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Agenda - Final

Thursday, September 16, 2021

11:00 AM

To give written or live public comment, please see the top of page 4

Construction Committee

Tim Sandoval, Chair

Fernando Dutra, Vice Chair

Jacquelyn Dupont-Walker

Janice Hahn

Paul Krekorian

Tony Tavares, non-voting member

Stephanie Wiggins, Chief Executive Officer

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(ALSO APPLIES TO BOARD COMMITTEES)

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A member of the public may address the Board on agenda items, before or during the Board or Committee's consideration of the item for one (1) minute per item, or at the discretion of the Chair. A request to address the Board must be submitted electronically using the tablets available in the Board Room lobby. Individuals requesting to speak will be allowed to speak for a total of three (3) minutes per meeting on agenda items in one minute increments per item. For individuals requiring translation service, time allowed will be doubled. The Board shall reserve the right to limit redundant or repetitive comment.

The public may also address the Board on non agenda items within the subject matter jurisdiction of the Board during the public comment period, which will be held at the beginning and/or end of each meeting. Each person will be allowed to speak for one (1) minute during this Public Comment period or at the discretion of the Chair. Speakers will be called according to the order in which their requests are submitted. Elected officials, not their staff or deputies, may be called out of order and prior to the Board's consideration of the relevant item.

Notwithstanding the foregoing, and in accordance with the Brown Act, this agenda does not provide an opportunity for members of the public to address the Board on any Consent Calendar agenda item that has already been considered by a Committee, composed exclusively of members of the Board, at a public meeting wherein all interested members of the public were afforded the opportunity to address the Committee on the item, before or during the Committee's consideration of the item, and which has not been substantially changed since the Committee heard the item.

In accordance with State Law (Brown Act), all matters to be acted on by the MTA Board must be posted at least 72 hours prior to the Board meeting. In case of emergency, or when a subject matter arises subsequent to the posting of the agenda, upon making certain findings, the Board may act on an item that is not on the posted agenda.

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REMOVAL FROM THE BOARD ROOM The Chair shall order removed from the Board Room any person who commits the following acts with respect to any meeting of the MTA Board:

- a. Disorderly behavior toward the Board or any member of the staff thereof, tending to interrupt the due and orderly course of said meeting.
- b. A breach of the peace, boisterous conduct or violent disturbance, tending to interrupt the due and orderly course of said meeting.
- c. Disobedience of any lawful order of the Chair, which shall include an order to be seated or to refrain from addressing the Board; and
- d. Any other unlawful interference with the due and orderly course of said meeting.

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The Committee Meeting begins at 11:00 AM Pacific Time on September 16, 2021; you may join the call 5 minutes prior to the start of the meeting.

Dial-in: 888-251-2949 and enter
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Public comment will be taken as the Board takes up each item. To give public comment on an item, enter #2 (pound-two) when prompted. Please note that the live video feed lags about 30 seconds behind the actual meeting. There is no lag on the public comment dial-in line.

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Written public comments must be received by 5PM the day before the meeting.

Please include the Item # in your comment and your position of "FOR," "AGAINST," OR "GENERAL COMMENT."

Email: BoardClerk@metro.net

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Board Administration

One Gateway Plaza

MS: 99-3-1

Los Angeles, CA 90012

CALL TO ORDER**ROLL CALL**

APPROVE Consent Calendar Item: 29.

Consent Calendar items are approved by one vote unless held by a Director for discussion and/or separate action.

CONSENT CALENDAR

29. SUBJECT: THIRD PARTY ADMINISTRATION [2021-0546](#)

RECOMMENDATION

AUTHORIZE the Chief Executive Officer to execute the annual expenditure budget plan for the FY22 Annual Work Plan for the City of Los Angeles (Attachment A).

Attachments: [Attachment A - FY22 Annual Work Plan for City of Los Angeles](#)

NON-CONSENT

13. SUBJECT: RESPONSE TO MOTION 18.1 BY DIRECTORS HAHN, GARCETTI, MITCHELL, BUTTS, AND DUTRA [2021-0566](#)

RECOMMENDATION

RECEIVE AND FILE this report on funding, financing, and limiting the impact to the project delivery schedule while minimizing the use of toll revenue bonds for the I-105 ExpressLanes Project while meeting state grant requirements with the goal of delivering the project ahead of the 2028 Olympic and Paralympic Games in Los Angeles.

Attachments: [Attachment A - Board Motion 18.1](#)
[Attachment B - Overview of Net Toll Revenue Grants](#)

(ALSO ON PLANNING AND PROGRAMMING COMMITTEE)

30. SUBJECT: 2021 LOS ANGELES CONSTRUCTION MARKET ANALYSIS [2021-0419](#)

RECOMMENDATION

RECEIVE AND FILE the report on 2021 Los Angeles Construction Market Analysis.

Attachments: [Attachment A - 2021 Los Angeles Construction Market Analysis Presentation](#)

**31. SUBJECT: PROGRAM MANAGEMENT MAJOR PROJECT STATUS
REPORT**[2021-0551](#)**RECOMMENDATION**

RECEIVE oral report on the Major Project Status by the Chief Program Management Officer.

Attachments: [Presentation](#)

32. SUBJECT: CALTRANS UPDATE[2021-0575](#)**RECOMMENDATION**

RECEIVE report by the Caltrans District Director on Delivery of Projects on I-5.

SUBJECT: GENERAL PUBLIC COMMENT[2021-0570](#)

RECEIVE General Public Comment

Consideration of items not on the posted agenda, including: items to be presented and (if requested) referred to staff; items to be placed on the agenda for action at a future meeting of the Committee or Board; and/or items requiring immediate action because of an emergency situation or where the need to take immediate action came to the attention of the Committee subsequent to the posting of the agenda.

**COMMENTS FROM THE PUBLIC ON ITEMS OF PUBLIC INTEREST WITHIN COMMITTEE'S
SUBJECT MATTER JURISDICTION****Adjournment**



Board Report

File #: 2021-0546, File Type: Informational Report

Agenda Number: 29.

CONSTRUCTION COMMITTEE SEPTEMBER 16, 2021

SUBJECT: THIRD PARTY ADMINISTRATION

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

AUTHORIZE the Chief Executive Officer to execute the annual expenditure budget plan for the FY22 Annual Work Plan for the City of Los Angeles (Attachment A).

ISSUE

During the design, construction, and maintenance phases of Metro projects, a significant amount of support is required from local jurisdictions via an annual work plan. The annual work plan shall serve as a commitment from the agency for the reimbursement of services provided by the City of Los Angeles reviewing jurisdictions for an estimated amount of services. Without an annual work plan, the City of Los Angeles jurisdictions have no funding sources to support Metro projects.

BACKGROUND

In December of 2002, A Master Cooperative Agreement (MCA) was executed between Metro and the City of Los Angeles. The intent of the agreement was to establish a streamlined process among both entities to successfully construct Metro's ongoing projects. A function of the MCA was to clearly identify a yearly budget for each City department to provide those city services. This function was labeled as the Annual Work Plan. A new MCA is currently being negotiated between Metro and the City of Los Angeles. The 2002 MCA will remain in effect until the new MCA is finalized. The new MCA is an effort to support the Metro construction program by capturing lessons learned, updating, and enhancing processes, and enhancing overall relationships between the two agencies. Upon execution of the new MCA, the 2002 MCA shall be terminated.

DISCUSSION

The action contained herein provides funding for the City of Los Angeles participation in the projects within the limit of the current approved FY22 budget for Third Party Review and maintenance. (See

Attachment A).

Metro staff efforts to proactively manage these costs will include the following:

- A. Controlling the design review process through the early coordination of design efforts to define scope and establish/clarify standards and requirements.
- B. Reviewing submittals for completeness.
- C. Ensuring that third party requirements are identified and addressed before sending to the third party.
- D. Reviewing timesheets with each third-party organization monthly to ensure that hours charged are appropriate.
- E. Conducting executive and staff level partnering with third parties

DETERMINATION OF SAFETY IMPACT

The recommended action has no impact on safety.

FINANCIAL IMPACT

The funding, which may be obligated and spent under this one-year work plan of \$17,285,619 is included in the FY22 budget in each of the project budgets that will require services to be performed by the City of Los Angeles. See attachment "A." Since these are multi-year projects, the Project Managers will be responsible for budgeting future year costs.

Impact to Budget

The funding for this Annual Work Plan will come from various sources of funds. See attachment "A". With the exception of major construction projects funded with specific grant funds, these funds are eligible for bus and rail operating and capital expenditures. No other sources of funds were considered for this activity because the primary beneficiary of the service is bus, rail and capital projects.

EQUITY PLATFORM CONSISTENCY

The Annual Work Plan funds Metro project plan reviews from various City of Los Angeles departments to support the review of design and construction project plans annually. These services are essential for streamlining project delivery, which includes expediting plan reviews and approvals, ensuring quality and effective construction measures, timely inspections, and other functional efforts as described above. All services are centered on avoiding project delays and promoting cost saving measures to effectively deliver the project with minimal impacts on the community and provide benefits of enhanced mobility and regional access to underserved populations within the respective project areas.

While considering the projects, Metro will provide an estimated 42 miles of new transit systems (pedestrian, bicycle, rail and bus) and 11 potential passenger stations within the City of L.A limits and

equity focused communities (EFC). Further, project specific equity considerations for this Board items include job opportunities and enhanced business opportunities for local communities. This Board item action will reduce the likelihood of transit and active transportation project delays.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

By executing the Annual Work Plan for FY22 and allowing the City departments to successfully review plans and provide a streamlined approval process to successfully construct Metro's ongoing projects, it would positively support Metro's overall plan and goal of expanding the transportation network, increase mobility for all users and improve LA County's overall transit networks and assets.

ALTERNATIVES CONSIDERED

The Board may reject the recommendation and direct us to include this work under Construction Contracts. Unfortunately, this is not recommended because it will delay each of the projects.

NEXT STEPS

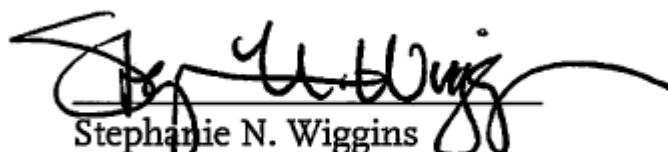
Upon MTA board approval of the annual work plan, the City of Los Angeles shall submit the annual work plan to the Los Angeles City Council and Mayor's Office for adoption.

ATTACHMENT

Attachment A - FY22 Annual Work Plan Anticipated Budget for the City of Los Angeles

Prepared by: Androush Danielians, Sr. Executive Officer; 213-922-7598
Eduardo Cervantes, Deputy Executive Officer; 213-922-7255.

Approved by: Bryan Pennington, Interim Chief Program Management Officer; 213-922-7449



Stephanie N. Wiggins
Chief Executive Officer

ATTACHMENT A

FY22 ANNUAL WORK PLAN ANTICIPATED BUDGET FOR CITY OF LOS ANGELES

RAILTO RAIL

Bureau of Engineering	\$75,000
Dept. of Transportation	\$800,000
Bureau of Street Services	75,000
Bureau of Street Lighting	\$165,020
<hr/>	
Subtotal:	\$1,115,020

UNION STATION FORECOURT AND ESPLANADE PROJECT

Bureau of Engineering	\$150,000
Dept. of Transportation	\$25,000
Bureau of Street Lighting	\$50,000
Bureau of Street Services	\$50,000
LASAN	\$20,000
LASAN (WPD)	\$25,000
<hr/>	
Subtotal:	\$320,000

ORANGE LINE

Bureau of Engineering	\$300,000
Dept. of Transportation	\$909,032
Bureau of Street Services	\$50,164
Bureau of Street Lighting	\$276,403
LACon Ad	\$697,813
<hr/>	
Subtotal:	\$2,233,412

ESVTC

Bureau of Engineering	\$1,200,000
Dept. of Transportation	\$1,023,538
Bureau of Street Services	\$204,757
Bureau of Street Lighting	\$939,999
LASAN (WESD)	\$140,274
Con Ad	\$715,526
Cross Coordination Support	\$153,010
<hr/>	
Subtotal:	\$4,377,100

ATTACHMENT A (Continued)

Link US

Bureau of Engineering	\$1,150,000
Dept. of Transportation	\$430,845
Bureau of Street Services	\$53,375
Bureau of Street Lighting	\$295,549
LASAN (WESD)	\$33,347
Con Ad	\$50,000

Subtotal: \$ 2,013,117

Brighton to Roxford

Bureau of Engineering	\$700,000
Dept. of Transportation	\$1,086,532
Bureau of Street Services	\$20,624
Bureau of Street Lighting	\$439,504

Subtotal: \$ 1,846,660

Doran Street Grade Separation

Bureau of Engineering	\$200,000
Dept. of Transportation	\$255,250
Bureau of Street Services	\$75,242
Bureau of Street Lighting	\$352,314
LASAN (WESD)	\$347,504

Subtotal: \$1,230,310

WEST SANTA ANA

Bureau of Engineering	\$50,000
Dept. of Transportation	\$50,000
Bureau of Street Services	\$25,000
Bureau of Street Lighting	\$25,000

Subtotal: \$150,000

LADOT / METRO SPEED RELIABILITY PROGRAM

Dept. of Transportation	\$4,000,000
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Subtotal: \$4,000,000

GRAND TOTAL: \$17,285,619

TOTAL FY22 BUDGET: \$17,285,619



Board Report

File #: 2021-0566, **File Type:** Motion / Motion Response

Agenda Number:

**PLANNING AND PROGRAMMING COMMITTEE
SEPTEMBER 15, 2021
CONSTRUCTION COMMITTEE
SEPTEMBER 16, 2021**

SUBJECT: RESPONSE TO MOTION 18.1 BY DIRECTORS HAHN, GARCETTI, MITCHELL, BUTTS, AND DUTRA

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE this report on funding, financing, and limiting the impact to the project delivery schedule while minimizing the use of toll revenue bonds for the I-105 ExpressLanes Project while meeting state grant requirements with the goal of delivering the project ahead of the 2028 Olympic and Paralympic Games in Los Angeles.

ISSUE

On May 19, 2021, the Board passed Motion No. 18.1 (Hahn, Garcetti, Mitchell, Butts, and Dutra, Attachment A) directing the Chief Executive Officer to report back in September 2021 with recommendations to fully fund the I-105 ExpressLanes with funding sources that minimize the use of the corridor's future net toll revenues, in order to maximize available resources from the project for future capital improvements to the Metro C (formerly, Green) Line. This Receive and File Board Report provides an overview of the ExpressLanes financing plan and outlines potential revenue to operate the ExpressLanes, fund eligible transit, active transportation, and other mobility projects in the corridor. A funding plan should be developed by December 2023 to meet state grant requirements and to initiate revenue service prior to the 2028 Olympic and Paralympic Games.

BACKGROUND

Among many issues and constraints surrounding major project delivery is reliable funding dedicated to the project. The capital cost estimate for the Interstate 105 (I-105) ExpressLanes project is \$676 million. The funding profile for this project includes Measure M, state grants, federal funding, and toll backed revenue loans. For the project to meet SB1 Solutions for Congested Corridors Program (SCCP) requirements and begin revenue operations to support the 2028 Olympic and Paralympic Games in Los Angeles. Any debt associated with this project will not need to be drawn down until 2024 and will be repaid exclusively using toll revenue without impacting other Metro projects or

funding commitments. Prior to project completion, Metro staff will continue to pursue all available grant and funding opportunities that can be used for this project.

DISCUSSION

I-105 ExpressLanes

As part of Measure M in 2016, Los Angeles County Voters approved development of ExpressLanes on I-105 allocating \$175 million to the project. In December 2020, the California Transportation Commission (CTC) awarded a SCCP grant in the amount of \$150 million -- the highest amount awarded to any project. To receive this \$150 million grant, a construction award -- notice to proceed - must be issued by December 2023.

The current funding plan allocates \$325 million in Measure M and SCCP funding, leaving a funding gap of \$351 million to complete delivery of the project. To bridge that gap, staff submitted grant applications for two rounds of Infrastructure for Rebuilding America (INFRA) funding grants which were unfortunately unsuccessful in 2017 and 2019. Staff has also evaluated the project's potential to receive Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants, formerly known as BUILD and TIGER. Metro Grant's staff has determined that other Metro projects (e.g., SR-57/60, I-5 North HOV Truck Climbing Lanes) are better positioned to be awarded future INFRA or RAISE grants and are currently pursuing those opportunities. Staff has also worked with various congressional offices for allocation of project earmarks as part of a potential federal reauthorization with no commitments made to date. Staff will continue to assess grant opportunities as part of the federal reauthorization process in FY22 and in future federal fiscal years.

Staff is working with the LA Olympic Committee on the Games Route Network (GRN) to ensure this project is eligible for funds identified to support the 2028 Olympic and Paralympic games. Staff continues to work with the California Transportation Commission to identify eligible state grants under Climate Action Plan for Transportation Infrastructure (CAPTI) once final guidelines and guidance are issued relative to those programs. While the SCCP funding has been fully committed, staff will continue to evaluate grant opportunities that may arise in future state budget cycles.

Locally, staff has been working with Metro's Strategic Financial Planning group to identify eligible funding in Metro's Short Range Financial Plan model. After a thorough review of the model and Metro's other funding sources, no eligible highway funding was identified. Staff has pursued discussions relative to an inter-corridor borrowing program that would enable borrowing net toll revenues from one corridor to provide funds towards construction of another ExpressLanes project. Any borrowed funds would be returned to the originating corridor inclusive of an agreed-upon interest rate over a period of 30 years. While this method of financing has been utilized on other Metro projects, the local Councils of Government (COGs) and Board offices representing the I-10 and I-110 ExpressLanes expressed reluctance in pursuing this alternative in 2017. In the absence of grant funding or the opportunity to use existing net toll revenues, consideration to accelerate project development is also being given to use debt to finance the remaining \$351 million by using future toll revenues, paid by users of the I-105 ExpressLanes, to finance the project.

Metro uses debt financing for nearly all its major transit and highway capital projects. The anticipated revenue and debt profile for the I-105 ExpressLanes covers all Metro costs and obligations for the

term of the loan and affords an additional \$2.9 billion to other eligible mobility projects, including the Metro C Line. Without timely completion of the I-105 ExpressLanes project no toll revenues will be available for the C Line or for any additional eligible projects along the corridor.

C (Green) Line

Staff will continue to explore various state and federal grant and funding opportunities to address Station Platform Expansion and Traction Power Substations (TPSS). Eligible funding and grant opportunities related to the SCCP and Local Partnership Program (LPP) continue to be developed. Likewise, grant requirements related to the State Transit and Intercity Rail Capital Program (TIRCP) are evaluated along with other new transit programs. To ensure Metro's ongoing commitment to our existing system's State of Good Repair, Metro will advance C Line improvements to receive funding as part of any future state programs.

Federal Funding

As Metro pursues federal funds to ease traffic on the I-105 by instituting ExpressLanes, there are a number of existing grant programs that can be used to help fund the high occupancy toll lanes that will - once constructed - serve to improve travel times. Under current law (FAST Act), there are two prominent grant programs that could serve to fund, in part, our I-105 ExpressLanes project. The RAISE program provides grants in the range of \$25 million for projects, according to the U.S. Department of Transportation that "create high-quality jobs, improve safety, protect our environment, and generate equitable economic opportunity for all Americans." The INFRA grant program provides an opportunity for grants that can be larger than RAISE grants for highway and rail projects of regional and national economic significance. In the past, Metro has pursued an INFRA grant for the I-105 ExpressLanes during prior administration - but that grant request was not favorably considered. Looking to the future, the Senate's bi-partisan infrastructure bill which may be adopted by the House later this month and signed into law by President Biden - includes similar grant programs as embedded in the FAST Act - though funded at higher levels. For example, the Senate bill includes \$8 billion for the Nationally Significant Multimodal Freight and Highway Program (also known as INFRA Grants) and a National Infrastructure Project Assistance Program funded at \$10 billion. If the Senate bi-partisan infrastructure bill were to become law, both of these grant programs could be used to pursue federal funds for the I-105 ExpressLanes project. Staff will continue to keep the Board apprised of our aggressive efforts to seek federal funding for the I-105 ExpressLanes project.

EQUITY PLATFORM

ExpressLanes does not anticipate any impact or burdens to marginalized drivers, riders, or residents tied to the use of debt financing. Existing tolls on the ExpressLanes are based on congestion density and not revenue needs. Given the current congestion on the corridor, no changes to the existing toll policy are anticipated due to using TIFIA or other debt instruments to develop this project.

Debt financing does provide mobility improvements to the corridor sooner than might otherwise be possible. This acceleration provides benefits to ExpressLanes users and allows Metro to advance

additional funding to transit services along the corridor, including the C Line and other active transportation modes through direct payments, and the ExpressLanes Net Toll Revenue Grant program. Additionally, tolls and fees collected from ExpressLanes users can support the current Low-Income Assistance Plan (LIAP) program while providing a reliable funding source should the Board decide to expand the program in the future.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Strategic Goal 1: Provide high quality mobility options that enable people to spend less time traveling. ExpressLanes provides drivers and transit users with the option of a more reliable trip while improving the overall operational efficiency of the freeway network.

ALTERNATIVES CONSIDERED

Delaying the project until additional grant monies are identified was evaluated. This alternative is not recommended because it would jeopardize Metro's \$150 million SB1 SCCP grant award and risk project completion in time for the 2028 Olympic and Paralympic Games. Moreover, any additional project delay is likely to increase project costs as construction awards, and local economic conditions have historically shown that construction costs increase faster than underlying consumer prices (CPI-U). This cost escalation pressure could potentially increase the forecasted project costs by tens of millions of dollars and render the project financially infeasible.

NEXT STEPS

As traffic volumes return to pre-COVID-19 levels and projects funded in prior Net Toll Revenue Grant rounds are completed, Staff anticipates initiating a new round of Net Toll Revenue grants in summer of 2022. Attachment C provides an overview of Net Toll Revenue Grant funding to date. Staff will continue evaluating future funding and grant opportunities to build the I-105 project as outlined in this Board report and must pursue debt financing to finalize the funding plan by December 2023 to meet grant timelines and initiate revenue service prior to the 2028 Olympic and Paralympic Games.

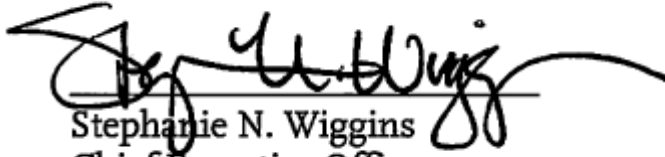
ATTACHMENTS

Attachment A - Board Motion 18.1

Attachment B - Overview of Net Toll Revenue Grants

Prepared by: Mark Linsenmayer, DEO, Congestion Reduction, (213) 922-5569

Reviewed by: Shahrzad Amiri, EO, Congestion Reduction Initiative, (213) 922-3061



Stephanie N. Wiggins
Chief Executive Officer



Metro

Board Report

File #: 2021-0341, **File Type:** Motion / Motion Response

Agenda Number: 18.1.

REVISED
PLANNING AND PROGRAMMING COMMITTEE
MAY 19, 2021

Motion by:

DIRECTORS HAHN, GARCETTI, MITCHELL, BUTTS, AND DUTRA

Related to Item 18: Metro ExpressLanes Program Management Support Contract Modification

The I-105 is the last major freeway constructed in LA County, and the Metro Green Line was included in this project to mitigate its impacts to communities of color in South LA. Any changes to the capacity on this 30-year-old freeway need to also improve the operations of the Metro Green Line, nearby transit services, and first/last-mile connections.

The I-105 freeway is now next in line for ExpressLanes which will add vehicle travel lanes and provide enhanced mobility for those who can pay a toll to avoid traffic congestion.

When Metro first created ExpressLanes on the I-10 and I-110, a key goal was that toll revenues would go to improve mobility for people walking, biking, and taking transit along these corridors. The ExpressLanes Strategic Plan identifies numerous potential funding sources for the program's expansion, of which future net toll revenues is just one.

The Metro Green Line needs major capital improvements to its existing infrastructure, including platform extensions, to be brought up to a state of good repair and to ensure seamless interoperability with the Crenshaw/LAX Line. Additionally, the Green Line needs to address long-standing issues with station platform ambient noise, transit transfer connectivity, and first/last-mile connections.

