



THE FUTURE OF INFRASTRUCTURE

OPPORTUNITY AND INNOVATION FOR LOS ANGELES

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LAEDC

Economic Forecast 2019

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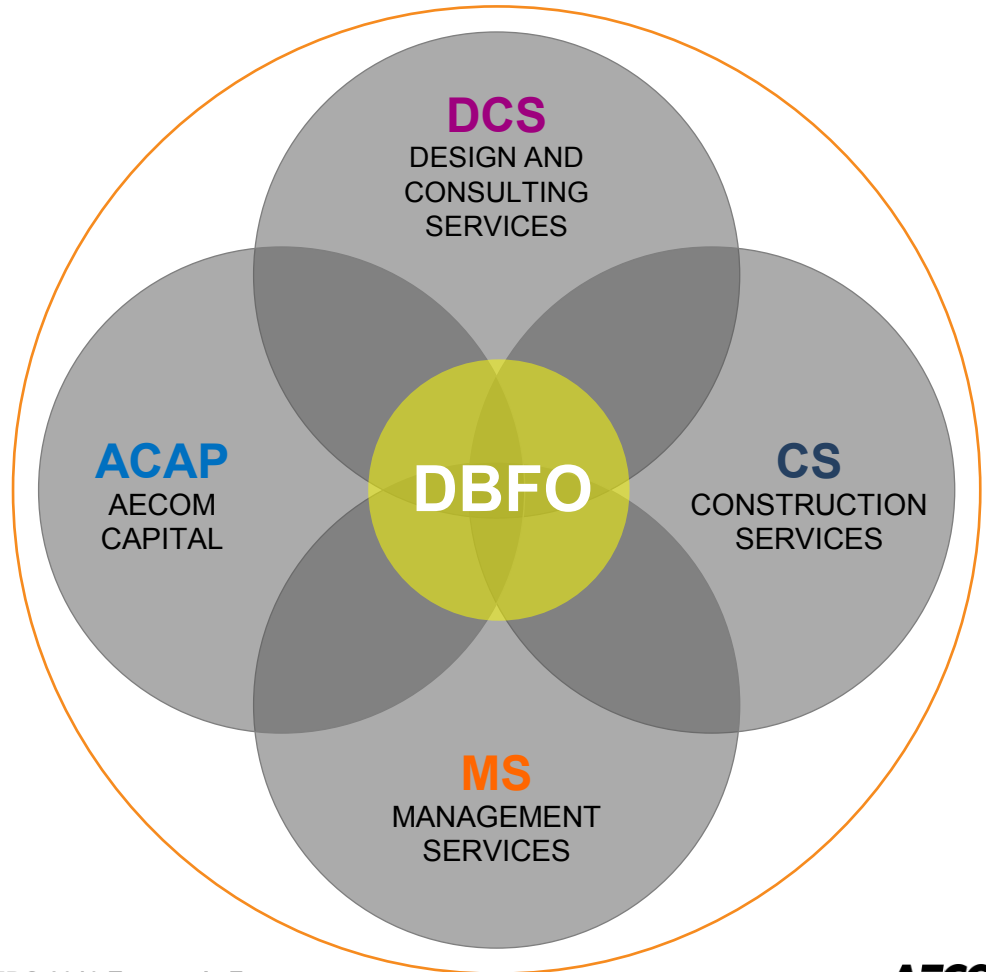
Imagine it.
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DELIVERING GROWTH, BUILDING STRENGTH

Meeting client needs
through an **integrated
delivery platform.**

Design.
Build.
Finance.
Operate.





FUTURE OF INFRASTRUCTURE



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THE FUTURE OF INFRASTRUCTURE: VOICE OF THE PEOPLE

Is *anyone* happy with their infrastructure?

- ▶ We asked **10,750 people** from **10 major cities** about the networks and services that impact their lives.
- ▶ How **satisfied, safe, inspired and engaged** are people with their **roads and bridges, transportation services and utilities**?



