

Implications of the Infrastructure Law on workforce

September 2022

Contents

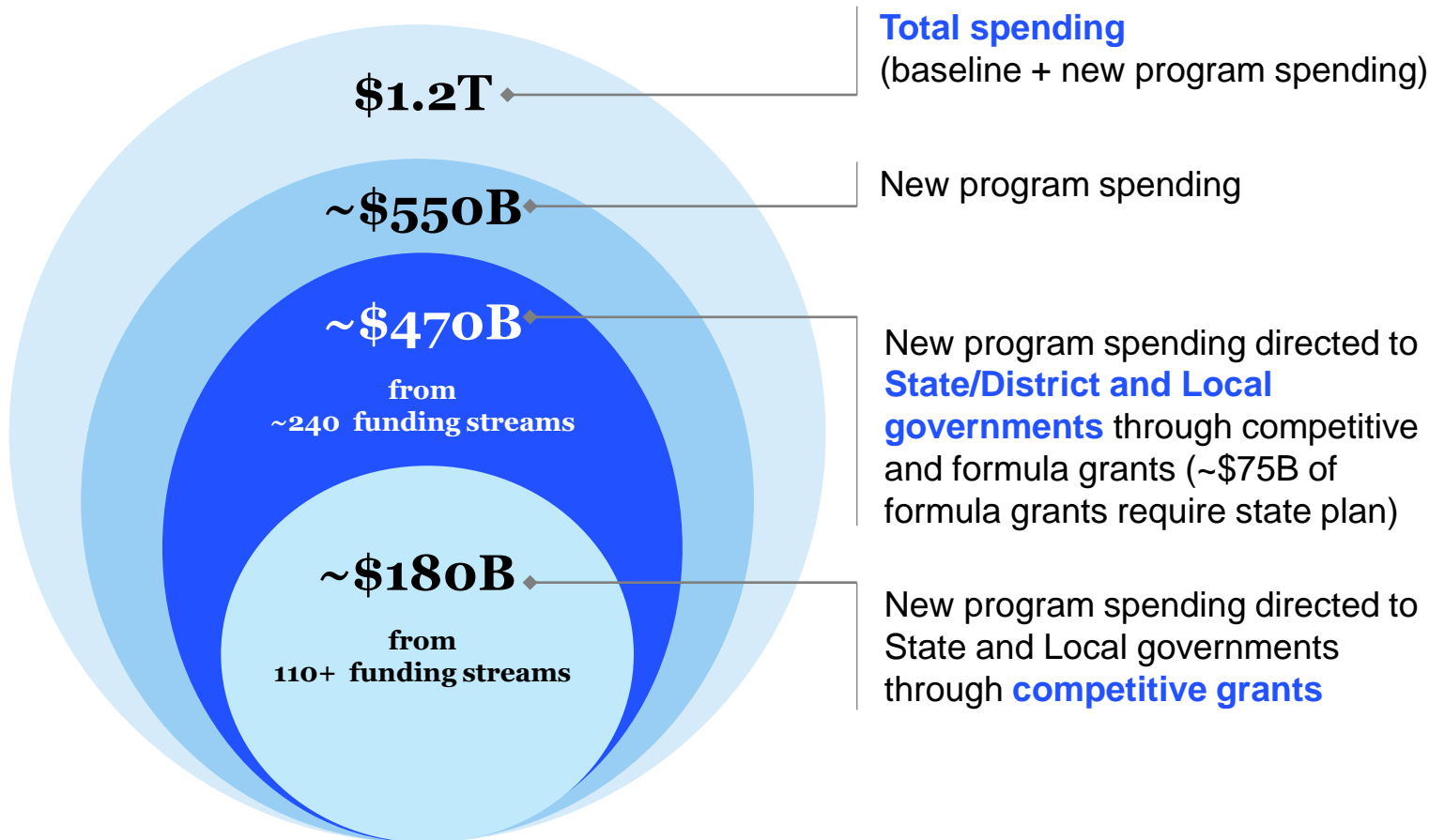
BIL overview

Potential workforce implications from formula spending

How states can act now

BIL provides \$1.2T in funding, including \$550B in new spending

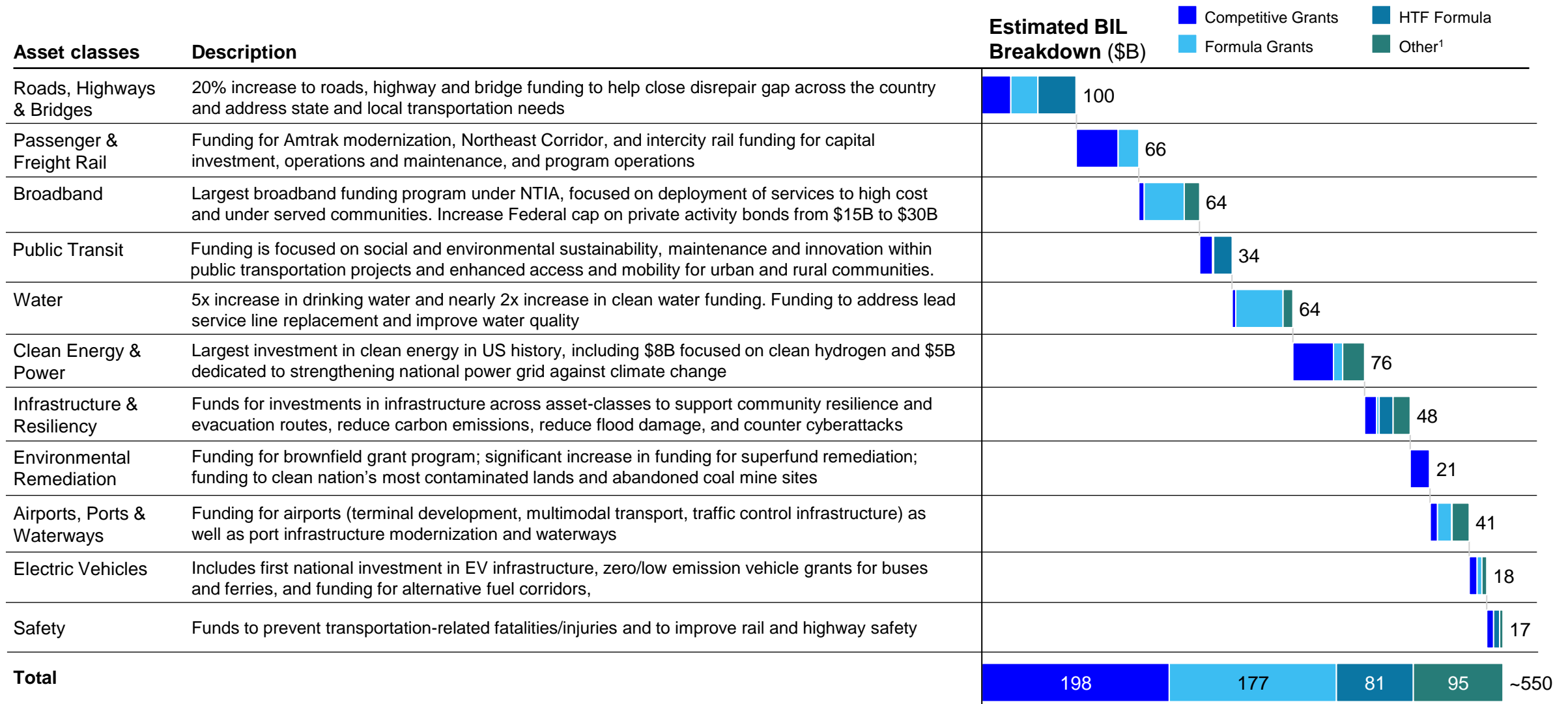
Overview of BIL funding



Key considerations for the law

- Blends net new funding and existing funding
- Blends formula and competitive funding
- Some formula programs require State plans; all competitive programs require State applications
- Potential for States to partner with or engage external stakeholders for applications and execution of projects
- Potential for efficient execution of funds (e.g., by adhering to “dig once” practices)

BIL supports infrastructure investment across key asset classes










Source: Preliminary estimates based on US Senate H.R. 3684, Bipartisan Infrastructure Law
 1. Includes additional funding mechanisms such as Loans and Direct Federal Spending

DOCUMENT INTENDED TO PROVIDE INSIGHT BASED ON CURRENTLY AVAILABLE INFORMATION FOR CONSIDERATION AND NOT SPECIFIC ADVICE

The Bipartisan Infrastructure Law includes formula and competitive funding that can enable several of Michigan's aspirations