SUBJECT: I-105 EXPRESSLANES PROJECT

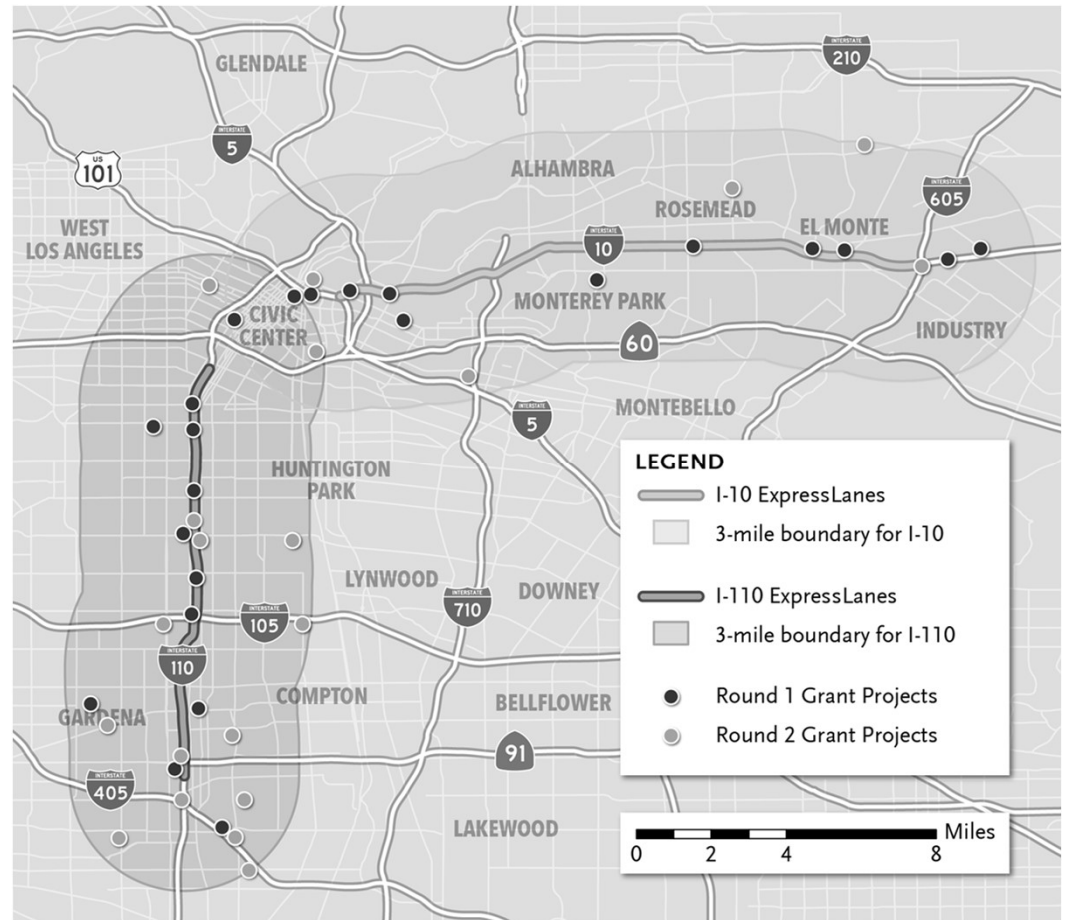
RECOMMENDATION

APPROVE Motion by Directors Hahn, Garcetti, Mitchell, Butts, and Dutra that the Board direct the Chief Executive Officer to report back in September 2021 with recommendations to fully fund the I-105 ExpressLanes with funding sources that minimize the use of the corridor's future net toll revenues, in order to maximize available resources from the project for future capital improvements to the Metro Green Line.

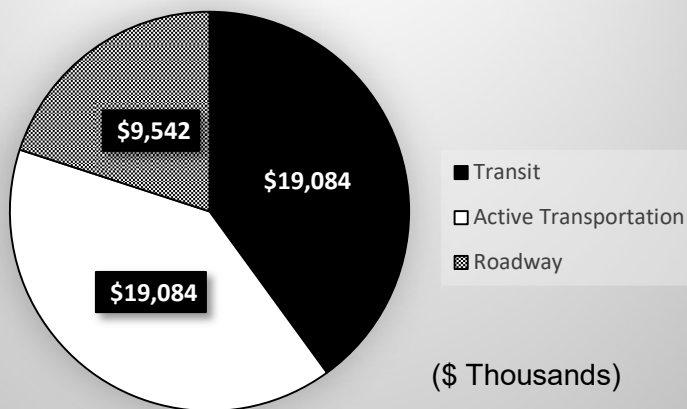
Overview of Net Toll Revenue Grants

Total: **\$47.7 Million** Awarded to **41 projects**

- **16 projects completed**
- 25 projects started with **\$26.1 Million remaining**
- Round 1 in 2014 awarded **\$19.76 Million** to 20 projects.
 - 62% spent
- Round 2 in 2016 awarded **\$27.85 Million** to 21 projects.
 - 33% spent










Net Toll Revenue Grant Summary



Where Net Toll Revenue Grants Are Provided

\$7.9 million annual transit funding in addition to the Grants listed below



Transit Funding – Round 1

	Sponsor	Project Name	Funding	Remaining
	Access Services	ExpressLane CNG-Fueled MV-1 Program	\$408,000	<input checked="" type="checkbox"/>
	City of Baldwin Park	Baldwin Park Commuter Connector Express Line	\$700,395	\$671,075
	Access Services	Express-Lane CNG-Fueled MV-1 Program	\$408,000	<input checked="" type="checkbox"/>
	City of Gardena	Line 1X-Expand Transit Bus Service on I-110 Freeway	\$842,482	<input checked="" type="checkbox"/>
	City of Los Angeles	Commuter Express Service Expansion to Alleviate Harbor Fwy Congestion	\$724,000	<input checked="" type="checkbox"/>
	LACMTA	Dodger Stadium Express-Harbor Gateway	\$1.29M	<input checked="" type="checkbox"/>
	Torrance Transit	Torrance Transit Expansion of Line #1 & #4 HOT Lane Service	\$2.23M	\$2.22M

= Complete

Where Net Toll Revenue Grants Are Provided






Bicycle & Pedestrian Funding -- Round 1

	Sponsor	Project Name	Funding	Remaining
	City of Baldwin Park	Frazier Street Pedestrian and Bicycle Safety Improvements	\$895,288	\$839,382
	City of El Monte	Santa Anita Ave Active Transportation for El Monte Station	\$ 633,782	\$631,784
	City of Los Angeles	My Figueroa Marketing and Safety	\$ 150,000	\$13,281
	City of Monterey Park	Monterey Park Bike Corridor Project	\$ 233,034	\$51,639
	City of El Monte	I-10 Active Commute, Healthy Communities Project	\$440,000	\$76,193
	City of Los Angeles	Cesar Chavez Great Street	\$435,000	\$334,200
	City of Carson	Dominguez Channel Bike-Ped Path	\$1.26M	\$1.22M
	City of Los Angeles	Active Streets LA Budlong Avenue	\$1.18M	\$1.08M
	LACMTA	Bikeshare-Downtown Los Angeles	\$3.80M	<input checked="" type="checkbox"/>
	LACMTA	Union Station Metro Bike Hub	\$700,000	<input checked="" type="checkbox"/>

= Complete

Where Net Toll Revenue Grants Are Provided












Roadway and Arterial Performance -- Round 1

	Sponsor	Project Name	Funding	Remaining
	Caltrans	Express Lanes Corridors Incident Management Improvements Project	\$480,000	\$306,106
	City of Los Angeles	Cesar Chavez Great Street	\$435,000	\$ 334,200
	Caltrans	I-110 HOT/Express Lanes Improvements	\$1.02M	<input checked="" type="checkbox"/>
	City of Los Angeles	ATSAC Infrastructure Communication Systems Enhancement along I-110 Freeway	\$1.43M	<input checked="" type="checkbox"/>
	County of Los Angeles	South Bay Arterial Performance Measurement Project	\$504,000	<input checked="" type="checkbox"/>

= Complete

Where Net Toll Revenue Grants Are Provided

Transit Funding – Round 2

	Sponsor	Project Name	Funding	Remaining
	Long Beach Transit	LA Galaxy Express Shuttle Bus	\$600,000	\$298,752
	City of Carson	Carson Rapid Bus Priority System	\$584,150	\$584,150
	Torrance Transit	Torrance Transit Express & Vehicles	\$960,000	\$960,000
	City of Los Angeles	DASH Improve. with Harbor Freeway	\$1.77M	<input checked="" type="checkbox"/>
	Gardena Transit	Gardena Transit Innovative ITS Rollout	\$1.38M	\$1.16M
	LACMTA	BRT Freeway Station Enclosure	\$1.83M	<input checked="" type="checkbox"/>
	County of LA	Vermont Green Line Intersection Improvement Project	\$1.63M	\$1.19M
	Foothill Transit	Two Electric Double Decker Buses	\$1,458,00	\$1.08M
	Access Services	CNG-Fueled Vehicles for Access Services	\$1.13M	<input checked="" type="checkbox"/>
	City of LA	On Demand Mobility Center	\$992,000	<input checked="" type="checkbox"/>
	County of LA	Whittier Blvd Transit Priority Project	\$516,600	\$476,684

= Complete

Where Net Toll Revenue Grants Are Provided






Bicycle & Pedestrian Funding -- Round 2

	Sponsor	Project Name	Funding	Remaining
	County of LA	Firestone Blue Line Station Intersection and Bikeway Improvements Project	\$1.86M	\$1.27M
	City of Carson	Dominguez Channel Bike Path Improvements	\$1.3M	\$1.3M
	City of Los Angeles	Downtown LA on Demand Mobility Connectivity Center	\$992,000	<input checked="" type="checkbox"/>
	City of Arcadia	City of Arcadia Transit & Pedestrian Mobility Enhancement Project	\$470,000	<input checked="" type="checkbox"/>
	LACMTA	Willowbrook/Rosa Parks Station	\$2.00M	\$2.00M
	County of Los Angeles	Eaton Wash Bike Path - Phase 1	\$3.10M	\$1.81M

= Complete

Where Net Toll Revenue Grants Are Provided

Roadway and Arterial Performance -- Round 2

	Sponsor	Project Name	Funding	Remaining
	City of Carson	I-110 Freeway Arterial Improvements	\$1.76M	\$1.76M
	County of Los Angeles	South Bay Arterial ITS Congestion Relief Project	\$717,360	\$509,317
	City of Los Angeles	I-110 Corridor Revitalization - Grand Avenue/Flower Avenue	\$1.23M	\$1.08M
	City of Los Angeles	Vision Zero I-10 Corridor Area Traffic Signal Improvements	\$776,000	\$239,283
	City of Los Angeles	Sixth Street Viaduct Mission/Myers Roundabout Project	\$1.80M	\$1.17M

= Complete

Item 18.1 – Response to May 2021 Board Motion

PLANNING AND PROGRAMMING COMMITTEE

SEPTEMBER 15, 2021

CONSTRUCTION COMMITTEE

SEPTEMBER 16, 2021

Related to Item 18: Metro ExpressLanes Program Management Support Contract Modification

Interstate 105 Funding and Financing -- Grant and Funding Alternatives

CEO to report back in September 2021 with recommendations to fully fund the I-105 ExpressLanes with funding sources that minimize the use of the corridor's future net toll revenues, in order to maximize available resources from the project for future capital improvements to the Metro Green Line.



**METRO
EXPRESSLANES**



Grants Background

- **What we have done to date**
 - Voters Approved Measure M to build ExpressLanes on the 105 (\$175 million, 2016)
 - Pursued Interfund loans in 2017/2018; denied by COGs
 - Pursued INFRA grants in 2017 & 2019 without an award
 - RAISE/TIGER/BUILD denied (other Metro projects advanced)
 - Pursued State SCCP Funding (Awarded \$150 million, 2020)
 - Federal Legislative Earmarks, none anticipated
 - **Future Funding Pursuits**
 - Climate Action Plan for Transportation Infrastructure (CAPTI)
 - State LA Olympics funding pending State budget process
- Senate Infrastructure Investment and Jobs Act of 2021:**
- Federal Congestion Relief Program; National Infrastructure Project Assistance; and future INFRA and RAISE rounds



**METRO
EXPRESSLANES**

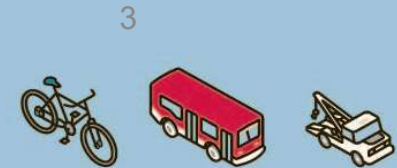


Grant Alternatives for Metro C (Green) Line

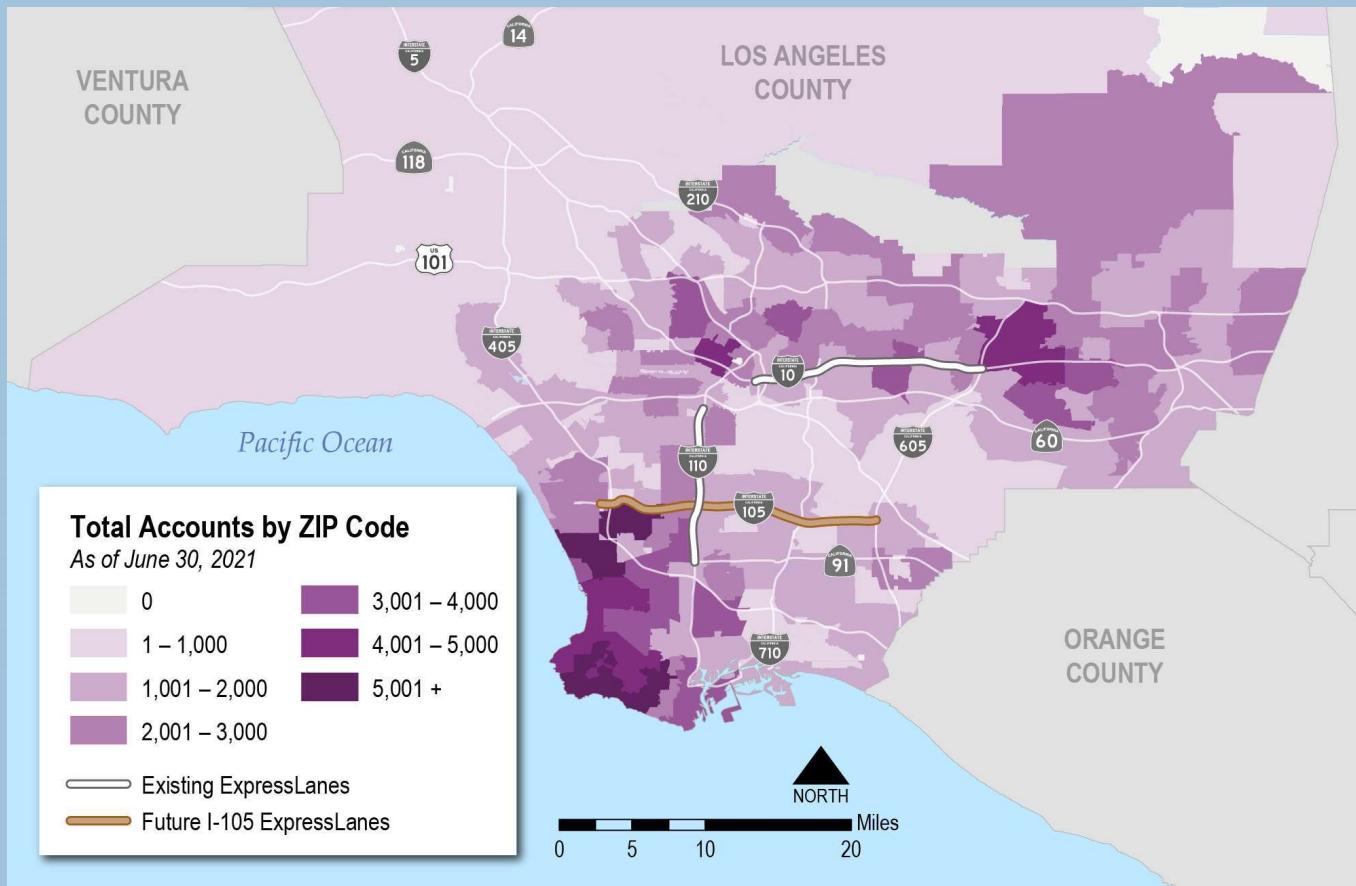
- **Station Platform Expansion and Traction Power Substation (TPSS):**
 - State SB1 Solutions for Congested Corridors Program (SCCP) and Local Partnership Program (LPP)
 - State Transit and Intercity Rail Capital Program (TIRCP)
 - LA Olympics funding pending State Budget process
 - Federal RAISE and other new transit programs
- **State of Good Repair:**
 - Federal Core Capacity Program



METRO
EXPRESSLANES



Where ExpressLanes Customers Live



77%
of Metro ExpressLanes
accountholders
are LA County residents

20.5%
of Metro LA County
ExpressLanes
live within 3 miles of I-105

11%
Reduction in GHG
emissions. Decreases in
CO and NOx as well.



**METRO
EXPRESSLANES**



I-105 Risk – Phase 1 Completion

- Phase 1 – section from 405 to 110 can be built using SCCP funds -- \$150 million
- Phase 2/3 -110 to 605 can be built with Measure M, TIFIA (toll revenues) – Funding Plan Needed by **Dec. 2023**



METRO
EXPRESSLANES



Continue to Pursue Grants

1. First Approach: Continue to Pursue Grants Through December 2023

- Federal Grants
- State Grants
- Funding opportunities around LA Olympics

2. Fall back: Any remaining funding gap identified by December 2023 can be funded by debt financing using TIFIA and other capital market financing

(Conversations with TIFIA and USDOT will continue as grant opportunities are identified.)



METRO
EXPRESSLANES



TIFIA is Well Suited for Express Lanes

- Nearly all Express Lane projects built in the US have used TIFIA for financing, including:
 - I-405 (OCTA) -- SR-91 (RCTC)
 - I-15 (RCTC) -- I-10 (SBCTC)
 - Also Toll Roads in Colorado, Texas, North Carolina, Florida, et al.
- TIFIA provides flexible loan terms with a low cost of capital, up to 33% of project cost or \$227 million
- Allows user fees to fund the project
- Debt to be repaid through future toll revenues
- Excess Revenue can be used to fund C Line



METRO
EXPRESSLANES



I-105 Funding Proposal

Project Costs by Phase and Funding

Source	(\$000s)
COST BY PHASE	
PAED	\$13,121
PS&E	\$46,883
ROW	\$3,081
CON	\$626,036
TOTAL	\$689,121
FUNDING BY SOURCE	
Federal	
CMAQ	\$2,607
State	
SB1 - SCCP	\$150,000
Local	
Funding Gap	\$361,514
Measure M - Preconstruction	\$60,478
Measure M - Construction	\$114,522
TOTAL	\$689,121

- SCCP Funds predicated on December 2023 construction start
- Measure M construction funding available beginning in FY27
- Need commitment by Dec 2023
- TIFIA draws can be designed to match anticipated construction schedule beginning in FY24

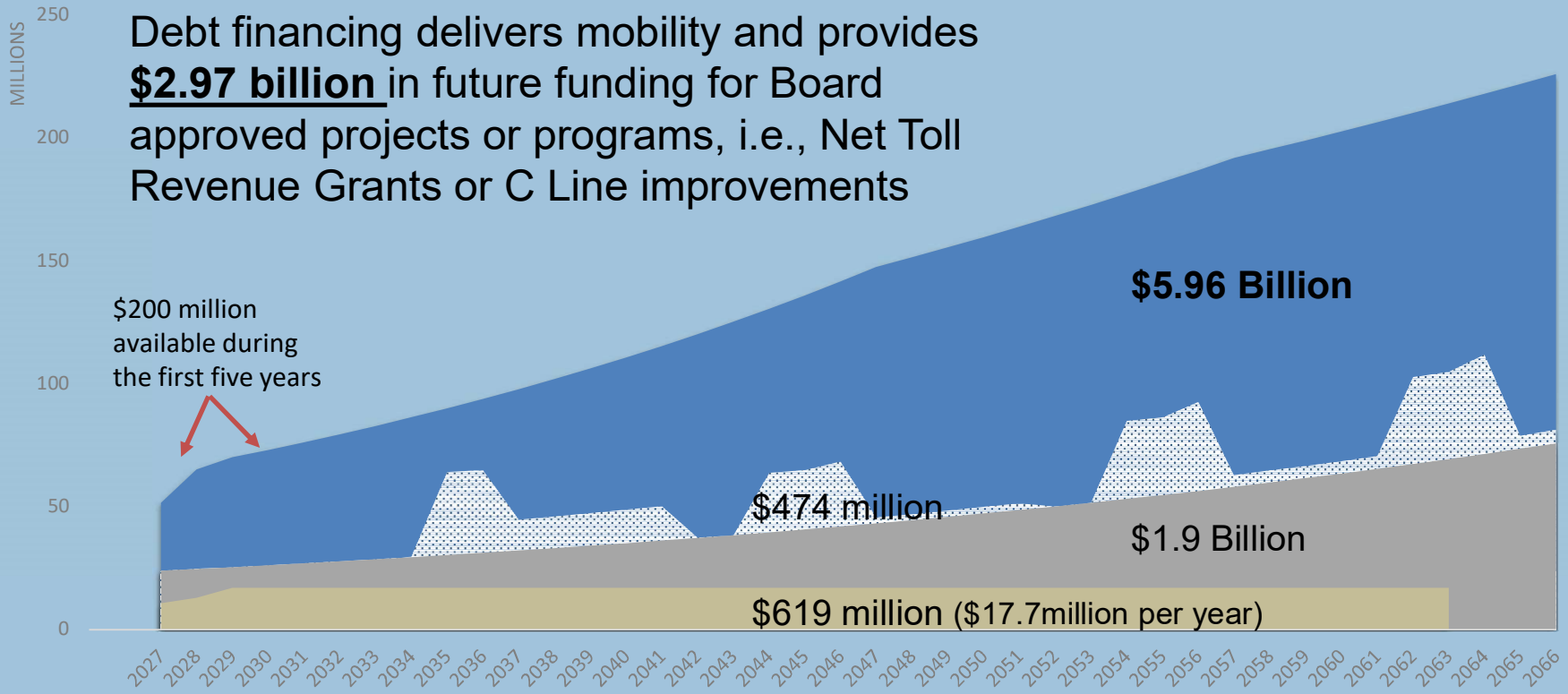


**METRO
EXPRESSLANES**



I-105 Revenue Forecast with Debt Service

I-105 Revenue and Expense Forecast - Including Roadway O&M
(40 Years)



■ Gross Revenue ▨ Major O&M ■ Routine O&M ■ Debt Financing

	millions
Revenue	\$5,960
Major Maintenance	\$474
Annual O&M	\$1,900
Debt Service	\$619
Remaining Cashflow	\$2,967





Board Report

File #: 2021-0419, **File Type:** Informational Report

Agenda Number: 30.

CONSTRUCTION COMMITTEE SEPTEMBER 16, 2021

SUBJECT: 2021 LOS ANGELES CONSTRUCTION MARKET ANALYSIS

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE the report on 2021 Los Angeles Construction Market Analysis.

ISSUE

A construction market analysis was performed to better understand the factors influencing construction bid prices and Metro's ability to deliver the largest transportation construction program in the country. Current and future market conditions, along with the economic impacts of the COVID-19 pandemic, were assessed in the 2021 Los Angeles Construction Market Analysis to determine factors influencing construction bidding activities and our ability to deliver Metro's capital program, including projects approved as part of Measure M.

BACKGROUND

Following the passage of Measure M, a construction market analysis was performed in 2018 to evaluate market conditions to determine factors influencing construction bidding activities and our ability to deliver Metro's capital program. As part of a bi-annual effort to continuously evaluate market conditions, a 2020 study was prepared. However, the 2020 Construction Market Analysis was finalized in March 2020 prior to the COVID-19 pandemic, which dramatically changed economic conditions locally and across the world. The 2021 Construction Market Analysis provides a comprehensive analysis and update of construction market factors and trends since the last report that was completed in March 2020 and presented to the Board in May 2020.

DISCUSSION

The Construction Market Analysis objectives were to gather information to evaluate the national, regional, and local economies as it relates to construction cost and bidding trends, the current and future amount of construction activities in the region, and measure its impact on the proposed work in

the region, and the macroeconomic employment trends and skilled labor availability.

The KTJV team under the Program Management Support Services contract performed the Los Angeles Construction Market Analysis update and completed the report in June 2021. The report discusses factors that would influence future construction bid prices at Metro and how they would impact our ability to deliver Metro's capital program on time and within budget.

- Current market indicators in the construction industry forecast a construction labor shortage, low unemployment, and a large volume of ongoing and planned work in the region.
- Inflation projections show a rise in construction costs. The budget development for multiyear projects must adequately account for escalation, increasing wages, increasing materials costs, and rising margins.
- The number, size, and complexity of megaprojects are increasing, resulting in reduced competition and higher bids.
- As market demand increases, contractors will be increasingly selective in deciding which projects to pursue, depending on the owner and the amount of risk an owner places on the contractor.

Metro and other agencies will compete for qualified contractors, subcontractors, and skilled workers in the robust construction marketplace.

