McKinsey & Company

Transportation and Warehousing Sector Analysis

Federal City Council

October 2020

Contents

Baseline Conditions

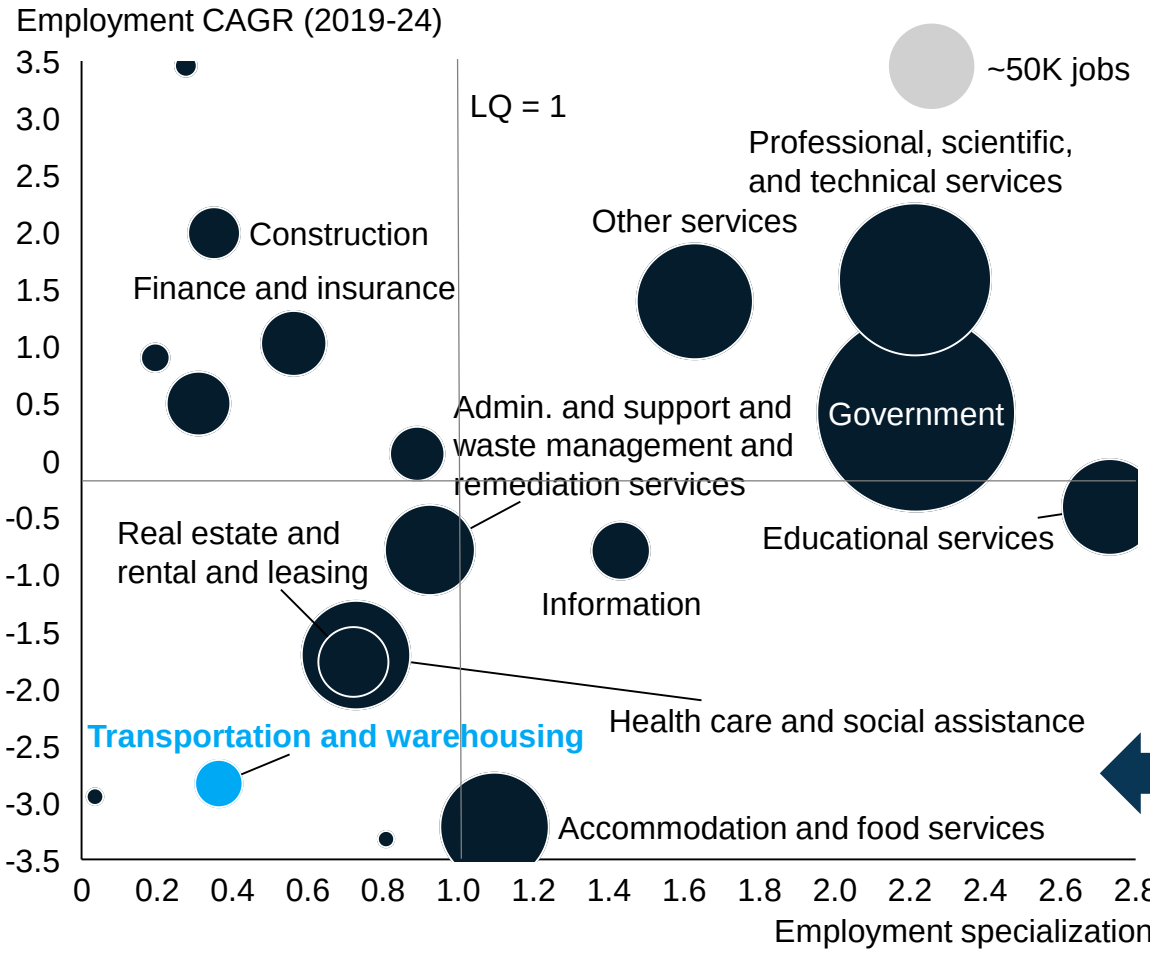
Challenges and trends

Opportunities and best practices

Appendix

The transportation sector in DC has modest employment…

Employment growth and specialization by industry[1]



…but is a critical enabler of economic competitiveness

Transit solutions are essential to **manage congestion** and support **optimal land use:**

- **Reduces congestion by 25%**, saving more than **$1.5 billion** annually in wasted time and fuel
- **Saves 1 million+** auto trips per day
- **Frees up 200,000 more parking spaces** in the core, equivalent of **166 blocks** of five-story garages

DC has one of the highest rates of **transit** and **bike** usage among major cities in the US:

- **34%** of workers commute by public transit (**3rd** highest among large US cities) and **4%** of workers commute by bicycle (**2nd** highest)[3]

Transit enhances DC's **affordability** for its residents:

- **$342 million/year** in auto expenditures saved by households using Metro due to reduced car ownership, operating, and maintenance costs
- **360,000** trips by transit dependents per day

- **Transportation and warehousing sector is ~2%** of DC employment
- **3%** decline in jobs forecasted between 2019-24, largely due to COVID-19
- **Low specialization** relative to the US as a whole (LQ = 0.4)

1 Mining, quarrying, and oil and gas extraction not included; Forecast from Moody's Analytics; 2 Location Quotient (LQ), or specialization, is measured as the ratio of a sector's share of output/employment in a state to that sector's share of output/employment in the U.S. as a whole; 3 With working populations greater than 250K

Source: Bureau of Economic Analysis (BEA), SAEMP25N Total Full-Time and Part-Time Employment by NAICS Industry; Moody's Analytics; WMATA "Why Metro Matters"; US Census

Transportation and warehousing is a relatively small sector in DC with low specialization relative to US average

Employment, growth, and specialization by major industry

✓ Focus of this document ✓ Analyses by other firms

Sector	Included in sector analysis	Size	Growth		Specialization
		Jobs, 2019[1]	CAGR, 2014-19, %	CAGR, 2019-24, %[2]	Jobs LQ[3]
Government and government enterprises	✓	248,311	0%	0%	2.2
Professional, scientific, and technical services	✓	147,712	3%	2%	2.2
Other services (except government and government enterprises)[4]		86,662	2%	1%	1.6
Health care and social assistance	✓	76,211	1%	-2%	0.7
Accommodation and food services	✓	75,933	3%	-3%	1.1
Educational services	✓	59,427	-1%	0%	2.7
Admin. and support and waste management and remediation services		52,751	0%	-1%	0.9
Real estate and rental and leasing	✓	32,102	3%	-2%	0.7
Finance and insurance		27,956	3%	1%	0.6
Retail trade	✓	26,806	2%	0%	0.3
Information		22,510	3%	-1%	1.4
Arts, entertainment, and recreation	✓	19,640	6%	0%	0.9
Construction	✓	17,961	1%	2%	0.4
Transportation and warehousing	✓	15,145	13%	-3%	0.4
Wholesale trade		5,782	0%	1%	0.2
Management of companies and enterprises		3,489	6%	3%	0.3
Manufacturing		2,154	4%	-3%	0.0
Utilities		2,116	1%	-3%	0.8
Mining, quarrying, and oil and gas extraction		252	-10%	-1%	0.0
Total		**923,009**	**1%**	**0%**	**1.0**

Transportation and warehousing represents <2% of total DC employment

1 Full-time and part-time; Includes Wage and salary employment and Proprietors employment; 2 Forecasts from Moody's Analytics; 3 Location Quotient (LQ), or specialization, is measured as the ratio of a sector's share of output/employment in a state to that sector's share of output/employment in the U.S. as a whole; 4 Other services is an especially large sector in DC as it includes NGOs and other institutions

Source: Bureau of Economic Analysis (BEA), SAEMP25N Total Full-Time and Part-Time Employment by NAICS Industry; Moody's Analytics

Transit and ground passenger transportation is by far the largest employer within this sector in DC

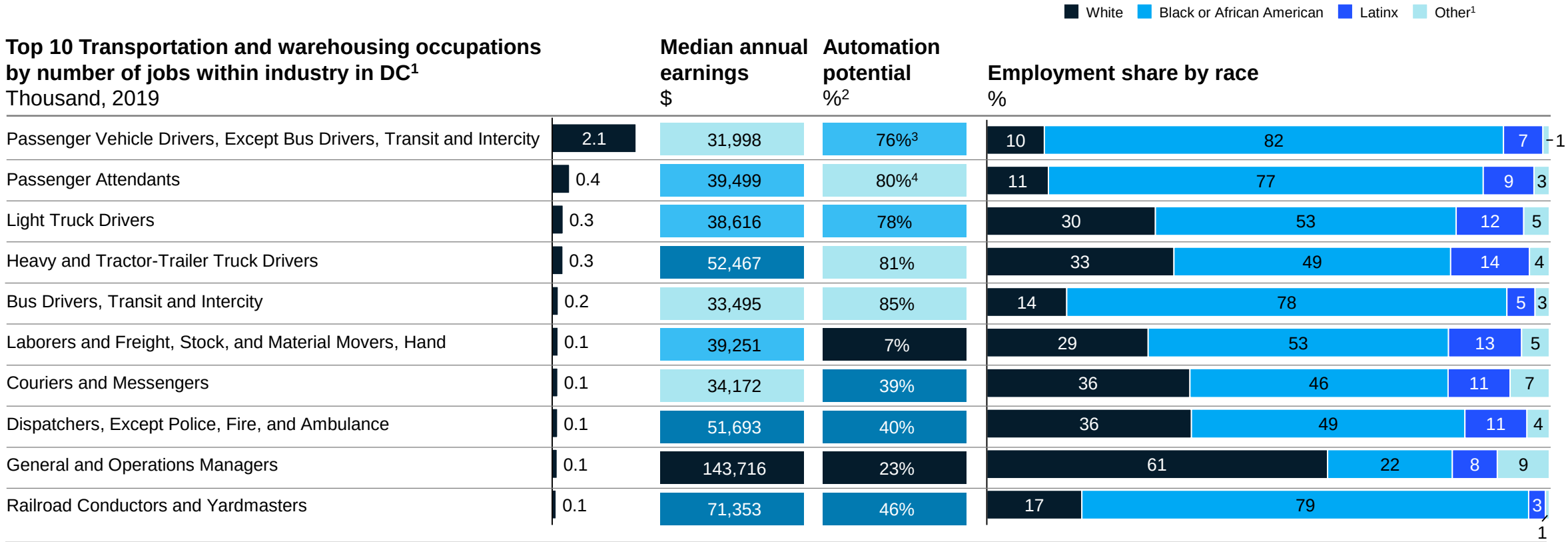
Employment, growth, and specialization by subsector

	Size	Growth		Specialization
Subsector	**Jobs, 2019[1]**	**CAGR, 2014-19, %**	**CAGR, 2019-24, %[2]**	**Jobs LQ[3]**
Transit and ground passenger transportation[4]	10,156	18%	-4%	1.0
Couriers and messengers	1,635[5]	NA[6]	1%	0.3
Rail transportation	1,580	-2%	-4%	2.0
Scenic and sightseeing transportation	662	9%	-4%	2.8
Support activities for transportation	394	18%	-1%	0.1
Truck transportation	375	5%	-1%	0.0
Air transportation	91	-2%	-3%	0.0
Warehousing and storage	69	NA[6]	2%	0.0
Water transportation	30	NA[6]	-3%	0.1
Transportation and warehousing (total)	15,145	13%	-3%	0.4

1. Full-time and part-time; Includes Wage and salary employment and Proprietors employment; Subsector jobs may not add up 100% to total due to data suppression
2. Forecasts from Moody's Analytics
3. Location Quotient (LQ), or specialization, is measured as the ratio of a sector's share of output/employment in a state to that sector's share of output/employment in the U.S. as a whole
4. Includes transit networks such as WMATA and rideshare such as Uber and Lyft, etc.
5. 2018 data (2019 data suppressed)
6. Historical data points suppressed

Source: Bureau of Economic Analysis (BEA), SAEMP25N Total Full-Time and Part-Time Employment by NAICS Industry; Moody's Analytics

Top Transportation occupations employ a majority of Black workers, and are at highest risk of displacement from automation



- All top roles (except operations managers) have a higher share of Black workers than **DC** as a whole, which is **44% Black** and **37% White** (both non-Latinx)
- These jobs all require a **high school diploma**, except for heavy truck drivers (certificate) and operations managers (Bachelor's)
- In the medium term, the District can work towards **upskilling** workers from high automation jobs to those with less risk and higher wages

1. Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Two or More Races; does not include all "Proprietors employment", which includes many small business owners and contractors
2. Dark = lowest risk of automation; preliminary analysis
3. Taxi drivers and chauffeurs used for automation analysis
4. Transportation attendants used for automation analysis

Source: EMSI; Bureau of Labor Statistics (BLS); McKinsey Global Institute (MGI)

Contents

Baseline Conditions

Challenges and trends

Opportunities and best practices

Appendix

Mobility in DC: Five core challenges will shape the future of the sector and its ability to support broader economic competitiveness