PRELIMINARY AND FOR DISCUSSION

Aspirations	BIL asset class	Formula / HTF Appropriations ¹ , \$B	Competitive Funds Available Nationally, \$B	Major opportunities
 Ensure reliable transportation	Roads, Highways & Bridges	7.9 ²	37	<ul style="list-style-type: none"> \$282B in total funding to improve / repair roads and bridges, \$13B to improve resiliency and equity, and \$13B for congestion mitigation Opportunities to invest in Main Streets / transform downtowns disrupted by highways Rail funding for innovative new lines (e.g., Detroit to Toledo) or upgrades to existing Transit funding focused on improving equity, resiliency of major systems
	Transit/Rail	1.4	44	
 Provide affordable high-speed internet	Broadband	1-1.7 ³	2	<ul style="list-style-type: none"> BEAD program could provide \$1-1.7B for Michigan to connect all locations to high-speed internet
 Provide clean, safe, and affordable water	Water	1.2	3	<ul style="list-style-type: none"> 2-5x increase in revolving funds to eliminate lead service lines and PFAs – with a focus on rural / disadvantaged communities
 Mitigate the impact of climate change	EVs	.2	8	<ul style="list-style-type: none"> NEVI program will add dozens of EV chargers across the state \$7B EV battery programs offer opportunity to stimulate industry \$8B hydrogen hub program and \$7B carbon capture could create new clean jobs and position MI as a leader in combatting climate change \$5B in competitive funds to clean and bolster resiliency of grid
 Invest in High-Growth Sectors	Energy	.3 ⁴	27	
 Win the War for Talent	Other	2.1	59	<ul style="list-style-type: none"> Funding for environmental remediation and cybersecurity / resiliency, as well as transportation safety and airports/ports/waterways
 Create an equitable MI	All	14.1-14.8	180	<ul style="list-style-type: none"> Majority of programs focus on: <ul style="list-style-type: none"> Driving funds to rural and disadvantaged communities Creating good jobs Improving diversity within all industries

Source: Preliminary estimates based on US Senate H.R. 3684, Bipartisan Infrastructure Law and White House state and district-specific information (1) Includes HTF programs as well as the 32 largest non-competitive funding programs across remaining asset classes; does not include funding for Safety or Environmental Remediation; (2) Includes \$7.3B for Federal-aid highway apportioned programs, \$563M for bridge replacement and repairs; (3) Estimates from 4-15-22 LEO memo (\$1-1.3B) and assumption that locations to be connected by RDOF / CAFII / USDA locations are counted as unserved (\$1.6-1.7B) (4) Formulas still to be determined but projection based on some of the relevant criteria listed in BIL

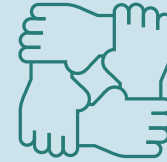
The Justice40 Initiative underpins many BIL programs



Background

In January 2021, the Biden-Harris administration announced a government-wide Justice40 Initiative, with the goals of:

- **Delivering 40% of the overall benefits** of relevant federal investments to **disadvantaged communities**;
- **Tracking performance toward that goal** through the establishment of an Environmental Justice Scorecard



Implications for BIL

Over 40% of BIL programs¹ will be covered by Justice40

- Many of these programs fall under the **DOT** or **DOE / EPA**
- **Community engagement** is a critical requirement to implement many of these programs
- Justice40-covered programs will require agencies to **track and report progress** toward Justice40 goals

1. [Justice40 Covered Programs List](#)

Source: [White House: The Path to Achieving Justice40](#)

