MAKING CONNECTIONS, MAKING A DIFFERENCE

Making Connections 2024
The National Transit Workforce Conference
November 11 – 13. 2024 · Baltimore. MD

TWC · TRANSIT WORKFORCE CENTER

Workforce Data in Context

National Trends, Future Projections, and Implications for Transit Locations

FTA's Strategic Workforce Development Goals

Strengthening Workforce Health and Safety

Funding Workforce Development

Enhancing Outreach and Recruitment

Retaining a Strong & Diverse Workforce

Advancing Skills, Careers and Partnerships

Utilizing Workforce Data and Metrics

Speakers

Douglas Nevins
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ITLC / Transit Workforce Center

Kenneth Blacks
Transportation Program Analyst
Federal Transit Administration

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Director of Education
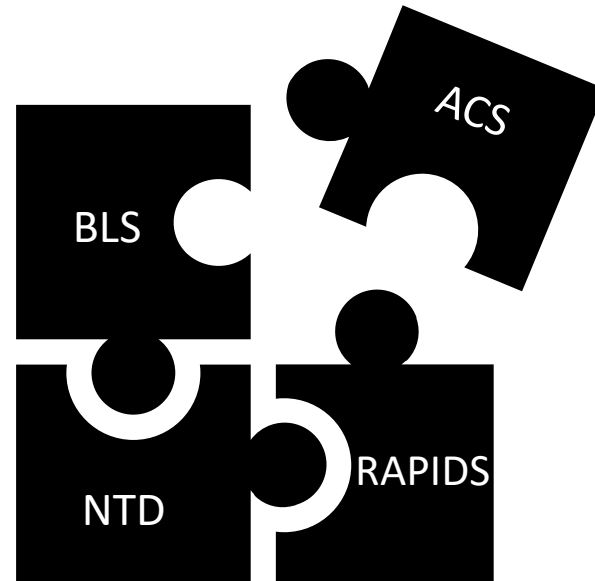*Mineta Transportation Institute*

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Kenneth Blacks

U.S. Department of Transportation
Federal Transit Administration
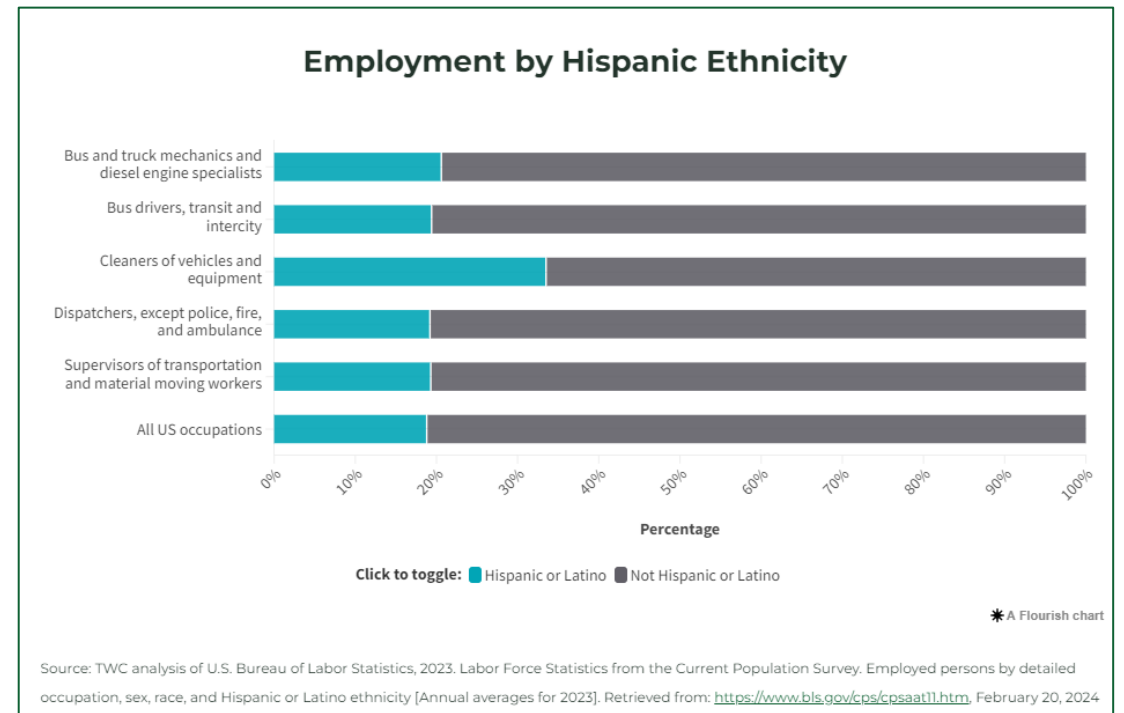
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Which data sources tell us about the transit workforce?
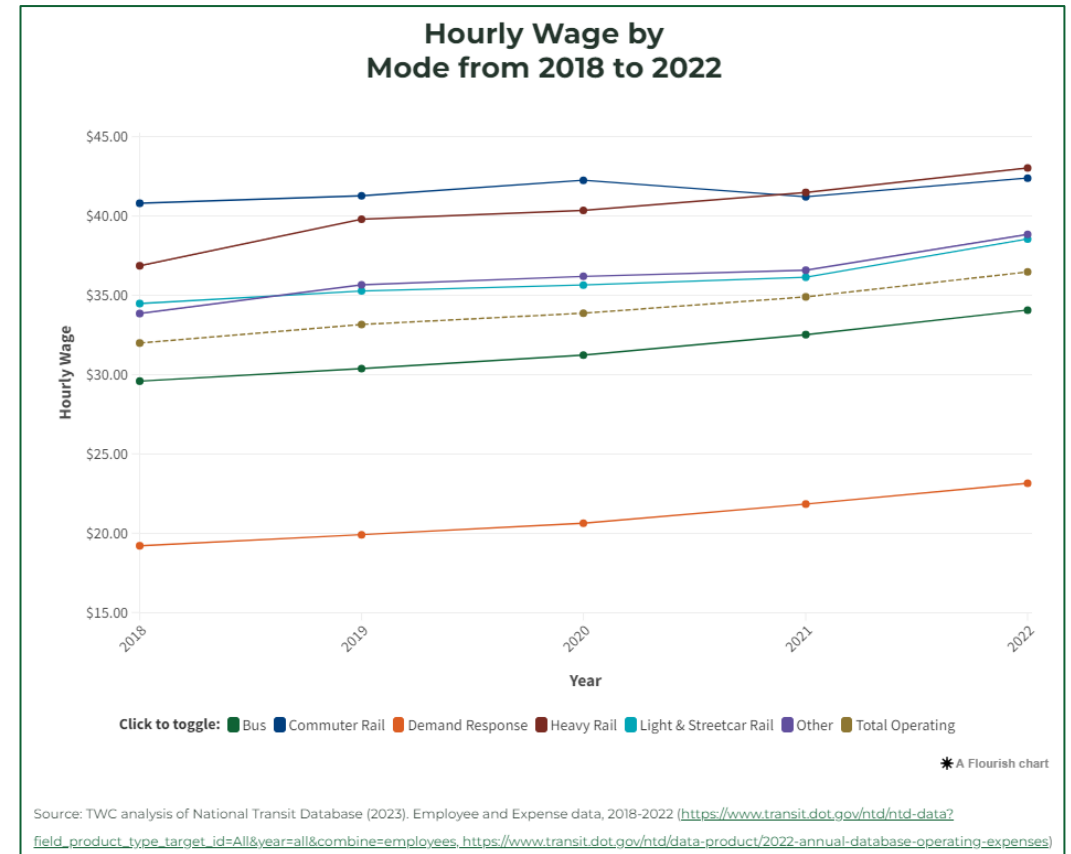
Bureau of Labor Statistics (BLS)

- Strengths:
  - Nationally representative / comprehensive
  - Demographics; projections; openings / separations; training requirements; educational attainment
  - Varied surveys and data sources (e.g., CPS, OEWS, etc.)

