

2018 LOS ANGELES CONSTRUCTION MARKET ANALYSIS

MAY 2018



Prepared for:



Metro

Prepared by:



KKCS/TRIUNITY JV
IN ASSOCIATION WITH CH2M

Executive Summary

Goals and Objectives

The purpose of this analysis is to assess near and long-term construction market conditions in the Los Angeles region. The assessment takes on considerable importance because market conditions and resource availability will affect Los Angeles County Metropolitan Transportation Authority's (Metro's) ability to deliver the Measure R, Measure M, and State of Good Repair programs over the next 10 years (2018 to 2028), including the Twenty-Eight by '28 projects targeted for completion in time for the 2028 Summer Olympic Games. The goals and objectives for this study are as follows:

- Perform a market analysis showing the current and projected construction activity in California, Southern California, and in the Los Angeles region, with emphasis on Los Angeles, Orange, Riverside, and San Bernardino counties.
- Analyze the qualified contractor and skilled labor availability in the region, including the number of potential bidders and employment trends in the construction industry.
- Query contractors to determine key factors leading to their decisions to bid or not bid on Metro contract opportunities.
- Provide recommendations as to how Metro can become an "Owner of Choice" in the region through comparison with other successful transit agencies, interviews with the contracting community, and continued implementation of best management practices.

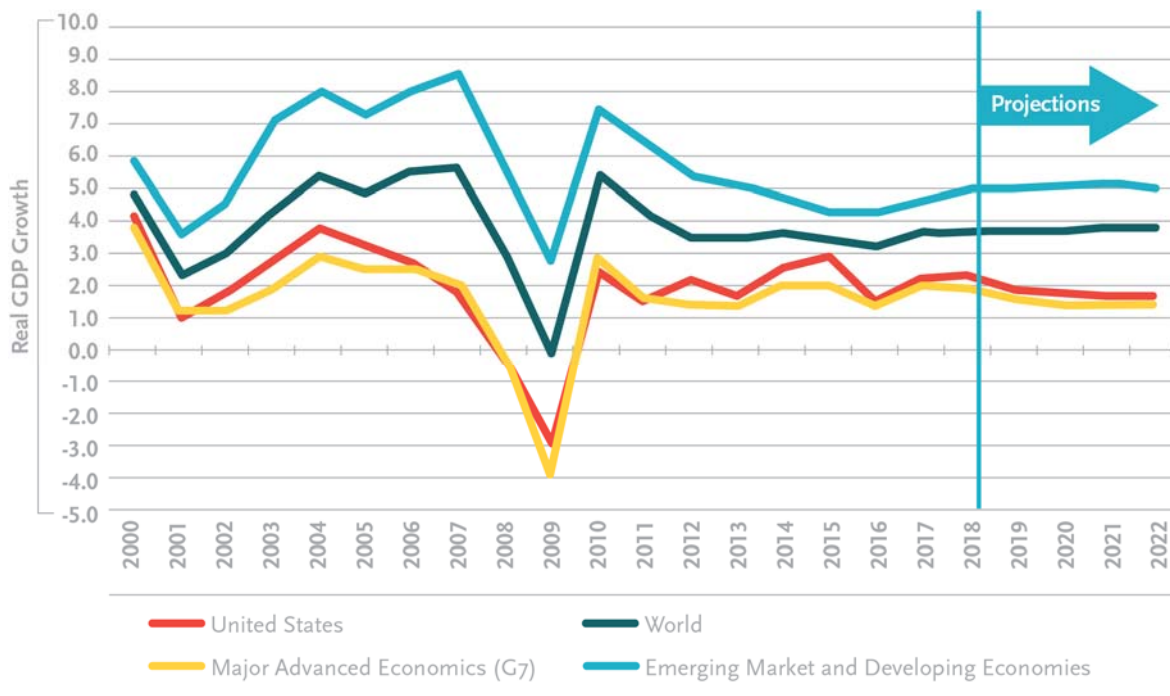
Summary

For this analysis, the KKCS/Triunity Joint Venture (KTJV)—in association with CH2M—researched available data; conducted discussions and surveys with contractors; and interviewed subject matter experts. The research concludes that there is a robust economic environment with a growing construction market in the four-county area. In addition, there will be more construction projects than workers and firms available to complete the work, which means that Metro will need to compete with other agencies in a tightening marketplace. This conclusion is based on:

4. Economic outlook per the Gross Domestic Product (GDP) and anticipated construction value of planned projects
5. Employment outlook per the projected unemployment rate versus anticipated employment requirements in construction
6. Construction cost trends including building costs and inflation

Economic Outlook

The economic outlook is strong and includes a GDP that is generally holding steady and a construction industry that is generally trending upward. The GDP rates appear to be stabilizing and there is no indication of large swings in the value, indicating a healthy economy that is much improved from the lows of the 2007 to 2009 timeframe (see Figure ES-1 on page ES-2).