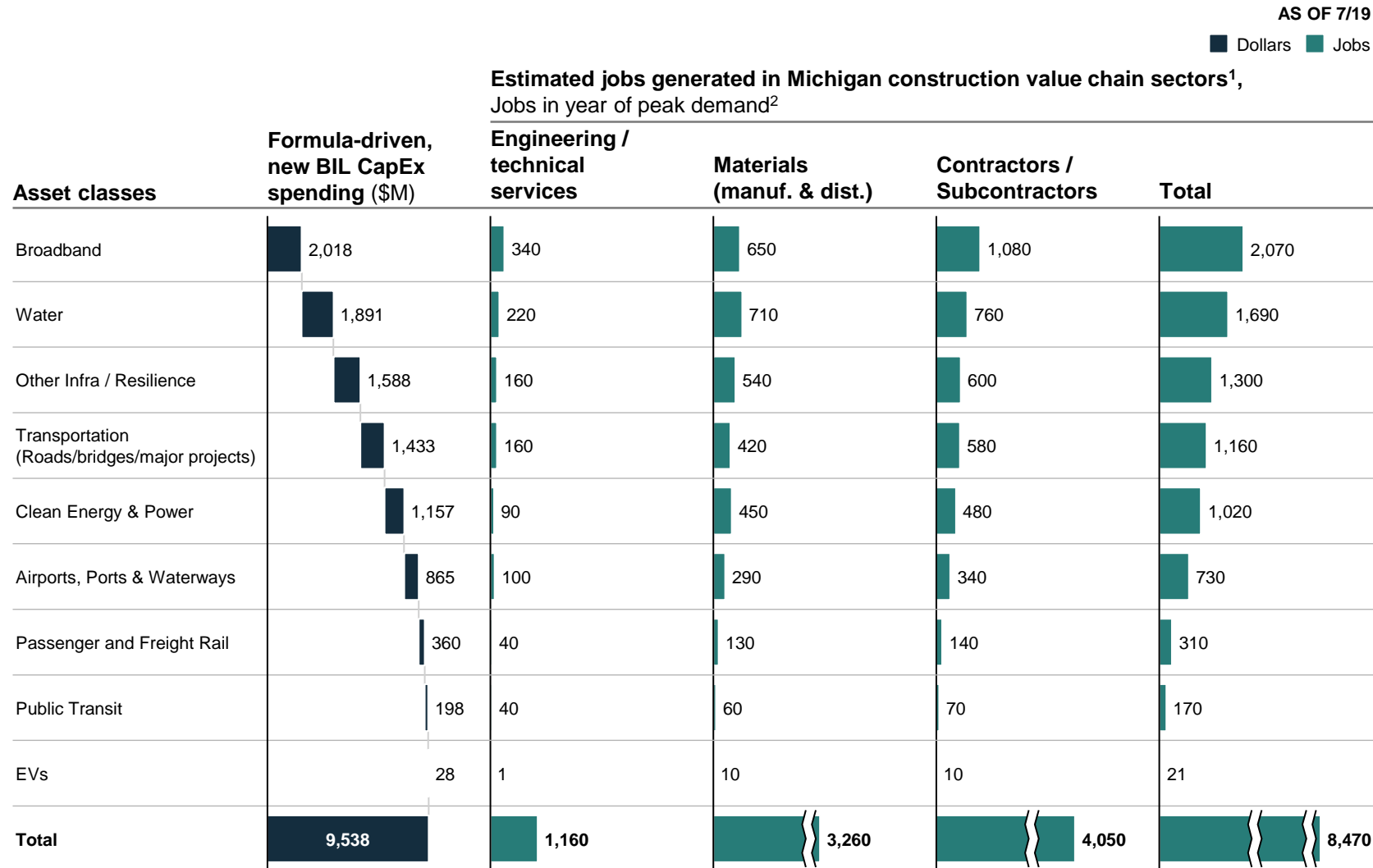
Contents

BIL overview

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New formula-driven BIL spending could lead to demand for ~8,500 workers at peak



Infrastructure spending on construction projects could lead to new roles not only in the construction industry¹

- ~48% of new roles may be employed by **contractors/subcontractors**
- ~39% of new roles may be in **materials (mainly manufacturing)**
- ~14% of new roles may be for **engineering and technical services**

Broadband and water formula spending may be the largest contributors to new demand

- **44% of new roles come from those two asset classes**

1. Estimates above do not include ~1.9k jobs generated during peak demand through supply-chain indirect effects outside of the construction value chain.