TOP GLOBAL PRIORITIES

1. UPGRADING PUBLIC TRANSPORTATION



37%

Are willing to pay higher taxes to fund infrastructure improvements in their cities

2. IMPROVING ENVIRONMENTAL SUSTAINABILITY



45%

Say their city government lags behind those of other cities in implementing or encouraging environmentally sustainable practices

3. UPGRADING UTILITIES



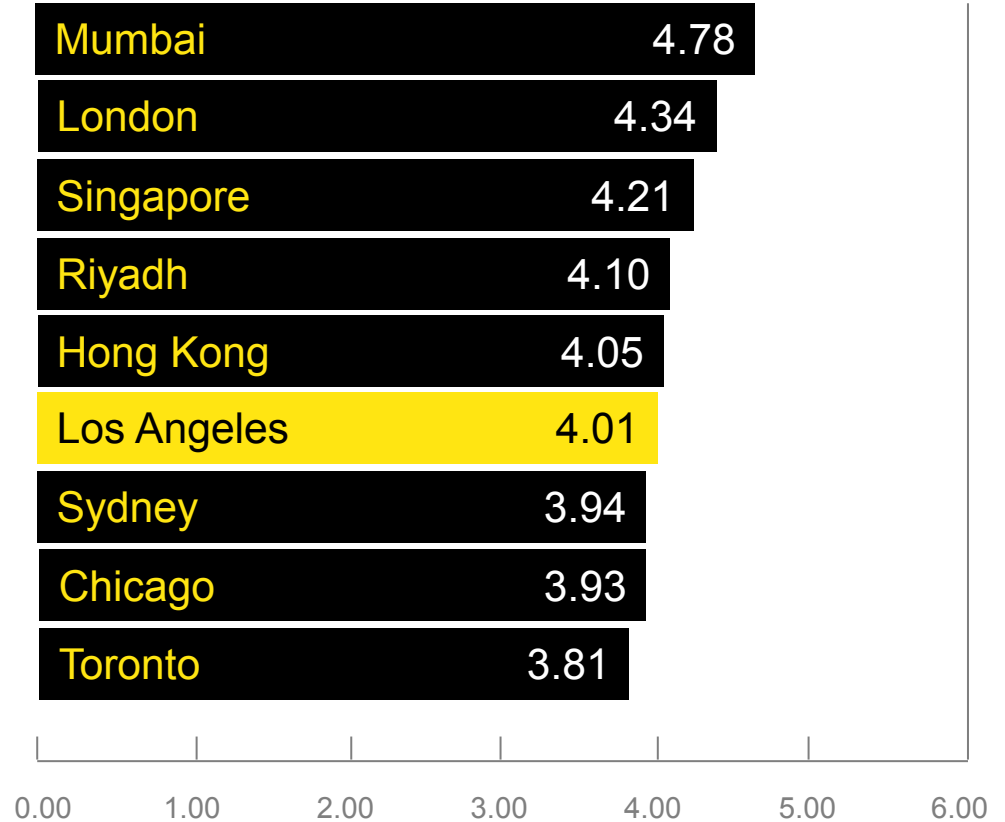
61%

Have experienced more than one power outage in the past year

THE FUTURE OF INFRASTRUCTURE: VOICE OF THE PEOPLE

- 1 Satisfaction:** How have you experienced core infrastructure – utilities and transportation?
- 2 Engagement:** How much do you engage with city authorities and infrastructure providers?
- 3 Innovation:** What is your experience with innovative technologies?
- 4 Resilience:** How confident are you in your city's ability to protect infrastructure from natural disasters, cyberattacks, terrorism and other external hazards?

Global Index



THE FUTURE OF INFRASTRUCTURE: VOICE OF THE PEOPLE

1,121
LOS ANGELES
RESIDENTS
WERE SURVEYED
AND SAID...

- ▶ **Top 3 Priorities for Los Angeles residents:**
 1. **Environmental Sustainability**
 2. **Upgrade to Public Utilities**
 3. **Mobility & Transportation Improvements**
- ▶ **Angelenos recognize the investment city leaders are taking to bring LA's infrastructure up-to-date.**
- ▶ **LA Residents demand a greener, safer, and more connected Los Angeles.**

ANGELENOS WANT THEIR SAY



51%

Believe city officials tend to take a short-term view of infrastructure planning

PRIVATE SECTOR INVOLVEMENT



64%

Agree that the private sector should have a greater role in infrastructure development

HIGHER TAXES



41%

Are willing to pay higher taxes to help fund infrastructure improvements



CONSTRUCTION OUTLOOK



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CONSTRUCTION OUTLOOK

NATIONAL TRENDS WITH LOCAL IMPACT



Public construction spending is up due to stronger state and local finances, and disaster recovery demands.