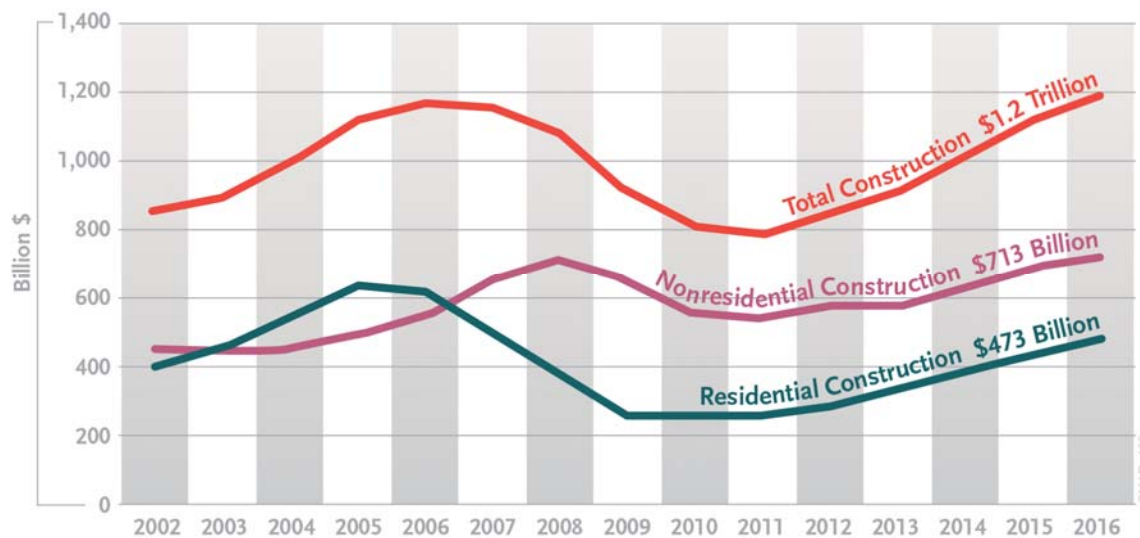


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Figure ES-1. Real Gross Domestic Product 2000 to 2022

Source: IMF, 2017

The improvement of the GDP from the lows of 2009 is also evident in the construction industry, with increased construction spending (see Figure ES-2). Construction peaked between 2005 and 2008 and then bottomed between 2009 and 2012. The industry has seen steady growth since 2011, with total construction growing 2.6 percent from December 2016 to December 2017. During this same one-year period, residential construction performed at an even higher 6.2 percent rate of growth.



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Figure ES-2. Annual Value of National Construction Put in Place, 2002-2016

Source: US Census Bureau, 2017a and 2017b

“The Infrastructure market looks to be improving considerably; therefore, staff and labor will begin to tighten along with available subcontractors and suppliers.”

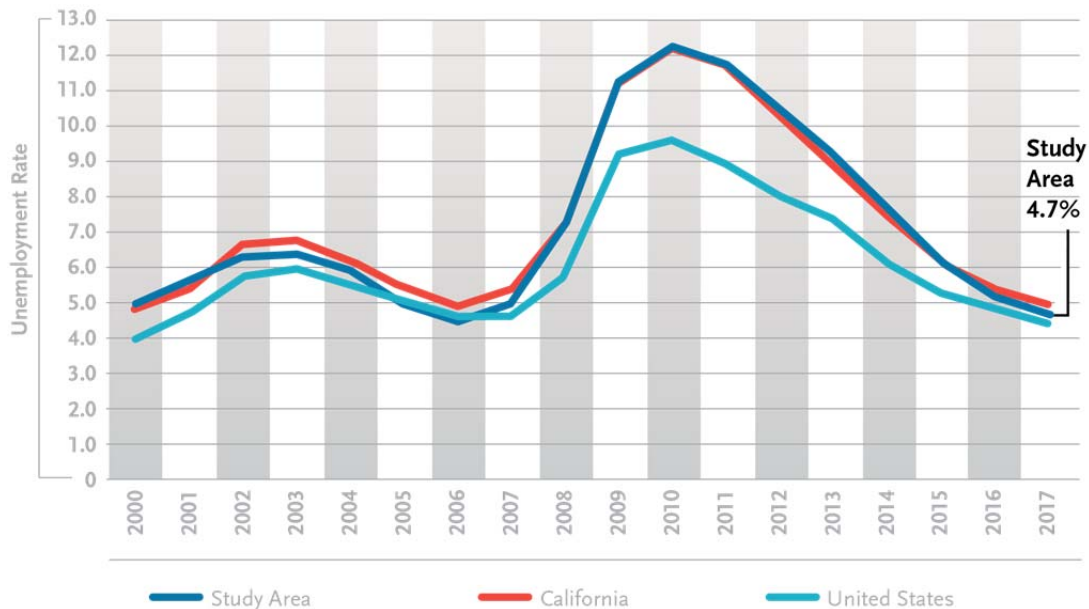
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The Los Angeles - Long Beach - Anaheim metropolitan areas are examples of growth in the region, where in 2017 building permits were issued for privately owned housing units valued at \$7.8 billion, representing a 23.7 percent increase from the 2014 level of \$5.9 billion. Another

example is the February 1, 2018 US Census Bureau Monthly Construction Spending Report indicating the value of total construction for transportation (one element of the total construction value shown on Figure ES-2) increased by 12.9 percent from December 2016 to November 2017, while construction for highways and streets increased 1.5 percent for the same period.

