

CRENSHAW/LAX TRANSIT CORRIDOR PROJECT: A New Beginning for the Crenshaw Corridor Through Use of Innovative Procurement Strategies

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INTRODUCTION

Background

The Los Angeles County Metropolitan Transportation Authority (LACMTA) has embarked upon a major capital expansion program to improve public transit service and mobility in Los Angeles County. As part of this program, the \$1.763-billion Crenshaw/LAX Light Rail Project will interline with the Metro Green Line, and provide connections to the Exposition Line and Los Angeles International Airport (LAX) along an 8.35-mile alignment. The guideway includes approximately 3.15 miles of underground construction both cut-and-cover and mined methods, 3.6 miles of at-grade and 1.6 miles of aerial construction segments. Six light rail stations are included in the baseline project with two optional stations carried as bid options; one located in the historic Leimert Park area where significant controversy exists with the community's strong desire for an additional underground station.

This paper describes the innovative design-build procurement approach, the funding and political challenges that have defined the project configuration, and outlines the strategy for a significant investment in predominantly African American and Hispanic communities.

The Crenshaw Transit Corridor is generally a north-south corridor that extends approximately 10 miles in length throughout much of the South LA community, a large area comprising approximately 45 square miles. The South Los Angeles area has a population of approximately 850,000 comparable in size to the City of San Francisco. For two decades, the region has faced

challenges in attracting capital investments. It remains the most affluent African American population west of the Mississippi though many of the area residents still suffer from lack of good paying jobs. Refer to the South LA Community profile in *Figure 1*.

South Los Angeles Community Profile



Figure 1 – South Los Angeles Community Profile

The Crenshaw corridor includes portions of five jurisdictions: Cities of Los Angeles, Inglewood, Hawthorne and El Segundo as well as portions of unincorporated Los Angeles County. Three major interstate highways traverse the corridor: the Santa Monica Freeway (I-10), Glen Anderson Freeway (I-105)

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and San Diego Freeway (I-405). The Harbor Freeway (I-110) parallels the corridor to the east.

In 1967, the Crenshaw Transit Corridor was included in the region's first rail system plan and over the last 40 years have been the focus of numerous plans and studies by LACMTA and its predecessor agencies, the Southern California Rapid Transit District (SCRTD) and Los Angeles County Transportation Commission (LACTC). LACMTA has completed three transportation studies of the corridor over the last 13 years alone. In 1994, the Crenshaw-Prairie Corridor Preliminary Planning Study clearly identified the need for high capacity transit improvements. These options were further developed in December 2000 with the Crenshaw-Prairie Route Refinement Study, which identified the need for viable transportation alternatives. In 2003, the Crenshaw-Prairie Corridor Major Investment Study (MIS) was completed to assist decision makers in evaluating the most effective solution or phasing of solutions to the transportation challenges identified in the corridor while achieving local goals and objectives.

The MIS provided the foundation for the inclusion of the Crenshaw Transit Corridor into the LACMTA Long Range Transportation Plan (LRTP), which led to the preparation of a Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/DEIR) completed in 2009. Certification of a final project definition was made by the LACMTA Board of Directors in September 2011 and a Record of Decision (ROD) was received from the Federal Transit Administration (FTA) in December 2011. This recommended action, consistent with the adopted 2009 LRTP will pave the way to restore high capacity transit not seen along the Crenshaw Transit Corridor since the Yellow Car operations were terminated in the 1950s. Refer to *Figure 2* for a picture of the original Yellow Car running on the corridor.

Funding and Political Challenges

Finding the right solution for the Crenshaw corridor has been a challenge since the initiation of these early studies and continued through the draft environmental phase. Initial reviews did not look towards a rail solution. Bus Rapid Transit was a serious consideration although it was not favored by the neighborhoods along the corridor that were looking for equality with other neighborhoods which either had an existing rail solution or were planning one. With Light Rail selected as a locally preferred alternative in December 2009, the community had raised their voices and a rail project started to become a reality although numerous challenges remain to be overcome. Refer to project map in *Figure 3*.