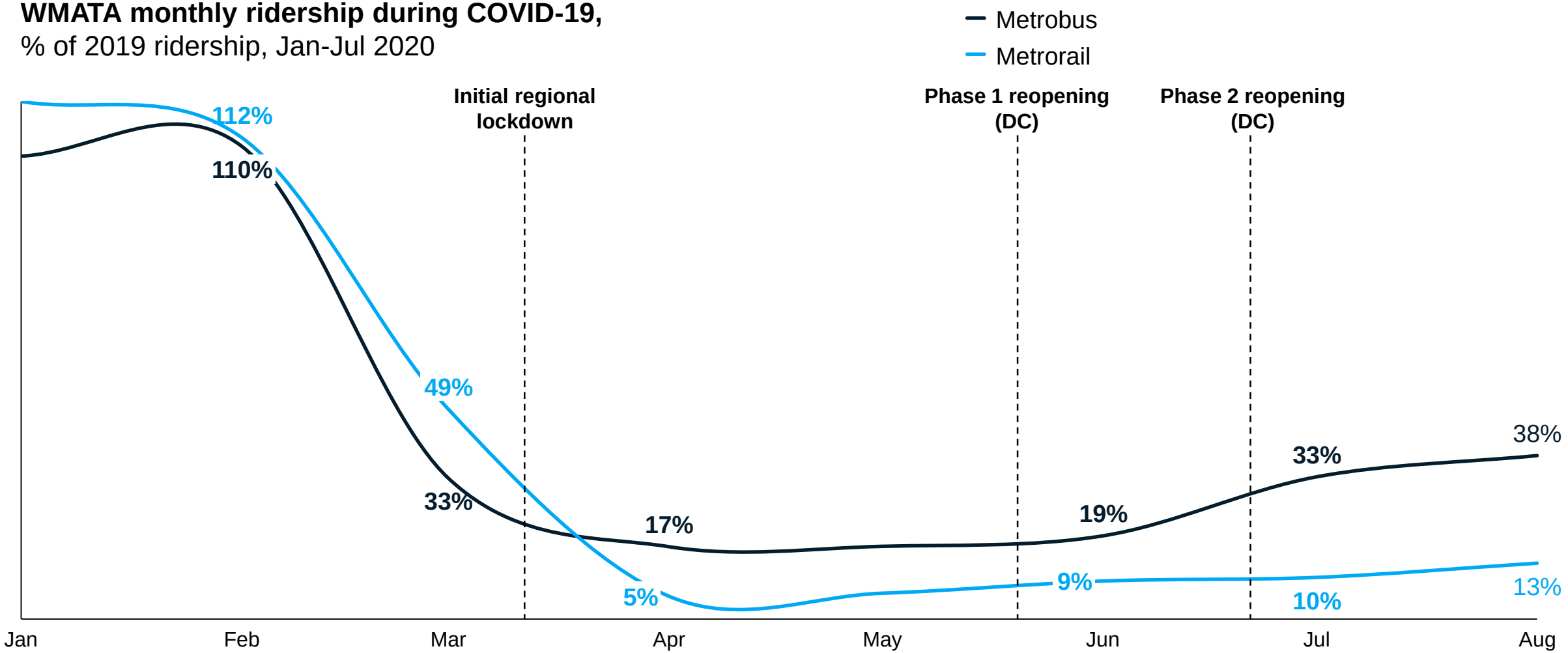
Challenge	A – Pre-COVID-19 trends	B – Impacts of COVID-19
1 **Health** and **viability of transit**	**Strong existing transit base with declining ridership levels** • **34%** of workers commute by public transit (3rd highest among large US cities) and **4%** of workers commute by bicycle (2nd highest) • **15%** and **20%** decline in rail and bus ridership from 2011-19	**Significant transit ridership drop and funding gaps** • **38%** and **13%** Metrobus and Metrorail ridership compared to pre-COVID levels as of end of Summer • **~$250** million budget gap forecasted by WMATA through end of FY • **5%** decline in Trade, transportation, and utilities jobs (Aug '19-20)
2 **Mitigating Congestion** and its impacts on productivity	**Congestion, long commute times and increased TNCs** • **3rd** in yearly delays per auto commuter among large metros (**~$2K** annual cost of congestion per commuter) • **¾** of public transit riders and **½** of drivers face daily commutes over 30 minutes	**Short-term congestion decline, rebound expected; rise of telework** • **3%** increase in driving demand since the start of the pandemic • **55%** of executives said most (60-100%) office employees will work remotely at least one day a week post-COVID-19[1]
3 **Managing the curbside**	**Pressure on curb from TNCs, e-commerce and curbside delivery** ▪ **10,000** new rideshare drivers added annually (2014-17) in the D.C. metro area ▪ **98%** increase in e-commerce sales from 2014 to 2019[1]	**Continued rise of e-commerce, with new uses for the curb** • **32%** increase in e-commerce sales from 2020 Q1 to Q2[1] • **81%** of 685 poll respondents support "streeteries" post-COVID
4 **Ensuring equity** in transportation and transit access	**Unequal transit access among communities of color** ▪ **39%** of Black residents in low-income neighborhoods lack access to high frequency transit • **33.7 minutes** is the average commute time for Black workers, longest among racial groups	**Unequal transit access for essential workers** ▪ **62%** of jobs requiring less formal training, such as drivers and clerks, can be reached by residents with applicable skills (compared to **72%** for high-skill jobs and residents) ▪ **50%** of Health technologists (example occupation) in low-income neighborhoods lack access to high frequency transit
5 **Ensuring safety**	**Lagging safety outcomes, most notably for cyclists** • **4.3** bicycling fatalities per 1M population, higher than San Francisco, Seattle, Chicago, New York, Boston, and others • **2nd** highest share of bicycle commuters yet **15th** and **27th** city in number of miles of protected and unprotected bike lanes	**Increased demand for walking and biking: safety critical** • **5%** increase in biking and walking and **1%** increase in shared micromobility expected immediately in the "new normal"[1]

1. US statistic

Source: US Census; WMATA, Regional Reopening Plans; PwC "US Remote Work Survey"; Texas A&M, 2019 Urban Mobility Report; Apple Mobility Trends Report; WUSA9; NHTSA Traffic Safety Facts; McKinsey Center for Future Mobility; Metropolitan Policy Program at Brookings; Barred in DC Twitter poll, accessed through WUSA9; BLS-Current Employment Statistics (CES); DCist

1b: WMATA has seen record low ridership that is just beginning to recover

WMATA monthly ridership during COVID-19,
% of 2019 ridership, Jan-Jul 2020

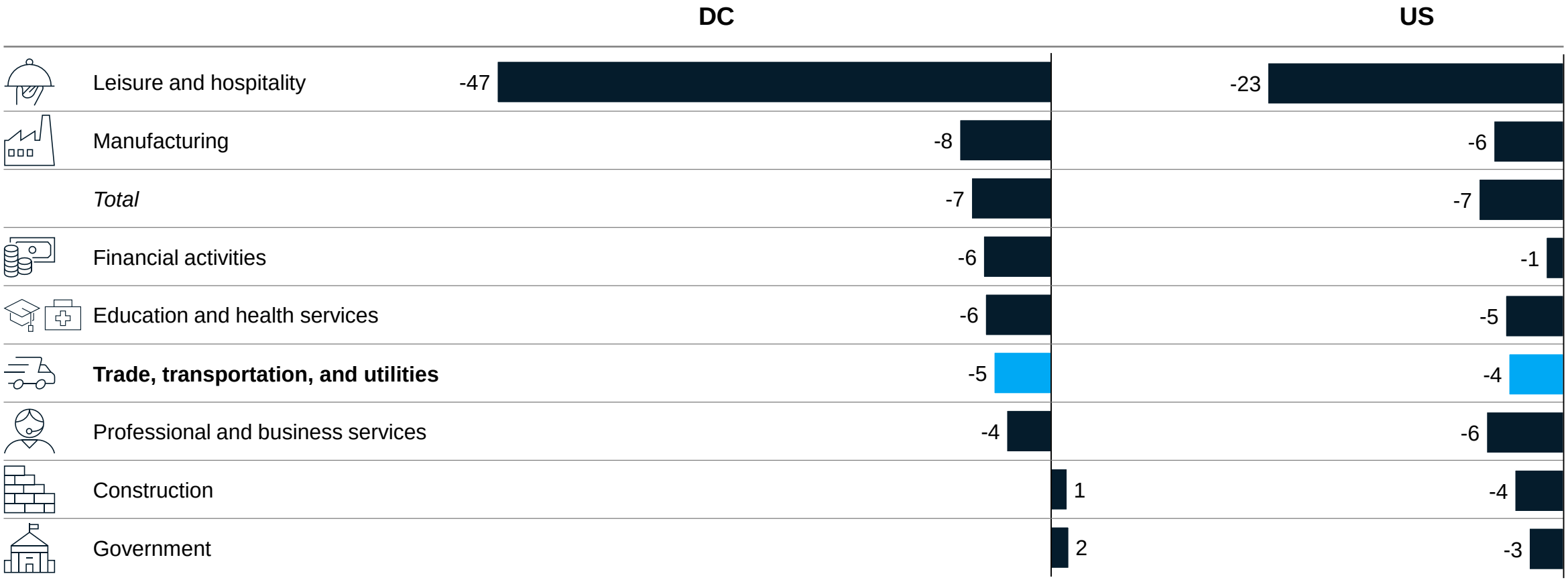


Source: WMATA, Regional Reopening Plans

1b: Employment in Trade, transportation, and utilities declined by 5%, which was not as steep a decline as DC overall

Change in employment by major industry from August 2019 to August 2020[1]

% change



1. Available sectors with data shown here

Source: Bureau of Labor Statistics (BLS) Current Employment Statistics (CES)

2a: DC faces relatively high congestion delays and costs

National Congestion Table – What congestion means to you, 2017

	Yearly Delay per Auto Commuter		Travel Time Index		Excess Fuel per Auto Commuter		Congestion Cost per Auto Commuter	
Urban Area	**Hours**	**Rank**	**Value**	**Rank**	**Gallons**	**Rank**	**Dollars**	**Rank**
Very Large Average (15 areas)	*83*		*1.35*		*32*		*1,730*	
Los Angeles-Long Beach-Anaheim CA	119	1	1.51	1	35	4	2,676	1
San Francisco-Oakland CA	103	2	1.50	2	39	1	2,619	2
Washington DC-VA-MD	**102**	**3**	**1.35**	**7**	**38**	**2**	**2,015**	**3**
New York-Newark NY-NJ-CT	92	4	1.35	7	38	2	1,947	4
Boston MA-NH-RI	80	6	1.30	19	31	7	1,580	8
Seattle WA	78	7	1.37	5	31	7	1,541	9
Atlanta GA	77	8	1.30	19	31	7	1,653	5
Houston TX	75	9	1.34	11	31	7	1,508	10
Chicago IL-IN	73	10	1.32	16	30	12	1,431	11
Miami FL	69	12	1.31	17	34	5	1,412	12
Dallas-Fort Worth-Arlington TX	67	13	1.26	23	25	20	1,272	18
San Diego CA	64	16	1.35	7	24	27	1,584	7
Philadelphia PA-NJ-DE-MD	62	18	1.25	25	26	15	1,203	22
Phoenix-Mesa AZ	62	18	1.27	22	26	15	1,089	30
Detroit MI	61	20	1.24	28	25	20	1,129	25

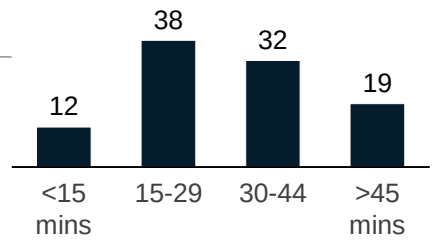
Source: Texas A&M, 2019 Urban Mobility Report

2a: Three-quarters of public transit riders and half of drivers face daily commutes over 30 minutes