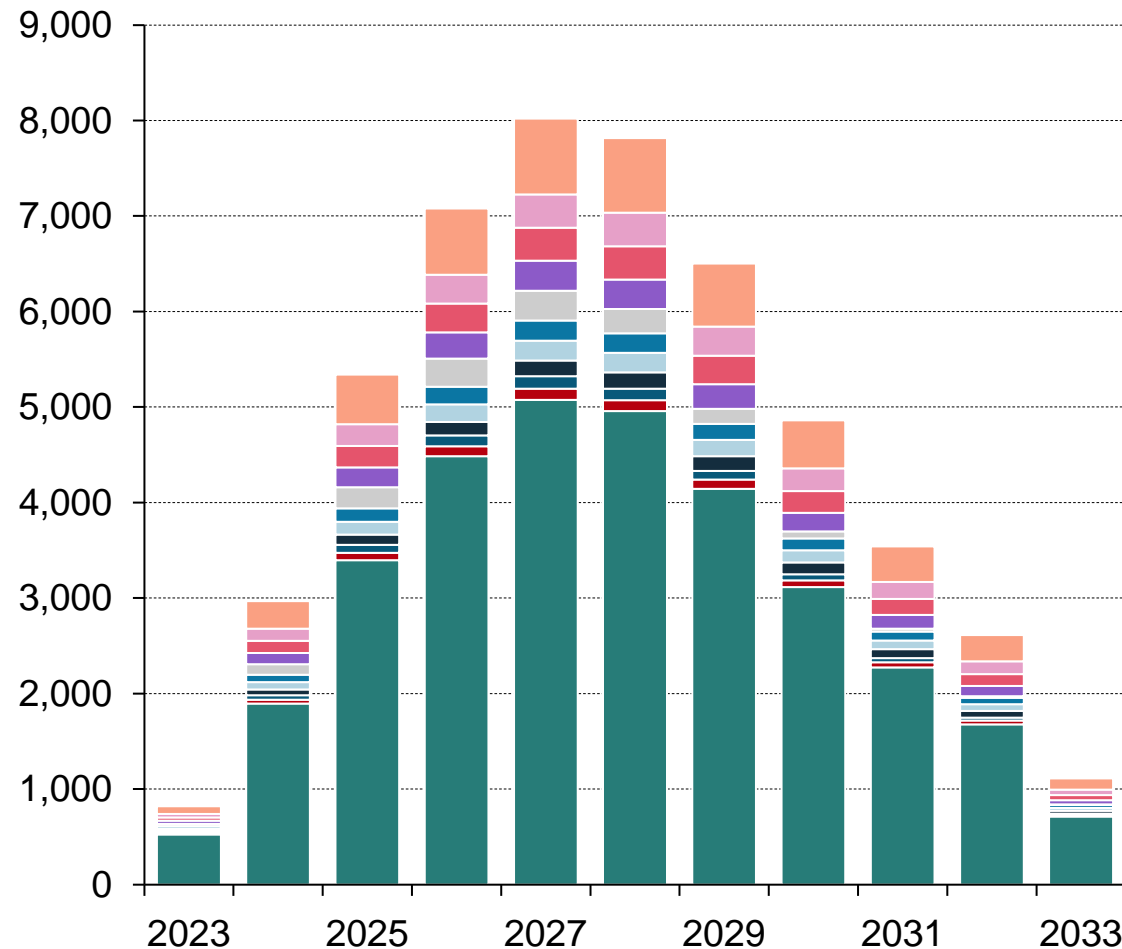
2. Peak demand is defined as the year between 2023 and 2033 that an asset class has the highest number of jobs required from spending. Across asset classes, the median peak years are 2027 or 2028— depending on asset class.

Sources: Expert interviews, Preliminary estimates based on US Senate H.R. 3684, Bipartisan Infrastructure Law, and White House state-specific information, EMSI, US BEA; Moody's Analytics

Most demand from formula funds could peak around 2026-28 based on estimates of federal funding program flows

Annual estimate of roles in construction value chain¹ from by new BIL formula spending in Michigan, by detailed occupation

AS OF 7/19



Detailed occupation

- Construction Laborers
- Heavy and Tractor-Trailer Truck Drivers
- Operating Engineers and Other Construction Equipment Operators
- First-Line Supervisors of Construction Trades and Extraction Workers
- Line Installers & Repairers
- Office Clerks, General
- Mechanical Engineers
- Carpenters
- Electricians
- Project Management & Business Operations Specialists, All Other
- Other

Funding flows modeled by ...

- First using the expected timing of when **federal funding for each asset class** will be **distributed to states**
- Then adding 18 months to **estimate when states will spend** those funds on projects (i.e., accounting for time for states to define projects, procure contracts, and spend cash)

1. Estimates above do not include ~11.3k jobs generated from 2023 to 2033 through supply-chain indirect effects outside of the construction value chain.