This paper discusses in detail a two step, best value procurement method that was initiated with the release of a Request for Qualifications in December 2011 where interested firms were required to submit detailed Statement of Qualifications. Five proposers submitted qualifications and four proposers were invited to the second step to receive a Request for Proposals (RFP) in June 2012. The RFP included a design innovation approach referred to as Alternative Technical Concepts (ATCs) to encourage pre-qualified proposers to apply their creativity to achieve a competitive edge on cost and schedule in addition to providing an underserved community the best possible project including consideration for an optional station in historic Leimert Park if supported within a fixed life of project budget. Proposers were allowed to present ATCs for agency review and signoff as a step in the procurement process where confidentiality was maintained between the Agency and Proposer.

The Crenshaw/LAX line was an excellent candidate for Design-Build as was best value to provide maximum flexibility to proposers without violating basic technical and contractual requirements.

Upon contract award and payment of stipends to unsuccessful proposers, all Alternative Technical Concepts become the intellectual property of LACMTA with freedom to direct implementation to the successful proposer. LACMTA is applying a similar procurement template for project delivery as established for the Crenshaw/LAX project to its other major rail projects.

View of the Yellow Car Line 5 operating in the medians on Crenshaw Boulevard and Leimert Avenue in the 1950's, heading south on Leimert Avenue towards Crenshaw Boulevard.



Figure 2

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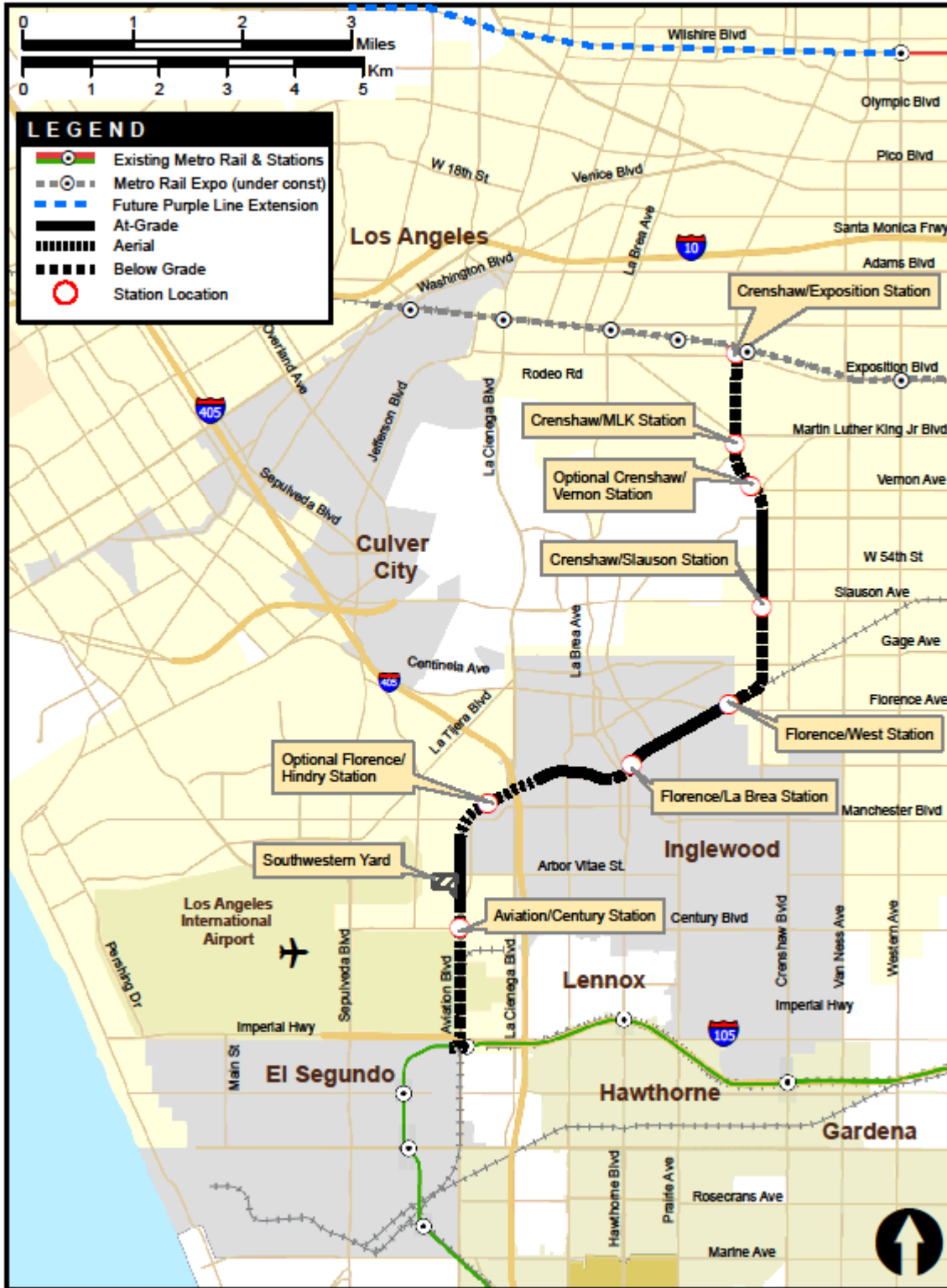