51% of DC automobile commuters have trips longer than 30min

Commute time by automobile, 2017

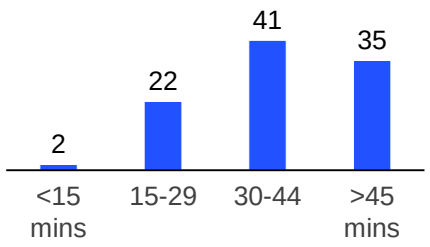
Percent of automobile commuters



Travel time

Commute time by public transportation, 2017

Percent of public transit commuters

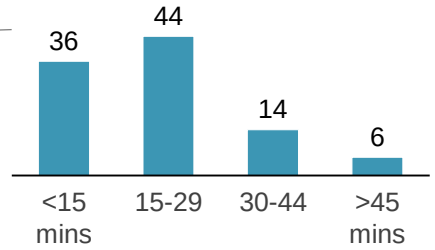


76% of public transportation users have commutes over 30 minutes

Walking and biking are most common for commutes less than 30min

Commute time by walking, 2017

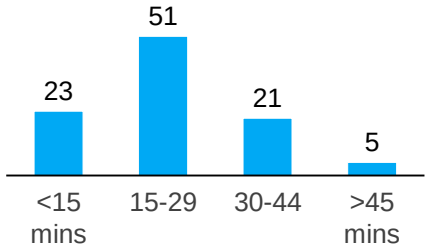
% of walking commuters



Travel time

Commute time by other methods, 2017

% of other transit commuters

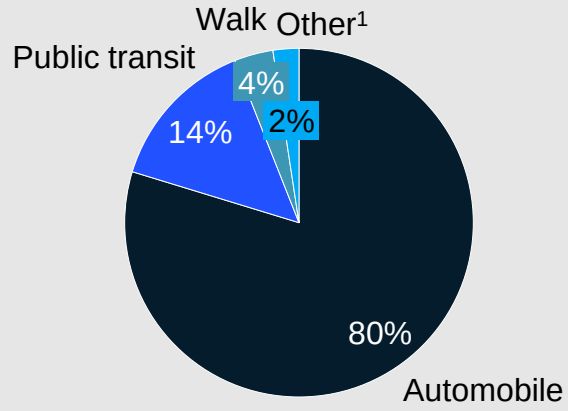


1. Other includes commuters using bicycles, motorcycles, taxicabs, etc.

Source: US Census - American Community Survey; WalletHub

Metro DC commuters mode of transit,

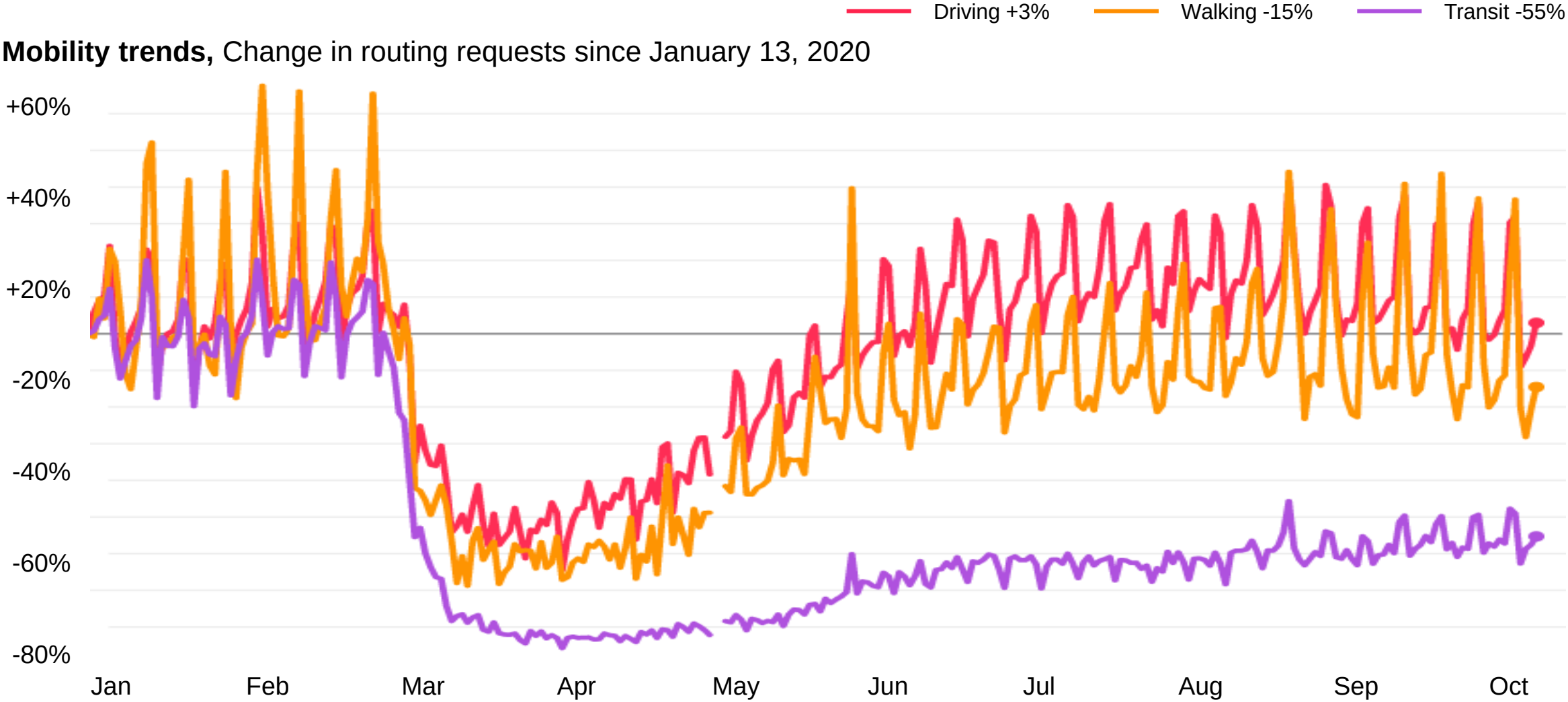
% of commuters using specific mode of transit, 2016



- DC ranked **86th of 100** cities in WalletHub's **"Best & Worst Cities to Drive in" in 2020**
- **14% of DC metro commuters use public transit,** which is significantly lower than automobile usage, but still **one of the highest rates of public transit usage** among metro areas
- As a city, Washington, DC has the **3rd highest public transit usage** in the US (34%), after New York and San Francisco

2b: Transit demand is down significantly but driving is up since the start of the pandemic

Mobility trends, Change in routing requests since January 13, 2020



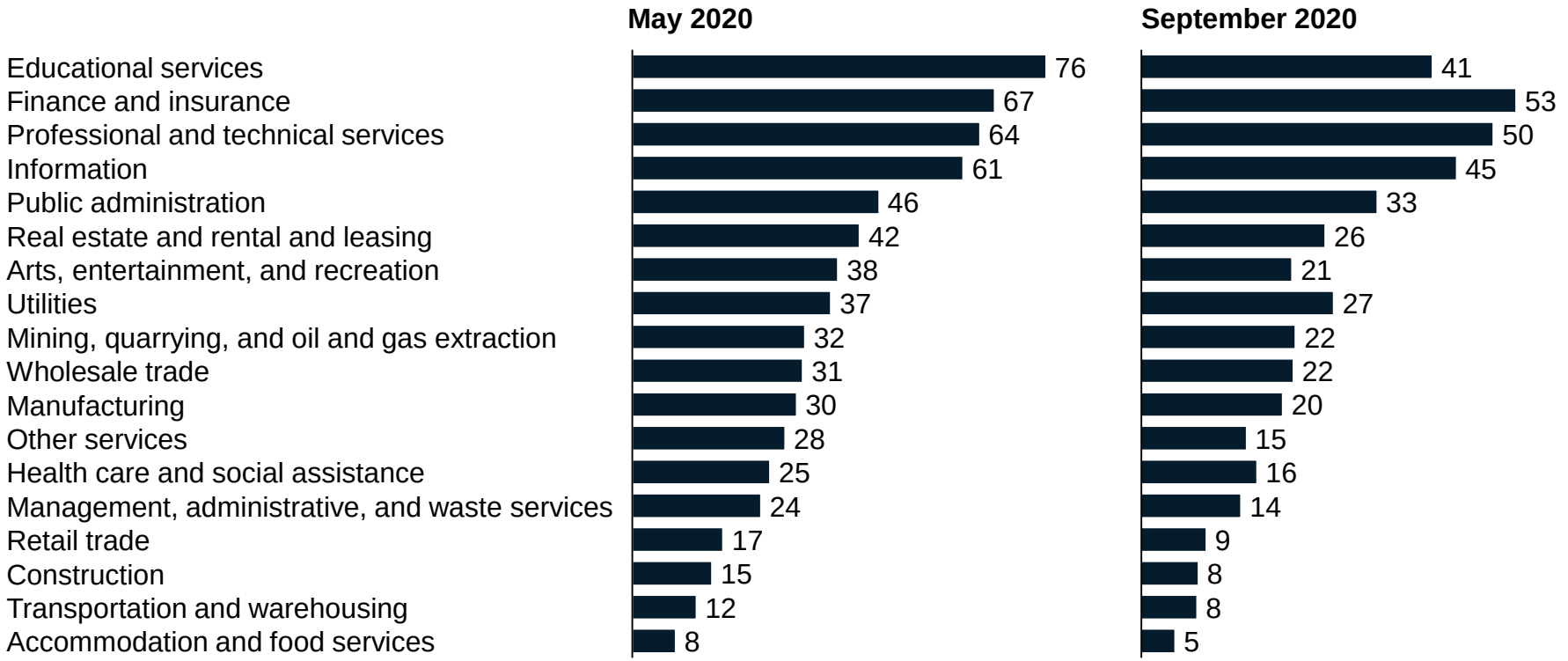
Source: Apple Mobility Trends Report

2b: ~50% of white collar workers are teleworking, and many will continue to work remotely post-COVID part-time

Teleworking is a challenge and opportunity for transportation systems

Share of teleworkers by industry in the United States, May 2020 to September 2020[1]

% of workers within industry



According to PwC's US Remote Work Survey:

- **55%** of executives said most (60-100%) of office employees will work remotely **at least one day a week** post-COVID-19
- **72%** of surveyed office workers would like to work remotely **at least two days per week**

According to Upwork's The Future of Remote Work

- **~20%** of the workforce is likely to continue **working remotely** on a **full-time** basis
- **~33%** will continue doing so **part-time**

The rise in telework presents challenges and opportunities for transit, as people may decide to live further from their employer's offices (swapping a longer, occasional commute for more space), commute to work less times per week, and take more local trips throughout the day during "off-peak" hours

1. Data from BLS – CPS; Full description: Employed persons who teleworked or worked at home for pay at any time in the last 4 weeks because of the coronavirus pandemic

Source: Bureau of Labor Statistics (BLS) - Current Population Survey (CPS); PwC - US Remote Work Survey; Upwork - The Future of Remote Work; government technology magazine

4a: Transit commutes correlate with income and race, though many workers in low-income neighborhoods work outside DC

Commute time to work via public transportation

% commuters traveling >45 mins

Race

% Black population

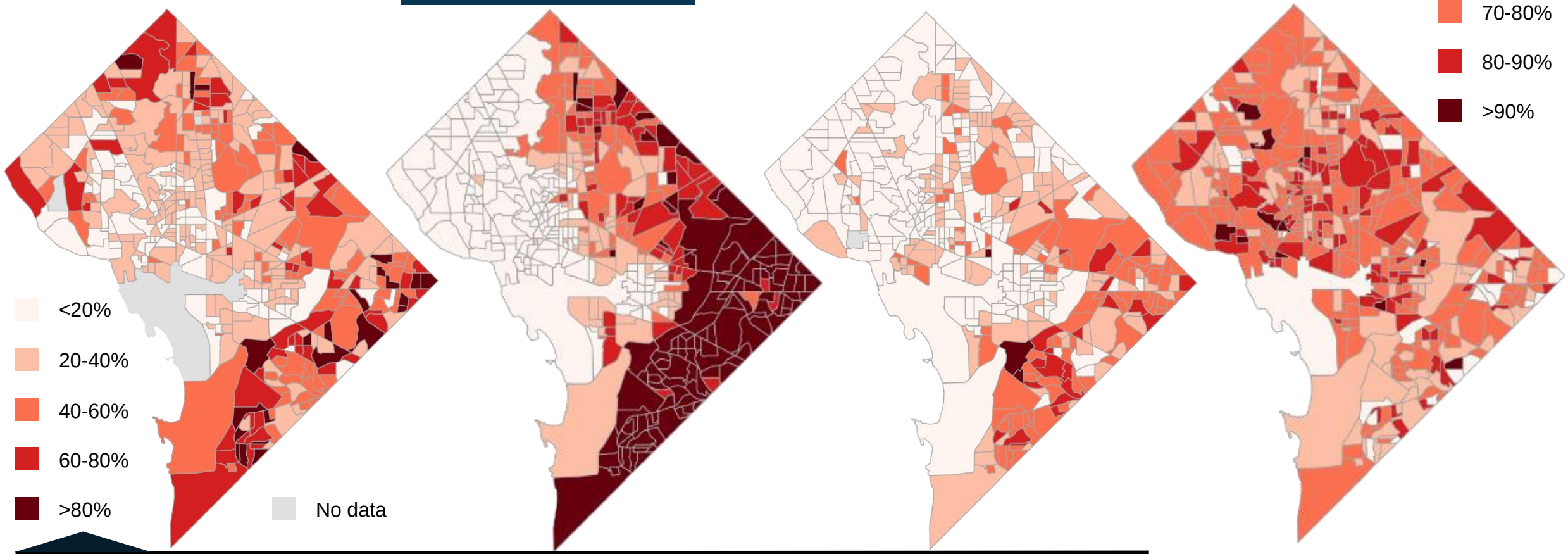
0.6 correlation between Black population and commute time