Report Recommendations

The 2021 Los Angeles Construction Market Analysis report identifies the following goals for Metro to better position itself in the marketplace: be the owner of choice, increase the labor pool, and control construction costs. Based on these goals, the following recommendations are made:

- Embrace partnering on all levels of engagement with contractors to build a reputation as an owner of choice
- Review and revise standard contract terms and conditions to be more attractive to bidders
- Conduct outreach to top-tier contractors who have not previously worked with Metro
- Fill the talent gap resulting from the VSIP and develop training programs
- Expand the scope and reach of the WIN-LA program to support contractors in hiring local talent
- Allocate a small percentage of units in Metro joint development projects for craft labor working on Metro projects
- Build temporary dormitory housing on laydown/staging sites for Metro projects
- Develop specifications that can be flexible to allow for price swings in different materials
- Develop a list of approved material substitutes that can be used in the event of fluctuations in the cost of materials

Shorten review times between the submittal of bids and awards to prevent future fluctuations in

materials between the time of bid submittal and notice to proceed.

FINANCIAL IMPACT

There is currently no impact on the budget.

EQUITY PLATFORM

The goal of the analysis is to highlight the factors influencing construction bid prices and Metro's ability to deliver the transportation construction program. As part of the analysis, there was a review of the economic impacts, especially from the pandemic, and found it has manifested differently across workers, businesses, and industries with small businesses in nonessential industries experiencing the most economic distress, and women and minorities being disproportionately affected.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The recommendation supports strategic plan goal #1 to expand the transportation network as responsibly and quickly as possible and by targeting infrastructure and services investments towards those with the greatest mobility needs.

NEXT STEPS

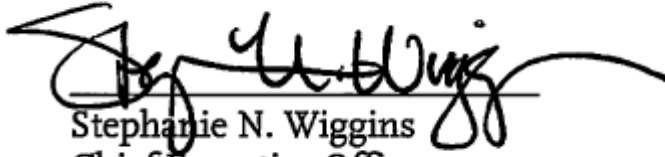
Metro staff will evaluate each of the recommendations and implement them, if appropriate. Staff will also continue to develop strategies on how to best address the factors impacting Metro's ability to deliver projects on-time and within budget successfully.

ATTACHMENTS

Attachment A - 2021 Metro Construction Market Analysis

Prepared by: Julie Owen, Senior Executive Officer, Program Management,
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Reviewed by: Bryan Pennington, Chief Program Management Officer (Interim),
(213) 922-7449
Debra Avila, Chief Vendor/Contract Management Officer, (213) 418-3051



Stephanie N. Wiggins
Chief Executive Officer



Metro™



2021

LOS ANGELES
CONSTRUCTION
MARKET ANALYSIS



KKCS/TRIUNITY JV

Jacobs



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EX

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

The COVID-19 pandemic has reshaped nearly all aspects of daily life and the economy, including how we work and travel, with the long-term impacts still not clear. This 2021 Construction Market Analysis serves as a barometer of current and future construction markets to reflect the economic impact of the pandemic since the last Construction Market Analysis was issued in March 2020. The report is also intended to help Los Angeles County Metropolitan Transportation Authority (Metro) gauge near- and long-term market conditions that may affect Metro's ability to construct Measure M projects. The market conditions (as of July 2021) identified in this report will be felt in both the short term while Metro delivers approximately 20 construction contracts totaling \$4.5 billion in the next 2 years, and in the long term when Metro delivers a myriad of transportation projects in time for the 2028 Olympic Games in Los Angeles (LA). The report focuses on three goals to support the delivery of projects within this decade: increase the labor pool, be the owner of choice, and control construction costs.

Economic Conditions

U.S.

Following a historic period of economic growth, 2020 was a year of historic decline with national GDP shrinking by 3.5% and 22 million jobs lost (UCLA Anderson Forecast 2021a). Congress and the Federal Reserve reacted much more quickly to the pandemic crisis than they did to the Great Recession in 2008 by implementing measures for a V-shaped recovery, causing short-term concern regarding inflation. While the fight against the pandemic continues, the overall economic outlook is positive and significant growth is projected for the next few years (LAEDC 2021).

California

According to the UCLA Anderson Forecast, California's strict public health measures during the pandemic, while causing immediate impacts on the economy, set the stage for "euphoric" growth and an even faster recovery in the state than nationwide. One concern of this economic outlook is the lack of a workforce for the growing economy because nearly half a million people have opted out of the workforce since the start of the pandemic (California Department of Finance 2021).

More than a year after the pandemic began, California has weathered the storm with a nearly \$76 billion surplus in the state budget. This surplus will provide an extra \$11 billion investment in the state's transportation system, including \$1 billion for 2028 Olympic Games-related transportation infrastructure projects (California Department of Finance 2021).

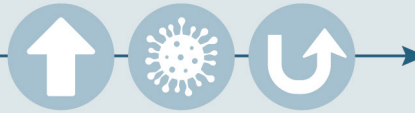
Los Angeles

Los Angeles County was at one point the epicenter of the COVID-19 pandemic, which severely affected the local economy. The county also saw a sharp decline in population that is likely related to the cost of housing in the region. Construction persevered as an essential service with LA having the second most cranes in operation in North America. Like California, LA is anticipated to grow significantly as the region prepares to welcome the world for the 2028 Olympic Games.

2020

CONSTRUCTION MARKET ANALYSIS

Summer 2018 - Spring 2020



2021

CONSTRUCTION MARKET ANALYSIS

Spring 2020 - Summer 2021

KEY ECONOMIC INDICATORS

	2020	2021(f)	2022(f)
--	------	---------	---------

National



GDP GROWTH	-3%	6%	4%
UNEMPLOYMENT	8%	7%	6%
INFLATION	1%	3%	2%

▶ Key Driver: Potential of a major infrastructure stimulus bill

California



GDP GROWTH	-1%	2%	1%
UNEMPLOYMENT	10%	9%	8%
INFLATION	1%	3%	2%

▶ Key Driver: Nearly \$76 billion budget surplus

Los Angeles



GDP GROWTH	-3%	3%	4%
UNEMPLOYMENT	14%	9%	8%
INFLATION	2%	4%	2%

▶ Key Driver: 3rd most cranes in North America

METRO'S CONSTRUCTION PROCUREMENTS AND AWARDS IN THE NEXT 24 MONTHS



\$4.5B
in total construction value



9 projects are over **\$100M**

\$76B surplus in the CA budget

\$7.5B extra investment in the CA transportation system

Los Angeles:

2nd most cranes in North America

State of the Construction Industry

Revenues and funding for construction were hit hard by the pandemic and owners resorted to a variety of strategies to balance budgets and keep capital programs moving. According to the American Road & Transportation Builders Association 2021 Transportation Market Forecast, transportation construction spending will dip in 2021 but is projected to grow significantly starting in 2022 regardless of the fate of a federal infrastructure package. If an infrastructure bill is passed, the industry could see high levels of spending on infrastructure that would fuel construction activity across the country.

Construction Labor Shortage Persists

After the initial shock of the pandemic and record unemployment, construction jobs bounced back because construction was generally considered an essential service across the country. Associated General Contractors of America's Construction Hiring and Business Outlook survey for 2021 found that a majority of contractors are expecting to employ additional staff but are also struggling to find qualified workers to hire. According to the U.S. Chamber of Commerce, the consequences of the labor shortage include asking workers to do more work, difficulty meeting schedules, submitting higher bids, and turning down work.

Construction Costs Outpacing the Market

When compared to the Consumer Price Index (used to determine inflation), construction costs are increasing more quickly than the cost of a typical basket of consumer goods and services. This is even more the case in LA: several construction cost indices for LA are more than 50% higher than the national average.

Fluctuating Materials Costs to Normalize Next Year

Nearly every construction material has increased in price from a year ago as demand has increased and low production levels and logistical issues plague supply. For example, over the past year, the price of lumber has soared by 125% and the price of steel has increased by 73% according to the Bureau of Labor Statistics. As the economy continues to ramp up and pandemic-related supply issues are resolved, it is anticipated that the price of materials will normalize in 2022.

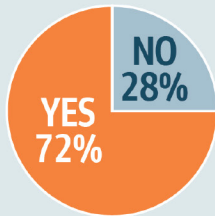
Bidding Climate

Based on an analysis of publicly available bid results in the LA region, agencies are receiving bids from one to two more bidders compared to the pre-pandemic average number of bidders. However, in the transportation megaproject arena, owners and contractors are seeing minimal competition, and contractors are being selective about bidding on high-risk work and contracts.

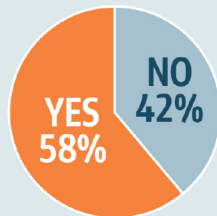
Market Outlook

The Dodge Momentum Index is a bellwether report for the construction industry because it gauges the initial planning of nonresidential projects and usually precedes actual construction spending by 12 months. Since hitting its 9-year low in January 2021, the Dodge Momentum Index is now at a 12-year high as of July 2021. In addition, three major confidence indices by Associated Builders and Contractors, Engineering News-Record, and the U.S. Chamber of Commerce reveal contractor optimism and growth expectations.

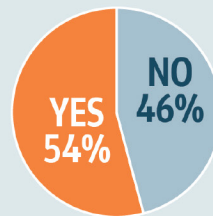
CONTRACTOR RESPONSE TO SKILLED LABOR SHORTAGE



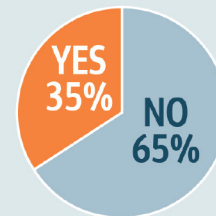
ASKING SKILLED WORKERS TO DO MORE WORK



CHALLENGES TO MEET SCHEDULES



SUBMITTING HIGHER BIDS



TURNING DOWN WORK

Source: US Chamber of Commerce

LUMBER

ANNUAL INFLATION RATE **45%**

STEEL

ANNUAL INFLATION RATE **89%**

COPPER

ANNUAL INFLATION RATE **41%**

CRUDE OIL

ANNUAL INFLATION RATE **102%**

CONTRACTOR BACKLOG

50% of the top 20 ENR transportation contractors worked for or are currently working with Metro

All 10 of these contractors have a backlog exceeding **\$1B**

4 of the 10 contractors have a backlog exceeding **\$2.5B**

CONSTRUCTION INFLATION OUTPACING CONSUMER MARKET

Consumer Market



Consumer Price Index

Construction Market



Construction Cost Index



Building Cost Index



RLB Comparative Cost

	Consumer Price Index	Construction Cost Index	Building Cost Index	RLB Comparative Cost
NATIONAL	5.4%	7.0%	12.0%	1.8%
LOS ANGELES	3.9%	7.8%	11.3%	5.2%

Metro in the Marketplace and the Path Forward

To navigate the financial impact of COVID-19, Metro implemented several actions to maintain financial stability. Metro also took advantage of the empty streets resulting from stay-at-home orders to recover or accelerate project schedules through temporary street closures.

Metro has continued to make significant progress with initiatives related to some of the market pressures such as the groundbreaking SEED School of LA County to develop the next workforce generation. Metro is also implementing new alternative delivery methods like construction management/general contractor and progressive design-build with the goal of improving cost certainty.

Future Construction Market Projects

It was previously estimated that Metro construction expenditures would average approximately \$2.9 billion per year leading up to the 2028 Olympic Games, with peak spending occurring in 2025. The estimate has been updated to reflect the latest project information and schedule updates. It reveals that Metro construction expenditures will likely average \$3.5 billion per year during this same period, with spending peaking at nearly \$5 billion in 2026. The change can be attributed to recent increases in the life-of-project budgets for several projects, and more parallelism in projects due to the COVID-19-driven schedule delays.

Forecast Continues to Show Prolonged Labor Shortage

The results of the forecast of the estimated number of construction jobs in the region show that the demand for construction jobs exceeds the available resources to fill these jobs. Contractors are having difficulty filling positions on current projects. This will only continue to get more difficult because the peak of the labor shortage will occur between 2024 and 2028, resulting in a labor shortage of approximately 19,000 to 28,000 people.

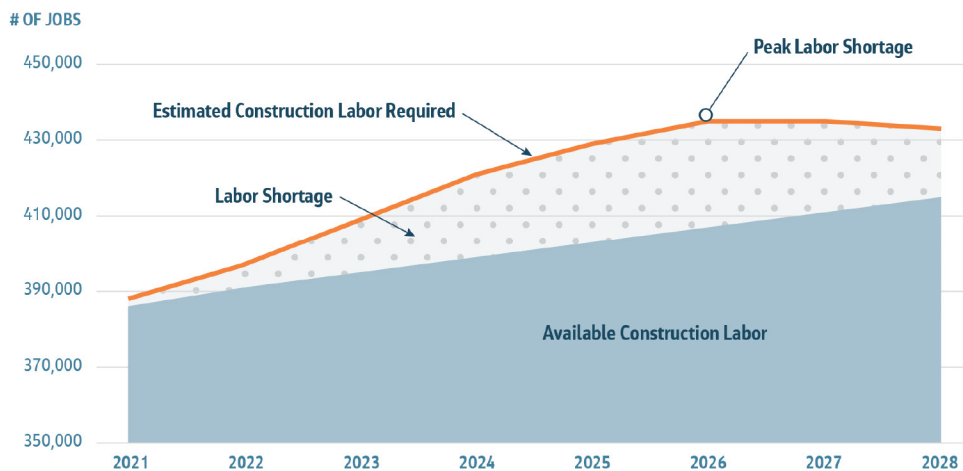
Recommendations

The following recommendations provide ideas and suggestions for how Metro can achieve the three goals identified in this report to provide some relief from the market pressures and stresses.

Recommendations	Be the Owner of Choice	Increase the Labor Pool	Control Construction Costs
Embrace partnering at all levels of engagement with contractors to build a reputation as an owner of choice	✓		
Review and revise standard contract terms and conditions to be more attractive to bidders	✓		
Conduct outreach to top-tier contractors who have not previously worked with Metro	✓		✓
Fill the talent gap resulting from the Voluntary Separation Incentive Program and develop training programs		✓	
Expand the scope and reach of the Workforce Initiative Now-Los Angeles program to support contractors in hiring local talent	✓	✓	

Recommendations	Be the Owner of Choice	Increase the Labor Pool	Control Construction Costs
Allocate a small percentage of units in Metro joint development projects to craft labor working on Metro projects		✓	
Build temporary dormitory housing on laydown/staging sites for Metro projects		✓	
Develop flexible specifications that accommodate price swings in different materials			✓
Develop a list of approved material substitutes that can be used in the event of fluctuations in the cost of materials			✓
Shorten bid review times to limit the chance of fluctuations in material prices between the bid submittal and notice to proceed	✓		✓

ESTIMATED CONSTRUCTION LABOR PROJECTIONS

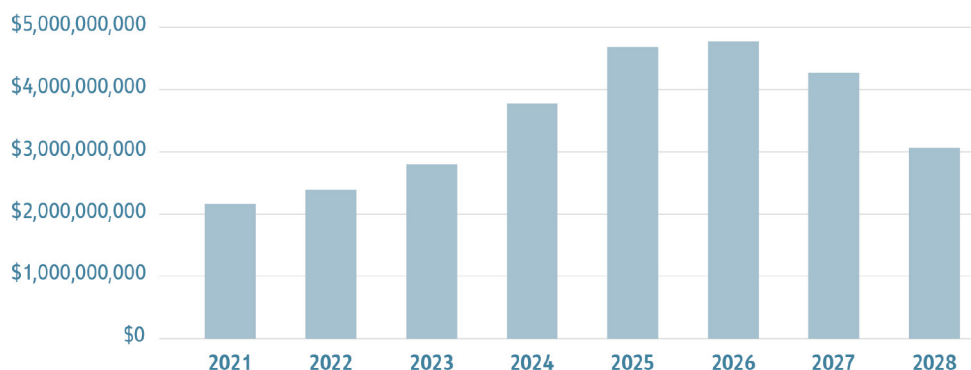


AVERAGE BIDDERS ON CONSTRUCTION PROJECTS

6-7 average bidders in the past year for other regional agencies

3-4 average bidders on Metro projects

METRO CONSTRUCTION EXPENDITURE PER YEAR



ALTERNATIVE DELIVERY

- 1** Progressive Design-Build
- 2** CM/GC

01

INTRODUCTION



INTRODUCTION

Following the completion of the March 2020 Construction Market Analysis, Los Angeles (LA) County and the world went into quarantine in response to the COVID-19 pandemic. A year and a half later, the pandemic has reshaped all aspects of our lives, including how we work and travel, with the long-term impacts still not clear.

To serve as a barometer for current and future construction markets, this updated Construction Market Analysis is intended to help Los Angeles County Metropolitan Transportation Authority (Metro) gauge near- and long-term market conditions that may affect Metro's ability to sustain progress toward improving transportation infrastructure in LA County.

This report intends to address the following questions to help Metro progress toward its objectives during this unprecedented time:

- What is the impact from the pandemic and outlook on national, state, and local economies?
- What is the state of the construction market and what are the trends?
- How is Metro responding to current market conditions?
- Will resources be available to support Metro's capital program?
- Can Metro achieve its goals in this market?

What is Driving Metro's Construction Needs?

LA is facing many challenges, including recovering from the global COVID-19 pandemic, encouraging transit ridership, reducing roadway congestion, adapting to and mitigating the impacts of climate change, tackling the housing crisis, and hosting the 2028 Olympic and Paralympic Summer Games. To tackle these challenges, a reliable, high-quality transportation system is crucial to LA County's economic recovery, continued prosperity, and quality of life. Metro is at the front and center of leading this effort as the primary planner, designer, builder, and operator of LA County's transportation network.

Supported by Measure M, Metro is leading the most aggressive multimodal transportation expansion program in the country to address the region's most pressing challenges. This decade will see historic levels of construction activity by Metro due to construction on several rail corridors and future projects in the coming years.

COVID-19 Derails Metro's Revenues

In March 2020, LA County announced a Safer-at-Home Public Health Order in response to the rapidly growing COVID-19 pandemic. Overnight, daily life changed dramatically for over 10 million residents. As LA County and the word grappled with an unprecedented “black swan” event that shut down the economy and imperiled the health of the population, Metro’s operations and construction projects continued as essential services.

Metro’s primary sources of revenues are from sales taxes, which dramatically declined as businesses were shut down in the beginning of the pandemic. Significant measures were needed to conserve resources and reduce expenses as a result of the decreased revenue. Measures were taken by Metro to provide financial stability during this crisis. Further details on Metro’s response to COVID-19 are provided later in the report.

Purpose

The 2020 Construction Market Analysis identified the following goals that aligned with Metro’s Vision 2028 to support the delivery of Metro projects over the next 10 years: increase the labor pool, be the owner of choice, and create a more resilient organization. After an unprecedented year dealing with the COVID-19 pandemic, these goals are still applicable. Metro has proven to be a resilient organization responding to these challenging times by continuing to provide operations for essential workers and exercising sound fiscal stewardship.

The trend of higher costs on several megaprojects has been magnified as Metro has looked to reduce expenses during the pandemic. For this reason, this has been added as a new goal. The three goals that this report will focus on include the following:

- Be the owner of choice
- Increase the labor pool
- Control construction costs

In addition, this report will evaluate how the economic climate, the construction industry, and Metro’s response to shifting market conditions to deliver transformative projects in the next 10 years. Analyses aimed at these goals will reveal current and future indicators of construction market conditions. These updated results will help guide Metro’s approach to being the preferred partner in the construction industry, maintain and increase the pipeline of talent, and mitigate the rising costs of construction.

Understanding the market pressures and stresses will help Metro in the marketplace. This will be critical as Metro prepares to procure approximately 20 construction contracts that total in value approximately \$4.5 billion within the next 2 years.

METRO'S CONSTRUCTION PROCUREMENTS AND AWARDS IN THE NEXT 24 MONTHS



\$4.5 billion in total construction value



9 projects are above **\$100** million in value

Methodology

The KKCS/Triunity Joint Venture with support from Jacobs Engineering Group Inc. under the Program Management Support Services contract with Metro prepared this report. The team gathered existing Metro data and conducted a literature review and researched statistical data and public records to develop a picture of the current and future construction market, the labor market, and the availability of construction labor and trade resources.

These industry and public resources provided the most current, relevant data available as of July 2021 during the preparation of the analyses and report:

- U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics (BLS), U.S. Census Bureau, and the U.S. Department of Commerce
- American Road and Transportation Builders Association (ARTBA)
- Associated Builders and Contractors (ABC)
- Associated General Contractors of America (AGC)
- Business and trade journals
- Congressional Budget Office (CBO)
- Dodge Data and Analytics (Dodge)
- Engineering News-Record (ENR)
- Fails Management Institute (FMI)
- Los Angeles Economy Development Corporation (LAEDC)
- Rider Levett Bucknall (RLB)
- University of California, Los Angeles (UCLA) Anderson School of Management
- U.S. Chamber of Commerce
- Agency websites and bid data

02

ROAD TO RECOVERY – ECONOMIC CONDITIONS



ROAD TO RECOVERY – ECONOMIC CONDITIONS

The Pre-Pandemic Economy

The pre-pandemic economy was defined by the longest economic expansion in U.S. history, lowest unemployment rate since 1969, and longest stretch of monthly job gains. However, in 2020 the national economy began to slow and the potential for a recession loomed due to uncertainties on the global stage, such as the outcome of the 2020 national election.

At that time, both California and LA produced strong economic trends, exceeding the nation in most indicators, but were also dealing with housing affordability that threatened to slow economic growth. However, the unexpected shock of the global pandemic in March 2020 dramatically changed the national, state, and local economies.

Economic Shock in 2020 and Recovery in 2021

United States

The U.S. was one of the hardest-hit countries in the world by the global COVID-19 pandemic in 2020, resulting in what was the sharpest economic downturn in the last 60 years (UCLA Anderson Forecast 2021a). Gross domestic product declined by 3.5% and 22 million jobs were lost (UCLA Anderson Forecast 2021a). Many industries were forced to shut down, while some adapted to the new way of life and conducting business from home.

In response to the pandemic, the federal government took steps to manage economic fallout by enacting monetary and fiscal policies aimed at cushioning the impact. Congress provided several major economic relief and stimulus acts that included:

- **March 2020:** The \$2.3 trillion Coronavirus Aid, Relief, and Economic Security (CARES) Act included one-time cash payments to individuals, unemployment benefits, loans for small business and to prevent corporate bankruptcy, and \$25 billion for public transportation relief.
- **December 2020:** The Consolidated Appropriations Act of 2021 provided \$868 billion in COVID-19 relief and funding, including direct stimulus payments of up to \$600 to individuals, another round of Paycheck Protection Program loans, and enhanced unemployment benefits.
- **March 2021:** The \$1.8 trillion American Rescue Plan provided direct aid to state and local governments, stimulus payments of up to \$1,400 to individuals, extended unemployment benefits, and over \$30 billion for public transportation relief.

Potential Significant Spending from Infrastructure Bill

In early August, the Senate passed the \$1.2 trillion infrastructure plan, which includes more than \$110 billion to replace and repair roads, bridges, and highways, and \$66 billion for passenger and freight rail. The plan now moves to the House of Representatives for a vote. At the publication of this report, it is uncertain when the House of Representatives will vote on the bill, or when it would reach the President's desk for signing. If passed, funds from the legislations could become available as soon as within months for projects that already have permits in place and contractors engaged. This infrastructure bill will significantly increase construction spending and create a pipeline of work for contractors over the next several years.

Reacting more quickly to the pandemic crisis than it did to the Great Recession that began in 2008, the Federal Reserve slashed interest rates to nearly 0% and continued to keep financial markets functioning and credit available to the market, especially for small businesses.

These actions helped prevent further economic contraction and supported recovery, but the economic impacts from the pandemic have manifested differently across workers, businesses, and industries. Disparate effects of COVID-19 on the economy include:

- Low-wage workers have experienced disproportionate levels of unemployment compared to higher-wage workers.
- Small businesses in nonessential industries experienced the most economic distress.
- Women and minorities have been disproportionately affected.

As the U.S. economy rebounds following the COVID-19 pandemic, inflation is a topic of concern. The prices of goods and services have increased over the past year due to the reopening economy and increased consumer demand as well as federal stimulus aid injected into the economy. Another factor is that Americans have money to spend and are eager to spend it on the things they could not do or buy during the pandemic. Adding to the problem are ongoing supply shortages because of disruptions in manufacturing, logistics, and transport caused by the pandemic.

California

At the start of the pandemic, California enacted one of the first stay-at-home orders in the country to control the spread of COVID-19 (State of California 2020). However, by the end of 2020, California had over three million cases, more than any other state (County of LA Public Health 2021). As a result, the pandemic severely affected California's economic performance in 2020.

