

# California Construction Market Analysis

## Causes of Bidding Trends and Industry Ability to Respond to Increased Department Funding



*Division of Construction*

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## **California Construction Market Analysis**

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## ***I. Executive Summary***

Over the past few years, the number of contractors bidding on new construction contracts for the California Department of Transportation (Department) has declined. In addition, during the same time the aggregate price of the submitted low bids for those contracts has increased relative to the Department's engineer's estimates. The Department is concerned that these trends may be indicative of a declining level of competition for the Department's construction contracts. This concern is magnified in light of an approximate increase of three to four-fold in funding levels for new construction work in fiscal year 2005/2006, compared to the approximate \$1 billion for construction work advertised in fiscal year 2004/2005.

In order to develop an understanding of these recent trends and the effect that they may have on the delivery of projects for fiscal year 2005/2006 and beyond, Department management requested that a "California Construction Market Analysis" be performed. The purpose of this analysis was to identify what factors may be contributing to the recent trends of fewer bidders and higher bid prices of awarded contracts, and to research how those various factors contribute to the trends. In addition, the analysis was to address if the recent trends and their underlying factors will adversely impact the delivery of the Department's future construction program, particularly in the current fiscal year.

Department management identified a number of potential factors that may be contributing to the recent trends. The Department then solicited input from the construction contracting community to confirm if those factors were, in fact, influencing their decisions about bidding on the Department's work and to identify other factors that were involved in those decisions.

The analysis identified a number of factors that appear to have had an effect on either the number of bidders or the prices bid on recent Department construction work. These factors include:

- ❖ The complexities associated with the Department's construction contracts (such as traffic handling requirements and critical path method (CPM) scheduling specifications) appear to have contributed to both the declining number of bidders and to the increase in bid prices.
- ❖ The declining volume of work advertised and awarded by the Department during the last fiscal year in conjunction with an increasing volume of road and highway work advertised and awarded by other public agencies during

that same time frame appears to have contributed to the declining number of bidders responding to the Department's contract advertisements.

- ❖ The dramatic rise and unpredictability of certain material prices (such as steel, cement and aggregates) appears to have contributed to the increase in bid prices being received by the Department's Office of Office Engineer.
- ❖ The perspectives of the construction contracting community regarding the Department's contracts and its contract administration appear to have contributed to the declining number of bidders responding to the Department.

In addition, the analysis did identify a number of factors that suggest that the Department will, in fact, be able to achieve its programmatic objectives. These factors include:

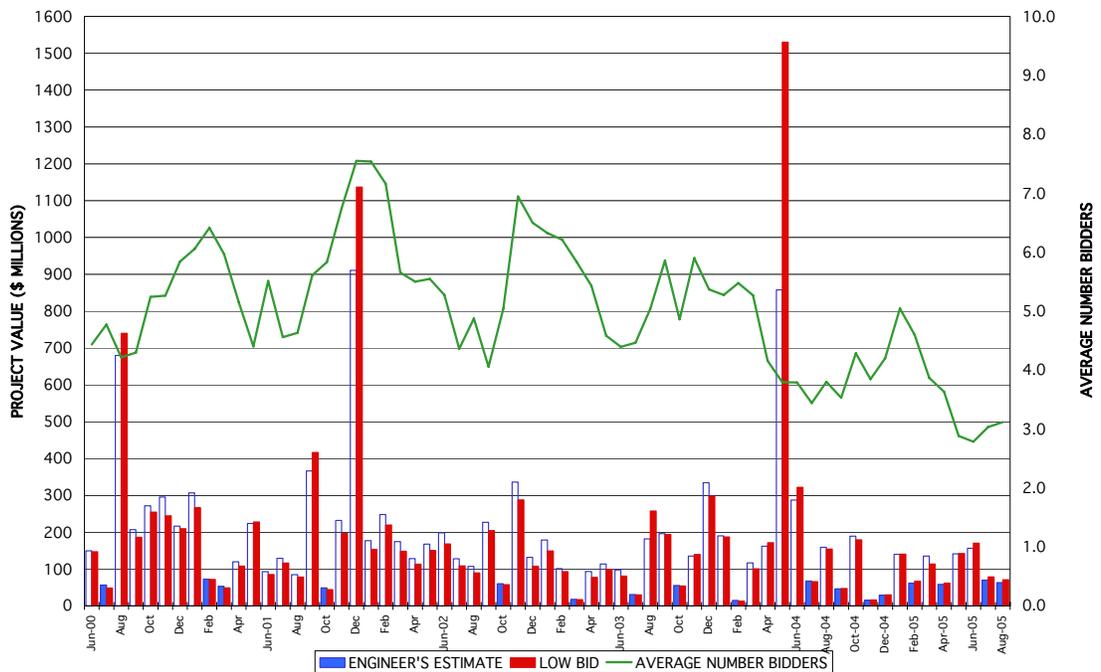
- ❖ The continued volume of road and highway construction work anticipated to be performed by other public agencies, while competing with the Department's projected work for the construction contractor's interest and resources, should not preclude a competitive bidding environment for the Department. The construction industry's existing contractual obligations and resource limitations will, most likely, contribute to a certain time lag from when the Department increases the level of its advertised work and the bidding volume returns to historical norms.
- ❖ In addition to the anticipated increase of new construction contracts advertised in fiscal year 2005/2006, there is a single large contract [the San Francisco Oakland Bay Bridge Self-Anchored Suspension (SAS) Span] currently estimated at \$1.5 billion. While this significant contract will commit a particular contractor (or joint venture) for a considerable amount of time and requires significant resources to execute, this should not adversely impact the California construction community's ability to respond to the balance of the Department's advertised work.
- ❖ Even though there were a limited number of respondents to the survey used as part of this analysis, the survey results did indicate that there was significant capacity to absorb the anticipated increase in the Department's construction work. More importantly, a large majority of the respondents to the survey indicated that they would more than likely bid on future Department work.

- ❖ The continued materials market instability projected for steel, cement, and aggregates suggests that the recent trend of low bids exceeding the Department’s cost estimates is likely to continue, particularly in light of the retrospective nature of the engineer’s estimates and the significant role that these materials play in the Department’s construction contracts.

**II. Introduction, Background and Report Organization**

Over the past few years, the number of contractors bidding on new construction contracts for the California Department of Transportation has declined from a range of approximately five to seven bidders to three bidders. In addition, during the same time the aggregate price of the submitted low bids for those contracts has increased with respect to the Department’s estimated cost (engineer’s estimate), from historical averages of approximately ninety-five percent (95%) of the engineer’s estimate to over one hundred twelve percent (112%) of the engineer’s estimate. Figure 1 is a summary of the Department’s aggregate construction contract bid information over the last five fiscal years. The data include all projects advertised, awarded or not.