Household income

% income <$35K

Place of work

% work in DC

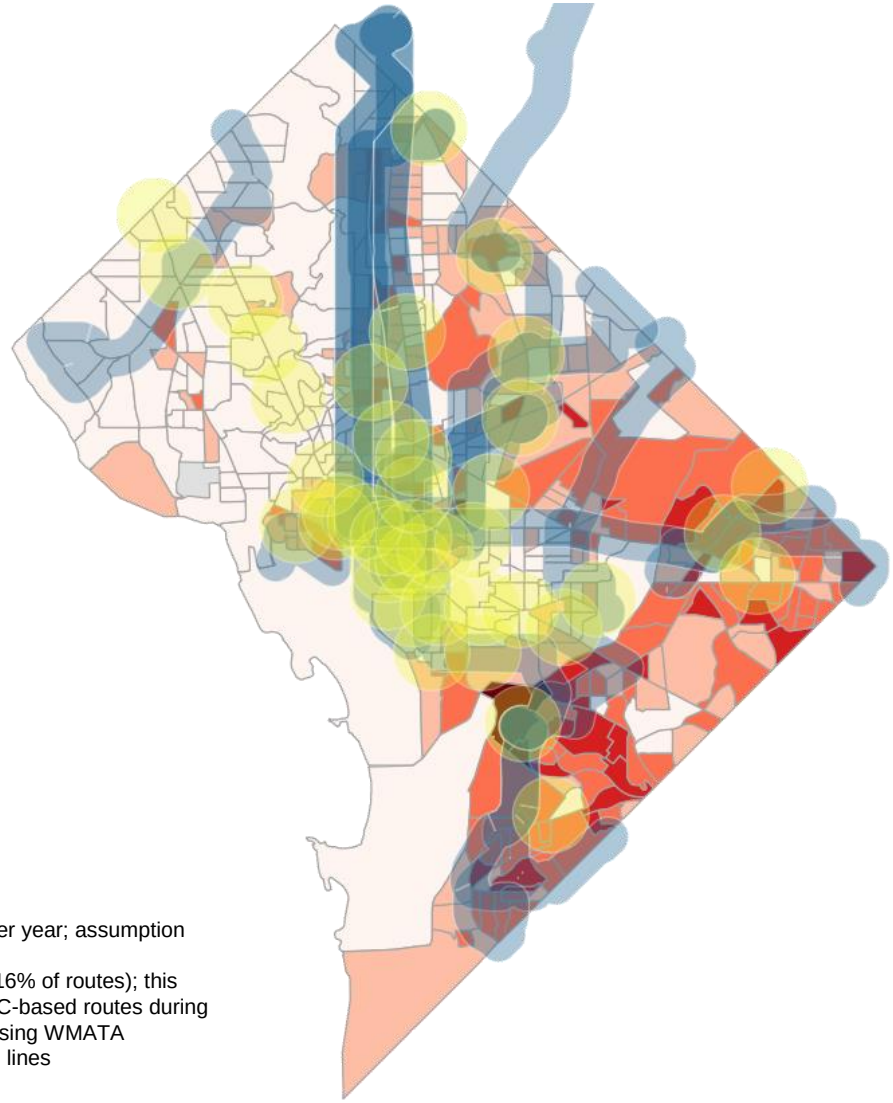


Source: US Census

4a: Swathes of low income districts are under-served by high-frequency transit

Population by household income

% income <$35K

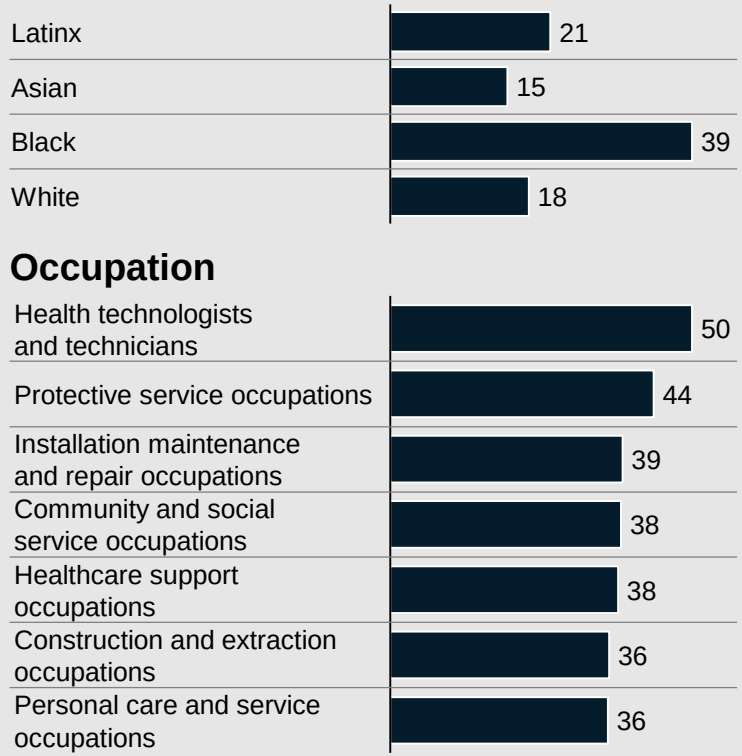


1. Neighborhoods where >40% of households earn <$35K per year; assumption that population in Block Groups is dispersed evenly
2. Defined as bus lines with service ~4+ times every hour (~16% of routes); this was estimated by averaging the number of buses on all DC-based routes during 3 sample hours in the day: 8-9 AM, 2-3 PM, and 5-6 PM using WMATA timetables; walking distance of ¼ mile created around bus lines
3. Walking distance of ½ mile created around metro stations

Source: US Census; Open Data DC; WMATA District of Columbia Timetables

Share of residents more than ¼ mile from high-frequency buses and ½ mile from metro stations in low-income neighborhoods[1]

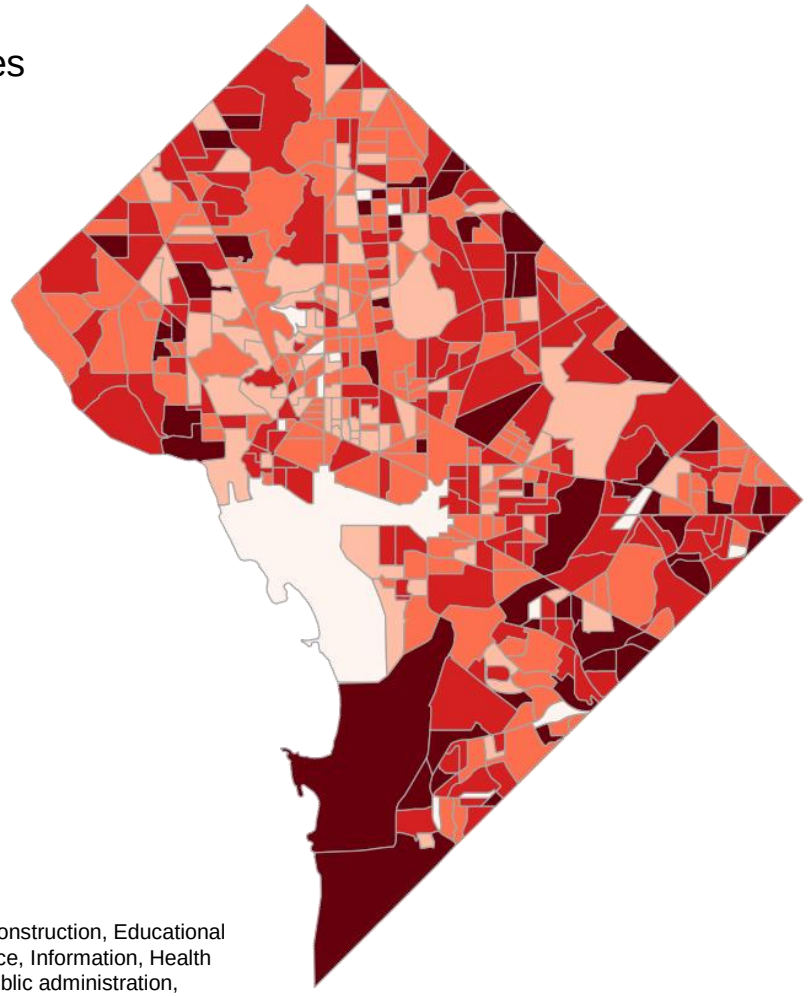
% by selected characteristics



4b: Southeast DC has a disproportionate share of essential workers

Neighborhoods where essential workers live[1]

% share of workers in essential industries

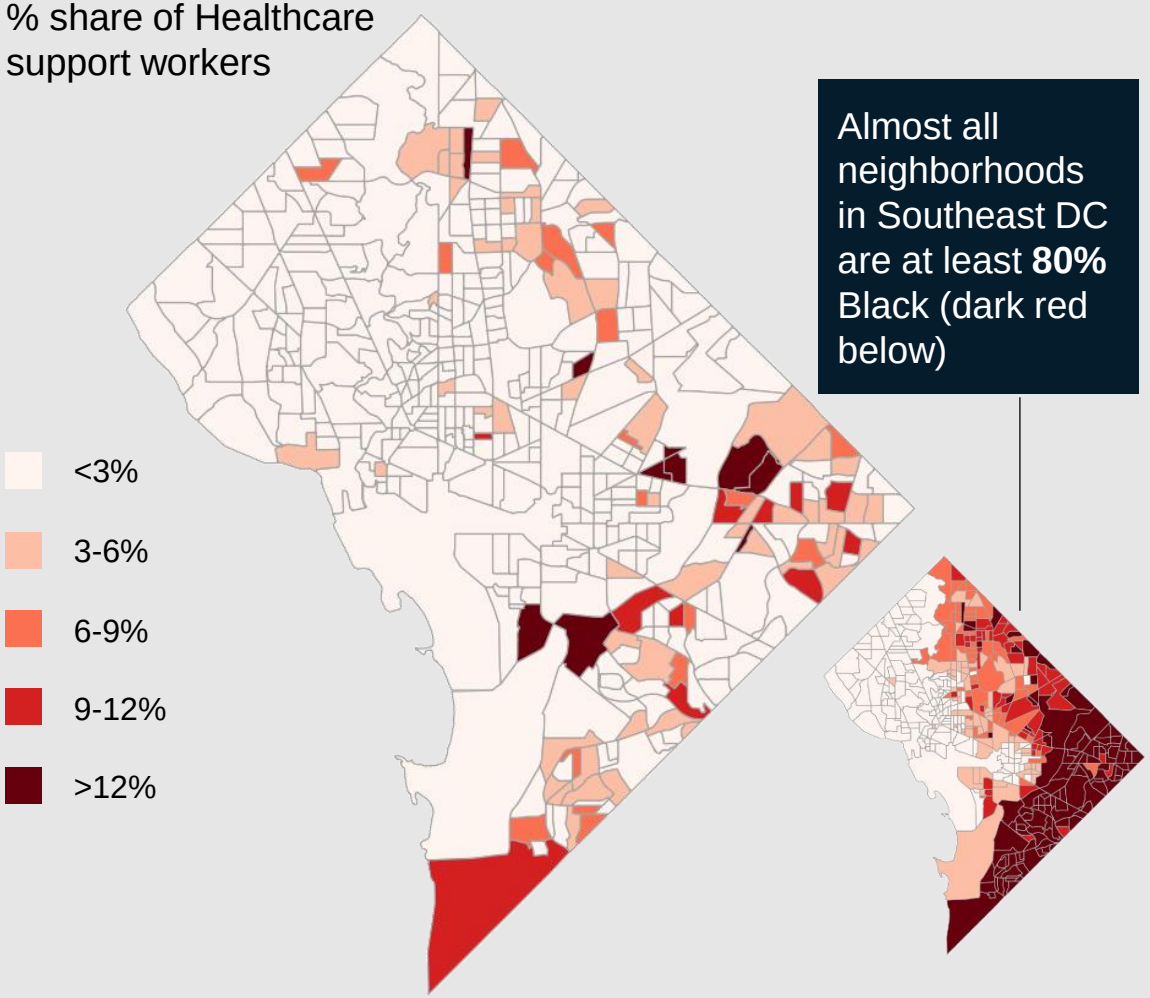


1. Essential industries include: Construction, Educational services, Finance and insurance, Information, Health care and social assistance, Public administration, Transportation and warehousing, Utilities