Employment Outlook

A “perfect storm” of conditions is occurring in the construction industry with a construction labor shortage, low unemployment, and large amount of ongoing and planned work in the region. The regional unemployment rate has dropped from the high of 9.5 percent in 2010 to 4.5 percent in January 2018, with state and national averages showing even greater improvement (see Figure ES-3).



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Figure ES-3. Unemployment Rate for US, State of California, and Study Area

Source: US Bureau of Labor Statistics, 2017

Note: Data for 2017 is through October

Specific to the four-county focus area in this study, the unemployment rate is 4.3 percent in Los Angeles County, 2.8 percent in Orange County, 4.3 percent in Riverside County, and 3.9 percent in San Bernardino County. These unemployment statistics will be further affected by the construction growth rate projected in the range of 1.4 percent to 3.4 percent depending on the job classification and the county location, per the State of California Employment Development Department (EDD).

In an interview, one contractor stated that the labor shortage is exacerbated because construction workers are retiring and there is a lower supply of experienced workers to fill the void. Additionally, one source in this study indicated that as many as 1.7 million workers left the construction labor force after the housing collapse in 2008 to seek alternate employment, and almost 1.5 million have still not returned to the construction labor force as of 2016 (NAHB, 2018a).

Responding to a regional labor shortage would typically involve outreach beyond the study area or even outside of California to draw-in external labor to the local market. As shown on Figure ES-4, most of the western states are also seeing growth in construction employment, which will make outreach to a broader employment base more difficult.

“Big shortages now getting worse. Have to pay premium over scale for best trades.”

“Labor shortage will drive up the cost of work and lengthen the duration to complete projects.”

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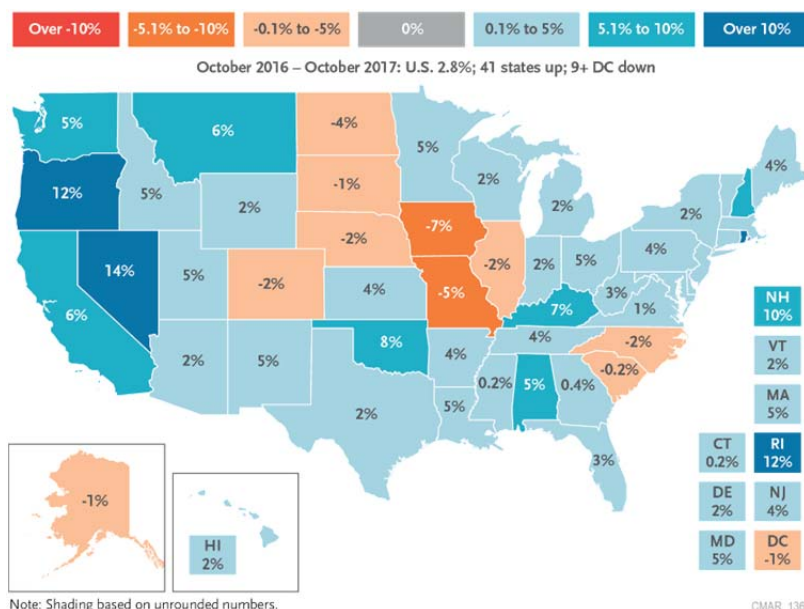


Figure ES-4. State Construction Employment Change

Source: AGC, 2017

Even recruiting from states projecting negative construction growth may be difficult given the cost of living differential compared to California. For example, a labor force being recruited from North Dakota's shrinking construction market to the Los Angeles-Long Beach area would face a 139 percent increase in housing costs, 26 percent more for utilities, and 22 percent more for transportation. One option used in the construction industry has been to establish local dormitory-style housing to attract out-of-state construction labor; this concept is further discussed in the body of this report, but would need to be reviewed for compliance with Project Labor Agreements and local hiring requirements.

One of the best methods to address the labor shortage may be to develop a local labor force, including a joint effort with school districts and colleges to re-invigorate curriculum related to the construction industry, implement Metro's initiative to establish a vocational school, and identify unemployed persons living in Los Angeles County Measure H housing who are capable of re-training for the construction industry. Metro's Workforce Initiative Now-Los Angeles (WIN-LA) Program, currently under implementation, will focus on the development of construction labor and be expanded and tied to the unions to train those interested in construction. It may be worth exploring if WIN-LA can become a broader umbrella organization that supports workforce development, education/training, homeless/housing, and Science, Technology, Engineering, and Math (STEM) career development goals for the entire region.