**Figure 1 Construction Contract Bid Information 2000 - 2005**



The Department is concerned that these trends may be indicative of a declining level of competition for Department construction contracts. This

concern is magnified in light of a significant increase in funding for new construction contracts in fiscal year 2005/2006. Part of this dramatic increase in funding is the \$1.3 billion in Proposition 42 funds included in the Department's 2005/2006 budget. Should such funding levels continue for a number of years, the overall volume of Department construction contract work undertaken in the future will be among the highest levels in the Department's history.

In an effort to develop a better understanding of these recent trends and the effect that they may have on the delivery of projects for fiscal year 2005/2006 and beyond, Department management requested that a "California Construction Market Analysis" be performed. The purpose of this analysis was to identify what factors may be contributing to the recent trends of fewer bidders and increasing bid prices of awarded contracts, and to research how those various factors contribute to the trends. In addition, the analysis was to address if the recent trends and their underlying factors will adversely impact the delivery of the Department's future construction program, particularly in the current fiscal year.

This analysis was broken into several components. The first aspect reviewed was an assessment of certain parameters of the Department's construction contracts to determine the extent to which these parameters may have contributed to the two significant trends outlined above. A discussion of these parameters and their influence on bidding and bid values is summarized in Section III of this report. The second aspect of the study was the solicitation of feedback from the construction contracting community concerning possible factors influencing their decisions to bid on Department construction contracts and/or the extent to which those factors may increase the amount bid to perform the work. A discussion of the survey responses as they relate to the various factors being evaluated in this study is summarized in Section IV of this report. Section V of the report summarizes the third aspect of the study, which was research conducted on the availability and price stability of various materials vital to the transportation construction industry, such as steel, cement and aggregates. Section VI of this report discusses additional factors that may be contributing to the recent trends; factors not analyzed at this time, but that may warrant further study. The fourth aspect of the study focused on the overall level of construction activity in California during the recent past, including isolating the Department's contribution to the streets, highways and bridge sector of work. A summary of this evaluation is included in Section VII of this report. The final aspect of this analysis was an evaluation of projected California construction activity for the next several years, particularly in the area of public works associated with streets, highways and bridges, in order to illuminate how the Department's anticipated level of funding may be responded to by the contracting community. The results of the analysis of

projected construction activity levels are summarized in Section VIII of this report.

### ***III. Construction Contract Parameters***

As a public agency, the Department is subject to many rules and regulations that private owners may not be subjected to. While these rules and regulations, in many instances, are intended to protect the use of public funds (i.e. taking the maximum advantage of a competitive bidding market), they may require more work or place additional risk upon the contractors doing work for the Department. For example, compliance with Storm Water Pollution Prevention Program requirements or adherence to work area or work timing limitations due to environmental considerations could significantly alter a contractor's approach to a given project. These added work requirements or risks will, more than likely, result in higher bid prices for Department construction contracts than might otherwise be seen. In addition, there are contractual parameters, which the Department has developed, to protect the Department or to improve its dealings with its construction contractors. These parameters may also influence the construction contractor's interest in the Department's work and/or the price bid to perform such work. The following is a brief review of a few topics identified by Department management that were considered to be currently affecting the construction contractors in accomplishing the Department's work and therefore may be contributing factors to the bid level and bid price trends outlined above.

#### ***A. Traffic Handling Constraints***

Over the past ten years annual traffic volume on California highways has increased from approximately two hundred seventy-six (276) billion miles traveled to approximately three hundred twenty-eight (328) billion miles traveled, an increase of almost twenty percent (20%). In most highly congested urban areas, peak traffic times now run from 6 a.m. until 10 a.m. and again from 3 p.m. until 7 p.m. The Department's construction contracts have been increasingly structured to avoid closing lanes during these peak periods so that excessive delays to the traveling public can be avoided. As a result there is now only a five-hour window during the day in which to accomplish any work on existing lanes. The alternative is to do the work at night. Consequently, nearly all of the Department's current work on traffic lanes in urban areas awarded over the last five years has been performed at night.

Complicating this situation is the fact that, at times, the allotted windows for work (even at night) *may* not be sufficient to allow the contractors to complete their operations in an efficient manner. Under the parameters of the Department's

contracts, contractors are rarely allowed to close a section of freeway in a manner that permits them to complete their work in the *most* efficient manner. In addition, the Department's construction contractors may be penalized for any lane closure that is not picked up in the scheduled time. All of the conditions associated with performing large portions of the construction contract work at night (including the risks associated with late pick-ups) must be factored into the bid price of the work.

While the conditions associated with performing work under lane closure restriction may be understood at the time of the engineer's estimate, the engineer's estimate is, in fact, developed based on historical bid prices. The fact that recent construction contracts are structured to require an increasing amount of the work to be performed at night and the fact that information contributing to the engineer's estimate is by design retrospective, may be a contributing factor in the trend of bid amounts being greater than the engineer's estimate.

### ***B. Environmental Considerations and Risks***

Since late 1999, tightened environmental regulations have been focused on air quality, water quality, solid waste handling and construction site impacts. Federal, state and local air quality regulators have placed increased emphasis on (1) non-road emissions and diesel fuel regulations, (2) nitrogen oxide and fine particulate emissions from diesel engines, (3) naturally occurring asbestos, and (4) dust control. Water quality regulators have concentrated on regulating (1) dewatering and storm water run-off water quality on construction sites, (2) total maximum daily loads generated at construction sites and industrial operations, and (3) discharge effects of sediment loadings and turbidity on receiving waters. The California Legislature and Integrated Waste Management Board have instituted stricter solid waste regulations that: (1) limit disposal of construction wastes to landfills and require documentation of diverted waste streams, (2) regulate additional materials (e.g. treated wood), (3) increase the potential liability of contractors who work in contaminated soil, and (4) generally increase the cost and liability of offsite disposal of excess materials from the Department's projects.

Environmental constraints on construction site activities have the potential to adversely impact a construction contractor's productivity and drive up costs due to: (1) endangered and threatened species protection, (2) wetlands, floodplain, and fish passage restrictions, (3) precautionary measures to avoid contamination from stored materials or spills, and (4) restricted work windows and activities due to environmental constraints. To the extent that the Department's construction contractors experience these increased costs, they will be reflected in bid prices to perform the Department's work. Contractors have complained that environmental

regulators have become more active in assessing fines and penalties and this trend has intensified as general fund revenues have slowed due to the California budget crisis<sup>1</sup>. First time offenders face potentially devastating penalties for unintentionally violating environmental laws or regulations. Under the California Porter-Cologne Water Quality Control Act, a regional water quality control board can assess a civil liability fine of up to \$25,000 per day for an uncontrolled storm water discharge. The Federal Comprehensive Environmental Response Compensation and Liability Act (CERCLA or Superfund) imposes strict, joint and several liabilities (i.e., liability without fault) on virtually anyone who comes into contact with a preexisting hazardous substance on a construction site.