Figure 3 – Crenshaw/LAX Transit Corridor Project Alignment Map

PROCUREMENT PROCESS

As a public agency, LACMTA adheres to statutory requirements defined under Public Contract Code (PCC), Sections 20209.5 – 20209.14 where either a Sealed Bid or a Negotiated “full trade off best value” procurement process is determined to provide the best benefit for a project. Although LACMTA has traditionally used a Sealed Bid process, the latter method was selected for the Crenshaw/LAX project due to the complexity of the project and the need to hire the best contractor team to work with a diverse and active community. This method involves a two step process:

- Step One: Request for Qualifications (RFQ) that required a Statement of Qualifications to be submitted by interested proposers and which was evaluated on Pass/Fail criteria.
- Step Two: Request for Proposal (RFP) that was issued to pre-qualified proposers who were requested to submit separate Technical and Price Proposals which were then evaluated by a Proposal Evaluation Team (PET) to make a Best Value Determination.

Major Activities in Order to Make a Best Value Determination

The major activities included two distinct phases, a pre-submittal of proposals and a second phase with four steps after receipt of submittal of proposals.

Pre-submittal of Proposals

- Initial Alternative Technical Concepts were developed by the Proposers and issued to LACMTA for review. Extensive engineering and cost information was not required for the initial ATCs. There was no discussion with proposers at this initial stage and this is considered a “lessons learned” where early confidential one-on-one meetings would have benefited the initial ATC process by providing clarification to the proposers and guidance for the submittal of detailed ATCs for final acceptance by the agency. Without the potential added benefit of this dialogue, LACMTA evaluated the ATCs and identified which ATCs were deemed to have sufficient merit to be included as a detailed ATC.
- Detailed ATCs were then developed by the Proposers and issued to LACMTA for review.

Confidential one-on-one meetings were held between LACMTA and each of the Proposers to clarify the detailed ATCs. The detailed ATCs that were accepted by LACMTA could then be incorporated into both technical and price proposals.

After Receipt of Proposals

- Phase 1 – Evaluation of technical proposals by the Proposal Evaluation Team with support by subject matter experts. The PET provided initial scoring and ranking of proposers. Price proposals were evaluated by a separate cost team and scores were combined after initial technical scores were determined.
- Phase 2 – Oral presentations were requested by LACMTA with each of the Proposers. The PET evaluated if a contract award could be made or if the BAFO should be exercised.
- Phase 3 – Since an award decision was not made in Phase 2, a Competitive Range was established and discussions were held with proposers in preparation for release of a BAFO.
- Phase 4 – Received BAFO from interested proposers, and the PET re-evaluated to determine final scores and determine contract award.

ALTERNATIVE TECHNICAL CONCEPTS

Summary of ATCs

The ATCs were required to be equal or better than the original requirements of the contract. The required elements for the ATCs included the following:

- Description – A full description of the proposed ATC, including drawings, product data, and other technical information, and a discussion of how the ATC will be used on the Project.
- Justification - A justification for the use of the ATC, including a description of the objectives of the proposed ATC and a discussion of the reasons why the acceptance of the ATC would be advantageous to LACMTA (i.e., the specific quality improvement or cost or schedule savings that will result).
- Relation to Technical Requirements – Identification of any technical requirements or other Contractual Documents (including the RFP) that is inconsistent with the proposed ATC, and a description of the specific deviations or

modifications to those requirements that would be necessary.