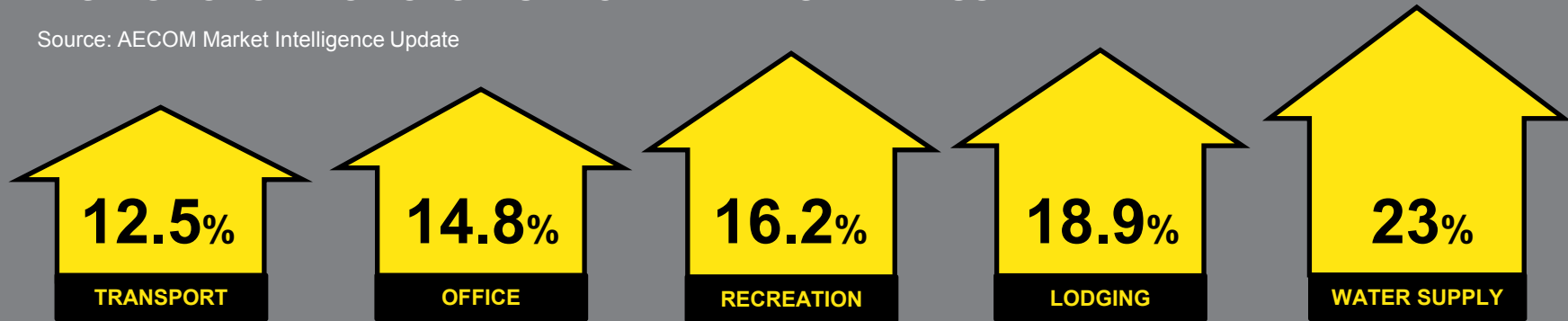
Costs of Imported Steel and other **vital construction materials are up.**



Labor Shortage continues. Finding skilled workers is a challenge on a national scale.

FASTEST GROWING CONSTRUCTION MARKETS IN THE US

Source: AECOM Market Intelligence Update



CONSTRUCTION OUTLOOK

DEMAND FOR INNOVATION

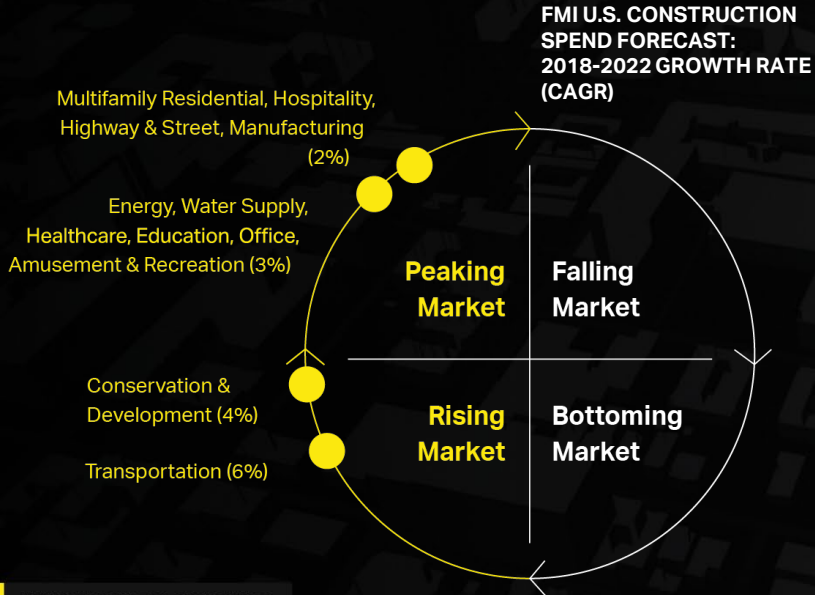
The Construction industry is one of the most challenged when it comes to using digital technologies and innovations.

- ▶ Our research shows that Construction industry **investment in technology has more than doubled in the last 5 years** to nearly \$18B in the US.
- ▶ Technology has **the ability to radically improve project delivery in construction*** – e.g. digital twins, advanced analytics, performance management, prefabrication, and 3-D modeling tools.
- ▶ “When combined at maximum efficiency, **these changes can create up to 45% reductions in capital costs and 15% improvements in operating margins.**”*
- ▶ **Key trends in digital tools include:** on-site iPads, wearable tech, and GPS-enabled devices (for improved safety and worker data), as well as document management and digitized data. Job site sensors, drone scans, and job site digital twins.