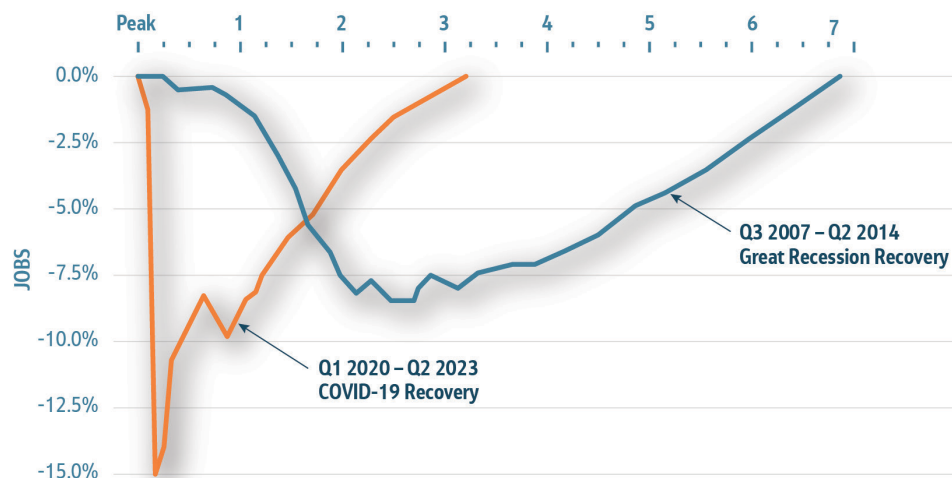
The state's unemployment rate reached a record high of 16% during the pandemic before improving to 8% through March 2021 (BLS 2021). California has added back over 1.2 million jobs—44% of the 2.7 million jobs lost in March and April 2020 (State of California, Department of Finance 2021). But the labor market continues to struggle because there are more than one million fewer employed Californians and more than half a million fewer people in the labor force (State of California, Department of Finance 2021). Some of the most common reasons for people opting out of the workforce include a need to care for children and for parents, fear of becoming infected at work, despair over not finding a job, opting for unemployment benefits, early retirement, and burn out.

California projected a budget deficit of \$54 billion a year ago as a result of COVID-19. As of August 2021, the state has managed the economic storm and is now projecting a nearly \$76 billion surplus (State of California, Department of Finance 2021). With an additional \$25 billion in federal relief, the state has the opportunity to speed up the economic recovery from the pandemic and address long-standing challenges facing the state like housing/homelessness, climate change, and transportation.

The surplus resulted in revisions to the budget that include significant investments in both new transportation infrastructure and the maintenance of existing infrastructure. The surplus adds to the initial \$18 billion budget with an extra \$11 billion investment in the state's transportation systems (State of California, Department of Finance 2021). This surplus investment enhances the state's competitive position to pursue federal funding from a potential infrastructure bill.

According to the UCLA Anderson Forecast, California's strict public health measures during the pandemic, while causing immediate impacts on the economy, set the stage for an even faster recovery in the state than nationwide (2021).

CALIFORNIA JOB LOSSES AND YEARS TO RECOVERY (YEARS AFTER EMPLOYMENT PEAK)



Source: CA Employment Development Department, Labor Market Information Division; CA Department of Finance, CA Governors Proposed Budget – May Revision

EXTRA \$11 BILLION TO TRANSPORTATION INFRASTRUCTURE PROPOSED BY GOV. NEWSOM



\$1B TO DELIVER CRITICAL PROJECTS IN TIME FOR 2028 OLYMPICS GAMES



\$1B FOR TRANSIT AND RAIL PROJECTS STATEWIDE



\$500M TO ADVANCE ACTIVE TRANSPORTATION PROJECTS



\$500M FOR HIGH-PRIORITY GRADE SEPARATIONS AND GRADE CROSSING IMPROVEMENTS



\$2B TO SUPPORT STATE HIGHWAY REHABILITATION AND LOCAL ROADS AND BRIDGES



\$1.4B FOR ZERO-EMISSION BUSES AND TRUCKS

\$400M FOR ZERO-EMISSION RAIL AND TRANSIT INFRASTRUCTURE

Los Angeles

LA County has been significantly affected by COVID-19 because large portions of its economy include the industries hardest hit by the pandemic, causing the county Gross Domestic Product to fall by 3% in 2020 (LAEDC 2021a). The pandemic worsened in LA County in January 2021 when the county became the epicenter of the COVID-19 pandemic with average daily cases above 40,000 (County of Los Angeles Public Health 2021).

Fortunately for businesses and individuals alike, over 800,000 individuals received the first dose of the vaccine at the start of February 2021 when vaccines were beginning to be available (County of Los Angeles Public Health 2021). LA County has continued to make substantial progress with over 40 million doses administered and 63% of the population fully vaccinated at the end of July 2021.

The unemployment rate in LA County peaked in May 2020 at the historic level of 18.8%. In comparison, the peak unemployment rate during the Great Recession was 13.2%. Since May 2020, the unemployment rate has started to come down and was at 10.5 % as of June 2021 (BLS 2021a). Unemployment in LA County has trended higher than the rest of the state. This is mostly due to the large portion of the economy being in industries most affected by the COVID-19 restrictions, like hospitality, tourism, entertainment, and in-person retail.

For the third straight year, the population in LA County has declined. This past year saw a notable drop in population of nearly 100,000 people, the most in the state, according to demographic data by the California Department of Finance (State of California, Department of Finance 2021). A consequence of the declining county population trend of the past 3 years of particular concern to Metro is the impact of reduced sales tax revenue to fully fund construction projects in the future.

One of the contributing factors to the population decline is the supercharged housing market. The median home price in LA rose to \$750,000 as of April 2021, a 19% increase over the past year. According to Zillow, the average number of days houses are on the market in LA County is just 13 (Zillow Group 2021). The booming housing market is in stark contrast to the renter's market. In general, renters have been disproportionately hit the hardest by unemployment or income losses from the pandemic and are struggling to make ends meet.

In the beginning of the pandemic, LA lost 22,000 construction jobs in March and April 2020 (State of California Employment Development Department 2021). However, local government agencies deemed construction as an essential service and the industry, for the most part, persevered through the pandemic. Construction sites adjusted to provide safety protocols and practices to allow construction to continue, including all Metro projects. This has led to fewer short-term payroll falloffs for construction workers. As of July 2021, the construction industry has recovered nearly 80% of the total numbers of construction jobs lost initially (Bureau of Labor Statistics). This number would likely be higher; however, contractors are struggling to find workers, partially due to the labor force in the county shrinking by 120,000 from pre-pandemic levels (LAEDC 2021c).

A sign of the recovering and growing LA construction market is the 43 tower cranes in the region. The RLB Crane Index, a reputable indicator of construction activity, lists LA as having the second most cranes in North America for the first quarter of 2021, behind Toronto (RLB 2021).

Economic Outlook

The information presented for the national, state, and local economic outlooks is a summary of various sources that include the International Monetary Fund, California State Budget May Revision Economic Outlook, LAEDC 2021 Forecast, and UCLA Anderson Forecast.

United States

The next 2 years will likely see economic recovery, but the speed of recovery is tied to supply chain normalization as well as the population becoming vaccinated. According to estimates by the Congressional Budget Office, the majority of industries will return to pre-pandemic employment levels by 2024 (CBO 2021). This 4-year timeline appears to be a quicker recovery compared to that of the Great Recession, which took over 6 years to reach the pre-recession peak.

Risks to the national economy outlook remain, including a new wave of cases and deaths due to COVID-19 variants, vaccine hesitancy, and the risk of a stock market correction. Inflation has been a major concern in 2021, but the Federal Reserve estimates that inflation will fall to 2% by next year once the economy is on firmer footing and the pandemic is in the rearview mirror (Federal Reserve 2021).

California

According to the June 2021 UCLA Anderson Forecast, California is poised for a “euphoric” rebound as a result of the COVID-19 restrictions put in place to protect the economy in the long run. Employment in the state is estimated to grow by 2.6% on average and reach pre-pandemic levels by mid-2023. California’s unemployment rate is projected to broadly follow the national trend of steady decline but at a slightly higher level. California’s unemployment rate is projected to return to pre-pandemic levels in 2024. The California Department of Finance is also forecasting a faster recovery than the Great Recession, aided by a surplus of nearly \$76 billion.

Higher housing costs and housing constraints in the state continue to drive inflation above national levels in the long run and affect affordability.

Los Angeles

Los Angeles is a hub for entertainment and live events, and it is anticipated the region will see an abundance of economic activity and growth due to strong vaccination levels and pent-up demand. Employment and personal income growth are expected to rise in the coming year above that of pre-pandemic levels (LAEDC 2021a).

Many development and infrastructure projects not yet in construction have been deferred to the future, but not cancelled. With many of these deferred projects to be built before the 2028 Olympic Games and a potential windfall of stimulus money from Sacramento and Washington, the construction industry will continue to see strong growth in the foreseeable future.

A number of difficulties that predate the COVID-19 pandemic, including the cost of housing, have worsened during the pandemic and could hold back the region from even stronger economic growth in the future.

KEY ECONOMIC INDICATORS

2020

2021(f)

2022(f)

National



GDP GROWTH	-3%	6%	4%
UNEMPLOYMENT	8%	7%	6%
INFLATION	1%	3%	2%

▶ *Key Driver: Potential of a major infrastructure stimulus bill*

California



GDP GROWTH	-1%	2%	1%
UNEMPLOYMENT	10%	9%	8%
INFLATION	1%	3%	2%

▶ *Key Driver: Nearly \$76 billion budget surplus*

Los Angeles



GDP GROWTH	-3%	3%	4%
UNEMPLOYMENT	14%	9%	8%
INFLATION	2%	4%	2%

▶ *Key Driver: 3rd most cranes in North America*

03

STATE OF THE CONSTRUCTION INDUSTRY



STATE OF THE CONSTRUCTION INDUSTRY

The construction industry was booming at the start of 2020 and the future was bright. However, the COVID-19 pandemic hit hard and fast and paused construction sites overnight due to safety and financial reasons. The impact of the COVID-19 pandemic on construction is unlike anything the industry has experienced in decades.

In the current COVID-19 pandemic-driven recession, the construction industry faces several roadblocks, but will be a key economic engine for driving the nation's economic recovery. The following discusses the market drivers of the construction industry.

Construction Activity and Spending Down, But Growth Ahead

Revenues and funding for construction were hit hard by the stay-at-home orders, causing historic levels of unemployment, economic recession, and declines in air travel and public transit. This resulted in significant revenue shortfalls for state, county, and local transportation agencies.

According to ARTBA (2021), owners are using a variety of strategies to balance budgets on their capital programs, such as:

- Delaying projects or cutting capital programs
- Using rainy day funds or bonds to maintain capital spending
- Decreasing costs by deferring maintenance needs, furloughing staff, and freezing hiring

HOW AGENCIES DEALT WITH COVID-19 REVENUE IMPACTS

18 state DOTs delayed at least **\$12 billion** in projects (ARTBA)

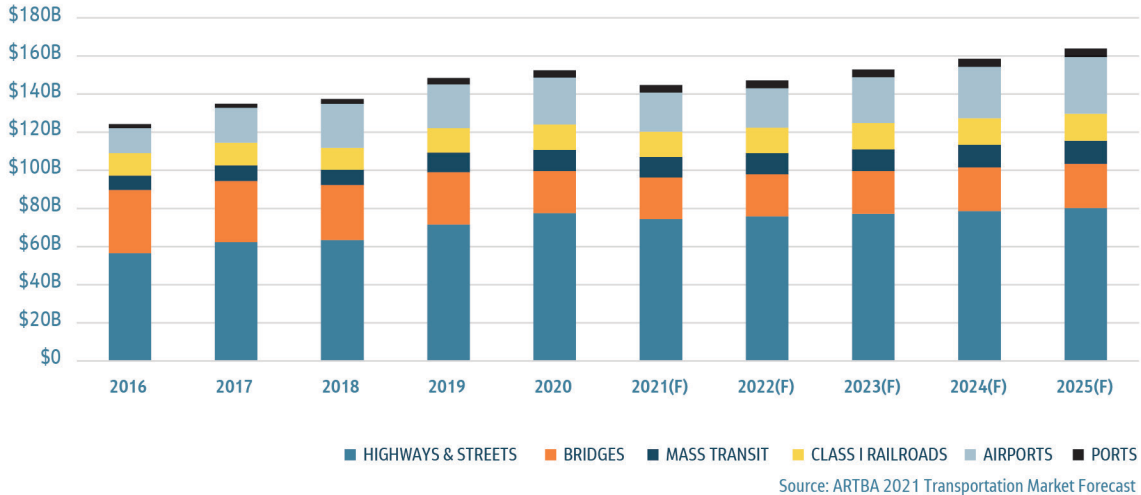


33% of transit agencies across the country delayed capital projects (APTA)



20% of transit agencies used capital budgets to cover operating costs (APTA)

ARTBA'S TRANSPORTATION CONSTRUCTION SPENDING PER YEAR WITH 5-YEAR FORECAST



The cumulative impact of these strategies will be felt in 2021 and will reflect the broader COVID-19-related economic contraction that began in the spring of 2020. This can be seen on the following figure, which shows that transportation construction is anticipated to decline by 5% in 2021 according to ARTBA forecast models. The forecast also reveals growth resuming in 2022 assuming economic conditions improve, travel demand is restored to pre-COVID-19 levels, and the national infrastructure bill becomes law.

RLB's Construction Activity Cycle provides insight into the construction activity within the general economy based on 14 cities in North America. The cycle identifies whether cities are in a growth or decline phase and is structured in three zones (peak, mid, and trough) to best represent the current status of the construction industry in the respective 14 cities. According to RLB's report for the first quarter of 2021, Los Angeles is one of seven cities in the RLB 14-city construction cost index to be in a peak construction activity cycle. As shown on the following figure, Los Angeles is still in the peak growth while construction activities in six cities are in decline.



SOURCE: RLB CONSTRUCTION ACTIVITY CYCLE

Voters Approve Measures Despite Recession

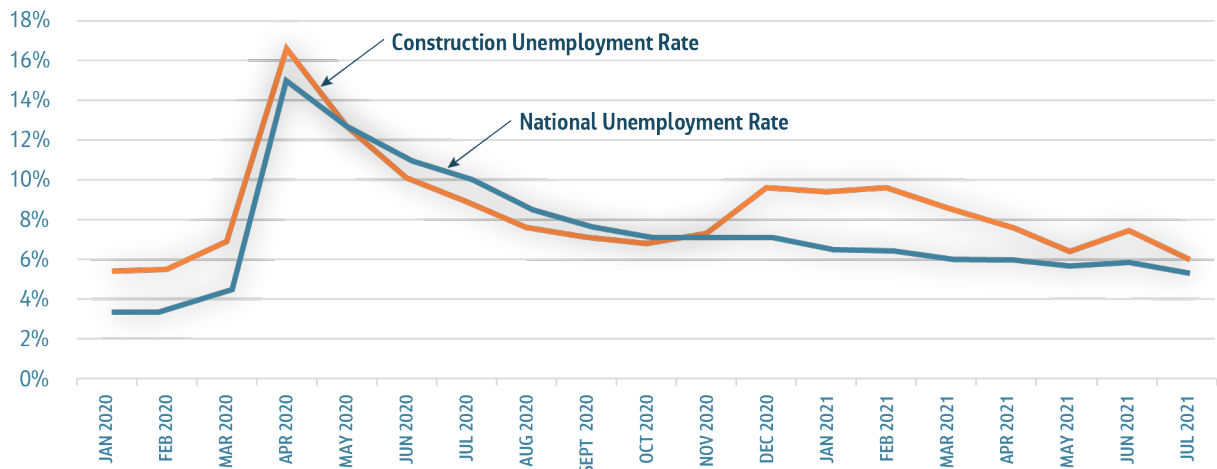
Voters across the country in the November 2020 general election approved approximately \$14.1 billion in transportation funding (ARTBA 2021). Despite the recession, 94% of transportation funding measures passed. The largest measure passed occurred in Austin, Texas, providing \$7.5 billion for major transit projects. In California, most counties elected not to put transportation measures on the ballot due to the recession. Sonoma County decided to move forward with its transportation measure and was successful at the ballot box, securing more than \$500 million for transportation.

Construction Labor Shortage Persists

In the first month of the pandemic, more than 600,000 construction workers were laid off or discharged. The following month, April 2020, was even worse with more than 700,000 layoffs, totaling in nearly 11% of the construction workforce (BLS 2021b). This was more than 50% above the number of construction workers laid off during the worst month of the Great Recession.

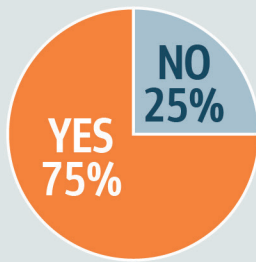
The unemployment rate in construction generally followed the national trend for most of the year with a peak in April 2020 at 16.6%. Following the second major COVID-19 outbreak at the start of 2021, construction unemployment rose above the national trend. As shown on the following figure, the unemployment rate is now falling and at a similar rate as national unemployment.

CONSTRUCTION UNEMPLOYMENT RATE

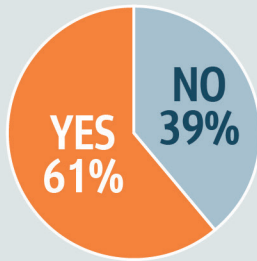


Source: Bureau of Labor Statistics

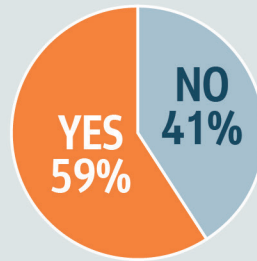
CONTRACTOR RESPONSE TO SKILLED LABOR SHORTAGE



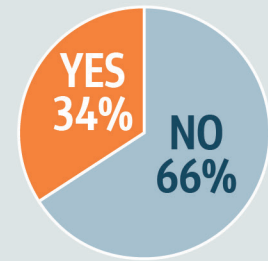
ASKING SKILLED WORKERS TO DO MORE WORK



FACING CHALLENGES TO MEET SCHEDULES



SUBMITTING HIGHER BIDS



TURNING DOWN WORK

Source: US Chamber of Commerce

Total hires and job openings in the construction industry are back up to near pre-COVID-19 levels (BLS 2021b). The significant job losses during the pandemic did not mitigate the skilled labor shortage that has plagued the industry for years. Historically, some workers who lose or leave their jobs during a recession do not return to the industry. During the Great Recession, more than 60% of construction workers who lost their jobs left the construction industry by 2013 for positions in other industries or retired according to the U.S. Census Bureau.

From the contractor's perspective, most are expecting to maintain staffing size or add staff according to AGC's 2021 Construction Hiring and Business Outlook survey. The survey also found that contractors are struggling with finding qualified workers to hire, whether to expand headcount or replace departing staff. Nearly half believe the labor shortage will continue in the future and it will be as difficult or more difficult to find qualified workers in 2021.

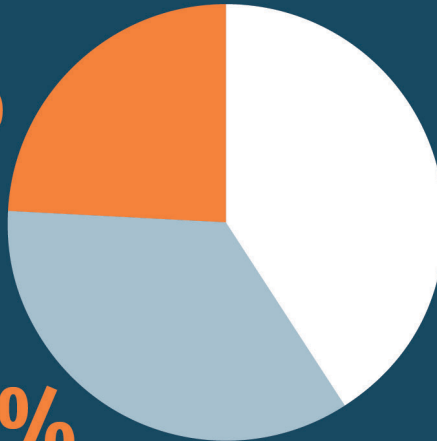
Another source, FMI's 2021 First Quarter Heavy Civil Construction Index, surveyed contractors around the country to identify challenges in the construction industry. In response to a question about the top three current economic risks to contractors, more than half of the responses identified the limited supply of skilled labors and craftworkers as the top risk.

In the U.S. Chamber of Commerce quarterly survey of the construction market for June 2021, contractors continued to see impacts on their business operations as a result of the skilled labor shortage. Although concerns have eased for some compared to pre-pandemic conditions, a significantly high number of contractors are experiencing the labor shortage and are struggling to meet project schedules, putting in higher bids, and turning down work.



MOST CONTRACTORS EXPECT TO MAINTAIN STAFF LEVELS IN 2021

24%
EXPECT TO DECREASE
STAFF SIZE



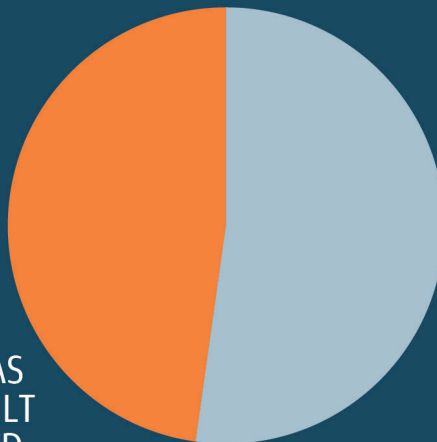
41%
EXPECT TO MAKE
NO CHANGES
TO STAFF SIZE

35%
EXPECT TO
INCREASE
STAFF SIZE



MOST CONTRACTORS CONCERNED ABOUT LABOR SHORTAGES

49%
EXPECT IT TO BE AS
OR MORE DIFFICULT
TO HIRE QUALIFIED
WORKERS IN 2021



54%
CURRENTLY FIND IT
DIFFICULT TO HIRE
QUALIFIED WORKERS

Construction Costs Outpacing the Market

The construction industry uses several cost indices to measure inflation in the construction market, or more simply, the change in cost over time. The year-over-year changes in these cost indices are used to estimate escalation. In construction, escalation is commonly used in cost estimates to represent anticipated future changes in construction costs. This report looks at cost indices published by ENR and RLB. ENR produces two indices, the Construction Cost Index and Building Cost Index, which are calculated based on material and labor components and a 20-city national average. ENR's cost indices are highly respected and used by California's Department of General Services to develop the California Construction Cost Index. RLB's cost index is also based on material and labor components, but for a 12-city national average. This report references both ENR and RLB because they produce city-specific cost indices for Los Angeles and are based on nonresidential construction.

When compared to the Consumer Price Index, construction costs are increasing more quickly than the cost of a typical basket of consumer goods and services. These indices also reveal that Los Angeles costs are some of the highest in the country and exhibit significantly higher annual increases than the national average. ENR's indices reveal the high inflation rate for construction in Los Angeles can be contributed to materials costs, because labor costs have been mostly unchanged.

In a previous survey by contractors, nearly half of the respondents anticipate escalation between 5% to 10%. This is consistent with ENR and RLB's construction cost indices.

CONSTRUCTION INFLATION OUTPACING CONSUMER MARKET

Consumer Market



Consumer
Price
Index

Construction Market



Construction
Cost
Index



Building
Cost
Index



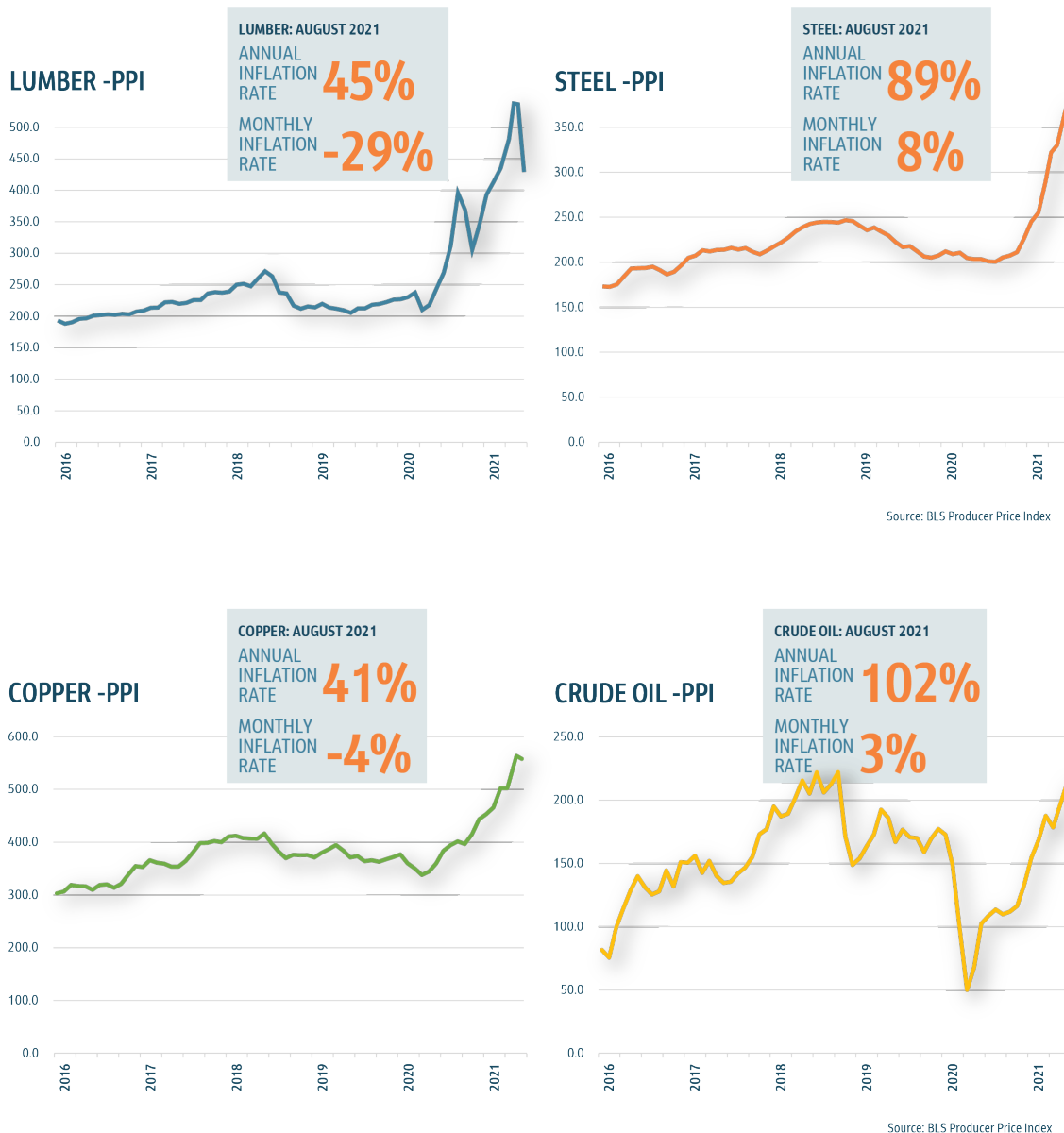
RLB
Comparative
Cost

	Consumer Price Index	Construction Cost Index	Building Cost Index	RLB Comparative Cost
NATIONAL	5.4%	7.0%	12.0%	1.8%
LOS ANGELES	3.9%	7.8%	11.3%	5.2%

Fluctuating Materials Costs to Normalize Next Year

Nearly every construction material has increased in price from a year ago. ENR's Material Cost Index rose 4.5% from June to July 2021, while the annual escalation rate increased 19.9%. The Los Angeles market, in particular, is feeling the squeeze: the region had by far the largest annual increase in ENR's 20-city Material Cost Index, rising 44% over the past year.