- Example Cases – A description of other projects or cases in which the proposed ATC has been used, and the results of such usage in achieving stated ATC objectives.
- Cost and Schedule Impacts - Identification of any anticipated impacts on cost (including construction cost, project management cost, operations and maintenance cost, etc.) or anticipated impacts on schedule resulting from the implementation of the proposed ATC.
- Operations or Maintenance Impacts - Identification of any operational or maintenance impacts (including any life cycle impacts), or any change in operation or maintenance requirements, anticipated to result from the use of the proposed ATC.
- Construction, Environmental, and Safety Impacts - Identification of any construction, environmental, or safety impacts (improvements or detriments) that could be anticipated from the use of the proposed ATC, including any inconsistencies with or impacts on the Final EIS/EIR or the Record of Decision or any mitigation measure required by or adopted in those documents.
- Rights of Way - Identification of any additional right of way or other property interests that would need to be acquired in connection with the implementation of the proposed ATC.
- Risks - Identification of any risks to LACMTA, third parties, or the Project resulting from the implementation of the ATC.

Of the 119 initial ATCs received, 37 ATCs were subsequently approved by LACMTA. The range of cost savings was \$50 to \$90 million. Summary of dispositions for the ATCs are identified in Table 1 and Table 2 below.

Table 1 - Initial Alternative Technical Concepts

Disposition	Total
Pass	88
Reject	27
Not an ATC	4
Total	119

Table 2 - Detailed Alternative Technical Concepts

Disposition	Total
Accept	37
Reject	8
Not an ATC	2
Total	47

Examples of ATCs

The ATCs received covered many aspects of the project. Below are examples of ATCs that were presented.

Ventilation

Ventilation was included in the base design for a medium fire growth rate with supplemental fire protection measures for the underground stations. A higher arson fire growth rate was mandated as a bid option with proposers having the flexibility to propose innovative concepts for competitive pricing to be included in evaluation of total contract price. Several proposers identified alternatives to the alignment, station design and operational scenarios that allowed for compliance with the more restrictive mechanical design criteria and reduced the construction cost.

Station Kit of Parts

The base design in the procurement documents established a modular approach for station design and construction. Several months before the RFP was released, the agency completed a report that established a systemwide concept for station design at both ground and above ground level, the station Kit of Parts. The Station Kit of Parts was included in the RFP, and application of the Kit of Parts would be determined by the Proposers. The Proposers identified alternative concepts incorporating the Kit of Parts that reduced the construction cost.

Grade Separation and Station at La Brea

The base design at the La Brea intersection grade separated the LRT below a major roadway, La Brea Avenue, and located the La Brea station at-grade, but

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below the adjacent major street, Florence Avenue. ATCs were proposed for the LRT to bridge over La Brea Avenue and raise the station to be level with the adjacent street. This alternative concept was initially evaluated in an earlier phase of the project as part of the Locally Preferred Alternative, although it was a considerably longer and higher structure but was not incorporated into the final environmental approval due to factors including the uncertainty of abandonment of an adjacent BNSF freight track.

Allowing this alternative concept in the RFP process after a formal abandonment order was issued for BNSF did not require a supplemental environmental assessment or opening of the Record of Decision, which was not allowed according to the procurement instructions. By implementing this alternative concept, the construction cost was reduced, the construction impact to the community was greatly lessened, and the operations and visibility of the station was significantly improved.

Bridge Over I-405 Freeway

The LRT crosses over a state highway, and the base design placed the new LRT Bridge within the footprint of an existing freight bridge. During preliminary engineering, it was determined that a multi-span bridge over the highway would be more cost effective than a clear span bridge. An alternative concept proposed the LRT Bridge to clear span over the freeway, which would appear to be more expensive; however, the existing freight bridge would be left in place for alternative uses and is beneficial in eliminating impacts on freeway traffic, which would reduce costs.

Optimizing Horizontal and Vertical Alignment Profiles

Proposers were encouraged to optimize the alignment particularly underground segments where raising a station box by several feet could generate significant cost savings. One ATC went as far to completely shift one of the underground stations allowing the elevation of the station to be raised by over ten feet. This design innovation required discussion with a third party who was brought in under a confidentiality agreement to solicit their comments and support before signing off on the ATC. In the majority of ATCs that took advantage to optimize the alignment, the only restrictions placed on proposers were compliance with LACMTA's design criteria and no additional property acquisition.