The Department incorporates environmental requirements and restrictions in contract language by referencing environmental documents, permits, and mitigation measures. Contractors may lack the expertise to interpret the impact that these technical environmental documents will have on their construction operations, cost and schedule during the course of a project. As a result contractors may be hesitant to bid work because environmental requirements have tightened, and fines and penalties for non-compliance are prohibitive. In addition, given an increased level of cost of compliance with tightened environmental requirements as well as the potential risks associated with penalties, increasing bid prices for the Department's work are inevitable. To the extent that the data feeding the Department's engineer's estimate for its construction contracts lags this current costs/risk/pricing perspective, this will also be a contributing factor to the trend of bid prices exceeding the engineer's estimates.

### ***C. Critical Path Method Project Schedules***

In 1992, the Department started requiring progress schedules based on a CPM network from its construction contractors. Both the Department and its contractors were perceived to benefit from the implementation of these requirements. The original CPM specifications contained "shared-float" provisions. Such provisions allowed whichever party needed to use float to use it to their advantage. In other words, usage was based on a "first-come first-served" basis and documented in the CPM schedule. Under this approach, the Department would be able to offset state-caused delays with float made available by early completion schedules (i.e. schedules which reflected completion of the work earlier than the contractually required date). Conversely, contractors were able to use the float if they experienced a contractor or subcontractor-caused delay or wished to diminish project forces (and extend the scheduled duration of the work) for improving overall project efficiency.

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<sup>1</sup> Regulatory Position Paper, Association of General Contractors, January 2001.

In 1997, the CPM specifications were revised to provide more detailed requirements. Under the new specifications, total float of the project generated from an early completion schedule would no longer be shared between the Department and the contractor. Under these specifications, the contractor owns the float exclusively. This ownership was expected to provide the construction contractors with an incentive to provide early completion schedules and perform the work as quickly as reasonable within the limits of their own production efficiency. Under these specifications a state-caused delay would justify delay compensation, even under the conditions of the contractor completing the work of the contract before contract time expired. Under this version of the CPM specifications, Department-owned float could be generated by reviews of critical contractor submittals in less time than allotted in the schedule. Currently, the CPM specifications are similar to those as revised in 1997, with minor changes. The time-related overhead (TRO) specification, developed in 2000, has provided an additional incentive to the contractor for submitting early completion schedules. As with earlier versions of the CPM specification, additional overhead compensation may be due to the construction contractor even though the work is not delayed beyond the required contract completion date. Under the TRO specifications, such compensation is made as part of regular periodic progress payments.

Implementation of the CPM schedule specifications has provided the Department with the benefits of improved planning for the execution of its work as well as a source of documentation of the actual timing and sequence of the work, both of which aid not only the daily management of the contract, but also the resolution and/or mitigation of disputes. From the Department's perspective, implementation of the CPM specifications has had the positive effect of requiring the contractor to "plan the work" before they "work the plan" to complete the specified work in the contract-allotted time. After the resident engineer accepts the progress schedule, there is agreement on past and future sequence, logic, and duration of activities. Planning has also allowed the resident engineer to be aware of the planned use of the contractor's forces on various activities as well as timing of activities, which allows for more efficient quality assurance of the work by the Department. The contractor's documentation of the actual performance of the work eliminates many disputes, especially those related to potential extensions of contract time.

Implementation of the CPM specifications, however, comes with a cost. The evolution and increased sophistication of the CPM specifications leads to the need for increased sophistication and experience in the application and use of the method as a project management tool. In a manner similar to the environmental

requirements described above, many of the Department's potential construction contractors may lack the expertise to implement these requirements of the contract. As a result, such contractors may be hesitant to bid work. Such hesitancy may, in fact, be a contributing factor to the trend of a declining number of bidders for the Department's construction contracts. In addition, given an increased level of the cost of compliance with the more sophisticated scheduling and reporting requirements, increasing bid prices for the Department's work are highly likely. To the extent that the data used in the Department's engineer's estimate for its construction contracts lags current costs, CPM specifications will also be a contributing factor to the trend of bid prices exceeding the engineer's estimate, although, less than that of the other factors.

### ***D. Labor Compliance Requirements***

The federal government required payment of prevailing wages upon the enactment of the Davis-Bacon Act of 1931. California enacted its own "Little Davis-Bacon" law in 1937. Since that time, the Department has been required to include the necessary language in its construction contracts. The majority of contractors and subcontractors that participate in the Department's construction contracts are familiar with these requirements. Many of these contractors are signatories to union agreements and are virtually in compliance on their own. On occasion, there are individual or specific situations that may be contested, but there appears to be general acceptance of the requirements and no evidence to suggest that these long-standing conditions have contributed to either the declining number of bidders or bids greater than engineer's estimates trends outlined above.

However, over the last few years the Department of Industrial Relations (DIR) has continued to expand the definition of public work and associated activities that are covered by prevailing wage. One such example is the payment of prevailing wages for on-haul and off-haul trucking. Past court decisions<sup>2</sup> limit prevailing wage payment to the site of the work itself. DIR rulings now require the payment of prevailing wages for truckers employed by construction contractors when their truckers travel to and haul from commercial material plants. Unfortunately, due to the Department not having a clear understanding or expectation of DIR's interpretation of prevailing wage coverage for truckers, the Department was not uniformly enforcing off-site activities, leading to uncertainty for contractors bidding the Department's work. Labor compliance requirements do not appear to be a contributing factor to the trend of a declining number of bidders for the Department's construction contracts, but do impact bid prices.

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<sup>2</sup> O.G. Sansone Co. v. Department of Transportation, 55 Cal.App.3d 434 (1976)

Contractors do express serious concern about specific wage related decisions. Wage Order 16 adopted by the California Industrial Welfare Commission and recently enforced by the DIR, Division of Labor Standards Enforcement, is an example. That wage order, implemented in January 2001, re-established the 8-hour workday and required rest breaks or payment for the breaks if they could not be taken. This change applied retroactively to all ongoing contracts, instead of just to new contracts from that time forward. Significant costs were involved and whether the contractors or the Department is responsible for those costs has been vigorously pursued through the dispute resolution board process and/or arbitrated for those projects. Clearly, for construction contracts bid after the implementation of the order, the increased cost of labor (either as the result of changes to anticipated productivity or the direct cost of untaken breaks) would be included in the construction contractor's bids. Given that the Department did not have a clear understanding or expectation regarding the implementation of Wage Order 16, consideration for its effect on bid prices would not have factored into its engineer's estimate and, as such, this qualifies as a contributing factor in the trend of low bids exceeding the engineer's estimate. Wage Order 16 continues to impact future bid prices as contractors evaluate and include its impacts. On the other hand, the construction contractors are now required to comply with the provisions of Wage Order 16, so these provisions do not appear to be a contributing factor to the trend of a declining number of bidders for the Department's construction contracts.