“The U.S. is busy. The Southern CA market is extremely busy with many mega projects. The skilled workforce is tapped, and there are not many others coming from out of town due to their home markets being busy.”

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Labor Shortage

The average annual construction spending is estimated to be \$35 billion to \$42 billion per year from 2018 to 2028 in the four-county area (study area).¹ The unemployment rate currently ranges from 4.3 percent to 2.8 percent, depending on county, and it is expected to decrease further; this decrease presents challenges to Metro not only in accessing available resources but in addressing inflationary pressures.

Economic modeling was used to identify the number of construction jobs that will be generated from construction activity for comparison to the currently available construction labor force. The modeling resulted in a range of potential jobs from high to low, which is detailed in Section 7 of the report. The construction labor required, as generated from the economic modeling, was compared to the available construction labor as determined by EDD. These projections were not in line with comments and assessments made by contractors during the interviews and surveys. To address the disconnect, an in-depth review and analysis of the data were performed and compared to trending data, based on historical values and information provided by the contractor interviews and surveys. This analysis is graphically depicted on Figure ES-5, Construction Labor Projections, showing a projected labor shortage through 2027. The data presented on Figure ES-5 is highly variable and will be affected by various events, including:

- Fluctuations in construction spending and pricing
- Economic volatility
- Unforeseen events (like a dramatic national policy decision)
- Natural and environmental disasters
- Immigration and emigration to the State of California

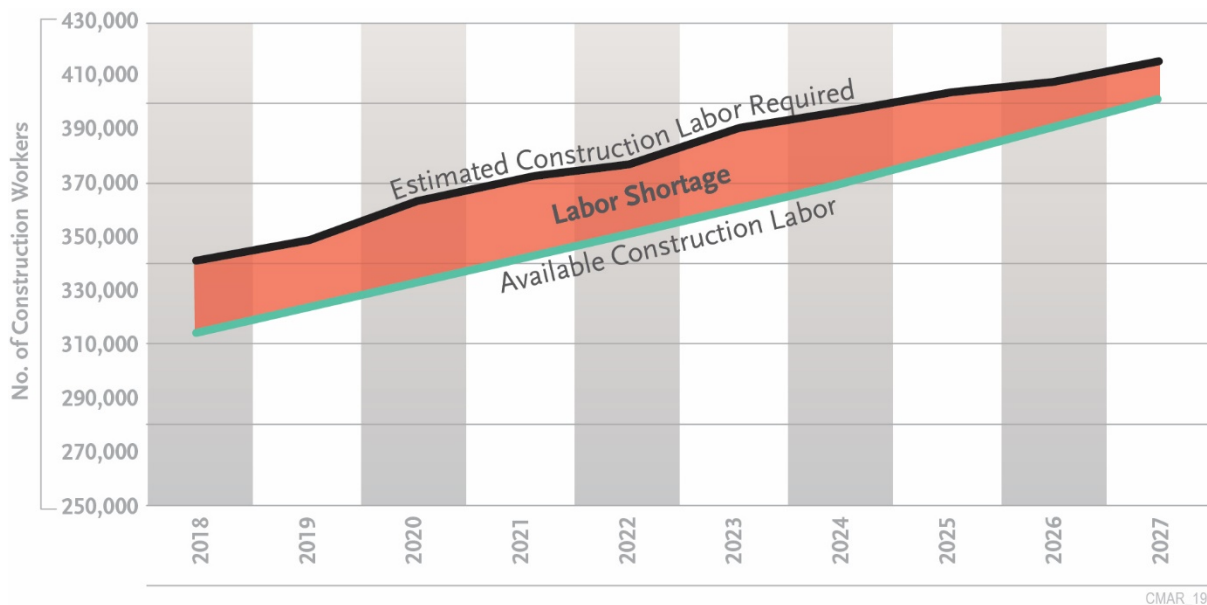


Figure ES-5. Construction Labor Projections
Study Area

¹ Construction spending is based on regional agency/city data in addition to data and analytics provided by Dodge Data and Analytics. Some agency/city data required linear projections beyond 2018 and Dodge data beyond 2022. These projections will fluctuate because of economic and geopolitical influences and should be updated periodically.

As noted during the interview with the AGC's chief economist, projections beyond one-year can vary widely because of various conditions, including those listed above. Therefore, the data presented on Figure ES-5 may change, and it is recommended that the data be reviewed on an annual basis to determine if the labor supply and demand is trending as projected.

