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executive summary





# MOBILITY & INFRASTRUCTURE PARTNERSHIP

## Sector Research Engagement

November 2023

*Prepared by CivicSol*

A proud partner of the  **americanjobcenter** network

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With the investment in transformational regional infrastructure, we can address affordability challenges by creating family-supporting jobs and sustainable career pathways, while improving regional mobility.

## What are we working towards?



**A robust, skilled labor force to deliver generational construction and infrastructure projects**



**Defining economic development opportunities in a new, different way**

# Achievements to Date

## Established Industry Partner Group

Learning from industry to understand M+I workforce needs

## Designated Policy Leadership Group

Getting the right people in the room for policy action

## Announced Partnership to the Public

Garnering support and buy-in for the upcoming action items

## Conducted a SWOT Analysis

Strengths, Weaknesses, Opportunities, and Threats around the M+I sector

## Hosted Industry Focus Groups

Convened stakeholders to gain a deeper understanding of the challenges ahead

## Started Comprehensive Research Study

Started significant M+I industry study and long-range forecast

## Launched Two Action Groups

Addressing policy areas around contracts and non-traditional populations

## Held M+I Workforce Summit

Convened stakeholders to share findings and brainstorm actions

## Research Engagement to Date



# Research Engagement Goals

1

Understand the future skills needed to build and operate our transformational mobility investment.

2

Evaluate our construction and mobility training programs to understand capacity, approach, pipeline, and resources needed to scale.

3

Identify the obstacles preventing jobseekers from seeking these jobs and participating in training.

4

Develop an action plan to build a robust mobility and infrastructure workforce for the future.



# METRO AUSTIN'S M+I SECTOR 2040 FORECAST

Top-Level Findings

Developed by CivicSol, supported by Lightcast

# What is the current state of the M+I Workforce?

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# Who will build and operate Austin's future infrastructure and mobility projects?

**We defined the Mobility and Infrastructure (M+I) sector to include 5 groups of occupations:**



Operations &  
Supervision

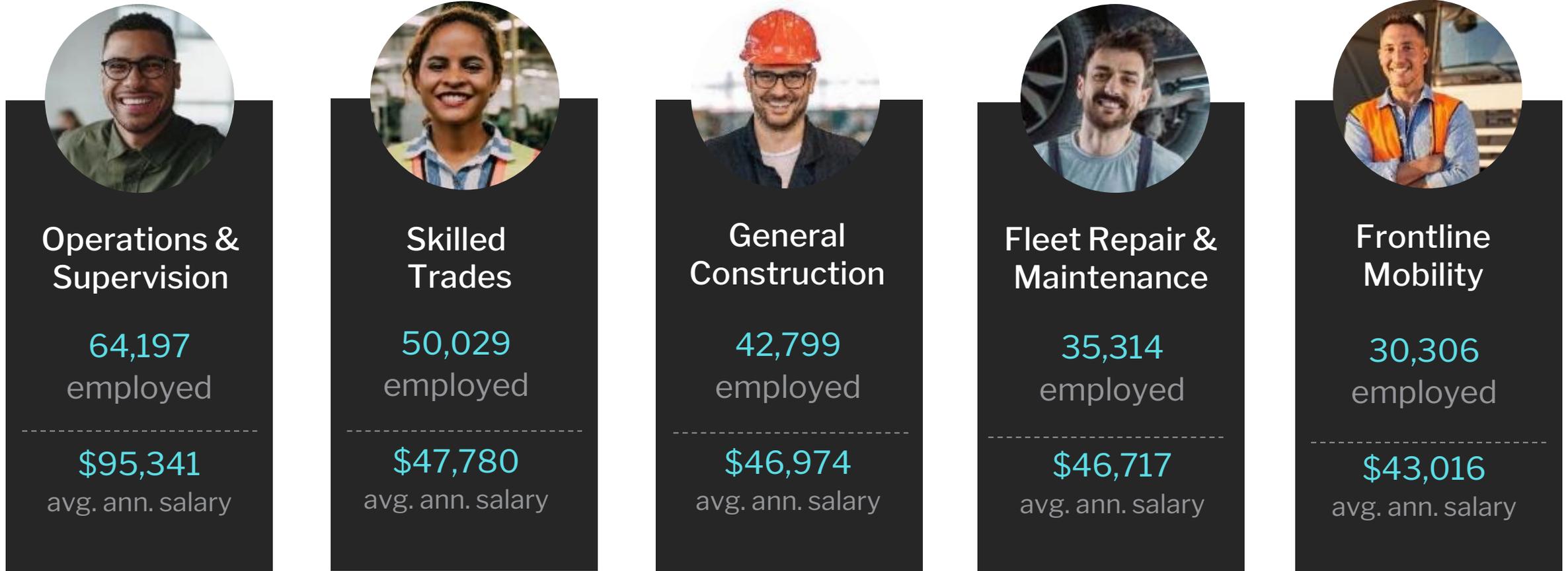
Skilled  
Trades

General  
Construction

Fleet Repair &  
Maintenance

Frontline  
Mobility

# In 2022, 222,646 make up the region's M+I labor pool.

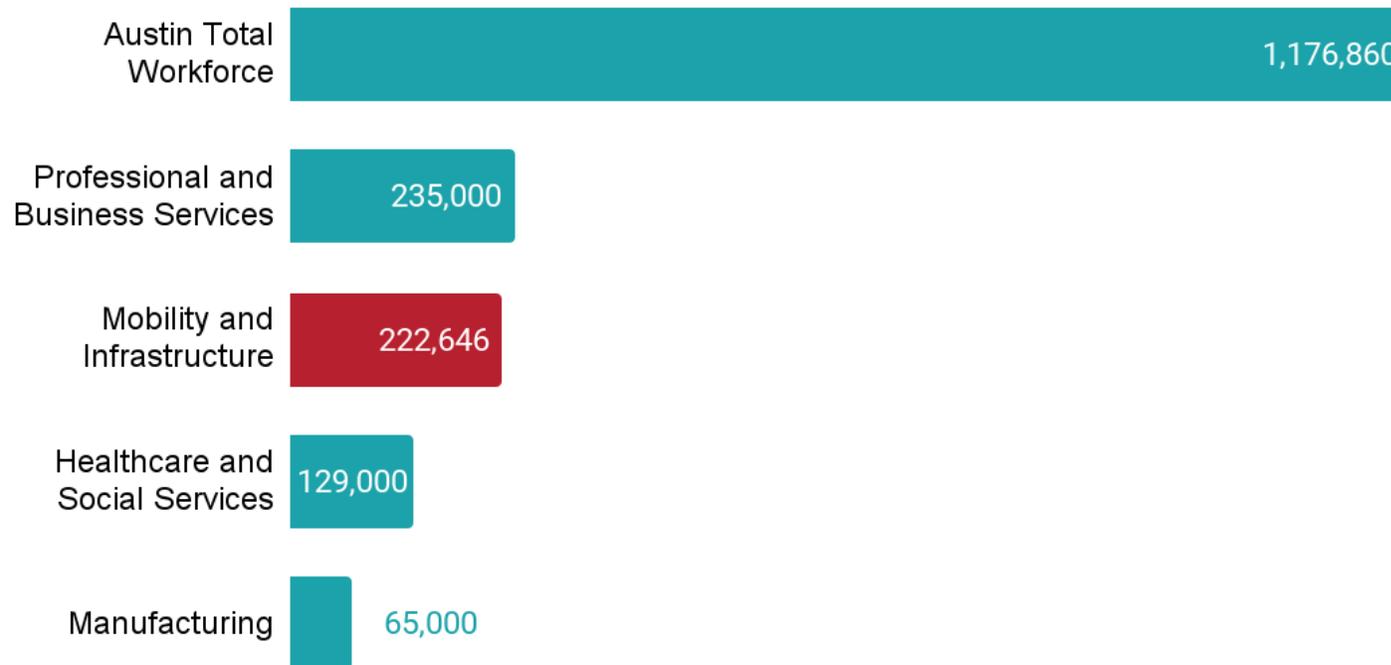


Sources: Lightcast for employment data, as of 2022Q4; Lightcast for wage data, as of 2022Q4.

Note: The average annual salary in Austin is \$63,890 (BLS, 2023). The prevailing wage is [defined as \\$22/hr.](#) or approximately \$45,760 annually

# The region's M+I sector is among its largest employment bases.

## Austin Labor Force Comparison



# Who makes up the M+I workforce?

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# And, we already face a skill deficit.

Location Quotient\*, 2023

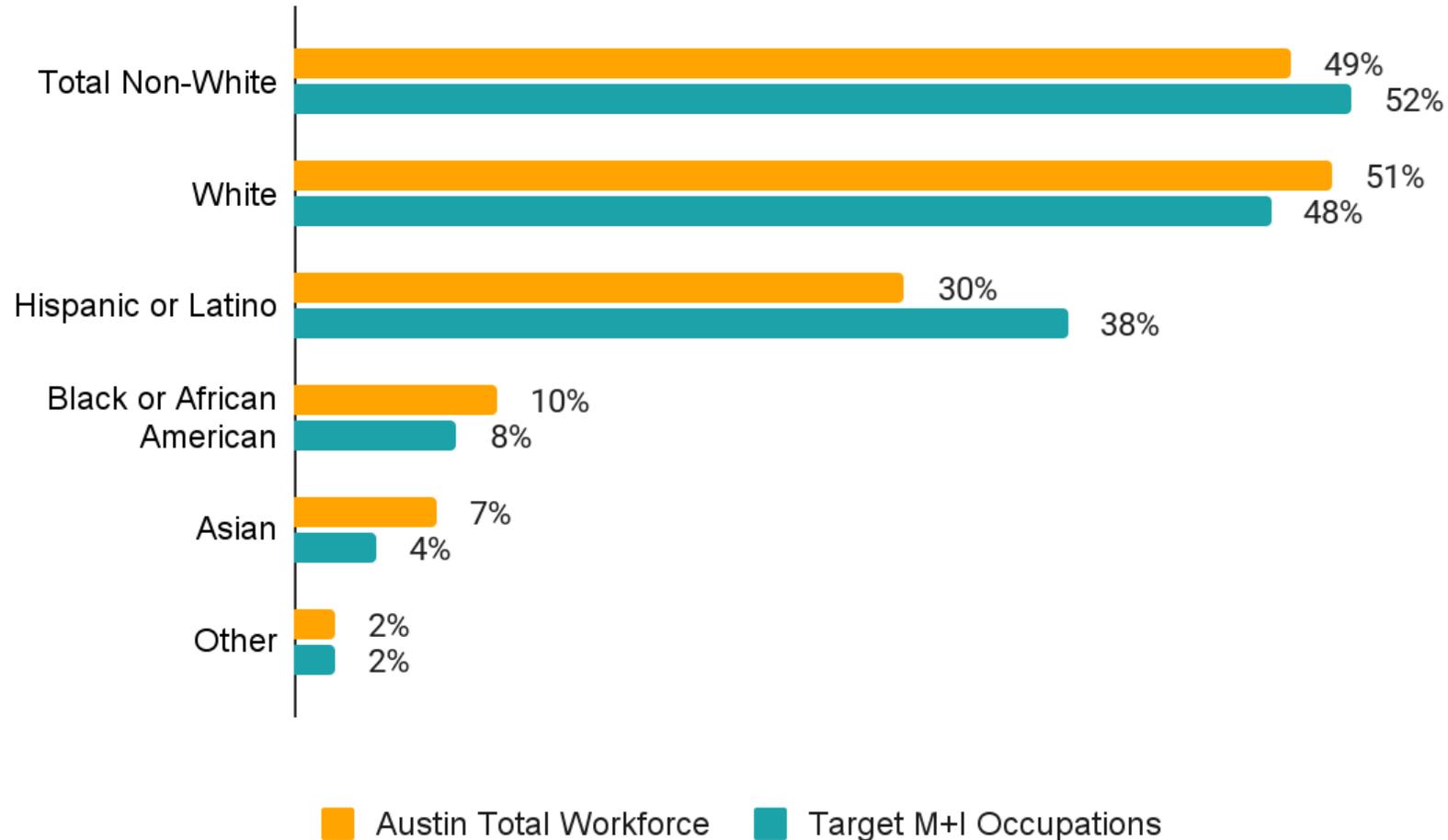


- Metro Austin’s share of Frontline Mobility occupations is 23% smaller than a region its size
- 19% smaller for Skilled Trades
- 18% smaller for Fleet Maintenance and Repair

Source: Lightcast Calculations; CivicSol Analysis

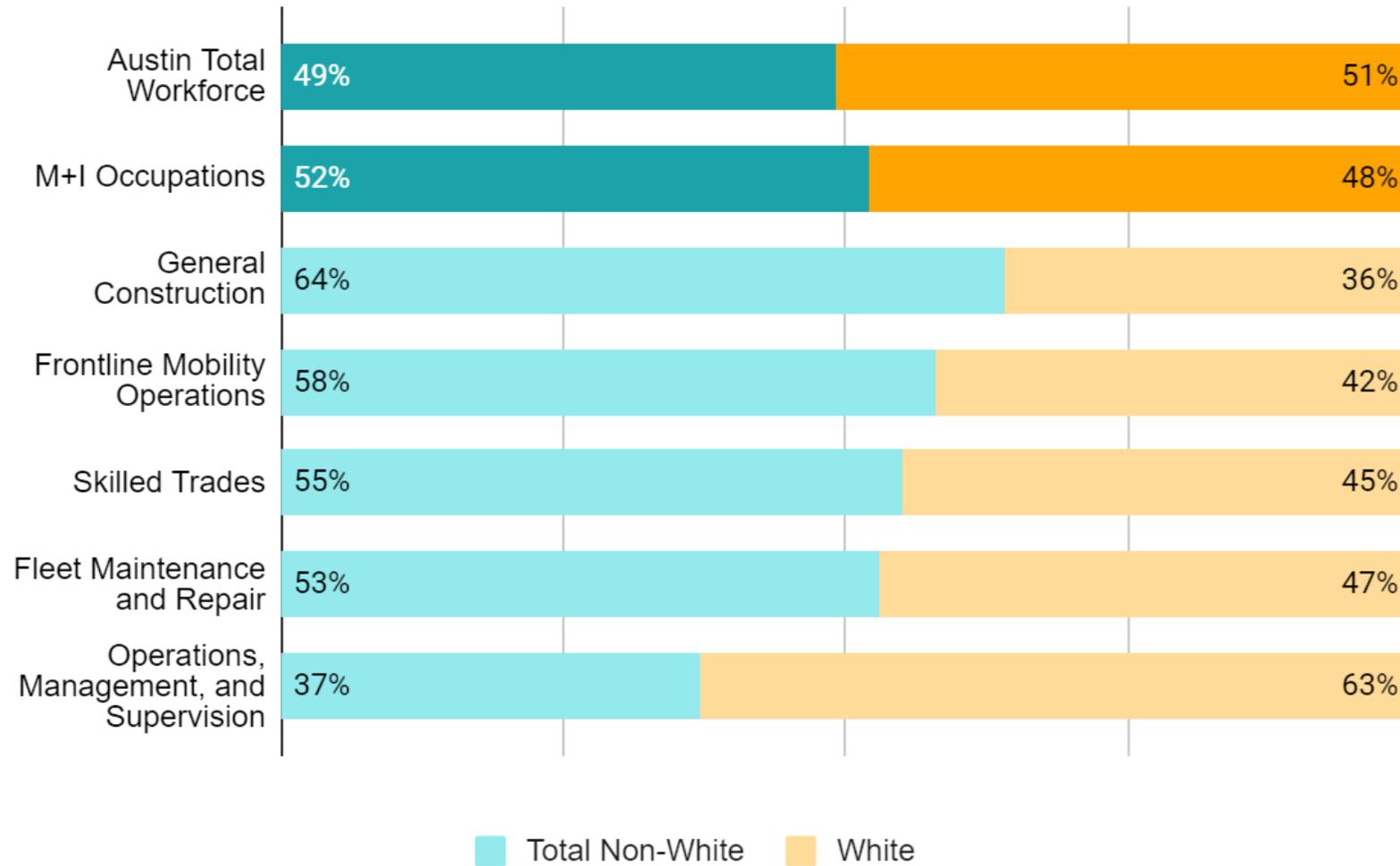
# Hispanics represent nearly 4 in 10 M+I jobs, driving 52% BIPOC representation.

Austin Total Workforce vs. Target M+I Occupations, 2022



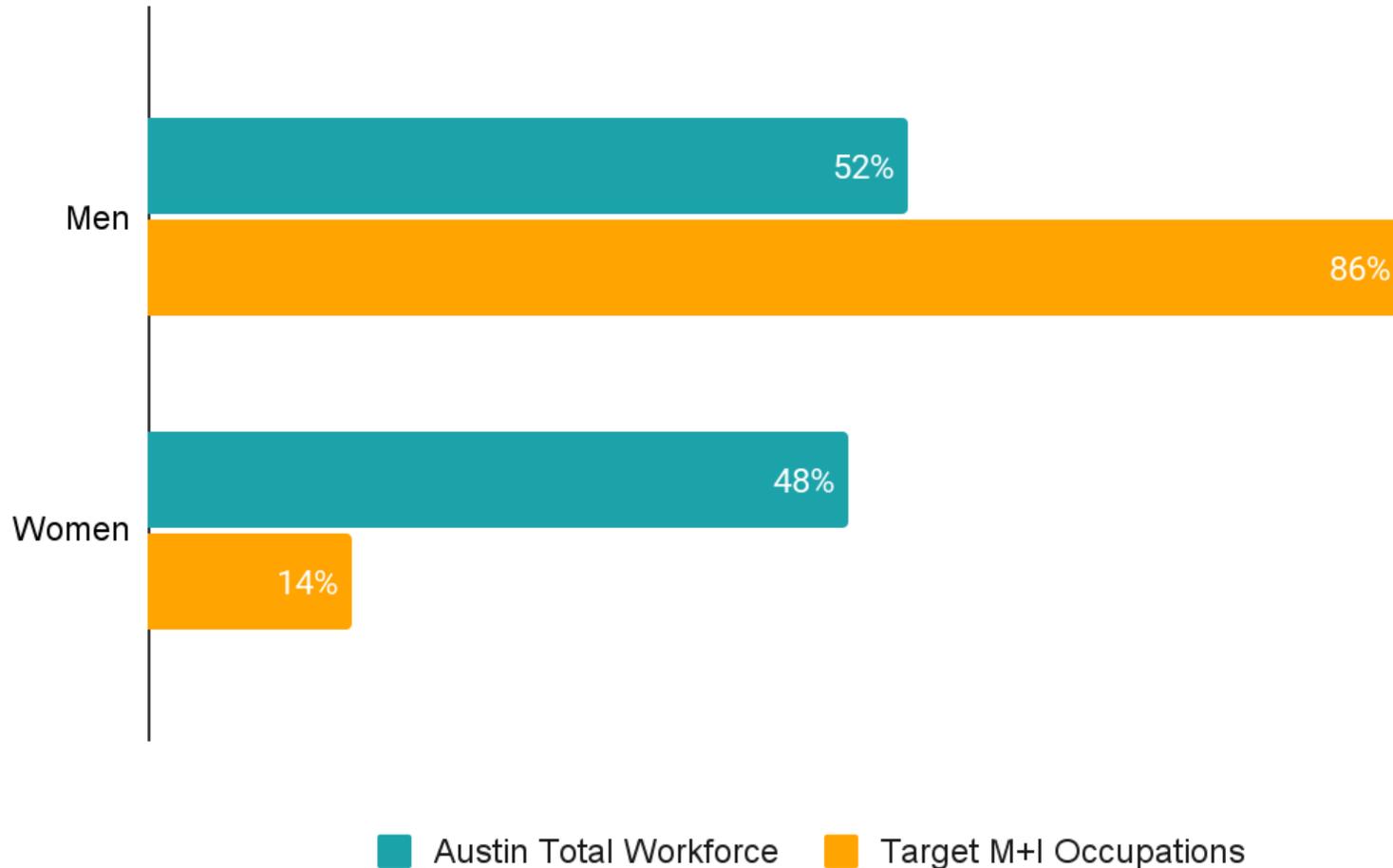
# Highest BIPOC representation is in General Construction occupations.

Race/Ethnicity: Target M+I Occupations, 2022



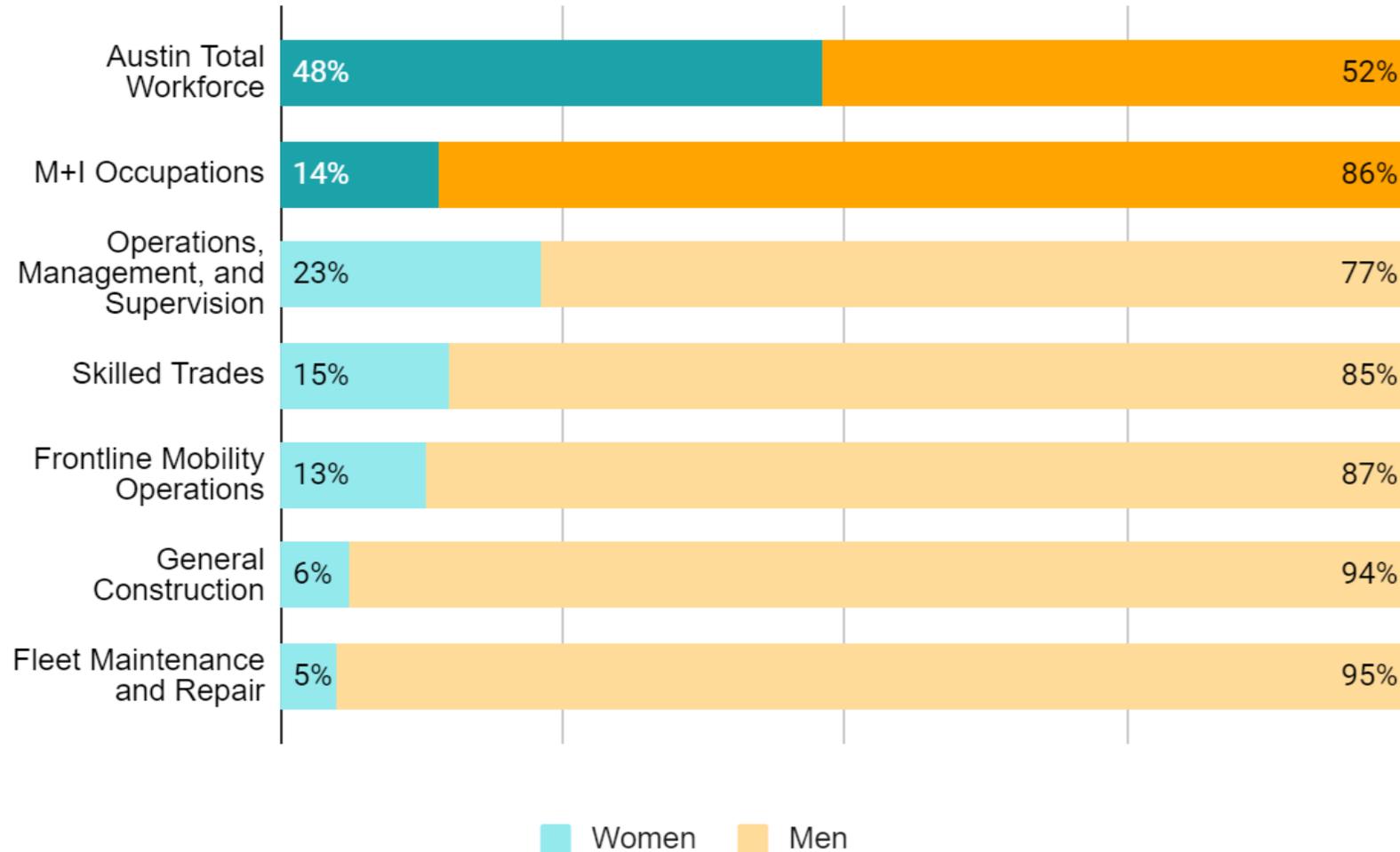
# Women make up 48% of the Austin workforce, but they hold only 14% of M+I jobs.