This can be seen in the prices of common construction materials, such as lumber, steel, copper, and crude oil. In May 2021, the price of lumber peaked with 154% year-over-year increase according to the BLS Producer Price Index (PPI). While the price of lumber is coming down, the price of steel, crude oil, and copper have been increasing over the past several months. These significantly high annual increases are not just adjustments from prices dropping at the onset of the pandemic, but rather that prices are at all-time-highs for most materials due to demand and low production levels, as shown on the following figure.



“Any owner who is expecting to build [had] better factor in the likelihood that there will be delays, and, depending on how the risk is shared with contractors, price increases.”

Ken Simonson, AGC's Chief Economist

The rising costs can also be attributed to the consequences of the global pandemic on logistics and transport. The impact of COVID-19 left the ports shorthanded and overwhelmed from the surge in online shopping. This resulted in a domino effect in the logistics chain, causing delays in the delivery of materials.

According to surveys by both US Chamber of Commerce and AGC, contractors have expressed ongoing concerns about the potential effect of tariffs and trade wars on their access to materials and the cost of materials, specifically lumber, steel, and aluminum.

AGC's Chief Economist, Ken Simonson, said the continued supply chain issues may hold back the construction industry recovery from anticipated construction spending and activity in the second half of 2021. “Any owner who is expecting to build [had] better factor in the likelihood that there will be delays, and, depending on how the risk is shared with contractors, price increases.”

CONTRACTORS' MOST CONCERNING PRODUCTS EXPERIENCING COST FLUCTUATION



56%
say lumber



48%
say steel



19%
say copper

94% of contractors say material **cost fluctuations** have a moderate to high impact on business

84% of contractors face **material shortages**

Other Market Drivers

Struggling Subcontractors and Suppliers

One of the most immediate pandemic impacts on the construction industry was at the subcontractor market, because construction sites were shut down in some cities that did not consider construction to be essential. The highly competitive market and project shutdowns of only a couple weeks led to many small business subcontractors and suppliers declaring bankruptcy during this period.

As construction activity picks up over the coming months, larger general contractors may need to self-perform a lot of work they would normally subcontract out. Another issue plaguing some contractors is their inability to afford the required insurance and lack of available labor.

Increased Insurance Costs and Tougher Terms

The construction insurance market is transitioning from a decade of stability to one in which prices are increasing. Factors driving this change include increased underwriter scrutiny, significant losses due to claims, and less capacity of specialty construction insurers, according to a report by Marsh LLC (2021). Due to the COVID-19 pandemic, many carriers are pushing for increasing prices and lowering policy limits for excess casualty insurance coverage. These price increases and lower policy limits make it difficult for subcontractors struggling to survive and general contractors will likely pass these costs on to owners through higher bids.

Bonding Companies Exerting More Control

Similar to what is happening in the insurance market, bonding companies are exerting more control with respect to contractors' bonding requests by scrutinizing contract terms and conditions and the risk associated with performance and pricing. While it is typical for bonding companies to be spinoffs of insurance carriers/underwriters, bonding companies do not presuppose loss like insurance companies do, but rather seek to secure loss through a contractor's assets in the event that a bond claim is perfected. Public agencies, by statute, require prime contractors to provide a bid/proposal bond as well as a performance and payment bond to protect the public interest. Consequently, if contractual risks are not balanced and/or reflected in performance and pricing, some contractors are denied bonds, which reduces the bidding/proposal pool, and also has an impact on competitive pricing in the marketplace.

Megaprojects

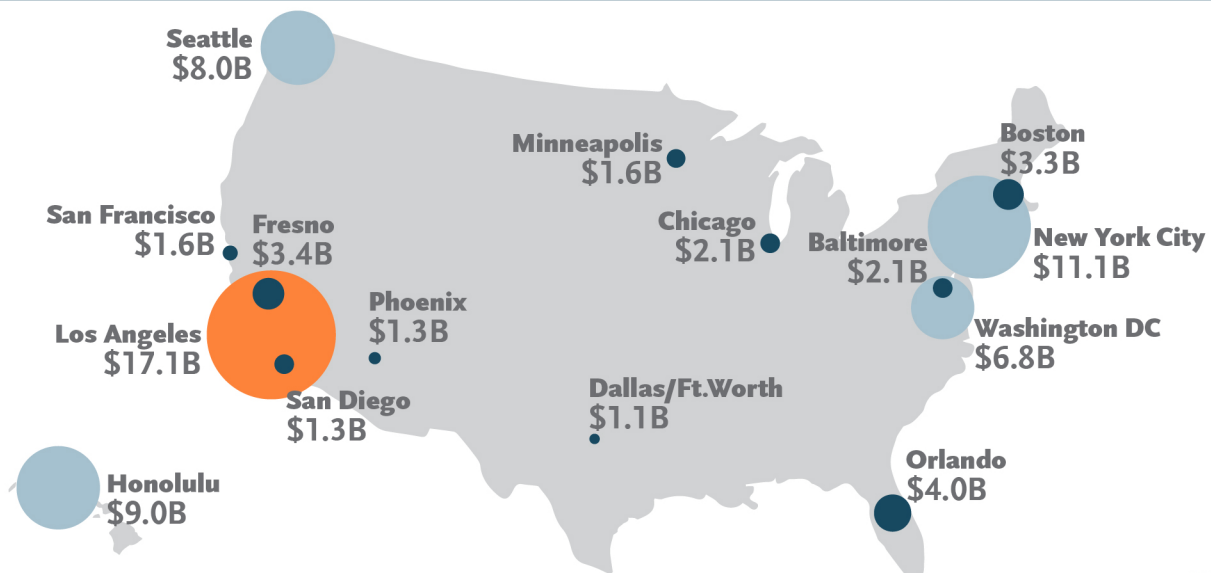
Metro, along with other transit agencies, is embarking on many megaprojects (greater than \$1 billion) across the country. In fact, Metro has 12 megaprojects totaling \$35 billion under construction or planned to start construction within the next 10 years.

The demand to rebuild infrastructure is high, and megaprojects are growing larger and increasing in number and complexity. Between 2013 and 2018 alone, the annual value of U.S. megaprojects increased from 3% to approximately 33% of all U.S. construction project starts (FMI 2019).

The scale of effort for megaprojects comes with more unforeseen challenges, construction durations lasting nearly a decade, and historically overrun cost and schedule objectives. Transportation megaprojects also come with unique challenges and risks, such as approval requirements from multiple jurisdictions, changing site conditions between communities, greater interactions with traffic, and local business disruptions.

Owners and contractors are struggling to develop accurate bid estimates and manage the risks, scale, and complexities of megaprojects. Megaproject performance analysis indicates that merely one out of ten megaprojects in all U.S. market sectors are delivered on time and within budget (GlobalData 2019). This trend is not likely to improve, because the pool of contractors and resources will be further constrained as the number of megaprojects in the market increases.

RAIL TRANSIT MEGAPROJECTS UNDER CONSTRUCTION BY METROPOLITAN AREA



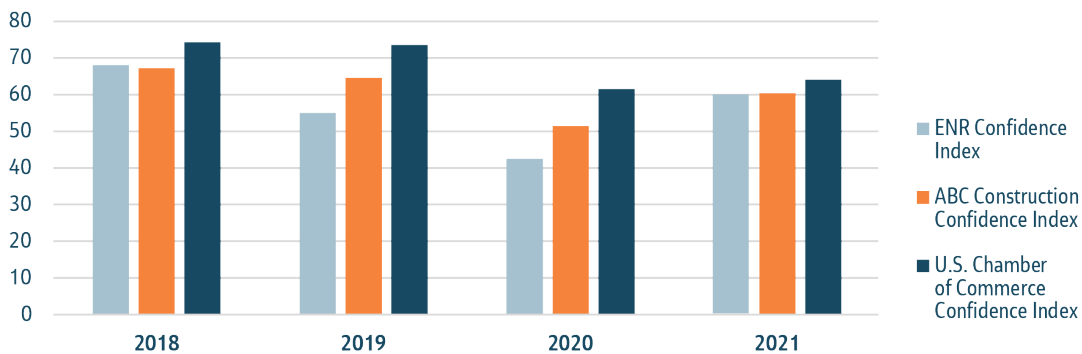
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Confidence Indices

To gauge confidence in the construction industry, three confidence indices were evaluated: the ABC Construction Confidence Index, the U.S. Chamber of Commerce Commercial Construction Index, and the ENR Construction Confidence Index. In general, these indices measure contractor sentiment about the current market and where it will be in the short term and long term. Index readings above 50 indicate growth optimism, and below indicate growth pessimism.

All three confidence indices are above the threshold of 50, indicating growth expectations over the next 6 months. The July 2021 scores for these indices are higher than what they were in 2020, but contractor sentiment is still below the pre-pandemic outlook.

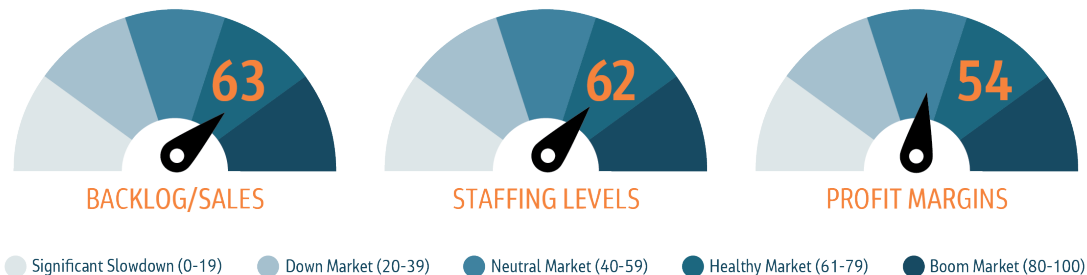
CONTRACTOR'S OUTLOOK IMPROVING



Indicators of ABC's Construction Confidence Index, which captures the construction industry's business climate through sales, profits, and staffing, are shown on the following figure. These key indicators have generally remained steady over the last couple of months but have increased since the worst of the pandemic recession started in 2020. However, contractor sentiment is still several points below the Construction Confidence Index for February 2020 for all three indicators.

Collectively, the industry's outlook appears to anticipate market recovery will continue into the fall and winter of 2021. "There are risks to the outlook, including inflation, rising interest rates and viral variants," said ABC National's Chief Economist Anirban Basu. "Available data indicate that while many segments continue to exhibit weak fundamentals, the worst is now past in terms of market deterioration" (ABC 2021).

CONSTRUCTION CONFIDENCE INDEX (JULY 2021)



Source: Associated Builders and Contractors

Bidding Climate

In 2021, the U.S. Chamber of Commerce Commercial Construction Index reported that approximately 35% of contractors were turning down bid opportunities. . This aligns with contractors' experience in the Los Angeles region, where they are seeing one or two more bidders on projects. Many contractors and subcontractors are favoring alternative delivery such as construction management/general contractor (CM/GC) and progressive design-build instead of more traditional design-bid-build and design-build.

An analysis of nearly 400 construction bids of more than \$1 million from 12 public agencies in Southern California over the past 6 years reveals that the typical number of bidders on projects ranges between five and six. The number of bidders over the past year has increased to six or seven. This is consistent with the market perceptions described in the previous paragraph. It should be noted that due to the relatively small number of projects out for bid in the past 12 months, it is difficult to determine whether this accurately reflects current market conditions. In comparison, the number of bidders on Metro procurements has not increased over the past year, as it has for other agencies in the region.

In the transportation megaproject arena, contractors are seeing minimal competition and are being selective about bidding on work with onerous terms. An executive at a top transportation contractor sees “very limited competition” on large projects and expects that it “will not change into the future.” At a recent earnings report, the executive stated, “We think all our margins will continue to trend up as we add more and more new work at higher margins.” Based on this, attracting competitive bids for complex transportation projects will require aggressive outreach by owners, who might want to consider splitting up large projects to increase the pool of bidders.

Risks and costs are increasing for megaprojects, as previously noted, and developing accurate bid estimates of the actual costs has been difficult for both contractors and owners. Contractors are sensitive to these risks because many have suffered major losses on megaprojects. Depending on the risk share between the contractor and owner, contractors are pricing the risk exposure into their bids.

“A number of [contractors] indicated that they are observing less competition for projects. Many firms appear to have reached their capacity limits, and therefore are not able to bid on significant numbers of projects.”

Anirban Basu, ABC's Chief Economist

Market Outlook

The Dodge Momentum Index is a bellwether report for the construction industry because it gauges the initial planning of nonresidential projects and usually precedes actual construction spending by 12 months. Since hitting its 9-year low in January 2021, the Dodge Momentum Index hit a 12-year high in May 2021. The sharp swing appears to be driven by longer-term optimism about the country's overall progress against COVID-19, even with the short-term challenges of the construction industry's emerging recovery. As of July 2021, the index has fallen by 5% since May, but continues to show positive signs for growth in the construction industry in the coming years.

This is consistent with anticipated construction spending and the three industry confidence indices previously described. Another data point, the FMI Construction Industry Round Table Report for the second quarter of 2021, shows strong optimism that recovery across most of the construction industry is underway or coming soon. Both FMI's Sentiment Index and Design Index rose to record highs based on the growth in the overall U.S. economy and nonresidential construction resulting from the potential federal infrastructure bill.

Another indicator of the health of the construction market is the backlog of contractors. Nearly two-thirds of ENR's Top 400 Contractors reported higher or similar size backlog since the start of 2020.

Of ENR's top 20 contractors in the transportation sector, half of them have done work for or are currently working with Metro. All ten of the contractors have a transportation backlog of over \$1 billion, with four exceeding \$2.5 billion. The size of the backlog of Metro contractors shows that it is a contractor's market in the transportation sector.

Material prices are generally anticipated to normalize by the end of the year as supply chains ramp up production to pre-pandemic levels. Owners and contractors could also see costs come down if Congress provides tariff relief and eases trade relations for improved access to materials.

The labor shortage continues to be the biggest hurdle for the construction industry. With the potential of a major federal infrastructure bill and the economy poised for further growth, finding workers to meet the demand will be difficult. The industry will need to prioritize recruiting, especially with women, who make up only 3% of the construction workforce.

From a local market perspective, construction will be a growth industry in the region. Local public works and transportation entities within the counties of Los Angeles, Orange, Riverside, and San Bernardino still have a robust pipeline of capital projects from local sales tax measures that will likely be complemented by funding from a potential federal infrastructure bill. Approximately \$90 billion in infrastructure projects is planned for construction within this decade. This is driven by several initiatives and programs such as SB-1, LA County's Measure W, LA World Airports' Airfield & Terminal Modernization Program, LA Department of Water and Power's renewable energy and recycled water program, Metrolink's SCORE program, and Virgin Train's XpressWest project.

CONTRACTOR BACKLOG

50% of the top 20 ENR transportation contractors worked for or are currently working with Metro

All 10 of these contractors have a backlog exceeding **\$1B**

4 of the 10 contractors have a backlog exceeding **\$2.5B**

04

METRO IN THE MARKETPLACE AND THE PATH FORWARD



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METRO IN THE MARKETPLACE AND THE PATH FORWARD

Response to COVID-19

The COVID-19 pandemic fundamentally disrupted nearly every element of daily life, and Metro was no exception. The following presents the responses taken to the challenges and opportunities during the COVID-19 pandemic related to construction market.

COVID-19 Call to Action to Control Costs

A call to action by Metro was put in place to maintain financial stability through the COVID-19 crisis. The following actions were undertaken by Metro for sound fiscal stewardship:

- Allowed major construction projects under executed contracts to continue as essential service
- Projects not in construction were deferred, or required to reduce spending until the financial outlook improved
- Voluntary reduction of 2% in profit fees by contractors
- Incentive package to staff for voluntary separation

Although not in construction, work on the four pillar projects continued but with limited expenditures. As a result, it is anticipated the deferral and limited work during the pandemic for the four pillar projects and other projects not in construction will impact the Measure M schedule.

Metro's request to contractors for a voluntary 2% reduction in profit fees was widely accepted by the vast majority of Metro contractors. This cost savings action allowed Metro to better manage cash flow early in the pandemic.

The incentive package offered to staff known as the Voluntary Separation Incentive Program (VSIP) resulted in the loss of many of Metro's most experienced staff in construction, technical capability, and contractor negotiations. As part of the agency's reorganization to reduce costs, at least 50% of the positions vacated due to the VSIP were permanently eliminated.

Street Closures Accelerate Construction

The emergency order calling on residents to stay at home and limit travel to essential tasks, caused traffic congestion to disappear. Metro recognized the potential to expedite infrastructure projects while the region experienced this dramatic drop in traffic. Metro coordinated with the local jurisdictions to use full street closures for the Regional Connector, Crenshaw/LAX, and Westside Purple Line Extension projects to maintain and in some cases accelerate schedules.

Mixed Results from Project Labor Agreement/Construction Career Policy and Female Participation

There are 11 active construction projects with Project Labor Agreement/Construction Career Policy (PLA/CCP) program requirements. The following are the highlights of the PLA/CCP worker utilization data as of March 2021:

- 9 of the 11 contractors met or exceeded the 40% Targeted Worker Goal
- 5 of the 11 contractors met or exceeded the 20% Apprentice Worker Goal
- 6 of the 11 contractors met or exceeded the 10% Disadvantaged Worker Goal

Program-wide for both active and closed projects, the PLA work hours of total construction hours is 58% for targeted workers, 22% for apprentice workers, and 11% for disadvantaged workers.

The average female participation on Metro construction projects is at 3.6% of total work hours, compared to less than 2% on other non-Metro public works construction projects in the region. Based on the December 2020 Metro Female Participation Scorecard, the majority of the contractors are receiving grades of C (3.1% to 4.5%) and F (0% to 1.5%).

Worker utilization data on active construction projects provided for December 2019 and December 2020 was analyzed to see the potential influence COVID-19 may have had on disadvantaged workers. Results show a decrease of 3.4% for targeted workers and a decrease of 2.0% in female participation from a year ago. Although further analysis is needed to fully understand the reasons for the decrease, likely the primary factor is impacts from COVID-19. Targeted workers are from economically disadvantaged communities, which had some of the highest number of COVID-19 cases and deaths in the county, who likely suffered from the virus and were unable to work. As previously mentioned, women were disproportionately affected, and many were burdened with full-time childcare while schools and daycare centers were closed. This likely caused some women in construction to drop out of the workforce. However, participation by apprentice workers and disadvantaged workers from the criminal justice systems increased by nearly double digits.

The Creation of the Recovery Task Force

In April 2020, Metro established a Recovery Task Force to respond to the COVID-19 pandemic. The task force's mandate was to recommend actions that would address immediate, frontline safety concerns for Metro workers and riders; help the agency recover from the seismic impact of lost revenue; chart a course for an equitable economic recovery for LA County; and pursue "mobility without congestion" as the new normal. One resulting recommendation was to evaluate Metro's major capital projects and best practices from across the industry to develop specific guidance for reducing future costs and gaining more cost certainty.

Response to Market Conditions

Building up the Labor Pool

Metro has continued to host quarterly meetings with job coordinators of the prime contractors to discuss best practices and identify outreach and recruitment opportunities. Metro is also helping female workers transition to other active or upcoming Metro projects as their current assignments near the end of construction.

Another step that Metro has undertaken includes issuing notices to prime contractors that do not meet the female participation goals at 25%, 50%, and 75% project completion milestones. Adapting to the times, Metro has shifted to virtual platforms to continue outreach to community-based organizations, pre-apprenticeship schools, and building trades to promote and increase recruitment in the construction industry.

WIN-LA

Metro's workforce development program, Workforce Initiative Now Los Angeles (WIN-LA), is helping address this challenge by increasing opportunities and creating career pathways in the transportation industry—including construction.

WIN-LA is delivered through established regional partnerships between Metro, the Los Angeles Regional Community College Consortium, the Transportation Workforce Institute, and community-based organizations. Beyond providing needed resources for the training and placement of hard-to-fill positions within the transportation industry, WIN-LA collaborates with program partners to support areas such as life skills development, skill set enhancement, and educational attainment services.

SEED School of Los Angeles County

In October 2020, Metro, in partnership with LA County and the SEED Foundation, broke ground on the SEED School of Los Angeles County. This free boarding school offers vocational and college preparatory curriculum tailored to train approximately 400 high school students annually in the transportation industry. It aims to attract students from across the county who have been homeless, in foster care, or involved in the criminal justice system (and through the WIN-LA program).

Early plans for the curriculum envision seven career tracks that include logistics, civics and public policy, and engineering and mechanics, along with classes that meet state curriculum requirements. After graduation, students could obtain work with Metro or other local contractors, or go to college to study engineering, architecture, or urban planning.



Implementing Alternative Delivery Methods

Managing the delivery of megaprojects is extremely difficult. In the past, most megaprojects were awarded through low-bid design-bid-build or design-build contracts. Depending on the type and complexities of the projects, these delivery methods can be appropriate, but have a greater risk of cost overruns due to low-bid selections that do not account for the risk uncertainties and complexities of megaprojects.

For these reasons, Metro has reassessed its project portfolio to confirm the most appropriate delivery strategies. Recently, several of its construction-ready projects were determined to be well-suited for alternative delivery methods not previously used by Metro. This includes progressive design-build for the Metro Orange Line Improvements, which is the first time Metro will be implementing this delivery method. It was also recently determined that the I-105 ExpressLanes project would be delivered via CM/GC.

Metro also made significant progress on the alternative delivery of two major projects: Sepulveda Transit Corridor and Link US. Metro awarded two predevelopment agreement contracts, the first in the transit industry in North America, for the Sepulveda Transit Corridor. Another milestone was reached this spring when Metro released the first RFP for CM/GC for the Link US project.

Alternative delivery methods were chosen for these specific projects based on risk and complexity and to buck past megaproject trends. The use of alternative delivery methods for these megaprojects is intended to increase market-readiness, improve execution, and better control costs.

Engaging in Robust Industry Outreach

Metro has actively engaged contractors early and often regarding upcoming projects through market soundings and one-on-one meetings with contractors during the pre-solicitation stage, and by hosting industry forums.

Adjusting to the social distancing and virtual settings, Metro has continued its robust contractor outreach for upcoming procurements. Metro participates in monthly meetings with AGC to help keep the industry up-to-date by sharing appropriate information such as project scope, timing, procurement and financial approach, and technical components. A couple of examples include:

- **Four Pillar Projects** – Held a virtual event for the industry to meet with the Metro project managers and hear the latest on the four pillar projects
- **Link US** – Held two virtual industry forums that had more than 1,100 attendees to provide insight into the CM/GC and support services procurements, and held one-on-one meetings with the potential CM/GC teams
- **I-105 ExpressLanes** – Held two virtual events to provide details on the various procurement opportunities related to the project

Advantages of early contractor outreach include obtaining high-level feedback from the private sector prior to project procurement regarding project design, the delivery mechanism, public funding commitments, and feasibility; and determining if there is sufficient interest to proceed with the procurement or the need to modify the procurement approach. For example, one of the ideas generated during the early contractor outreach was the use of shared incentives to encourage project acceleration and this concept was incorporated into the Link US contract. The following are other success stories based on industry feedback.