Source: US Census; Government of the District of Columbia

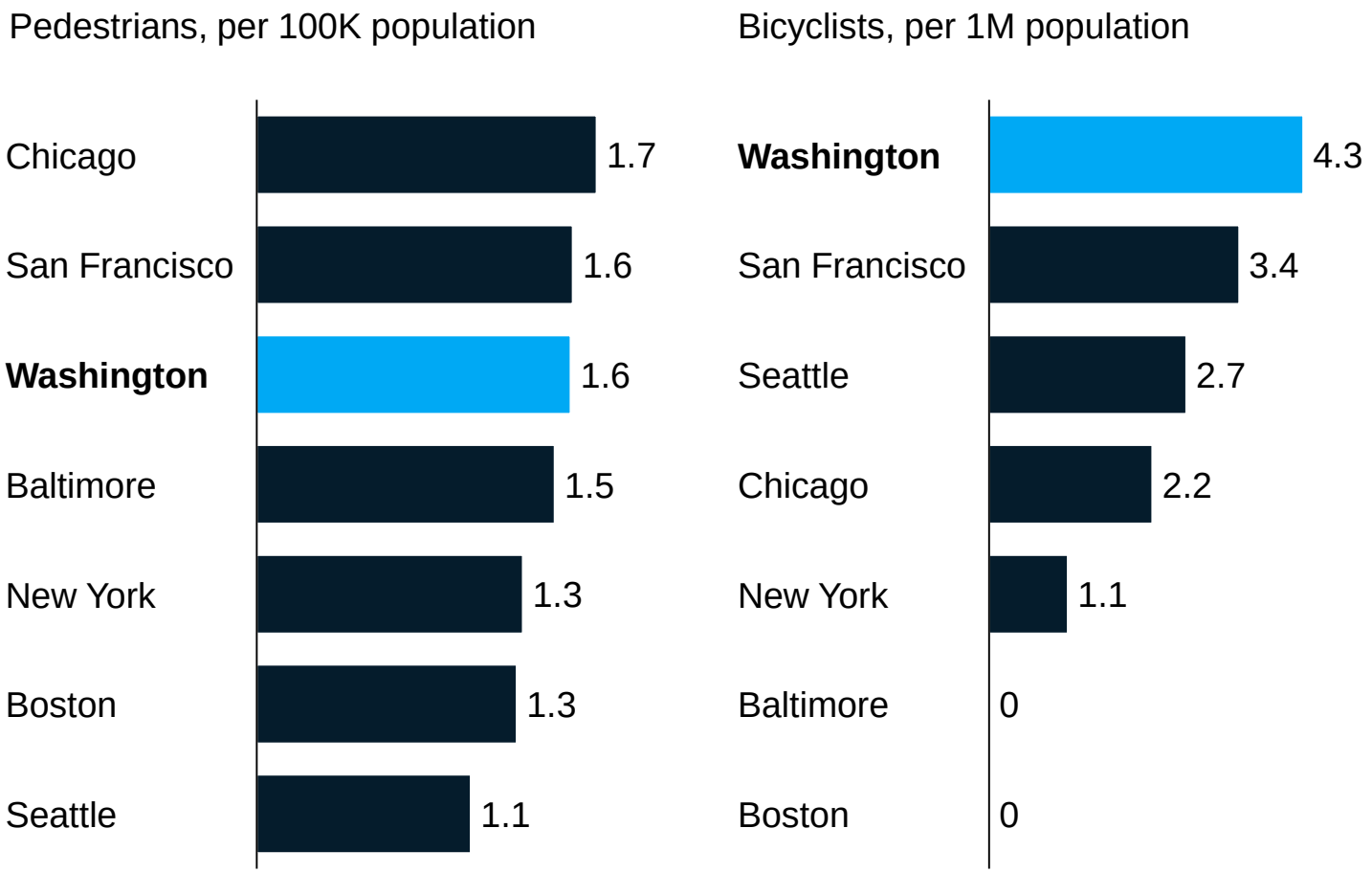
Neighborhoods where Healthcare support workers live[1]

% share of Healthcare support workers



5a: Among peers, Washington DC has the highest share of cyclist fatalities

Fatalities per capita, selected large city peers, 2018



Bicycle collisions, 2016-19[1]

Some of the most dangerous roadways in DC for cyclists are along U Street NW, 14th Street NW, and Dupont Circle

1. Map from WUSA9 report: "These are DC, Maryland & Virginia's most dangerous roads for cyclists & pedestrians"

Source: NHTSA Traffic Safety Facts; WUSA9

5a: While DC has one of the highest shares of bicycle commuters, it has less bike lanes than many peers

US cities by share of bike commuters (%) and bike lanes in number of miles

Cities with working population >250K	Share of bicycle commuters, %[1]	Miles of paved public paths[2]	Miles of protected bike lanes[2]	Miles of unprotected bike lanes[2]	Miles of bike infrastructure per square mile[2]	State passing law[3]
Portland	5.2	94	29	208	2.5	"Safe distance"[4]
Washington	4	60	12[6]	72	2.3	3 feet
San Francisco	3.8	70	31	153	5.4	3 feet
Seattle	3.7	48	10	98	1.9	3 feet + change lanes[4]
Boston	2.5	53	7	102	3.4	"Safe distance"[5]
Denver	2.4	65	12	330	2.7	3 feet
Tucson	2.3	132	6	330	2.1	3 feet
Philadelphia	2.1	Not Reported	24	237	1.9	4 feet
Chicago	1.5	42	86	99	1.0	3 feet
Atlanta	1.3	42	9	47	0.7	3 feet

Washington, DC has the **2nd** highest share of bicycle commuters yet is the **15th** and **27th** city in number of miles of protected and unprotected bike lanes (of 50 large US cities)

1.Data from the US Census, Commuting Characteristics by Sex, by Place, 2019 ACS 1-Year Estimate
2.Data from The League of American Bicyclists, "Bicycling and Walking in the United States, 2018 Benchmarking Report"
3.Data from the National Conference of State Legislatures (NCSL) "Safely Passing Bicyclists Chart", 2020
4.Require motorist to completely change lanes when passing a bicycle if there is more than one lane in the same direction
5.A speed less than 35 mph and a "safe distance" means a distance that is sufficient to prevent contact with the person operating the bicycle if the person were to fall into the driver's lane of traffic.
6.Updated from DDOT

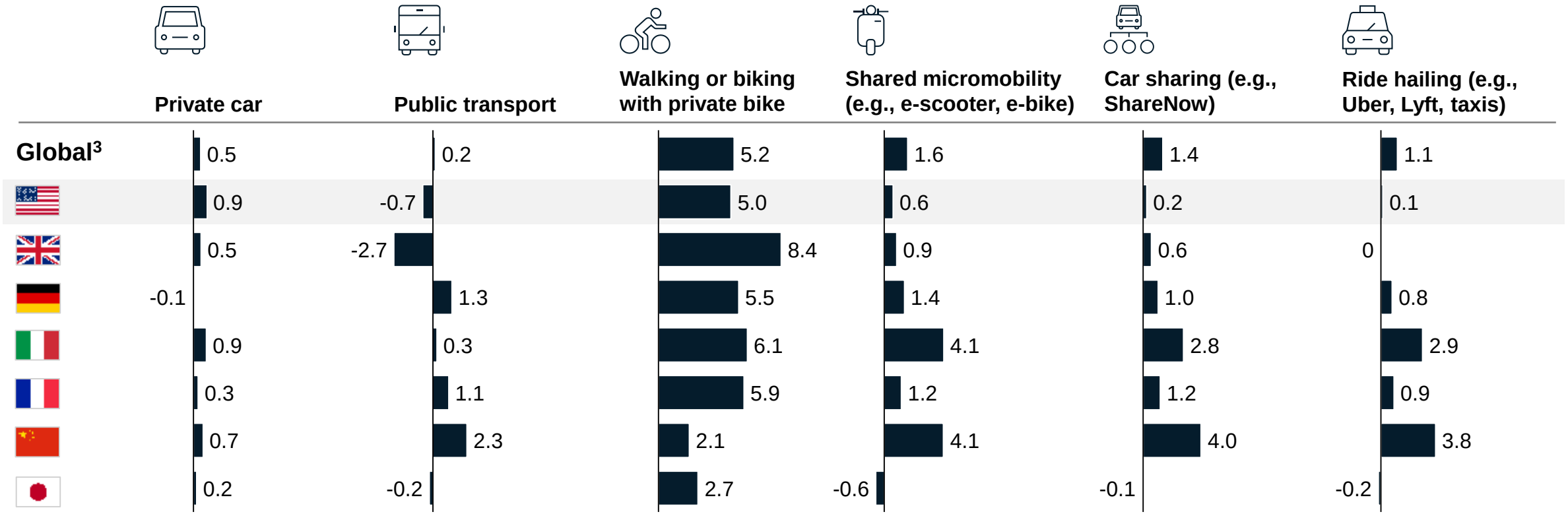
Source: US Census; The League of American Bicyclists, "Bicycling and Walking in the United States, 2018 Benchmarking Report"; National Conference of State Legislatures (NCSL)

5b: Walking and biking expected to increase 5% in the US post-COVID-19, and micromobility set to rise as well

Results of wave 1 (May 9-18), wave 2 (May 27-29), wave 3 (June 16-18), wave 4 (July 15 – 17), and wave 5 (Sep 2-4)

Change of transportation modes when returning to "next normal" vs. before COVID-19[1,2]

Delta of responses for return to "next normal" vs. before COVID-19 outbreak, in percent points



1 Q: Before/today/when you return to "next normal", how often did/do you/do you expect to use the following modes of transportation?
2. Mode usage once or more than once per week
3. US, UK, Germany, Italy, France, China, Japan

Source: McKinsey Center for Future Mobility

Contents

Baseline Conditions

Challenges and trends

Opportunities and best practices

Appendix

Mobility in DC: opportunities to enhance transportation and economic outcomes across DC

Deep dive in Appendix

Challenge	Opportunities	Details	Best practices
1	**Reaffirm commitment** to transit solutions and **robust mix of mobility options**	A Increase **integration** and **agility** of **existing networks** for long-term sustainability and financial viability	Jelbi
		B View long-term transit health as integrated with **land use solutions** that increase density, affordability, and access to transit	minneapolis | 2040
2	Increase **supply of mobility solutions** in connection with **managing congestion and demand** through pricing	C Adopt mobility solutions based on **dynamic pricing**	Ministry of Transport Connecting Singapore
		D Invest in streetscape to support **walking, cycling-, and micro-mobility**	PARIS
		E Develop **employer-back** transit solutions	Seattle Office of Labor Standards
3	Adopt new **regulations, uses,** and **pricing** scheme	F **Dynamically price** on-street parking to reduce congestion and raise revenues	LA Express Park
		G Facilitate **technological** solutions to improve **delivery management**	STARSHIP
4	**Close equity gaps** through **new mobility options** (e.g., microtransit) and target traditional fixed-route **high-frequency routes** targeting transit "deserts"	H Provide **subsidies** for low-income residents for transit usage	orca LIFT
		I Leverage **microtransit** or **ride-sharing partnerships** for new routes	VIA
		J Review and redesign traditional **fixed-route high-frequency** routes targeting **underserved communites**	GO BOSTON 2030
5	Adopt comprehensive **Vision Zero goals** to enhance safety outcomes	K Fastrack **Vision Zero** initiatives (e.g., District-wide reduction of speed limits, streetscape redesigns)	Stockholms stad

1a: Increase integration and agility of existing networks for long-term sustainability and financial viability

Description

- Develop multimodal system that integrates public transit, rideshare, micromobility
- Streamline multimodal transit usage through one-app booking and payments (e.g. Denver residents can use Uber's app to purchase tickets for the local bus and train transit system, RTD)
- Call on regional transit providers (WMATA, MARC, VRE, Circulator) to improve regional integration (e.g., coordinated schedules, increased Union Station capacity and frequency, fare integration, free transfers) and expand nights / weekend service for key residential and employment zones

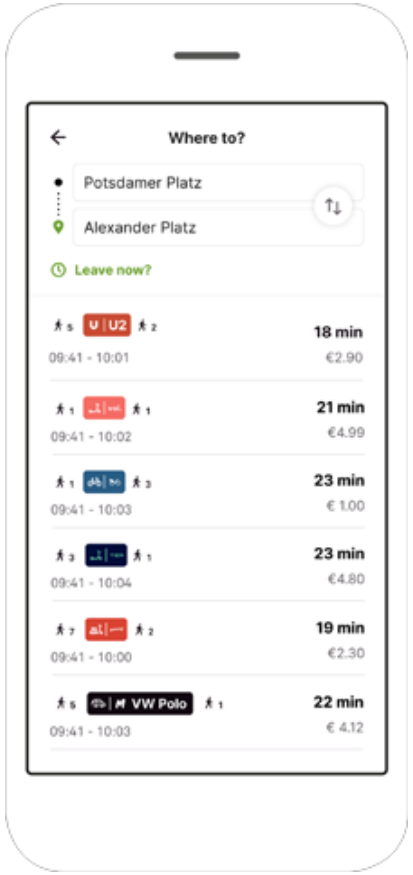
Case example

Berlin

- In 2019, Berlin introduced a Mobility as a Service (MaaS) app called Jelbi, in partnership with mobility platform Trafi
- Goal of Berlin public transport authority BVG's smart mobility strategy to connect every shared mobility offer in the German capital into a single marketplace for its residents to provide an attractive alternative to private cars
- Jelbi integrates all public and shared mobility options, including bike sharing, taxis, carpooling, and public transportation
- Allows Berliners to register one time for all existing and to-be-integrated mobility services, receive messages from transit (e.g. regarding closures or safety), plan intermodal trips (lowest time, cost), receive real time public transport information, and buy any type of ticket (no need to switch between apps)
- Employers can provide employee travel allowances on the app

Impact:

- In the first year of Jelbi:
  - ~5% of Berliners have used Jelbi
  - 15,500+ vehicles available
  - 51% public transport
  - 49% share mobility