### *E. Disadvantaged Business Enterprise Requirements*

The passage of Title VI of the Civil Rights Act of 1964 was the basis for creating the Disadvantaged Business Enterprise (DBE) program. The program helps ensure that there is equal opportunity in contracting where federal aid is any part of a contract's funding source. DBEs are small, socially and economically disadvantaged businesses. The Surface Transportation Assistance Act of 1982, among others, introduced a DBE participation goal of ten percent (10%) for federal-aid highway and transit projects. The Department sets project specific goals before advertising each highway or transit construction contract. To be eligible for award, contractors must either meet or exceed the participation goal for certified DBEs or they must demonstrate that they made a "good faith effort" to do so. If a contractor fails to meet the DBE goal and cannot demonstrate a "good faith effort," the next lowest bidder is considered for award of the contract. Likewise, the second low bidder must fulfill the same DBE requirements for award. DBE subcontractor performance and goal attainment is monitored during construction and substitution of DBE participants receives close scrutiny to ensure that the Department meets the project and overall goals of the program. There

have been some technical changes in counting participation among trucking subcontractors. Recently, commercially useful function has received closer attention. It mandates that listed DBE participants are actual businesses capable of doing the work for which the prime contractor is receiving DBE credit consistent with that included in the awarded contract. This heightened scrutiny attempts to police the use of companies that are fronts with DBE figurehead owners and achieve the legislative intent to support equal opportunity for DBE businesses to contract with the government.

Because of the longevity of the program, there is general acceptance by the Department's construction contractor community. In some cases, contractors depend on demonstrating "good faith efforts" rather than making rigorous efforts to subcontract with certified DBE firms. Locating DBE firms for some types of work and in certain locations throughout the state remains a problem. A number of DBE firms that have participated in the program have succeeded to the point that they are ineligible for certification as they no longer are "disadvantaged," thereby reducing the pool of potential participants for the construction contractor community. Given the longevity and familiarity of the program, it is unlikely that the necessity for compliance with the program requirements would be a contributing factor to either the recent trend of declining number of bidders or the recent trend of low bid prices exceeding the engineer's estimates.

### *F. Disabled Veteran Business Enterprise Requirements*

The Disabled Veteran Business Enterprise (DVBE) is a state program intended to recognize disabled veterans for their service and encourage greater economic opportunity. The state has established an overall goal of three percent (3%) participation by certified DVBEs. The Department of General Services (DGS) rather than the Department of Transportation manages certification. Due to the widely reported use of "front" DVBE equipment rental firms in 2003, legislation was enacted in 2004 to more firmly establish the commercially useful function requirements for DVBEs and strengthen DGS enforcement capabilities. Difficulties remain in analyzing DVBE submittals before award and in policing commercially useful function during contract administration. There are an extremely small number of DVBEs available to supply or do work on major construction contracts. Thus, prime construction contractors have repeatedly used the same DVBEs over and over and/or they find their "good faith efforts" typically fruitless. Given the relatively low level of participation goals and the general reliance on "good faith efforts" to meet the intent of the state's program, it does not seem reasonable that the necessity for compliance with the DVBE program requirements would be a contributing factor to either the trend of declining

number of bidders or the trend of low bid prices exceeding the engineer's estimates.

### ***G. Small Business Requirements***

Like the DVBE program, small business is a state-mandated program. The statewide small business goal is ten percent (10%). Governor Davis set a Small Business participation goal for state contracting of twenty-five percent (25%) by Executive Order D37-01 of May 2001. Under the Department's procurement process, small businesses receive a five percent (5%) bid preference towards determining the relative low bidder on specified state-only funded contracts. A small business can actually have a higher bid than a non-small business and still be awarded a contract if their bid is within five percent (5%) of the lowest bid. Small businesses have prompt payment protections that include significant penalties for delayed payments. The Department's construction contracting community generally accepts this program, and it does not seem reasonable that the necessity for compliance with the small business program requirements would be a contributing factor to either the recent trend of declining number of bidders or the recent trend of low bid prices exceeding the engineer's estimates.

### ***H. A+B Bidding of Construction Contracts***

The A+B bidding provision, also referred to as cost plus time bidding, combines the sum of the "A" bid amount for various contract items of work and the "B" time consideration as the basis for comparing bids. The bidding contractor bids items of contract work (the "A" amount) and separately estimates the "B" amount by estimating the number of days proposed to complete the project then multiplying that number of days by a Department-specified dollar amount per day. The successful low bidder will have submitted the lowest aggregate amount for the performance of the work. The contract award amount is the "A" portion of the bid. The "B" portion of the bid becomes the allowable contract duration. This approach uses the competitive bid process to encourage the construction contractor's ingenuity in developing innovative construction techniques and acknowledges their unique ability to balance cost and time relationships to achieve the most efficient use of their resources.

Although the intent of using the competitive bid process to shorten project duration remains desirable, it should be recognized that some bidding contractors may fail to sufficiently account for the many variables that influence the most optimal balance between cost and time to complete the work. The intent of the use of an incentive/disincentive clause, in conjunction with A+B bidding, is for the contractor to bid a reasonably shorter "B" duration (albeit with a relatively higher

“A” bid amount) to “win” the competitive low bid, affording the necessary work acceleration to earn early completion incentive payments. If the “B” amount is not properly balanced before bidding, then the contractor may decide it beneficial to manipulate project scheduling to protect early finish float, maximizing the potential for incentive payment.

The Department started using A+B bidding in 1990 on an experimental basis. In 1995, the Department began using the process on a more regular basis on selected projects with engineer’s estimates greater than \$5 million. The Department now requires its use in projects \$5 million or more and with daily road user delay costs of \$5,000 or more. Given that the percentage of overall construction contracts which have engineer’s estimates over this threshold has historically been approximately ten to fifteen percent (10%-15%) of the total number of contracts awarded by the Department, the application of the process, in effect, is limited to a small percentage of all work undertaken. The Department’s construction contracting community has generally accepted use of the A+B bidding approach and it does not seem reasonable that its limited use would be a contributing factor to either the recent trend of declining number of bidders or the recent trend of low bid prices exceeding the engineer’s estimates.