Responding to Industry Feedback: I-5 North County Capacity Enhancement

Although Metro funds and designs highway projects, California Department of Transportation (Caltrans) typically leads the construction phase of highway projects. Since the passage of SB-1, Caltrans has been more reluctant to administer Metro highway construction projects because of their own backlog of projects. For the I-5 North County Capacity Enhancements project, Metro decided to lead the construction of the project instead of Caltrans. Listening to industry feedback and lessons learned from a previous Measure R project, Metro staff determined it would be best to use Caltrans-like contract language instead of Metro's standard contract language. This change was applauded by the contracting community because the Caltrans contract language was widely used and accepted by the industry for highway projects. Based on the bid results, this is likely one of the reasons the bid average was below the estimate.

Responding to Risk: Rail to Rail Active Transportation Corridor

The initial delivery strategy for the Rail to Rail Active Transportation Corridor was to use a design-build approach. Design-build was initially the chosen delivery method to allow the contractor to advance the design from its conceptual level. However, the conceptual level design had too many unknowns and risks for contractors to bid on as a firm fixed price. Recognizing that the uncertainties of the project were being reflected in the bids, Metro changed the delivery method to design-bid-build. This allowed the design to be further defined and for risks such as stakeholder approvals and environmental site investigations to be managed. This gave Metro more cost certainty in the bids.

Future Construction Market Projections

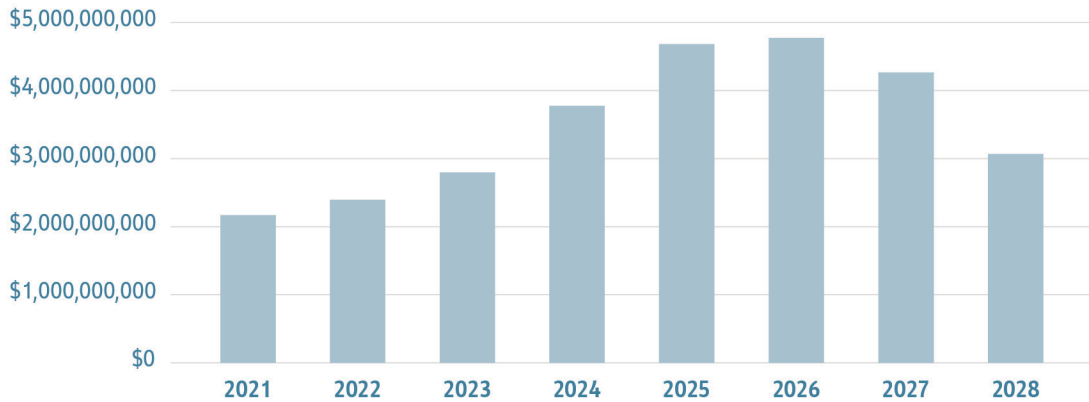
The following provides details on the anticipated levels of Metro construction expenditures and the labor needed in the region and for Metro projects.

Peak Construction Expenditures Pushed to 2026

To forecast Metro's annual construction expenditure for its projects, a model was developed to analyze available project data such as construction costs, anticipated construction start dates, and construction duration. The data was entered in an S-curve model to capture the cumulative progress of a project as construction activity typically begins slowly, ramps up in the middle, and then slows toward completion.



METRO CONSTRUCTION EXPENDITURE PER YEAR



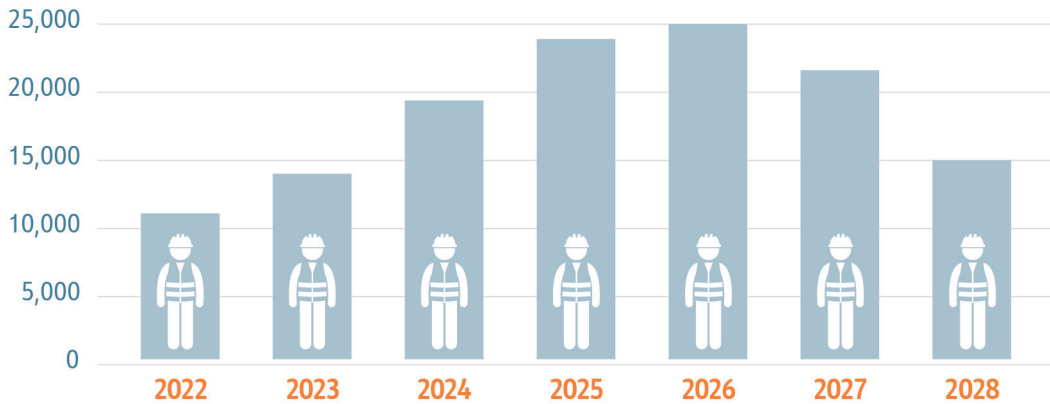
In the 2020 Construction Market Analysis, it was estimated that Metro construction expenditures would average approximately \$2.9 billion per year leading up to the 2028 Olympic Games, with peak spending occurring in 2025. However, this estimate has been updated to reflect the latest project information and schedule updates. It now reveals that Metro construction expenditures will likely average \$3.5 billion per year during this same period, with spending peaking a year later in 2026 at nearly \$5 billion. The following figure details Metro's forecasted capital expenditures by year. The change can be attributed to recent increases in the life-of-project budgets for several projects, and more parallelism in projects due to COVID-19-driven schedule delays.

Forecast Continues to Show Prolonged Construction Labor Shortage

As mentioned in the previous section, hiring construction workers continues to be a struggle for contractors in the current market and there is no sign that it will improve. This aligns with labor availability and needs projections based on data collected from the California Employment Development Department, the BLS, LAEDC, Dodge private development data, local agency capital expenditure plans, and Metro. Although speculative, this is based on a long-term economic analysis that provides a view into local construction employment conditions. It should be noted that it is standard for economists to forecast no more than 3 years in the future. This long-term forecast model serves a basis to further develop trends that will impact the implementation and completion of Metro's projects.

The results show that demand for construction jobs exceeds the available resources to fill these jobs. The construction industry is expected to sustain substantial growth and a need for construction labor in preparation for the 2028 Olympic Games along with significant investment in infrastructure and private development. After the Olympics, the construction industry will likely experience a slight decline as a localized market correction reflects the completion of Olympics-related construction activity.

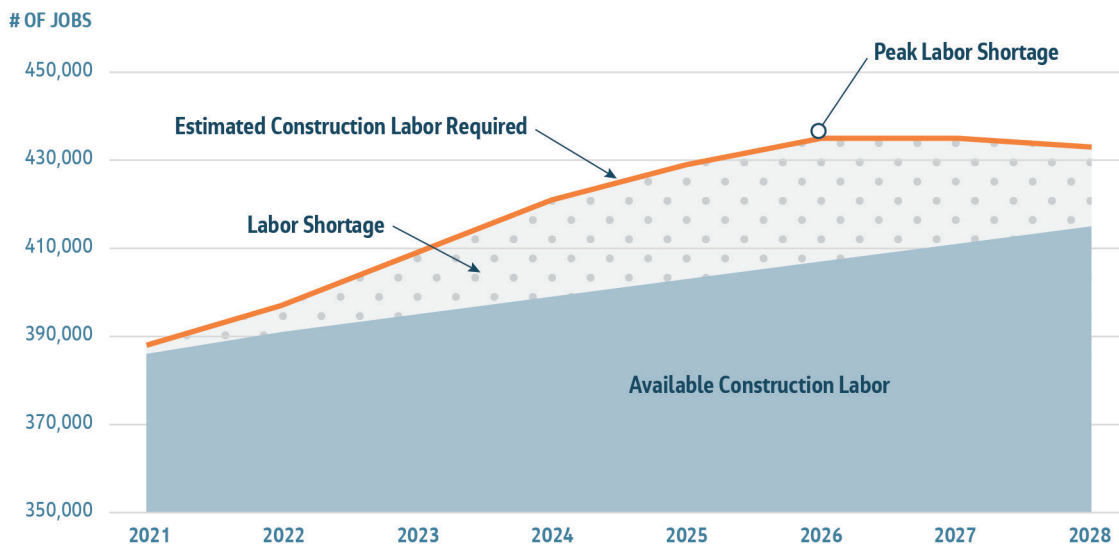
ESTIMATED METRO CONSTRUCTION LABOR REQUIRED



It is estimated that the current labor shortage is approximately 1,000 construction workers, and it will continue to grow over the next 3 years while construction activity accelerates in the region as the economy recovers and grows. A major labor shortage will be felt when construction activity will be at the highest between 2024 and 2028 leading up to the Olympics, resulting in a shortage of approximately 19,000 to 28,000 people to fill construction jobs that peaks in 2026.

One potential strategy for reducing the pressures from the labor shortage is incorporating more precast, preassembled methods in construction. This approach essentially takes the work to where the workforce is by fabricating project components at offsite locations. This could provide several benefits such as lessening the stresses of the labor shortage, shortening project schedules, and providing more competitive bids.

ESTIMATED CONSTRUCTION LABOR PROJECTIONS



\$3.9B Metro's **average construction** expenditure for the next 10 years

2026 **Peak labor shortage** in the LA market

2026 Metro's **peak construction** expenditure at nearly **\$5B**

In comparison, the estimated construction labor required to support Metro projects ranges from 12,000 to 25,000 workers between 2022 and 2028. The projected labor shortage across the region could significantly hamper Metro's ability to complete construction on time and within budget.

This projected construction labor shortage as well as the estimated duration of the shortage is variable and will be affected by market conditions, such as:

- Economic volatility
- Unforeseen events (such as national policy decisions and black swan events)
- Natural and environmental disasters
- Population growth

Therefore, these conditions must be routinely monitored to detect either positive or negative impacts on the projected labor shortage. Regular updates to the findings in this report are prudent.

What Does this Mean for Metro?

Metro has responded appropriately to the COVID-19 pandemic and resulting market conditions. Over the next several years, Metro can expect a construction boom and should position itself to be out in front of the market. The following recommendations provide ideas and suggestions for how Metro can do that with a focus on the three goals identified in this report: be the owner of choice, increase the labor pool, and control construction costs.

Be the Owner of Choice

For the foreseeable future leading to the 2028, LA will continue to be a hot spot for construction activity and spending. Contractors will continue to have options as to which owners, both public and private, they want to work with.

Contractors have indicated that owners with a partnering mentality will be the owners of choice. Contractors view these as owners who help resolve issues, appropriately share the risk of unforeseen conditions, are flexible about changes, and proactive with approvals. Metro's ability to embrace this kind of partnering will establish Metro's reputation as an owner of choice. Metro will have more bidders and see more competitive prices, and work with more cooperative contractors that complete projects on time.

Examples of owner-driven partnership include stipends and incentives, as well as the allocation of risks to the partner best able to control them. Partnership also extends to the procurement phase. Some examples of partnership in this phase include shortlists of no more than three and coordinating bid due dates to not conflict with other major regional bids.

- **Recommendation: Embrace partnering on all levels of engagement with contractors to build a reputation as an owner of choice.**

In addition, Metro will be competing with other local agencies for the same resources and likewise wants to build a reputation as being an owner of choice by contractors. With approximately \$90 billion of construction projects in the region scheduled for this decade, contractors will select owners with more contractor-friendly terms and conditions.

- **Recommendation: Review and revise standard contract terms and conditions to be more attractive to bidders.**

Not only do local agencies programs provide competition, but the sheer size of Metro's capital program also creates its own market. The biggest competition for resources will come from Metro among individual projects. For example, five of the eight prime contractors on Metro's megaprojects in construction are currently delivering two or more Metro contracts. One prime contractor will soon be delivering five construction contracts for Metro. As mentioned previously, half of ENR's top 20 contractors in the transportation sector have not worked with Metro. There is a window of opportunity to proactively engage with some of these top contractors and encourage them to pursue work with Metro. It is recommended that an independent third party conduct this in order to encourage candid feedback and assure contractors that their honest input will not jeopardize future work with Metro.

- **Recommendation: Conduct outreach to top-tier contractors who have not previously worked with Metro.**

Increase the Labor Pool

Metro has long recognized the need to build and train a diverse, inspired, and competent workforce to support the robust portfolio of projects resulting from Measure M. Over the past few years, Metro has made significant strides in developing a diverse labor pool and embarked on bold strategies to develop the next workforce generation.

Across the industry, Metro and the private sector offered incentives for early retirement as a strategy to reduce costs during the COVID-19 impacts. Many of the industry's top talent took the early retirement incentives, including many Metro employees. This has created a major talent gap that will only be harder to fill with the continued labor shortage.

- **Recommendation: Fill the talent gap that resulted from the VSIP and develop training programs.**

The potential infrastructure bill from Congress will likely include provisions for local hire incentives or policies for federally funded projects. This is one of many strategies that can increase the labor pool and bring in new talent to offset the ongoing workforce shortage in the construction industry. It will be crucial for Metro to be a key player in the local hiring program, and not rely solely on contractors to fulfill the requirements. Metro's WIN-LA is well-suited to play a pivotal role in being a conduit for contractors to hire trained, local talent.

- **Recommendation: Expand the scope and reach of the WIN-LA program to support contractors in hiring local talent.**

As noted, one of the region's top challenges is housing affordability. This has been a major barrier to attracting talent to the region. Metro will need to consider innovative ways to house the workforce needed to build future projects.

- **Recommendation: Allocate a small percentage of units in Metro joint development projects for craft labor working on Metro projects.**
- **Recommendation: Build temporary dormitory housing on laydown/staging sites for Metro projects.**

Control Construction Costs

Across the nation and the world there has been a noticeable increase in rail project costs. Rail projects by their very nature are complex undertakings, while satisfying numerous technical, regulatory, and societal requirements. As a result of these reasons and many others, the costs add up and result in more expensive projects.

In February 2020, Metro Program Management prepared a presentation titled "Why Do Rail Transit Projects Cost So Much?" This presentation attempted to address this question by identifying 21 cost drivers. These 21 cost drivers have been prioritized and are currently being examined for opportunities to apply industry best practices for control measures.

The current fluctuation in material costs is likely to be in the short term and costs are expected to normalize once the economy is on firmer footing. However, changes in the economy and world events could cause future swings. With Metro's construction expenditures kicking into high gear before the 2028 Olympic Games, preparation for the future should look to lessons learned by previous host cities. For example, China experienced a construction boom in the lead up to the 2008 Olympic Games in Beijing. This caused the cost of steel to rise dramatically around the world. Based on the anticipated construction expenditures in the region and rush to complete infrastructure projects before the 2028 Olympic Games, Metro should expect to see similar increases in material costs.

- **Recommendation: Develop specifications that can be flexible to allow for price swings in different materials.**
- **Recommendation: Develop a list of approved material substitutes that can be used in the event of fluctuations in the cost of traditional materials.**
- **Recommendation: Shorten review times between the submittal of bids and award to prevent future fluctuations in material costs between the time of bid submittal and notice to proceed.**

Metro typically sees three to four bidders based on previous bids analyzed. This is below the general average for local agencies of five to six bidders and the recent trend of six to seven bidders over the past year. As noted previously, the number of the bidders is a common indicator of how competitive bids will be on a project. Historically, one or two more bidders can create a 10% to 25% price difference among the bids. It is reasonable to expect that Metro will see more competitive bids just from an increase in the number of bidders. Conducting outreach to contractors not currently working at Metro could help attract more bidders on future construction procurements.

Summary of Recommendations

These recommendations are intended to help mitigate the rising costs of megaproject construction and increase the number of contractors and the depth of craft and management resources available to build Metro projects. They focus on positioning Metro as the owner of choice for potential bidders who continue to be risk-adverse and have a strong backlog.

The following table is a summary of the recommendations presented in this report based on the current market conditions and analysis.

Recommendations	Be the Owner of Choice	Increase the Labor Pool	Control Construction Costs
Embrace partnering on all levels of engagement with contractors to build a reputation as an owner of choice	✓		
Review and revise standard contract terms and conditions to be more attractive to bidders	✓		
Conduct outreach to top-tier contractors who have not previously worked with Metro	✓		✓
Fill the talent gap resulting from the VSIP and develop training programs		✓	
Expand the scope and reach of the WIN-LA program to support contractors in hiring local talent	✓	✓	
Allocate a small percentage of units in Metro joint development projects to craft labor working on Metro projects		✓	
Build temporary dormitory housing on laydown/staging sites for Metro projects		✓	
Develop specifications that can be flexible to allow for price swings in different materials			✓
Develop a list of approved material substitutes that can be used in the event of fluctuations in the cost of traditional materials			✓
Shorten bid review times to limit the chance of fluctuations in material prices between the bid submittal and notice to proceed	✓		✓

05

NOTES AND REFERENCES



NOTES AND REFERENCES

Acronyms and Abbreviations

ABC	Associated Builders and Contractors
AGC	Associated General Contractors of America
APTA	American Public Transportation Association
ARTBA	American Road and Transportation Builders Association
B	Billion
BLS	U.S. Bureau of Labor Statistics
CBO	Congressional Budget Office
CA	California
Caltrans	California Department of Transportation
CM/GC	Construction Management/General Contractor
Dodge	Dodge Data and Analytics
DOT	Department of Transportation
ENR	Engineering News-Record
FMI	Fails Management Institute
GDP	Gross Domestic Product
LA	Los Angeles
LAEDC	Los Angeles Economy Development Corporation
M	Million
Metro	Los Angeles County Metropolitan Transportation Authority
PLA/CCP	Project Labor Agreement/Construction Career Policy
PPI	Producer Price Index
Q	Quarter
RLB	Rider Levett Bucknall
UCLA	University of California, Los Angeles
VISP	Voluntary Separation Incentive Program

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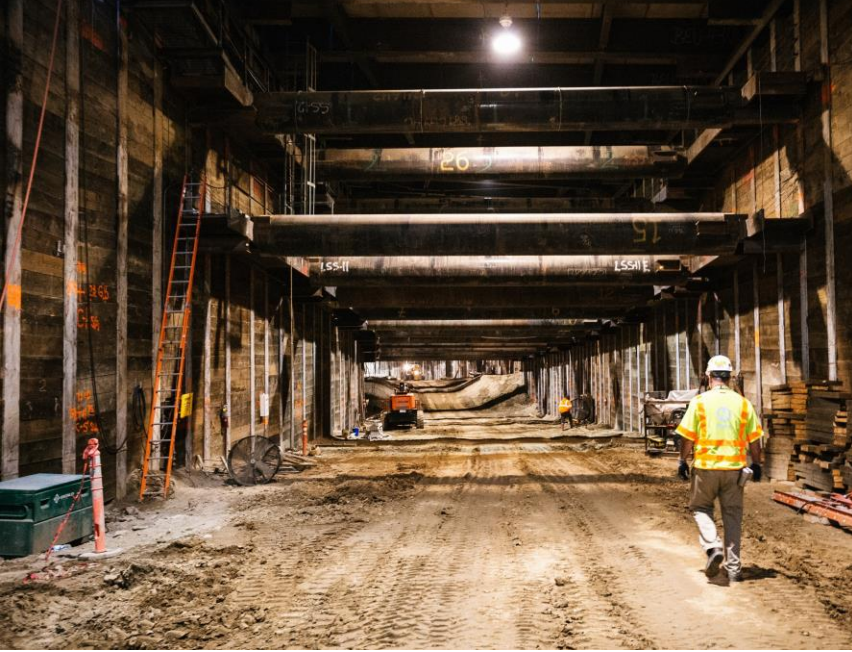
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Photography Sources

All photos by Metro.





LOS ANGELES
CONSTRUCTION
MARKET ANALYSIS



Metro™

2021

OVERVIEW OF THE 2021 UPDATE

- Economic conditions
- State of the construction industry
- Metro in the marketplace
 - Be the owner of choice
 - Increase the labor pool
 - Control construction costs
- Forecast of construction expenditures and labor needs
- Recommendations



ROAD TO RECOVERY: ECONOMIC CONDITIONS

- National economy projected to recover faster than after the Great Recession
- California to have a “euphoric” recovery
- Los Angeles has the second most cranes in North America
- Recovery tied to vaccination, increasing material supply, and improved logistics

KEY ECONOMIC INDICATORS

	2020	2021(f)	2022(f)
Los Angeles			
 GDP GROWTH	-3%	3%	4%
UNEMPLOYMENT	14%	9%	8%
INFLATION	2%	4%	2%



STATE OF THE CONSTRUCTION INDUSTRY

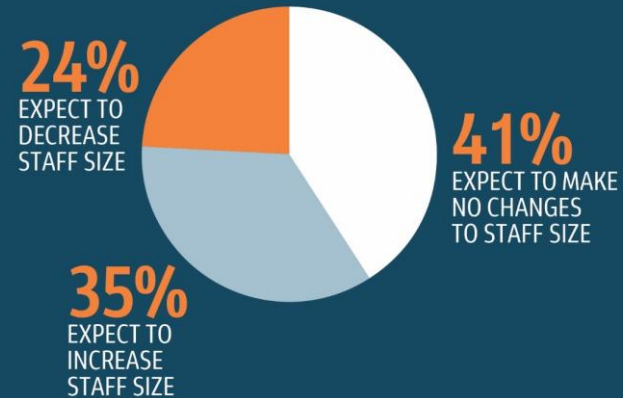
- Construction labor shortage persists
- Construction costs outpacing the market
- Fluctuating material costs
- Optimistic outlook for future activity and spending
- Contractors' market



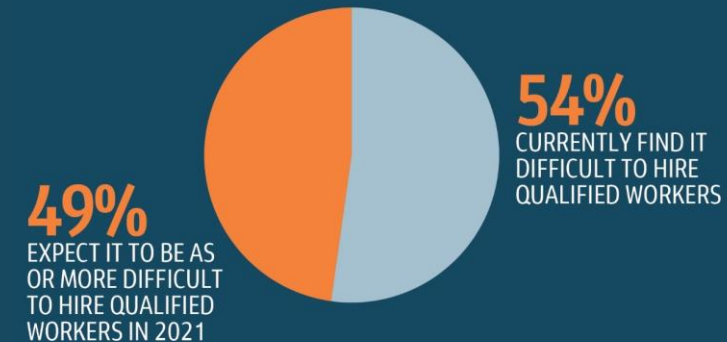
WHAT ARE CONTRACTORS SAYING?