**Sources: AECOM Market Intelligence Update, McKinsey Startup and Investment Landscape Analytics, PitchBook, Capital IQ. Data as of Q2 2018*

CONSTRUCTION OUTLOOK

National forces with impacts in LA County.



- ▶ Construction **growth is beginning to slow**, having reached its peak business cycle.
- ▶ The **Dodge momentum index is at its highest level in years**, although it tempered off a bit in Aug.-Sept. 2018.
- ▶ Construction **starts will hold steady** at \$808B in 2019, following a 3% uptick in 2018.
- ▶ Current **backlog will keep contractors busy through at least 2020-2021**.
- ▶ Despite any future slowdown, the **size of the market remains incredibly large**, with more construction activity now than during the mid-2000s boom.





LOS ANGELES OUTLOOK



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LOS ANGELES OUTLOOK

LOCAL INVESTMENT SINCE 2015

Measure M

\$120B over 40 years, passed in 2016. Transformational investment into transportation and mobility.



LACCD 2016 Bond Measure

\$3.3B to significantly modernize and improve education facilities



Measure W

\$300M/year for LA County's Safe Clean Water Program for storm water capture projects – passed in 2018



P3 Momentum.

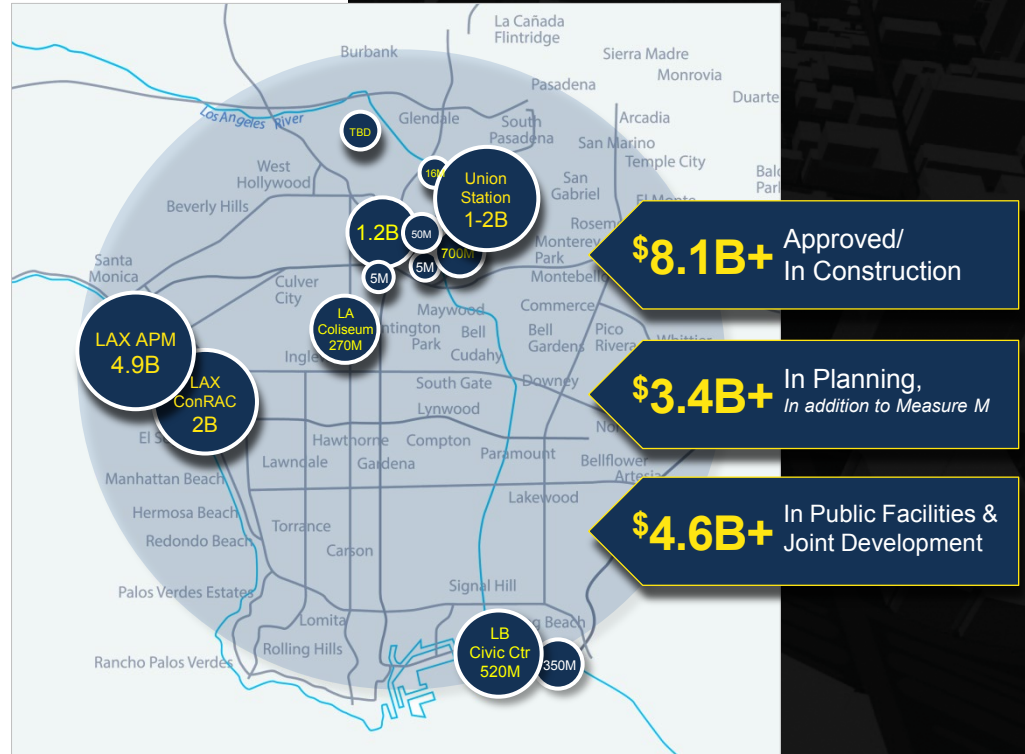
Growing range of P3 models for maximizing local public dollars.



