Transportation Workforce Development

September 2022
Key Public Works Transportation Subsectors

- Construction
- Air transportation
- Water transportation
- Rail transportation
- Bus service and urban transit
- Services incidental to transportation
- Warehousing and storage
- Architectural, engineering, and related services

Source: U.S. Bureau of Labor Statistics
Key Transportation Workforce Challenges: Retirements and Separations

- **92%** of public transit agencies are having difficulty hiring new employees
- **71%** of transit agencies have had to cut or delay service because of worker shortages
- In 2021, the average transit operator was **ten years older than the average** American worker, 52.7 years old compared to 42.2 years

**Contributing factors to vacancy in the transportation workforce:**
- Retirements
- Occupational transfers
- Other exits

**Unique subsectors:**

Due to their smaller size, the **railroad and maritime subsectors** could be particularly affected by significant portions of retiring workers

Key Transportation Workforce Challenges: Skilled Labor Shortage

Jobs in **operations and maintenance** are in particularly high demand.

Projections show yearly job openings are **68% greater than student completion of relevant training**, indicating a **skills gap**.

13 of 20 highest-demand jobs in transportation have **salaries above median wage**.

Some jobs require high school diplomas or **specialized certification**, while for other roles **on-the-job training or technical education** is sufficient.

Key Transportation Workforce Challenges: Career Pathways

A key aspect of developing career pathways for the transportation workforce is job training, including technical education programs, apprenticeships, pre-apprenticeship programs, and workplace trainings.

Six key elements:

1. Cross-agency partnerships and role clarity
2. Employee engagement
3. Education and training
4. Identifying funding
5. Policy and program alignment
6. Measurement of change and performance


<table>
<thead>
<tr>
<th>State</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA</td>
<td>16%</td>
</tr>
<tr>
<td>OR</td>
<td>17%</td>
</tr>
<tr>
<td>CA</td>
<td>18%</td>
</tr>
<tr>
<td>CO</td>
<td>13%</td>
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<tr>
<td>NE</td>
<td>12%</td>
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<tr>
<td>AZ</td>
<td>10%</td>
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<tr>
<td>NM</td>
<td>2%</td>
</tr>
<tr>
<td>KS</td>
<td>8%</td>
</tr>
<tr>
<td>AR</td>
<td>5%</td>
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<tr>
<td>TN</td>
<td>7%</td>
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<tr>
<td>NC</td>
<td>4%</td>
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<tr>
<td>SC</td>
<td>4%</td>
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<tr>
<td>OK</td>
<td>3%</td>
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<tr>
<td>LA</td>
<td>20%</td>
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<tr>
<td>MS</td>
<td>3%</td>
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<tr>
<td>AL</td>
<td>9%</td>
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<tr>
<td>GA</td>
<td>9%</td>
</tr>
<tr>
<td>HI</td>
<td>22%</td>
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<tr>
<td>TX</td>
<td>19%</td>
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<tr>
<td>FL</td>
<td>13%</td>
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<tr>
<td>NY</td>
<td>6%</td>
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<tr>
<td>NJ</td>
<td>16%</td>
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<tr>
<td>PA</td>
<td>10%</td>
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<tr>
<td>DE</td>
<td>17%</td>
</tr>
<tr>
<td>MD</td>
<td>6%</td>
</tr>
<tr>
<td>VT</td>
<td>-1%</td>
</tr>
<tr>
<td>NH</td>
<td>5%</td>
</tr>
<tr>
<td>ME</td>
<td>6%</td>
</tr>
</tbody>
</table>

**NE states**:
- ME: 6%
- NH: 5%
- VT: -1%
- RI: 8%
- MA: 7%
- CT: 10%
- NY: 6%
- NJ: 16%
- PA: 10%
- DE: 17%

**Other states**:
- WA: 16%
- OR: 17%
- CA: 18%
- CO: 13%
- NE: 12%
- AZ: 10%
- NM: 2%
- KS: 8%
- AR: 5%
- TN: 7%
- NC: 4%
- SC: 4%
- OK: 3%
- LA: 20%
- MS: 3%
- AL: 9%
- GA: 9%

**Notes**:
- <0% indicates a decline in growth.
- 1-10% indicates a growth rate of 1% to 10%.
- 11-20% indicates a growth rate of 11% to 20%.
- 21-30% indicates a growth rate of 21% to 30%.
- >30% indicates a growth rate greater than 30%.

