



Louisiana Energy Workforce Outlook

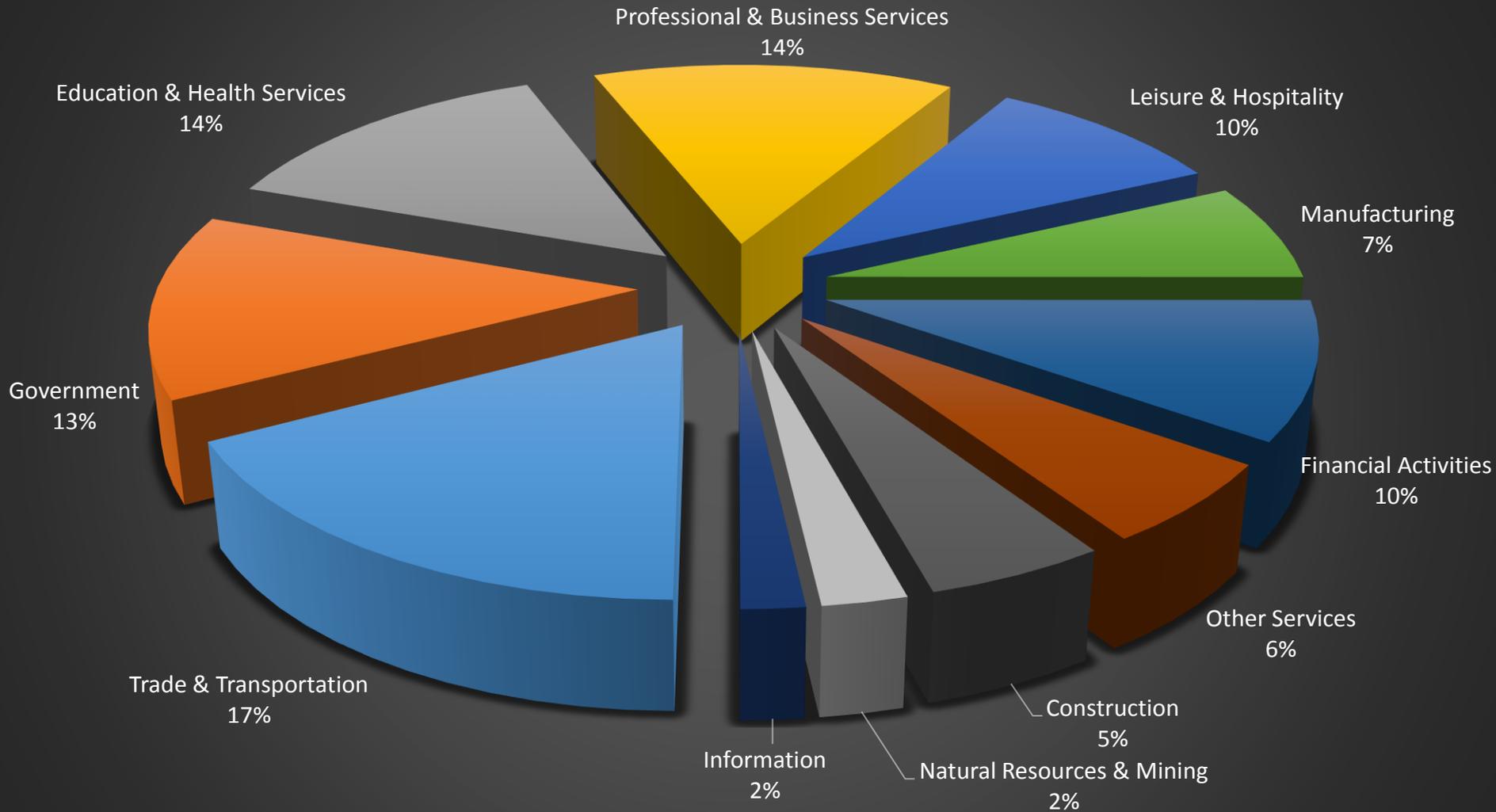
Stephen R. Barnes, PhD



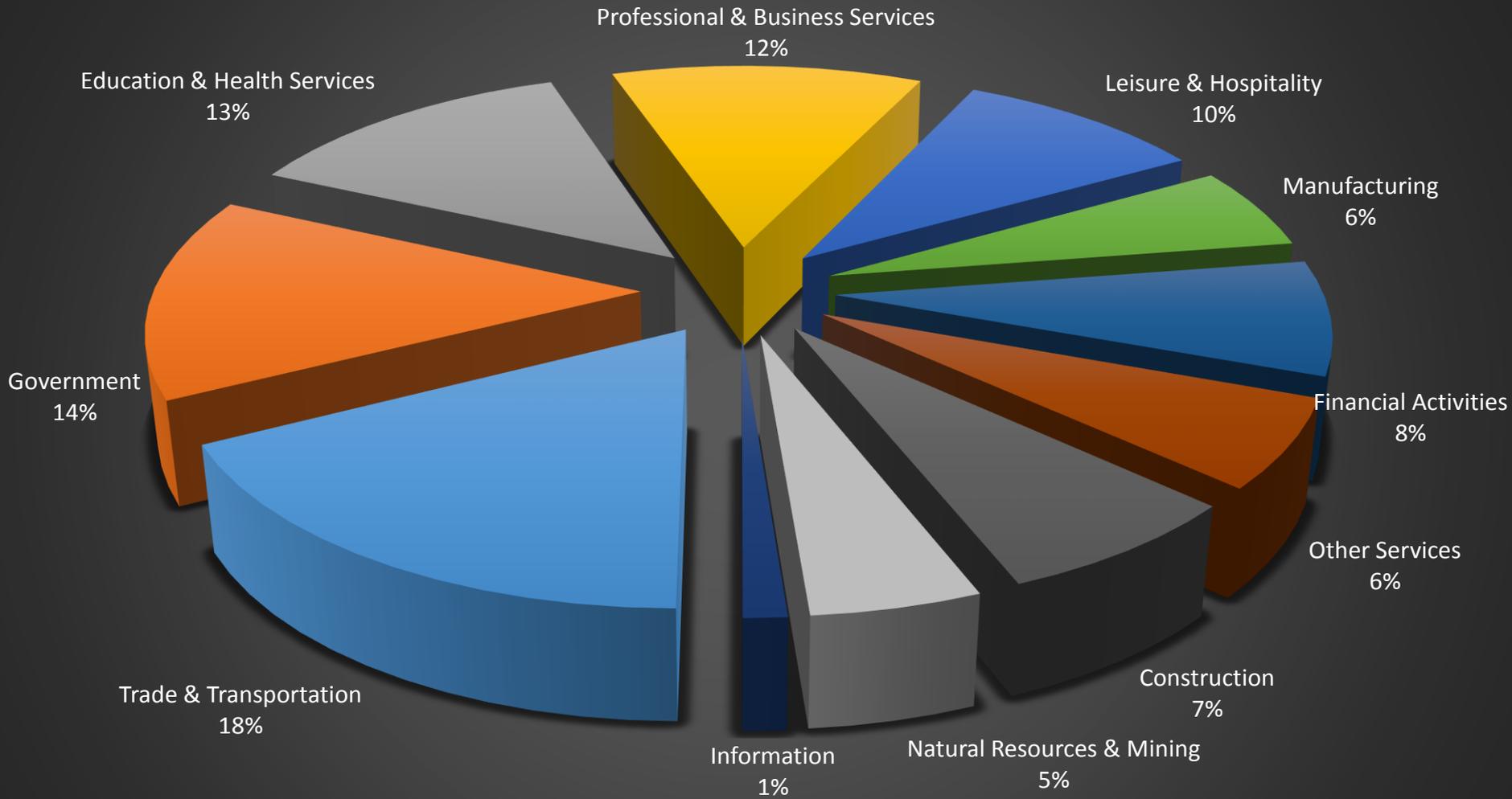
E. J. Ourso College of Business
Division of Economic Development