These summary results are discussed in the following pages, with expanded discussion throughout the report. Additionally, the study addresses how Metro can be competitive in its procurements based on contractor interviews and surveys, including contractors who currently do not bid Metro work; as well as Metro and peer transit agency comparisons, including discussions with Dallas Area Rapid Transit (DART) and Seattle Sound Transit primarily related to best management practices.

Construction Cost Trends

The inflation projection is based on information contained in Engineering News-Record's (ENR) Building and Construction Costs Indices (CCI), which allow for a forecast to be developed based on historical experience. The annual percentage change in the CCI and Building Cost Indices (BCI) are trending upward from the values seen in 2013 and 2014.

This indicates a rise in construction and building costs as shown on Figure ES-6. Importantly, this historical information that is used to develop the forecast inflation does not account for factors that will be unique to the forecast period and are already evident, including mercurial commodity pricing that is trending upward overall, a significant rise in fuel oil prices, a likely significant rise in steel prices, labor cost increases that will result from a historically low unemployment rate, and an anticipated rise in interest rates that will drive inflationary pressures. These factors will increase projected escalation well beyond the historical trends and for that reason, the KTJV team believes that escalation factors will be under-reported if based only on past experience.

"We see construction prices rising in the next 5 years. Currently, the market is at the end of the downturn cycle and the prices are starting to reflect a more robust market. Number of mega projects bidding within a short time will reduce competition, as well as anticipated skilled labor shortage will cause an upward trend in the prices."

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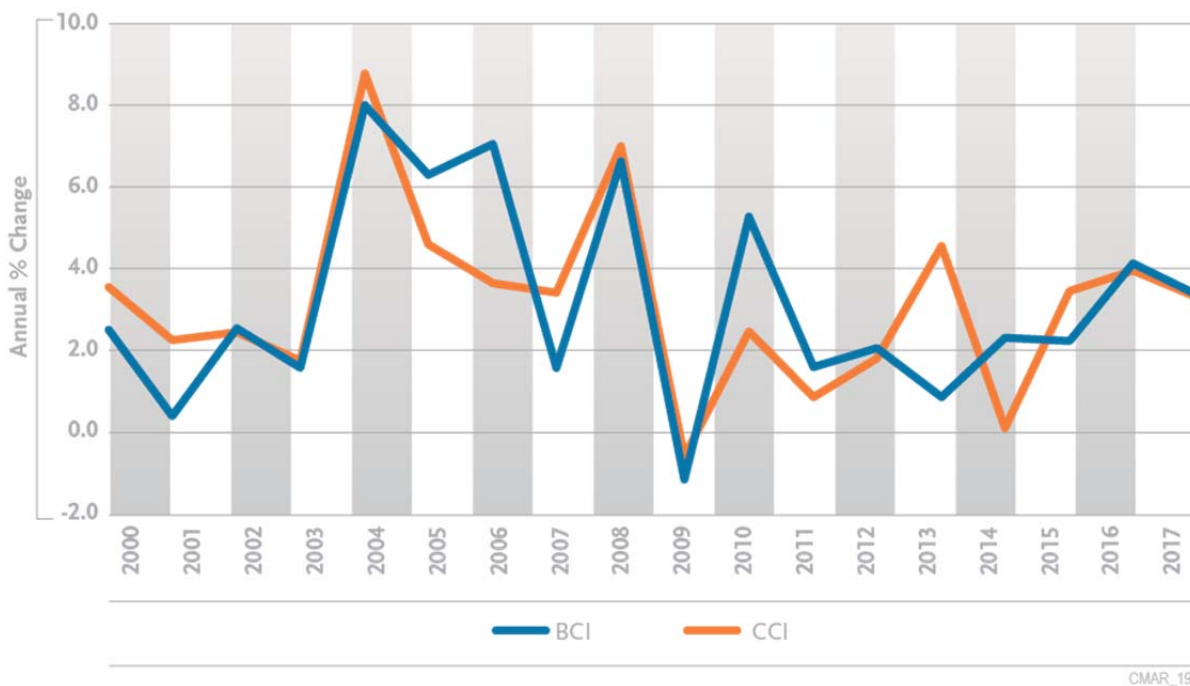


Figure ES-6. Construction Cost and Building Cost Indices, 2000-2017

Source: ENR, 2017

Contractor Interviews and Surveys

Potential bidders are most likely to pursue work with agencies that have a positive reputation in the contracting community. The amount of work and tightening labor pool will allow potential bidders to focus on owners that are consistent in the administration of procurements and the contracting process and are perceived to treat contractors fairly, especially in terms of cost and schedule issues that arise over the course of a project.