- Contractors are concerned about hiring staff
- Consequences of the labor shortage include
 - Overworked staff
 - Schedule delays
 - Higher bids
 - Turning down work

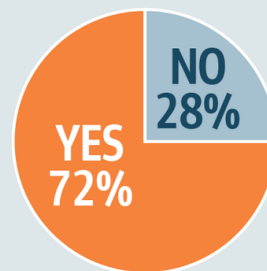
MOST CONTRACTORS EXPECT TO MAINTAIN STAFF LEVELS IN 2021



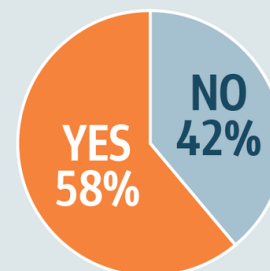
MOST CONTRACTORS CONCERNED ABOUT LABOR SHORTAGES



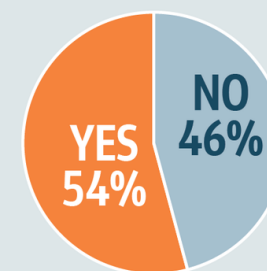
CONTRACTOR RESPONSE TO SKILLED LABOR SHORTAGE



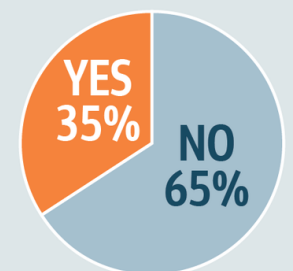
ASKING SKILLED WORKERS TO DO MORE WORK



CHALLENGES TO MEET SCHEDULES



SUBMITTING HIGHER BIDS



TURNING DOWN WORK

Source: US Chamber of Commerce



SOARING MATERIAL COSTS WILL NORMALIZE

LUMBER: AUGUST 2021

ANNUAL INFLATION RATE **45%**

STEEL: AUGUST 2021

ANNUAL INFLATION RATE **89%**

COPPER: AUGUST 2021

ANNUAL INFLATION RATE **41%**

CONTRACTORS' MOST CONCERNING PRODUCTS EXPERIENCING COST FLUCTUATION



56%
say lumber



48%
say steel



19%
say copper

94% of contractors say material **cost fluctuations** have a moderate to high impact on business

84% of contractors face **material shortages**

SOURCE: U.S. CHAMBER OF COMMERCE



Metro

METRO IN THE MARKETPLACE

- Be the owner of choice
 - Attract more bidders
 - Alternative delivery
- Increase the labor pool
 - WIN-LA
 - SEED School of LA County
- Control construction costs
 - Identified 21 cost drivers
 - Examining Metro capital projects and industry best practices to develop cost reduction strategies

CONTRACTOR BACKLOG

50% of the top 20 ENR transportation contractors have worked for or are currently working with Metro

All 10 of these contractors have a backlog of over **\$1 billion**

4 of 10 of these contractors have a backlog exceeding **\$2.5 billion**

METRO'S CONSTRUCTION PROCUREMENTS AND AWARDS IN THE NEXT 24 MONTHS



\$4.5 billion in total construction value



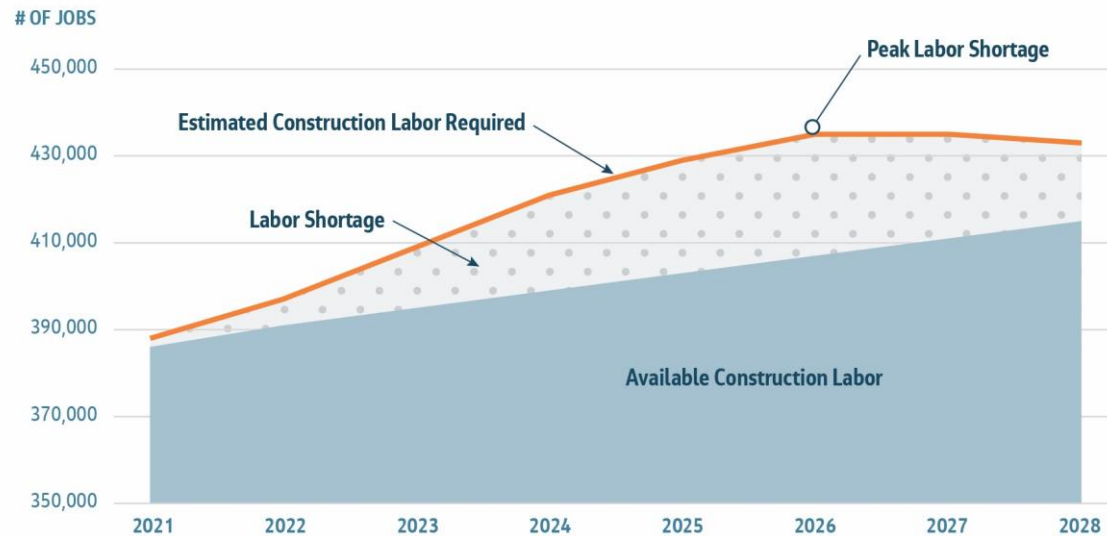
9 projects are above **\$100 million** in value



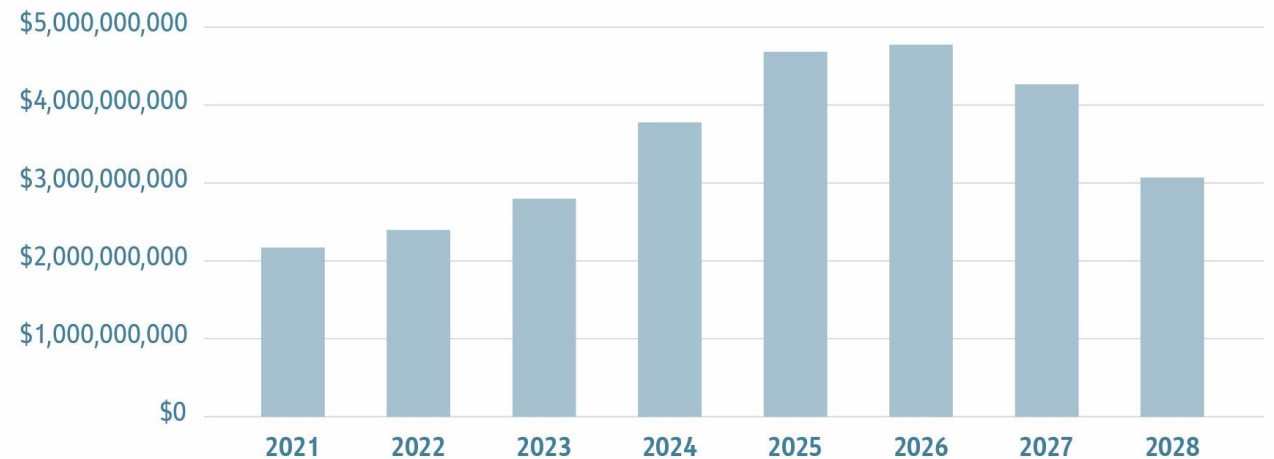
FORECAST OF EXPENDITURE AND LABOR NEEDS

- Metro's peak construction expenditure at nearly \$5 billion occurring in 2026
- Peak labor shortage in the region to occur in 2026

ESTIMATED CONSTRUCTION LABOR PROJECTIONS



METRO CONSTRUCTION EXPENDITURE PER YEAR



RECOMMENDATIONS

Recommendations	Be the Owner of Choice	Increase the Labor Pool	Control Construction Costs
Embrace partnering on all levels of engagement with contractors to build a reputation as an owner of choice	✓		
Review and revise standard contract terms and conditions to be more attractive to bidders	✓		
Conduct outreach to top-tier contractors who have not previously worked with Metro	✓		✓
Fill the talent gap resulting from the Voluntary Separation Incentive Program and develop training programs		✓	
Expand the scope and reach of the Workforce Initiative Now-Los Angeles program to support contractors in hiring local talent	✓	✓	

RECOMMENDATIONS

Recommendations	Be the Owner of Choice	Increase the Labor Pool	Control Construction Costs
Allocate a small percentage of units in Metro joint development projects for craft labor working on Metro projects		✓	
Build temporary dormitory housing on laydown/staging sites for Metro projects		✓	
Develop specifications that can be flexible to allow for price swings in different materials			✓
Develop a list of approved material substitutes that can be used in the event of fluctuations in the cost of materials			✓
Shorten bid review times to limit the chance of fluctuations in material prices between the time of bid submittal and notice to proceed	✓		✓



Board Report

File #: 2021-0551, **File Type:** Oral Report / Presentation

Agenda Number: 31.

**CONSTRUCTION COMMITTEE
SEPTEMBER 16, 2021**

SUBJECT: PROGRAM MANAGEMENT MAJOR PROJECT STATUS REPORT

ACTION: ORAL REPORT

RECOMMENDATION

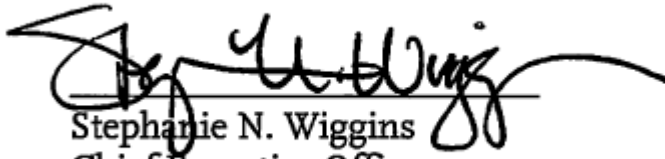
RECEIVE oral report on the Major Project Status by the Chief Program Management Officer.

DISCUSSION

Update report covering the month of September 2021 by the Chief Program Management Officer.

Prepared by:

- **Crenshaw/LAX** - Sameh Ghaly, Sr EO Project Mgmt., (213) 418-3369
- **Regional Connector** - Sameh Ghaly, Sr EO Project Mgmt., (213) 418-3369
- **Westside Purple Line Ext 1** - James Cohen, EO Project Mgmt., (213) 922-7911
- **Westside Purple Line Ext 2** - Michael McKenna, EO Project Mgmt., (213) 312-3132
- **Westside Purple Line Ext 3** - Kimberly Ong, EO Project Mgmt., (323) 903-4112
- **Willowbrook/Rosa Park Station** - Timothy Lindholm, Sr. EO Project Engr., (213) 922-7297
- **Airport Metro connector (AMC)** - Timothy Lindholm, Sr. EO Project Engr., (213) 922-7297
- **Division 20 Portal Widening Turnback** - Rick Meade, Sr EO Project Mgmt., (562)524-0517
- **I-210 Barrier Replacement** - Androush Danielians, Sr EO Project Engr., (213) 922-7598
- **I-5 North County Enhancements** - Timothy Lindholm, Sr. EO Project Engr., (213) 922-7297
- **I-5 North** - Abdollah Ansari, Sr EO Construction & Engr., (213) 922-4781
- **I-5 South** - Abdollah Ansari, Sr EO Construction & Engr., (213) 922-4781
- **Presentation** - Yohana Jonathan, Mgr, Project Control, (213) 418-3031



Stephanie N. Wiggins
Chief Executive Officer

Program Management Major Project Status Report

Presented By

Bryan Pennington

Chief Program Management Officer (Interim)

PROJECT BUDGET & SCHEDULE STATUS SUMMARY CHART

Project	Cost Performance		Schedule Performance		Comments
	Variance Approved LOP	Variance Revised Budget	Variance Original	Variance Revised Schedule	
Crenshaw/LAX					Project is 99.1% complete. Contractor is not applying sufficient work force to complete their remaining work. Remaining work is primarily underground station finishing, facility equipment and communications system testing. Metro continues to work with contractor to mitigate the delays and impacts to the project schedule; emphasizing safety and reliability in final acceptance of project elements and systems. Equity - 8 of 8 stations (100%) are within or adjacent to Equity Focus Communities.
Regional Connector					Project is 83% complete. Comprehensive planning for testing underway for 7th/Metro Center interfaces; Site work and restoration throughout alignment continues; and MEP and systems work continues in stations and guideway. Equity - 3 of 3 stations (100%) are within or adjacent to Equity Focus Communities.
Westside Purple Line Extension-Section 1					Project is 71% complete. TBM tunnel mining is complete. The implementation and planning of post-tunnel construction activities continue. The Project's forecast Revenue Service Date is Fall 2024. Equity - This Project is not located within or adjacent to Equity Focus Communities.
Westside Purple Line Extension-Section 2					Project is 45% complete and proceeding on schedule and within budget. Equity - This project is not located within or adjacent to Equity Focus Communities.
Westside Purple Line Extension-Section 3					Project is 26% complete and proceeding on schedule and within budget. Equity - 1 of 2 stations (50%) are within or adjacent to Equity Focus Communities.
Willowbrook/Rosa Parks Station					Entire Transit Station is substantially complete and open to the public starting August 9 th . Punch List work, mainly north crossing and security systems work, will continue for a few months as the project team works toward full Project Closeout. Equity - 100% of the project is within or adjacent to Equity Focus Communities.
Airport Metro Connector					Early Works Phase site work continuing with site demolition and grading work. Primary station contract process has issued notice of intent to award to the winning bidder with NTP expected in Fall 2021 and construction start expected at end of 2021. Equity - 100% of the project is within or adjacent to Equity Focus Communities.
Division 20 Portal Widening Turnback					Project is 24% complete. Construction continues with the excavation and grading for duct banks and vaults, Portal excavation, utility installation, the 1st Bridge and duct banks and manholes for the Traction Power Substation. Upon execution of CN6/MOD20 contingency will be drawn significantly, and schedule dates will be updated as time impacts are unknown at this time. Updated information may be available at next reporting cycle. Equity - 100% of the project is within or adjacent to Equity Focus Communities.
I-210 Barrier Replacement					Project 1 design package is approved by Caltrans. Funding source(s) for Project 1 construction is still to be determined. Metro presented its design approach for Project 2 to Caltrans on August 18. Acceptance of this design approach by Caltrans is critical for Metro to proceed with Project 2. A presentation of the barrier results to Caltrans will occur in September. Equity - 8.53% of the corridor is within or adjacent to Equity Focus Communities
1-5 North County Enhancements					Construction NTP is expected Summer 2021. Equity - This project is not located within or adjacent to Equity Focus Communities
I-5 North: SR 118 to SR 134					Segment 1, 2 and 4 are completed. Segment 3 (Empire Ave & Burbank) is 92% complete. Equity - I-5 North: 4 of 4 segments of the corridor project are within or adjacent to Metro's Equity Focus Communities. Only 1 segment of the project remains to be completed. Caltrans is the lead on the project.
I-5 South: Orange County Line to I-605					Segments 1, 3, 4, and the Carmenita Interchange are completed. Segment 2 (Valley View) is 82% complete. Segment 5 (Florence) is 94% complete and started the one-year plant establishment period in April 2021. Equity - I-5 South: 4 of 6 segments of the corridor project are within or adjacent to Metro's Equity Focus Communities. Only 2 segments of projects remain to be completed. Caltrans is the lead on the project.

CRENSHAW/LAX TRANSIT PROJECT

BUDGET	Approved	Previous	Current
TIFIA	LOP*	Period**	Forecast**
\$2,148M	\$2,058M	\$2,148M	\$2,148M
Variance from Approved LOP:		\$90M (4%)	\$90M (4%) ok
Variance from Revised Budget:			\$0 ok

*At time of the award of contract - Board Approval June 2013
 **Excludes finance costs and includes \$10M Non-TIFIA activities

SCHEDULE	Approved	(REVENUE OPERATION)	Current
Original	Rebaseline	Previous	Forecast*
Oct.2019	May 2020	Winter 2021	Winter 2021
Variance from Original:		+766d (26%)	+802d (26%) !
Variance from Revised Schedule:		+581d (23%)	+596d (24%) !

*Current Forecast is Contractor's April Schedule update

- Overall Project Progress is 99.1% complete.
- Contractor is not applying sufficient specialty work force to complete remaining work, testing/test reports on time.
- Remaining work is primarily underground station finishing, equipment, communications and systems testing.
- Metro continues to work with contractor to minimize delays and impacts to the project; emphasizing safety and reliability in final acceptance of project elements and systems.
- Equity - 8 of 8 stations (100%) are within or adjacent to Equity Focus Communities.



Leimert Park Station – Mosaic tile artwork installation



UG-3 – Staff performing system integration testing

September 2021



On target



Possible problem (5-10% variance)



Significant Impact (over 10% variance)





Metro 3

Construction Committee

Los Angeles County Metropolitan Transportation Authority

REGIONAL CONNECTOR TRANSIT PROJECT


BUDGET

<u>FFGA</u>	<u>Approved LOP*</u>	<u>Previous Period**</u>	<u>Current Forecast**</u>
\$1,402M	\$1,420M	\$1,755M	\$1,755M
Variance from Approved LOP:		\$335M (24%)	\$335M (24%) 
Variance from Revised Budget:		\$0	

*At time of the award of contract – Board Approval April 2014

**Excludes finance costs

SCHEDULE

<u>Original</u>	<u>Approved** Re-baseline</u>	<u>Previous Period</u>	<u>Current Forecast*</u>
May 2021	Fall 2022	Fall 2022	Fall 2022
Variance from Original:		+480d (19%)	+480d (19%) 
Variance from Revised Schedule:		0d	

*Current Forecast is Contractor's March Schedule update

**Approval in process

(REVENUE OPERATION)

- Overall Project Progress is 83% complete.
- Little Tokyo/Arts District Station & Surrounding Area:** Cut & Cover guideway concrete, MSE wall modifications, station MEP and finishes continue.
- Historic Broadway Station:** Overbuild Load Transfer System (LTS) structural concrete continues; vent structures along Spring and Broadway continue; station finishes and MEP advancing per plan. Backfill operations continue.
- Grand Av Arts/Bunker Hill Station:** Schedule-critical elevator installations continue; backfill and restoration of joint communication trench construction is ongoing; systems and MEP busy on all levels, Ped Bridge advancing on-schedule.
- Flower Street:** Final utility work continues; cut-over plans and actions with 7th/Metro Station established; interface with Operations and Communication to mitigate impacts to ongoing rail service continues.
- Trackwork:** Remedial work underway on various installations to prepare for acceptance inspections. Preparations for special trackwork on Alameda underway.
- Systems:** Installation of signals and communications, as well as equipment and cabling for permanent power continuing; momentum gaining traction throughout alignment.
- Equity:** 3 of 3 stations (100%) are within or adjacent to Equity Focus Communities.





Asphalt pavement complete along Hope Street




1st Street Leg Plug Rail Installation

September 2021

 On target

 Possible problem (5-10% variance)

 Significant Impact (over 10% variance)



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Los Angeles County Metropolitan Transportation Authority



WESTSIDE PURPLE LINE EXTENSION – SECTION 1

BUDGET



FFGA	Approved LOP* **	Previous Period**	Current Forecast**
\$2,822M	\$2,774M	\$3,129M	\$3,129M
Variance from Approved LOP:		\$355M (13%)	\$355M (13%) 
Variance from Revised Budget:		\$0	

*At time of the award of contract – Board Approval July 2014

**Excludes finance costs

SCHEDULE

(REVENUE OPERATION)

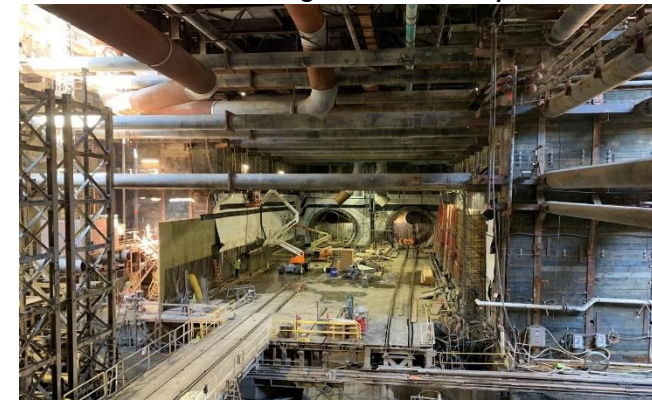
Original	Approved Rebaseline	Previous Period	Current Forecast*
Nov.2023	Fall 2024	Fall 2024	Fall 2024
Variance from Original:		+365d (11%)	+365d (11%) 
Variance from Revised Schedule:		0d	

*Current Forecast is Contractor's April Schedule update

- Overall Project progress is 71% complete.
- Wilshire/La Brea Station:** Permanent utility installation/backfill (above the roof) activities, west hammerhead structure, MEP work and appendage construction are ongoing.
- Wilshire/Fairfax Station:** Structural concrete activities continue. Nine out of 16 concrete roof blocks have been placed to date. West hammerhead structure work moves forward. Entrance plaza and appendage work are ongoing.
- Wilshire/La Cienega Station:** TBM gantry removal is ongoing. East hammerhead, platform level interior walls and appendage construction are progressing.
- Reach 1 Tunnel:** All cross-passage structures are complete. Tunnel invert and walkway concrete activities continue. Track installation is scheduled for October 2021.
- Reach 2 Tunnel:** Cross passage excavation is underway.
- Budget/Schedule:** The Project's current target RSD is Fall 2024.
- Equity:** This Project is not located within or adjacent to Equity Focus Communities.



Reach 2 Cross-Passage Excavation Preparation



Track Level View of Wilshire/La Brea Station

WESTSIDE PURPLE LINE EXTENSION – SECTION 2

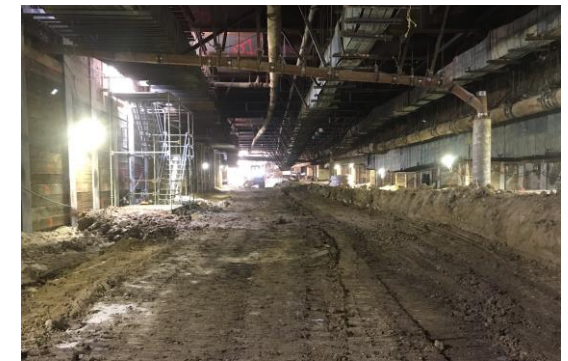
BUDGET	Approved	Previous	Current
<u>FFGA</u>	<u>LOP*</u>	<u>Period**</u>	<u>Forecast**</u>
\$2,499M	\$2,441M	\$2,441M	\$2,441M
Variance from Approved LOP:		\$0M (0%)	\$0M (0%) OK
Variance from Revised Budget:			\$0 OK

*At time of the award of contract – Board Approval January 2017
 **Excludes finance costs

SCHEDULE		(REVENUE OPERATION)	
<u>Original</u>	<u>Approved Rebaseline</u>	<u>Previous Period</u>	<u>Current Forecast*</u>
Aug. 2025	N/A	Summer 2025	Summer 2025
Variance from Original:		+0d (0%)	+0d (0%) OK
Variance from Revised Schedule:			0d OK

*Current Forecast is Contractor's April Schedule update

- Overall Project progress is 45% complete as of period ending July 2021.
- **Century City Constellation Station**
 - Excavation of the station box is 28% complete as of August 9, 2021.
- **Wilshire/Rodeo Station**
 - Placement of concrete for invert slab is 64% complete, the remaining will be completed after the TBMs are walked through the station box.
 - Installation of waterproofing membrane, rebar, and framework for first level walls is ongoing.
- **Tunneling**
 - The conversion of the muck conveyance systems for both tunnels was completed on July 27, 2021.
 - Both tunnel boring machines (TBMs) “Ruth” and “Harriet” are operating within the City of Beverly Hills. Progress as of August 9, 2021, is as follows:
 - Ruth (eastbound subway tunnel) – 2,294ft (20%)
 - Harriet (westbound subway tunnel) – 2,416ft (21%)
- **Equity** - This project is not located within or adjacent to Equity Focus Communities



Constellation Station Box Excavation



Tunnel Muck Removal in Century City

September 2021

OK On target
 ◆ Possible problem (5-10% variance)
 ▲ Significant Impact (over 10% variance)

Construction Committee

Los Angeles County Metropolitan Transportation Authority



WESTSIDE PURPLE LINE EXTENSION – SECTION 3

BUDGET

<u>FFGA</u>	<u>Approved LOP*</u>	<u>Previous Period**</u>	<u>Current Forecast**</u>
\$3,599M	\$3,224M	\$3,224M	\$3,224M
<i>Variance from Approved LOP:</i>		\$0M (0%)	\$0M (0%) OK
<i>Variance from Revised Budget:</i>			\$0 OK

*At time of the award of contract – Board Approval February 2019

**Excludes finance costs

SCHEDULE

(REVENUE OPERATION)

<u>Original</u>	<u>Approved Rebaseline</u>	<u>Previous Period</u>	<u>Current Forecast*</u>
Mar. 2027	N/A	Spring 2027	Spring 2027
<i>Variance from Original:</i>		+0d (0%)	+0d (0%) OK
<i>Variance from Revised Schedule:</i>			0d OK

*Current Forecast is Contractor's March Schedule update

**Approval in process

- Overall Project Progress is 26% complete.
- Final design progress is 87% complete.
- Tunneling
 - TBM Iris (BR) – Full gantry system is undergoing testing and commission for relaunch in August 2021.
 - TBM Aura (BL) – Starter tunnel completed; starter gantry removed and full gantry assembly underway.
- Stations
 - Westwood/VA: Utility relocation continues, Station contract Support of Excavation piling completed.
 - Westwood/UCLA: Utility relocations continues; sound wall at UCLA Lot 36 completed for upcoming piling work.
- Equity - 1 of 2 stations (50%) are within or adjacent to Equity Focus Communities.



Conveyor Belt Tests at Tail Track Exit Shaft



Gates Installed in Sound Wall at Construction Staging Area (UCLA Lot 36)

September 2021

OK On target

◆ Possible problem (5-10% variance)

▲ Significant Impact (over 10% variance)



Construction Committee

Los Angeles County Metropolitan Transportation Authority

WILLOWBROOK/ROSA PARKS STATION

BUDGET	Approved LOP*	Previous Period	Current Forecast
TOTAL COST	\$109.3M	\$128.4M	\$128.4M

SCHEDULE	Approved Rebaseline	(Substantial Completion) Previous Period	Current Forecast*
Original	Rebaseline	Period	Forecast*
March 2021	June 2021	June 2021	June 2021

Variance from Approved LOP: \$18.5M (16.5%) 
 Variance from Revised Budget: \$0 

Variance from Original: +90d (8%) 
 Variance from Revised Schedule: 0d 

*At time of the award of contract – Board Approval (May 2018)

*Current Forecast is Contractor's May Schedule update

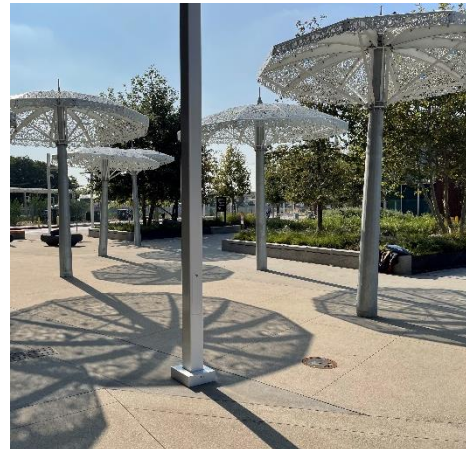
- Package A and C: Remaining punch lists items have been consolidated and are being closed out. Full close-out of punch list expected by end of August. North Pedestrian Crossing and signal case installation in final stages. All of this work has been performed with minimal interruptions to public service.
- Package B: This final phase is substantially complete and open to the public as of August 9th. Focus now on completing punch list work.
- Equity - 100% of the project is within or adjacent to Equity Focus Communities.