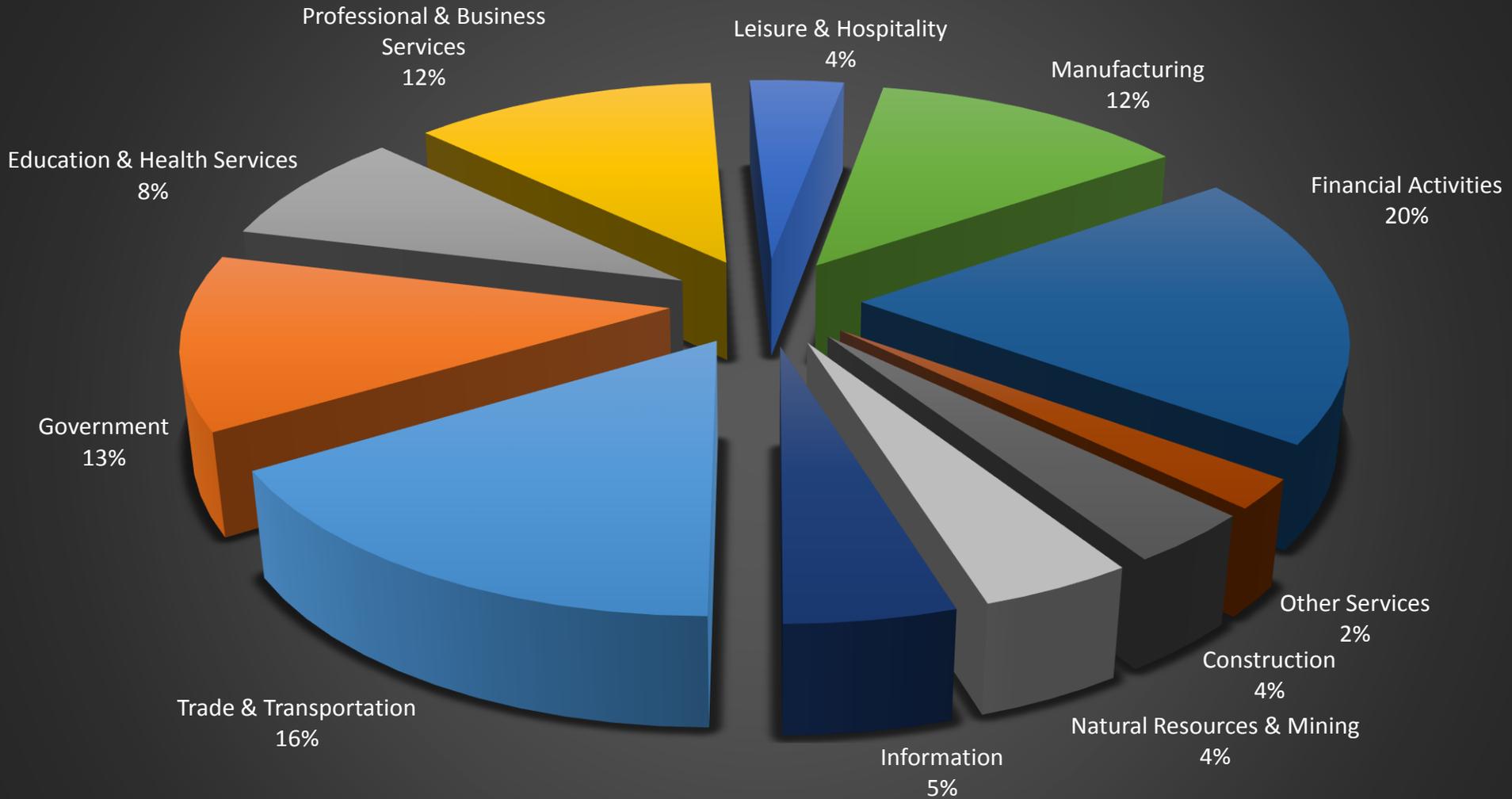
US Employment by Industry



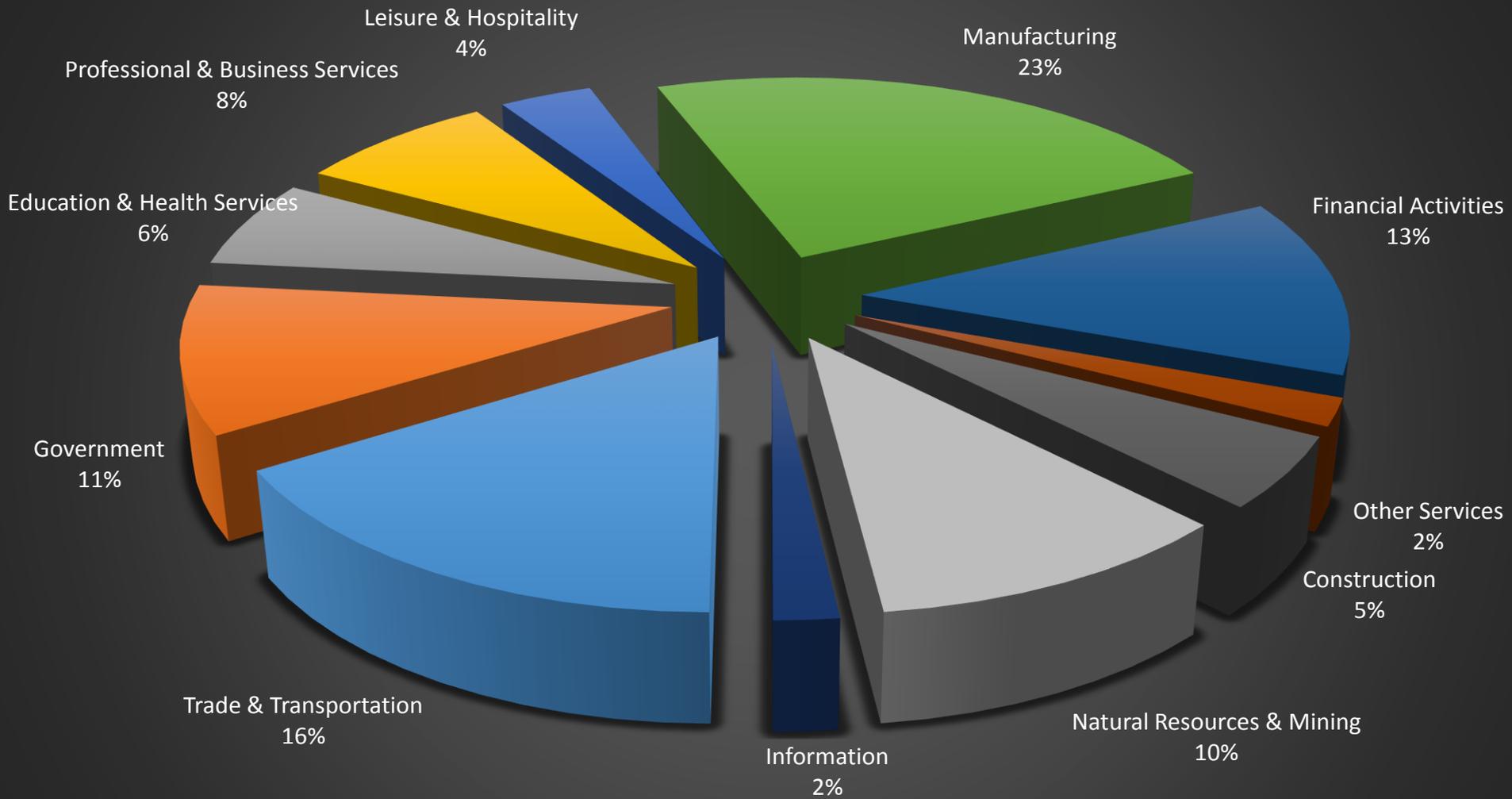
LA Employment by Industry



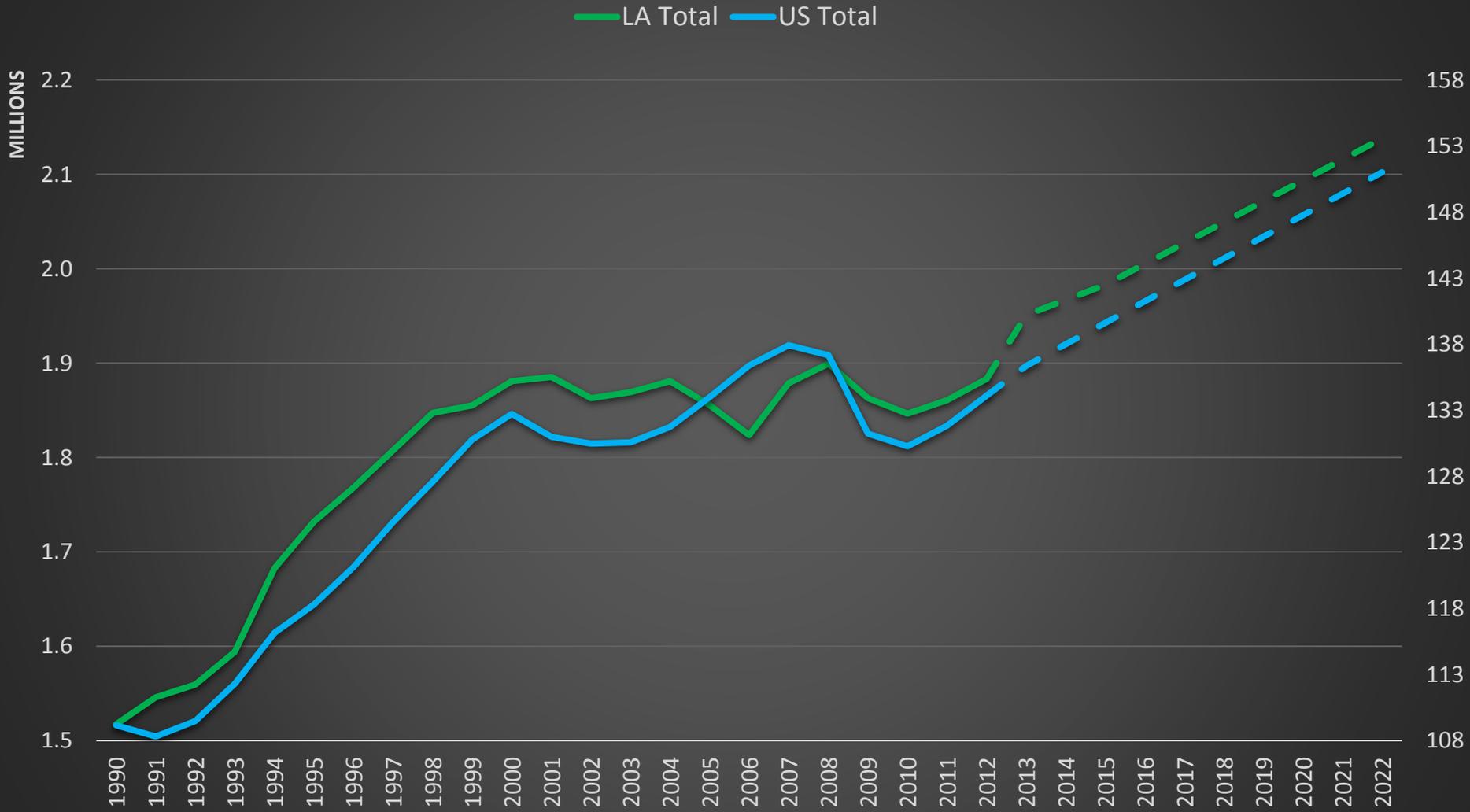
US GDP by Industry



Louisiana GDP by Industry