- Limitations:
  - Cannot extract all data for occupations *within* industries

Employment by Hispanic Ethnicity

Bus and truck mechanics and diesel engine specialists
Bus drivers, transit and intercity
Cleaners of vehicles and equipment
Dispatchers, except police, fire, and ambulance
Supervisors of transportation and material moving workers
All US occupations

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Percentage

Click to toggle: ■ Hispanic or Latino ■ Not Hispanic or Latino

❋ A Flourish chart

Source: TWC analysis of U.S. Bureau of Labor Statistics, 2023. Labor Force Statistics from the Current Population Survey. Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity [Annual averages for 2023]. Retrieved from: https://www.bls.gov/cps/cpsaat11.htm, February 20, 2024

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National Transit Database (NTD)

- Strengths:
  - Transit-specific
  - Modal information; agency-specific data; full-time / part-time employee data

- Limitations:
  - Employment data for full-reporters / directly operated only
  - Aggregated employment categories

Hourly Wage by Mode from 2018 to 2022

Click to toggle: Bus ■ Commuter Rail ■ Demand Response ■ Heavy Rail ■ Light & Streetcar Rail ■ Other ■ Total Operating

✳ A Flourish chart

Source: TWC analysis of National Transit Database (2023). Employee and Expense data, 2018-2022 (https://www.transit.dot.gov/ntd/ntd-data?field_product_type_target_id=All&year=all&combine=employees, https://www.transit.dot.gov/ntd/data-product/2022-annual-database-operating-expenses)
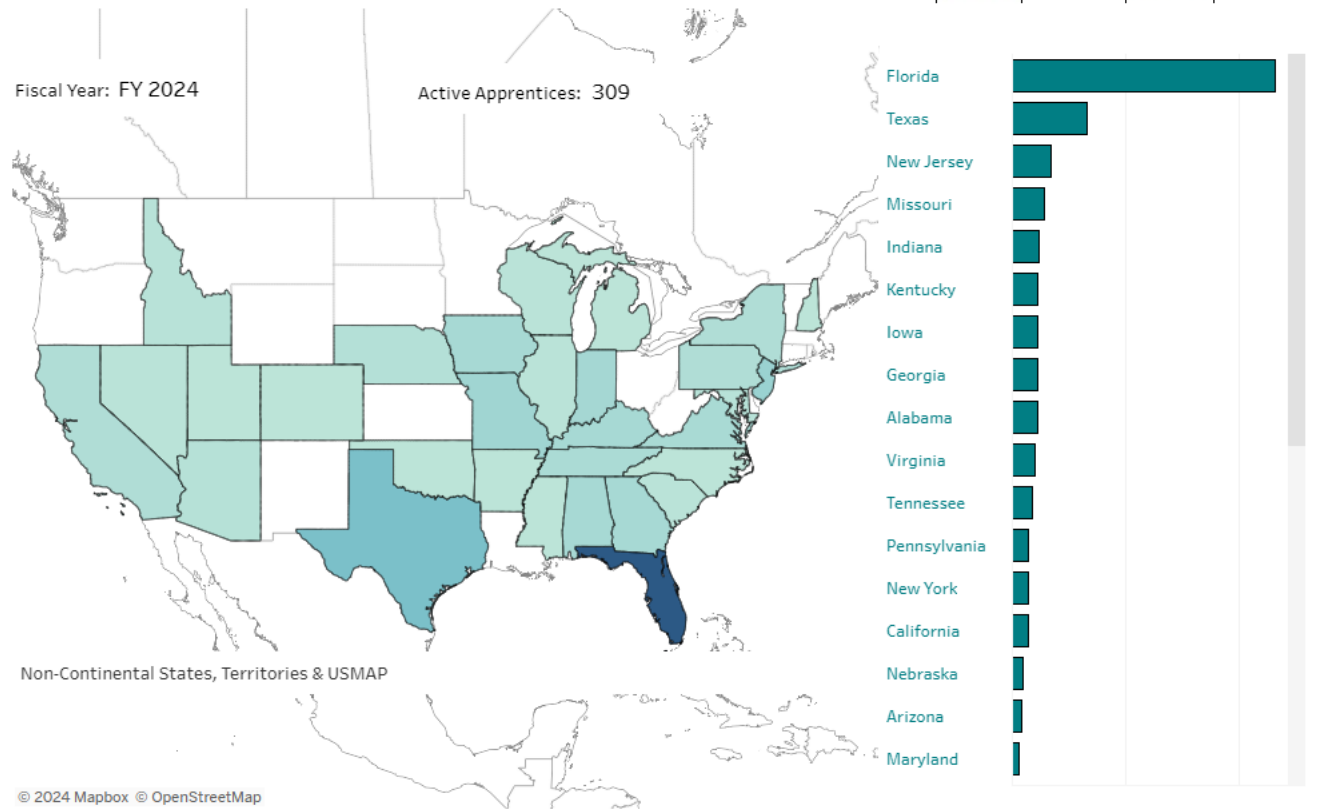
RAPIDS (Registered Apprenticeship Partners Information Database System)

- Strengths
  - Specific to apprentices
  - Several transit-related categories
  - Longitudinal
  - Demographics and other individual traits
  - Average wage by each characteristic

- Limitations
  - Occupational categories inconsistently reported
  - Employer name no longer public

Apprentice Growth by Fiscal Year

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Apprentice Count						19	22	49	143	302	309
Year over Year							▲ 15.79%	▲ 122.73%	▲ 191.84%	▲ 111.19%	▲ 2.32%
Growth from 2014						▲ 0.00%	▲ 15.79%	▲ 157.89%	▲ 652.63%	▲ 1489.47%	▲ 1526.32%

Continental USA

State   County

Fiscal Year: FY 2024   Active Apprentices: 309

Florida
Texas
New Jersey
Missouri
Indiana
Kentucky
Iowa
Georgia
Alabama
Virginia
Tennessee
Pennsylvania
New York
California
Nebraska
Arizona
Maryland

Non-Continental States, Territories & USMAP

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Breakdown   By Gender
- ● Gender
- ○ Race
- ○ Ethnicity
- ○ Age Cohort
- ○ Individuals with Disabilities
- ○ Veteran Status
- ○ Education
- ○ Industry
- ○ Occupation
- ○ Union Status

Male — 292 (94.50%)
Female — 14 (4.53%)
Participant Did Not Self-Identify — 3 (0.97%)

American Community Survey (ACS)

- Strengths:
  - Many variables available
  - Easily accessible microdata

- Limitations:
  - Some of the same as BLS—transit employees specifically cannot be extracted
  - Sample sizes for specific occupations by region are very small

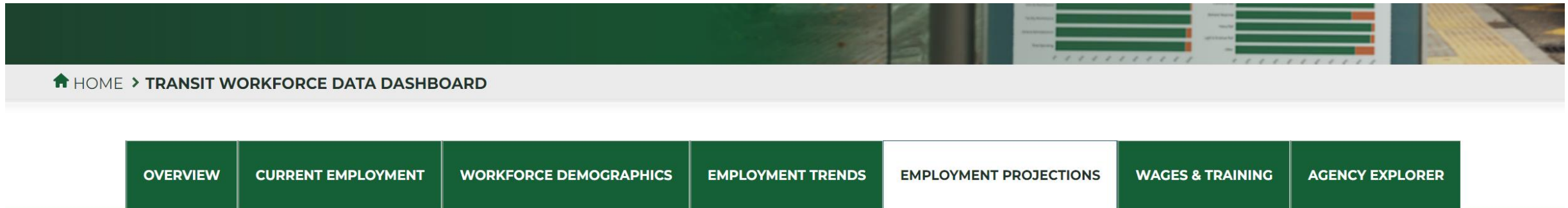|	Sex (SEX)		
Occupation recode for 2018 and later based on 2018 OCC codes (OCCP)	Total	Male	Female
∨ Total (104)	698,715	583,431	115,284
∨ Total Alabama (2)	9,486	7,168	2,318
RPR-Bus And Truck M...	6,209	5,833	376
TRN-Bus Drivers, Trans...	3,277	1,335	1,942
∨ Total Alaska (2)	1,831	1,637	194
RPR-Bus And Truck M...	1,163	1,121	42
TRN-Bus Drivers, Trans...	668	516	152
∨ Total Arizona (2)	10,896	9,370	1,526
RPR-Bus And Truck M...	5,334	5,294	40
TRN-Bus Drivers, Trans...	5,562	4,076	1,486
∨ Total Arkansas (2)	5,918	5,484	434
RPR-Bus And Truck M...	4,678	4,678	0
TRN-Bus Drivers, Trans...	1,240	806	434
∨ Total California (2)	68,735	56,384	12,351
RPR-Bus And Truck M...	30,953	30,120	833
TRN-Bus Drivers, Trans...	37,782	26,264	11,518

Data Dashboard Demo

Thank you!

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Bureau of Labor Statistics Employment Projections
in context

TWC's Transit Workforce Data Dashboard features Employment Projections data on its own dedicated tab:

🏠 HOME ❯ **TRANSIT WORKFORCE DATA DASHBOARD**

| OVERVIEW | CURRENT EMPLOYMENT | WORKFORCE DEMOGRAPHICS | EMPLOYMENT TRENDS | EMPLOYMENT PROJECTIONS | WAGES & TRAINING | AGENCY EXPLORER |

What does the Bureau of Labor Statistics project?

Future employment

Change

Separations

Transfers

Exits

Openings

Current employment + change = future employment

Transfers + exits = separations

Change + separations = openings

🚌 for example:

Employment Projections by Occupation

Occupation: **Bus drivers, transit and intercity** ▾

■ Employment, 2023 ■ Labor force exits, 2023-2033 ■ Occupational transfers, 2023-2033 ■ Employment change, 2023-33
■ Projected employment, 2033

Employment, 2023	194,100
Projected employment, 2023	204,100
Projected openings, 2023-2033	246,100

Employment and projected employment and openings
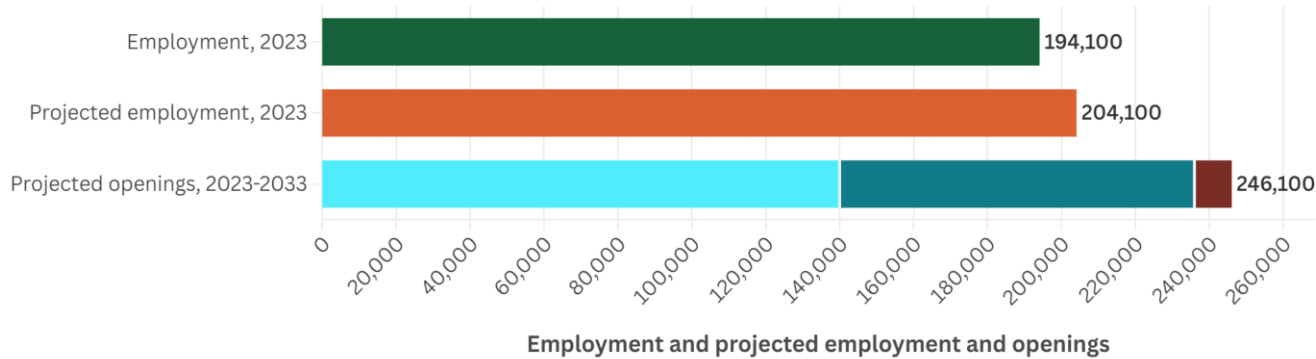
Note: x-axis adjusts to employment for each occupation.

✳ A Flourish chart

Source: TWC analysis of Bureau of Labor Statistics (2024). Occupational Employment Projections Data – Table 1.2 Employment by detailed occupation, 2023 and projected 2033; Table 1.10 Occupational separations and openings, projected 2023–33. Retrieved from:
https://www.bls.gov/emp/data/occupational-data.htm, September 12, 2024

Current employment + change = future employment

Transfers + exits = separations

Change + separations = openings

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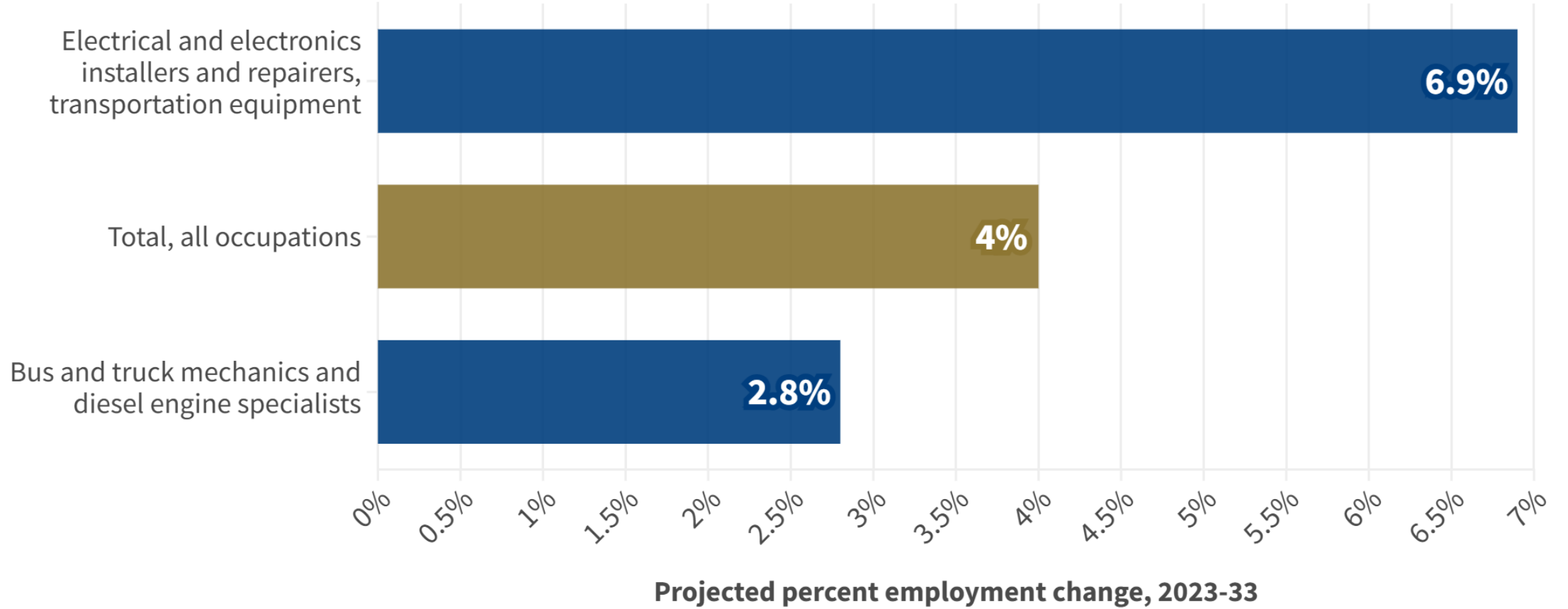
What drives estimates of change?

Projected percent employment change, 2023-33
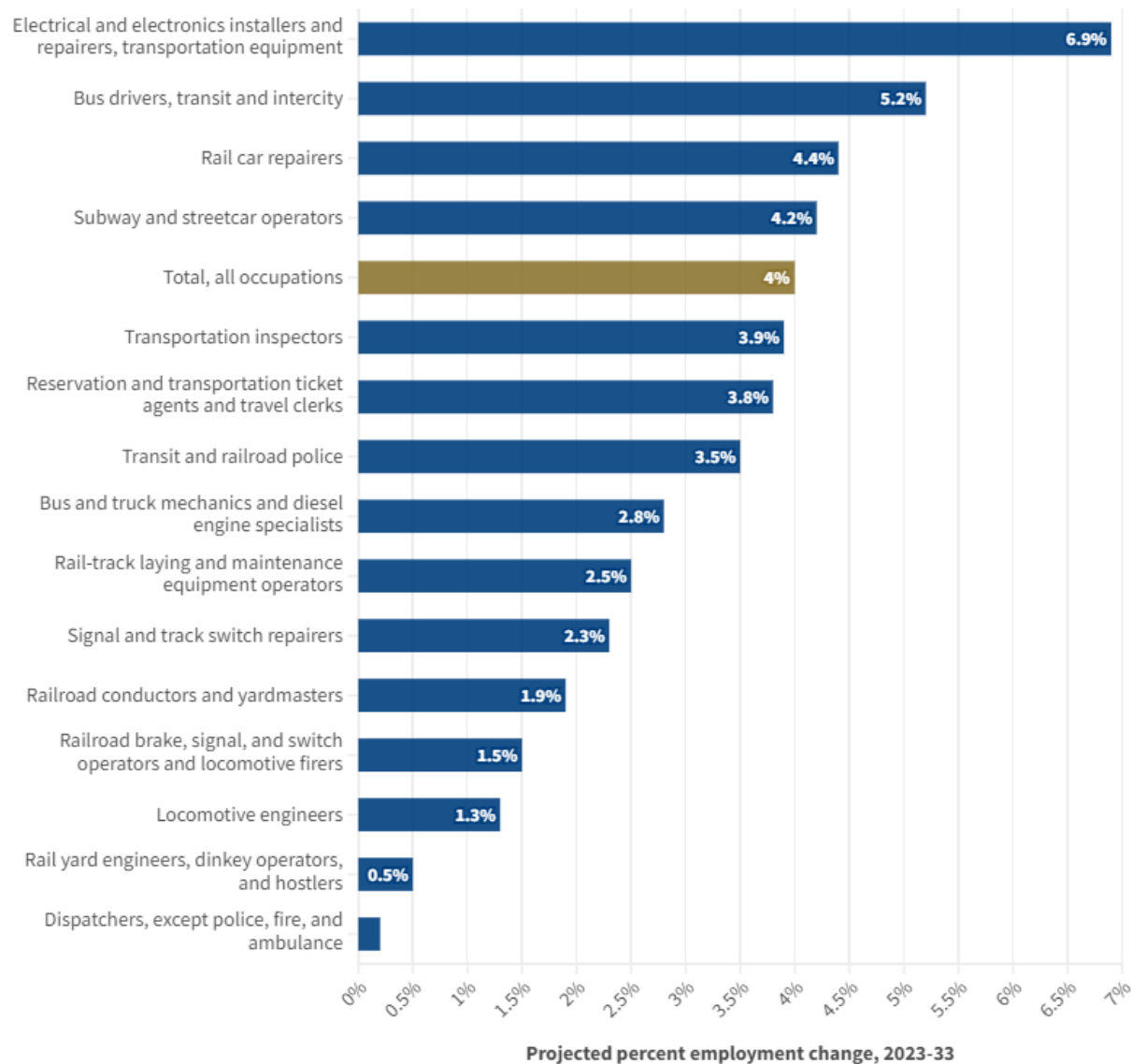
- Trends in the economy (demand)
- Technology
- Allocation of occupations by industry

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Example of change – tech-driven changes

	Projected percent employment change, 2023-33
Electrical and electronics installers and repairers, transportation equipment	6.9%
Total, all occupations	4%
Bus and truck mechanics and diesel engine specialists	2.8%

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Example of change – tech-driven changes

Occupation: Bus and truck mechanics and diesel engine specialists

In industry: Urban transit systems

Demand change - *share decreases* as adoption of electric vehicles (EVs) increases and the total number of diesel engines decreases, which require less maintenance than internal combustion engine (ICE) vehicles.

Occupation: Electrical and electronics installers and repairers, transportation equipment
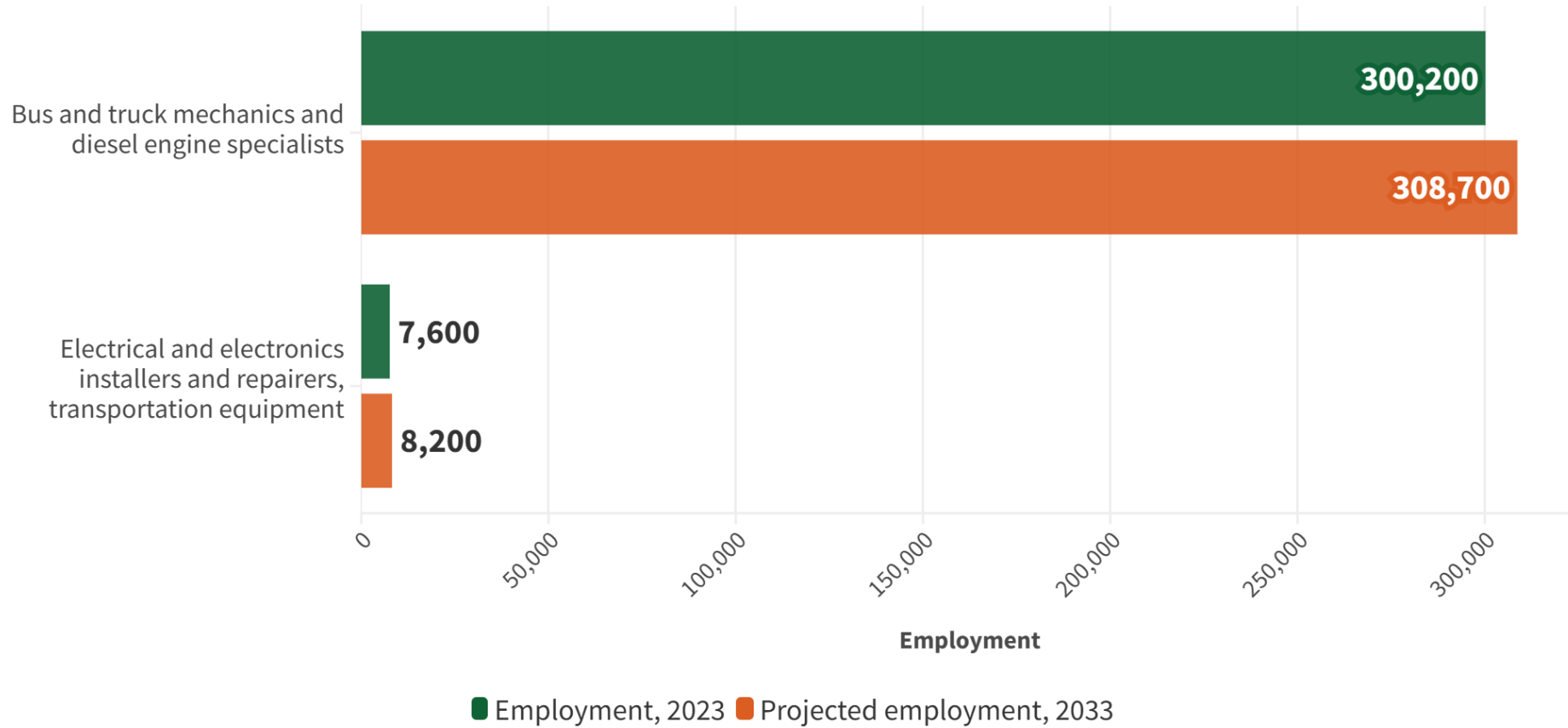
In industry: Local government, excluding education and hospitals

Demand change - *share increases* as local governments need installers and repairers to support the Internet of Things (IoT), 5G networks, and Artificial Intelligence (AI) capabilities on public bus and rail services.

Size of occupations

Bus and truck mechanics and diesel engine specialists: 300,200 (Employment, 2023); 308,700 (Projected employment, 2033)

Electrical and electronics installers and repairers, transportation equipment: 7,600 (Employment, 2023); 8,200 (Projected employment, 2033)

Employment

■ Employment, 2023   ■ Projected employment, 2033

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What drives estimates of separations?

- Historical data about workers' behavior based on their occupation, education, and demographic characteristics.
- Not set in stone!

Example for separations – age-related

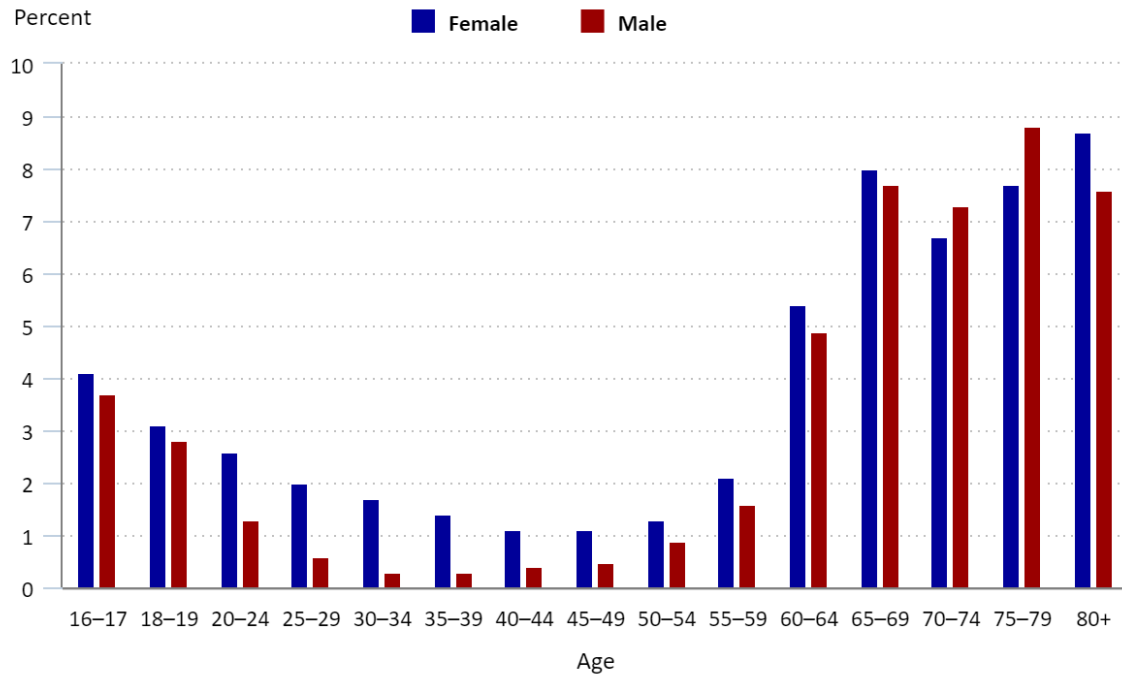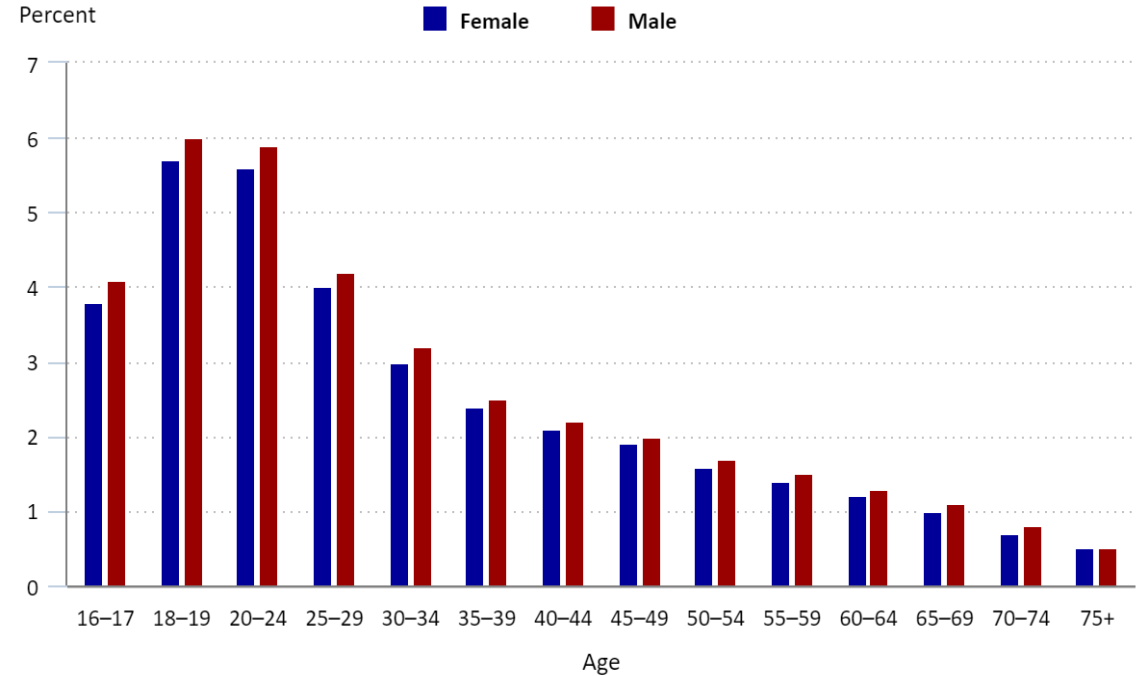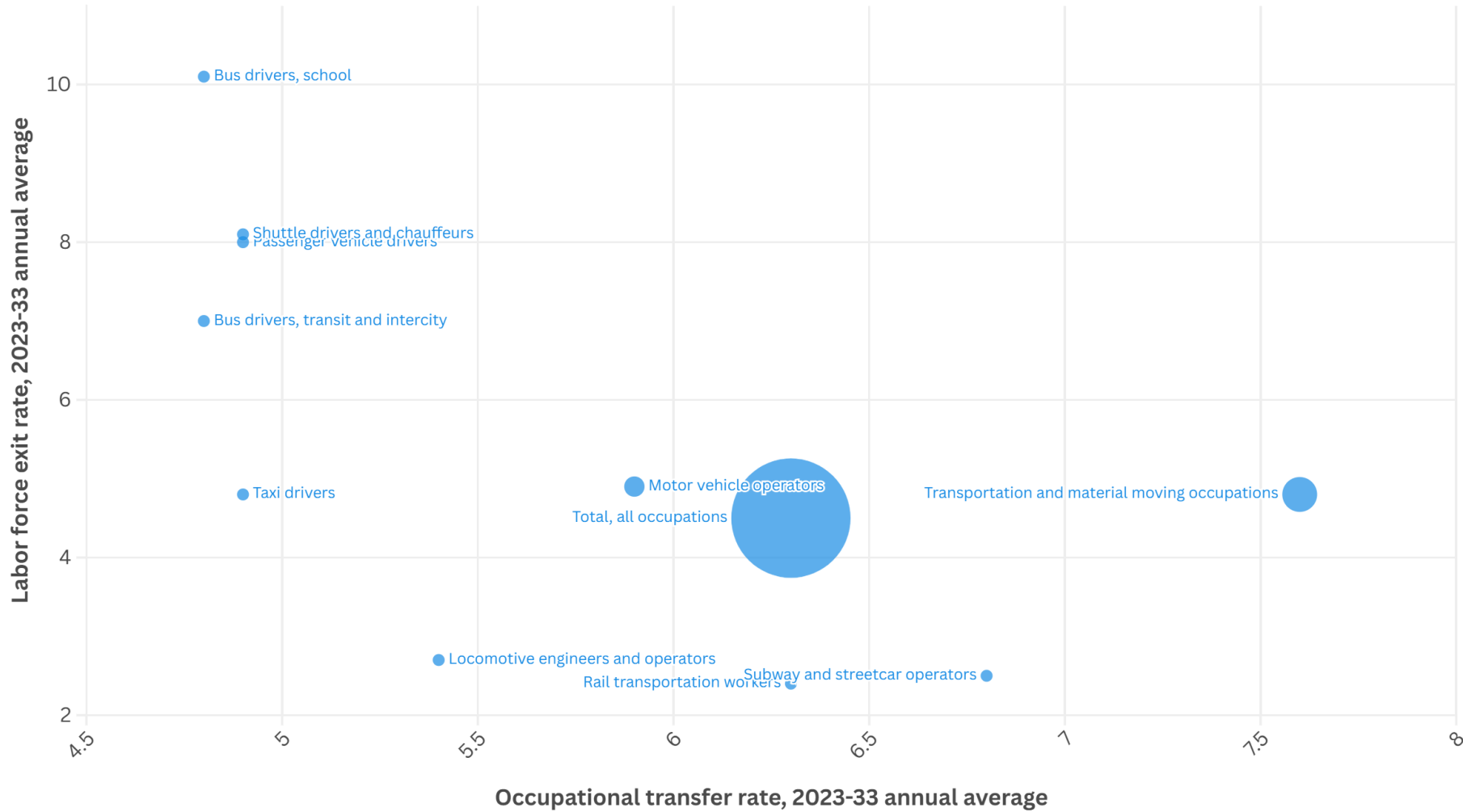**Figure 1. Annual probability of labor force exit, by age and sex, example worker**

Figure 2. Annual probability of occupational transfer, by age and sex, example worker

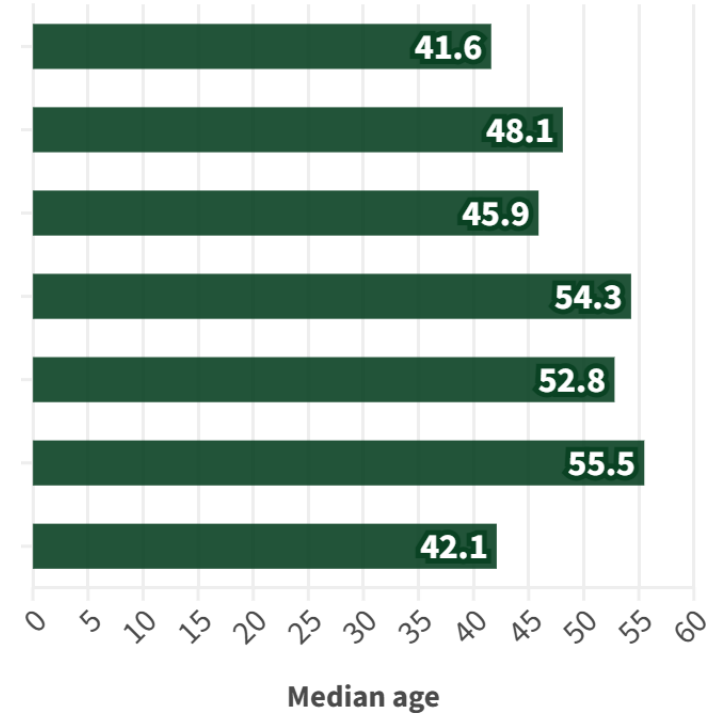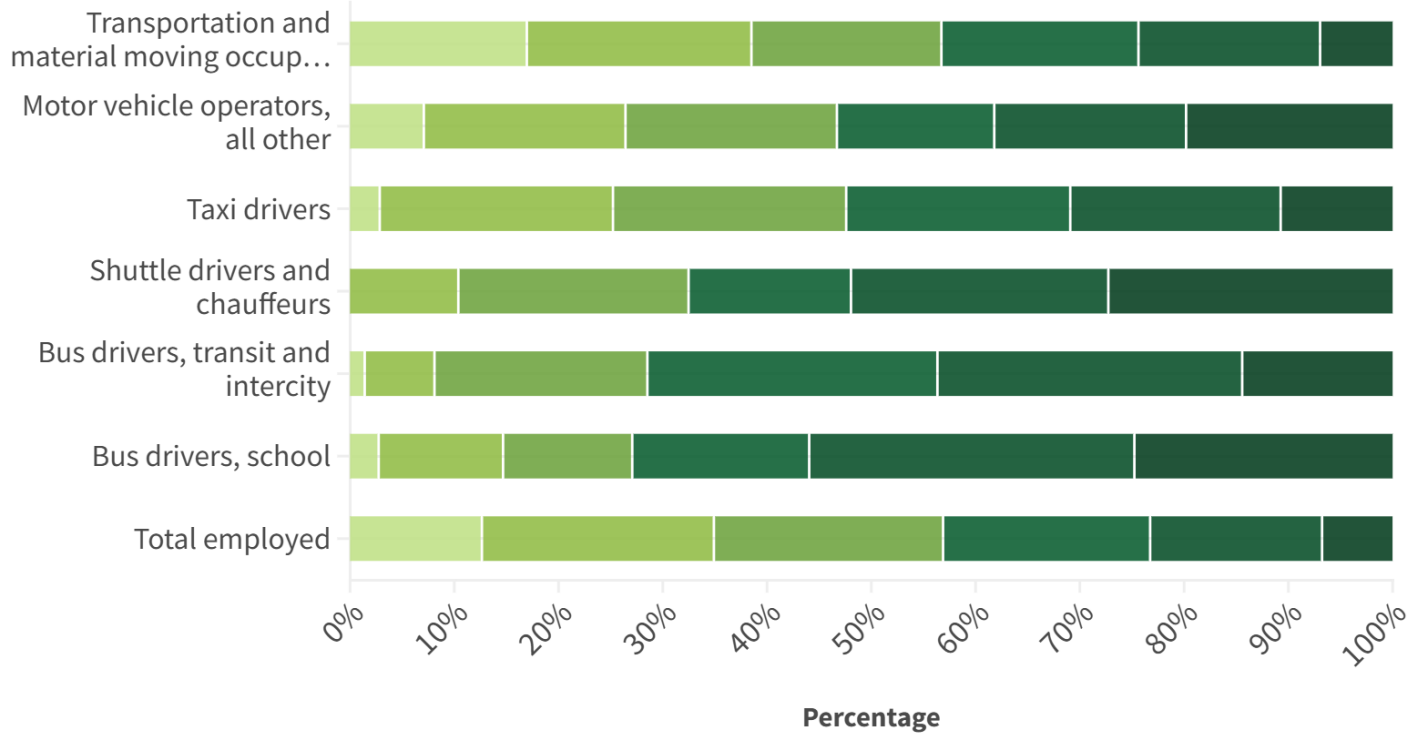Source: BLS, 2019, "What's Behind Occupational Separations?"

Example for separations – transfers and exits

Labor force exit rate, 2023-33 annual average (y-axis) vs. Occupational transfer rate, 2023-33 annual average (x-axis)

- Bus drivers, school
- Shuttle drivers and chauffeurs
- Passenger vehicle drivers
- Bus drivers, transit and intercity
- Taxi drivers
- Motor vehicle operators
- Total, all occupations
- Transportation and material moving occupations
- Locomotive engineers and operators
- Subway and streetcar operators
- Rail transportation workers

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Ages by occupation

Percentage (left chart) — Ages by occupation, stacked bar:

Occupation	
Transportation and material moving occup…	
Motor vehicle operators, all other	
Taxi drivers	
Shuttle drivers and chauffeurs	
Bus drivers, transit and intercity	
Bus drivers, school	
Total employed	

Median age (right chart):

Occupation	Median age
Transportation and material moving occup…	41.6
Motor vehicle operators, all other	48.1
Taxi drivers	45.9
Shuttle drivers and chauffeurs	54.3
Bus drivers, transit and intercity	52.8
Bus drivers, school	55.5
Total employed	42.1

Legend: Under 25 years · 25 to 34 years · 35 to 44 years · 45 to 54 years · 55 to 64 years · 65 years and over

Some things to remember…

- BLS projections are not set in stone!
- National datasets can reveal trends that may reflect agency-level data.
- But… agency-level data is valuable.

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Thank you!

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Understanding Workforce Diversity in the Transit Industry:

Establishing a Baseline of Diversity Demographics

Transit Workforce Center's Making Connections 2024 Conference
November 13, 2024

Asha Weinstein Agrawal, PhD

Acknowledgements

Co-authors: Dr. Evelyn Blumenberg
             Dr. Anastasia Loukaitou-Sideris

Project funding:

Thank you to the experts who offered project advice and support:

Research Objectives (as requested by APTA)

1. Provide baseline data on the status of the racial/ethnic and gender diversity of the transit agency workforce in the U.S., through analysis of EEO data submitted to the FTA

2. Identify potential barriers to, and promising practices for, diversifying the transit workforce

Today's Presentation

- Transit agency workforce diversity (EEO data)

- Transit agency diversity practices (original survey data)

- Recommendations

EEO Data Analysis

FTA EEO Data Requirements

To meet federal EEO law, FTA requires employee demographic reports from transit operators with 100+ employees that receive significant federal funds

Operators must submit an "EEO program plan" that includes data on the race and sex of their transit-related workforce (including contractors), broken out by job classification

The data permit national
<u>and</u>
longitudinal analysis

EEO Data Analyzed

- EEO Program Plans from 2018/20 and 2022 reporting cycles (received through FOIA requests)

- Of the 218 plans received, 152 contained usable workforce demographics data

EEO Data Quality Challenges

Problem	Examples
Missing data	○ Data not disaggregated by job category ○ Data not submitted for some job categories
Inaccurate data	○ Data submitted for a larger pool of workers than just transit ○ Data reported for multiple years instead of one year ○ Data reported for wong job categories ○ Many employees do not choose to self-report race/ethnicity
Data format	○ Data submitted in pdf format only ○ Illegible data (pdf with low resolution and small font) ○ Data provided as percentages rather than raw numbers

Sex, by job type
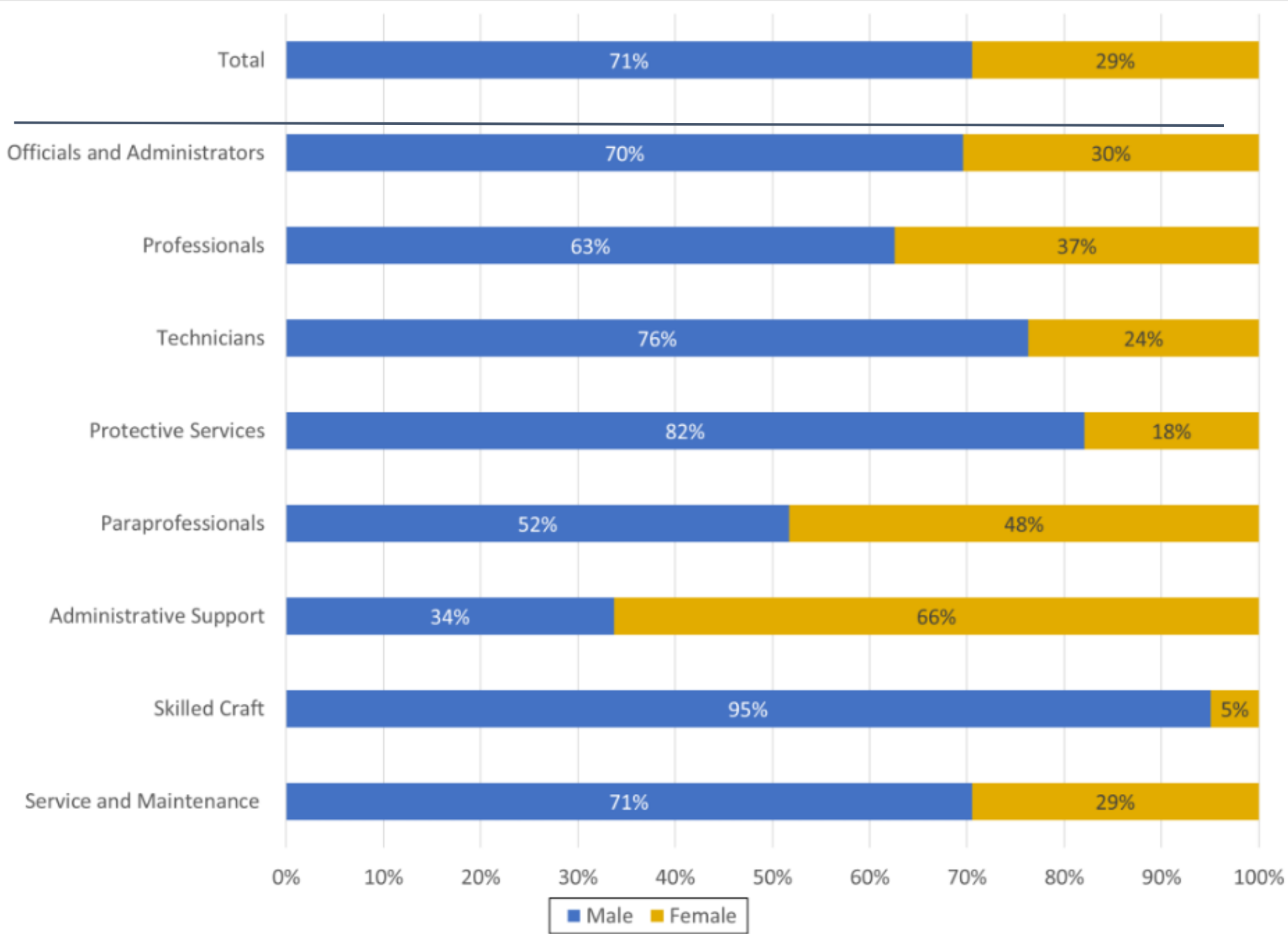
Race and ethnicity, by job type

Job Type	White	Black	Hispanic	Asian	Other*
Total	36%	40%	17%	6%	
Officials and Administrators	58%	23%	11%	6%	
Professionals	44%	29%	14%	12%	
Technicians	42%	25%	24%	7%	
Protective Services	48%	25%	19%	7%	
Paraprofessionals	41%	29%	21%	6%	
Administrative Support	30%	42%	22%	4%	
Skilled Craft	47%	27%	17%	7%	
Service and Maintenance	25%	53%	17%	4%	

Legend: ■ White ■ Black ■ Hispanic ■ Asian ▢ Other*
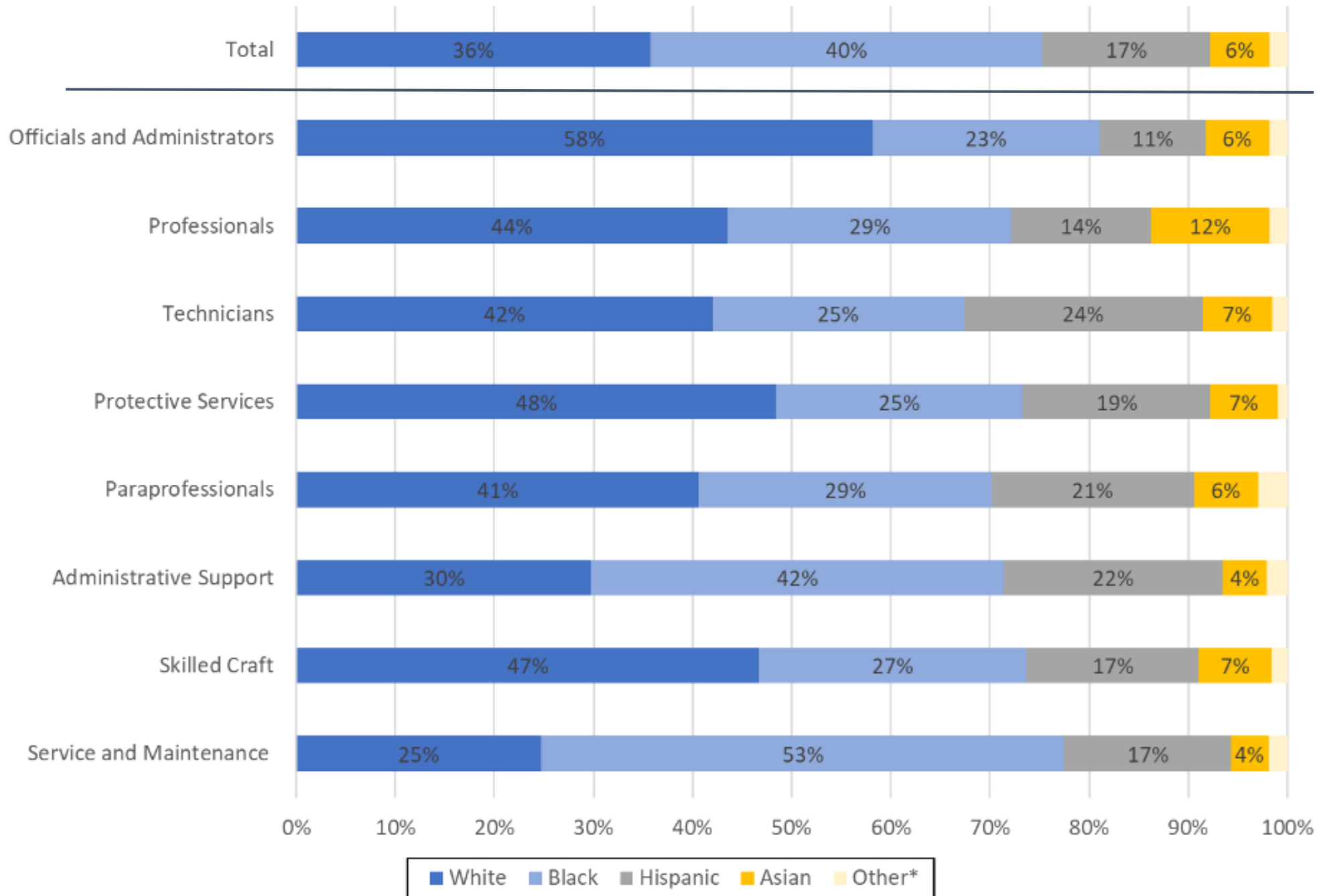
*Other includes American Indian/Alaska Native, Native Hawaiian and other Pacific Islander, and multiracial

Utilization rates by race, ethnicity, & sex, by job type

Job Category	White M (%)	White F (%)	Black M (%)	Black F (%)	Hispanic M (%)	Hispanic F (%)	Asian M (%)	Asian F (%)
Total workforce	parity	underutilization	overutilization	overutilization	underutilization	underutilization	underutilization	underutilization
Officials and managers	parity	underutilization	overutilization	overutilization	underutilization	underutilization	underutilization	underutilization
Professionals	underutilization	underutilization	overutilization	overutilization	underutilization	underutilization	underutilization	underutilization
Technicians	overutilization	underutilization	overutilization	overutilization	overutilization	underutilization	underutilization	underutilization
Administrative support workers	underutilization	underutilization	overutilization	overutilization	underutilization	underutilization	underutilization	underutilization
Craft workers	parity	underutilization	overutilization	overutilization	underutilization	underutilization	overutilization	underutilization
Service workers	overutilization	underutilization	overutilization	overutilization	parity	underutilization	parity	underutilization

>100% = overutilization; 80% to 99% = parity; <80% = underutilization

Data sources: EEO transit agency reporters and U.S. Census Bureau.

Analysis of Survey Data

Survey Methodology

- Recruitment: Invitation sent to the HR Director of 544 public transit agencies that were APTA members

- Sample: 92 responses from 68 public transit agencies, 27 of which were from the largest 50 transit agencies

