



Duval County Petroleum Refinery Construction: Phase 1 Input-Output Draft Analysis



Duval County Population (2016)	11,303
Duval County Jobs (2016)	5,743
Duval County Average Earnings (2016)	\$40,123

Duval County Labor Force

There are over 5,700 jobs in Duval County based off recent annual estimates. Listed are the largest occupations within the county. This is just a sample of the 456 occupations in Duval County as of 2016 employment data.

Farmers, Ranchers, and Other Agricultural Managers	1,110
Personal Care Aides	199
Home Health Aides	189
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	139
Heavy and Tractor-Trailer Truck Drivers	134
Office Clerks, General	110
Managers, All Other	95
Correctional Officers and Jailers	92
Construction Laborers	83
Roustabouts, Oil and Gas	82
Cashiers	79
General and Operations Managers	78
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	75
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	74
Elementary School Teachers, Except Special Education	68
Industrial Machinery Mechanics	61
Detectives and Criminal Investigators	61
Childcare Workers	58
Combined Food Preparation and Serving Workers, Including Fast Food	57
Service Unit Operators, Oil, Gas, and Mining	56
Secondary School Teachers, Except Special and Career/Technical Education	53
Teacher Assistants	53
First-Line Supervisors of Construction Trades and Extraction Workers	51
Police and Sheriff's Patrol Officers	49
Bookkeeping, Accounting, and Auditing Clerks	47
Wellhead Pumpers	47
Licensed Practical and Licensed Vocational Nurses	46
Property, Real Estate, and Community Association Managers	45
First-Line Supervisors of Retail Sales Workers	44
Electricians	43
Middle School Teachers, Except Special and Career/Technical Education	41
Registered Nurses	40
Welders, Cutters, Solderers, and Brazers	39
Laborers and Freight, Stock, and Material Movers, Hand	38
Substitute Teachers	37
Maintenance and Repair Workers, General	37
Operating Engineers and Other Construction Equipment Operators	36
Retail Salespersons	34
Maids and Housekeeping Cleaners	33
Nursing Assistants	31
Carpenters	28
Chief Executives	25
Real Estate Sales Agents	25
Nonfarm Animal Caretakers	25
Accountants and Auditors	24
Sales Representatives, Services, All Other	24



The refinery project, which Raven Petroleum wants to start building in 2017 and open by the end of 2018, would create about 350 permanent jobs and 1,800 temporary construction positions.

Oil and Gas Pipeline and Related Structures Construction

Oil and Gas Pipeline and Related Structures Construction (NAICS 237120):

This industry comprises establishments primarily engaged in the construction of oil and gas lines, mains, refineries, and storage tanks. The work performed may include new work, reconstruction, rehabilitation, and repairs. Specialty trade contractors are included in this group if they are engaged in activities primarily related to oil and gas pipeline and related structures construction. All structures (including buildings) that are integral parts of oil and gas networks (e.g., storage tanks, pumping stations, and refineries) are included in this industry.

Illustrative Examples:

Distribution line, gas and oil, construction

Oil refinery construction

Gas main construction

Petrochemical plant construction

Initial:

This number represents the initial change in jobs as input by the user, and therefore does not include ripple effects. If a user has made the input in terms of jobs, this figure will match exactly what the user entered. If in terms of earnings or sales, this number will represent the conversion to jobs from those other terms.

Direct:

The effect of new input purchases by the initially changed industries. This is the first round of impacts (see "Indirect"). This change is due to inter-industry effects.

Indirect:

The subsequent ripple effect in further supply chains resulting from the direct change. In more awkward terms, this shows the sales change in the supply chains of the supply chain, as a result of the direct change. This is the sum of the second and subsequent rounds of impact (see "Direct"). This change is due to inter-industry effect.

Induced:

This change is due to the impact of the new earnings, investment, and government created by the initial, direct, and indirect changes. Induced effects enter the economy as employees spend their paychecks in the region, businesses invest to grow their operations, and government spends more to support the changes.