West Entrance



North Entry Monument





Art Work completed




New Bus Bays

September 2021

 On target

 Possible problem
(5-10% variance)

 Significant Impact
(over 10% variance)

AIRPORT METRO CONNECTOR (AMC) PROJECT

BUDGET	Approved LOP*	Previous Period	Current Forecast
TOTAL COST	\$898.6M	\$898.6M	\$898.6M
Variance from Approved LOP:		\$0M (0%)	\$0M (0%) OK
Variance from Revised Budget:			\$0 OK

*Approved May 2021 Board

SCHEDULE	Approved Rebaseline	(Revenue Operation) Previous Period	Current Forecast*
Original June 2024	N/A	June 2024	June 2024
Variance from Original:		+0d (0%)	+0d (0%) OK
Variance from Revised Schedule:			0d OK

*Current Forecast is Metro's May Schedule update

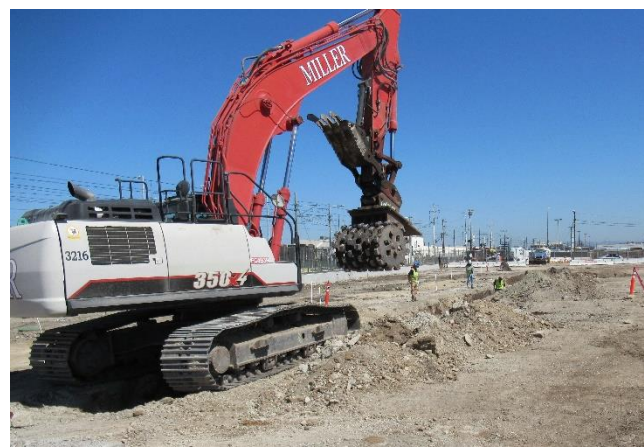
- Early Works Phase construction continues with demolition and site grading work.
- Primary Station Construction Contract process has issued Notice of Intent to Award to winning bidder with full NTP scheduled for Fall 2021.
- APM Guideway structural completed with APM Station heavy structural installation in progress and scheduled for completion fall of 2021 – clearing the area for AMC Station work to begin.
- Equity - 100% of the project is located within or adjacent to Equity Focus Communities.



Grading Work continues





Duct Bank Work





On Site Utility Work

DIVISION 20 PORTAL WIDENING TURNBACK

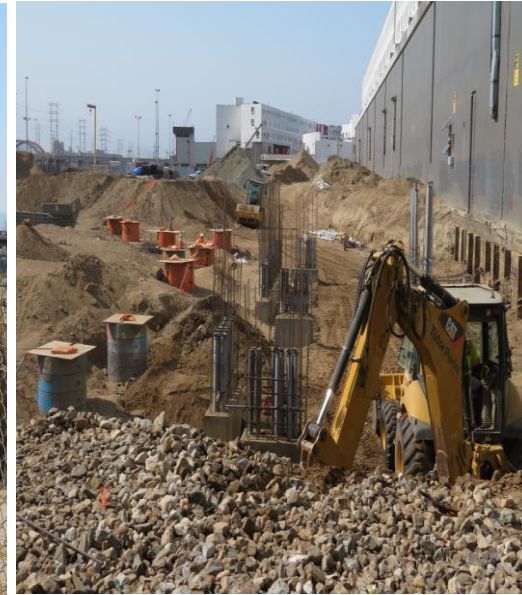
BUDGET	Approved LOP*	Previous Period	Current Forecast
TOTAL COST	\$801.7M	\$801.7M	\$801.7M
Variance from Approved LOP:		\$0M (0%)	\$TBD 
Variance from Revised Budget:			\$TBD 

*At time of the award of contract – Board Approval (February 2020)

SCHEDULE	Approved Rebaseline	(Substantial Completion) Previous Period	Current Forecast*
Original June 2024	N/A	June 2024	TBD
Variance from Original:		+0d (0%)	TBD 
Variance from Revised Schedule:			TBD 

*Current Forecast is Contractor's Schedule update

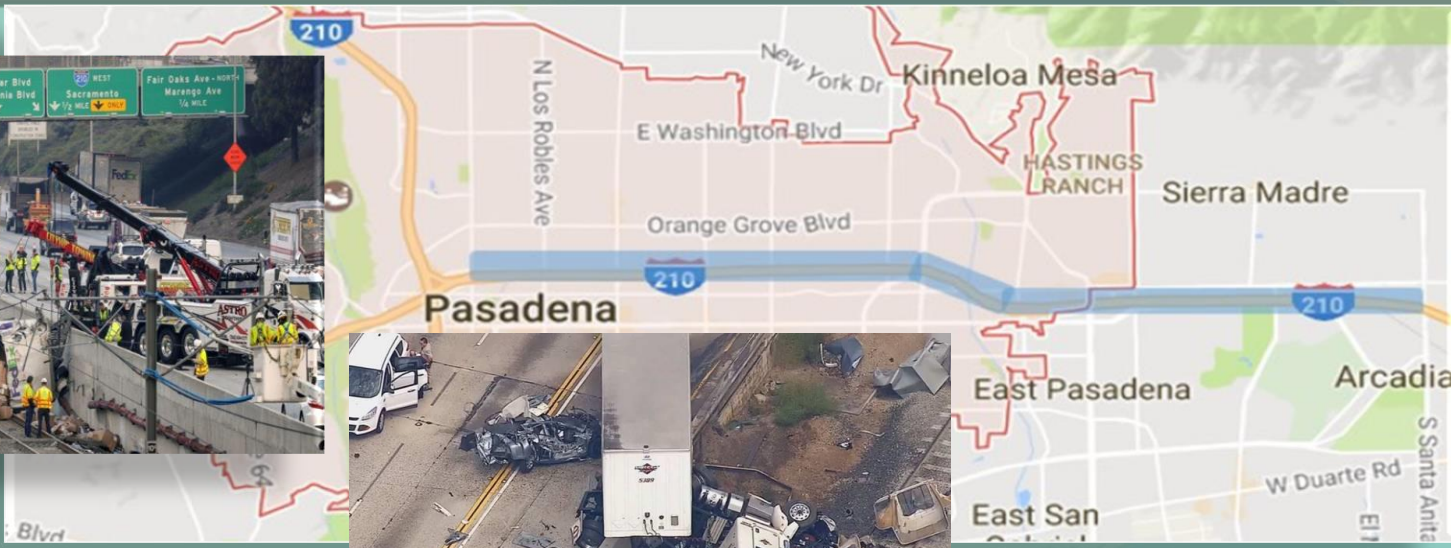
- Overall Project progress is 24% complete.**
 Includes Real Estate Acquisitions, Environmental, Design, Contract Mobilization, Early Demolition, Power, Utility contracts and contract change orders
- C1136 Portal Widening Turnback Contract**
 PWT C1136 Contract progress is 30%.
 Phase 1 Track, utilities, and civil work continues
 1st Street Bridge Rehabilitation and Portal excavation
- Major Change Orders to Date:**
 Hazardous Material Removal
 1st Street Bridge Rehabilitation
 Completion of Utility Contracts
 3rd Party Unforeseen Interfaces
 Design Revisions (*in progress*)
- C1184 Traction Power Substation Contract** at 57%
- Coordination with Adjacent Projects**
 Purple Line Extension (PLE1)
 Regional Connector
 Metro Center Project
 6th Street Bridge (City of L.A. Project)
- Continued Regular risk assessments to determine budget/schedule**
- Equity - 100% of the project is located within or adjacent to Equity Focus Communities





Gold Line/I-210 Safety Enhancement Project

Project Overview & Update

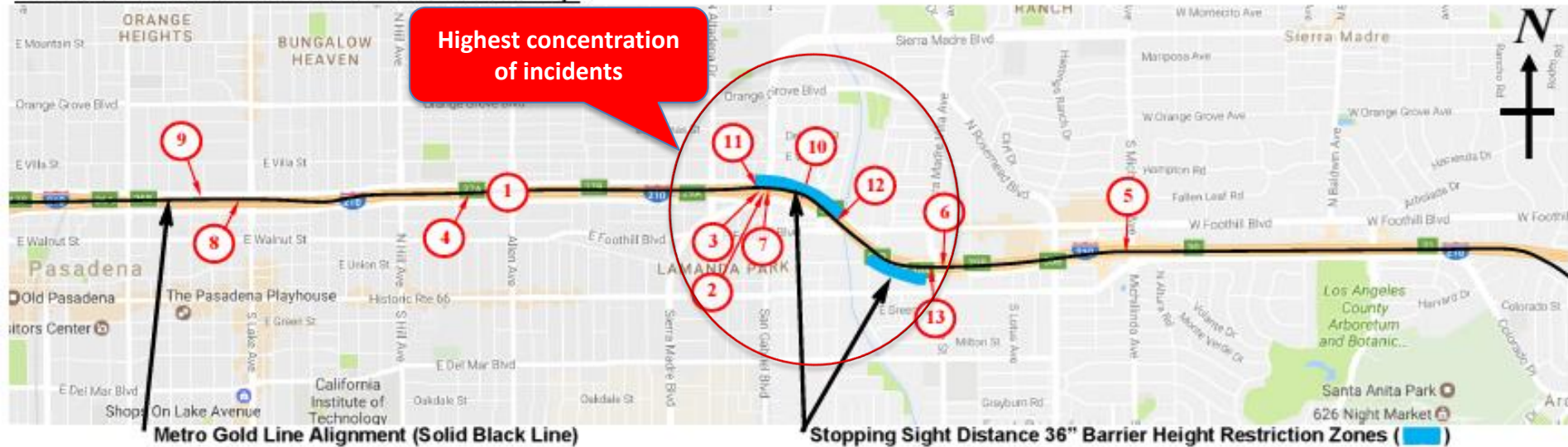


Metro

Gold Line/I-210 Safety Enhancement Project

Incident History

Metro Gold Line: I-210 Median Vehicle Breach Incident Map:



Total Accidents	13
Tractor/Trailer	11
Dark- AM	7
Dark-PM	0
Daytime	6
Eastbound	5
Westbound	7

Metro Gold Line: I-210 Median Barrier Crash Confirmed Incident Summary

This summary includes all confirmed cases where vehicles have breached the barrier and entered into Metro's Operating ROW.

	Date:	Time:	Direction:	Location:	Vehicle Type:	Aggravations:		Δ Time: (months)
						Sun:	Rain:	
①	10/13/2007	1:20 A.M.	Unrecorded	Allen Station	Tractor Trailer			N/A
②	10/7/2010	8:00 A.M.	East Bound	Betw. Allen and Sierra Madre Villa Stations	Tractor Trailer & Pickup			36
③	11/21/2013	2:57 A.M.	East Bound	Betw. Allen and Sierra Madre Villa Stations	Tractor Trailer			37
④	4/24/2014 ¹	1:00 P.M.	East Bound	Near Corson St. on ramp	Tractor Trailer			5
⑤	8/11/2014	2:30 P.M.	West Bound	West of Michillinda Ave.	Tractor Trailer			4
⑥	3/6/2016	3:00 A.M.	West Bound	Near Sierra Madre Villa Station	Tractor Trailer	X		19
⑦	12/22/2016	4:52 A.M.	East Bound	I-210 near San Gabriel Blvd.	Tractor Trailer		X	9
⑧	1/17/2018	11:45 A.M.	East Bound	200 feet west of N. Lake Avenue	Midsize Sedan			13
⑨	4/26/2018	1:30 A.M.	West Bound	800 feet west of N. Lake Avenue	Tractor Trailer			3
⑩	10/13/2018	7:00 A.M.	West Bound	800 feet east of San Gabriel Blvd.	Tractor Trailer		X	6
⑪	11/22/2018	1:55 A.M.	West Bound	200 feet west of San Gabriel Blvd.	Tractor Trailer			1
⑫	8/15/2019	6:15 P.M.	West Bound	350 feet east of N. Sunnyslope Ave.	Honda Midsize SUV	X		9
⑬	7/26/2021	4:25 A.M.	West Bound	200 feet west of Sierra Madre Blvd.	Tractor Trailer		X	23

Δ Time = This is the time elapsed from the previous incident in months

Average Frequency of Last 10 known incidents = **9 months**

1) April 24, 2014 was the first time Metro began recording incursion incidents into the Metro (L) Line I-210 Corridor Operating R.O.W.



Metro

Gold Line I-210 Barrier Replacement Standardization at the S-Curve/Current Design Proposal

Freeway design corrections necessary to standardize the S-Curve area:

- Widening the freeway toward the outside (min. 20 feet)
- Reconstruction of local interchanges
- Widening/reconstruction/seismic retrofit of bridges
- Reconstruction of retaining walls and sound walls
- Realignment of local streets

Impacts:

- A full-scale environmental process
- Acquisition of substantial right-of-way
- Major closures and traffic congestion during construction
- Estimated project cost: >\$1B

Current constraints on major investment on freeways:

- No support for ROW acquisitions
- No funding available

Design Being Proposed:

- Avoids major freeway widening
- Maintains or slightly improves the current non-standard features
- At the S-Curve, maintain the current breaking taillight line of sight
- Avoids extended HOV Lane closure during construction by providing a special design for the barrier on retaining walls
- Freeway lane closures and single tracking during construction will be limited to night and some weekends to avoid major traffic congestion

Gold Line/I-210 Safety Enhancement Project

Safety Barrier Project



Project 2:

- Final design by Fall 2022
- Estimated construction cost \$325M

If fully funded by 2024:

- Construction start 2026
- Construction completion 2028

Project 1:

- Final design completed (3/2021)
- Estimated construction cost \$100M

If fully funded by April 2023:

- Construction start 2024
- Construction completion 2025



Metro

Gold Line/I-210 Safety Enhancement Project

Early Corrective/Preventive Measures

- Provide advisory information to truck operators
- Assign more CHP officers for speed enforcement
- Replace regulatory signs to limit trucks to right lane only
- Install additional regulatory traffic signs for lower speed limits
- Install Active Traffic Management System (TMS) Signage



I-5 Construction Projects (Administered by Metro)



September 2021



Construction Committee

Los Angeles County Metropolitan Transportation Authority

I-5 NORTH COUNTY ENHANCEMENTS

BUDGET	Approved LOP*	Previous Period	Current Forecast
TOTAL COST	\$679.3M	\$679.3M	\$679.3M
Variance from Approved LOP:		\$0M (0%)	\$0M (0%) 
Variance from Revised Budget:			\$0 

*At time of the award of contract – Board Approval (March 2021)

SCHEDULE	Approved Rebaseline	(Substantial Completion) Previous Period	Current Forecast*
Original			
Spring 2026	N/A	Spring 2026	Spring 2026
Variance from Original:		+0d (0%)	0d (0%) 
Variance from Revised Schedule:			N/A 

*Current Forecast is Metro's Internal Schedule update

- Notice to Proceed is expected to be issued in summer
- Construction Community Meeting and Groundbreaking anticipated in the fall
- Life of Project budget established in March
- Equity - This project is not located within or adjacent to Equity Focus Communities



I-5 Construction Projects (By Caltrans)



September 2021

Construction Committee

Los Angeles County Metropolitan Transportation Authority



Metro 18

I-5 NORTH: SR 118 TO SR 134

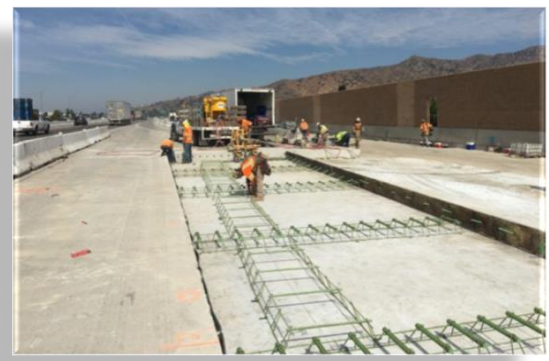
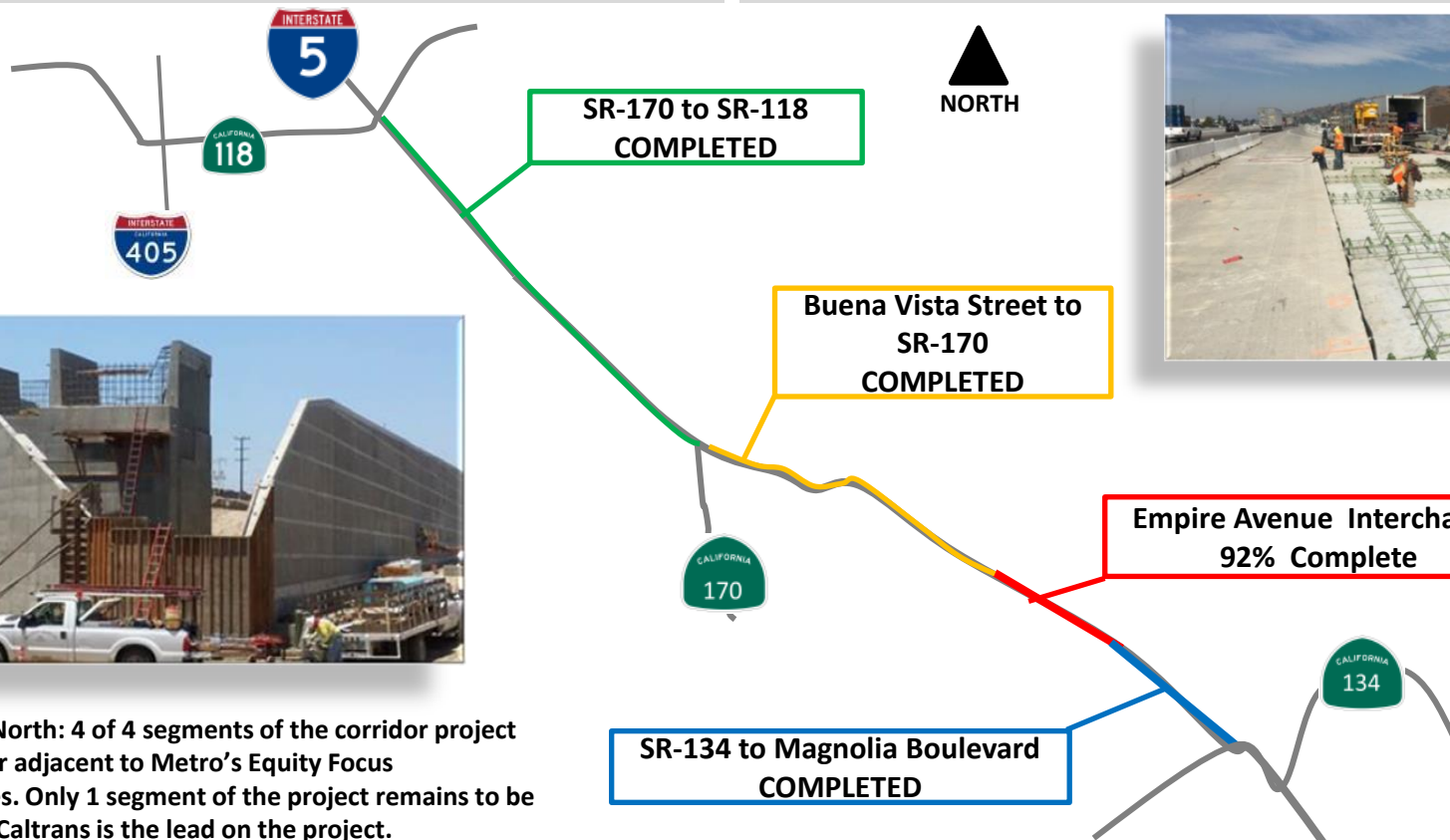


BUDGET	Approved LOP*	Previous Period	Current Forecast
TOTAL COST	\$845.1M	\$954.1M*	\$935.3M*
Variance from Approved LOP:		\$109M (13%)	\$90.2M (11%)
Variance from Revised Budget:		\$ 73.2M (8%)	\$ 54.4M (6%)

*At time of the award of contract – Board Approval (December 2012)

SCHEDULE	(Anticipated Project Completion)		
Original	Approved Rebaseline	Previous Period	Current Forecast*
Fall 2017	Summer 2022	Spring 2023	Spring 2023
Variance from Original:		+2034d (77%)	+2034d (77%)
Variance from Revised Schedule:		+266d (6%)	+266d (6%)

* Current Forecast is Contractor's April Schedule update



- Equity - I-5 North: 4 of 4 segments of the corridor project are within or adjacent to Metro's Equity Focus Communities. Only 1 segment of the project remains to be completed. Caltrans is the lead on the project.

September 2021

On target
 Possible problem (5-10% variance)
 Significant Impact (over 10% variance)

Construction Committee

Los Angeles County Metropolitan Transportation Authority

* Risk Analysis, May 2021 with the Approved Loan Term Amount



I-5 SOUTH: ORANGE COUNTY LINE TO I-605

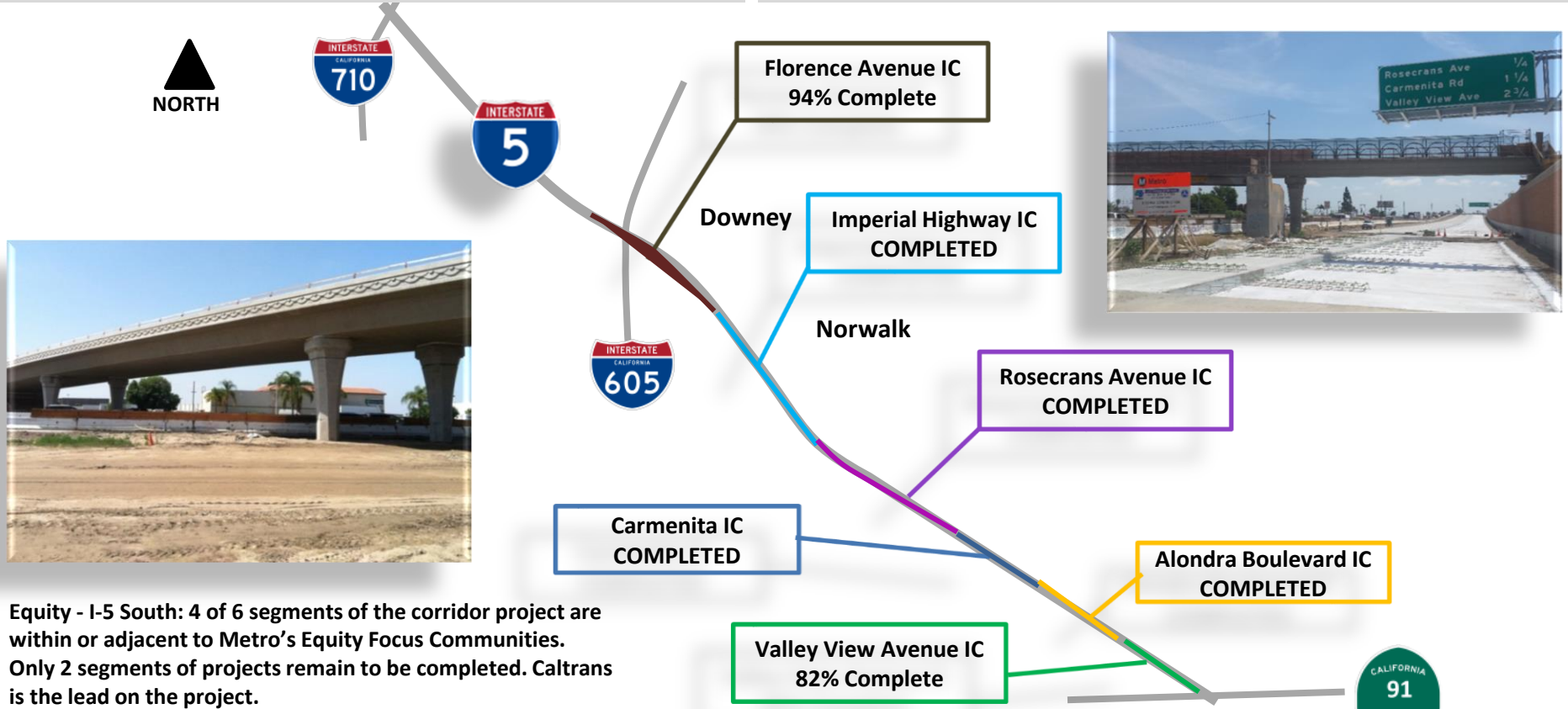


BUDGET	Approved LOP*	Previous Period	Current Forecast
TOTAL COST	\$1,844M	\$1,888M	\$1,888M*
Variance from Approved LOP*:		\$44M (2%)	\$44M (2%)
Variance from Revised Budget:		\$0	\$0

* At time of the award of contract – Board Approval (Jun 2013 & May 2009)

SCHEDULE	(Anticipated Project Completion)		
	Approved Rebaseline	Previous Period	Current Forecast*
Original	Spring 2022	Spring 2023	Spring 2023
Variance from Original:		+2324d (87%)	+2324d (87%)
Variance from Revised Schedule:		+372d (10%)	+372d(10%)

*Current Forecast is Contractor's April Schedule update



- Equity - I-5 South: 4 of 6 segments of the corridor project are within or adjacent to Metro's Equity Focus Communities. Only 2 segments of projects remain to be completed. Caltrans is the lead on the project.

September 2021
Construction Committee

● On target
 ◆ Possible problem (5-10% variance)
 ▲ Significant Impact (over 10% variance)