### *I. Time-Related Overhead Specifications*

Historically, compensation by the Department for a construction contractor’s overhead costs has been made either as part of the payment of contract items (unit price or lump sum) or as part of the force account markups specified in the contract for extra work covered by a contract change order (CCO). *Standard Specifications* language indicates that the specified markups are intended to provide full compensation for all overhead costs of the construction contractor. Should the construction contractor wish to pursue a claim for field and home office overhead (F&HOOH) damages, the *Standard Specifications* require the contractor to submit an independent Certified Public Accountant audit supporting the claim. Contractors’ claims for F&HOOH are often contentious and time consuming to resolve.

The Department developed and implemented a pilot program of the time-related overhead (TRO) special provision in an effort to provide timely compensation to its construction contractors for project delays. TRO is included in most of the Department’s contracts awarded since August 2000 and estimated at greater than \$5 million.

The implementation of the TRO special provision was expected to produce certain benefits for the Department including: setting overhead prices through

competitive bidding, administering compensation at the project level, improving project management decisions on project delay issues and events, reducing adversarial positions, resolving delay issues during the project and reducing the level of post-project efforts expended by resident engineers, auditors and other experts. From a financial perspective, implementation of the TRO special provision appears to be beneficial, to the extent that the Department is able to limit the magnitude of time extensions granted under its contracts. Financial analysis indicates that there are fewer CCO expenditures and less identifiable overhead compensations paid (as a percentage of net CCO value) on the TRO projects than on the non-TRO projects. In addition, the bid prices for the TRO item have, in general, been less than the engineer's estimate for that specific contract item<sup>3</sup>.

The implementation of the TRO specification appears not to have adversely affected the contracting community and it does not seem reasonable that the necessity for compliance with the TRO specification requirements would be a contributing factor to either the recent trend of declining number of bidders or the recent trend of low bid prices exceeding the engineer's estimates.

### *J. Summary of Contract Parameters*

Review of the various Department construction contract parameters described above indicates several are not likely contributing factors in the declining number of bidders and/or low bid prices exceeding the engineer's estimate. These parameters include:

- Labor compliance requirements (in general),
- DBE requirements,
- DVBE requirements,
- Small Business requirements,
- A+B bidding, and
- TRO specification.

Conversely, review and consideration of other Department construction contract parameters indicates several of these aspects do appear likely to have been contributing factors in the declining number of bidders and/or low bid prices exceeding the engineer's estimate. These parameters include:

- Traffic handling constraints,

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<sup>3</sup> Executive Summary, Overhead Specification Evaluation, Navigant Consulting, Inc, November 26, 2003.

- Environmental considerations and risks,
- CPM schedule specifications,
- DIR prevailing wage interpretations, and
- DIR's Division of Labor Standards Enforcement (Industrial Welfare Commission's Wage Order 16, specifically).

#### ***IV. Bidders Feedback and Comments***

The second aspect of this analysis was to assess the current mood of the construction contracting community concerning possible factors influencing their decisions to bid on Department construction contracts and/or the extent to which those factors may increase the amount bid to perform such work. To aid in this assessment, the Department created a short survey that was sent to three contractor organizations: the Engineering & Utility Contractors Association, the Southern California Contractors Association and the Associated General Contractors. At the Department's request, these organizations distributed the survey to their respective memberships. While the initial distribution and straightforward nature of the survey may have yielded more responses, only twenty-nine were received in time to be evaluated as part of this analysis. Such a small number of responses is not considered to be statistically significant and, as such, the insights gained through the surveys should be considered in that context. On the other hand, while some of the responses to the survey were anonymous, others were from contractors that have historically done a significant volume of work for the Department. Accordingly, the insights gained from the surveys cannot be considered inconsequential and were included in the overall analysis.

The first item addressed by the survey was to gain insight into how many contractors had reduced the volume of or stopped bidding altogether on Department projects and, to the extent possible, why? Seventy percent (70%) of the twenty-nine responses indicated that they had, in fact, reduced their volume of or stopped bidding on the Department's projects. The survey developed by the Department listed nine possible reasons for a contractor's decision to curtail or discontinue bidding, including:

- Contractual complexities (such as CPM specifications, TRO specification, A+B bidding),
- Traffic handling constraints,
- Environmental considerations and risks,
- Labor compliance requirements,

- DBE/DVBE/SB participation requirements,
- Material(s) availability,
- Material(s) price instability,
- Subcontractors availability, and
- Pursuit of work from other public agencies and/or private owners.

In addition to the Department's list of possible contributing factors, the structure of the survey provided space for the respondents to list other reasons that may not have been shown on the form. Not unexpectedly, most of the respondents to the survey included other reasons for their firm's determination to reduce and/or discontinue bidding on the Department's construction contracts. Also, not unexpectedly, these reasons varied widely in their content. Analysis of the additional reasons did suggest, however, a certain level of commonality across the rationales and permitted those "write-ins" to be grouped into three categories: Department personnel challenges, contract document difficulties, and others. The survey, as structured, allowed the respondents to rank possible factors (whether identified by the Department or added by the respondent) as elements germane to their bidding rationale. A summary of the rankings of the various reasons for reducing and/or stopping bidding on the Department's work is shown in Figure 2.

