>10</b>
<b>Raw Material Proximity</b>	<b>10 (depending on industry segment)</b>
<b>Market Proximity</b>	<b>10 (depending on industry segment)</b>
<b>Transportation Costs</b>	<b>9</b>
<b>Highway Access</b>	<b>8</b>
<b>Rail Service</b>	<b>6 (more important for some segments)</b>
<b>Motor Carrier Service</b>	<b>7</b>
<b>Labor Market</b>	<b>8</b>
<b>Qualified Entry Level (e.g., mixing, blending, slicing, packaging)</b>	<b>9</b>
<b>Technical workers (e.g., food technologists, nutritionists, biologists, chemists)</b>	<b>7</b>
<b>Skilled Crafts (e.g., maintenance)</b>	<b>7</b>
<b>Unionization Risk</b>	<b>10</b>
<b>Seasonal Workers</b>	<b>9 (applicable to some segments)</b>
<b>Offshift Staffing</b>	<b>6</b>
<b>Labor Costs</b>	<b>9</b>
<b>Utilities</b>	<b>8</b>
<b>Electric Power</b>	<b>10</b>
<b>Capacity</b>	<b>9</b>
<b>Reliability</b>	<b>8</b>

<b>Cost</b>	<b>10</b>
<b>Natural Gas</b>	<b>9</b>
<b>Availability</b>	<b>10</b>
<b>Cost</b>	<b>7</b>
<b>Water Supply</b>	<b>9</b>
<b>Water Treatment Capacity</b>	<b>7</b>
<b>Sewer Treatment Capacity</b>	<b>9</b>
<b>Water Costs</b>	<b>5</b>
<b>Sewer Costs including surcharges for Basic Oxygen Demand, Total Suspended Solids, and Nutrient Loading (e.g., Nitrogen Phosphorus Compounds)</b>	<b>8</b>
<b>Telecommunications</b>	<b>5</b>
<b>Real Estate, Available Building</b>	<b>8</b>
<b>Ready To Go Sites (All Utilities In Place)</b>	<b>9</b>
<b>Fast Track Construction/Permitting (Especially Environmental)</b>	<b>8</b>
<b>Flexibility for Expansion</b>	<b>9</b>
<b>Geotechnical Compatibility</b>	<b>10</b>
<b>Construction/Occupancy Costs</b>	<b>7</b>
<b>Clean Operating Environment (USDA Standards)</b>	<b>10</b>
<b>Taxation</b>	<b>6</b>
<b>Corporate Income</b>	<b>5</b>
<b>Sales/Use</b>	<b>7</b>
<b>Property</b>	<b>6</b>
<b>Incentives (A Factor Among Qualified Communities)</b>	<b>7</b>
<b>Education/Training Resources</b>	<b>6</b>
<b>Quality-Of-Life/Transferee Appeal</b>	<b>4</b>

A few comments on the above are in order. Due to escalating energy costs, the price of electricity is an important consideration. Labor market considerations including costs, reflective of competitive demand/supply, are also key. Many plants are water intensive so availability of quality water is a main consideration. As food processing plants require substantial sewer treatment, a community's willingness to divert sufficient capacity for the proposed plant must be carefully evaluated. Additionally, beware of sewer surcharges.

Relative to incentives, many states offer tax credits. But most food plants do not register profits. Hence, credits might not be of any real value. Rather, incentives that have tangible benefits are typically more meaningful. These include:

- Site preparation assistance
- Write down to land/building costs
- Payroll tax rebates
- Capital investment tax rebates
- Property tax abatement
- Waiver of sewer/water meter installation fees
- Fast track permitting

Today, many companies are concerned about sustainability. Construction of a LEED certified building could yield dividends in terms of energy efficiency, company reputation and earning employer-of-choice status.

## Site Selection Process

There are four stages that comprise the selection of sites for food processing. They are:

1. Stage One: Planning
2. Stage Two: Screening
3. Stage Three: Location Evaluation
4. Stage Four: Site Evaluation.

In Stage One, a multi-discipline team, led by an operations executive, needs to define the project. Key elements include:

1. Business rationale for the new plant
2. Strategic fit of the new facility within the current manufacturing portfolio
3. Timeline for plant startup
4. Plant operating requirements, year one and future (e.g., customer/raw material proximity, transportation, site/building utilities, labor market, etc.)
5. Weighting of locational criteria (see above)
6. Geographic search region (for conducting the location study)

Once informational building blocks are in place, the challenge now becomes finding the best location. In Stage Two the objective is to screen locations on sequentially more restricted factors until a shortlist (usually three) emerges.