The KTJV team conducted two separate efforts to gain insight from contractors, (1) one-on-one interviews with 24 of ENR's top 100 design-build contractors; and (2) an online survey made available to the Associated General Contractors of America (AGC) membership. Additionally, Metro conducted its own outreach to the contracting community at a Construction Industry Forum, also included in this report. The questions and conversations were designed to extract opinions focused on three topics:

- Construction market conditions
- Areas of improvement, for those currently working with Metro
- Barriers that impede participation, for those not working with Metro

One-on-One Interviews

Details on the interview questions and responses are included in this report. In summary:

- 100 percent of those responding perceive there will be issues in the next 5 years with the labor market and resource availability.
- 75 percent of those responding who work or have worked with Metro perceive Metro's allotted window for proposal submission to be inadequate especially for design-build.
- 72 percent of those responding who work or have worked with Metro perceive Metro's Contract Specifications and General Requirements to be unclear and ambiguous.
- 71 percent of those responding who work or have worked with Metro perceive that Metro's change order and claims processes require improvement.
- 55 percent of those responding perceive there will be inadequate Disadvantage Business Enterprises (DBE)/Small Business Enterprises (SBE) local resources to achieve utilization requirements.

"The availability of qualified professional and craft workers is declining, combined with increased compliance requirements, listed personnel requirements, and a general lack of interest in the hard work, long and often unusual hours required by construction."

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"Need to recruit and develop more DBE or vastly decrease the requirements. Also need to recruit and develop more trade help."

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Additionally, the KTJV team noted the following consistencies among the respondents who provided expanded input as a part of the survey:

- **Risk Sharing.** Contractors noted the importance of sharing risk equally, and recommended working together with Metro prior to bid package advertisement to better define how risk can be most appropriately shared. This approach may also have a positive effect on bid pricing.

“If the risk is not well-defined contractors will price it into the work and it will result in higher bid prices.”

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- **Partnering.** A common comment was to have true partnering on a project and to approach the work as a team, with some recommended re-emphasis on improving relationships between contractors and construction management consultants.

“Work to improve the use of partnering in the true sense and support partnering from the top down.”

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- **Timely Document Processing.** The contractors noted that progress payments and change orders were reviewed and approved quickly at the field level, where field teams are empowered to make decisions. There is, however, a contractor perception that when documents are forwarded outside of the field office for further processing, timeliness suffers.

“Timely processing of payments/changes in the finance/accounting team.”

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- **Short List/Qualification Selection Process.** Contractors stated that for them to pursue work with Metro, the selection of the contractor must have a short-listing qualification process, further indicating that if the selection is solely based on low bid, they will not participate.

For contractors not working in the region and/or not working with Metro, many of the respondents were not familiar with Metro or at least not aware that Metro was no longer doing business as its predecessor agencies had, including recent implementation of new best management practices. There is also a perception among respondents falling into this category that Metro has preferred companies in mind with whom to do business, placing the others at a disadvantage. In both cases, additional contractor outreach may be in order.

“The politics and the relationship development is a barrier to pursuing projects in LA in general.”

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AGC Questionnaires

In addition to the one-on-one interviews already discussed, a 13-question online survey was developed and issued to the AGC Southern California membership. The survey reached out to both large and small companies, and focused more on resource availability and less on doing business with Metro.

The most noteworthy of the 25 contractor responses received are:

- 88 percent anticipate labor shortages over the next 5 years.
- 80 percent anticipate difficulty fulfilling DBE/SBE utilization requirements in the next 5 years.
- 64 percent anticipate increased escalation over the next several years.

“The market continues to tighten, and union benches are already empty for certain trades. As the market gets busier, it will become increasingly more challenging to find qualified labor.”

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“There are not enough qualified DBE/SBE firms that specialize in the work that needs to get done at the size of the projects and how slow the owner payment process is.”

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Metro Construction Industry Forum Survey

Additional information was provided to the KTJV team from a survey conducted by Metro during a Construction Industry Forum at Metro Gateway in September 2017. This industry survey was completed by 144 respondents that represented small, medium and large construction firms, and covered the breadth of contractor skillsets. The survey was focused on six barriers impeding companies from pursuing work at Metro. The results are graphically depicted on Figure ES-7.