Source: The Verge; Unsense; BVG Jelbi website

1b: View long-term transit health as integrated with land use solutions that increase density, affordability, and access to transit

minneapolis | 2040

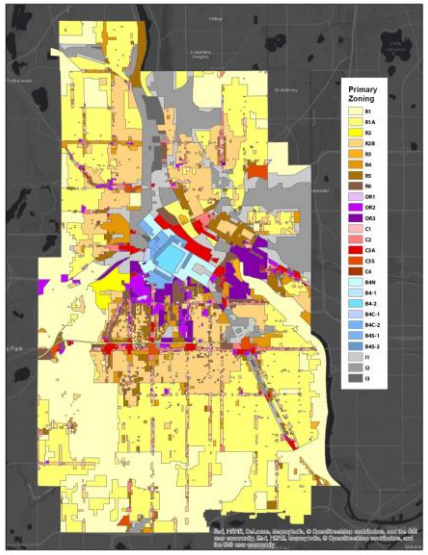
Description

- Cities and states such as Minneapolis, Austin, Seattle, Montgomery County MD, Oregon, and more have recently begun implementing changes to land use policy to encourage housing affordability
- 20% of the District's surface area is occupied by single-family units, which increases to 48% of all land not occupied by the federal government (or National Park Service)
- The District could consider targeted land-use measures near transit to incentivize more housing density and affordability

Case example

Minneapolis

- In October 2019, Minneapolis became the first city in the U.S. to eliminate single-family zoning
- As part of the Minneapolis 2040 comprehensive plan for the city, a package of further reforms includes:
  - Encouraging further density near transit stops
  - Eliminating off-street minimum parking requirements
  - Requiring new developments set aside units for low- and moderate-income households ("inclusionary zoning")
  - Increasing funding for affordable housing
- Before the 2040 Plan, Minneapolis made incremental steps to increasing housing affordability, such as in 2014 expanding the availability of "Accessory Dwelling Units" (ADUs)



Impact:

- Region-wide goal of 37,900 newly constructed affordable housing units between 2021 and 2030
- ~$10M per year from the City budget to an Affordable Housing Trust Fund providing competitive low/no interest deferred loans
- ~$50M per year in Low Income Housing Tax Credits

Source: Minneapolis 2040; The Century Foundation; D.C. Policy Center

2c: Adopt mobility solutions based on dynamic pricing (e.g., congestion pricing)

MINISTRY OF TRANSPORT
CONNECTING SINGAPORE

Description

- Charging for use of roads in an effort to reduce congestion and carbon emissions, increase safety, and generate revenue that can be reinvested into transit infrastructure

Congestion pricing:

- System can be cordon fee (e.g., charge to pass a cordon line around city center), area-wide, or corridor/facility specific
- May include a variable pricing scheme to respond to congestion (using algorithms to determine optimal price and time and transmitting this information to road screens or apps)
- Requires similar infrastructure as current road tolling (cameras, sensors, and electronic transponder devices for vehicles)

Revenue generation:

- Potential to endow the city with a sustainable infrastructure bank
- Net annual revenue is USD $182M in London, $155M in Stockholm, and $100M in Singapore

Case example

Singapore Electronic Road Pricing (ERP)

- Singapore launched ERP in 1998 to reduce congestion and improve journey time reliability for car users
- It is an electronic toll collection system with open road tolling, now (as of 2020) using satellite technology instead of cameras and gantries to charge vehicles
- It uses variable pricing designed to respond to congestion in real-time (charges depend on type of vehicle, congestion, time, and distance travelled)
- In conjunction with ERP, Singapore doubled parking fees within the restriction zone, established park-and-ride facilities outside the zone, increased bus frequency, and established HOV lanes
- Hours are 7 AM-8 PM Monday to Saturday
- Initial investment: $110M USD
- Annual operating cost: $18.5M USD
- Annual net revenue: $100M USD

Impact:

- Reduced traffic in the inner city by 24% and increased average speeds from 18-22 to 24-28 MPH
- Public transit improvements (expanded bus, rail, biking and pedestrian network), and bus and train ridership has increased by 15%
- Levels of CO2 and other greenhouse gas emissions have been reduced by 10-15%

Source: The Straits Times; Tri-State Transportation Campaign, “ROAD PRICING IN LONDON, STOCKHOLM AND SINGAPORE: A WAY FORWARD FOR NEW YORK CITY”

2d: Invest in streetscape to support walking, cycling-, and micro-mobility

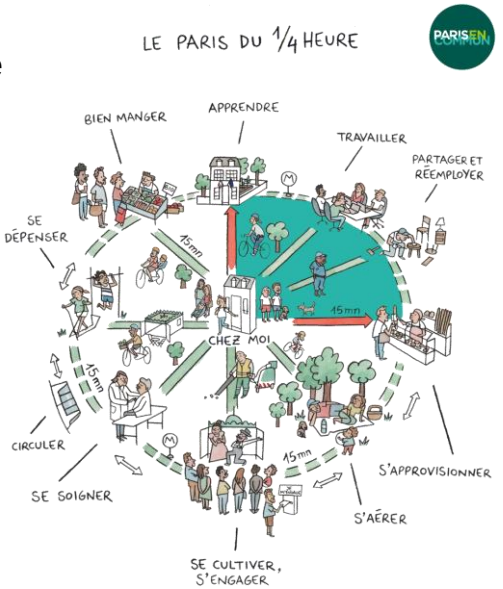
Description

- Increase number and mileage of dedicated bike lanes, especially in neighborhoods and around key amenities (e.g. grocery stores)
- Create additional mixed-use transit-and-micromobility corridors along key arteries, e.g., bus rapid transit (BRT) lanes and non-traditional vehicle "mobility corridors" for bikes, ride-sharing pools, and scooters
- Allow for year-round, permanent parklet usage by restaurants (e.g., New York)
- Improve walkability and neighborhood amenities through more car-free zones, plazas, and more Great Streets east of the river
- Expand dockless bicycle and scooter parking and charging infrastructure

Case example

Paris has been undergoing a transformation to make the city less congested and more walking- and cycling-friendly. The plan to make Paris a "15-minute city," where a resident's needs are a short walk away, includes:

- Pedestrianization of the highways along the Seine's riverbanks
- Car-free first Sunday of each month in 10 congested areas of the city
- Expansion of the city's bike-share program Vélib'
- €350m (£300m) plan to create "a bike lane in every street" by 2024
- Plan to do away with 60,000 parking spaces for private cars
- Free public transit for kids under eleven and senior citizens
- Banned cars near schools when kids are arriving and leaving to make it safe for children to walk and bike
- In response to COVID-19, temporary pedestrianized streets and 30 additional miles of dedicated bike lanes



Impact:

- Vehicular traffic has decreased by 20 percent in the last five years
- The number of cyclists has grown 54% in 2019
- City has reached 620 total miles of cycle paths in 2019, nearing its goal of 870 miles

Source: World Economic Forum; BBC; Ubique; Fast Company

3f: Dynamically price on-street parking to reduce congestion and raise revenues

Description

What is it?

A system of sensors that detect open parking spaces and make them visible to citizens looking for parking spaces via mobile applications or vehicle navigation systems, reducing time spent looking for parking; dynamic pricing helps shape demand to meet occupancy goals. Systems may also use analytics to predict future parking availability

What is the city's role?

Buy and implement (or partner with third party to implement) smart parking sensors, meters, and applications; encourage privately owned garages and lots to implement parking guidance systems through subsidies or regulation; offer parking availability and pricing data for third parties to leverage

Case example

Los Angeles: The Los Angeles smart parking program leveraged multiple sensors to provide real-time parking spaces through a mobile app. The smart parking application started as a pilot around 4.5 square miles on the downtown area in 2012

Features and approach:

The application uses parking sensors, dynamic pricing that reacts to demand, a parking guidance system and a mobile app that supplies real-time information about parking availability

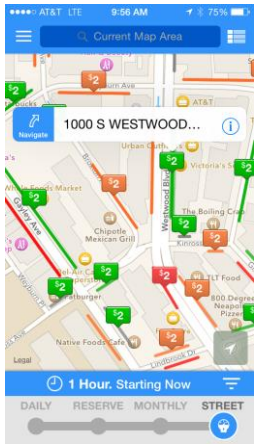
The app provides support for mobile payments, current rate, payment methods, voice guidance to parking spots and spaces available with the option to filter parking searches by permit type

Reservations can be made on a daily or monthly basis

The information helps LA DOT to set enforcement priorities to ensure compliance. All transactions are recorded and then used to optimize operations

Operations and cost:

LA Express Park was founded by grants from the US DOT and the city (~$18M in total). The LA DOT manages the program. The smart parking application uses the parking sensors from Street Line company, and Xerox has helped develop a highly integrated advanced pricing engine



Source: Laexpresspark.org; McKinsey Global Institute team analysis

4h: Provide subsidies for low-income residents for transit usage

Description

The District already provides some transit subsidies through a number of sources:

- The “Kids Ride Free” program allows students to ride MetroBus, Metrorail, and the DC Circulator for free within the District
- SmartBenefits allows employers to offer tax-free commuting to employees – with no fee to employees
- The Transportation Benefits Equity Amendment requires companies in the District that offer employees free or subsidized parking to also offer subsidized transit fare

The District could consider addressing equity concerns by expanding existing subsidies and providing additional subsidies for low-income residents[1]

Revenue sources for this program could come from other initiatives, such as dynamic pricing on certain roads or a cordon fee

Case example

Seattle: “King County Metro has long offered discounted fares to make transit service more affordable and accessible. In addition to existing programs for youth, seniors, and disabled riders, Metro recently expanded the Human Services Ticket Program and introduced the ORCA LIFT low-income fare in 2015.”

According to King Country Metro, “The ORCA LIFT program offers a reduced transit fare for people with incomes at or below 200% of the federal poverty level. Enrollment is available at locations across King County and partner agencies like King County Public Health verify income of participants through existing benefits programs like Apple Health, Social Security and Employment Security.

Metro reached out to the public in spring 2017 to develop recommendations for simplifying fares. We created a stakeholder advisory group, briefed and interviewed interested groups, and gathered two rounds of public feedback. This led the Executive to propose a simplified fare structure of a flat fare of $2.75 at all times, regardless of time or distance, which was adopted by King County Council and took effect in summer 2017.”

1. Proposals for such a program do exist, such as Councilmember Allen's proposal to provide a $100 monthly transit subsidy to every DC resident

Source: DDOT; WMATA; DC Council; King County

5k: Fastrack Vision Zero initiatives

Description

- Fastrack DC Vision Zero safety efforts by redesigning streets and sidewalks to prioritize and protect pedestrians and cyclists
- Develop connected network of cycling and pedestrian infrastructure, and prioritize junctions with high numbers of accidents (through visibility, predictability and speed reduction)
- Entice more residents to cycle, which is proven to increase safety (e.g., survey bike commuters and DC residents to determine what would encourage them to cycle more, such as additional protected bike lanes, more bike parking infrastructure, slower driving speeds, etc.)
- Strengthen enforcement for 20 mph speed limit on DC roads (e.g., traffic enforcement cameras as in NYC)
- Reduce the volume of motorized traffic, especially during peak times (e.g., through use of congestion charge)

Case example

Stockholm Vision Zero Project

- Systems approach to safety: core responsibility for accidents on the overall system design (rather than only faulting drivers)
- Transport infrastructure redesign to eliminate fatalities and serious injuries
- The project includes multiple sub-initiatives such as:
  - Rebuilt intersections: built tighter roundabout focused in slowing speeds which reduced death rate by 90%
  - Road design: safer cross-walks: Bumps, road narrowing, chicanes, etc. mainly in urban areas
- Vision Zero 2.0: integrate health benefits of more people walking and cycling

Impact:

- 56% of Stockholm residents commute via public transport, cycling, or walking
- Sweden has one of the lowest annual rates of road deaths in the world (3 out of 100,000 as compared to 12.3 in the United States)
- Fatalities involving pedestrians have fallen almost 50% in the last five years

Source: Stockholm Civitas Database; Center for Active Design; DDOT; International Transport Forum

Contents

Baseline Conditions

Challenges and trends

Opportunities and best practices

Appendix

Transportation and warehousing is a relatively small sector with low specialization

GDP, growth, and specialization by major industry

✓ Focus of this document ✓ Analyses by other firms

Sector	Included in sector analysis	Size	Growth		Specialization
		GDP, Mil., 2019[1]	CAGR, 2014-19, %	CAGR, 2019-24, %[2]	GDP LQ[3]
Government and government enterprises	✓	40,721	1%	2%	2.8
Professional, scientific, and technical services	✓	26,407	2%	3%	2.7
Real estate and rental and leasing	✓	9,623	-1%	2%	0.6
Information		9,246	9%	3%	1.1
Other services (except government and government enterprises)[4]		8,479	2%	0%	3.5
Health care and social assistance	✓	5,916	2%	0%	0.6
Finance and insurance		4,520	2%	1%	0.6
Accommodation and food services	✓	4,193	2%	0%	1.2
Educational services	✓	4,086	0%	3%	2.8
Admin. and support and waste management and remediation services		3,140	0%	0%	0.8
Retail trade	✓	1,645	4%	4%	0.2
Wholesale trade		1,254	2%	4%	0.2
Construction	✓	1,248	-1%	1%	0.3
Utilities		1,222	3%	1%	0.7
Arts, entertainment, and recreation	✓	1,164	4%	3%	0.9
Management of companies and enterprises		930	7%	7%	0.3
Transportation and warehousing	✓	341	-2%	3%	0.1
Manufacturing		273	6%	2%	0.0
Total		**123,929**	**2%**	**2%**	**1.0**