Relying on desktop research (e.g., published and private data sources), begin applying fundamental criteria to eliminate locations within the geographic search region. The search can be conducted at a metro area or county level. Initial screening criteria might include population size, four-lane highway linkage, rail linkage, and distance to a commercial airport. Then apply additional criteria to ultimately reach a long list (about 10) of promising areas. Criteria could include:

- Demographic characteristics
- Educational attainment
- Labor force
- Average manufacturing wages
- Average electric power cost
- Natural gas service

Now it is time to contact economic development agencies in long-listed locations to obtain additional data for comparative analysis. Such data often includes:

- Available buildings/sites
- Utility infrastructure
- Willingness to accept sewer effluent
- Water supply/quality
- Utility costs
- Tax practices/rates
- Outlets for process scrap
- Support vendors
- Major employers, including food processors
- Motor carriers
- Rail service
- Potential incentives

Each long-listed area needs to be ranked/scored. Aggregate individual factors into broad categories such as labor market, market/raw material access, transportation, utilities, sites/buildings and costs. Score all areas on individual factors and the category. Then tabulate a weighted composite score. The top candidates should be lower cost that also scores well on other considerations. Select three to carry forward to the next stage.

In Stage Three, the company's site selection team visits each shortlisted location. The lead economic development agency can arrange field itineraries. While in each area, undertake the following:

1. Interview food processors and other manufacturers to learn of their operating experiences
2. Interview other pertinent organizations such as:
  - Motor carriers
  - Rail carriers
  - Electric power provider
  - Water/sewer authorities
  - Natural gas suppliers
  - Tax assessors
  - Real estate owners
  - Education/training officials
  - Staffing agency

3. Inspect sites/buildings focusing on geo-technical and physical characteristics
4. Review environmental Phase One reports for sites



5. Review topographic and plot maps for each site
6. Request the lead economic development agency to provide a preliminary incentives package.

Target a primary and back-up location for final due diligence to be performed in Stage Four. The main focus should be on sites/buildings, utilities, transportation and incentives. It would be a good idea to have engineering expertise to assess sites/buildings and utilities.

Negotiate with all appropriate groups including property owners, utilities, transportation, local government and state government. Furthermore conduct due diligence on legal, environmental, regulation and taxation. Secure a final incentives package and estimate dollar value over life of the program. Be careful in committing to any incentive clawback provisions (recapture clauses).

Perform another ranking of both the community and best sites/buildings. Then make the final selection. At this point, the implementation or construction phase begins. An internal project manager needs to be assigned. Then add other experts (e.g., construction manager, design/build firm, environmental engineer) as required.

## Conclusions

Despite the recession, the food processing industry has fared pretty well. As the economy rebounds, we anticipate a spate of new facility investment in nearly all segments of the industry.

Logistics will continue to be the prime driver shaping location decisions. Most important will be proximity to either raw materials or markets and transportation costs (inbound and outbound).

As the cost of energy will likely remain historically high, companies will continue making investments in operational efficiency. Additionally, plants will gravitate toward areas with more favorable electric power costs.

Water supply will also be important. This can be an issue in the western U.S. and elsewhere, especially in drought prone areas.

Sewer treatment capacity is also key. Companies will choose locations with sufficient capacity and reasonable cost (watch out for surcharges).

Food safety will be paramount. Federal government regulation will add to both construction and ongoing costs. This needs to be taken into account when comparing specific sites/buildings.

Greening/sustainability will also be important. This will call for green buildings, environmentally sensitive waste recovery and packaging, and recycling.

Nearly all states will partake in the physical expansion of this industry. But the densest concentration of new facilities will continue to be in states that are proximate to significant concentrations of raw materials and/or markets.

In siting new facilities it is important to follow a systematic/structured process. Especially critical is upfront definition of

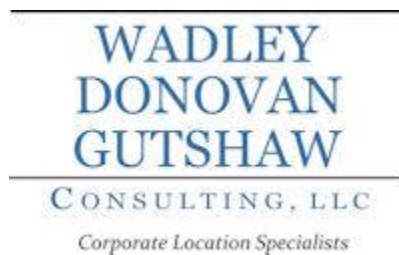
requirements and criteria. Ideally, locational choice will boil down to a balance between business costs and prime operational issues (e.g., utility infrastructure).

## About the Author

### Dennis J. Donovan

Wadley-Donovan-Gutshaw Consulting

---



**Dennis J. Donovan** is a principal of Wadley-Donovan-Gutshaw Consulting (WDGC), a corporate site selection firm. Based in Bridgewater, New Jersey, WDGC specializes in global site selection primarily for Fortune 1000 companies. Dennis Donovan has been active in corporate site selection for over 35 years.