Sources: Expert interviews, Preliminary estimates based on US Senate H.R. 3684, Bipartisan Infrastructure Law, and White House state-specific information, EMSI, US BEA; Moody's Analytics

BIL incremental demand from formula spending relative to forecast growth built from historic trends

i.e., BIL growth in the context of job growth forecast from historic industry trends

AS OF 7/19

Top occupations impacted by BIL ¹	Employment, 2022	Forecast baseline employment growth, 2022 - 2027	Potential incremental BIL demand, # of jobs in peak year ²	BIL incremental demand divided by baseline growth
Construction Laborers	22.6k	1,296	791	60%
Heavy & Tractor-Trailer Truck Drivers	51.7k	1,435	351	20%
Operating Engineers & Other Construction Equipment Operators	6.6k	336	347	100%
First-Line Supervisors of Construction Trades & Extraction Workers	13.0k	486	314	60%
Line Installers & Repairers	1.8k	-63	313	Preserve
Office Clerks, General	36.0k	-1,069	210	Preserve
Mechanical Engineers	36.3k	-143	207	100%+
Carpenters	17.0k	-80	172	100%+
Electricians	18.6k	462	-128	30%
Project Management & Business Operations Specialists, All Other	16.3k	422	-118	30%

1. Top occupations are selected based on the number of jobs generated from new BIL construction CapEx spending in the year of highest forecast demand and that require an increase in the workforce above 0.5%.

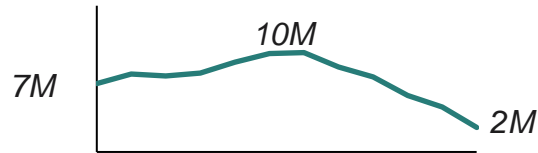
2. Peak demand is the year which federal outlays of BIL spend to states creates the highest demand for workers, by each role, typically estimated in 2027 or 2028; but the time it takes for states to spend money flowing from the federal government may push back these peaks.

The labor gap is part of broader structural trends...

Preliminary and for discussion

National workforce factors, 2010 – current

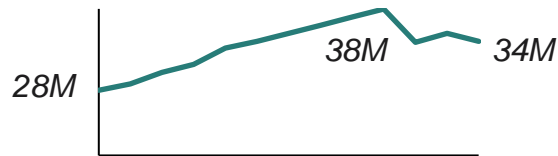
Net migration



-76%

Net international migration decline since 2016

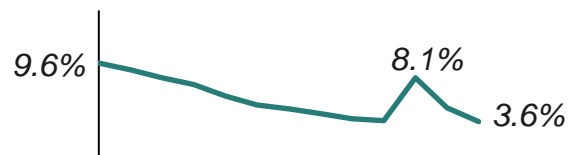
Workforce 55+



-10%

Change in workforce 55+ post-pandemic, potentially accelerating an overall trend of retirements (e.g., 41% of the US construction workforce is expected to retire by 2031)

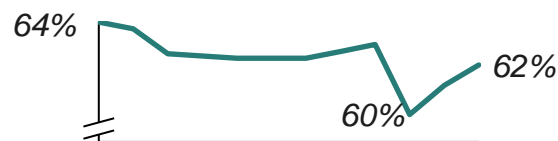
Unemployment



3.6%

National unemployment rate at historically low levels

Workforce participation



62%

Workforce participation rate, which is rebounding from 2020 levels but not fully recovered to early 2020 levels

Source: BLS, Census.gov, Federal Reserve

... as well as constraints specific to the construction industry



Historic levels of infra investment

Infrastructure investment at highest levels since the 90s



Aging workforce

~41% of the current US construction workforce is expected to retire by 2031



Working conditions versus wages

Construction wages have grown at 3.9% versus competing industries (retail, manufacturing) at 7.0%

Seasonality, lack of flexible hours, dangerous conditions, no hybrid / remote options



Recruitment and training

Recruitment, training and career advancement programs often ad hoc, many shut down during pandemic



Slowed innovation

Few productivity improvements over the last several decades

Source: BLS, Census.gov, Federal Reserve

Contents

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Major actions states can take to address these gaps