Corpus Christi MSA adding 1,800 jobs to Oil and Gas Pipeline and Related Structures Construction

1,800	622	154	953
Initial	Direct	Indirect	Induced
1.00 Multiplier	0.35 Multiplier	0.09 Multiplier	0.53 Multiplier

San Antonio MSA adding 1,800 jobs to Oil and Gas Pipeline and Related Structures Construction

1,800	418	140	1,014
Initial	Direct	Indirect	Induced
1.00 Multiplier	0.23 Multiplier	0.08 Multiplier	0.56 Multiplier

Laredo MSA adding 1,800 jobs to Oil and Gas Pipeline and Related Structures Construction

1,800	241	45	409
Initial	Direct	Indirect	Induced
1.00 Multiplier	0.13 Multiplier	0.03 Multiplier	0.23 Multiplier

Combined Effect on jobs from adding 1,800 jobs to Oil and Gas Pipeline and Related Structures Construction *

1,800	609	201	1,458
Initial	Direct	Indirect	Induced
1.00 Multiplier	0.34 Multiplier	0.11 Multiplier	0.81 Multiplier

*Combined regions of the Corpus Christi, San Antonio and Laredo MSA's

1,800 Initial Jobs

1.00 Multiplier

Name	Corpus Christi MSA	San Antonio MSA	Laredo MSA	Combined Regions
Construction Laborers	310	411	682	339
Welders, Cutters, Solderers, and Brazers	179	46	27	169
Operating Engineers and Other Construction Equipment Operators	126	171	78	135
First-Line Supervisors of Construction Trades and Extraction Workers	93	123	132	101
Heavy and Tractor-Trailer Truck Drivers	88	65	29	83
Roustabouts, Oil and Gas	82	27	23	69
Pipelayers	75	103	76	99
Plumbers, Pipefitters, and Steamfitters	73	60	64	71
Office Clerks, General	61	44	47	51
Construction Managers	40	72	73	45
General and Operations Managers	39	27	21	31
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	35	27	19	30
Maintenance and Repair Workers, General	28	15	10	25
Carpenters	26	73	131	30
Mobile Heavy Equipment Mechanics, Except Engines	24	18	10	23
Bookkeeping, Accounting, and Auditing Clerks	23	18	11	20
Helpers--Production Workers	23	19	7	24
Laborers and Freight, Stock, and Material Movers, Hand	22	14	11	0
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	21	24	15	20
Civil Engineers	17	4	3	15
Control and Valve Installers and Repairers, Except Mechanical Door	16	5	4	15
Earth Drillers, Except Oil and Gas	15	50	11	23
Excavating and Loading Machine and Dragline Operators	15	37	5	17
Cost Estimators	13	15	9	12
Sales Representatives, Services, All Other	13	8	4	10
Helpers--Extraction Workers	12	5	9	10
Helpers--Installation, Maintenance, and Repair Workers	12	8	11	11
Crane and Tower Operators	11	7	3	11
Accountants and Auditors	10	7	5	8
Industrial Machinery Mechanics	10	4	2	0
Landscaping and Groundskeeping Workers	10	8	7	9
Septic Tank Servicers and Sewer Pipe Cleaners	9	5	4	9
Cement Masons and Concrete Finishers	8	17	9	8
First-Line Supervisors of Mechanics, Installers, and Repairers	8	4	2	7
Riggers	8	2	2	7
Surveying and Mapping Technicians	8	6	10	2
Installation, Maintenance, and Repair Workers, All Other	8	5	3	7
Painters, Construction and Maintenance	7	32	57	11
Service Unit Operators, Oil, Gas, and Mining	7	3	0	7
First-Line Supervisors of Production and Operating Workers	7	4	4	7
Structural Iron and Steel Workers	7	10	9	7

Corpus Christi MSA	San Antonio MSA	Laredo MSA	Combined Regions
622	418	241	609
Direct	Direct	Direct	Direct
0.35 Multiplier	0.23 Multiplier	0.13 Multiplier	0.34 Multiplier