Gender: Austin Total Workforce vs Target M+I Occupations, 2022



# Women representation is highest in Operations, Management, and Supervision occupations.

Gender: Target M+I Occupations, 2022



# How will the M+I workforce change by 2040?

2040 Forecast

CIVICSOL



# We explored the impact of 5 major capital projects on the Austin metro.



**Project  
Connect**

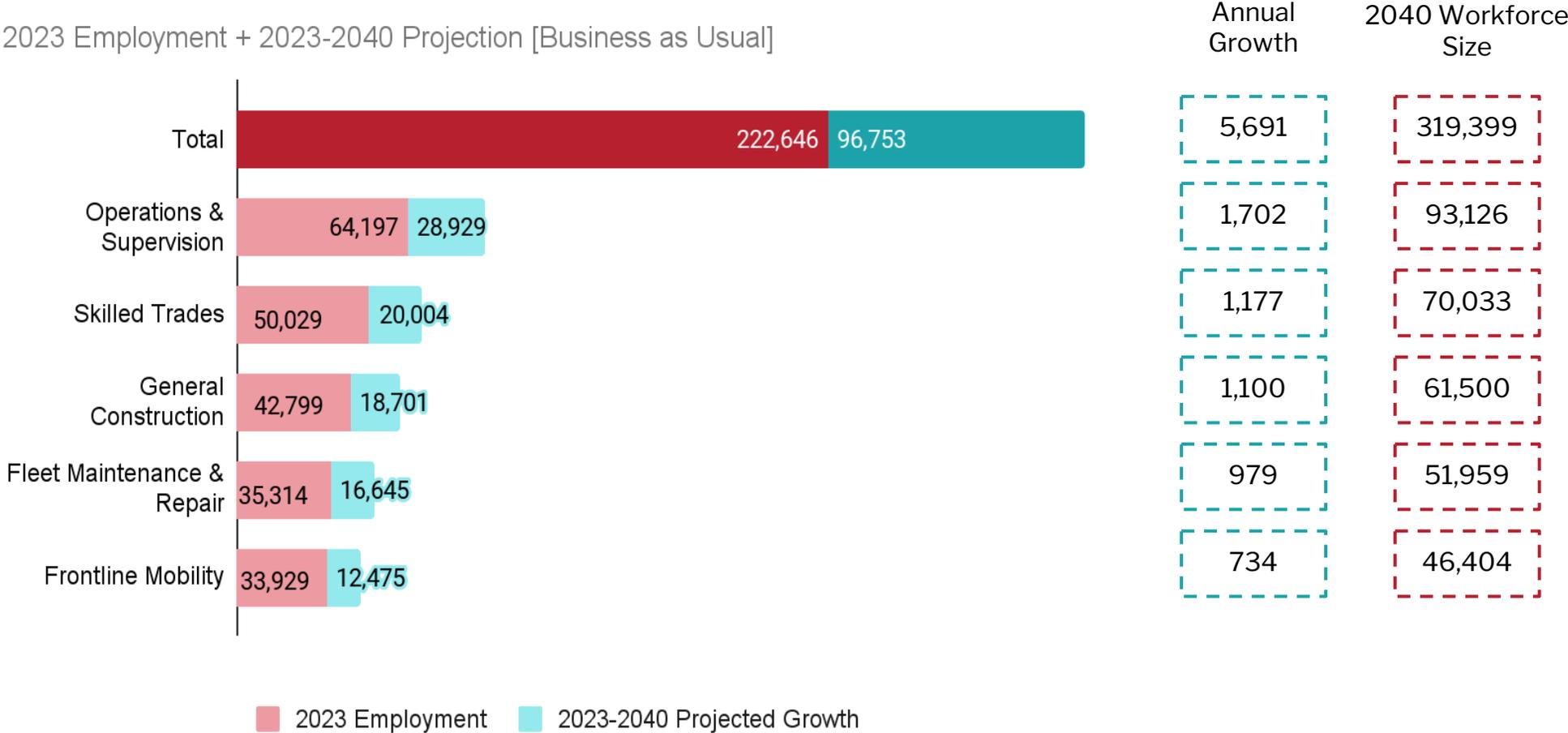
**Airport  
Expansion**

**I-35  
Expansion**

**Tesla  
Gigafactory**

**Samsung**

# Even without pending capital projects, the region's M+I workforce will add 96,700 workers by 2040 – a 38% increase.

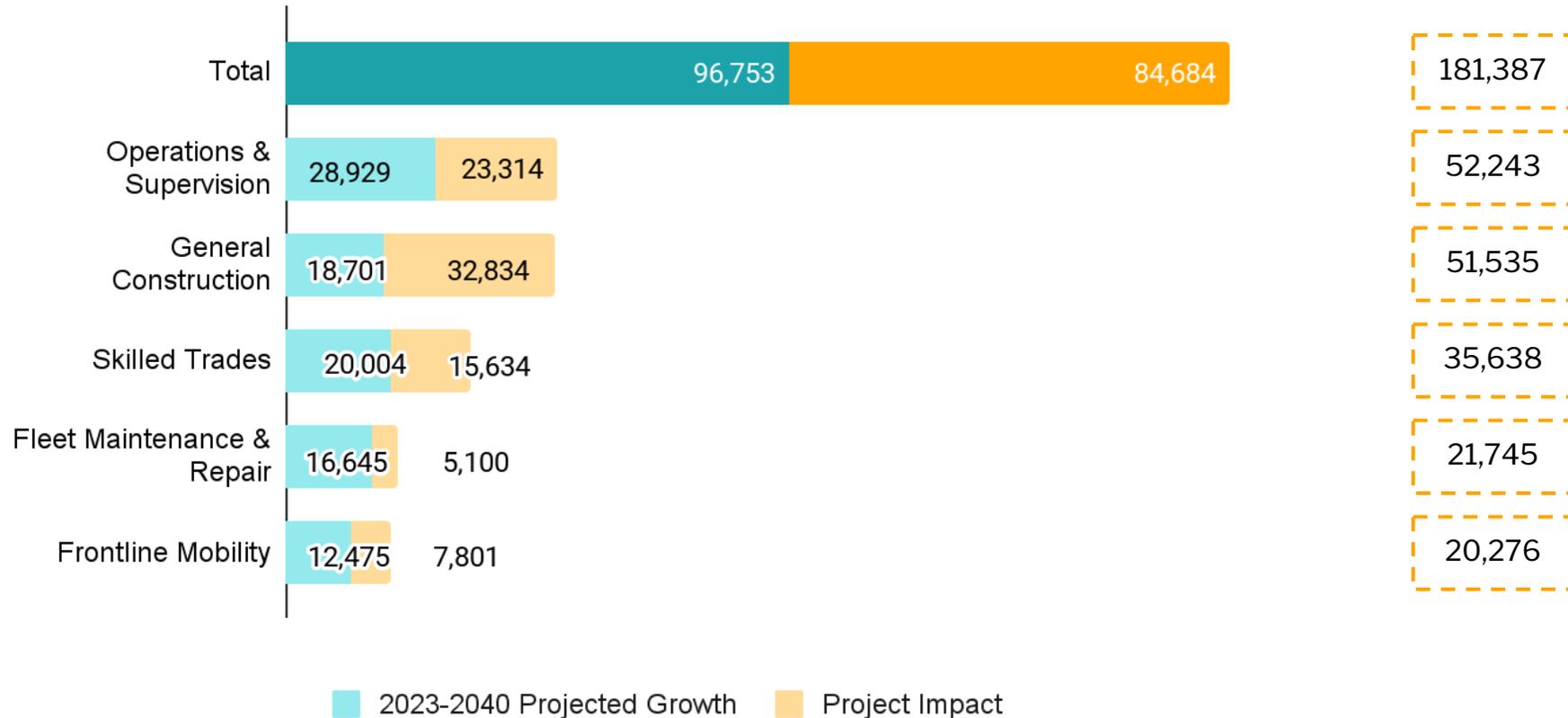


Source: Lightcast Calculations; CivicSol Analysis

# With regional capital projects added, M+I growth will top 181,000 – an 81% increase from 2023.

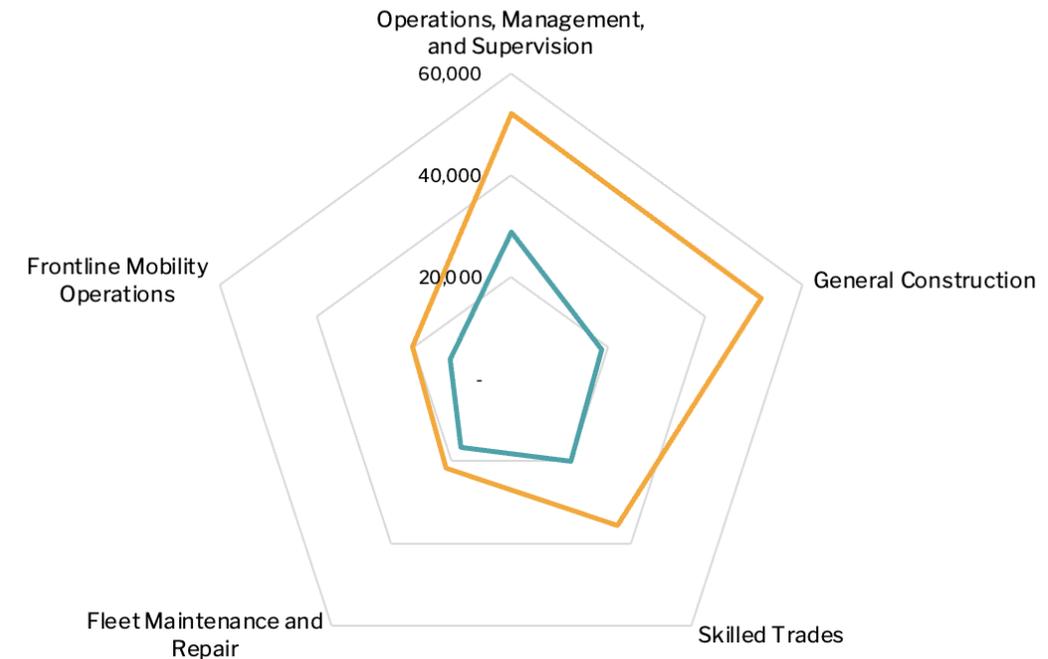
2023-2040 Projection + Project Impact

Total Forecasted Growth



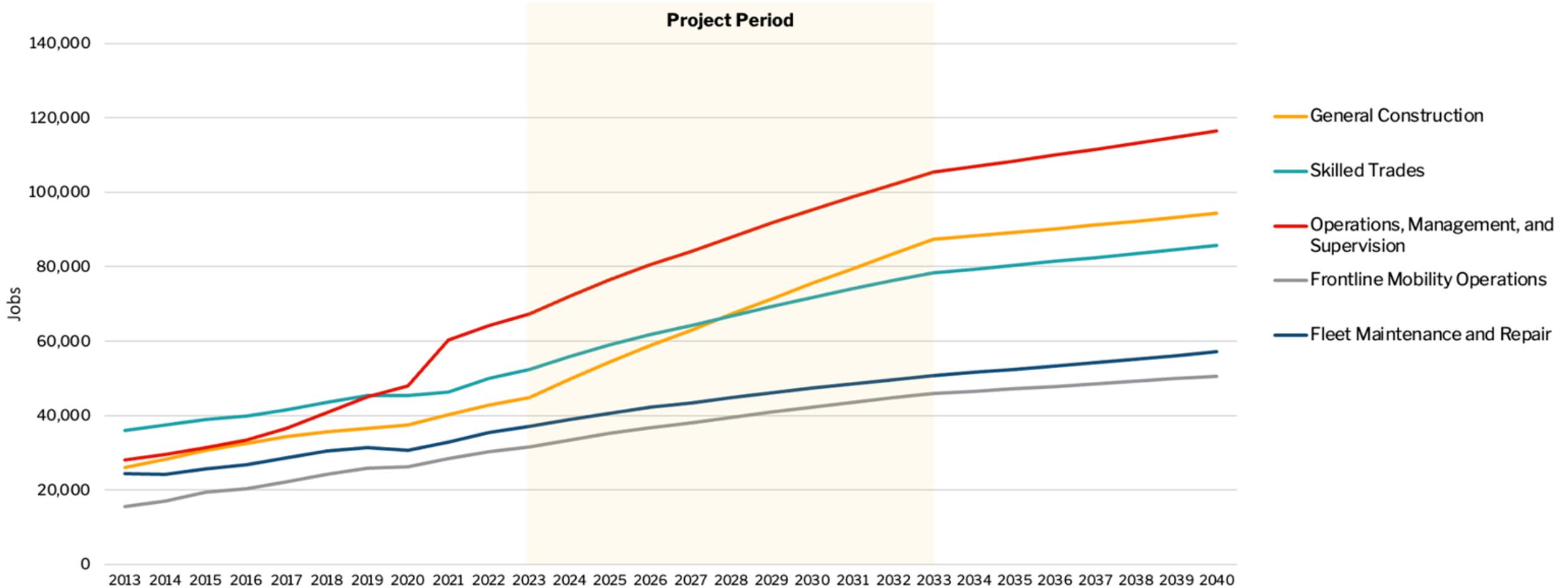
# This will bring supercharged growth, far exceeding business as usual projections.

Occupations	2023-2040 Projection	2023-2040 Projection + Project Impact
<b>Total</b>	<b>43%</b>	<b>81%</b>
Operations, Management, and Supervision	45%	81%
General Construction	44%	120%
Skilled Trades	40%	71%
Fleet Maintenance and Repair	47%	62%
Frontline Mobility Operations	41%	67%



# From 2023-2033, the region's M+I workforce will scale quickly.

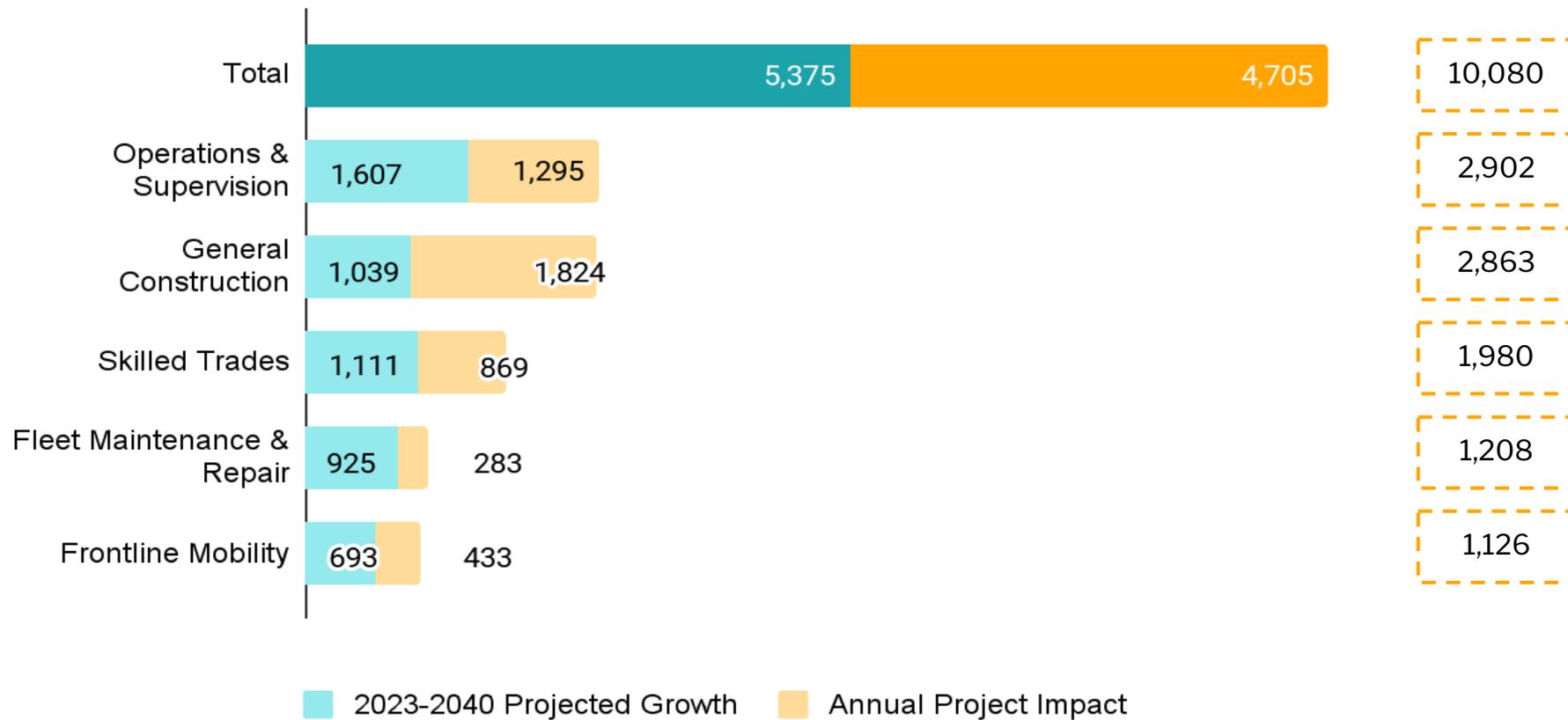
Estimated Employment in Target Occupations, 2013-2040



# This equates to average annual growth that exceeds 10,000 M+I workers.

Average Annual Projection + Project Impact, 2023-2040

Annual Forecasted Growth



# 3 Pressures on Labor Market: Retirement, Automation and Wages

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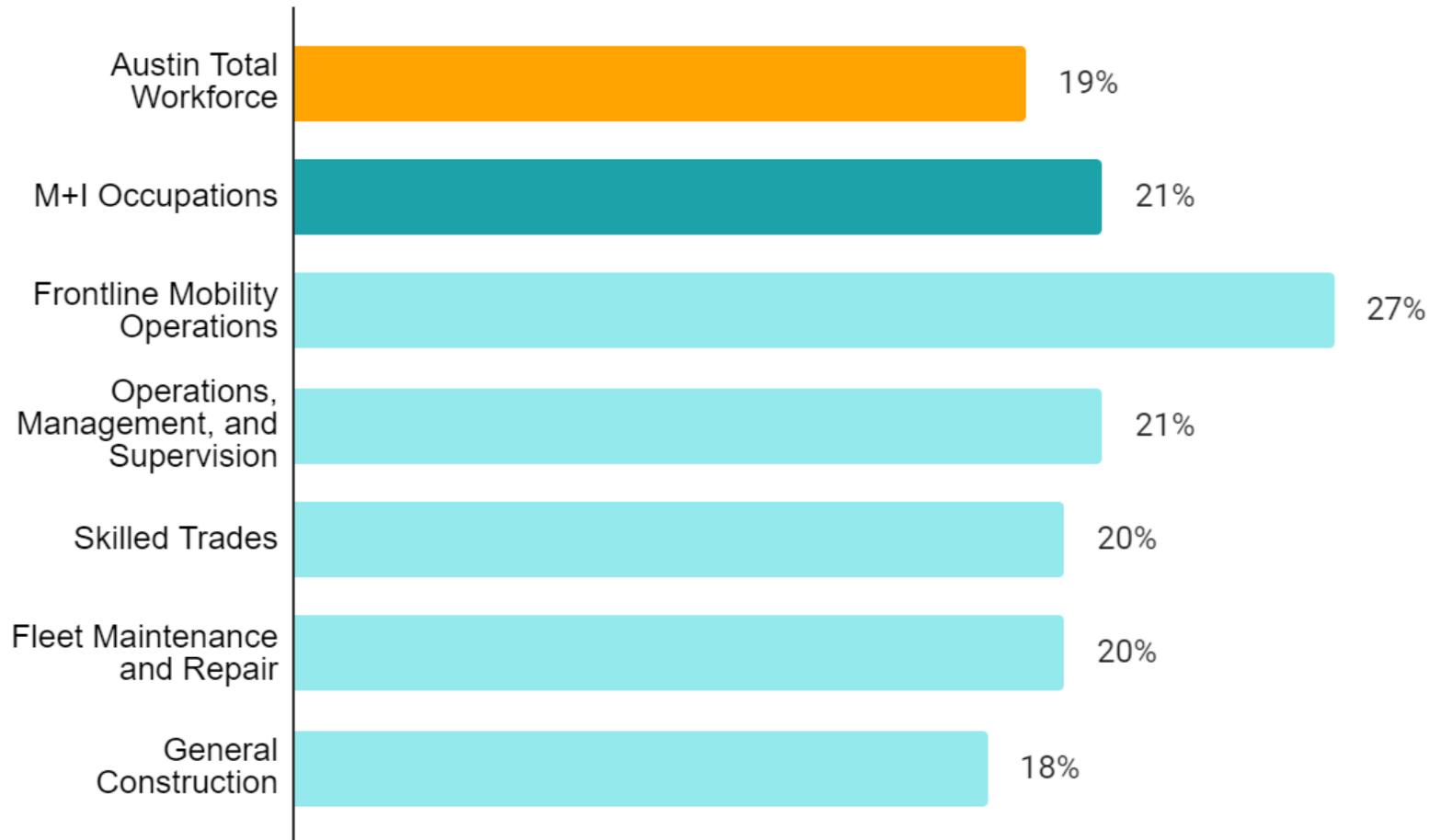
# Just 2 in 10 M+I workers are 55 and older, demonstrating a low retirement risk.

M+I Occupations: Retirement Risk (Share of Workers 55+), 2022



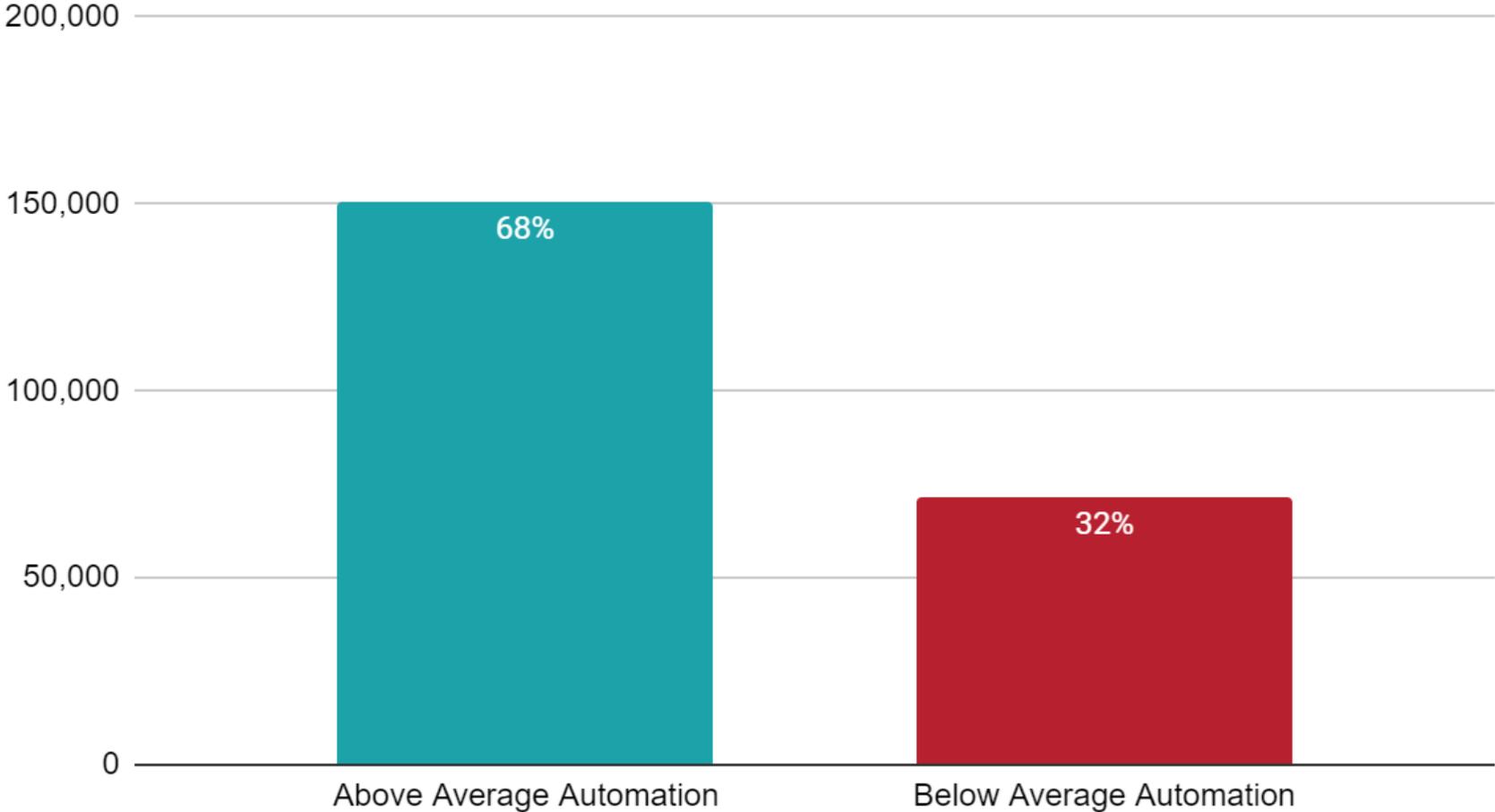
# However, nearly 3 in 10 Frontline Mobility Operations workers are 55 and older.