Benefits of ATCs

Including the ATCs as part of the procurement process was determined to be beneficial for both the proposers and for the agency. Benefits included improved contract documents and better understanding of the contract documents by the proposers, improved design solutions, and competitive pricing.

Improved Contract Documents

In Design-Build procurement, an ATC process clarifies the type of design innovation that is permissible and clarifies contractual technical requirements.

Improved Design Solutions

This encourages both a designer and contractor to work collaboratively in developing solutions that can enhance or streamline project features while providing a team a competitive edge and lower costs to the agency.

The ATCs resulted in "out of the box" solutions that were incorporated into the bid price and allowed execution upon contract award. Alternatively, if the ATC process had not been used, the alternative concepts may not have been identified to the agency until after NTP as Value Engineering, which would reduce potential schedule benefit and only allowed the agency savings of 50% that are likely understated without competition.

Competitive Pricing

Confidential ATCs and clarification one-on-one meetings, within the extent allowed, enabled LACMTA to have competitive proposals (technical and price).

BEST AND FINAL OFFER PROCESS

Discussions

LACMTA advised proposers that a recommendation for award was not made after initial evaluations and scoring. Questions were developed and discussions were coordinated over a one month period with proposers on both technical and price proposals. Discussions included additional ATCs and cost saving measures.

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Examples of BAFO Changes

The benefits of BAFO discussions prompted a number of cost savings. Several are indicated below:

- Changes in requirements for deflection criteria on support of excavation walls for station boxes and cut and cover segments that allowed proposers more flexibility in means and methods.
- Allowing increased flexibility in hardscape and landscape treatments in station and plaza areas.
- Staging land at a new planned 18 acre maintenance facility adjacent to the Crenshaw /LAX corridor to provide additional laydown areas and an existing office facility on LACMTA-owned property for use as a co-located project office.
- Reductions in the number of key personnel that proposers had to commit to the project allowing proposers more flexibility in staffing the job.
- Owner-furnished trackwork materials to be furnished by the agency instead of the contractor with options for another major Measure R project to increase cost savings.
- Reduction in daily liquidated damages and cap on maximum exposure on liquidated damages.
- Reduction of cap on limit of liability on Builder's Risk insurance and limit on damages to correct non performing work.

LESSONS LEARNED

Summary of lessons learned are below:

- Allow confidential one-on-one discussions with Proposers from initiation of RFP instead of after submittal of detailed ATCs.
- A number of proposers commented that the ATC process was the only means to have dialogue with the agency and encouraged the agency to have dialogue with proposers regardless if there is a formal ATC process or not.
- Two-step ATC provided a valuable screening process to eliminate concepts that were not deemed feasible for incorporation during the procurement process. This allowed the Proposers and the agency to concentrate resources on only those potentially viable concepts.

- Allowing the ATC process without any initial commitment to a BAFO process allowed discussion of alternative concepts early in the procurement process that could have been held until the BAFO phase, thus allowing a shortened duration for the BAFO phase.

Current Procurement Status

At the writing of this paper, LACMTA has completed the evaluation of BAFOs and is moving forward with award strategies to be presented at a May board meeting. The recommended contractor cannot be named until after mail-out of board reports the first week of May. A Notice to Proceed to the successful proposer is anticipated in Summer 2013.

As a footnote, the South Los Angeles (LA) Community has a rich cultural history as do many areas that make up the South LA Community Profile. An example of this diverse history is the old adobe buildings of Rancho La Cienega and Baldwin Hills which is a major community and neighborhood in South LA. These communities are expected to benefit from the significant investment that LACMTA is making in the corridor. Refer to figures 3, 4 and 5 to see the early pioneers.

Old adobe buildings of Rancho La Cienega or Paso de la Tijera. Circa 1930



Figure 3

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Baldwin Hills and other surrounding geography are named for the famous 19th century horse racing and land development pioneer, Elias J. "Lucky" Baldwin, who is pictured below.



Figure 4

John Fisher and son Julian, Lucky Baldwin's ranch foreman and race horse trainer are pictured below.



Figure 5