Name	Corpus Christi MSA	San Antonio MSA	Laredo MSA	Combined Regions
Retail Salespersons	93	53	44	84
First-Line Supervisors of Retail Sales Workers	35	21	16	33
Cashiers	30	18	12	30
Heavy and Tractor-Trailer Truck Drivers	26	22	14	31
Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	22	13	8	18
Office Clerks, General	12	8	6	13
Stock Clerks and Order Fillers	11	7	4	10
Laborers and Freight, Stock, and Material Movers, Hand	11	8	5	0
Sales Representatives, Wholesale and Manufacturing, Except Technical	10	9	4	11
Welders, Cutters, Solderers, and Brazers	10	4	1	7
General and Operations Managers	9	7	3	9
Customer Service Representatives	9	10	4	12
Real Estate Sales Agents	8	5	3	7
Pharmacy Technicians	8	3	2	6
Light Truck or Delivery Services Drivers	8	4	2	6
Civil Engineers	8	1	0	4
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	7	5	2	7
Sales Representatives, Services, All Other	7	4	2	6
Bookkeeping, Accounting, and Auditing Clerks	7	5	2	7
Managers, All Other	6	4	3	6
First-Line Supervisors of Non-Retail Sales Workers	6	4	4	6
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6	4	2	6
Maintenance and Repair Workers, General	5	3	1	5
Maids and Housekeeping Cleaners	5	2	2	4
Accountants and Auditors	5	3	2	5
Structural Metal Fabricators and Fitters	5	2	0	4
Lawyers	4	2	1	4
Waiters and Waitresses	4	2	2	4
Inspectors, Testers, Sorters, Samplers, and Weighers	4	3	1	4
Landscaping and Groundskeeping Workers	4	2	1	4
Tellers	4	1	2	1
Personal Financial Advisors	4	2	1	3
First-Line Supervisors of Office and Administrative Support Workers	4	3	2	4
Pharmacists	4	2	1	3
Security Guards	3	2	2	3
Combined Food Preparation and Serving Workers, Including Fast Food	3	2	1	3
Securities, Commodities, and Financial Services Sales Agents	3	2	1	2
Machinists	3	1	0	2
Automotive Service Technicians and Mechanics	3	2	1	3
First-Line Supervisors of Production and Operating Workers	3	3	1	3
Sheet Metal Workers	3	2	0	2

Corpus Christi MSA	San Antonio MSA	Laredo MSA	Combined Regions
154	140	45	201
Indirect	Indirect	Indirect	Indirect
0.09 Multiplier	0.08 Multiplier	0.03 Multiplier	0.11 Multiplier

Name	Corpus Christi MSA	San Antonio MSA	Laredo MSA	Combined Regions
Real Estate Sales Agents	10	7	3	11
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	5	4	1	6
Office Clerks, General	4	3	1	5
Heavy and Tractor-Trailer Truck Drivers	4	4	2	6
Laborers and Freight, Stock, and Material Movers, Hand	3	4	2	0
Property, Real Estate, and Community Association Managers	3	2	1	4
Customer Service Representatives	3	5	1	6
Maids and Housekeeping Cleaners	3	2	1	3
Security Guards	3	2	1	3
Real Estate Brokers	3	2	1	3
Waiters and Waitresses	3	2	1	3
Accountants and Auditors	3	2	1	3
Landscaping and Groundskeeping Workers	3	2	1	3
Managers, All Other	2	2	1	3
General and Operations Managers	2	2	1	3
Sales Representatives, Services, All Other	2	1	0	2
Photographers	2	2	1	3
Maintenance and Repair Workers, General	2	2	0	2
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	2	2	1	3
Bookkeeping, Accounting, and Auditing Clerks	2	2	1	3
Combined Food Preparation and Serving Workers, Including Fast Food	2	1	0	2
Personal Financial Advisors	2	2	0	2
Light Truck or Delivery Services Drivers	2	2	0	2
Management Analysts	2	1	0	2
Retail Salespersons	2	1	1	2
Sales Representatives, Wholesale and Manufacturing, Except Technical	1	2	0	2
Tellers	1	0	0	1
Cooks, Restaurant	1	1	0	1
Securities, Commodities, and Financial Services Sales Agents	1	1	0	1
First-Line Supervisors of Office and Administrative Support Workers	1	1	0	2
First-Line Supervisors of Non-Retail Sales Workers	1	1	0	2
Lawyers	1	1	0	1
Welders, Cutters, Solderers, and Brazers	1	0	0	1
Appraisers and Assessors of Real Estate	1	1	0	1
Unclassified Occupation	1	1	0	2
Insurance Sales Agents	1	1	0	1
Stock Clerks and Order Fillers	1	1	0	2
Telecommunications Equipment Installers and Repairers, Except Line Installers	1	0	0	0
Machinists	1	0	0	1
Inspectors, Testers, Sorters, Samplers, and Weighers	1	1	0	1
Civil Engineers	1	0	0	0