M+I Occupations: Retirement Risk (Share of Workers 55+), 2022



# At least two-thirds of M+I occupations are likely to be augmented by technology.

M+I Occupations: Employment Relative to Average\* Automation, 2022

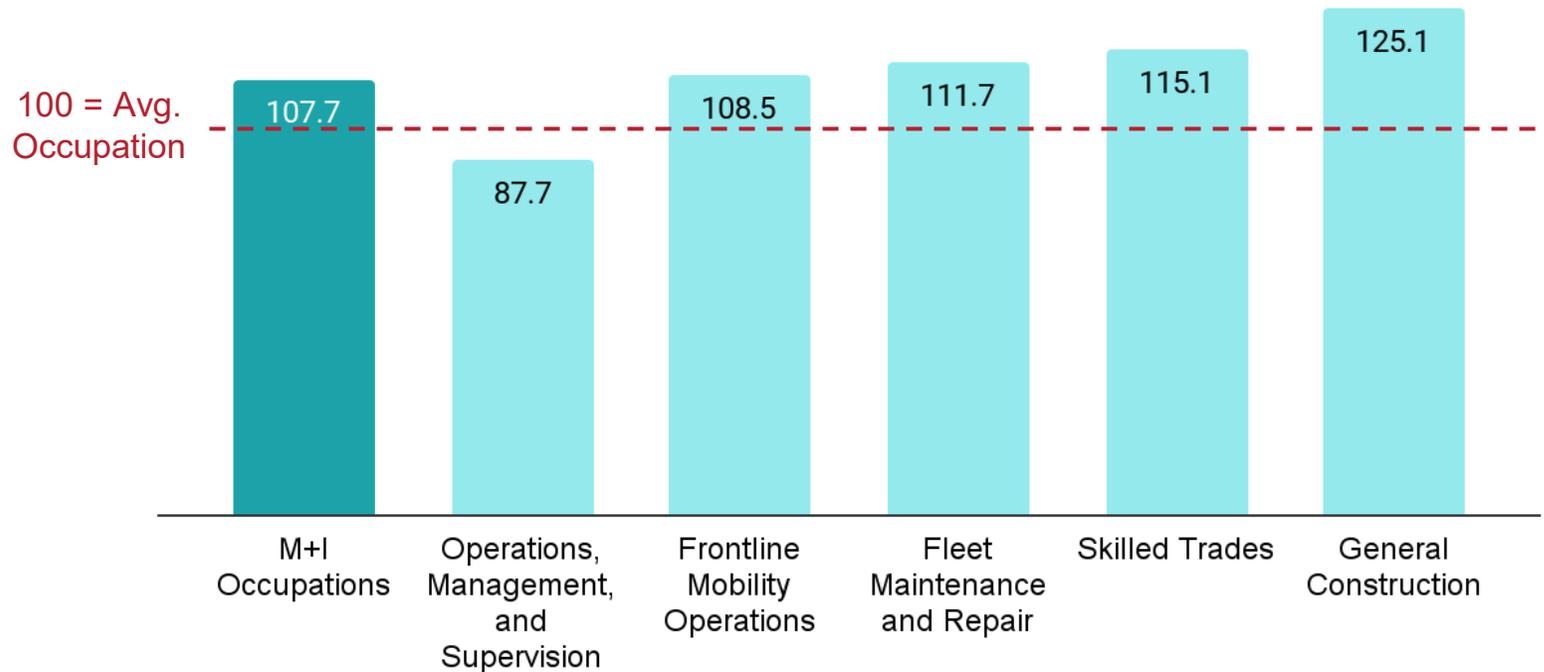


Source: Lightcast Calculations; CivicSol Analysis

Note: \* For reference, occupations with near-average automation scores include Office Clerks, Healthcare Support Occupations, Bus and Truck Drivers, Bill and Account Collectors, and Transportation Inspectors. Methodology on the Automation Index can be found here: <https://kb.lightcast.io/en/articles/6957638-automation-index-methodology>. The methodology is based on how automatable the underlying tasks in a job are.

# Automation will impact General Construction jobs the most.

M+I Occupations: Automation Index, 2022



## Implications:

- **Change needed skills over time:** Robotics, drones, 3D printing, augmented reality, and more are likely to augment General Construction and Skilled Trades.
- Fleet electrification would change the work of repair and maintenance workers.
- **Reduced labor force needs:** Self-driving or AVs could dramatically change mobility occupations.

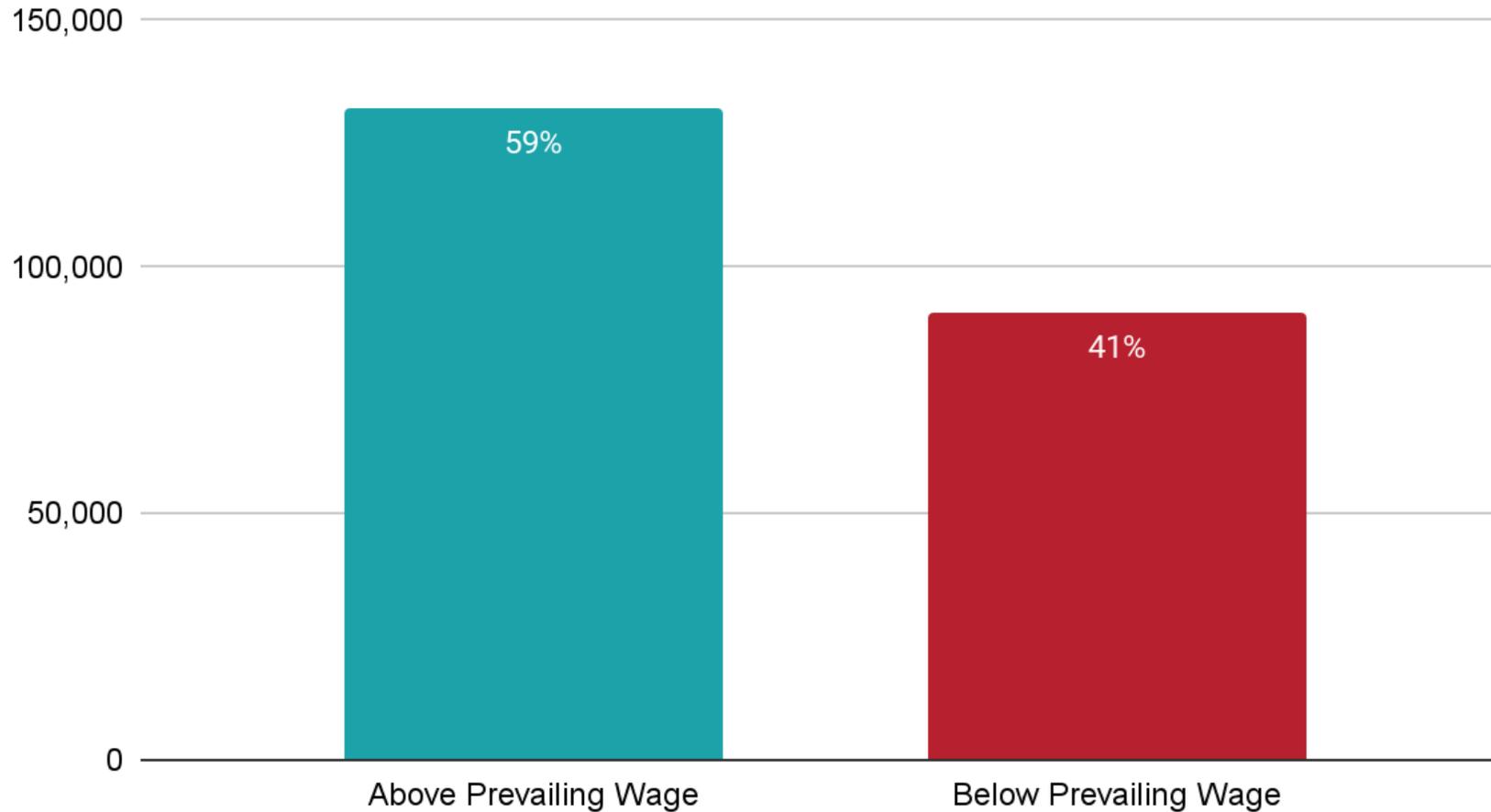
Source: Lightcast Calculations; CivicSol Analysis

Note: \* For reference, occupations with near-average automation scores include Office Clerks, Healthcare Support Occupations, Bus and Truck Drivers, Bill and Account Collectors, and Transportation Inspectors.

Methodology on the Automation Index can be found here: <https://kb.lightcast.io/en/articles/6957638-automation-index-methodology>. The methodology is based on how automatable the underlying tasks in a job are.

# 6 in 10 M+I occupations earn above the prevailing wage, leaving 90,500 jobs below.

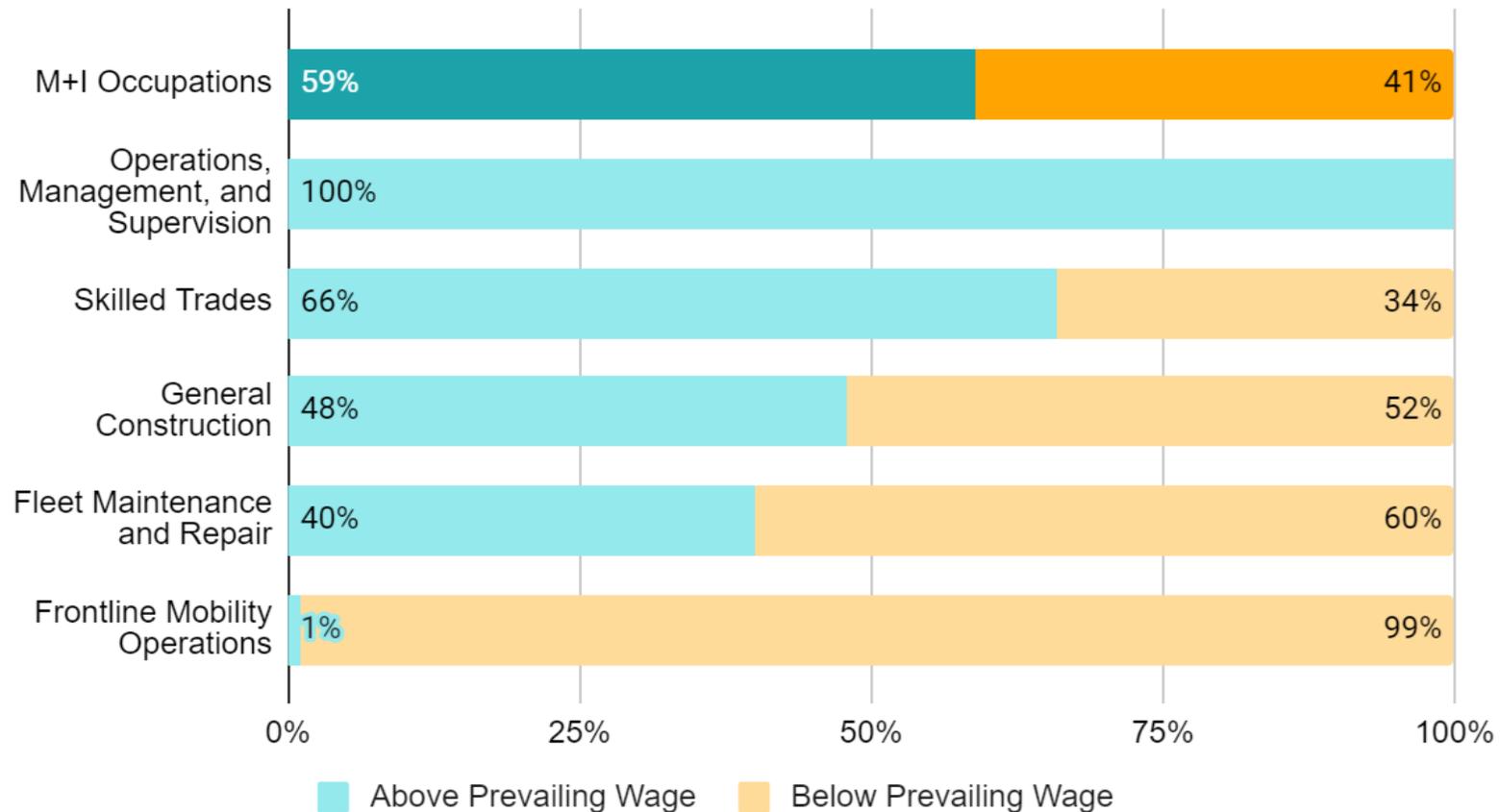
M+I Occupations: Employment Above and Below Prevailing Wage (\$22/hr), 2022



# On average, few Frontline Mobility Operations jobs earn a prevailing wage.

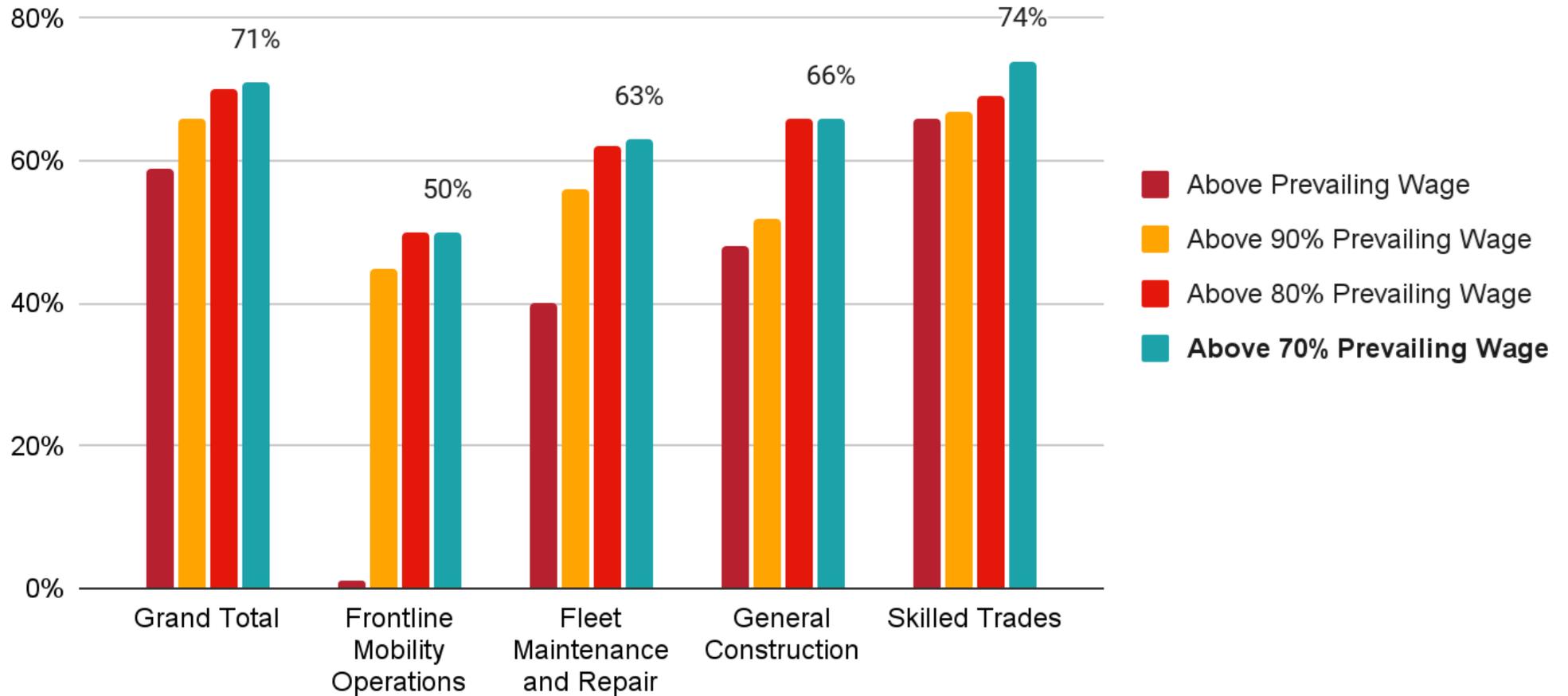
**Noteworthy: In January 2022, CapMetro increased starting pay for bus drivers from \$17.50/hour to \$22/hour.**

M+I Occupations: Employment Above and Below Prevailing Wage (\$22/hr), 2022



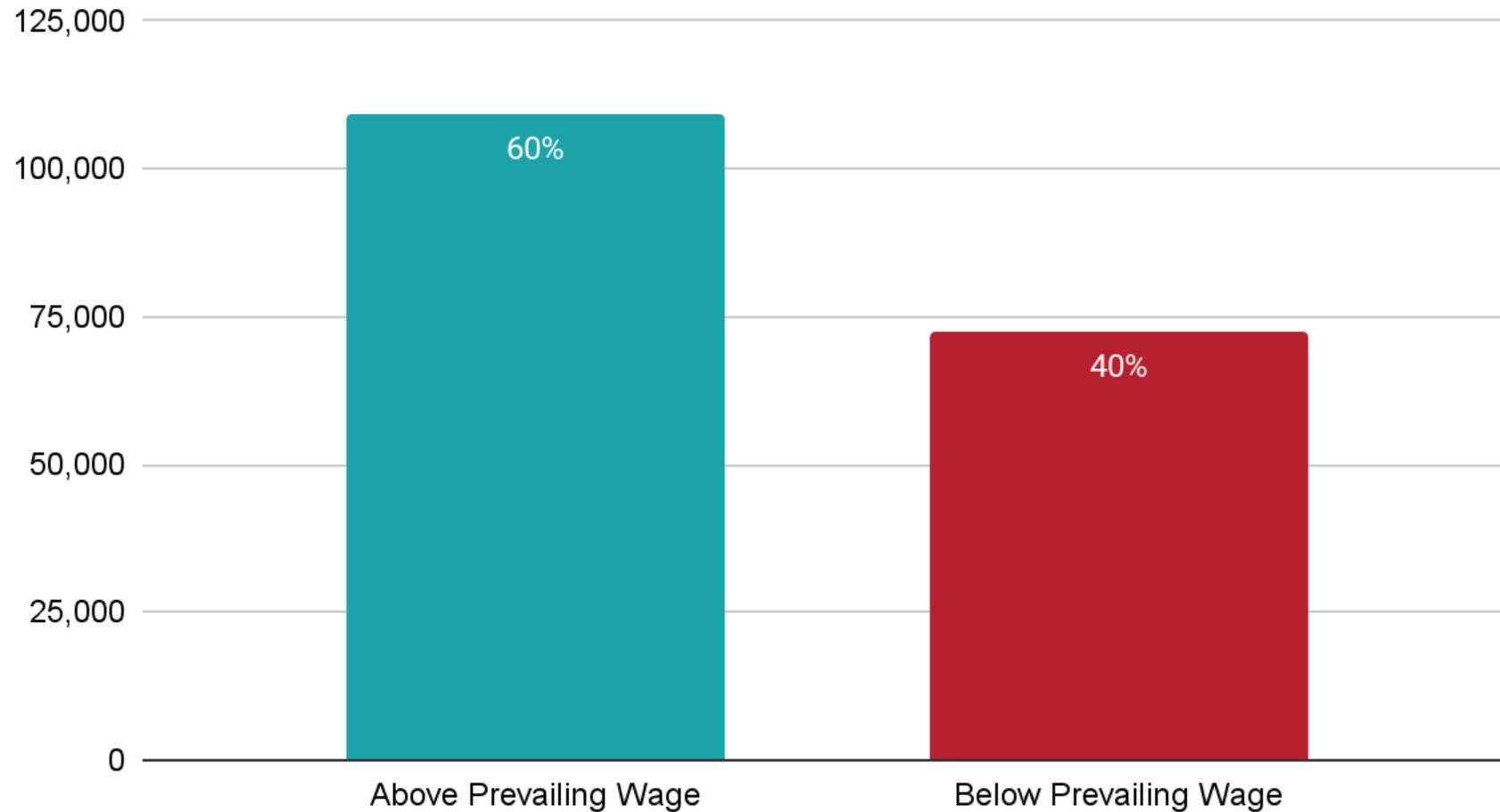
# 7 in 10 M+I jobs earn at least 70% of the prevailing wage.

Percent of Jobs at Different Prevailing Wage Discounts (70% = \$15.40/hr), 2022



# 6 in 10 M+I jobs added between 2023-2040 will earn above the prevailing wage.

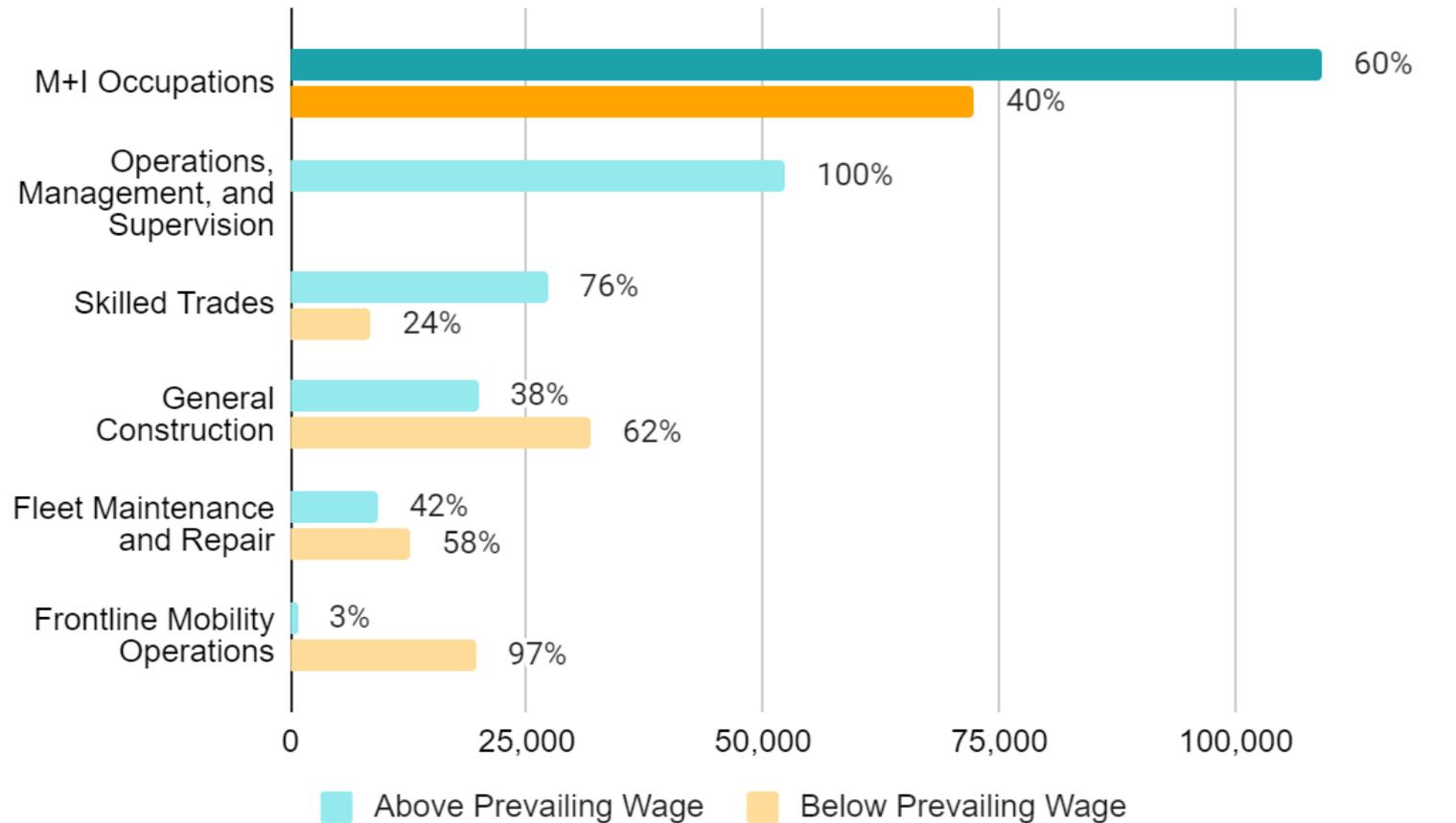
M+I Occupations: Added Jobs Above and Below Prevailing Wage (\$22/hr), 2023-2040



# But, most new mobility jobs will pay below the prevailing wage.

**Noteworthy: In January 2022, CapMetro increased starting pay for bus drivers from \$17.50/hour to \$22/hour.**

M+I Occupations: Added Jobs Above and Below Prevailing Wage (\$22/hr), 2023-2040



# Takeaways What Did We Learn?

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## Key Findings

**#1**

**10,000 M+I jobs  
created annually.**

Large capital projects will double (2x) the number of opportunities in M+I occupations in the region, from 38% increase under business as usual to 81% with the large capital projects.