LOS ANGELES OUTLOOK

MAXIMIZING RETURN ON PUBLIC FUNDS

- ▶ **Increasing reliance on P3** to deliver new and revitalized infrastructure, public facilities, housing, and recreational space.
- ▶ **\$8B+ of P3 projects** currently under construction in LA County.
- ▶ Included are **transportation infrastructure and joint development** of publicly-owned land for new public facilities and TOD.



LOS ANGELES OUTLOOK

**“The cost of living cheap
in the short term is very expensive
in the long term”**

Mayor Eric Garcetti (2.12.19)



- ▶ **50% of retail electricity from renewable power by 2026**

Recently moved up from 2030; Requires LADWP to hit 50% by 2025

- ▶ **Policies to increase distributed generation**



- ▶ **Greenhouse gas emissions reduction goal to 1990 levels**



- ▶ **Regulations in the next 4-9 years require power plants that use coastal water for cooling to either repower, retrofit or retire**



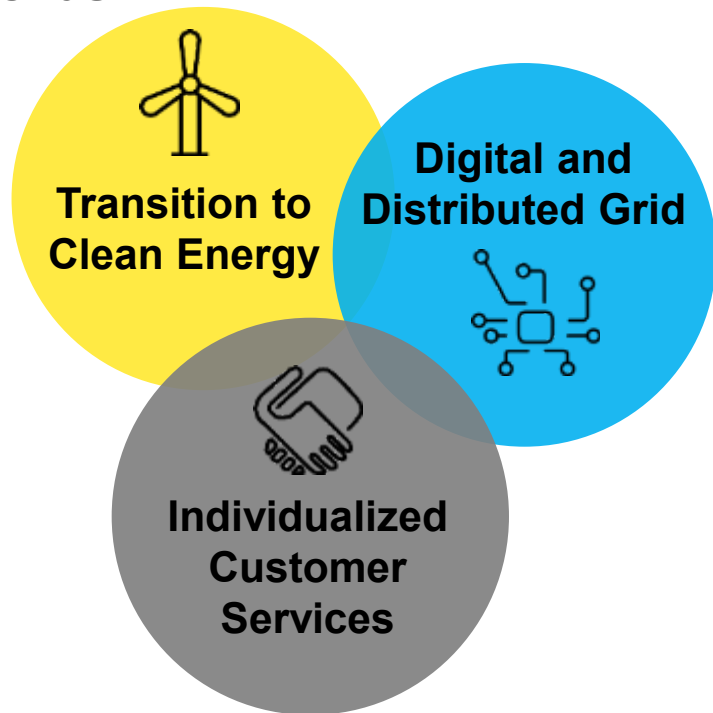
- ▶ **100% renewable power by 2045**
- ▶ **1.5 million zero emission vehicles by 2025**

LADWP goal of 10,000 EV charging stations in the City of LA over the next 5 years



SMART ENERGY AND CITY OPPORTUNITY

Three Key Trends that Create Opportunity



\$20B

Grid Modernization



\$45M

Streetlight Retrofitting



\$25B

By 2025 for Energy Efficiency





ENERGY'S CENTRAL ROLE IN MOST SMART CITY PLANS

- ▶ **Grid modernization is essential to achieving community resilience and sustainability targets**

 - System reliability, response and recovery

 - Carbon Reductions

 - Critical infrastructure protection Policies to increase distributed generation

- ▶ **Grid investments can create or enhance smart city platforms**

 - Vehicle electrification and mobility

 - Sensor deployment and smart networks

 - Water meter

 - Public Wi-Fi and connectivity



LOS ANGELES OUTLOOK

FORWARD MOMENTUM

"Our goal has always been to create a games concept that fits the long-term needs of LA and its people."

Casey Wasserman, LA2028 Chairman



Game-Changing Events



2020

- New Inglewood Stadium & 2 NFL teams
- MLB All-Stars
- NCAA Men's West Regional Basketball

2022 – Super Bowl

2023 – US Open

2026 – FIFA World Cup™ Candidate Host City

2028 – Summer Olympic and Paralympic Games



Transformative Mobility

2020 – New Crenshaw Line through heart of LA

2022 – Regional Connector unlocking more single-seat travel throughout the County

2025 – Gold Line east to edge of LA County

2026 – Purple Line subway extension to Westwood



By 2023 – Enhanced Public Transit to/from LAX with a 24-hour People-Mover serving all terminals



By 2025 – LA River Path connecting the Valley to Long Beach

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Q&A

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