Corpus Christi MSA	San Antonio MSA	Laredo MSA	Combined Regions
953	1,014	409	1,458
Induced	Induced	Induced	Induced
0.53 Multiplier	0.56 Multiplier	0.23 Multiplier	0.81 Multiplier

Name	Corpus Christi MSA	San Antonio MSA	Laredo MSA	Combined Regions
Retail Salespersons	46	45	27	67
Combined Food Preparation and Serving Workers, Including Fast Food	30	28	12	41
Waiters and Waitresses	28	24	15	36
Cashiers	26	27	14	40
Personal Care Aides	26	33	24	51
Registered Nurses	21	18	7	26
Maids and Housekeeping Cleaners	19	13	6	21
Home Health Aides	19	6	3	12
First-Line Supervisors of Retail Sales Workers	18	18	11	27
Office Clerks, General	18	19	9	28
Childcare Workers	17	13	8	21
Stock Clerks and Order Fillers	16	15	7	22
Real Estate Sales Agents	14	17	5	23
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	14	16	5	22
Cooks, Restaurant	13	12	6	18
Customer Service Representatives	11	20	5	27
Nursing Assistants	10	8	2	12
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	10	12	4	17
Medical Secretaries	10	9	4	13
General and Operations Managers	9	10	3	15
First-Line Supervisors of Food Preparation and Serving Workers	9	9	4	13
Maintenance and Repair Workers, General	8	7	2	11
Personal Financial Advisors	8	11	2	15
Cooks, Fast Food	8	6	3	9
Hairdressers, Hairstylists, and Cosmetologists	8	8	4	12
Bookkeeping, Accounting, and Auditing Clerks	8	9	3	13
Heavy and Tractor-Trailer Truck Drivers	8	10	5	15
Licensed Practical and Licensed Vocational Nurses	7	7	2	10
Food Preparation Workers	7	7	4	11
Laborers and Freight, Stock, and Material Movers, Hand	7	9	4	0
Teacher Assistants	7	5	2	8
Medical Assistants	7	7	4	10
Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	7	7	3	10
Bartenders	7	6	2	9
Sales Representatives, Services, All Other	7	6	2	9
First-Line Supervisors of Office and Administrative Support Workers	6	7	4	11
Elementary School Teachers, Except Special Education	6	7	2	10
Managers, All Other	6	7	4	10
Automotive Service Technicians and Mechanics	6	6	3	8
Nonfarm Animal Caretakers	6	5	3	8
Landscaping and Groundskeeping Workers	6	6	2	9

Appendix A - Data Sources and Calculations

Input-Output Data

The input-output model in this report is Emsi's gravitational flows multi-regional social account matrix model (MR-SAM). It is based on data from the Census Bureau's Current Population Survey and American Community Survey; as well as the Bureau of Economic Analysis' National Income and Product Accounts, Input-Output Make and Use Tables, and Gross State Product data. In addition, several Emsi in-house data sets are used, as well as data from Oak Ridge National Labs on the cost of transportation between counties.

Demographic Data

The demographic data in this report is compiled from several sources using a specialized process. Sources include annual population estimates and population projections from the US Census Bureau, birth and mortality rates from the US Health Department, and projected regional job growth.