## Key Findings

# #2

**Existing skill shortages may hamper project success.**

A shallow talent pool of Skilled Trades (0.81 LQ) will struggle to build out infrastructure, and a lack of Frontline Mobility Operations (0.77 LQ) and Fleet Maintenance and Repair (0.82 LQ) could stall the roll out of an improved transit system.

## Key Findings

### #3

**Even the deepest wells of talent will be spread thin.**

The region has a strong concentration of General Construction workers (1.28 LQ) but projected growth is highest for this occupation groups, with a 120% increase over 2022 job levels.

## Key Findings

**#4**

**6 in 10 M+I workers  
earn a prevailing  
wage.**

Improved prevailing wage policies can be used to attract and retain workers, especially in General Construction and Skilled Trades where half (52%) and a third (34%) of workers, respectively, are earning below the prevailing wage of \$22/hr.

## Key Findings

**#5**

**Women make-up just 14% of the M+I workforce.**

Women hold 6% of General Construction roles and 15% of Skilled Trade roles. Increasing the share of women in these roles (14%) to their share in the overall regional economy would cover 41% of the total projected demand for new workers.

## Key Findings

# #6

**Automation will change M+I jobs more than most.**

At least two-thirds of M+I occupations are likely to be augmented by technology.



# METRO AUSTIN'S M+I SECTOR 2040 FORECAST

Sector-by-Sector Findings

Developed by CivicSol, supported by Lightcast

# M+I 2040 Forecast: General Construction

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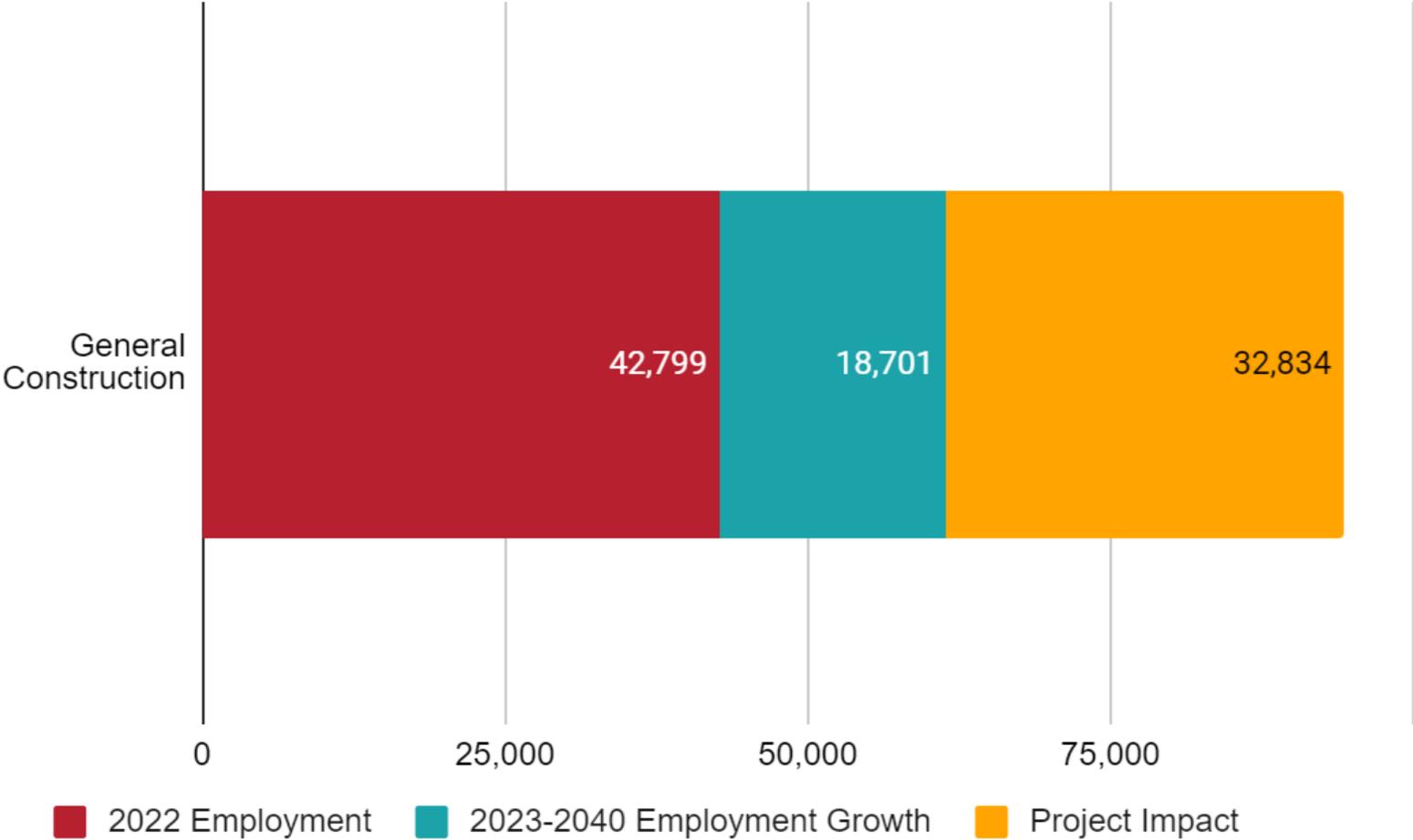


# By 2040, **General Construction** job opportunities will grow 120%, adding 49,000 new jobs.

**94,224**  
total jobs by 2040

**2,863**  
job opportunities  
per year, on  
average

General Construction: 2023-2040 Projection + Project Impact



Source: Lightcast Calculations

# General Construction wages are diminished largely by Construction Laborers, who earn 11% below the prevailing wage.

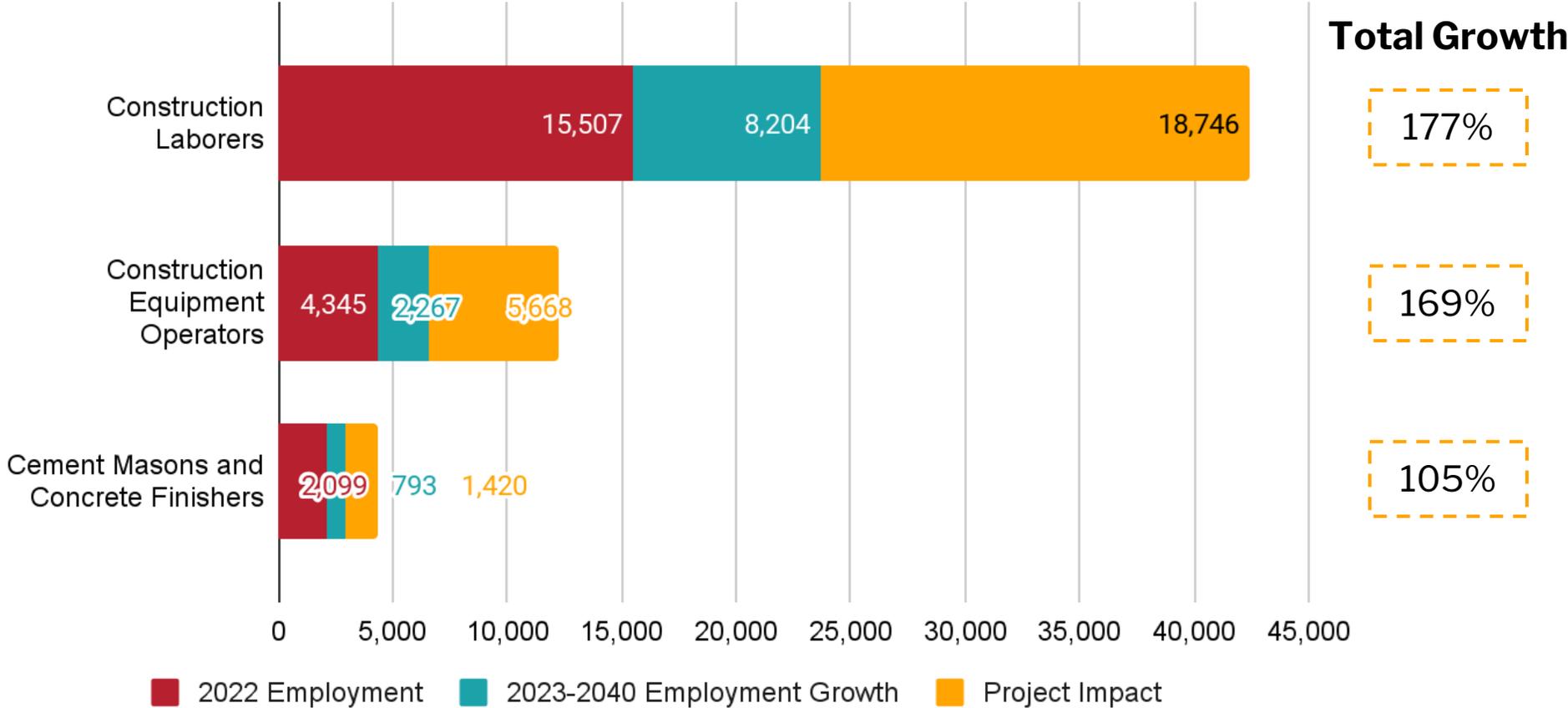
## General Construction: Occupations Below the Prevailing Wage

Occupation	2022 Jobs	Share of Occupation Group	Hourly Wage	Percent Below the Prevailing Wage
Construction Laborers	15,507	36%	\$19.59	11%
Helpers, Construction Trades	3,328	8%	\$18.06	18%
Cement Masons, Concrete Finishers, and Terrazzo Workers	2,099	5%	\$20.75	6%
Highway Maintenance Workers	664	2%	\$20.33	8%
Insulation Workers	617	1%	\$21.30	3%

Minimum 500 jobs in 2022

# There is a large bottleneck risk for the fastest-growing **General Construction** occupations.

General Construction: Occupations that Will Double in Size, 2023-2040



Note: Minimum 500 jobs in 2022. Minimum 100% growth through 2040.

# M+I 2040 Forecast: Skilled Trades

CIVICSOL

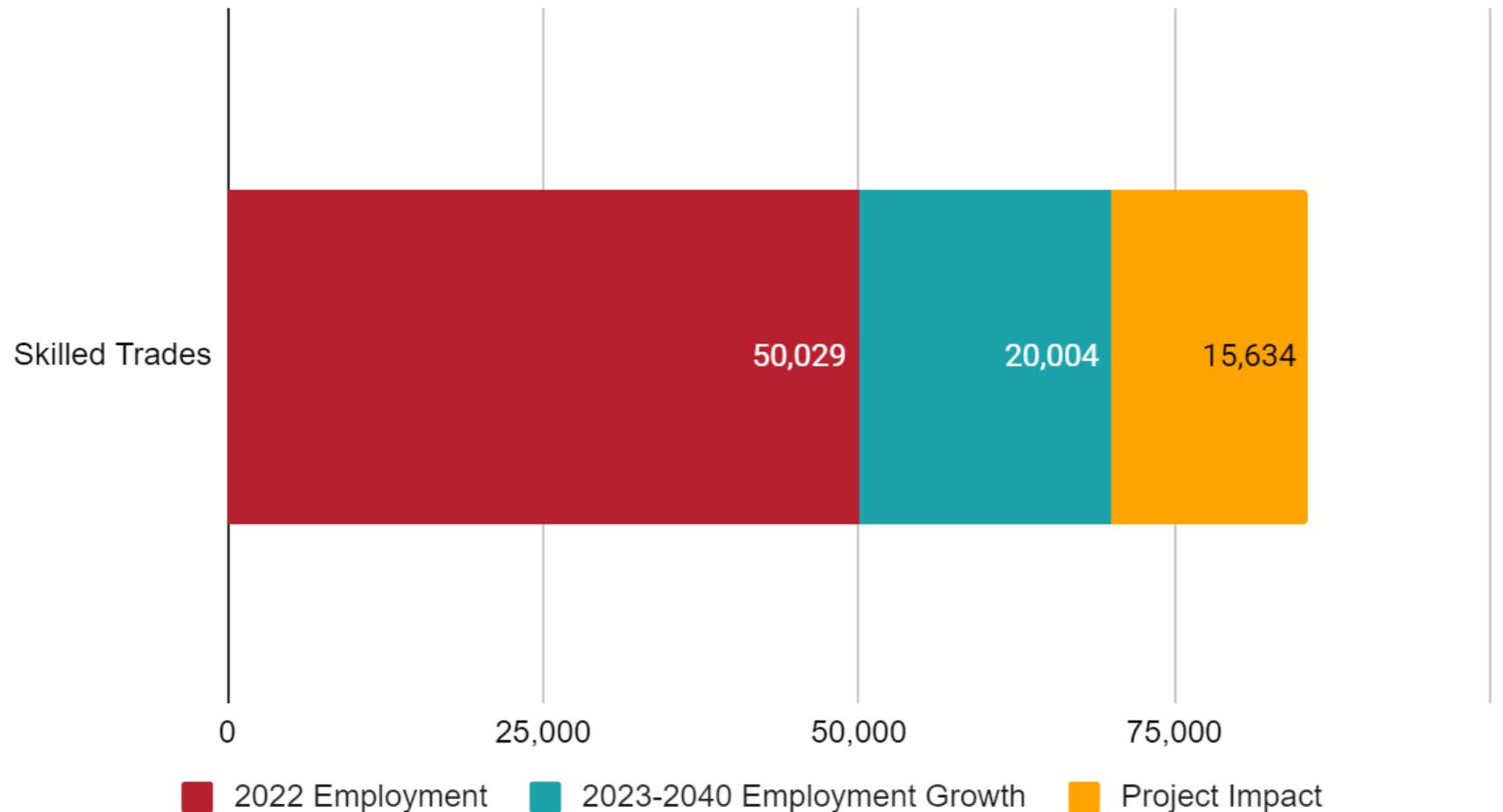


By 2040, **Skilled Trades** job opportunities are projected to increase by 71%, adding 35,638 new jobs.

**85,667**  
total jobs by 2040

**1,980**  
job opportunities  
per year, on  
average

Skilled Trades: 2023-2040 Projection + Project Impact



# Assemblers and Fabricators and Production Workers make up 20% of the workforce but earn 27% less than the prevailing wage.

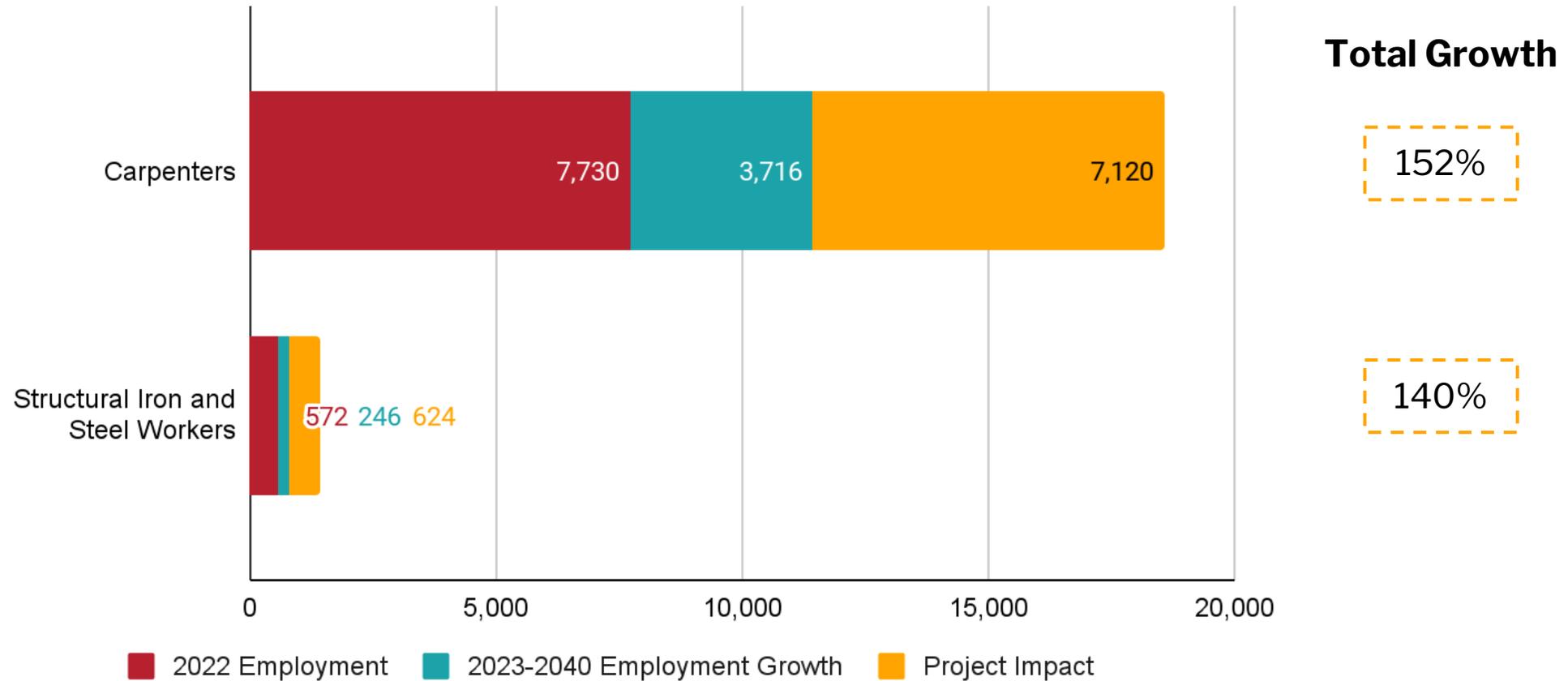
## Skilled Trades: Occupations Below the Prevailing Wage

Occupation	2022 Jobs	Share of Occupation Group	Hourly Wage	Percent Below the Prevailing Wage
Miscellaneous Assemblers and Fabricators	6692	13%	\$16.06	27%
Miscellaneous Production Workers	2968	6%	\$16.21	26%
Electrical, Electronics, and Electromechanical Assemblers	2411	5%	\$18.18	17%
Roofers	1028	2%	\$21.98	0%
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	963	2%	\$15.06	32%
Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	920	2%	\$18.50	16%
Glaziers	829	2%	\$21.37	3%
Molders and Molding Machine Setters, Operators, and Tenders, Metal and Plastic	750	1%	\$15.10	31%

Minimum 500 jobs in 2022

# There is a bottleneck risk for some of the **Skilled Trades** occupations.

Skilled Trades: Occupations that Will Double in Size, 2023-2040



Note: Minimum 500 jobs in 2022. Minimum 100% growth through 2040.

# M+I 2040 Forecast: Operations, Management, and Supervision

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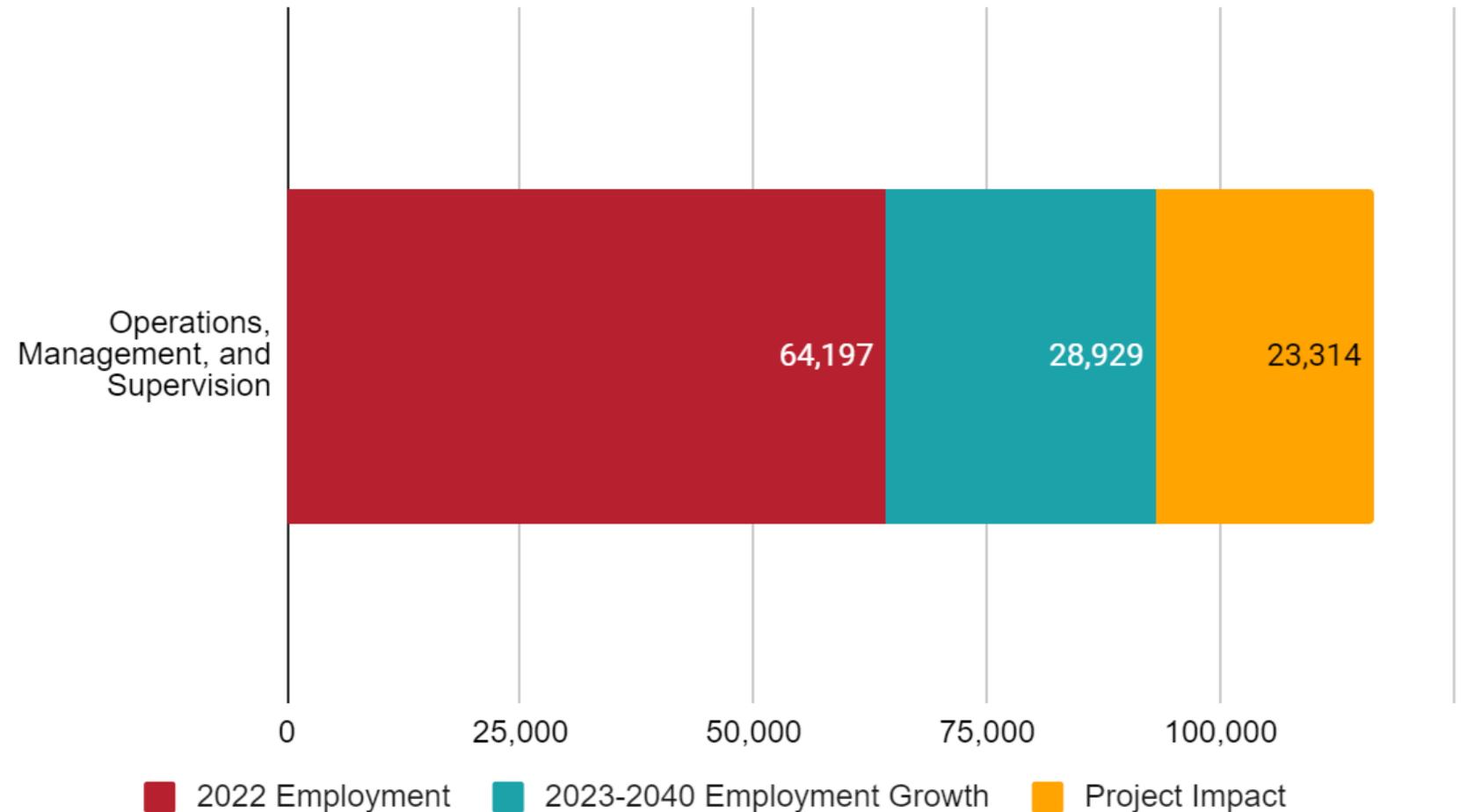


By 2040, **Operations, Management, and Supervision** job opportunities are projected to increase by 81%, adding 52,243 new jobs.

Operations, Management, and Supervision: 2023-2040 Projection + Project Impact

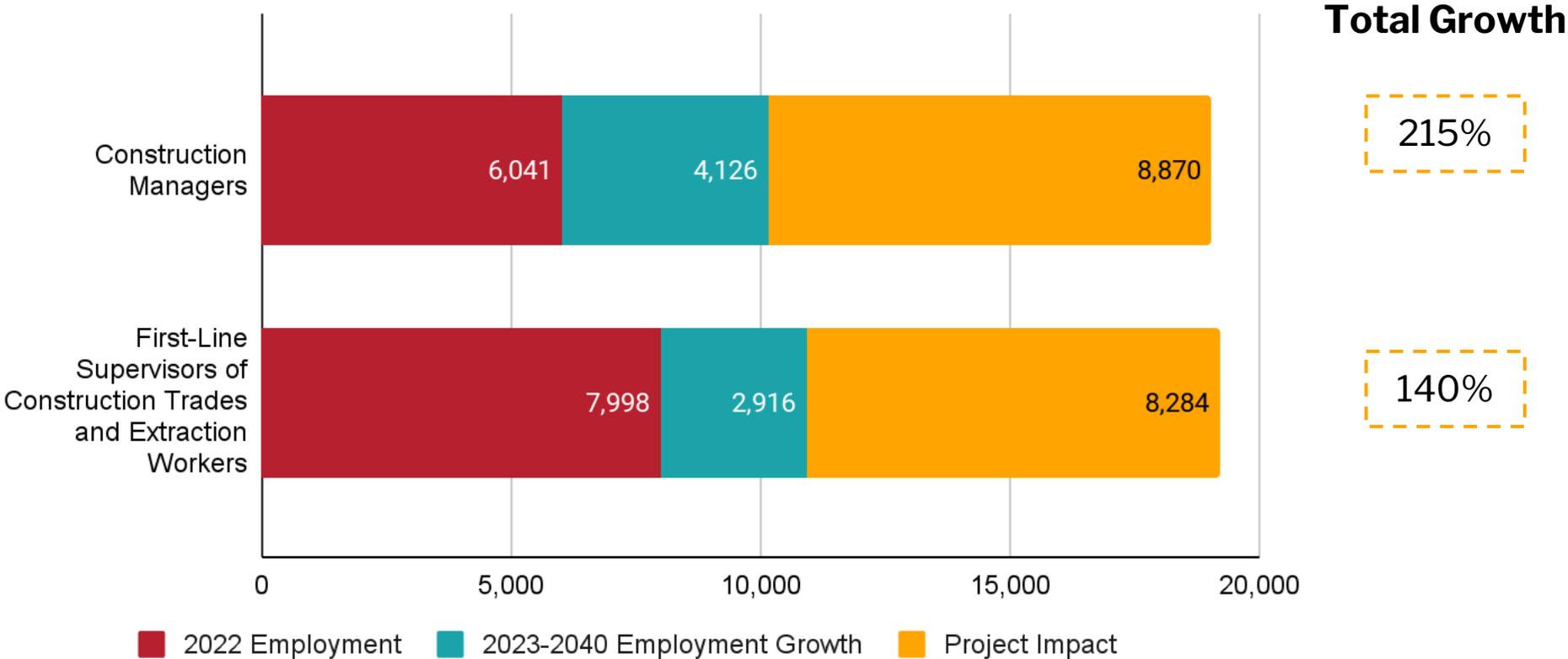
**116,441**  
total jobs by 2040

**2,902**  
job opportunities  
per year, on  
average



# There is a bottleneck risk for some of the **Operations, Management and Supervision** occupations such as **Construction Managers** and **Front Line Supervisors**.

Operations, Management, and Supervision: Occupations that Will Double in Size, 2023-2040



Minimum 500 jobs in 2022. Minimum 100% growth through 2040.

# M+I 2040 Forecast: Frontline Mobility Operations

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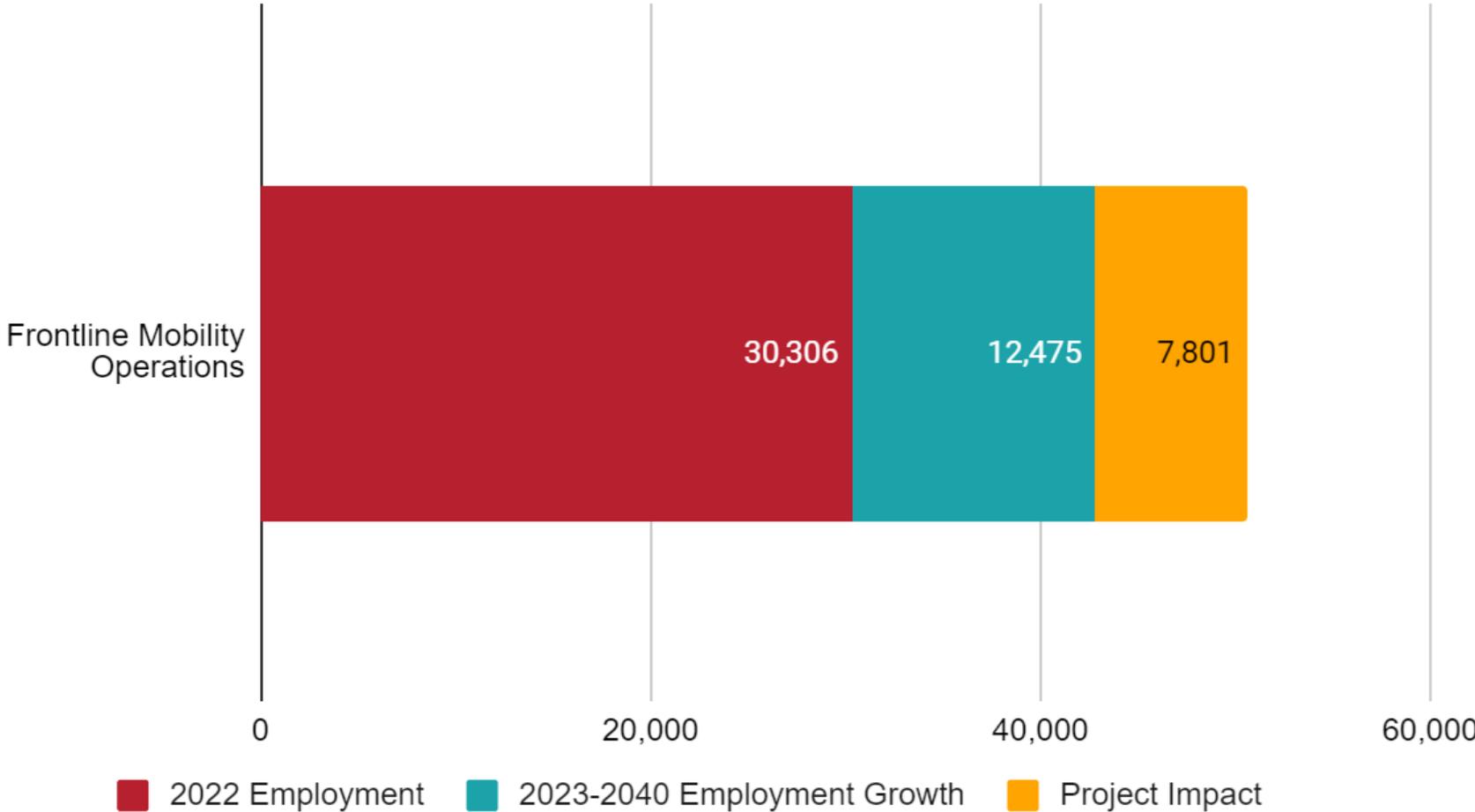


# By 2040, Frontline Mobility Operations job opportunities are projected to increase by 67%, adding 20,276 new jobs.

**50,583**  
total jobs by 2040

**1,126**  
job opportunities  
per year, on  
average

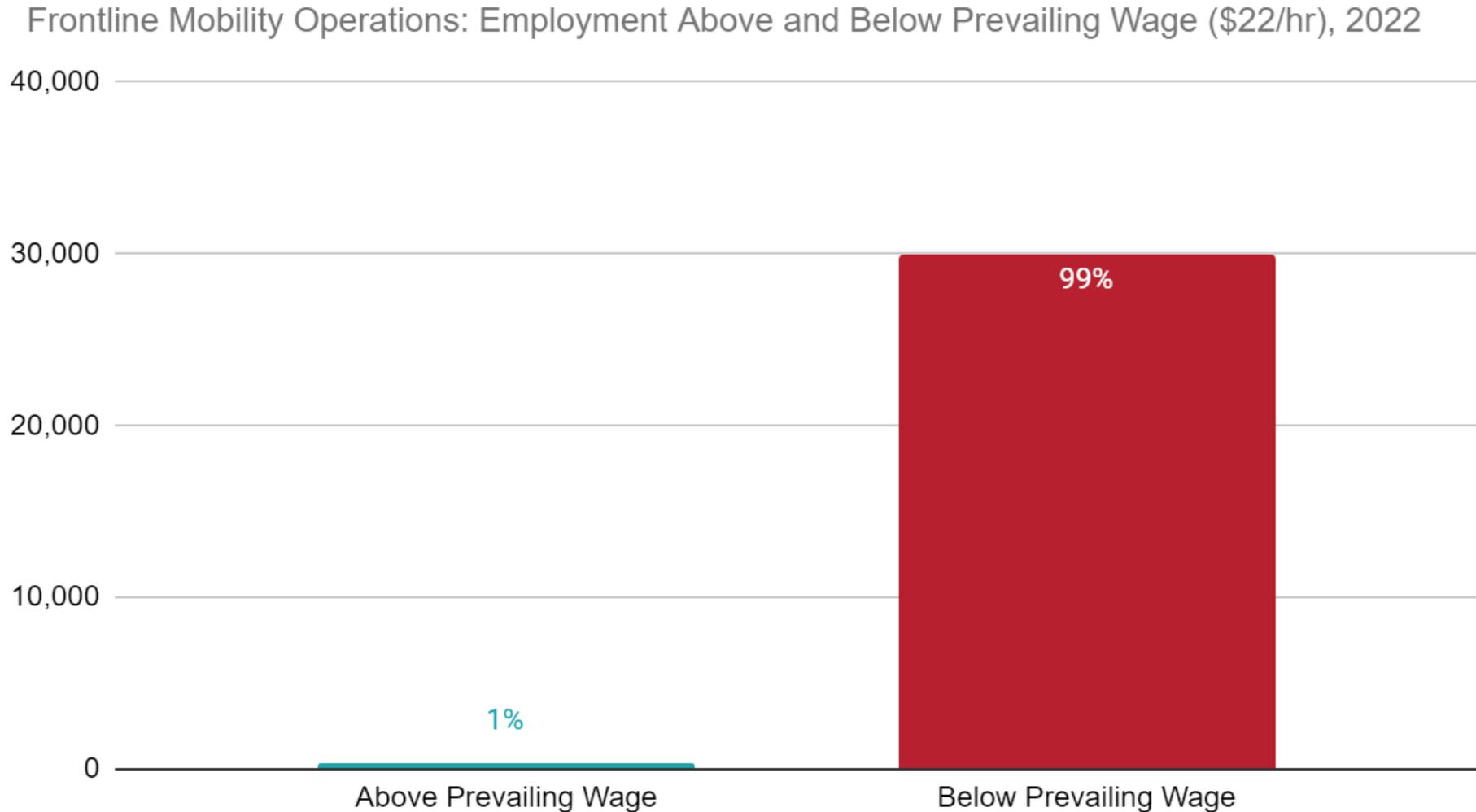
Frontline Mobility Operations: 2023-2040 Projection + Project Impact



Source: Lightcast Calculations

# Almost none of the Frontline Mobility Operations jobs pay above the prevailing wage

**Noteworthy: In January 2022, CapMetro increased starting pay for bus drivers from \$17.50/hour to \$22/hour.**



# M+I 2040 Forecast: Fleet Maintenance and Repair

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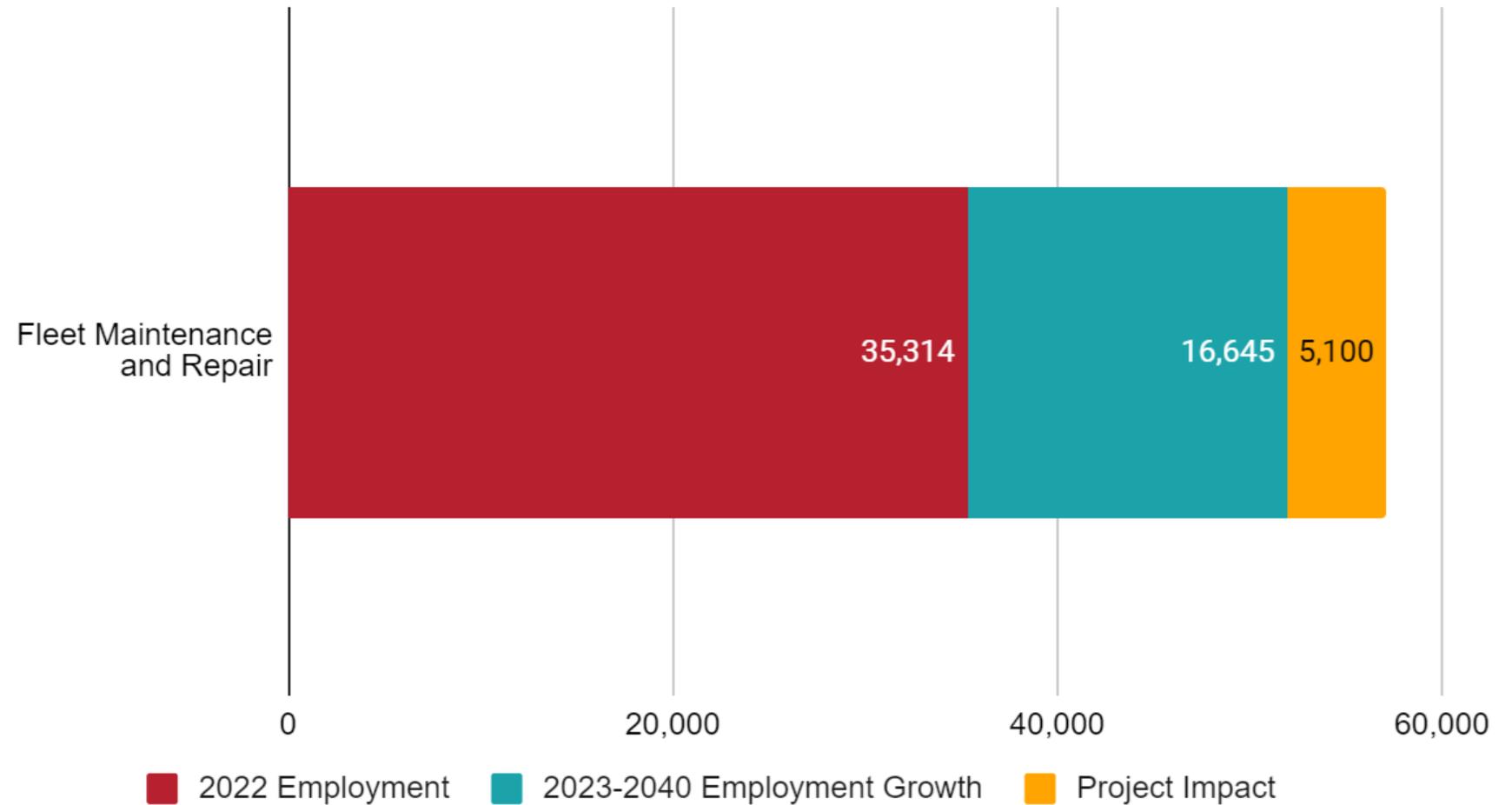


# By 2040, Fleet Maintenance and Repair job opportunities are projected to increase by 62%, adding 21,745 new jobs.

**57,059**  
total jobs by 2040

**1,208**  
job opportunities  
per year, on  
average

Fleet Maintenance and Repair: 2023-2040 Projection + Project Impact



# Wages are pulled down by General Maintenance Workers, who are within 10% of the prevailing wage but make up 35% of the group.

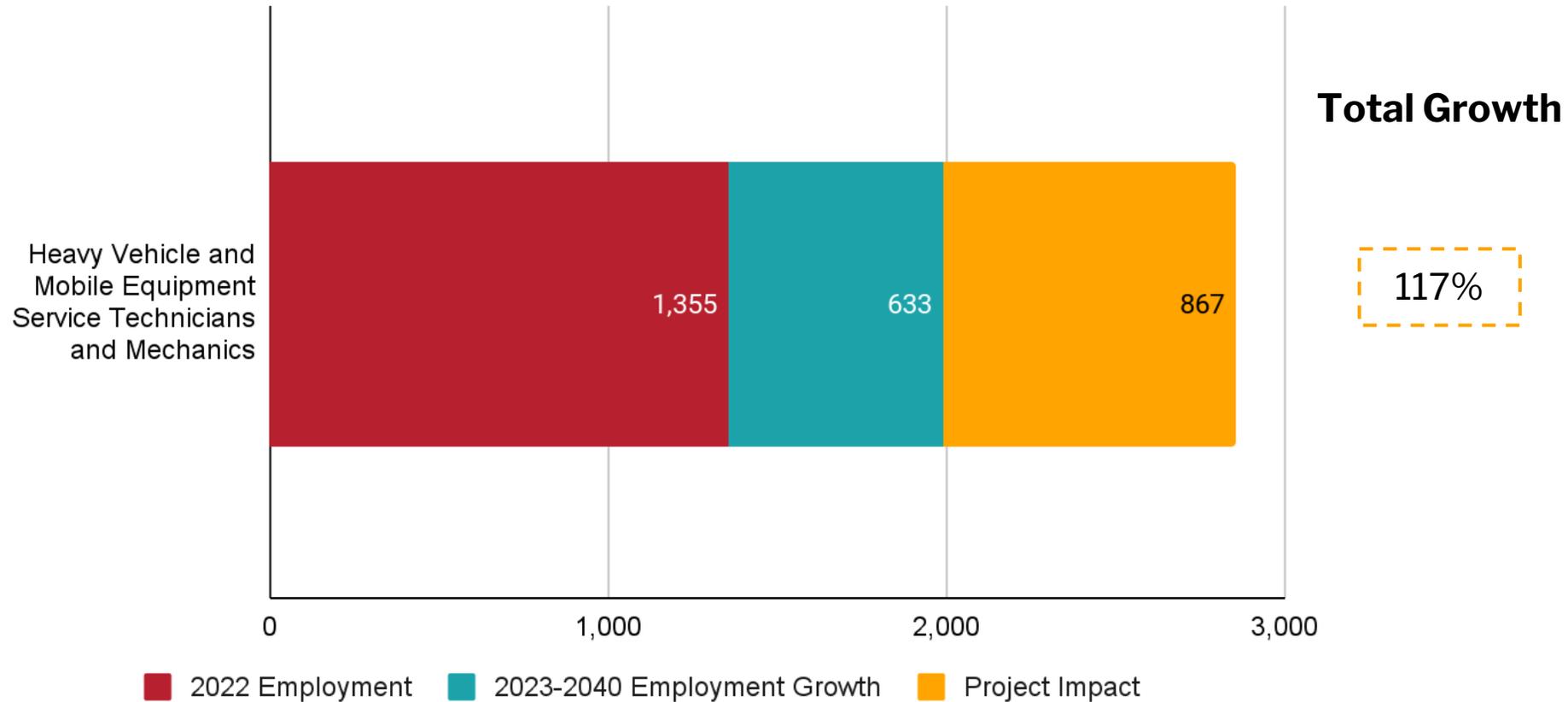
## Fleet Maintenance and Repair: Occupations Below the Prevailing Wage

Occupation	2022 Jobs	Share of Occupation Group	Hourly Wage	Percent Below the Prevailing Wage
Maintenance and Repair Workers, General	12,256	35%	\$20.05	9%
Industrial Truck and Tractor Operators	4,741	13%	\$18.81	14%
Miscellaneous Installation, Maintenance, and Repair Workers	3,043	9%	\$19.53	11%
Miscellaneous Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	1,093	3%	\$15.52	29%

Minimum 500 jobs in 2022

# There is a moderate bottleneck risk for Fleet Maintenance and Repair occupations.

Fleet Maintenance and Repair: Occupations that Will Double in Size, 2023-2040



Note: Minimum 500 jobs in 2022. Minimum 100% growth through 2040.



# METRO AUSTIN'S M+I SECTOR SKILL TRAINING INVENTORY

## Initial Findings

Developed by CivicSol, supported by Kezzler Group

# How Will Austin Meet the Training Demand?

## Training Program Inventory

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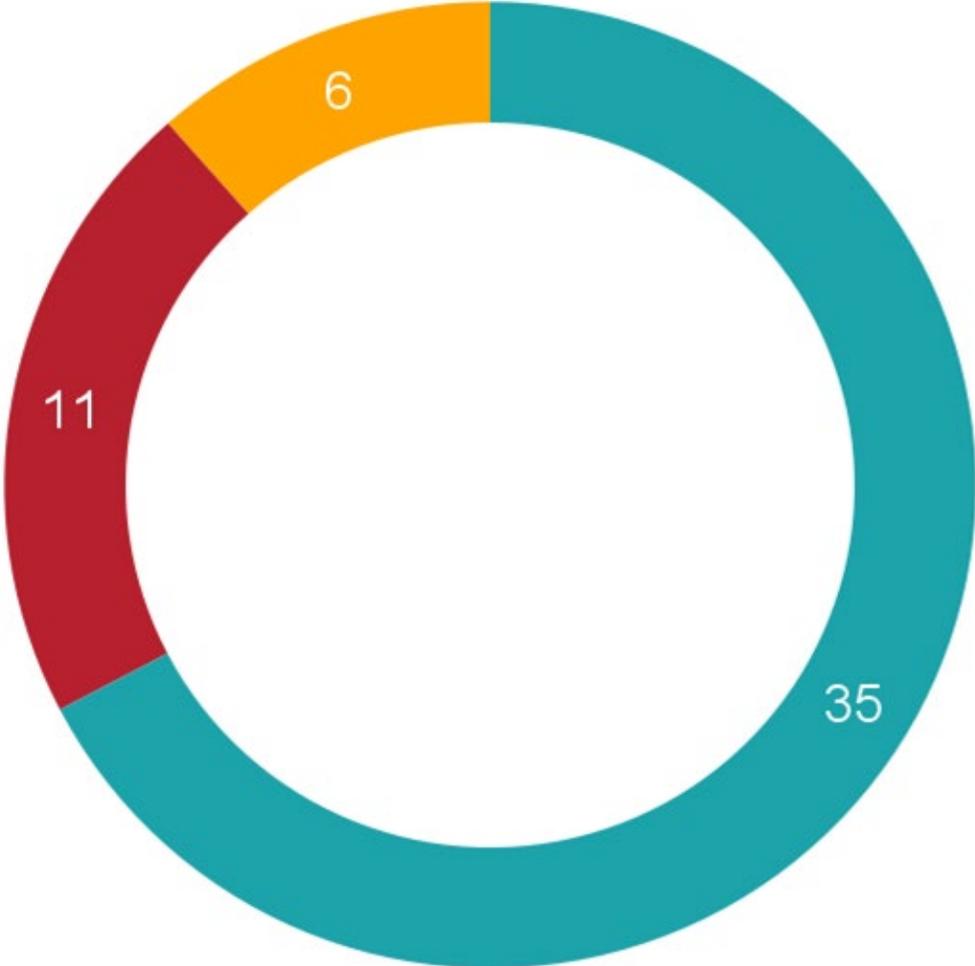