Figure 2 Summary of Ranked Reasons for Bid Curtailment

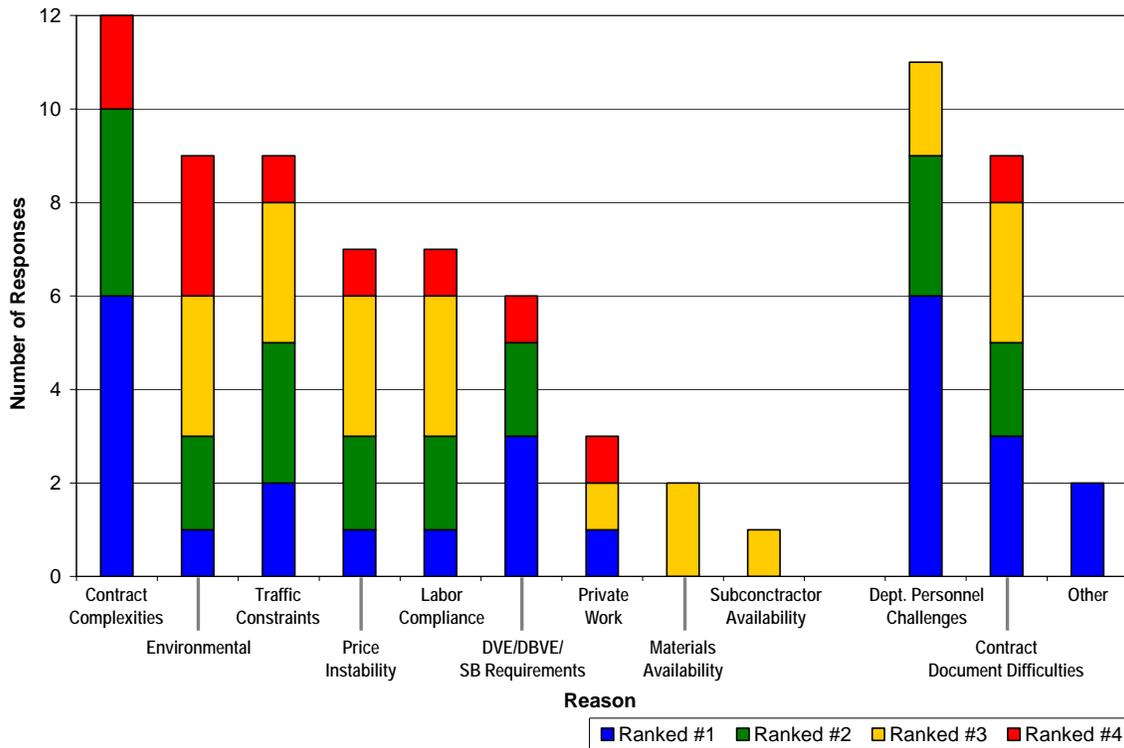


Figure 2 summarizes the four highest ranked reasons by the respondents. Review of the actual survey responses suggested that, while some respondents included more than four reasons from both the Department’s list and their own perspectives, the majority of the respondents had five or fewer reasons noted. In addition, it appeared reasonable to assume that any factor ranked in the top four by a given respondent should carry more weight than, for example, the ninth-ranked reason of another respondent.

As can be seen in Figure 2, the two reasons most frequently ranked number one for bidding curtailment (with six each) were contract complexities and Department personnel challenges. These two general reasons also had the highest total number of responses with twelve and eleven, respectively. As noted, these reasons are a generalization of some specific issues. As described earlier in Section II of this report and as defined in the survey, contract complexities included such aspects of the Department’s construction contracts as the CPM scheduling provisions, the TRO specification and A+B Bidding requirements, among others. Clearly, the response to the survey (at least in the context of the responses received) confirms the Department’s own assessment that some of these parameters are, in fact, contributing to the recent trend of a declining number of bidders for the Department’s work.

The second general reason ranked number one by the respondents was Department personnel challenges. The specific reasons included in the survey responses that were grouped into this category were quite varied and included items such as:

- Lack of confidence in Department personnel's ability,
- District personnel too difficult to deal with,
- An adversarial attitude by Department personnel,
- Inspectors are not competent,
- Aggressive/anti-contractor management, and
- Lack of negotiating fairly or in good faith.

While these responses suggest a level of frustration with the Department's contract administration personnel, procedures, and policy, and are insightful towards understanding what may be contributing to the recent trend of a declining number of bidders, these perspectives must be evaluated both in the context of all other factors contributing to the trend and in the context of the absolute number of such comments relative to the larger construction contracting community.

As shown in Figure 2, with a total of nine responses each, the next most frequently ranked reasons for reducing and or stopping bidding were contract document difficulties, traffic handling constraints and environmental constraints. Again, the latter two of these reasons the Department identified as *likely* contributing factors to the recent trends, and the survey responses (at least in the context of the few responses received) confirm the Department's own assessment that these parameters are, in fact, contributing to the recent trend of a declining number of bidders for the Department's work. As with the Department personnel challenges reason, contract document difficulties is a generalization of a number of specific items, including:

- Inappropriate equipment rental rates,
- Inadequate and/or incomplete project plans,
- Inappropriate number of working days specified,
- Ambiguous contract plans and/or soils reports,
- Insufficient profit on extra work at force account,
- Amount of paperwork drives overhead up, and
- Contract scope too large.

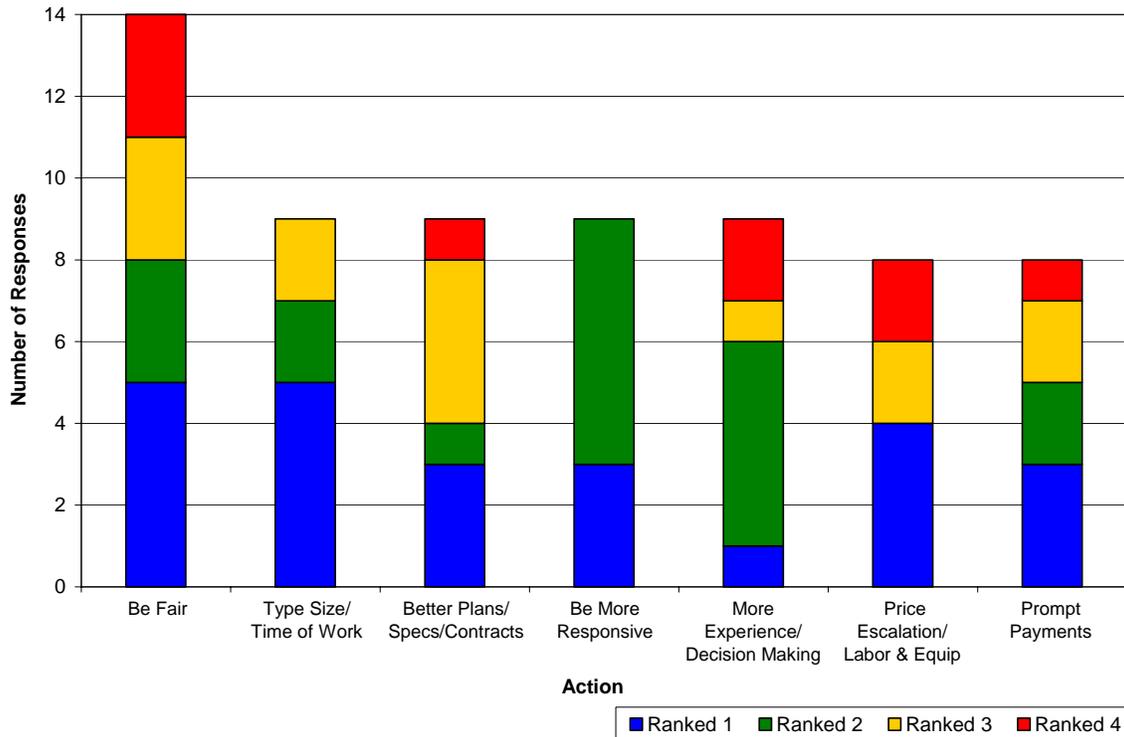
Some of these specific reasons suggest a level of experience in contracting with the Department and deciding to curtail such efforts based on a risk/return assessment, while other reasons suggest the determination to curtail working with the Department may be based on a simple mismatch between the contractor's capabilities and the Department's needs. As with the Department personnel challenges response, these responses are insightful towards understanding what may be contributing to the recent trend of a declining number of bidders. However, such perspectives must also be evaluated both in the context of all other factors contributing to the trend and in the context of the absolute number of such comments relative to the larger construction contracting community.