- Survey questions: Diversity data use and collection, status of workforce diversity and diversity efforts, barriers to improving workforce diversity, recommendations to increase workforce diversity
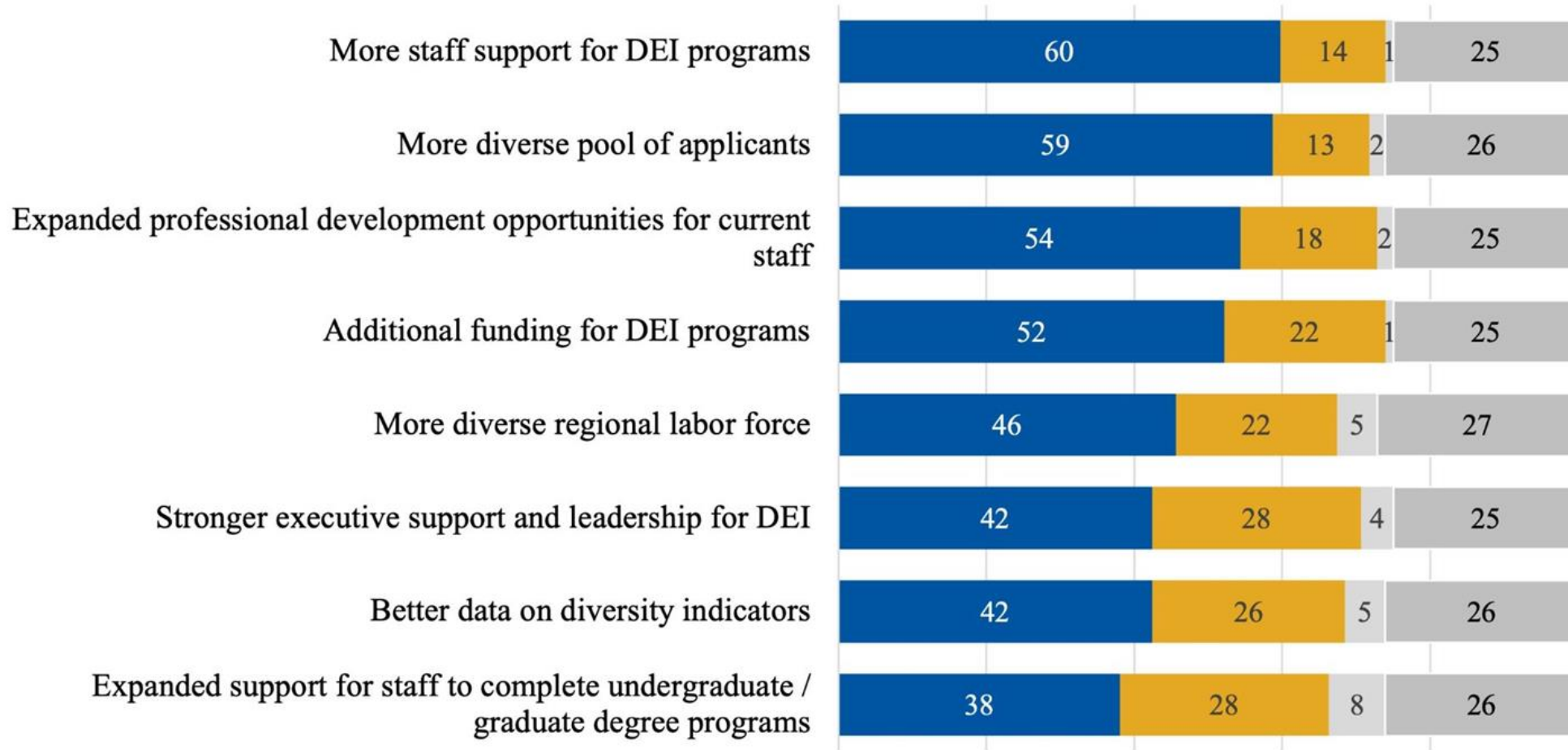
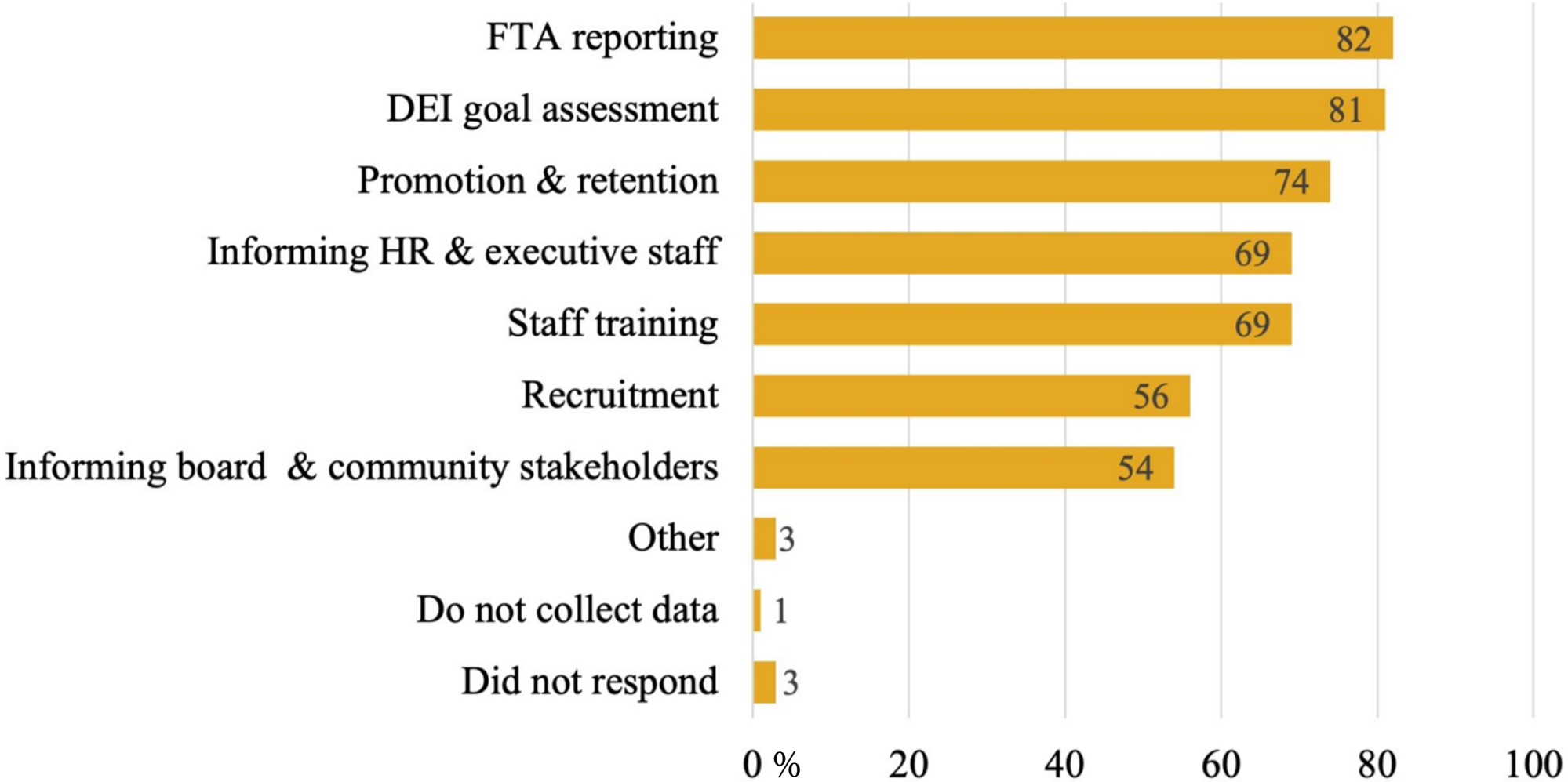# Perceptions of Change in Workforce Diversity (% of respondents)
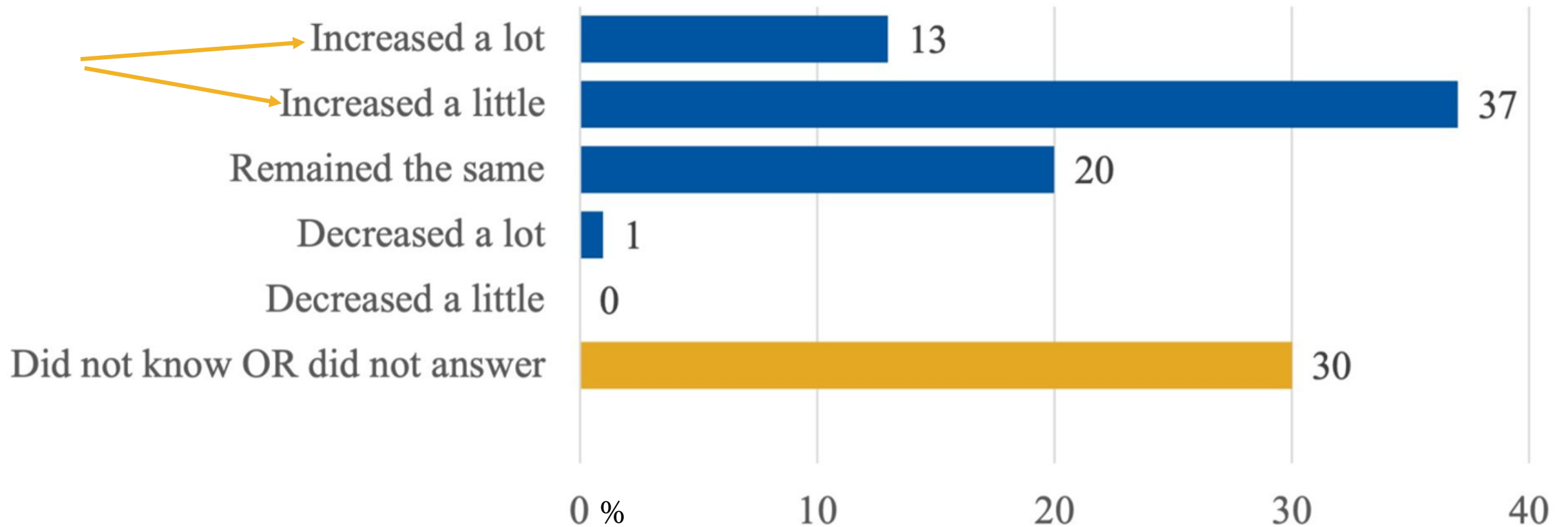
N=92 respondents

Perceived Helpfulness of DEI Strategies (% of respondents)

Strategy	Very helpful	Somewhat helpful	Not helpful	Did not respond
More staff support for DEI programs	60	14	1	25
More diverse pool of applicants	59	13	2	26
Expanded professional development opportunities for current staff	54	18	2	25
Additional funding for DEI programs	52	22	1	25
More diverse regional labor force	46	22	5	27
Stronger executive support and leadership for DEI	42	28	4	25
Better data on diversity indicators	42	26	5	26
Expanded support for staff to complete undergraduate / graduate degree programs	38	28	8	26

N=92 respondents

■ Very helpful　　■ Somewhat helpful　　■ Not helpful　　■ Did not respond

Extent and Use of Workforce Diversity Data (% of agencies)

Category	%
FTA reporting	82
DEI goal assessment	81
Promotion & retention	74
Informing HR & executive staff	69
Staff training	69
Recruitment	56
Informing board & community stakeholders	54
Other	3
Do not collect data	1
Did not respond	3

N=68 agencies

Recommendations

Workforce development

Staffing and resources: More is always good; also, develop in-house expertise (rather than using consultants)

Recruitment: Design marketing strategies to highlight the diverse careers available in transit. Work with local high-schools, trade schools, and colleges w/many minority students.

Develop in-house talent: Ongoing professional development opportunities for employees in every job category. Also, job shadowing to let people learn about different job opportunities within the agency.

Diversity data collection & analysis

FTA EEO program plans are an excellent tool, but implementation can be improved:

- Help agencies develop better tools for monitoring workforce data

- More carefully audit the the plans submitted to ensure data quality

- Require that workforce data be submitted in a spreadsheet format

- Encourage more employees to self-report about themselves

Develop a process for a regular review of industry-wide EEO data. This could come from within USDOT, from APTA, or perhaps another organization that advocates for diversity in the transit workforce.

Resources

[Report available from the Mineta Transportation Institute](#)

Contact: Asha Weinstein Agrawal, PhD
                asha.weinstein.agrawal@sjsu.edu

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Thank you!

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