# Over 50 regional training programs were inventoried.

1 Workforce Training Provider

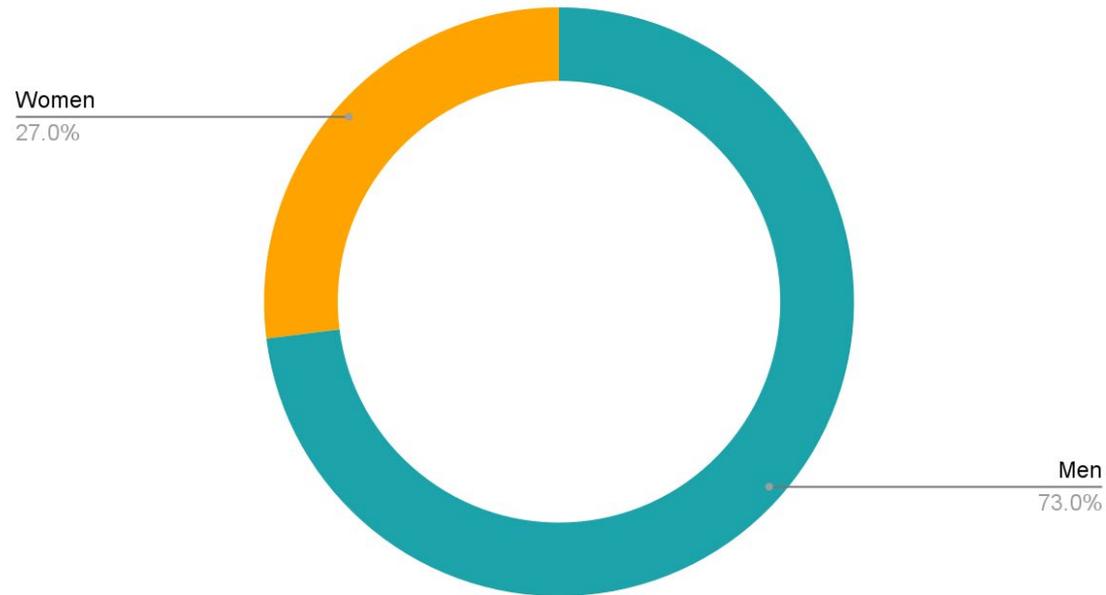
2 Job Creators

3 Infrastructure/  
Mobility Partner

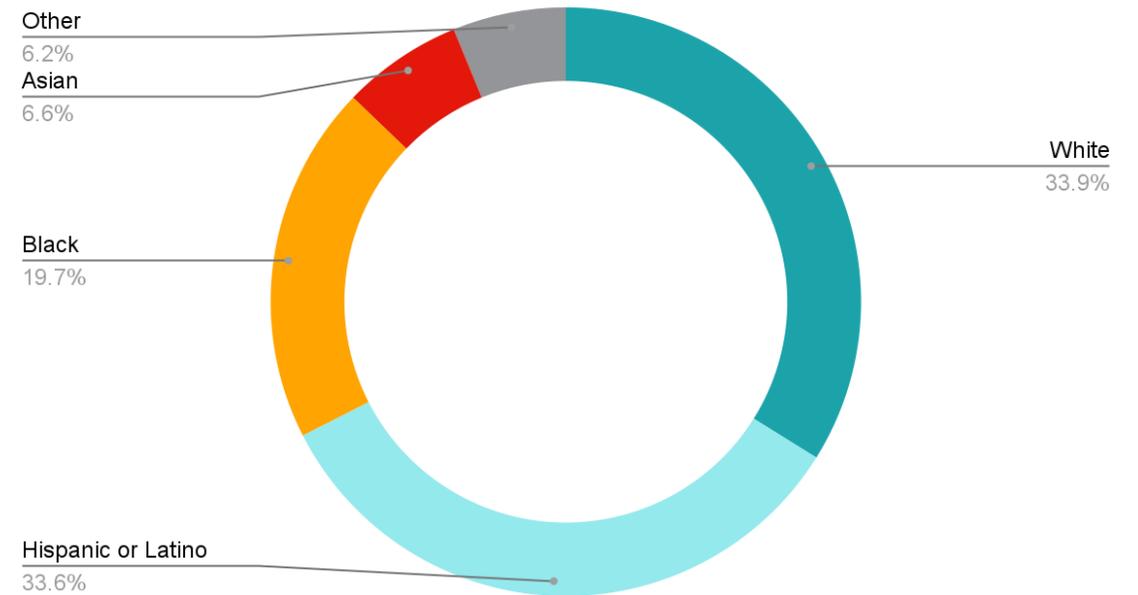


# Training programs are male dominated but racially diverse.

Program Inventory - Demographics, by Gender

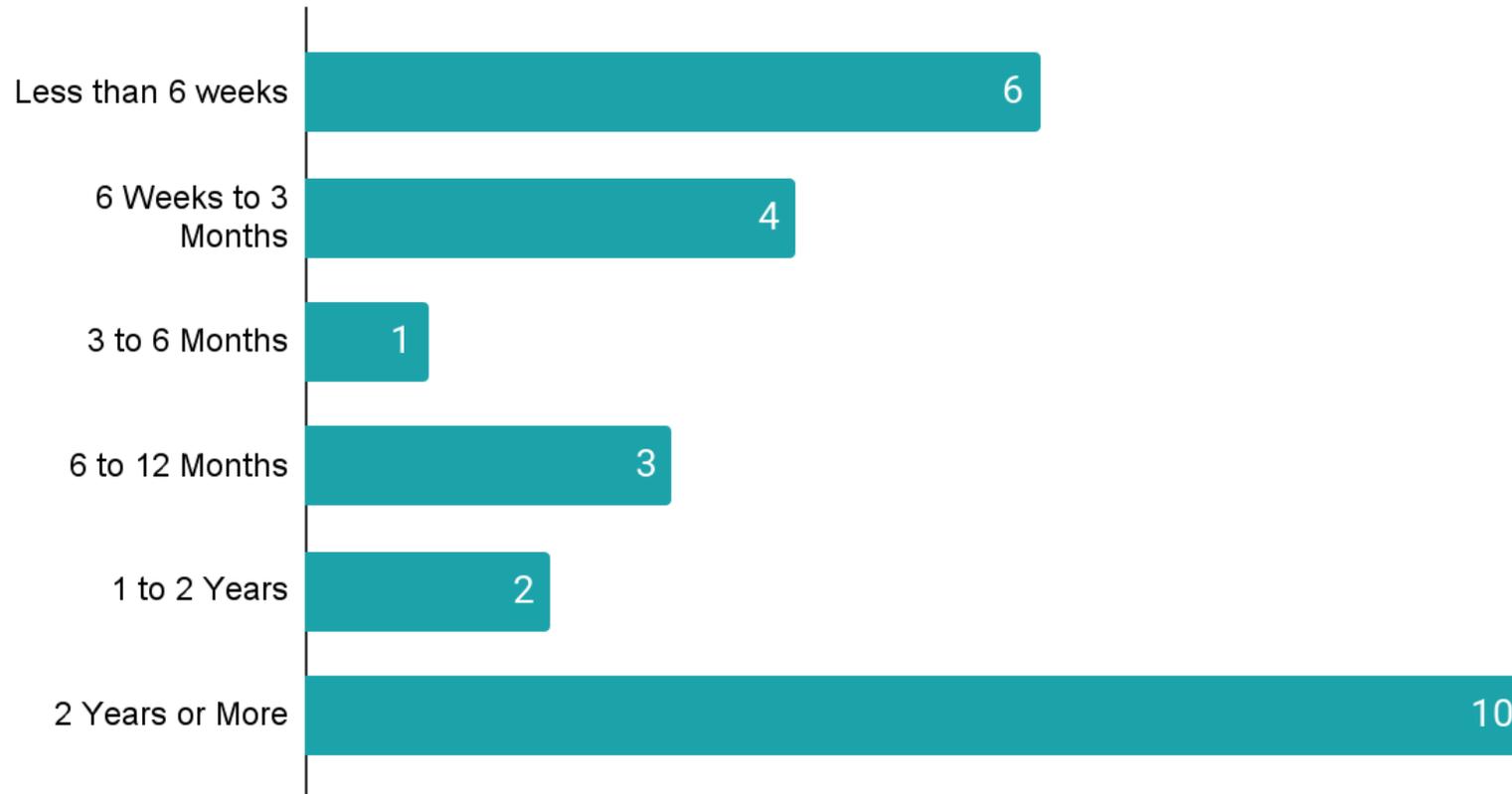


Program Inventory - Demographics, by Race



# Programs vary in duration with little consistency.

Program Inventory - Duration



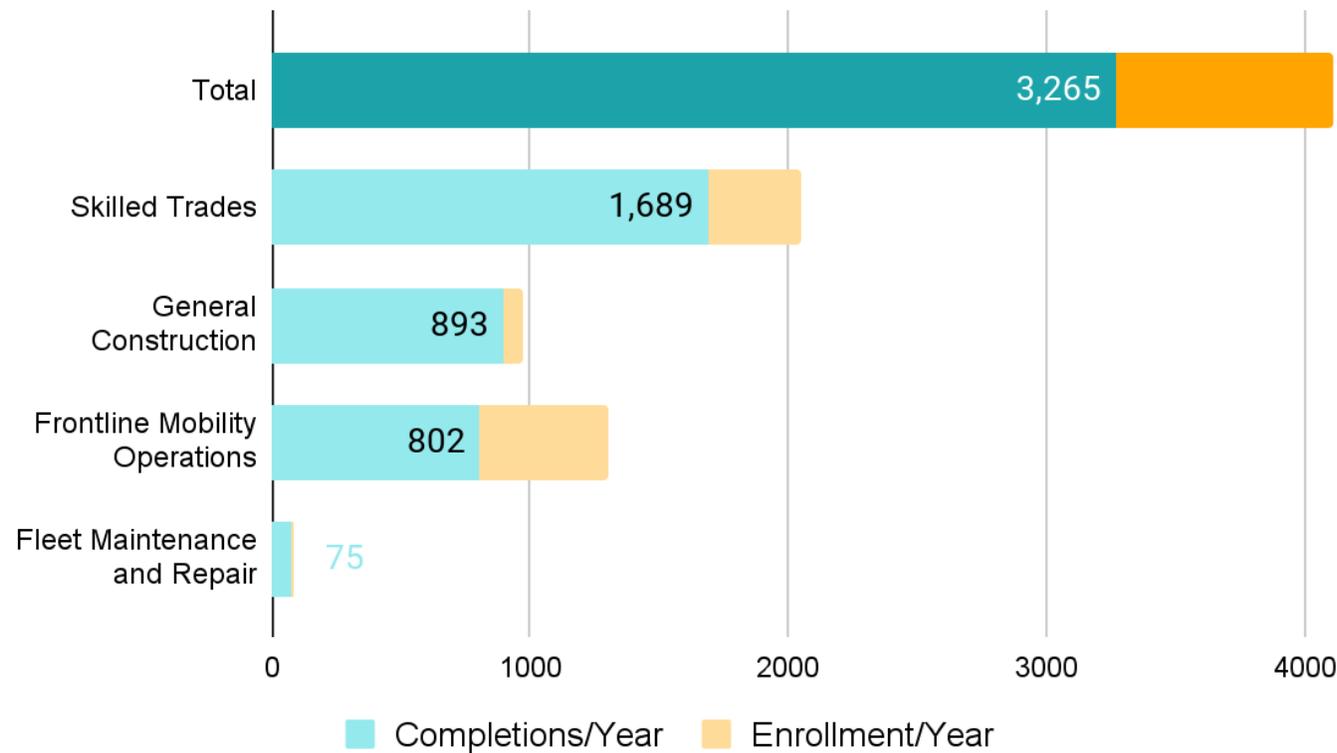
Source: CivicSol Analysis

**Programs less than 3 months are flexible, offering Certificates, CTEs, Hands on training, and Pre-Apprenticeships**

**Programs longer than a year are almost exclusively earn-and-learn opportunities**

# Over 3,000 people per year complete inventoried training programs, 52% of them in skilled trades.

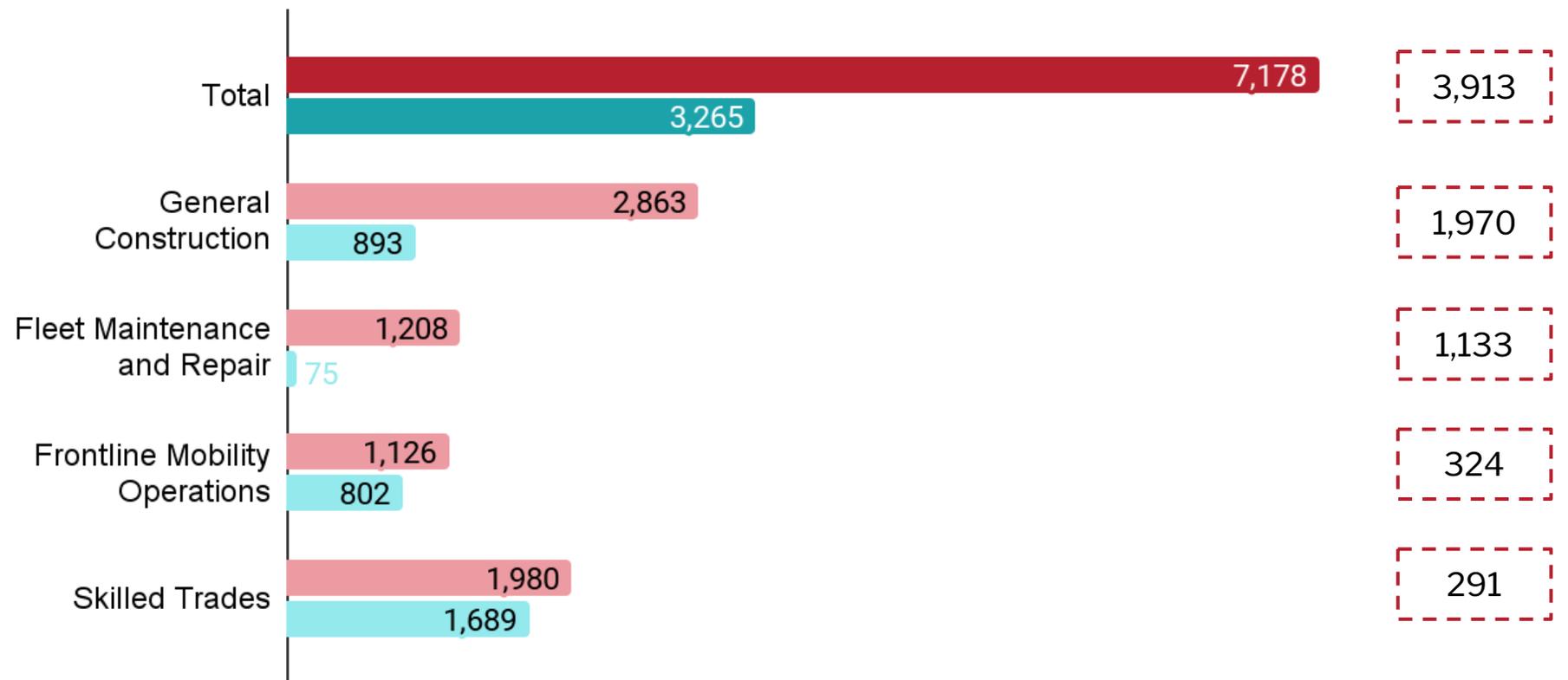
Program Completions by Skill Category



Total Enrollment	Completion Percentage
4,114	79%
2,048	82%
975	92%
1,306	61%
80	94%

# The region needs to train an additional 4,000 M+I workers annually to meet demand.

Forecasted Annual Growth vs Program Completions



Forecasted Annual Growth    Annual Program Completions

# What does a deeper dive show us?

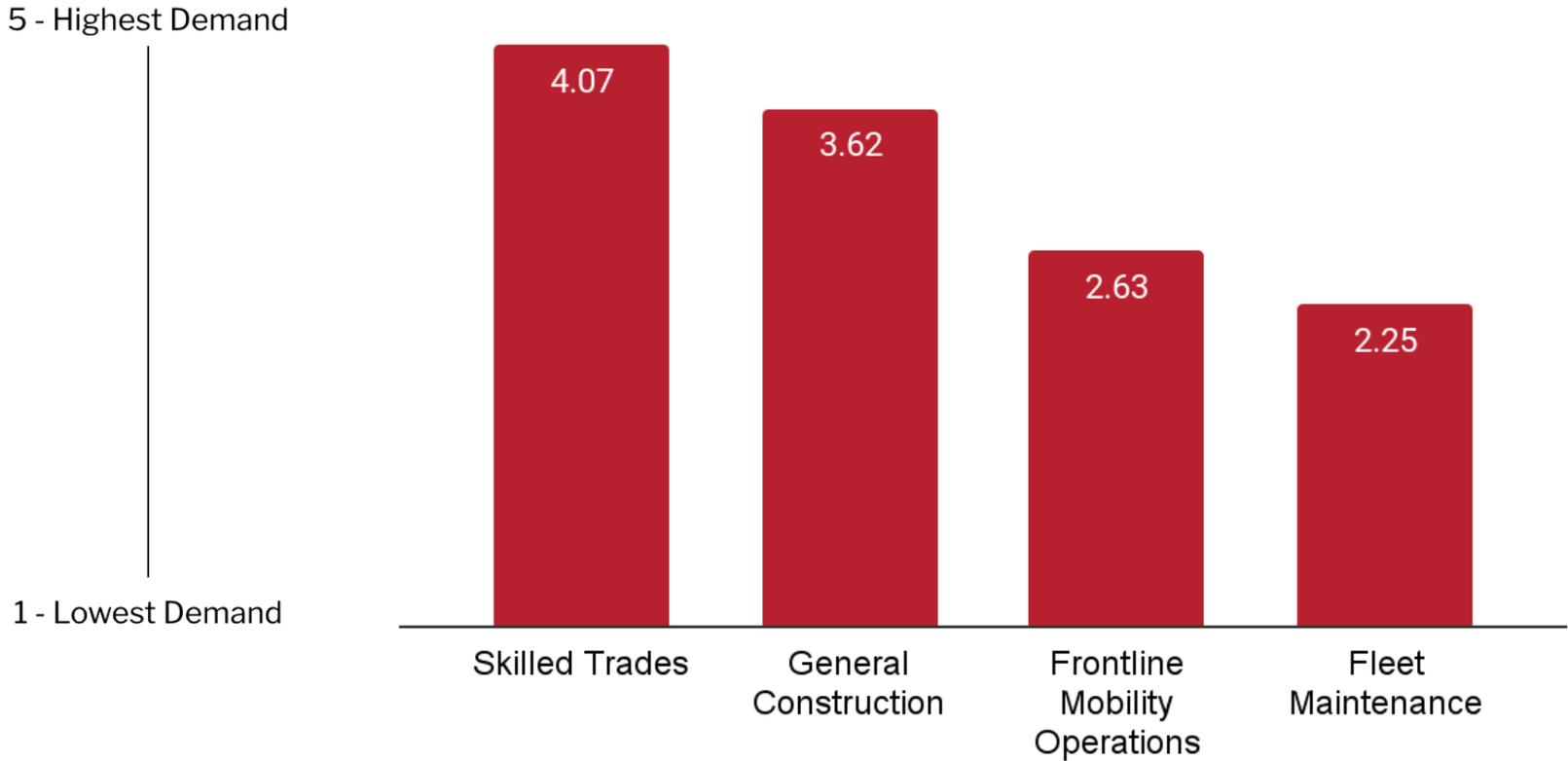
## Training Program Inventory

CIVICSOL



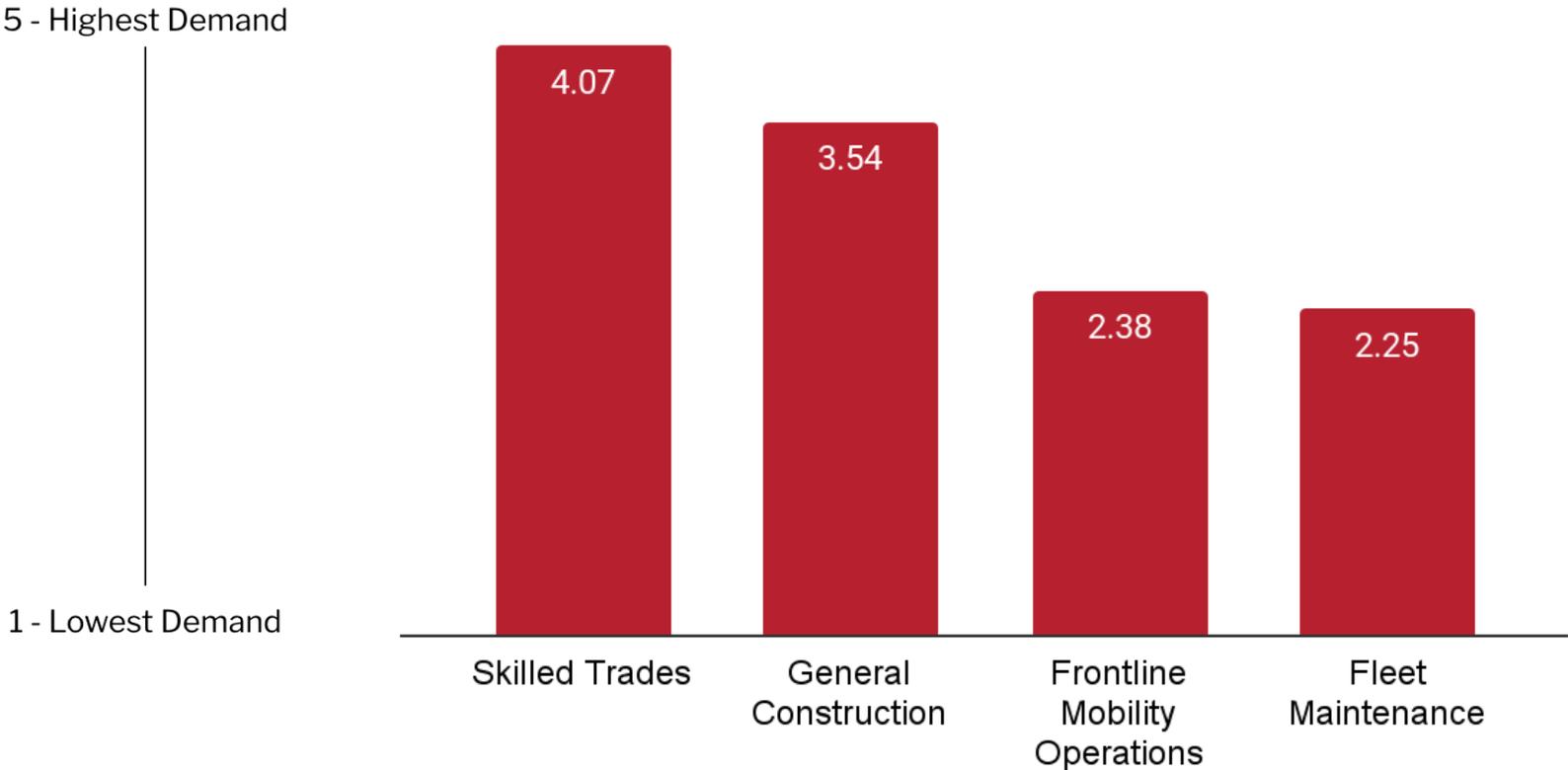
# Skilled Trade occupations have the highest demand from employers.

Job Creators: What skills are the highest in demand for your company?



# Employers also have the most difficulty recruiting for the Skilled Trades.

Job Creators: What skills are the most difficult to recruit for your company?



What did we learn?

CIVICSOL



## What We Learned

**#1**

**4,000 annual training gap will exacerbate skill shortages.**

The programs being offered generally match Austin's needs, but will be insufficient on their own to match projected growth.

## What We Learned

# #2

**Employers are disconnected from the skilled trade talent pool.**

Skilled Trades have the smallest annual training gap (291), but the highest employer demand. That these skills were deemed the most difficult to recruit for despite their prevalence shows a disconnected pipeline.

## What We Learned

# #3

**General  
Construction has the  
largest gap to  
overcome.**

The General Construction sector requires nearly 2,000 more annual program completions needed to meet the projected growth.

## What We Learned

# #4

**Few training programs exist for Mobility and Operations.**

There are just three programs total in the Frontline Mobility Operations and Fleet Maintenance and Repair sectors.

## What We Learned

**#5**

**There's no consistent standard training period for M+I training.**

Programs vary in duration with little consistency, ranging from as little as 6 weeks to more than 2 years.

## What We Learned

# #6

**Earn-and-Learn programs effective, but take the longest.**

Earn-and-Learn programs, viewed as the most effective, also take the longest time to complete. Generally, more than 2 years.

## What We Learned

**#7**

**Present day  
recruiting methods  
are limited.**

An over-reliance on word-of-mouth recruiting and a lack of consistency in school visits and community partnerships may hinder program growth and diversity.



# METRO AUSTIN'S M+I SECTOR ROUNDTABLES AND WORKSHOPS

Engagement Summary

Developed by CivicSol, supported by Kezzler Group

# Five Key Areas of Takeaways

	<b>Partnership</b>	Collaboration can increase benefits and efficiency
	<b>Communication</b>	Messaging around the partnership and how it will benefit the community
	<b>Pipeline</b>	Connecting trainees to the jobs that are in demand
	<b>Training</b>	Determining what makes an effective program and who is responsible for leading it
	<b>Supportive Services</b>	Providing the necessary services to reduce barriers for disadvantaged communities

## What We Learned

**#1**

**Partnership  
benefits the local  
economy.**

Job creators view the mobility and infrastructure partnership as mostly beneficial for the growth of their companies and the overall economy. Beyond that, as low availability of candidates was frequently mentioned as an issue, job creators mainly focused on the increase in labor supply that the partnership can provide.

## What We Learned

#2

**Collaboration, not competition, is a top priority.**

A rising tide lifts all boats. Although Job Creators are traditionally competing for projects and workers, the high number of large projects can create prosperity for everyone. Hoarding talent and innovative training programs will result in delayed projects throughout Austin. Instead, resources can be leveraged for the benefit of the whole industry. Building trust between organizations can build trust in the community as members begin to see organizations coordinating for public good.

## What We Learned

#3

**More flexibility is needed.**

In all parts of the system, adaptability is needed to meet the rising demand for workers and projects. Training programs often provide skills for a certain job that companies may not be looking for. Job creators are often so focused on meeting the demands of their current project that they cannot think about the workforce for their future projects. Project Sponsors are often forced to include certain requirements in their contracts that make hiring more difficult for job creators.

## What We Learned

### #4

# Project contracts are restrictive.

Job Creators would like to create more earn-and-learn and internship opportunities on their job sites, however, they mentioned that project contracts make this difficult. Since the job creators must have all of their employment and procurement numbers ready when they submit their proposal, there is no room for flexibility.

Additionally, contracts often have a mismatch between the certifications required and the job needed to be done. Job creators see this as a fundamental lack of trust in them to provide their service.

## What We Learned

**#5**

# **Messaging is crucial for building trust.**

This sort of buy-in will keep the messaging consistent as workers are recruited and programs are being created. Externally, messaging can emphasize the value proposition of the partnership and the infrastructure projects in general. By presenting a comprehensive plan with an understanding of benefits, the industry can raise awareness and gain support from those who have grown skeptical of progress in the industry.

## What We Learned

### #6

**Employers desire consistency with standardized systems.**

To give employers a better sense of the skills in the talent pool, and to give pipeline organizations a better idea of what skills employers are looking for, Project Sponsors mentioned the need for a standardized curriculum. The same also applies to creating consistent industry guidelines around contracts, messaging, and recruiting methods

## What We Learned

# #7

## Students need a roadmap to success

One-off information sessions are ineffective at growing student interest in the mobility and infrastructure field. Employers need to establish a consistent relationship with schools, with multiple touch points and job opportunities, to grow their pipeline. Several pipeline organizations voiced that messaging around career growth and upward movement in the industry is crucial.

## What We Learned

# #8

# Skills pipeline and employer needs are disconnected.

Too often, pipeline organizations see the skills they are training for go underutilized. Even after obtaining certifications, many job seekers and employees are having to wait to move into higher paying jobs until they can prove their skills on the job site. Additionally, state regulations that require schools to run a certain number of earn-and-learn programs are misaligned with project contract requirements that rarely offer the flexibility for short-term internships.

## What We Learned

#9

**There's a lack of agreement in who should provide training.**

Given the job creators' high preference for on-the-job training, they felt as though their organizations were equipped to handle advanced level training. They expressed that pipeline organizations should focus on teaching general and transferable skills. Pipeline organizations, looking to provide more meaningful opportunities for their students, indicated their desire to build better connections with employers so that they were more equipped to provide advanced level training.

## What We Learned

**#10**

**Wrap-around services are lacking in M+I sector.**

To expand the infrastructure workforce beyond its typical demographic, specific wrap-around services will need to be provided in order to meet the various needs of Austin's different communities. From justice-involved individuals to families with kids, a one-size fits all approach to wrap-around services will be ineffective at serving them.



# BEST PRACTICE INVENTORY

Developed by CivicSol

# Five concepts guide our M+I best practice work

## Incentivize

Modernize and invest in M+I skill training, while incentivizing job creators to do their part too.

## Pipeline

Broaden the talent pipeline through reimagined recruitment efforts and stronger connects.

## Navigation

Redefine and refine job-seeker and job-creator navigation within the M+I ecosystem.

## Harmonize

Coordinate contracts, job requirements, training experience, and support services.

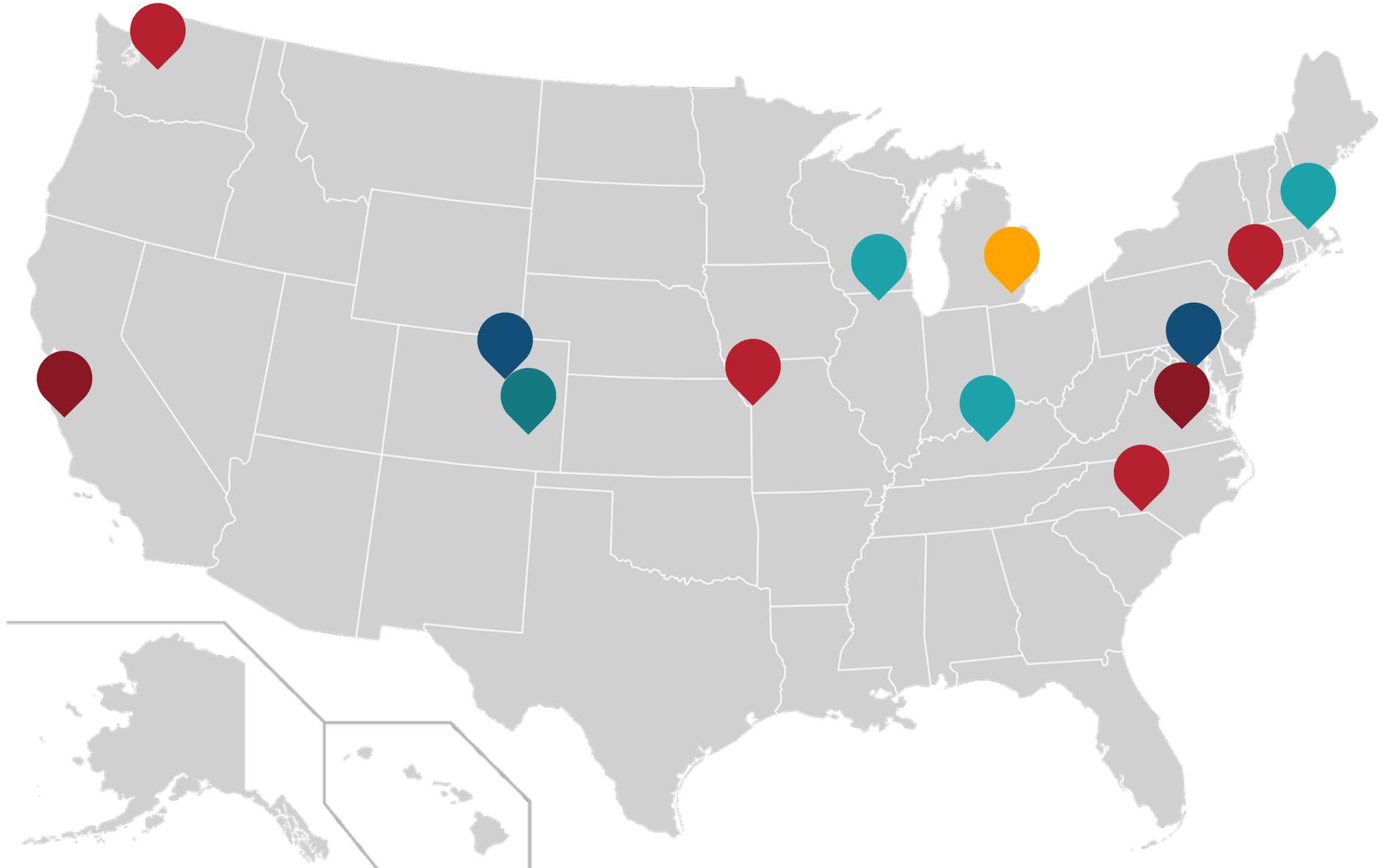
## Funding

Identify federal and state funding streams to support sustainable training initiatives.

# Examples come from all over the country

Louisville, KY  
Palatine, IL  
Detroit, MI  
San Francisco, CA  
Washington DC  
Richmond, VA  
Seattle, WA  
Charlotte, NC  
New York City, NY  
Denver, CO  
Kansas City, MO  
Boston, MA  
Colorado Springs, CO

Illinois  
Massachusetts  
Oregon



# Innovative Programs

Opportunities for Austin to replicate and expand upon the nation's best M+I programs

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# Essential Elements of Best Practices

1

## Boost Training Outcomes with Physical Space

In a physical space, cohorts of training programs can work together and improve training outcomes. Here, supportive services and career-next steps can be coordinated as well.

2

## Create Partnerships to Ensure Continuity

A new partnership or organization can ensure that priorities last on future projects. By getting organizations together to tackle a common goal, silos are removed and progress is made.

3

## Become a National Leader

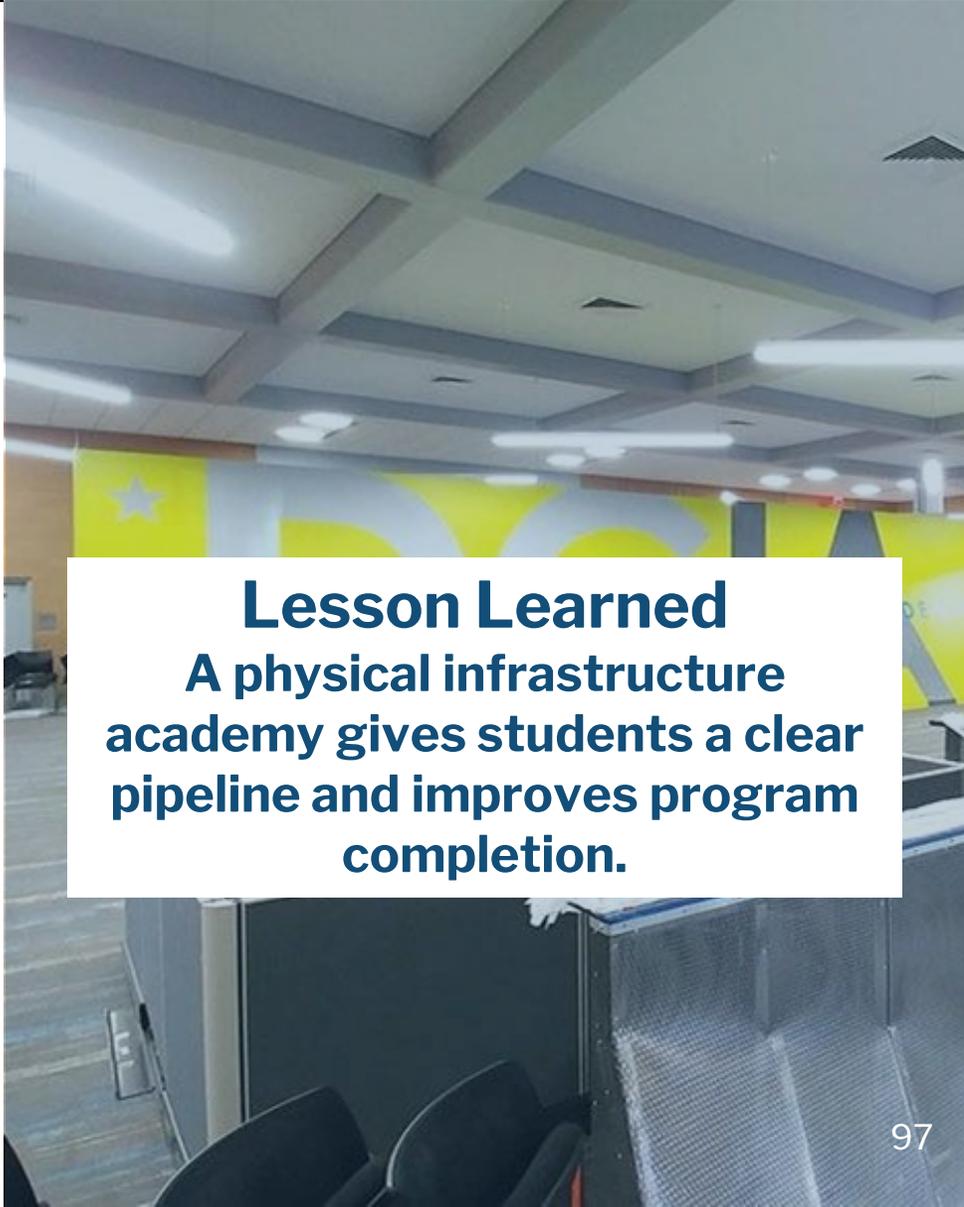
While best practices are plentiful, no region is combining all of these elements. Through this, Austin can address its M+I growth and become a national leader in the space.

## DC Infrastructure Academy – Washington D.C.

Created by Mayor Bowser under the DC Department of Employment Services, the DC Infrastructure Academy was established to give residents a pathway to the middle class.

The Academy consists of several “Quick Path” programs that last from 4-12 weeks. These programs are taught by various infrastructure companies in the DC area, such as PEPCO and Washington Gas, establishing a direct connection to jobs. These partnerships make the program highly effective, as industry partners are designing the curriculum, ensuring that the skills they need are being taught to the students.

Since the program has started, PEPCO specifically has hired 200 graduates. Partnerships also allow for expansion, as the DCIA staff is free to focus on recruiting and providing supportive services such as case management. To further promote the academy, the Director leads quarterly information sessions to update city residents on workforce programs.



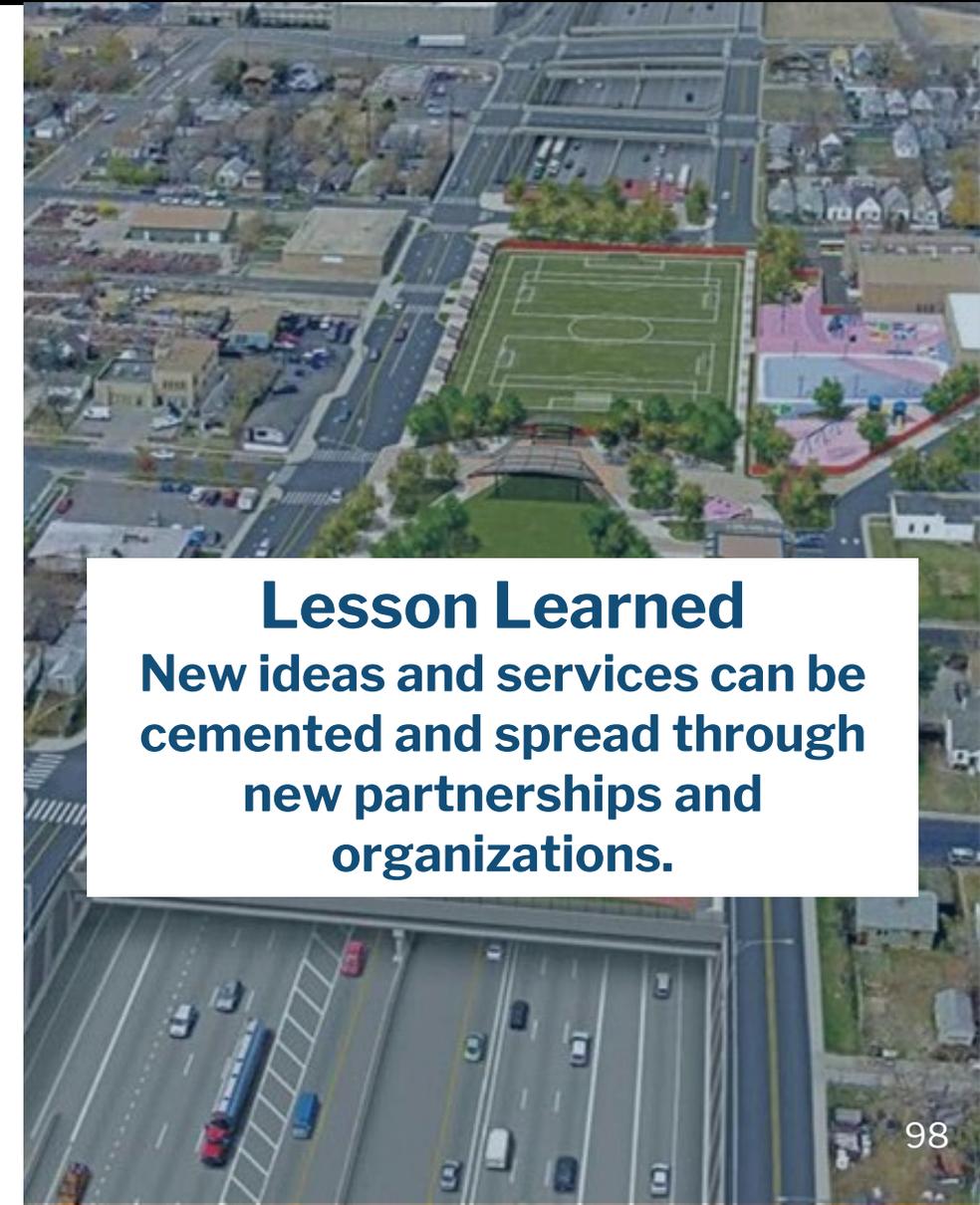
**Lesson Learned**  
**A physical infrastructure academy gives students a clear pipeline and improves program completion.**

## WORKNOW – Denver, CO

The Central 70 Program in Denver, similar to the I-35 Expansion in Austin, allocated \$1.2 billion in funding for highway improvement.

The Colorado Department of Transportation used a portion of these funds to conduct a community survey and create a local hire requirement. Through this, the WORKNOW partnership was created to better address the needs of the community. This partnership coordinates efforts across the infrastructure industry to provide training and supportive services. Through this coordination, WORKNOW sources wrap-around services to all of its partner organizations.

The creation of WORKNOW created a workforce leader that can coordinate the industry. It will be active in current and future projects, improving the longevity of the training and support systems.



**Lesson Learned**  
**New ideas and services can be cemented and spread through new partnerships and organizations.**

# Incentivize

Modernize and invest in M+I skill training, while incentivizing job creators to do their part too.

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# Essential Elements of Best Practices

1

## Maintain a Core Curriculum

A core curriculum or certificate bolsters the validity of pre-apprenticeship programs. It gives a clear display of skills gained and gives employers more confidence in hiring.

3

## Plan for Flexibility

Flexible training times and job opportunities ensures student success. A flexible and up-to-date curriculum ensures long lasting relevance.

2

## Let Industry Teach

It is important that the training is effective and connected to the workforce pipeline. Delegating training responsibility to job creators ensures that students are learning relevant skills.

4

## Incentivize Hiring from Training Programs

Whether it's through a bid credit program, wage subsidy, or other policy lever, these incentives can increase employer buy-in to a robust M+I training system.

# Multi-Craft Core Curriculum – Nationwide

The Multi-Craft Core Curriculum (MC3) is a nationally recognized program run by North America's Building Trades Union.

This pre-apprenticeship program, delivered online, aims to connect students to the greater union workforce system. Students who complete the 120 hour curriculum are prepared to enter into a union apprenticeship program. Through this, students are connected to registered apprenticeship programs offered by unions.

At the end of the program, students receive the MC3 Certificate, OSHA 10 Certification, and First Aid/CPR Certification. Overall, 75,000 apprentices are contracted annually by various unions.



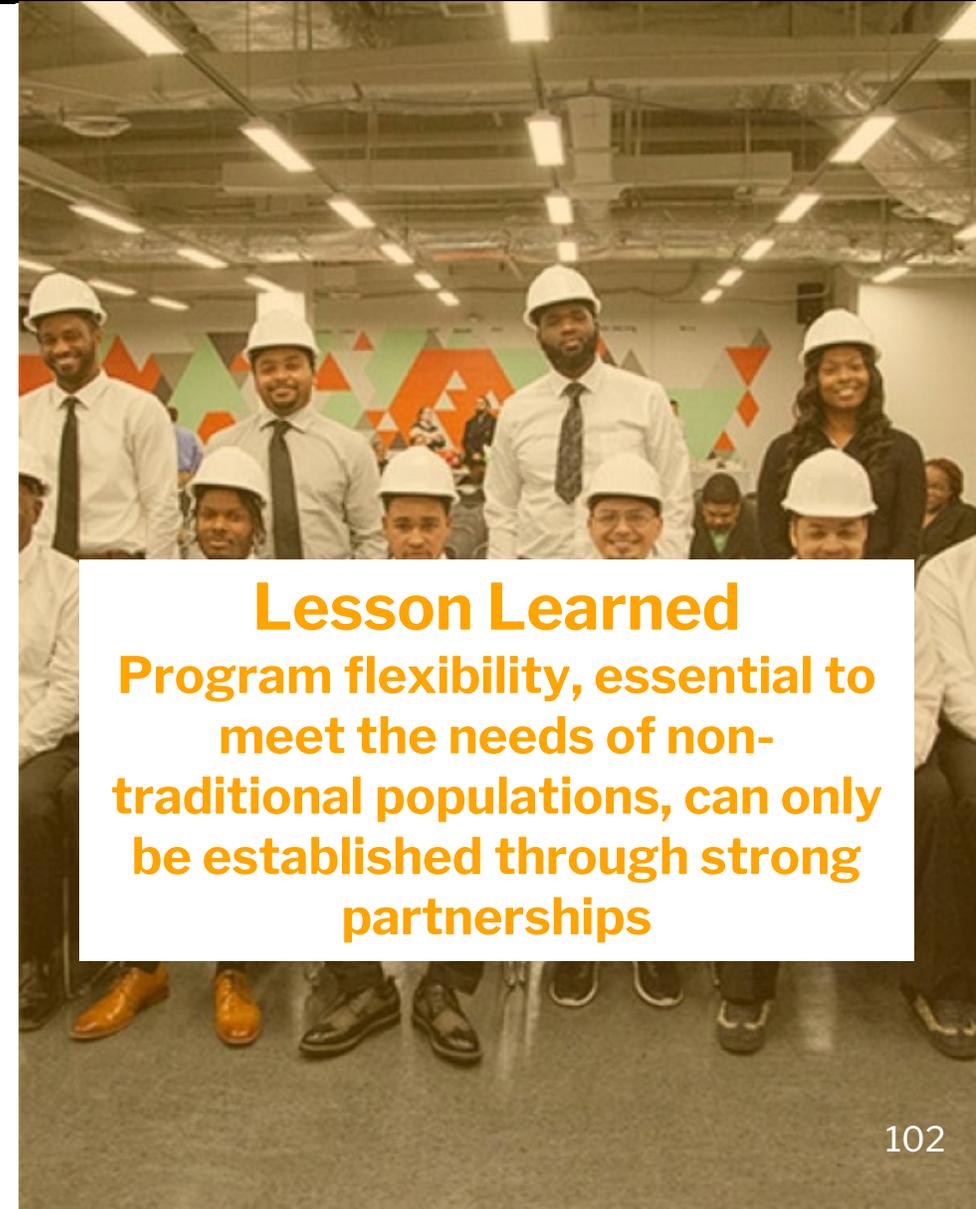
**Lesson Learned**  
**With a standardized curriculum, students build the necessary skills for the construction industry, and employers are confident their workers will be prepared.**

## Michigan Earn and Learn – Detroit, MI

In 2014, the State of Michigan created an Earn and Learn program that targeted the cities that were hit hardest by the recession, Detroit, Flint, and Saginaw. Funds were distributed to Workforce Boards in those three cities, and private partnerships were established to create an employment pipeline.