Finally, as shown in Figure 2, the other responses provided to the question of reason(s) for curtailing bidding with the Department were commodity price instability, labor compliance, materials availability, subcontractors availability, and pursuit of other public and/or private work. Except for commodity price instability and labor compliance, each with seven responses, none of these reasons were frequently mentioned. In addition, all but one of these factors can be generalized as being outside the influence of the Department. A number of these external factors are further addressed in the following section of this report.

Also, as part of the survey conducted in conjunction with this analysis, contractors were asked to provide suggestions of how the Department could make its construction work more inviting for bid. Not surprisingly, the offered suggestions followed a thematic consistency with the rationales for curtailing bidding on the Department's work. A summary of the input provided by the survey respondents is shown in Figure 3.

Figure 3

Contractor Recommendations



As with the reasons for curtailing bidding with the Department, the recommendations made by the survey respondents were varied and were grouped into the seven generalized suggestions delineated in Figure 3. In addition to the individual recommendations being categorized as shown above, they were assessed for the order in which they were made by the survey respondents in a manner similar to the ranking of the reasons for declining bid participation. As shown in Figure 3, the most frequent recommendations were associated with the general category of “Be Fair.” There were a total of fourteen individual suggestions categorized as such, with five of those “ranking” that item as the first suggested action for the Department. As can be seen in the balance of Figure 3, the other categories of suggestions all had either eight or nine individual responses. Specific examples of the items making up the “Be Fair” category included:

- “Administer the contract fairly,”
- “Provide a fair response to compensation requests,”
- “Develop better working relationships,” and
- “Do not make the contractor responsible for the unknowns.”

The other generalized category with five first-ranked recommendations was “Type and Size of Work.” The specific recommendations in this area were mostly associated with the general magnitude of individual contracts, the nature of the work, or the time available to complete the work (either each day or the total number of days in the contract). In this category, however, may be the most significant insight for the Department in light of the anticipated increase in volume of new contracts in the coming fiscal year(s). One recommendation made was, “keep the jobs coming, if work continues, we could staff up [to respond].” It is also worthy of note that the suggestion made second by the most respondents (with six such entries) was “be more responsive.” This certainly increases the weight of the “be fair” recommendation that is perhaps a different way to communicate the same notion.

The final aspect of the survey was to pose several questions to the respondents to assess the willingness and capacity of construction contractors to take on new Department work. This was posed by requesting the construction contractors to provide an opinion on the probability of the firm bidding on future Department projects. Responses ranged from one percent (1%) to one hundred percent (100%), with a sixty percent (60%) probability as the median. Perhaps more significantly, twenty-one of the twenty-nine respondents or seventy-two percent (72%) indicated a greater than fifty percent (50%) probability of bidding on new Department work in the future. Another insight was related to the potential bidders’ perspectives on their capacity to take on additional work at this time. Responses to this inquiry ranged from \$2 million to \$500 million in additional capacity, with three respondents indicating that they had unlimited additional capacity. The median response was \$10 million.

In summary, survey responses of the construction community indicate that the contributing factors to the trend of a declining number of bidders for the Department’s construction work are, in large part, associated with the complexity and specific requirements of its contracts (confirming the Department’s own evaluation) and the manner in which those contracts are administered. While these responses suggest a level of frustration with the Department’s contract administration personnel, procedures, and policy, such perspectives must be considered both in the context of *all other factors contributing to the trend* and in the context of the absolute number of such comments relative to the larger construction contracting community. Significantly, seventy-two percent (72%) of the respondents to the survey indicated a greater than fifty percent (50%) probability of bidding on new Department work in the future. All of the respondents indicated considerable capacity for additional work.

### ***V. Materials***

The third aspect of this analysis was focused on research conducted on the availability and price stability of various materials vital to the transportation construction industry. In the past few years, the availability and/or prices for some of the materials used in the construction of transportation projects have been rather unstable due, in large part, to increased demand both here in the United States and abroad. This instability appears to have had an effect on both the number of contractors bidding on Department projects and on the bid amounts relative to the estimated cost. As described in Section IV of this report, a few of the survey respondents did indicate that material price instability was, in fact, one reason for curtailing bidding on the Department's work. Furthermore, the continued uncertainty of material availability and prices may continue to impact future Department work either through a continued decline in the number of bidders or, more likely, through submitted low bids that exceed the engineer's estimate. The latter situation is particularly likely to occur on the larger Department construction contracts with significant durations to complete. These conditions will subject the bidders to the increased risk associated with projecting inherently unstable material prices well into the future.

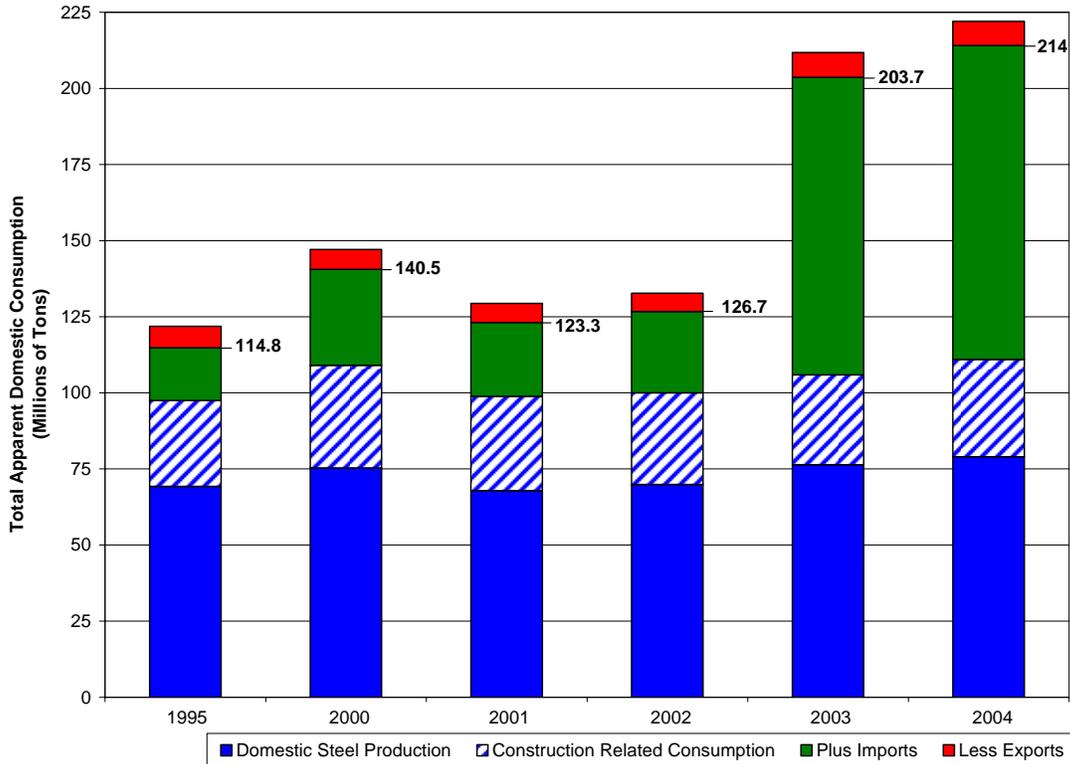
Following is a brief review of the markets for a few of the materials important to the Department's work.