The Public Works Transportation Workforce

Number of individuals employed (total for key public works transportation subsectors)

2017: 15,306,000 (+4.23%)
2018: 15,954,000 (+2.10%)
2019: 16,290,000 (-5.01%)
2020: 15,474,000 (+2.21%)
2021: 15,816,000

Transportation and Utilities Workforce Employed a Total of 9.37 Million People in 2021

Number of individuals employed by selected industries

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural, engineering, and related services</td>
<td>1,723,000</td>
</tr>
<tr>
<td>Services related to transportation</td>
<td>818,000</td>
</tr>
<tr>
<td>Warehousing and storage</td>
<td>1,065,000</td>
</tr>
<tr>
<td>Air transportation</td>
<td>620,000</td>
</tr>
<tr>
<td>Bus service and urban transit</td>
<td>460,000</td>
</tr>
<tr>
<td>Rail Transportation</td>
<td>197,000</td>
</tr>
<tr>
<td>Water transportation</td>
<td>76,000</td>
</tr>
</tbody>
</table>

### Percent of Women Among Employed Individuals in Selected Industries in 2021

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus service and urban transit</td>
<td>39.8%</td>
</tr>
<tr>
<td>Warehousing and storage</td>
<td>35.2%</td>
</tr>
<tr>
<td>Air transportation</td>
<td>27.8%</td>
</tr>
<tr>
<td>Water transportation</td>
<td>16.7%</td>
</tr>
<tr>
<td>Architectural, engineering, and related services</td>
<td>27.1%</td>
</tr>
<tr>
<td>Services related to transportation</td>
<td>25.3%</td>
</tr>
<tr>
<td>Rail transportation</td>
<td>7.6%</td>
</tr>
<tr>
<td>All industries</td>
<td>47.0%</td>
</tr>
</tbody>
</table>

**Source:** U.S. Bureau of Labor Statistics.
Racial Demographics in the Public Works Transportation Workforce

- **Black or African American**: 32.6%
- **Asian**: 15.3%
- **Hispanic or Latino**: 18.0%

### Industries
- **Bus service and urban transit**: 7.0%
- **Warehousing and storage**: 5.5%
- **Services related to transportation**: 7.1%
- **Air transportation**: 8.3%
- **Water transportation**: 3.2%
- **Rail transportation**: 1.0%
- **Architectural, engineering, and related services**: 8.0%
- **All industries**: 16.6%
Demographic Changes Over Time in the Public Works Transportation Workforce

**Women:**
- 25.3% (2017)
- 25.5% (2018)
- 26.3% (2019)
- 25.8% (2020)
- 23.8% (2021)

**Black or African-American:**
- 15.7% (2017)
- 15.8% (2018)
- 15.3% (2019)
- 16.3% (2020)
- 16.2% (2021)

**Asian:**
- 4.1% (2017)
- 4.7% (2018)
- 5% (2019)
- 5% (2020)
- 5.3% (2021)

**Hispanic or Latino:**
- 18.8% (2017)
- 19.5% (2018)
- 19.1% (2019)
- 19.3% (2020)
- 18% (2021)

Age Breakdown for Key Public Works Transportation Subsectors

Median Age Among Employed Individuals by Industry, 2021

- All industries: 42.2
- Water transportation: 44.8
- Warehousing and storage: 35.9
- Services related to transportation: 44.3
- Rail transportation: 44.6
- Bus service and urban transit: 52.7
- Architectural, engineering, and related services: 44.3
- Air transportation: 44.4

Source: U.S. Bureau of Labor Statistics
Definitions

- **Services related to transportation:** Jobs that support the transportation industry but aren't necessarily specific to it. i.e. tow truck operators, mechanics, dispatchers, etc.

- **Warehousing and storage:** Industries primarily engaged in operating warehousing and storage facilities for general merchandise; they may also provide a range of services, often referred to as logistics services, related to the distribution of goods including labeling, breaking bulk, inventory control and management, light assembly, order entry and fulfillment, packaging, pick and pack, price marking and ticketing, and transportation arrangement.

- **All industries:** The ‘all industries’ category takes the median value of employees across the various industries; an umbrella category containing the data of all workforces in the US Bureau of Labor Statistics dataset; the national average.

- **Median:** calculated by taking the “middle” value, the value for which half of the observations are larger and half are smaller; the advantage of the median is that it removes extreme measurements from a data set (i.e CEO salary).