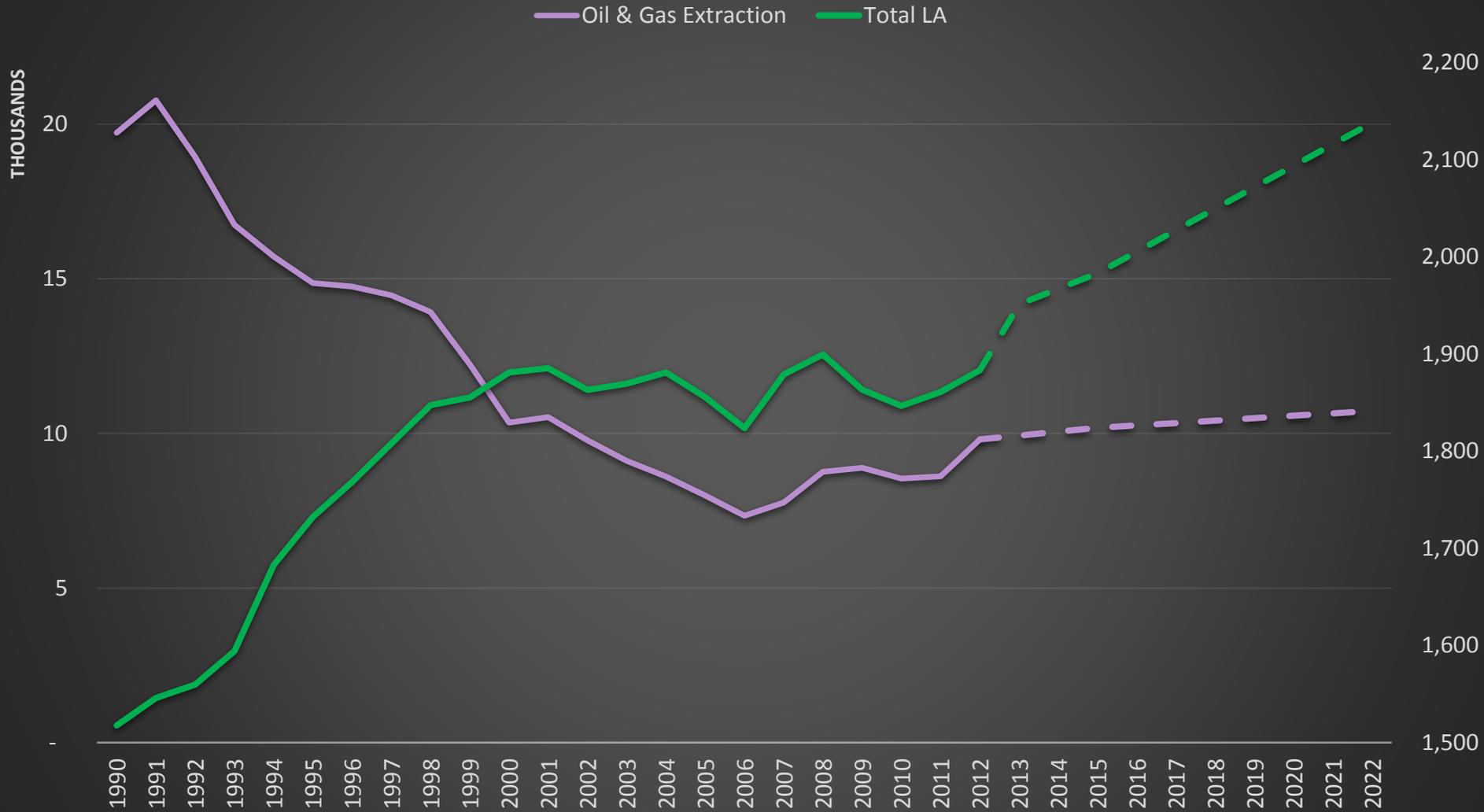
Historical Employment & Projections



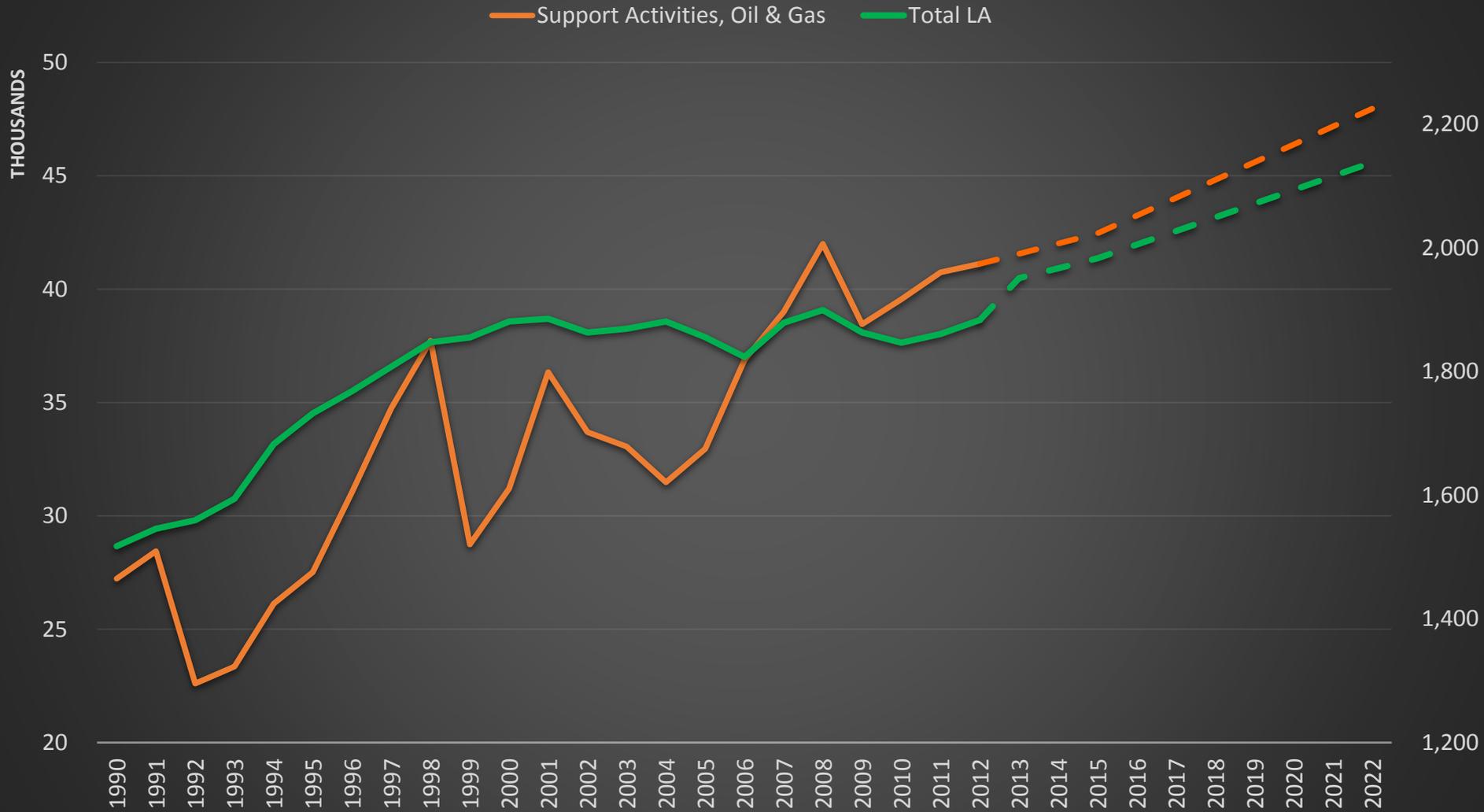
Core Energy Industries

- Oil & Gas Extraction
- Support Activities for Mining & Extraction
- Pipeline Transportation
- Utilities

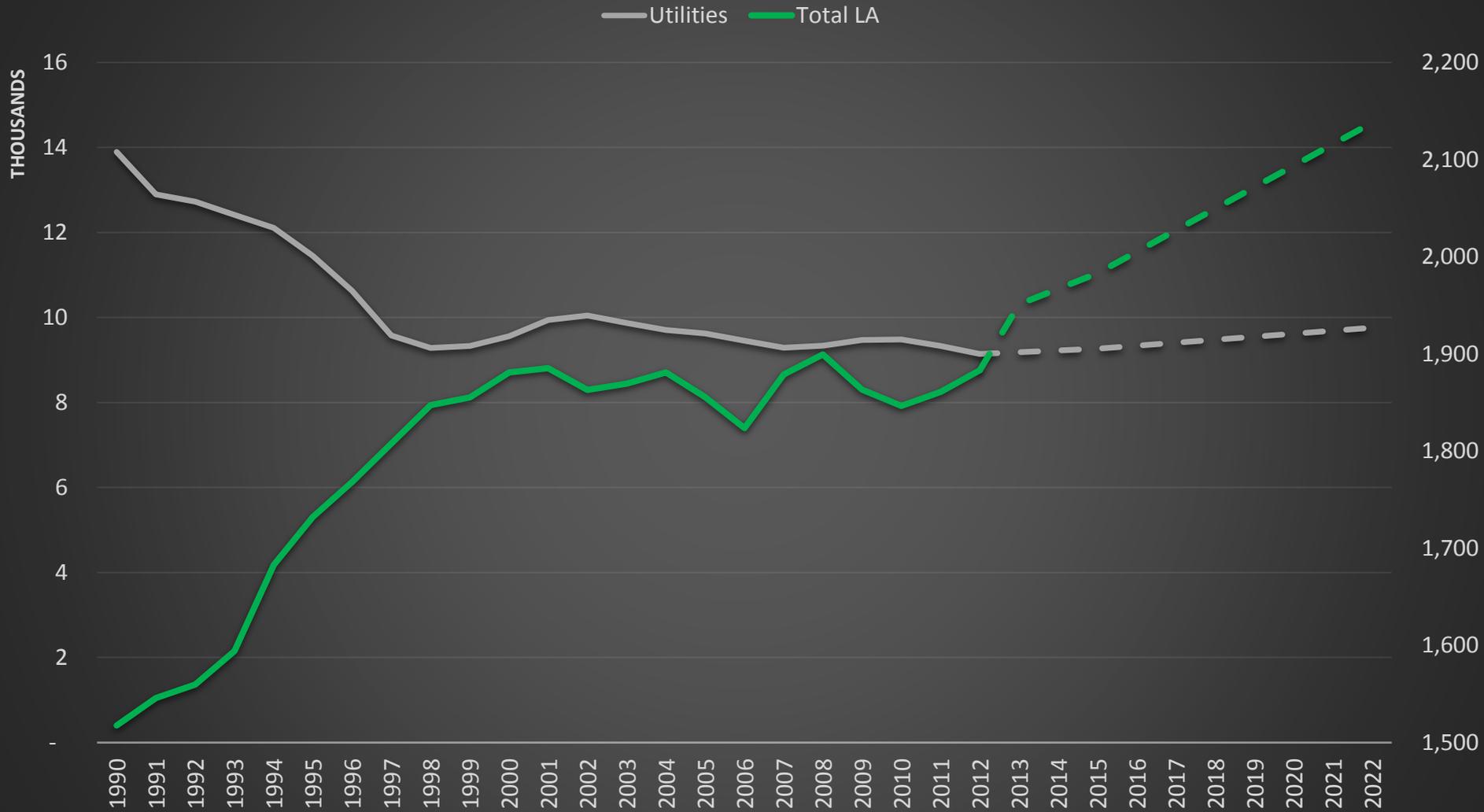
Historical Employment & Projections



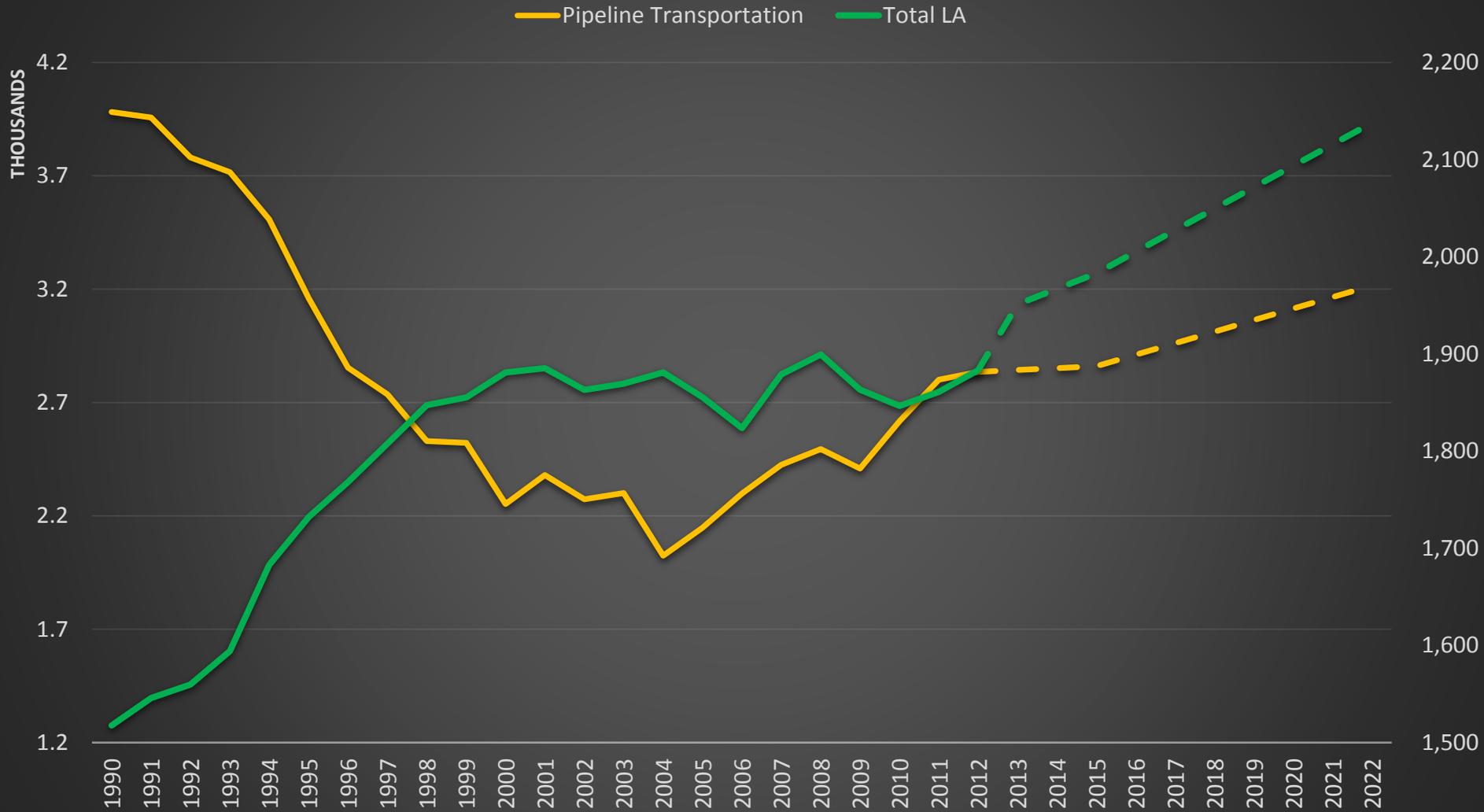
Historical Employment & Projections



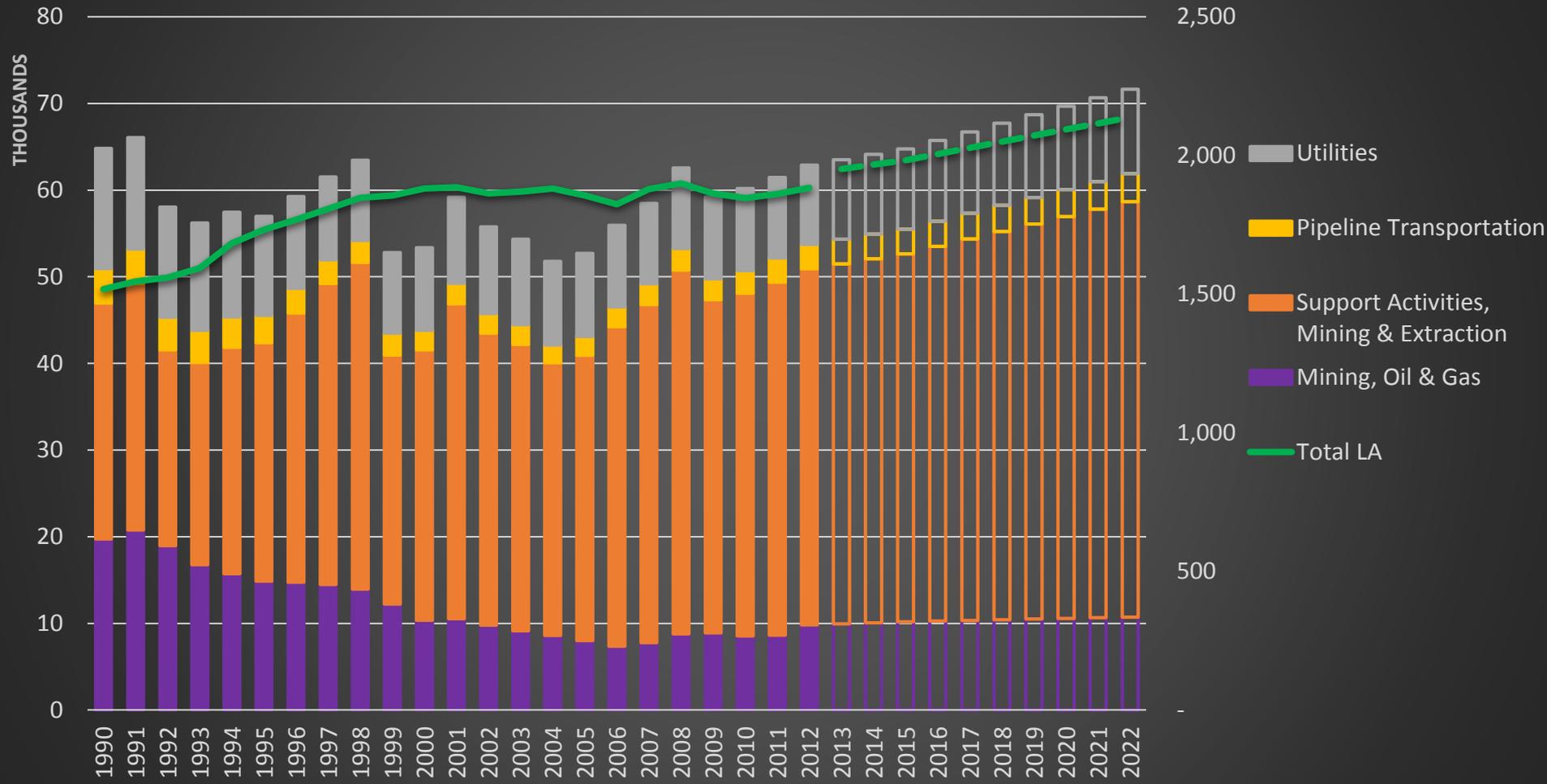
Historical Employment & Projections



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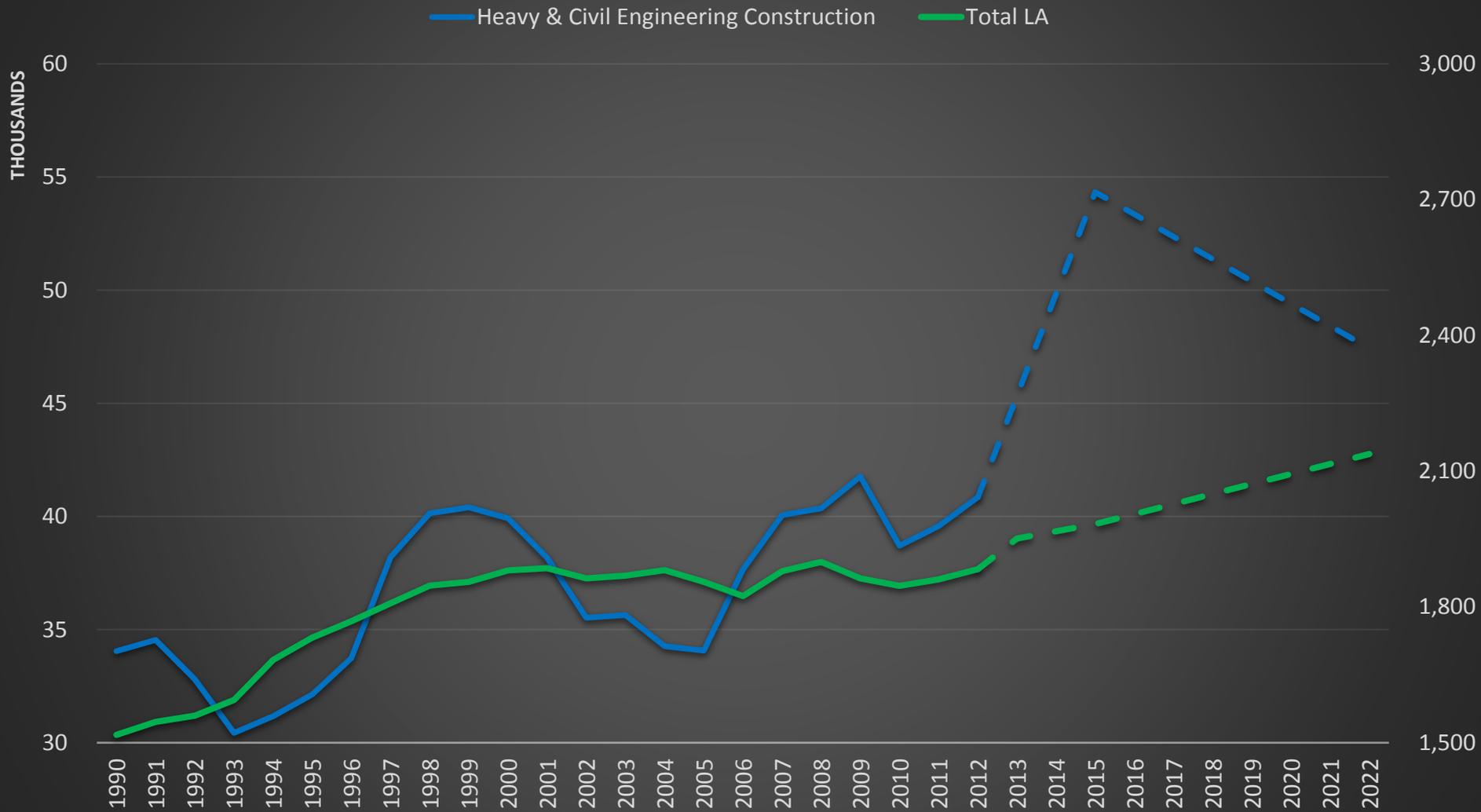
Core Energy Employment Outlook



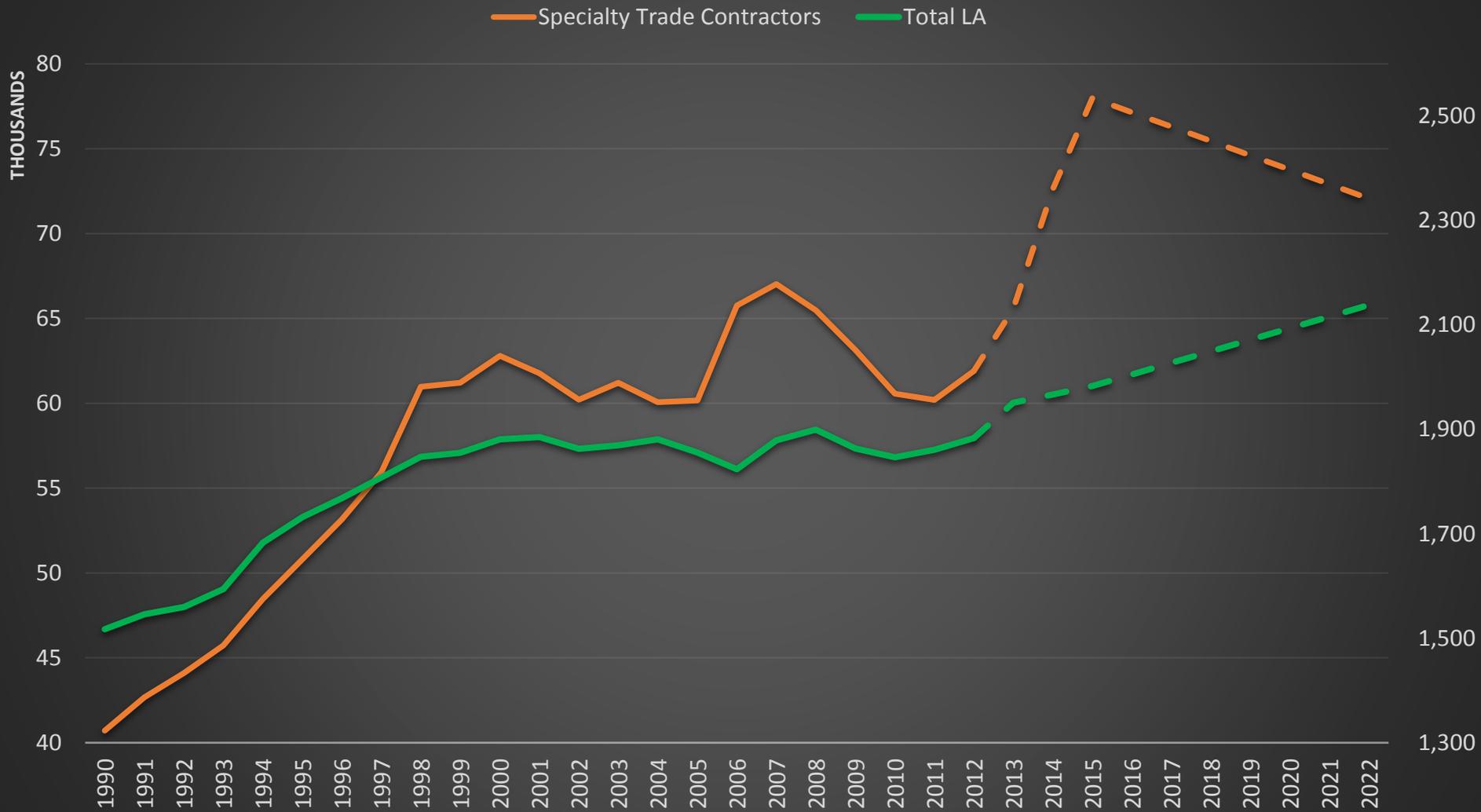
Closely-Related & Support Industries

- Petroleum Manufacturing
- Chemical Manufacturing
- Heavy & Civil Engineering Construction
- Specialty Trade Contractors
- Water Transportation
- Rail Transportation
- Support Activities for Transportation
- Machinery Manufacturing

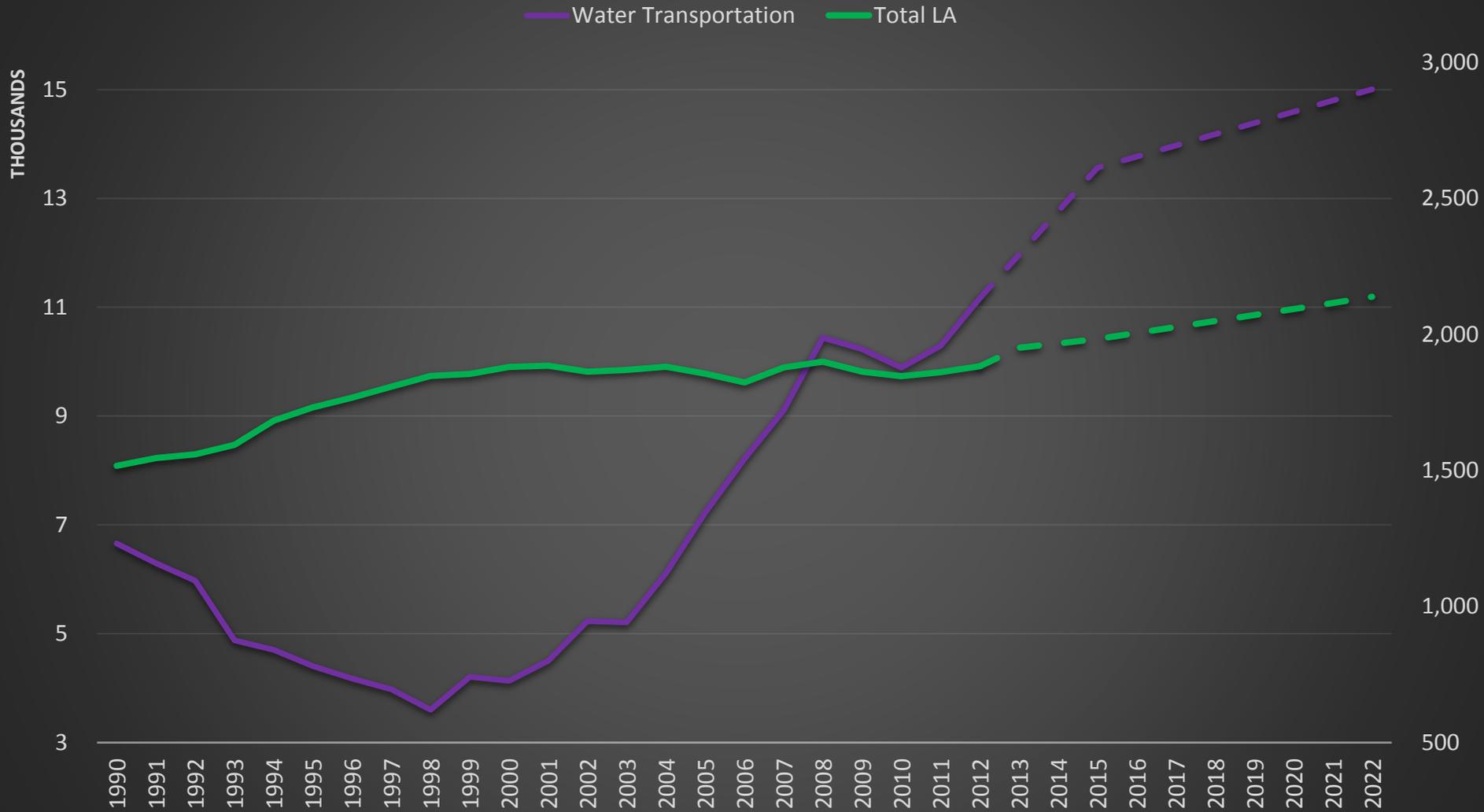
Historical Employment & Projections



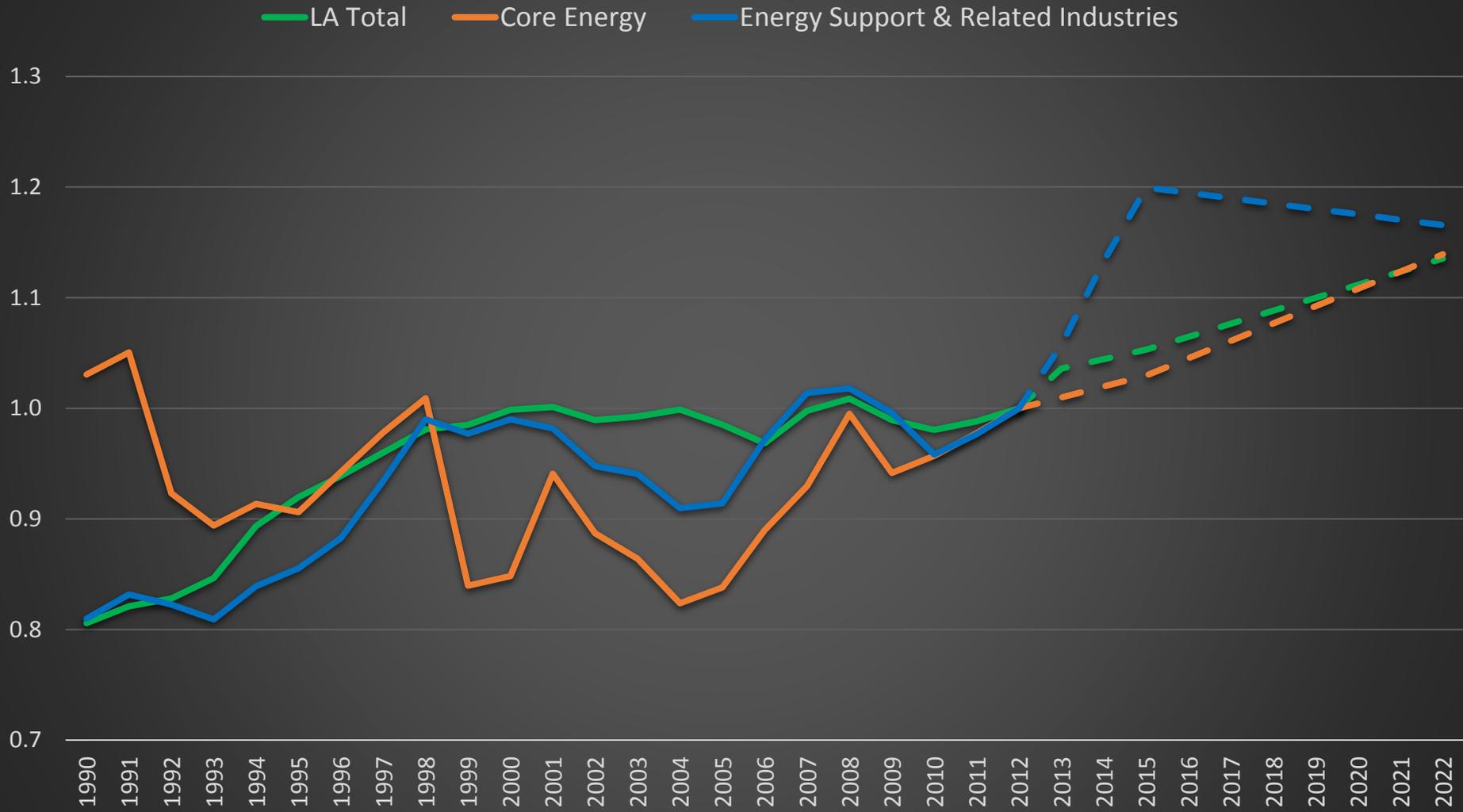
Historical Employment & Projections



Historical Employment & Projections



Historical Employment & Projections



Recent Workforce Trends in Energy

- Upstream growth has soaked up recent increases in workforce supply
- Downstream manufacturing expansions generating large increases in workforce demand
- Baby boomer retirements plus the oil and gas bust of 1980s leading to increase in replacement demand

Top Core Energy Occupations

- Service Unit Operators, Oil, Gas, and Mining
- Roustabouts, Oil and Gas
- Riggers
- Rotary Drill Operators, Oil and Gas
- Laborers and Freight, Stock, and Material Movers, Hand
- Crane and Tower Operators
- Welders, Cutters, Solderers, and Brazers
- Maintenance and Repair Workers, General
- First-Line Supervisors of Construction Trades and Extraction Workers
- Electrical Power-Line Installers and Repairers
- Petroleum Engineers
- Industrial Machinery Mechanics
- Derrick Operators, Oil and Gas
- General and Operations Managers
- Production Workers, All Other
- Petroleum Pump System Operators, Refinery Operators, and Gaugers
- Maintenance Workers, Machinery
- Heavy and Tractor-Trailer Truck Drivers
- Electro-Mechanical Technicians
- Electricians
- First-Line Supervisors of Production and Operating Workers
- Captains, Mates, and Pilots of Water Vessels

Competition for Workers

Riggers

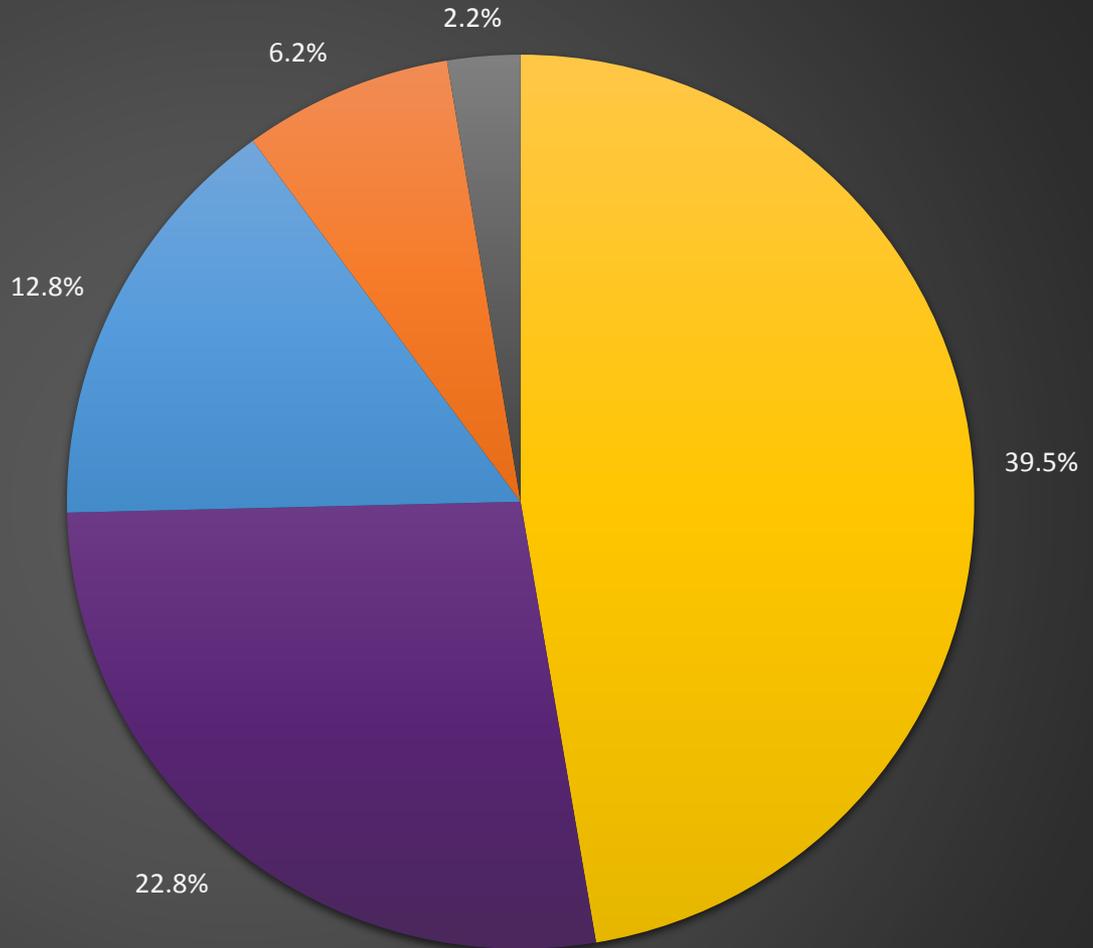
- Mining
- Transportation and Warehousing
- Construction
- Manufacturing
- Other

Staffing Ratios

Mining & Extraction: 3.6%

Annual Replacement

2.5%



Competition for Workers

Crane & Tower Operators

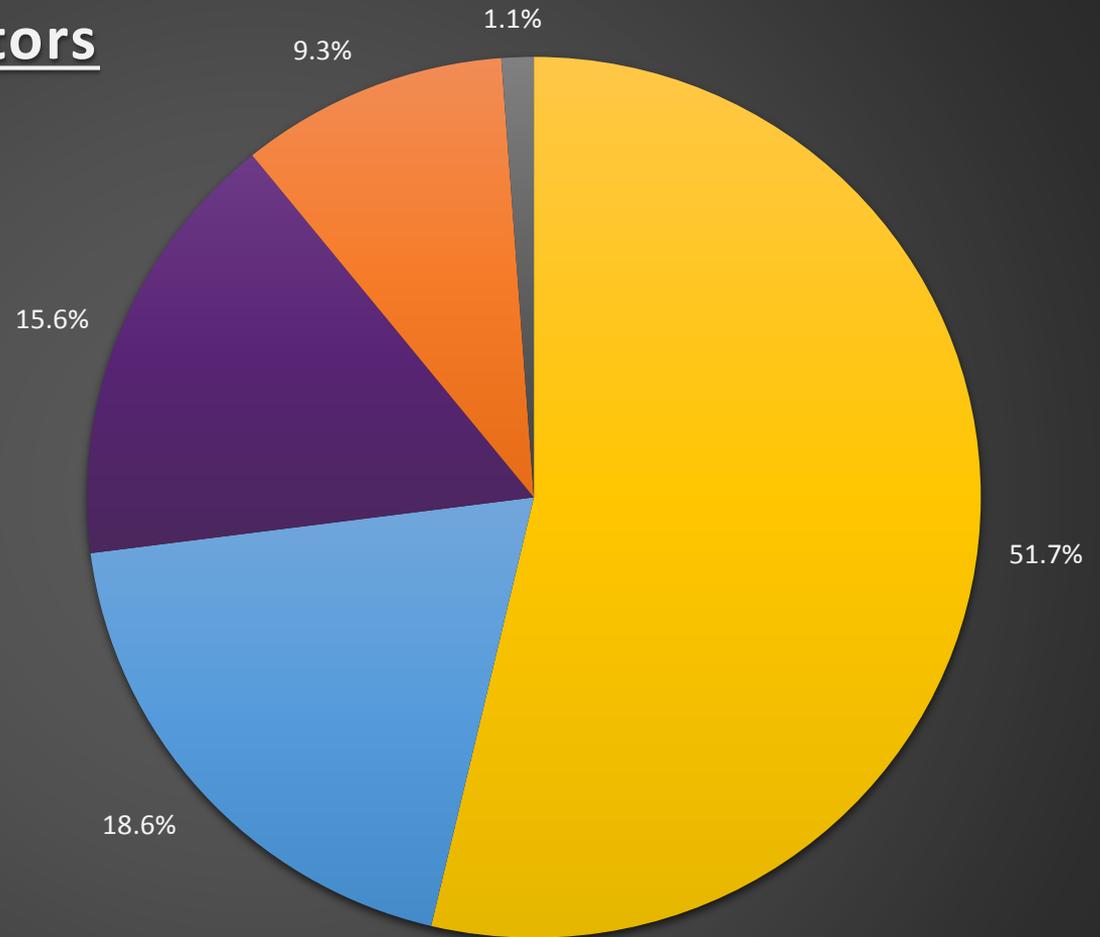
- Mining
- Construction
- Transportation and Warehousing
- Manufacturing
- Other

Staffing Ratios

Mining & Extraction: 2.8%

Annual Replacement

3.5%



Competition for Workers

Electricians

- Construction
- Manufacturing
- Self-Employed
- Mining
- Utilities
- Government
- Educational Services
- Other Services (except Public Administration)
- Management of Companies and Enterprises
- Other

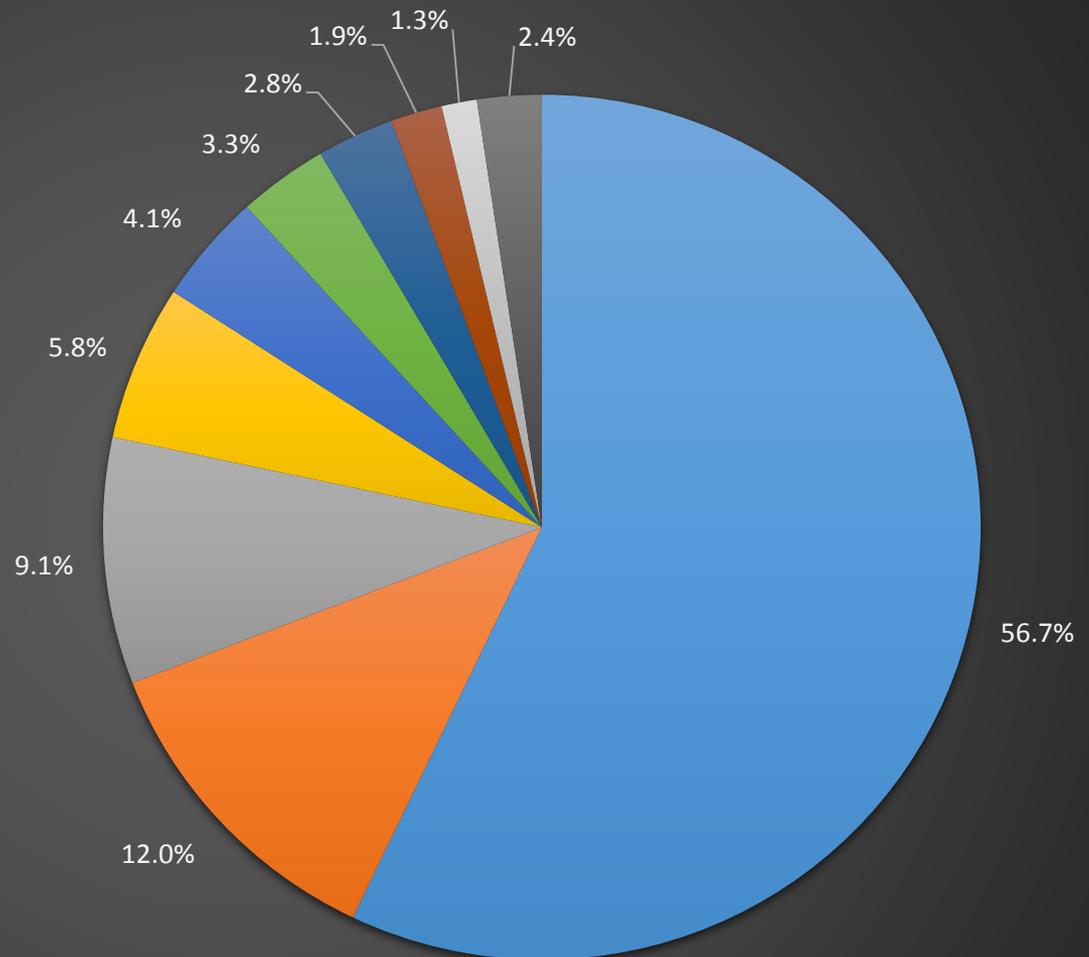
Industry Staffing Ratios

Utilities: 5.9%

Mining & Extraction: 1.4%

Annual Replacement

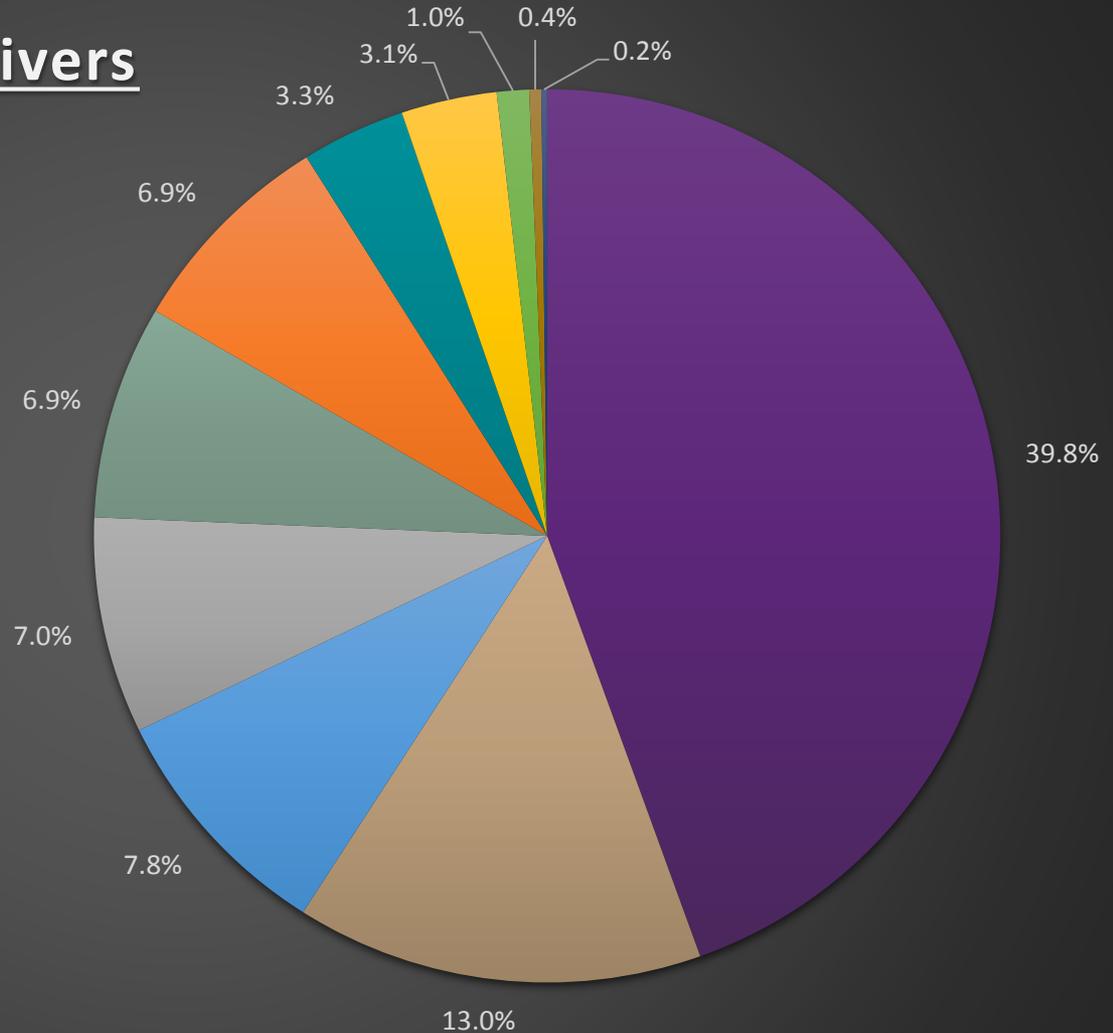
3.0%



Competition for Workers

Heavy Tractor & Truck Drivers

- Transportation and Warehousing
- Wholesale Trade
- Construction
- Self-Employed
- Administrative and Support and Waste Management and Remediation Services
- Manufacturing
- Retail Trade
- Mining
- Government
- Other Services (except Public Administration)
- Utilities



Staffing Ratios

Mining & Extraction: 1.7%

Utilities: 0.9%

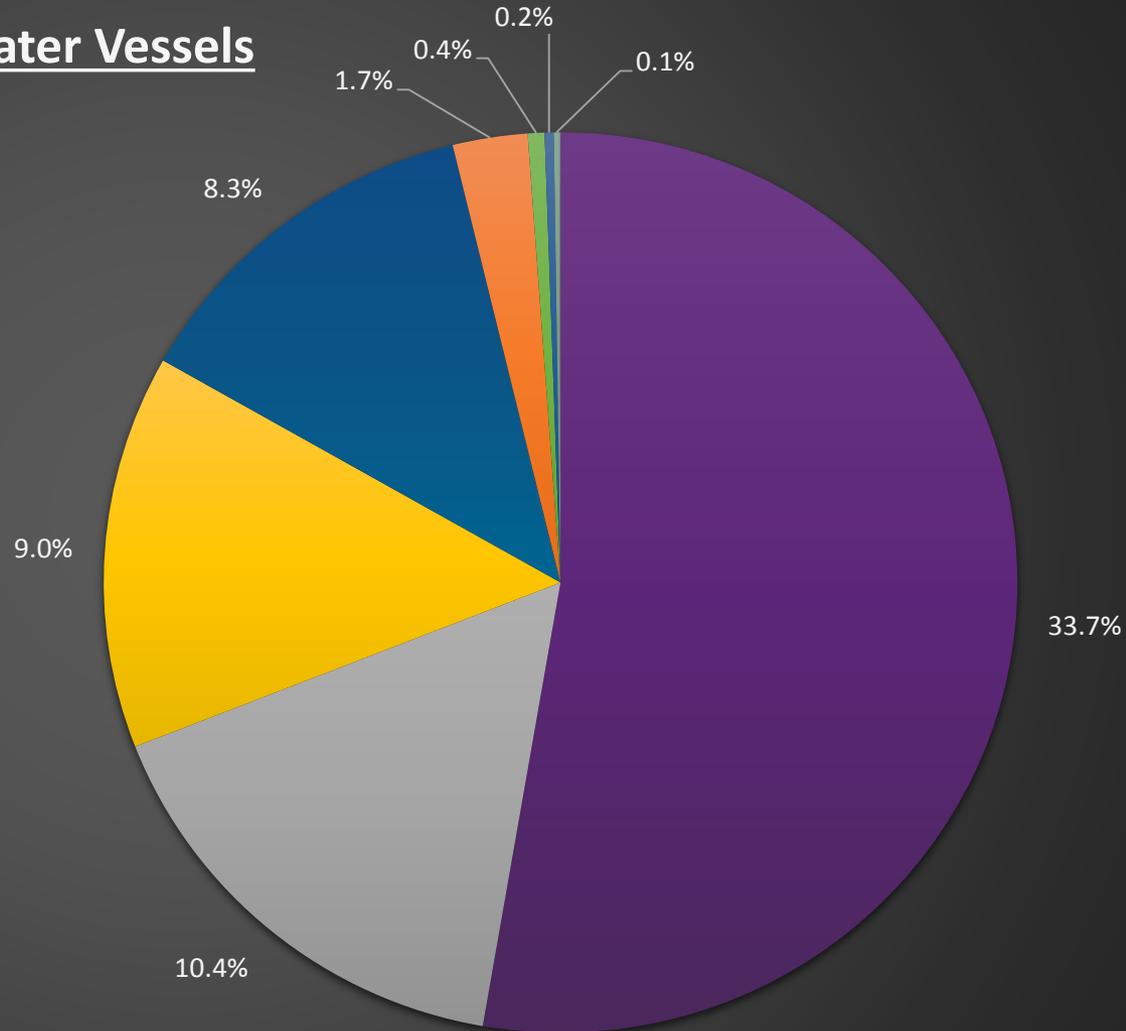
Annual Replacement

1.6%

Competition for Workers

Captains, Mates, and Pilots of Water Vessels

- Transportation and Warehousing
- Self-Employed
- Mining
- Real Estate and Rental and Leasing
- Manufacturing
- Government
- Arts, Entertainment, and Recreation
- Administrative and Support and Waste Management and Remediation Services



Industry Staffing Ratios

Mining & Extraction: 1.3%

Annual Replacement

4.7%

Replacement Rates

- Several energy occupations key to multiple industries experiencing turnover rates above statewide average (2.49%)
- Derrick Operators, Oil & Gas: 4.4%
- Rotary Drill Operators: 4.1%
- Welders, Cutters, Solderers : 3.0%
- Petroleum Pump System Operators: 3.7%
- Captains, Mates of Water Vessels: 4.6%
- Freight, Stock, & Material Movers: 3.1%
- Gas Plant Operators: 3.2%
- Civil Engineers: 2.5%
- Mechanical Engineers: 3.5%
- Mining & Geological Engineers: 3.6%
- Health & Safety Engineers: 2.6%
- Operating Engineers: 3.3%
- Mobile Heavy Eqpt. Mechanics: 2.9%
- Power Line Installers & Repairers: 3.4%
- Power Distributors & Dispatchers: 3.9%
- Electricians: 3.0%

2022 Outlook for Top Occupations

Occupation	2012 Base	New Growth	Replacement	Total Demand
Freight, Stock, and Material Movers, and Laborers	39,440	6,200	12,200	18,400
Heavy & Tractor-Trailer Truck Drivers	27,860	3,900	4,500	8,400
Maintenance & Repair Workers, General	28,650	3,800	5,500	9,300
Welders, Cutters, Solderers, & Brazers	14,590	2,100	4,400	6,500
First-line Supervisors of Construction & Extraction Workers	12,050	1,900	1,300	3,200
Electricians	10,830	1,500	3,200	4,700
First-line Supervisors of Production & Operating Workers	10,420	1,100	1,500	2,600
Captains, Mates, & Pilots of Water Vessels	9,270	1,700	4,300	6,000
Industrial Machinery Mechanics	6,890	2,200	2,000	4,200
Riggers	3,550	1,100	900	1,900
Service Unit Operators, Oil, Gas, & Mining	5,230	900	2,100	3,000
Crane & Tower Operators	4,640	800	1,600	2,400

2022 Employment Outlook

- Strong employment growth driven by energy
 - US Forecast: 12.6%
 - LA Forecast: 13.0%
 - LA Core Energy Forecast: 13.9%
 - LA Energy Support Forecast: 16.6%
- Replacement of existing workforce
 - US Annual Replacement Rate: 2.3%
 - LA Annual Replacement Rate: 2.5%
 - Energy Occupations Replacement Rate: 2.9%

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