Industry Data

Emsi industry data have various sources depending on the class of worker. (1) For QCEW Employees, Emsi primarily uses the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns. (2) Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, BEA State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics. (3) Self-Employed and Extended Proprietor classes of worker data are primarily based on the American Community Survey, Nonemployer Statistics, and BEA State and Local Personal Income Reports. Projections for QCEW and Non-QCEW Employees are informed by NIOEM and long-term industry projections published by individual states.

Unemployment Data

The unemployment data in this report comes from the Bureau of Labor Statistics' Local Area Unemployment Statistics and is updated every two months.

Occupation Data

Emsi occupation employment data are based on final Emsi industry data and final Emsi staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level Emsi earnings by industry.

Educational Attainment Data

Emsi's educational attainment numbers are based on Emsi's demographic data and the American Community Survey. By combining these sources, Emsi interpolates for missing years and projects data at the county level. Educational attainment data cover only the population aged 25 years or more and indicate the highest level achieved.

Infogroup Business-Level Data

Data for individual businesses is provided by Infogroup, which maintains a database of more than 16 million U.S. business entities. Note that in aggregate it will not be consistent with Emsi labor market data due to differences in definitions, methodology, coverage, and industry/geographic classification.

State Data Sources

This report uses state data from the following agencies: Alabama Department of Industrial Relations; Alaska Department of Labor and Workforce Development; Arizona Department of Administration, Office of Employment and Population Statistics; Arkansas Department of Workforce Services; California Labor Market Information Department; Colorado Department of Labor and Employment; Connecticut did not provide us with a data source; Delaware Office of Occupational and Labor Market Information, Delaware Wages 2004; District of Columbia Department of Employment Services; Florida Department of Economic Opportunity; Georgia Department of Labor, Workforce Information and Analysis, Occupational Information Services Unit; Hawaii Department of Labor and Industrial Relations, Research and Statistics Office; Idaho Department of Labor; Illinois Department of Employment Security, Employment Projections; Indiana Department of Workforce Development; Iowa Workforce Development; Kansas Department of Labor, Labor Market Information Services, Kansas Wage Survey; Kentucky Office of Employment and Training; Louisiana Department of Labor; Maine did not provide us with a data source; Maryland Department of Labor, Licensing and Regulation, Office of Labor Market Analysis and Information; Massachusetts Executive Office of Labor and Workforce Development; Michigan Department of Labor and Economic Growth, Bureau of Labor Market Information and Strategic Initiatives; Minnesota Department of Employment and Economic Development; Mississippi Department of Employment Security; Missouri Department of Economic Development; Montana Department of Labor and Industry, Research and Analysis Bureau; Nebraska Workforce Development; Nevada Department of Employment, Training and Rehabilitation, Information Development and Processing Division, Research and Analysis Bureau; New Hampshire Department of Employment Security; New Jersey Department of Labor and Workforce Development; New Mexico Department of Labor, Bureau of Economic Research and Analysis; New York Department of Labor, Division of Research and Statistics; North Carolina Department of Commerce, Labor and Economic Analysis Division; North Dakota Job Service, Labor Market Information Center; Ohio Department of Job and Family Services, Labor Market Information Division; Oklahoma Employment Security Commission; Oregon Employment Department, Oregon Labor Market Information System; Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis; Rhode Island did not provide us with a data source; South Carolina Employment Security Commission, Labor Market Information Department; South Dakota Department of Labor, Labor Market Information Division; Tennessee Department of Labor and Workforce Development, Research and Statistics Division; Texas Workforce Commission; Utah Department of Workforce Services; Vermont did not provide us with a data source; Virginia Employment Commission, Economic Information Services; Washington State Employment Security Department, Labor Market and Economic Analysis Branch; West Virginia Bureau of Employment Programs, Research Information & Analysis Division; Wisconsin Department of Workforce Development, Bureau of Workforce Information; Wyoming Department of Employment, Research and Planning

Parameters

Regions

Code	Description
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Timeframe

2015 - 2016

Datarun

2017.1 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors