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Assisting students as they  
prepare for college and  
careers in Transportation,  
Distribution & Logistics

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## Transportation, Distribution & Logistics

### Career Clusters Prepare all Students for College and Careers

Career Clusters prepare students for the information age as schools are striving for higher achievement in science, math and communication. One key to improving student achievement is providing students with relevant contexts for learning. Career Clusters offer a context for learning by linking what students learn in school with the knowledge and skills they need for success.

#### The Concept of Career Clusters

Career Clusters identify the knowledge and skills students need as they follow a pathway towards their career goals. The knowledge and skills identified form a strong foundation needed by students for success whether in high school, a post-secondary institution or at the workplace.

#### How to Pursue an Education in Transportation, Distribution and Logistics

There are thousands of challenging educational opportunities within the high-skilled world of Transportation, Distribution and Logistics. Students begin preparing in high school or middle school. They excel in communications, math, science and technology.

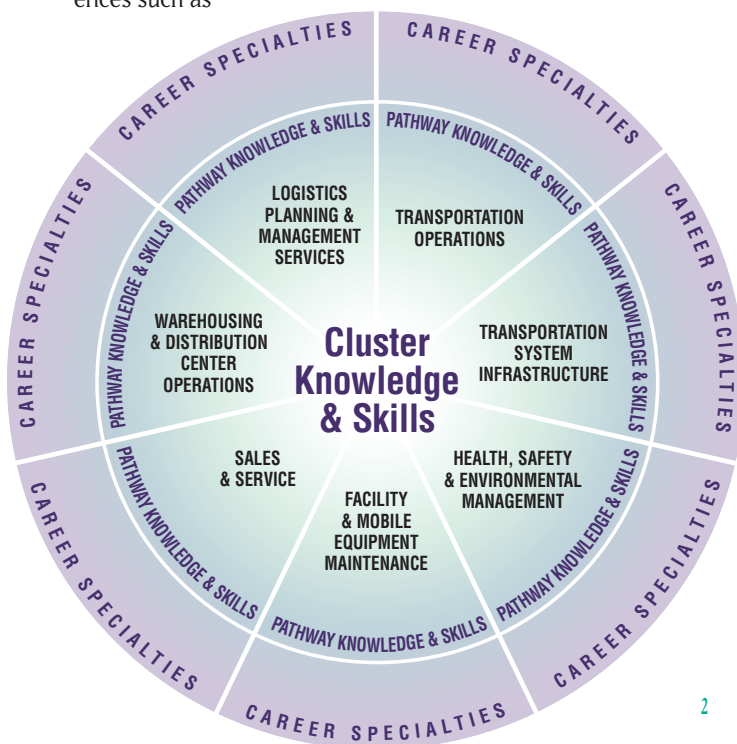


site visits, job shadowing, and internships. If they choose, they may achieve valuable skill certifications while in high school that lead to employment. Colleges and universities offer advanced

degrees and industry certifications that prepare students for entry-level, professional and technical careers. Along the way, career guidance professionals assist students in assessing their educational goals, interests, abilities and skills to ensure a fit to the cluster's many pathway options. Students participate in coordinated workplace learning experiences such as

degrees and industry certifications that prepare students for entry-level, professional and technical careers.

#### Making the Transportation, Distribution and Logistics Cluster Work for You



## Career Pathways at a Glance

The Transportation, Distribution and Logistics Career Cluster is divided into seven pathways. Pathways are grouped by the knowledge and skills required of occupations in these career fields. Each pathway provides instruction, which will give you the foundations necessary to become successful in any of several careers and educational pursuits.

### The Seven Pathways

- Transportation Operations
- Logistics Planning and Management
- Warehousing and Distribution Center Operations
- Facility and Mobile Equipment Maintenance
- Transportation Systems/Infrastructure Planning, Management and Regulations
- Health and Safety Management
- Sales and Service



### What is the Transportation, Distribution and Logistics Cluster?

This diverse Career Cluster exposes students to careers and businesses involved in the planning, management, and movement of people, materials, and products by road, air, rail and water. It also includes related pro-

fessional and technical support services such as infrastructure planning and management, logistic services, and the maintenance of mobile equipment and facilities.

### Employment Outlook

Transportation, distribution and logistics is a critical sector of the United States economy. Almost 10 million

people are employed in transportation or transportation-related occupations. High-growth industry and career specialties offer high-tech, high-wage opportunities. This industry sector represents over 11 percent of the gross domestic product, and is among the fastest growing of all sectors. The Bureau of Labor Statistics projects a 14.7 percent increase in employment in this sector through 2008. There will be a growing number of career opportunities in a variety of professional and technical occupa-



tions as well as high-paid, entry-level occupations that can provide career advancement opportunities.



## Transportation Operations

### Overview

Careers in the Transportation Operations Pathway are really on the move! These are the people that drive or pilot the vehicles that transport people and freight. Equally important to this pathway are the support people who ensure that any cargo transport is safe, secure, and on time.

### Sample Occupations and careers included in this career pathway

- Transportation managers
- Pilots
- Locomotive engineers
- Flight engineers and attendants
- Truck and bus drivers
- Air traffic controllers
- Ship and boat captains
- Aircraft cargo handling supervisors



- Railroad brake signal and switch operators
- Airfield operations specialists
- Terminal Supervisors

### Post-Secondary Certificates & Licensure Requirements

- Commercial Pilot's Licenses are issued by the Federal Aviation Administration (FAA).
- Air Traffic Controllers are selected through a competitive Federal Civil Service and FAA process.



- Most rail transportation workers receive extensive on-the-job training.
- Bus and truck drivers are required to obtain a Commercial Driver's License (CDL) from the State in which they live.
- Requirements for the water transportation industry are established and regulated by the U.S. Coast Guard.
- Available certificates include Certified Professional Fleet Manager (CPFM).

- Associate and B.S. Degrees are available in Business, Logistics, Engineering and Transportation.

### Employment Outlook

Overall, growth in the national economy is expected to require significant increases in the use of air, rail and ship transportation

operations. In the airline industry, keen competition is projected for most of the occupations as applicants exceed job openings. Persons seeking employment as Flight Attendants with a

college degree or experience in dealing with the public should find favorable job opportunities. Recently, both the transit and trucking industries have reported difficulties in attracting qualified applicants. Individuals interested in intercity or long-distance positions should experience ample opportunities.

## Logistics Planning and Management

### Overview

Careers in the Logistics Planning and Management pathway involve the planning, management and control of the physical distribution of materials, products, and people. Often, more than one mode of transportation is used as distribution efforts can be complex, even national or global. These people are responsible for the plans which will ensure that cargo arrives where it should, when it should, in the safest, most economical manner.

### Occupations and careers included in this career pathway

- Logisticians
- Logistics managers
- Logistics engineers and analysts
- Consultants
- International logistics specialists

### Post-Secondary Certificates and Licensure Requirements:

- Associate and B.S. degrees in Business, Marketing, Logistics, Engineering and Transportation
- Certificates available include Certified Professional Logistician (CPL) and Certified in Transportation and Logistics (CTL) certificates

### Employment Outlook

Growth is projected for the occupations in this growing career field. Many opportunities should be available for qualified applicants in the private sector, for example with large manufacturers, and wholesale and retail trade, and in government, especially with the Armed Forces.





## Warehousing and Distribution Center Operations

### Overview

Careers in Warehousing and Distribution Center Operations focus on the operation of transportation and distribution facilities including ports, terminals, warehouses, and other types of facilities. All cargo needs to be tracked, sorted, labeled, and loaded accurately and safely. Timing is also important, since many loads must adhere to a schedule in order to satisfy the needs of the customer.

### Occupations and careers included in this career pathway

- Storage and distribution managers
- Warehouse managers
- Industrial and packaging engineers
- Shipping and receiving supervisors

- Production, planning, and expediting clerks
- Freight and material movers and supervisors

### Post-Secondary Certificates and Licensure Requirements

- Many colleges offer two- and four-year degree programs in Engineering, Transportation and Business.
- Many managers and supervisors take advantage of on-the-job training and gain job-related experience in order to advance in their careers.



- Associate Degrees are available in Warehouse management.



### Employment Outlook

Growth is projected for the occupations in this pathway as the national economy expands. The warehousing industry itself is projected to grow by around 19% through 2008. With the continuing introduction of automation in this industry, the demand for qualified managers and supervisors will provide numerous job opportunities. Employers increasingly prefer to hire entry-level managers and supervisors with post-secondary training and computer skills.



## Facility and Mobile Equipment Maintenance

### Overview

Careers in the Facility and Mobile Equipment Maintenance pathway include the maintenance, repair, and servicing of vehicles and trans-

portation facilities, as well as the refueling of mobile equipment. All transportation relies on equipment which must function as designed, whenever needed. The people in this pathway keep the equipment and machinery running while looking for more efficient, safe, and cost-effective ways to do so.

### Occupations and careers included in this career pathway

- Industrial equipment mechanics
- Electricians and technicians
- Facility maintenance managers and engineers
- Mobile equipment maintenance managers, technicians and mechanics

- Aerospace engineering and operations technicians
- Diesel engine specialists

### Post-Secondary Certificates and Licensure Requirements

- Colleges offer four-year degree programs in Engineering and related fields.
- Many mechanics and technicians in this field learn their trade through a four-year apprenticeship program, sponsored by a local trade union, combining classroom instruction with on-the-job training.
- Many technical schools and community colleges offer formal training programs in equipment maintenance and repair
- Electronics technicians can seek certification through the International Society of Certified Electronics

Technicians (ISCET) or the Electronics Technicians Association (ETA).

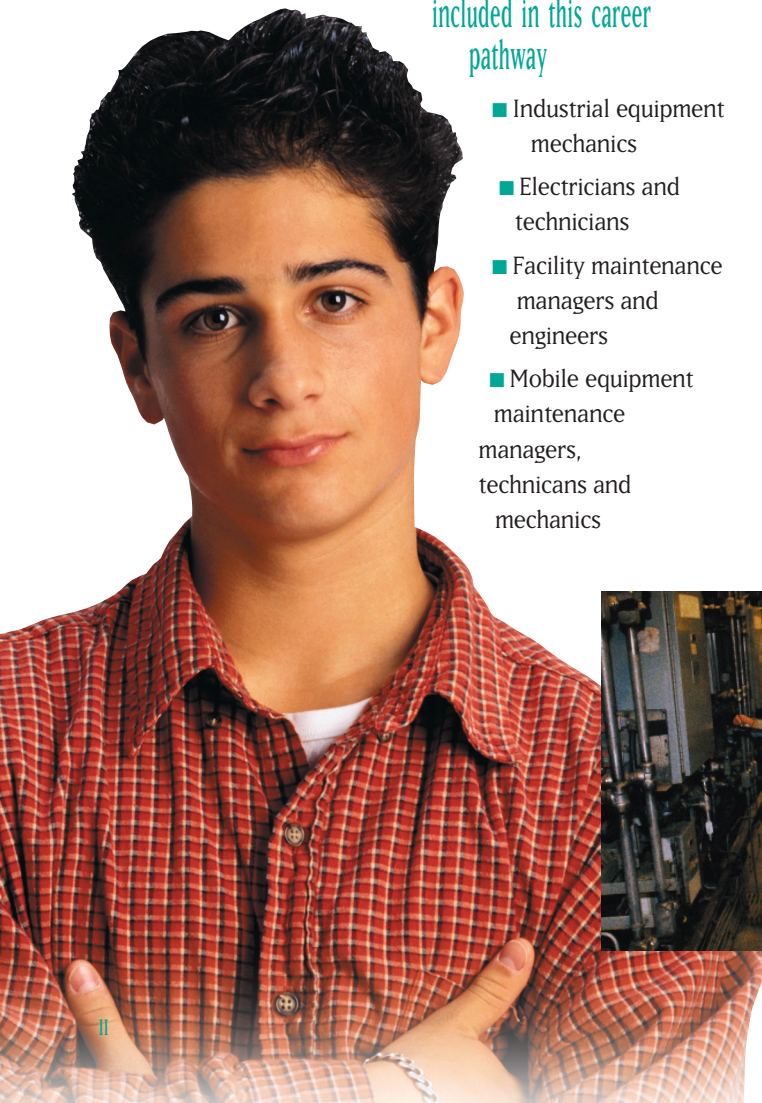
- Certificates are available in Airframe/Powerplant Mechanic, Avionics Repair and Aviation Maintenance as well as Automotive Service Excellence (ASE).

### Employment Outlook

As more firms continue to introduce expanded automation, the need for skilled applicants in this pathway will grow. Companies increasingly depend on technicians, engineers and mechanics to guard against equipment malfunction due



to the high cost of down time. Qualified applicants should encounter ample job opportunities.





## Transportation Systems/Infrastructure Planning, Management and Regulations

### Overview

Careers in the Transportation Systems/Infrastructure Planning, Management and Regulation pathway deal with all aspects of the design and operation of our public transportation systems — road, air, sea and rail. These functions are primarily the responsibility of people who are employed by federal, state and local transportation agencies. Many businesses work to assist these agencies in their efforts.

### Occupations and careers included in this career pathway

- Traffic engineers and technicians
- Urban and regional planners
- Civil engineers and technicians

- Vehicle and system inspectors
- Environmental compliance inspectors
- Federal, state, and local government transportation agency careers



### Post-Secondary Certificates and Licensure Requirements

- Many colleges offer four-year degree programs in Engineering, Public Administration and Urban Planning or two- and four-year programs in Engineering Technology and related fields.
- Technical institutes and vocational schools offer several training programs, from one to two years in length, including some associate degree programs.

- Most entry-level positions for urban and regional planners require a master's degree; nationally, there are about 80 accredited master's and 10 accredited bachelor's degree programs.
- Most inspector occupations require specialized certification through a government agency.
- The American Planning Association awards certificates as Certified Planners.

### Employment Outlook

Employment for occupations in this pathway is expected to grow faster than average as the national population and economy expand. Many of these positions are in Federal, State and Local Government agencies.



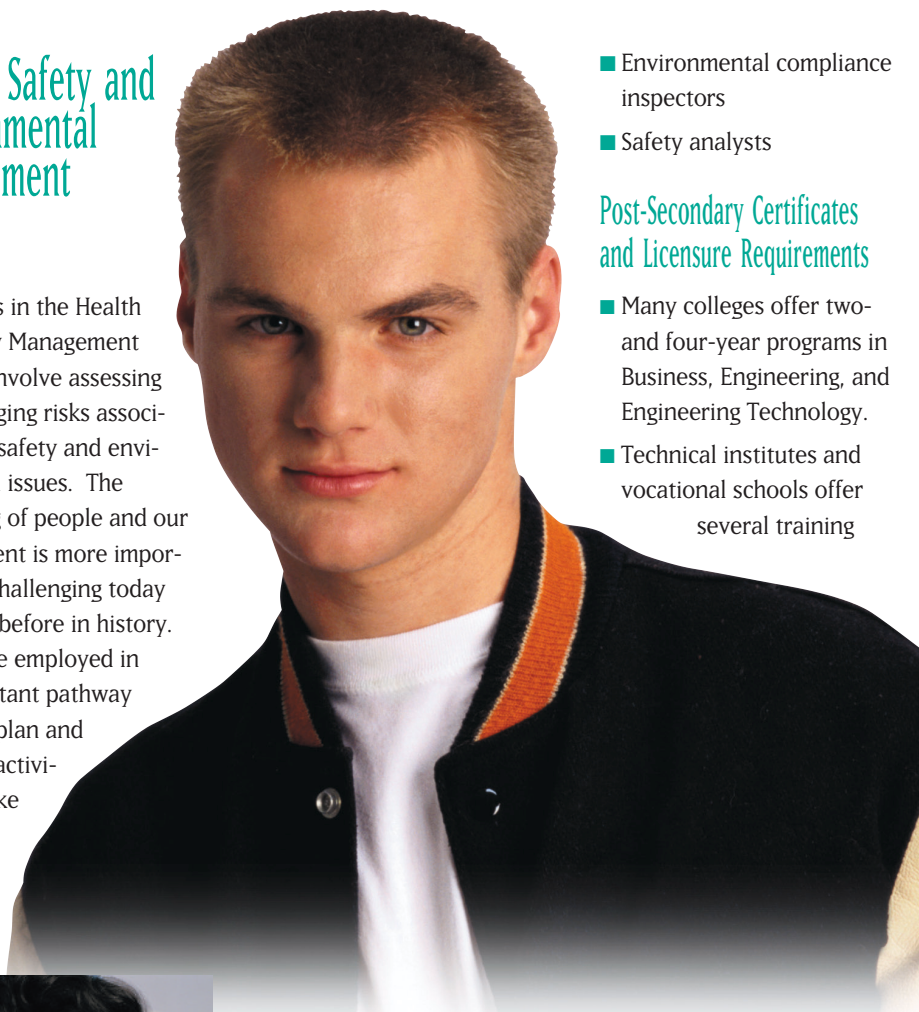
Thus, employment in this field is seldom affected by economic swings. This provides significant job security. Many job opportunities will arise due to the need to replace experienced workers as they retire.



## Health, Safety and Environmental Management

### Overview

Careers in the Health and Safety Management pathway involve assessing and managing risks associated with safety and environmental issues. The well-being of people and our environment is more important and challenging today than ever before in history. The people employed in this important pathway research, plan and carry out activities to make our environment safer and cleaner.



- Environmental compliance inspectors
- Safety analysts

### Post-Secondary Certificates and Licensure Requirements

- Many colleges offer two- and four-year programs in Business, Engineering, and Engineering Technology.
- Technical institutes and vocational schools offer several training

### Employment Outlook

Growth is projected for occupations in health and safety management. The public continues to demand a safe and healthy environment, while at the same time pushing for smaller government and fewer regulations. Employment is rarely



### Occupations and careers included in this career pathway

- Health and safety managers
- Industrial health and safety engineers
- Environmental scientists, specialists, technicians, managers and engineers

programs from one to two years in length, including some associate degree programs.

- Most safety engineers and technicians and environmental compliance inspectors require specialized certification

affected by economic fluctuations, thereby providing considerable job security. Many job openings will occur as experienced workers transfer to administrative positions or retire.

## Sales and Service

### Overview

Careers in the Sales and Service pathway involve the marketing and selling of transportation services to new customers as well as the management of existing customer relationships and customer service. Transportation businesses move passengers and freight to meet customer needs and demands. Successful businesses need skilled employees to provide excellent customer service.



### Occupations and careers included in this career pathway

- Marketing managers
- Sales managers
- Sales representatives
- Reservation and travel agents
- Cargo and freight agents
- Customer service managers and representatives
- Customer order and billing supervisors
- Cashiers

### Post-Secondary Certificates and Licensure Requirements

- A wide range of two- and four-year degree programs at colleges are suitable for entry into business, sales and marketing careers.
- Many vocational schools offer short-term training programs for occupations in the travel and customer service sectors.
- Certificates are available as Certified Travel Associate and Certified Travel Counselor.

### Employment Outlook

Employment for these occupations will grow as tourism and business travel expands over the next decade. Growth is projected, with most of the job openings arising as experienced workers transfer to related occupations or retire.