1 Full-time and part-time; Real GDP chained to 2012 USD; Removed Mining, quarrying, and oil and gas extraction sector due to lack of data; Sector GDP may not add up 100% due to data suppression and real GDP calculations; 2 Forecasts from Moody's Analytics; 3 Location Quotient (LQ), or specialization, is measured as the ratio of a sector's share of output/employment in a state to that sector's share of output/employment in the U.S. as a whole; 4 Other services is an especially large sector in DC as it includes NGOs and other institutions

Source: Bureau of Economic Analysis (BEA), SAGDP9N Real GDP by state by NAICS industry; Moody's Analytics

Transit and ground passenger transportation is the largest contributor to output in DC

GDP, growth, and specialization by subsector

	Size	Growth		Specialization
Subsector	**GDP, Mil., 2019[1]**	**CAGR, 2014-19, %**	**CAGR, 2019-24, %[2]**	**GDP LQ[3]**
Transit and ground passenger transportation[4]	165	4%	1%	0.5
Other transportation and support activities[5]	103	3%	7%	0.2
Rail transportation	36	-18%	1%	0.1
Air transportation	20	-14%	3%	0.0
Truck transportation	10	-4%	5%	0.0
Water transportation	3	1%	5%	0.0
Warehousing and storage	3	0%	11%	0.0
Pipeline transportation	3	-23%	8%	0.0
Transportation and warehousing (total)	341	-2%	3%	0.1

1. Full-time and part-time; Real GDP chained to 2012 USD; Subsector GDP may not add up 100% due to data suppression and real GDP calculations
2. Forecasts from Moody's Analytics
3. Location Quotient (LQ), or specialization, is measured as the ratio of a sector's share of output/employment in a state to that sector's share of output/employment in the U.S. as a whole
4. Includes transit networks such as WMATA and rideshare such as Uber and Lyft, etc.
5. Other Transportation and Support Activities includes scenic and sightseeing transportation, couriers and messengers, and support activities for transportation (BEA does not have separate data for them)

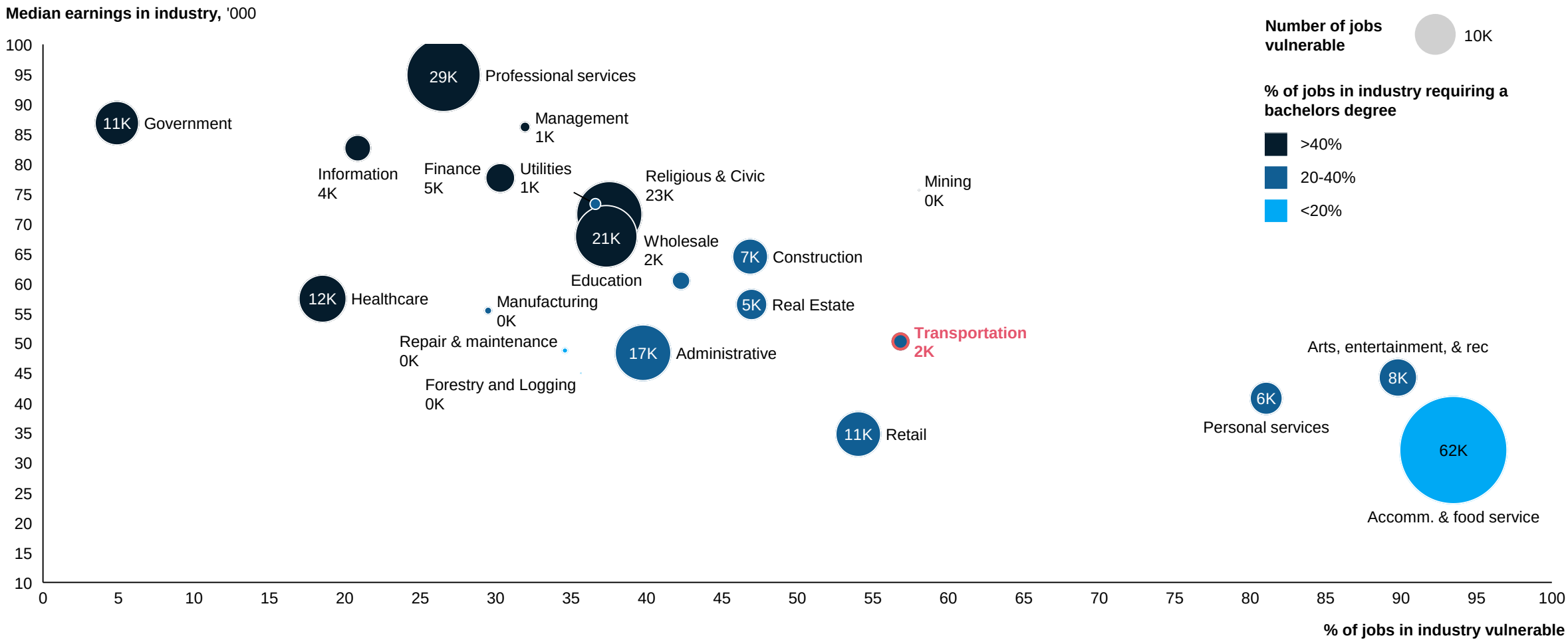
Source: Bureau of Economic Analysis (BEA), SAGDP9N Real GDP by state by NAICS industry; Moody's Analytics

1: DC's most vulnerable jobs are concentrated in sectors with the lowest wages and lowest educational attainment

Number of vulnerable jobs in DC

Preliminary, proprietary, pre-decisional

Total jobs at risk in DC **52.6K**



Note: Vulnerable jobs are those predicted to be furloughed, laid-off, or otherwise unproductive (e.g., kept on payroll but not working) during periods of high social distancing

Source: MGI Economics analysis based on scenarios generated by McKinsey in partnership with Oxford Economics, input from Moody's Analytics data

DC's GDP can be expected to decline by 6.4% in 2020

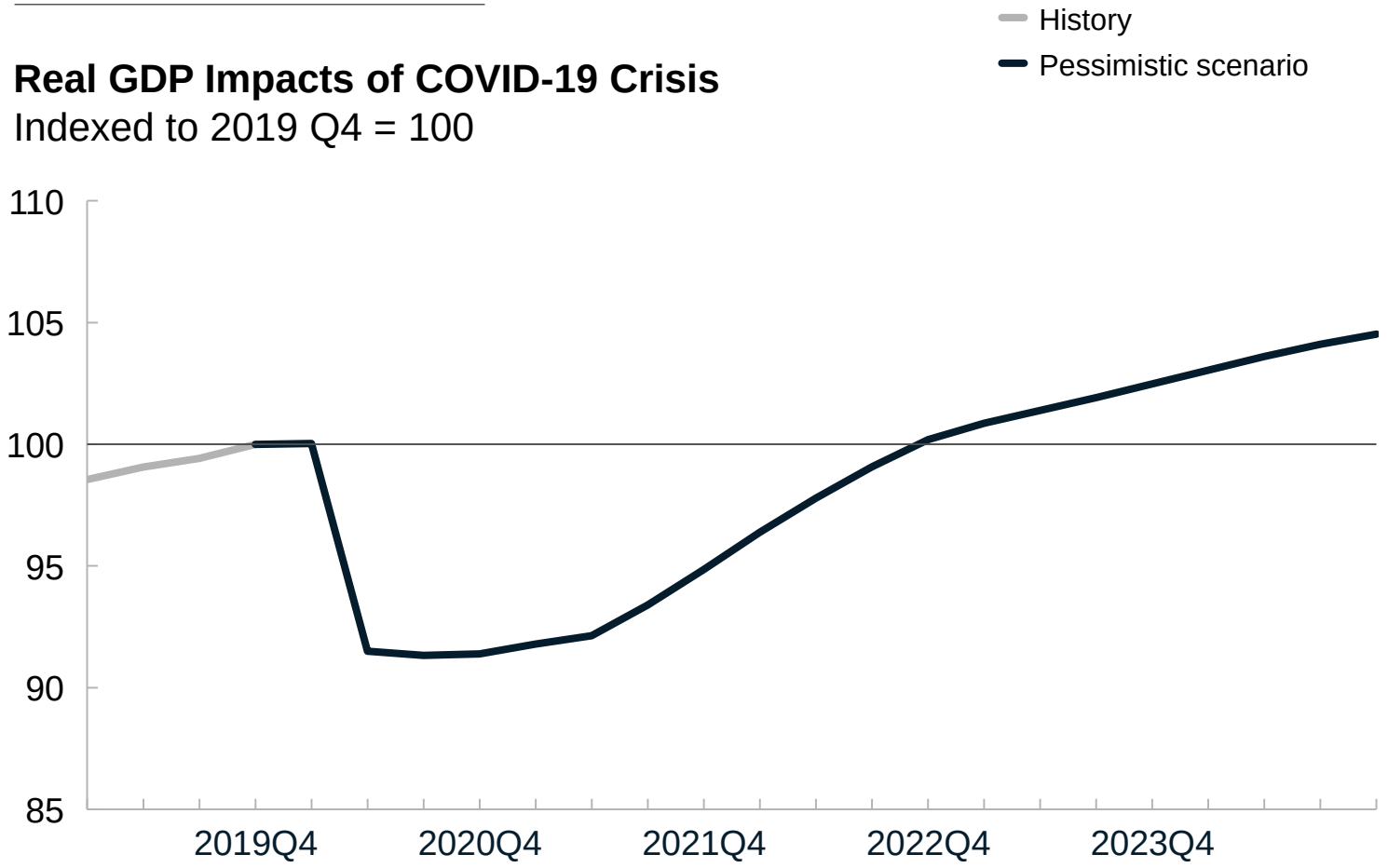
Real GDP, indexed to 2019 Q4

Current as of October, 2020

Preliminary, proprietary, pre-decisional

Real GDP Impacts of COVID-19 Crisis

Indexed to 2019 Q4 = 100



2020 GDP change[2] % Change	**GDP return to pre-crisis** Quarter
-6.4%	**2022Q3**

The pessimistic scenario (A1) assumes there is a virus resurgence and a muted recovery through 2022 globally

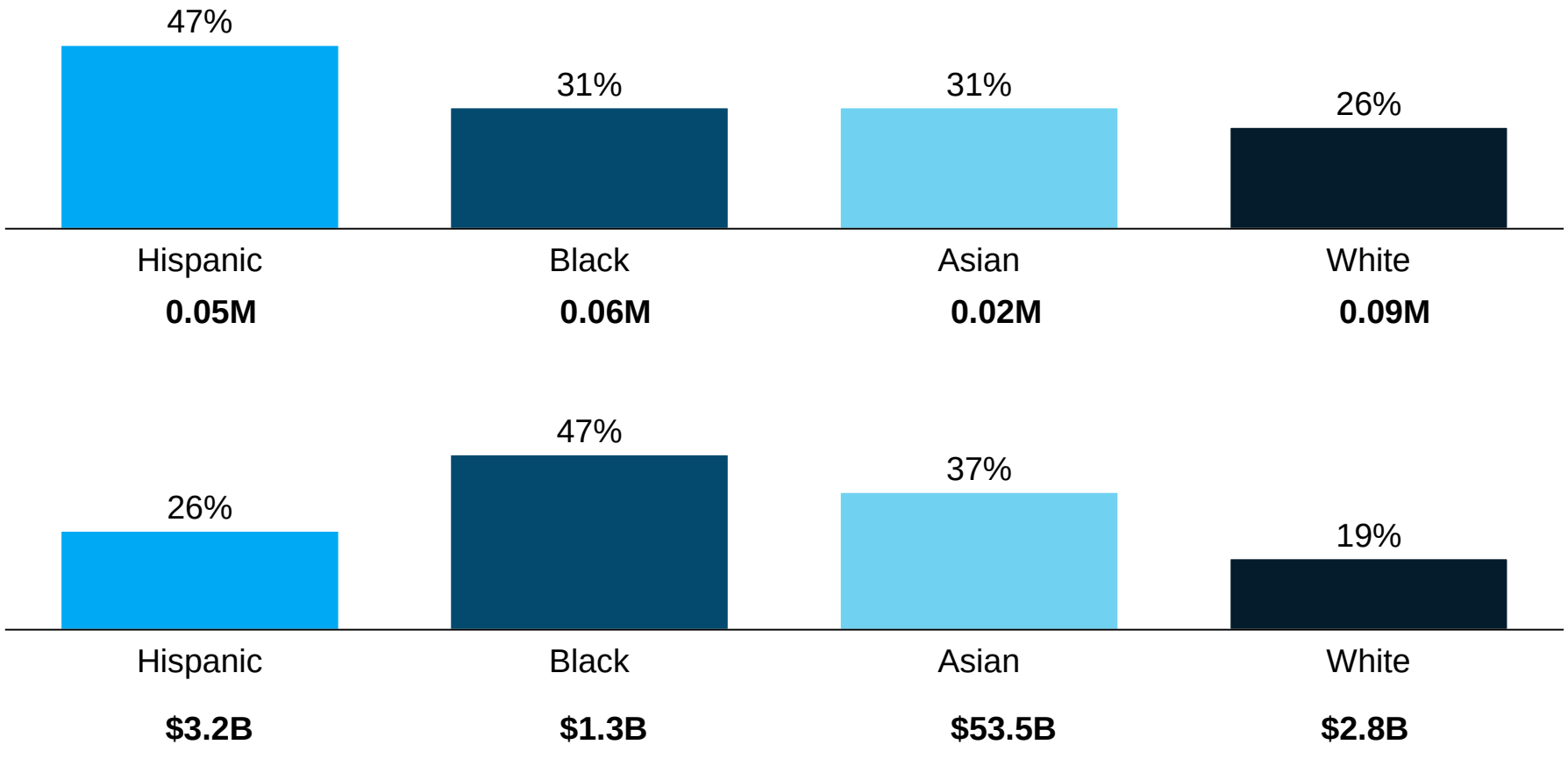
1.Average annual percent change

Source: MGI Economics analysis based on scenarios generated by McKinsey in partnership with Oxford Economics, input from Moody's Analytics data