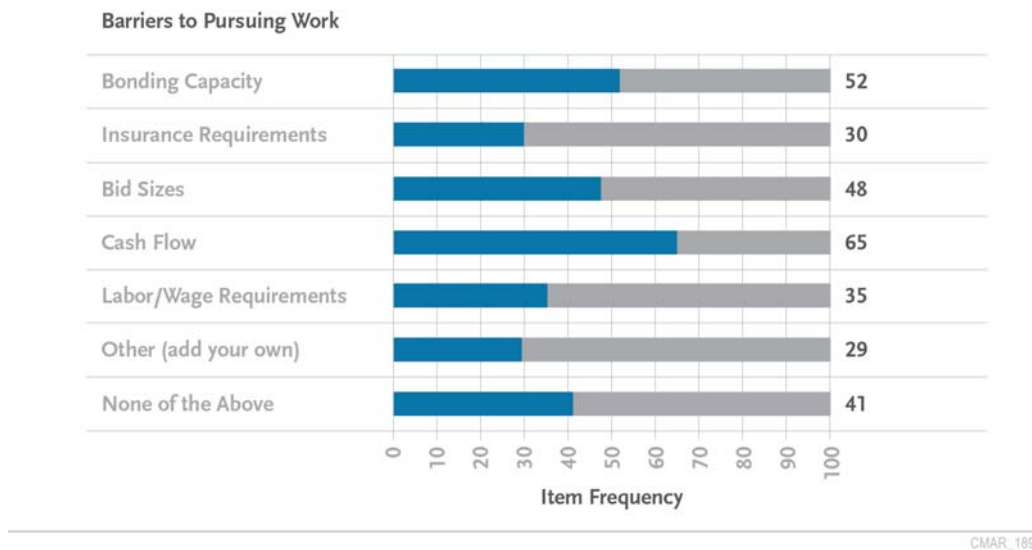


Figure ES-7. Graphical View of Metro Construction Industry Forum Survey Results

Source: Metro, 2017

Based on this analysis, the top three issues hindering contractors from pursuing work at Metro were related to smaller firms:

- Cash Flow.** Metro is currently assessing changes in the contract language to address contractor cash flow considerations, including methodologies to expedite payment to DBE/SBE firms. Other strategies were discussed with the survey respondents, including working with contractors and lending institutions to establish improved cash flow financing.
- Bonding Capacity.** Lack of bonding capacity often limits DBE/SBE firms that are otherwise capable of performing work. Survey respondents noted that lowering bonding capacity requirements in the contract would likely result in additional bidding participation, and some of the DBE/SBE firms may benefit with additional training on the Small Business Administration (SBA) Surety Bond Program. Metro is currently implementing a pilot bonding assistance program that may help alleviate this issue. Once the program is implemented and had an opportunity to run for six months, then a follow-up survey should be issued to determine if the program has addressed the issue and removed this barrier.
- Bid Sizes.** Smaller firms have difficulty forming large mega-teams for design-build projects, and would be better positioned to participate in Metro procurements on small and medium-sized design-bid-build packages or larger packages as a joint venture partner.

“Finding DBE/SBE that are CAPABLE of performing significant work. Bonding and Insurance are issues for many...”

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Peer Transit Agency Comparisons

DART and Sound Transit are peer transit agencies that have seen improved contractor bidding participation in recent years. The KTJV team contacted these agencies for insight into lessons learned and processes currently in place designed to remove barriers to pursuing work with each agency, with emphasis on:

- Contract Provisions
- Outreach Program
- Contract Type
- Project Sizing
- Improving Participation
- Risk Management/Risk Allocation
- Delegation of Authority

DART

In August 2016 Metro conducted interviews with DART staff to gain insight into the agency's ability to transition itself to be an "Agency of Choice" with the local contracting community. DART representatives indicated the following changes were implemented, many of which coincidentally relate to feedback received from contractors in the Los Angeles region that were interviewed for this report:

- Streamlining and modifying Contract Provisions
 - Simplified the terms and conditions
 - Simplified the submittal requirements
 - Incorporated cost sharing agreements and cost and schedule incentives for performance
 - Incorporated aggressive forecasting and trend analysis for variances
- Conducting direct monthly discussions with the contractors
- Focusing DART staff on fair and consistent resolution of problems raised by the contractors
- Instituting a robust Lessons Learned program
- Implementing an ombudsman to meet with the contractors, channel communications, and help coordinate issue resolution

By implementing these comprehensive changes, DART was able to also change how it was perceived in the contracting community. The result was increased bidder participation as well as elimination of the "DART factor" bid markup as high as 40-percent for perceived risk.

Sound Transit

Sound Transit indicated it had not made any specific changes to improve contractor bidding and participation in its procurements, but had made modifications to contract documents to incorporate lessons learned, industry best practices, and updated state and federal regulatory requirements. Sound Transit utilizes similar contract types as Metro, but also includes General Contractor/Construction Manager (GC/CM), which is similar to Construction Manager at Risk (CMAR) and Construction Manager/General Contractor (CMGC). The State of Washington has specific legislation and regulations for implementation of GC/CM.

Sound Transit individually evaluates each project to determine which delivery method is best for any particular project and that it can successfully meet the project goals along with addressing the constraints. For each procurement, Sound Transit holds a contract packaging workshop that is modeled on the Transit Cooperative Research Program (TCRP) Report 131, *A Guidebook for the Evaluation of Project Delivery Methods*. Additionally, it holds one-on-one meetings with contractors for DB procurement during the procurement phase to review the Request for Qualifications (RFQ), project requirements, and address any questions the contractors might have.

Use of GC/CM and one-on-one discussion with DB contractors may be two of the reasons why Sound Transit has not reported lack of competition in its procurement processes. Compared to the Los Angeles region, it was noted by several regional contractors in the interviews conducted for this study that there is also interest in CM/GC contracting, as well as more one-on-one interface between Metro and potential DB bidders.