The program focused on recruiting youth, the formerly incarcerated, and chronically underemployed people. Many individuals were placed in transitional jobs during the duration of the program. Additionally, employers were flexible about the order in which the work-based and the classroom-based activities were completed.

Nearly 1,300 people were served in the first 18 months of the program, with 16% of participants using supportive services such as public transportation assistance, GED prep, and TABE review.



**Lesson Learned**  
**Program flexibility, essential to meet the needs of non-traditional populations, can only be established through strong partnerships**

## Illinois Works – Illinois

The Illinois Department of Commerce and Economic Activity created Illinois Works as a multi-pronged effort to train people of all skills. The pre-apprenticeship and earn-and-learn programs were revamped, and a bid-credit system was created.

For the pre-apprenticeship program, an emphasis was placed on targeting diverse and underrepresented communities, and a general stipend was given out to all participants for whatever supportive services they needed. The program also created hiring requirements for apprenticeships, so that all large projects in the state are required to use apprenticeships to fill 10% of jobs.

Finally, through the bid credit program, contractors receive credits for hiring workers from pre-apprenticeship program that they can use to improve their chances of gaining new projects later on.



**Lesson Learned**  
**Public support around pipelines**  
**can streamline the recruitment**  
**and training processes**

# Pipeline

Broaden the talent pipeline through reimagined recruitment efforts and stronger connections.

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# Essential Elements of Best Practices

1

## Create Supply and Demand

Pairing an Infrastructure Academy with a Local Hire policy can create a stronger pipeline for non-traditional communities.

3

## Utilize Community Organizations for Recruiting

CBOs are typically the most effective at recruiting non-traditional workers because of their deep community ties.

2

## Message Intentionally for Non-Traditional Workforce

Genuine messaging for diverse communities, in recruiting, hiring, and on-the-job, can welcome them into the workforce.

4

## Hold Community Partners Accountable

Through data collection, workforce boards can determine which recruiting/contracting methods are effective and deserve to be funded.

## American Apprenticeship Initiative – Seattle, WA

With a \$400,000 grant from the American Apprenticeship Initiative, South Seattle Community College (SSCC) aimed to expand their apprenticeship offerings. SSCC grew their apprenticeship program to accommodate 3,000 apprentices each week, giving them college credit for completed courses.

Specifically, in partnership with IMPAQ International, they focused on recruiting women to their construction apprenticeship program. They found that something as simple as recruiting images of women and language that emphasized women in the workforce were 6% more effective at recruiting women. Combining this messaging with an intentional in-person recruiting arm was most effective.



**Lesson Learned**  
**Recruiting the non-traditional workforce requires an intentional commitment to inclusion, both before and during the job**

## Partnership for Inclusive Employment and Career Excellence – Charlotte, NC

The Partnership for Inclusive Employment and Career Excellence was created by the City of Charlotte in 2017. Through this pre-apprenticeship program, individuals go through eight weeks of skill training and receive the general NCCER certificate as well as an industry-specific certificate.

Partnerships have been essential for this program, as the City acts mainly as an administrative organization. Community-based organizations are responsible for community outreach and recruitment, holding meetings in neighborhoods throughout the City. Companies provide industry-specific training to establish stronger connections.

Of the 154 people who were trained in the first year of the program, 17% were women, 25% were younger than 25, and 33% had a criminal record.



**Lesson Learned**  
**Partnerships with community-based organization are an essential part of a vibrant recruiting network.**

## CityBuild Academy – San Francisco, CA

The CityBuild Academy incorporates all the key aspects of a successful workforce development program. Established and run by the San Francisco Office of Workforce Development, the Academy offers a 12-week pre-apprenticeship program with MC3 certification, and a construction administration program for the next training level.

This was created in tandem with San Francisco's Local Hiring Policy, which mandates that 30% of workforce hours and 50% of apprenticeship hours are filled by local residents. Thus, the CityBuild Academy serves as a feeder into those jobs.

To better recruit non-traditional populations, the OWD also established an all-women academy, and offers a \$1,000 dollar stipend a month for wrap-around services. Since the creation of the academy, 1,500 graduates have been hired.



**Lesson Learned**  
**Tying contracts to the pipeline can stimulate both worker supply and demand, creating a strong pool of non-traditional talent.**

## Full Employment Council – Kansas City, MO

The Full Employment Council (FEC) is the Workforce System that serves the greater Kansas City area. Through a series of Community Benefit Agreements, the organization has increased the percentage of women and BIPOC construction workers.

Crucial to this was the data collection done by the organization. Everyone connected to the workforce development system, from people looking for work to CBOs responsible for recruiting, was entered into the database. Through this, the FEC tracked program outcomes and connected individuals to programs more efficiently.

With multiple systems used for tracking, the FEC is also able to determine which partners are meeting their recruiting requirements and are deserving of continued funding.



**Lesson Learned**  
The FEC's commitment to data collection equipped them to create effective partnerships and hold partners accountable.

# Navigation

Redefine and refine job-seeker  
and job-creator navigation within  
the M+I ecosystem

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# Essential Elements of Best Practices

1

## Identify Training Needs

By identifying regional training needs, programs can be created that are more in line with what industry needs, and students can feel confident they will have a full-time job waiting for them.

2

## Collect and Centralize Information

Having a sense of existing programs, and creating a centralized hub of information, can streamline training and hiring.

3

## Provide a Pathway

By demonstrating the values of training and showing career ladders will keep students engaged and information organized. Keeping this information up to date with industry trends and open positions is essential.

## Virginia Infrastructure Academy – Richmond, VA

With Virginia set to receive over \$10 billion from the Bipartisan Infrastructure Law, the Commonwealth will need to fill over 100,000 infrastructure jobs. To accommodate this increase, the Virginia Community College System (VCCS) is starting its own Infrastructure Academy.

Unlike the DCIA, this Academy does not have a physical building and instead focuses on coordinating efforts between Virginia's Community Colleges. Through this program, VCCS has compiled a list of Infrastructure programs that are offered at each Community College, and aims to scale these up and establish connections with job creators. Essential to this is the FastForward program, which is being established in all Community Colleges and provides quick certification in high demand industries such as infrastructure.



**Lesson Learned**  
**Coordination can increase the scope and scale of training programs.**

## Transit Career Ladders Training – San Francisco, CA

Over the next few decades, BART is planning major extensions to its rail system. Already serving 124 million passengers a year, and employing 3,500 workers, BART created the Transit Career Ladders Training (TCLT) project to build the workforce by providing training opportunities to non-traditional communities.

The program created two separate training branches, one to upskill current BART workers into more technical roles (namely around the much-needed electrical and electronic fields), and one to fill vacancies left by the trained BART workers. Through collaboration between BART, the workforce development system, and the community college, the entities were able to build a robust electrical degree that met the needs of BART.



**Lesson Learned**  
**Collaboration between BART, the workforce development system, and the community college was essential to establish a useful program.**

# Harmonize

Coordinate contracts, job requirements, training experience, and supportive services.

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# Essential Elements of Best Practices

1

## Establish a Hub for Pre-Apprenticeship Programs

When an organization that is well connected to employers takes the lead on pre-apprenticeship training, the pipeline is strengthened.

2

## Designate an Apprenticeship Coordinator

While it takes multiple organizations to run an earn and learn program, designating one entity to coordinate this can reduce administrative barriers.

3

## Create a Childcare Fund

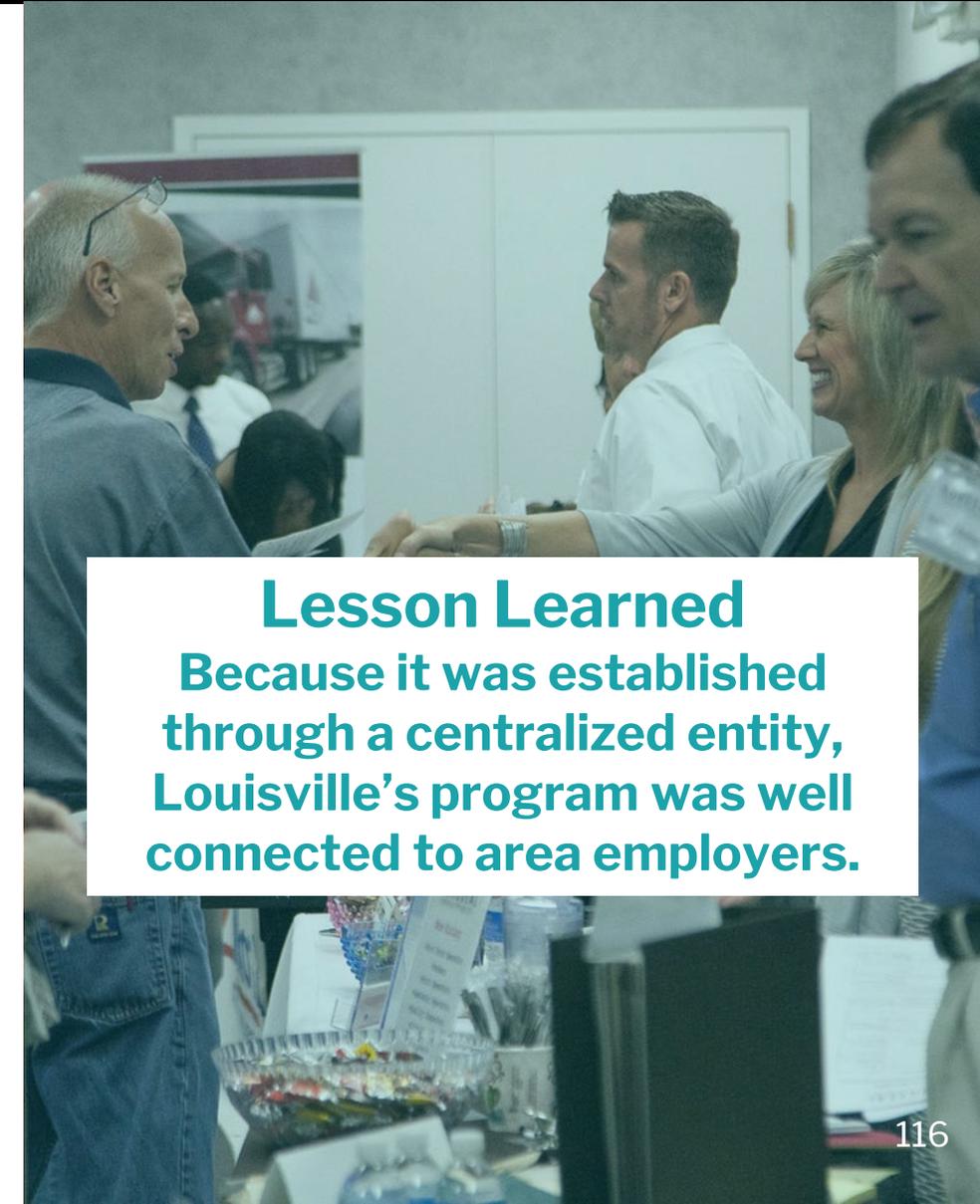
Policy initiatives can create a funding stream for childcare services. Developer buy-in can increase success.

## Kentuckiana Builds – Louisville, KY

The Louisville Workforce Development Board partnered with the Louisville Urban League to establish the Kentuckiana Builds program.

A centralized workforce development system was needed because of the large number of construction projects in the pipeline. The six-week long pre-apprenticeship program taught the basics of the construction trade and focused specifically on recruiting women and people of color. The organizations coordinated with local contractors to create a pipeline of underrepresented construction workers.

Of the 451 participants of the program, 74% were placed in construction jobs, 88% were BIPOC, and 25% were women. Upon completion of the program, students received the National Center for Construction Education Research Core Curriculum Certificate, OSHA-10 Certification, and First-Aid/CPR Certification.



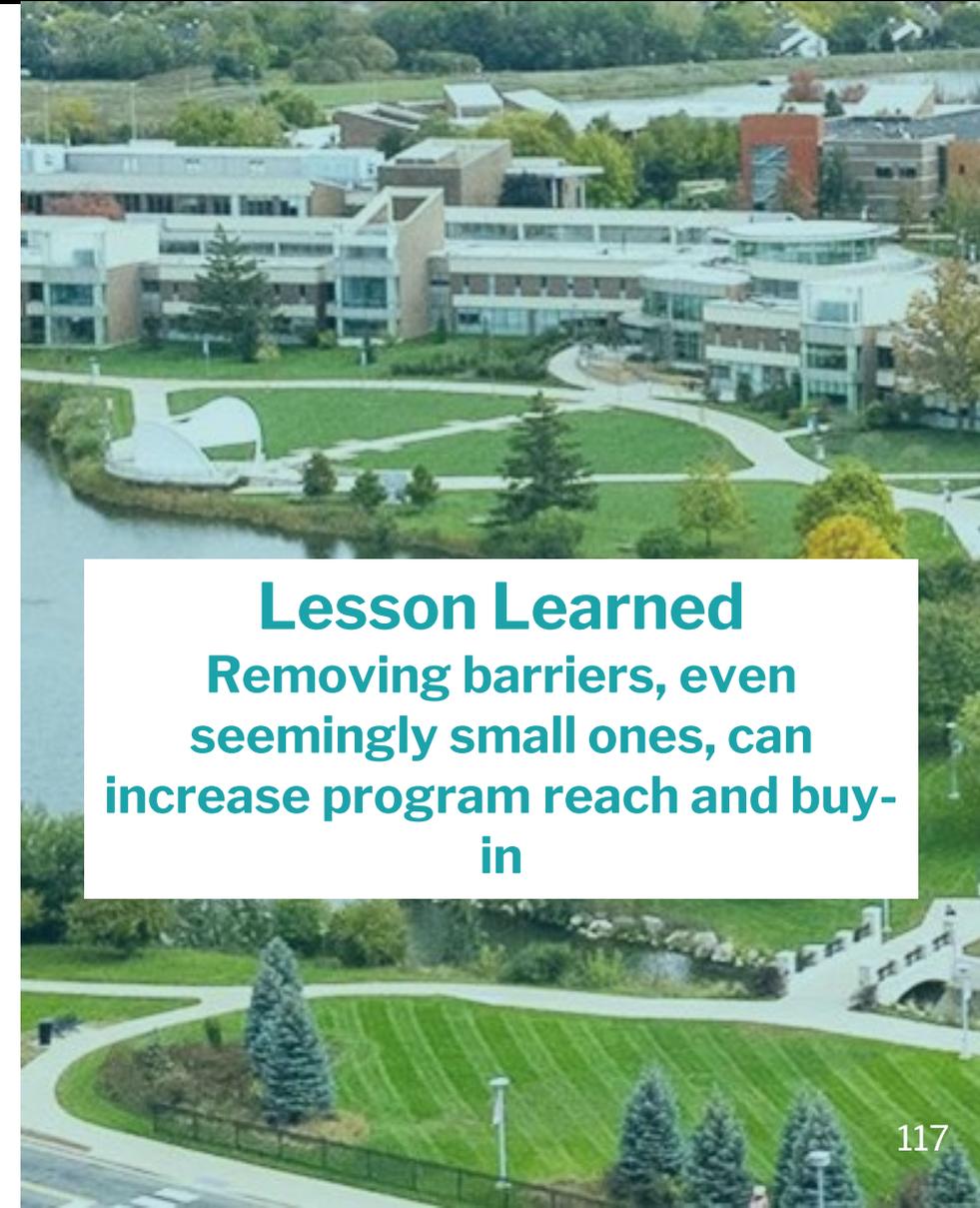
**Lesson Learned**  
Because it was established through a centralized entity, Louisville's program was well connected to area employers.

## Registered Apprenticeship – Palatine, IL

This program, run by Harper College, follows the basic Registered Apprenticeship model certified by State Agencies. Throughout this 2-3 year earn-and-learn program, there is no cost to the student, as the class portions are paid for by the employers.

The program, one of the first to be run through a community college, has grown to offer 10 different programs. Harper College has been able to grow the program rapidly because the institution takes on the administrative burden and assigns apprentices to the companies they are interested in. Thus, employers do not have to be certified by the state as Registered Apprenticeship providers.

This growth was further assisted by a \$2.5 million American Apprenticeship Initiative Grant. Moreover, Harper College, as a community college, already has the infrastructure to provide several supportive services, such as financial literacy and career counseling. Students who have participated in this program have a 3.61 GPA and an 84% retention rate.



**Lesson Learned**  
Removing barriers, even seemingly small ones, can increase program reach and buy-in

## Good Jobs Challenge – Boston, MA

In Boston, the policy environment set the stage for action on childcare. Mayor Wu made childcare one of the central focuses of her tenure, and because of that, the downtown zoning law was altered to require developers to either pay a childcare fee or provide the service themselves.

The Care That Works Coalition is actively unionizing workers and advocating for expanded childcare hours to better fit the needs of the workforce. This concerted effort by both government and unions has increased developer buy-in and resulted in a \$23 million grant from the Federal Good Jobs Challenge.

Boston's main partner in this endeavor, the Community Advocates for Young Learners, is responsible for convening stakeholders, leading employer engagement, and updating training programs.



**Lesson Learned**  
Policy efforts around a childcare fund created the fertile ground for improving childcare systems.

# Funding

Identify federal and state funding streams to support sustainable training initiatives.

# Essential Elements of Best Practices

1

## Explore Additional Funding Streams

Increasing a program's capabilities is not possible without more funding. Workforce development programs have a proven ROI.

2

## Advocate for New Funding Sources

In Oregon, it was the need for Childcare in the Construction training programs that led to a new funding stream.

3

## Evaluate Growth Potential of Existing Partners

Evaluate which partners are ready for growth in training or recruiting capabilities and prioritize funding for these programs.

4

## Offer Services On-Site

Offering services where they are needed can increase the number of program participants while being more cost effective.

# Construction Career Development Program – Massachusetts

In Massachusetts, employers were recognizing a gap between their infrastructure needs and the workforce skills. To address this gap, Massachusetts received funds through the Innovative Transit Workforce Development Program to expand their training capabilities.

Their main method of expansion was through their already existing partnerships with four Community-Based Organizations. MassDOT distributed funds to each of the CBOs to allow them to expand their current pre-apprenticeship programs to include more industry-recognized construction certifications.

Because the partnerships and programs were already established, MassDOT already had approval from the Division of Apprentice Standards and the union representatives, and recruiting in underrepresented communities was already being handled by the CBOs.



**Lesson Learned**  
Scaling existing programs and partnerships can be used to quickly adapt to industry needs.

## Apprentice-Related Childcare – Oregon

The Oregon Department of Transportation is “saving construction” through the creation of the Apprentice-Related Childcare Program. Anyone in Oregon completing an apprenticeship or pre-apprenticeship program is eligible to receive up to \$2,500 for childcare costs.

To improve the accessibility of the program, the Oregon Health and Human Services Department streamlined the certification process so that friends and family can become eligible childcare providers. With the creation of this program, women and people of color who received subsidies were 21% more likely to finish their apprenticeships.

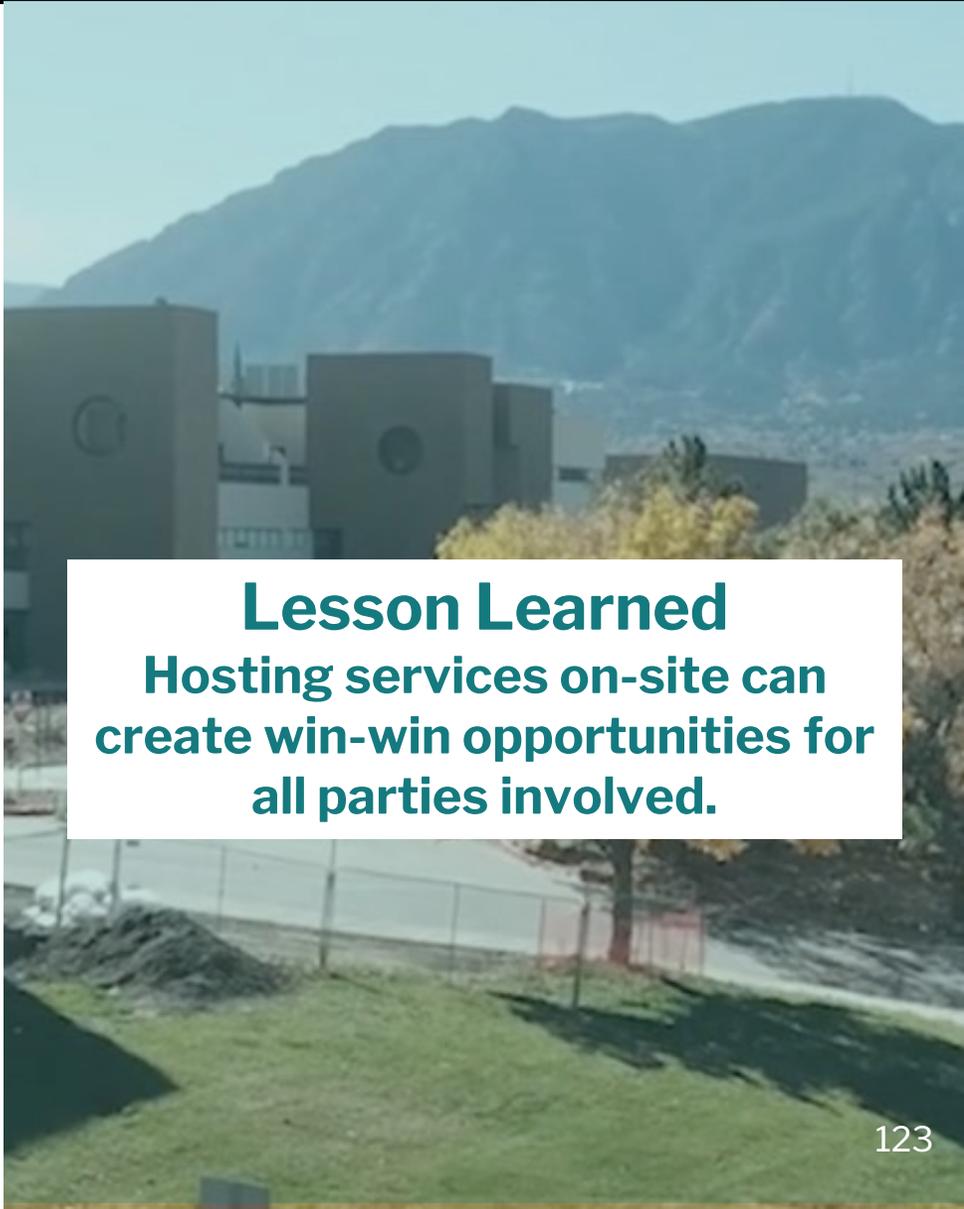


**Lesson Learned**  
Coordination across government agencies can reduce barriers and increase the supply of childcare workers.

## Community Partnership for Child Development – Colorado Springs, CO

Educational Institutions, while being excellent places for career services, rarely offer the childcare needed to serve the populations that need it the most. Pikes Peak State College is an example of an institution that is working to change that. The college is collaborating with Head Start to host one of their facilities on campus.

With the help of the Community Partnership for Child Development, the College established an on-site childcare facility that meets the needs of students. This is a win-win, as community colleges can accommodate more parents and host childcare in a needed location. Head Start programs avoid capital costs associated with building ownership and meet the federal requirement to receive 20% of their support through philanthropy. The creation of this program was assisted by a \$200,000 grant from ECMC foundation.



**Lesson Learned**  
**Hosting services on-site can create win-win opportunities for all parties involved.**

# What did we learn?

## Key Takeaways

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## Key Findings

# #1

## Opportunity to establish messaging best practice

Communication about the benefits of a career in the M+I industry - particularly in schools - is essential to meet demand. No region has undergone a widespread messaging campaign in this industry.

## Key Findings

# #2

## Connectivity fuels the system

While establishing new training programs is important, it is the clear connection to additional training programs, employers, and supportive services that makes a program a national best practice.

## Key Findings

### #3

# Multi-pronged approach key for success

Given the forecasted growth in the M+I sector, no one program will be able to meet the demand. It will take a combination of best practices – from program establishment to scalability – to create the robust training system that Austin requires.



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