Vulnerable jobs and businesses are concentrated disproportionately among Hispanic and Black DC residents

Preliminary, proprietary, pre-decisional

Share of vulnerability of workers and businesses, by race/ethnicity[1] (%)



Source: LaborCUBE, BLS Occupational Employment Statistics, Moody's Analytics, McKinsey Global Institute analysis

1. Vulnerability of minority-owned businesses is measured by share of revenue in five sectors with most vulnerable jobs: Accommodation & Food Service, Retail, Construction, Healthcare, and Professional services

Vulnerable jobs analysis: Traditional unemployment does not fully capture the economic risk facing American families

In addition to traditional unemployment[1], the “vulnerable jobs” metric attempts to capture the **income risk facing a larger set of American families** by reflecting—

Workers placed on **unpaid leave**

Workers facing **cuts to either hourly wages or hours worked**

Workers that **exit the labor force**

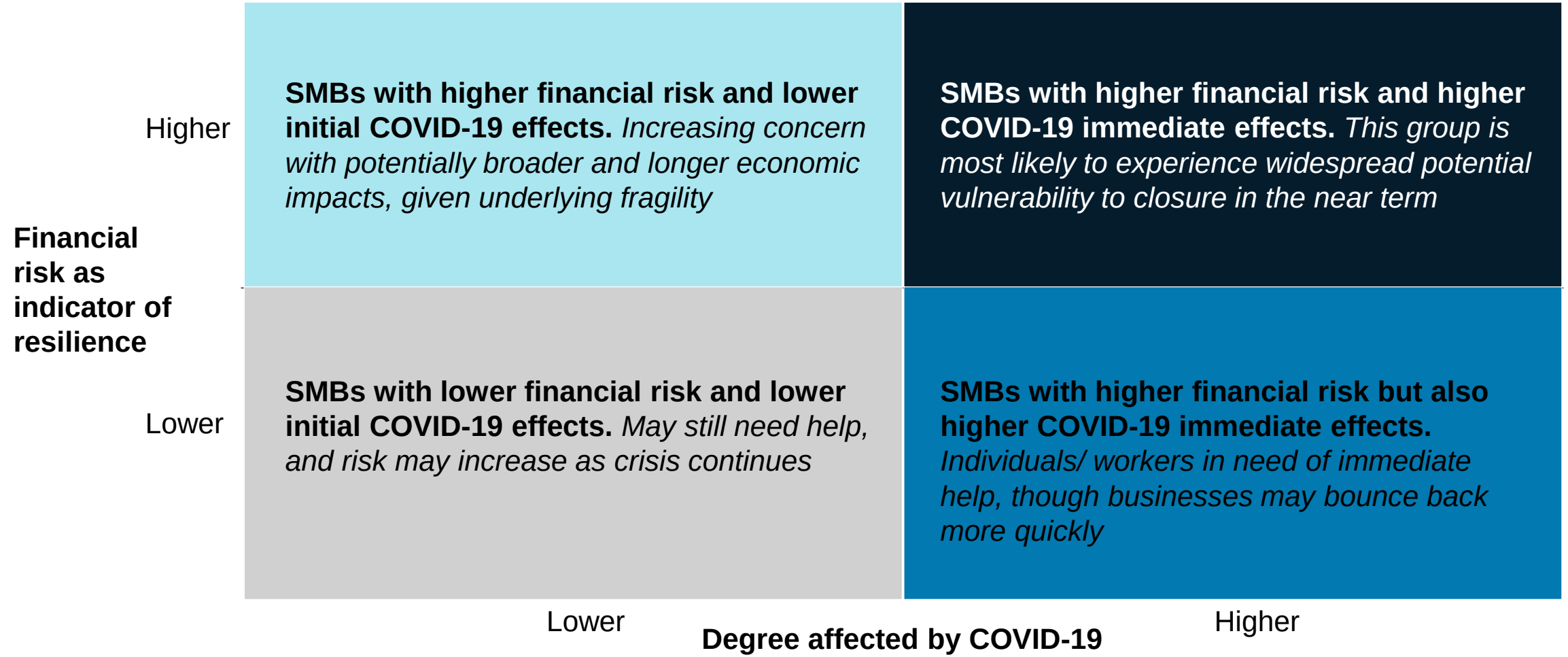
Workers that held multiple jobs and **reduced the number of jobs worked** as a result of Covid-19

1. The BLS measure of U3 unemployment includes all jobless persons who are available to take a job and have actively sought work in the past four weeks

Source: Pitchbook

Assessing small and medium business vulnerability leads to four segments that may require different interventions

Preliminary, proprietary, pre-decisional



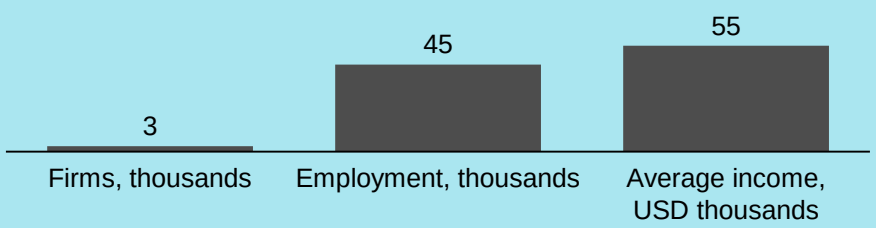
Note: Financial risk as indicator of resilience is based on adapting a Federal Reserve methodology using profitability, credit score, and use of retained earnings. COVID-19 affectedness is based on the US Census Bureau's Small Business Pulse Survey, where business owners indicated the level of effect they are seeing from COVID-19

Across sectors, DC has ~4K small-medium businesses with both higher financial risk and COVID-19 immediate impacts

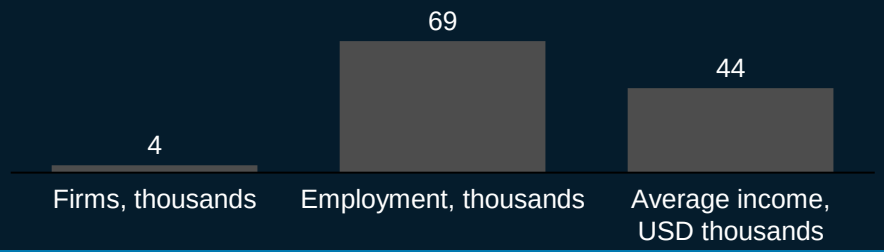
These SMBs employ ~69K workers, and their workers earn the lowest average income

Preliminary, proprietary, pre-decisional

SMBs with higher financial risk and lower initial COVID-19 effects. *Examples: Smaller apparel factories, local construction companies*



SMBs with higher financial risk and higher COVID-19 immediate effects. *Examples: Restaurants, barber shops, bed and breakfasts*



SMBs with lower financial risk and lower initial COVID-19 effects. *Examples: Law firms, financial advisors, lessors of residential buildings*

SMBs with lower financial risk but also higher COVID-19 immediate effects. *Examples: Dentist offices, child care centers*

Financial risk as indicator of resilience

Higher

Lower

Lower

Higher

Degree affected by COVID-19

Note: Financial risk as indicator of resilience is based on adapting a Federal Reserve methodology using profitability, credit score, and use of retained earnings. COVID-19 affectedness is based on the US Census Bureau's Small Business Pulse Survey, where business owners indicated the level of effect they are seeing from COVID-19

Other: Raleigh Commute Smart Consultants

Description

- Call on employers to offer paid mobility programs and cash out programs (e.g., providing cash or transit subsidies to employees who do not park at work)
- Pilot employer-centered mobility programs and evaluate the effectiveness, such as through the LAB @ DC
- Launch a dedicated team within the District government focused on assisting employers with commuting programs
- Convene various transit- and commuter-centric organizations to establish an integrated strategy for enhancing commuting in the District

Case example

Raleigh: The City of Raleigh has created a dedicated team of "Commute Smart Consultants." This team can assist employers to implement a "Commute Smart Program" for employees, making it easy for companies to support employees in alleviating traffic congestion and commuting stress.

The program offers easy solutions for employers by providing advice and assistance on how to increase the use of transportation options such as walking, biking, transit, carpooling, vanpooling, teleworking, creative work schedules, and parking cash-out.

The City states that "Implementing a Commute Smart Program can:

Increase employee satisfaction

Reduce the demand for parking

Reduce tardiness and absenteeism

Reduce employee stress

Enhance recruitment and retention

Enhance your public image

For example, one program the City offers for employers to implement is "Emergency Ride Home" which provides employees a free ride home if an emergency ever strikes. This service is available specifically to those who commuted to work by a method other than driving alone. Employers can register their organization at no cost so that all employees get six free emergency rides home per year.

Source: Commute Smart Raleigh; The LAB @ DC

Other: New York City's Dollar Vans

Description

- Provide subsidized microtransit (e.g., shuttles, mini-buses) in underserved communities
- City or transit agency can run the service or regulate private player(s) who run operations (e.g., NYC Dollar Vans, Via, etc.)
- Cross between legacy bus and ridesharing (e.g., Uber Pool)
- Can have fixed routes, fixed stops, or use algorithms to determine routes, vehicle size, and trip frequency
- Can supplement existing bus route capacity along with providing services to under-served areas
- Potential to generate employment and increase business ownership among underserved communities

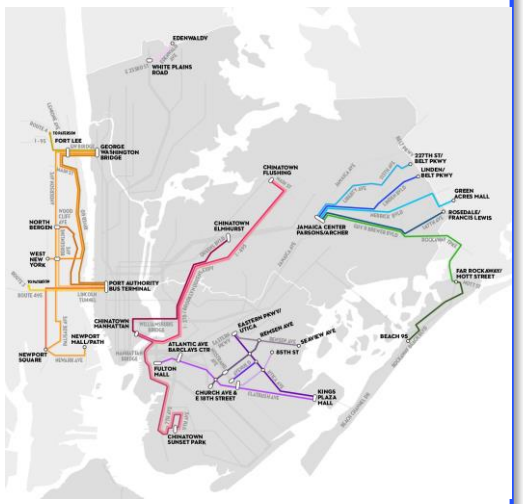
Case example

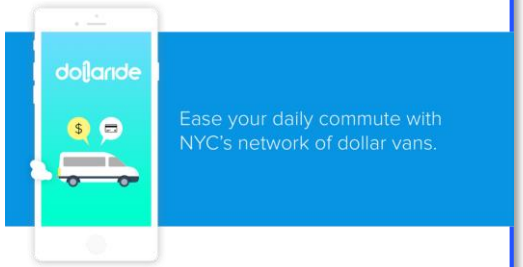
New York City's Dollar Vans

- Dollar Vans first appeared in New York City during a transit strike, and currently serve ~120K riders per day in areas of the city with transit gaps, primarily in Queens and Brooklyn
- Initially unregulated, the TLC (NYC Taxi & Limousine Commission) provides licenses to van owners, running background checks on all drivers, vehicle safety checks, and checking for proper insurance and licensing
  - Note that the strict requirements and high cost of insurance means that many vans continue to operate without permits
- Follow fixed routes linking key hubs and under-served areas, such as Sunset Park, Flushing, Flatbush, and Eastern Queens
- Dollaride, an app, allows users to locate licensed vans, determine their arrival time, and pay the fare
- Cost for riders:
  - Queens, Flatbush: $2
  - Chinatown, Flushing, Sunset Park: $3-4

Impact:

- 120K riders daily
- 2K drivers





Source: DollarVan.nyc; Dollaride; New York Times; The New Yorker