Conclusions

Over the next 5- to 10-year period there will be more construction work than workers and firms available to do the work and at a reasonable cost; Metro's Twenty-Eight by '28 program will be affected by this lack of resources. Metro's recent initiatives to implement best management practices and to initiate innovative approaches to developing local talent and resources are steps in the right direction to attract bidders and to expand available industry resources in a tightening and competitive marketplace.

Metro's access to resources can be improved by initiating an expedited and more bidder-friendly Request for Proposal (RFP) process, attracting companies outside of the region to participate in Metro procurements, building the craft labor base in the region, revisiting personnel qualifications requirements to strengthen the number of qualified candidates available, and structuring procurement packages to attract a greater range of responding firms.

As market demand increases, contractors will be increasingly selective in deciding which projects to pursue, dependent on the owner and the amount of risk an owner places on the contractor. Contract language that is perceived by contractors to be difficult, punitive, subject to interpretation, or inconsistent with other processes or procedures is viewed to be a source of conflict, uncertainty, and inefficiency, and can be a source of claims.

Recommendations

Building on Metro's recent initiatives, this study provides specific recommendations designed to increase the number of firms and depth of craft and management resources available to build Metro projects; and make Metro an "Owner of Choice" as potential bidders select where proposal preparation dollars are best invested in the region. These recommendations are discussed in detail in the body of this report. The primary recommendations are highlighted in summary below.

- Reduce the time and cost to propose on Metro projects by (1) requiring standard bid forms be prepared outside of the proposal process where they are done once, placed on file at Metro, and remain in force until there is a change in the information, (2) allowing for electronic submission of forms, certificates, and licenses, (3) not requiring the submission of a cost proposal as part of the qualification process, only requiring submission once the short listed firms have been selected, and (4) considering a limit on the number of short-listed bidders to three firms due to the high cost for the contractors to develop a detailed cost estimate.
- Open the bidding process to more firms/teams through less prescriptive RFP requirements. For example, "Describe experience working on similar projects with the same team" limits accessing resources from outside of the region and structuring differing combinations of teams, and excludes firms that may otherwise be capable; Key Personnel Qualifications often require high levels of experience that further limit the ability for bidders to be responsive and can result in higher bids for firms that can respond.
- Develop a joint committee to include Metro, Los Angeles County Office of Education, Los Angeles Community College District, and educators from trade schools to develop curriculum promoting skillsets applicable to the construction market. These efforts would bolster Metro's existing initiatives to develop its own vocational training center and develop talent through the WIN-LA program.

- Develop a joint committee to include Metro, representation from the Mayor's Office, and representatives of the AGC to innovate ways to create affordable housing to attract labor from outside of the region, including construction of dormitory-style housing that could serve the dual purpose of housing unemployed persons with capability for job retraining into the construction field.
- Identify projects that lend themselves to design-bid-build method so firms that are otherwise not able to assemble mega design-build teams can respond. There would also be the added benefit of providing more DBE/SBE participation, as many medium-size firms are also smaller and/or disadvantaged businesses.
- Maintain an aggressive posture competing with other agencies for limited available resources, including onboarding project management staff when qualified candidates are identified and available, even if prior to actual need arising.
- Evaluate contract language that might result in a less-attractive bidding climate to proposers and at higher cost.
- Reduce and simplify the number of contracting templates; check for inconsistencies; standardize the General Conditions and related contract provisions across all projects; and assess contract language for ambiguity that may lead to differences in interpretation. Then, assure contracts are administered exactly as written.
- Conduct one-on-one meetings with proposers during the RFP process to evaluate where there may be risk transfer to contractors, but with little or no commensurate value to Metro, and how to best achieve balanced risk sharing; and incorporate appropriate changes to the contract through RFP addenda.
- Reduce the time required to reach change order resolution by delegating more authority at the Project Manager level and assuring clear assignment of single-point change order responsibility.
- Due to the variable nature in material price increases and considering the recent tariffs and potential trade war, re-evaluate cost estimates for future planned projects to ensure that unit rates assumed in the estimate are in line with the current market trends.
- Due to construction costs trending upwards and becoming volatile with the trend for multiple cost increases per month for some items, perform a review of the escalation percentages utilized by Metro in the development of engineer's estimates.
- Develop contract language to allow for addressing likely cost increases for projects that have long durations to limit the risk to both Metro and the contractors.
- In addition to the one-on-one meetings prior to the RFP process, institute active engagement with the contracting community through monthly meetings with contractor executives to discuss successful project delivery. The intent of the meetings is to develop relationships between Metro and contractors, and to market the agency and its projects.
- Conduct regular discussions with the contractors to identify lessons learned, including what went well, what challenges there were, and areas for improvement.
- Institute an ombudsman to interface with the contractors to address issues and work to seek resolutions.
- Assess methodologies to objectively and accurately evaluate contractors' performance and capabilities.