■ Detailed next

Description

A	Attract workers	Attract workers through targeted efforts, expanding the pool of potential applicants to adjacent industries or regions, and ensuring that infrastructure jobs are high-quality and well-paid
B	Support upskilling and reskilling	Expand and fund training programs to upskill and reskill current employees in the workforce to prepare them for priority industries
C	Drive productivity improvement / Reduce demand	Adopt new technologies and processes and leverage Dig Once to reduce demand generated from BIL and increase productivity

A | Attract Workers

Existing construction focus

NOT EXHAUSTIVE

Case examples

Potential interventions	Other states	Michigan
1. Use marketing campaigns to advertise priority jobs in state	" Upskill Houston " markets Houston construction industry careers and connects potential applicants with job opportunities	Learn More Earn More is a campaign to increase the number of Michiganders with an HSD/E and a customized career pathway to post-secondary education, OJT, registered apprenticeships and more
2. Ensure jobs are gateways – paired with incentives (e.g., educational opportunities, partial tuition paid for, good wages, etc.),	Virginia’s FastForward program partners with community colleges to cover 2/3 of credential tuition	Michigan ReConnect (\$55M)¹ provides free tuition at in-district MI community college to earn an associate degree or Pell-eligible skill certificate if you’re 25+
3. Consider supports like childcare, housing to enable new populations to enter workforce	Oregon childcare investment package invests \$100 million to expand childcare services and encourage entry into the workforce	Stabilization grants (\$700m) for childcare providers to stabilize operations and support the health & safety of children and staff
4. Target workers outside labor market and outside the state if needed	Maine offers partial student loan reimbursement to incentivize people to move to state	MDOC Vocational Villages invests in programs for the incarcerated, providing industry recognized credentials or licensure (e.g., welding, masonry and concrete, electrical)
5. Identify pools of talent that can be redirected	Helmets to Hardhats , a national program, transitions veterans into construction jobs	MI has invested \$250,000 in Helmets to Hardhats via a grant from LEO to connect 225 Veterans with apprenticeships in construction

1. Based on October 2022 allocation

Source: [Strengthening Ohio’s Broadband & 5G Workforce](#), [Oregon Childcare Investment](#), [Helmets to Hardhats](#), [National conference of State Legislatures](#)

B | Support upskilling and reskilling

■ Existing construction focus

NOT EXHAUSTIVE

Case examples

Potential interventions	Other states	Michigan
1. Leverage WIOA programs for career and training services dedicated to construction	Maricopa County, Arizona WIOA funding supports pressing labor challenges, including current deficit in construction industry	Michigan Works! Agencies operate adult programs on a year-round basis, providing basic and individualized career services to dislocated workers, including in construction
2. Create marketplace to tie residents to career, education and support resources in construction	Georgia's Quick Start program runs collaboration between industry and technical colleges	Michigan Industry Cluster Approach (MICA) creates a framework for employers, industry suppliers, and support institutions in a product or service field (e.g., construction) to jointly engage with the workforce system to identify talent demand and challenges; activities include talent recruitment, creating customized training programs, and providing transportation and childcare
3. Partner with technical institutions to launch apprenticeships / OJT programs, and embed apprenticeship / OJT expectations for major state contractors	Arizona DOT funded projects sometimes require that contractors have an OJT program goal to train a certain number of OJT trainees for a certain minimum number of hours	Michigan Career & Technical Institute (MCTI) offers state-of-the-art vocational and technical training programs and support services needed to prepare Michigan citizens with disabilities for competitive employment (including in construction, industrial electronics, IT, and machine technology)
4. Double-down on the local workforce through regional and local programs	Washington D.C. is expanding its D.C. Infrastructure Academy to offer training and infrastructure jobs under one roof	Going Pro Talent Fund (\$55M)¹ awards funds to employers to assist in training, developing and retaining current and newly hired employees; training is short-term and fills a demonstrated talent need experienced by the employer

1. Based on October 2022 allocation

Source: : [MARICOPA COUNTY WORKFORCE DEVELOPMENT BOARD](#), [D.C Infrastructure Academy](#), [Georgia's Quick Start](#), [ADOT Requirements for Contracts with OJT Training Provisions](#), [Fact Sheet, Biden-Harris Administration Launches the Pipeline challenge](#).