#### ***A. Steel***

Steel in various forms constitutes an important component in the Department's construction contracts. Figure 4 is a summary of domestic steel production over the last several years along with data for domestic consumption, imports, exports, and construction industry-specific consumption.

As shown in Figure 4, domestic steel production from 1995 through 2002 ran at approximately one hundred (100) million tons per year. Exports during that time frame typically ran between six (6) and seven (7) million tons per year and imports were typically in the range of thirty (30) million tons per year. These figures indicate that during this time frame domestic consumption of steel had been on the order of one hundred fifteen (115) million to one hundred forty (140) million tons per year with the construction industry using approximately one quarter (1/4) of that figure or thirty (30) million tons per year.

**Figure 4 Domestic Steel Consumption and Production**



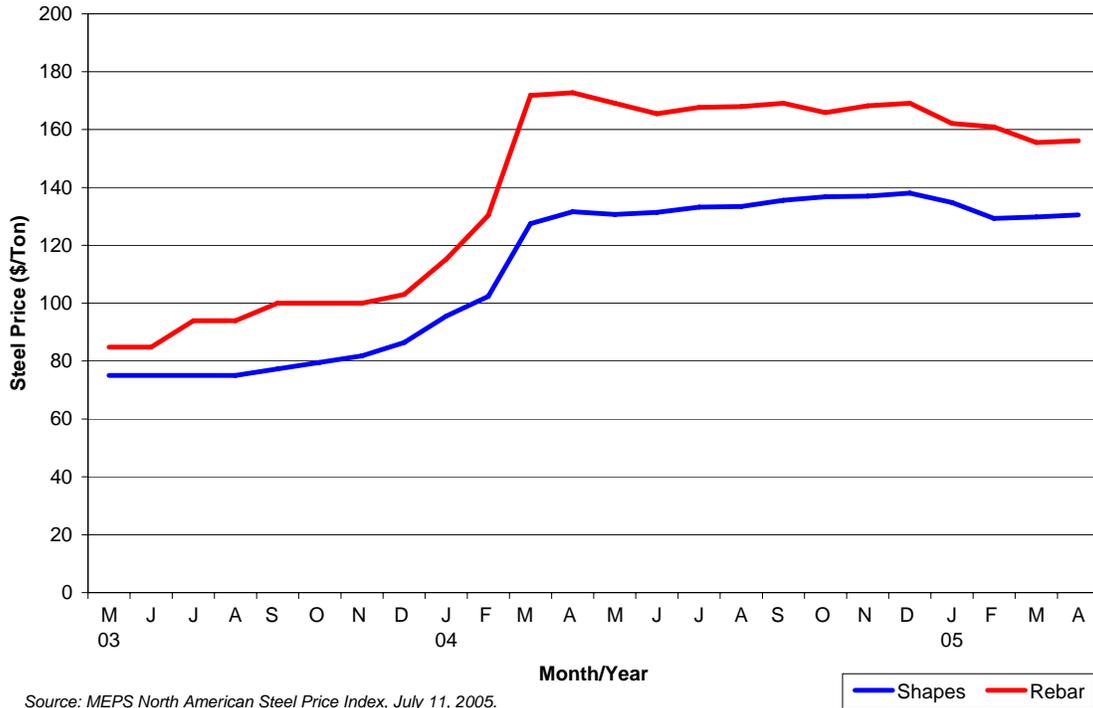
Source: Equity Research, April 29, 2005.

As can be seen in Figure 4, in 2003 and 2004 imports were dramatically higher at one hundred five (105) and one hundred ten (110) million tons per year, respectively. This level of imports nearly equaled the domestic production for those periods. Since overall domestic consumption of steel had not changed from the years immediately prior, the apparent reason for the significant increase in steel imports was to build stockpiles to take advantage of the increase in steel prices occurring during that time frame.

Figure 5 is a summary of domestic steel prices from early 2003 through mid-2005.

Figure 5

Steel Price Index



As shown in Figure 5, steel prices nearly doubled during the period from May 2003 to March of 2004 from approximately \$80 per ton to a range of \$130-\$170 per ton. This dramatic increase in the price of steel was due, in large part, to the increased consumption of steel in China<sup>4</sup>.

This rise in the price of the types of steel products heavily used in the Department’s construction projects correlates to the considerable difference between the Department’s aggregate engineer’s estimates for new contracts and the aggregate low bid prices during fiscal year 2003/2004, reflected in Figure 1 of this report. More specifically, analysis of the data underlying Figure 1 for fiscal year 2003/2004 revealed that it included the well publicized bid for the San Francisco Oakland Bay Bridge Signature Span. That one heavily steel-oriented project alone accounts for the entire difference between the total sum of low bid prices and the total sum of engineer’s estimate for that period. While a more detailed analysis of other specific projects was well beyond the scope of this study and report, it is reasonable to assume that a number of other contracts bid during the 2003/2004 period also included rapidly escalating steel prices not reflected in the Department’s engineer’s estimates for the work and that, absent those

<sup>4</sup> “Outlook for the Steel Industry,” The Wall Street TRANSCRIPT, May 2, 2005.

conditions, the total sum of low bid verses total sum of engineer's estimate may have reflected the historical average of approximately ninety-five percent (95%). Accordingly, the general instability of steel prices, or more specifically the rapid upward trend in those prices, must be considered as one of the principal causes of the recent trend of low bid prices exceeding the engineer's estimate.

While consuming more steel during the 2003/2004 period, China had also been increasing their own production capacity to the point that in mid-2004 they were no longer a large importer of steel<sup>5</sup>. China is also expected to continue to increase its own steel production capacity in the future. This, plus a general slowing of economic growth in China, could cause global steel prices to drop over the next five years<sup>6</sup>. However, short-term domestic steel prices may remain at current levels because domestic producers are selling at discounted prices to foreign markets in order to maintain high domestic prices<sup>7</sup>. This suggests that the Department could continue to see its low bid prices exceeding its engineer's estimates for a number of years, particularly in light of "Buy America" provisions.

### *B. Portland Cement*

Figure 6 is a summary of domestic production and consumption of cement, another integral component in the Department's wide-ranging construction contracts.

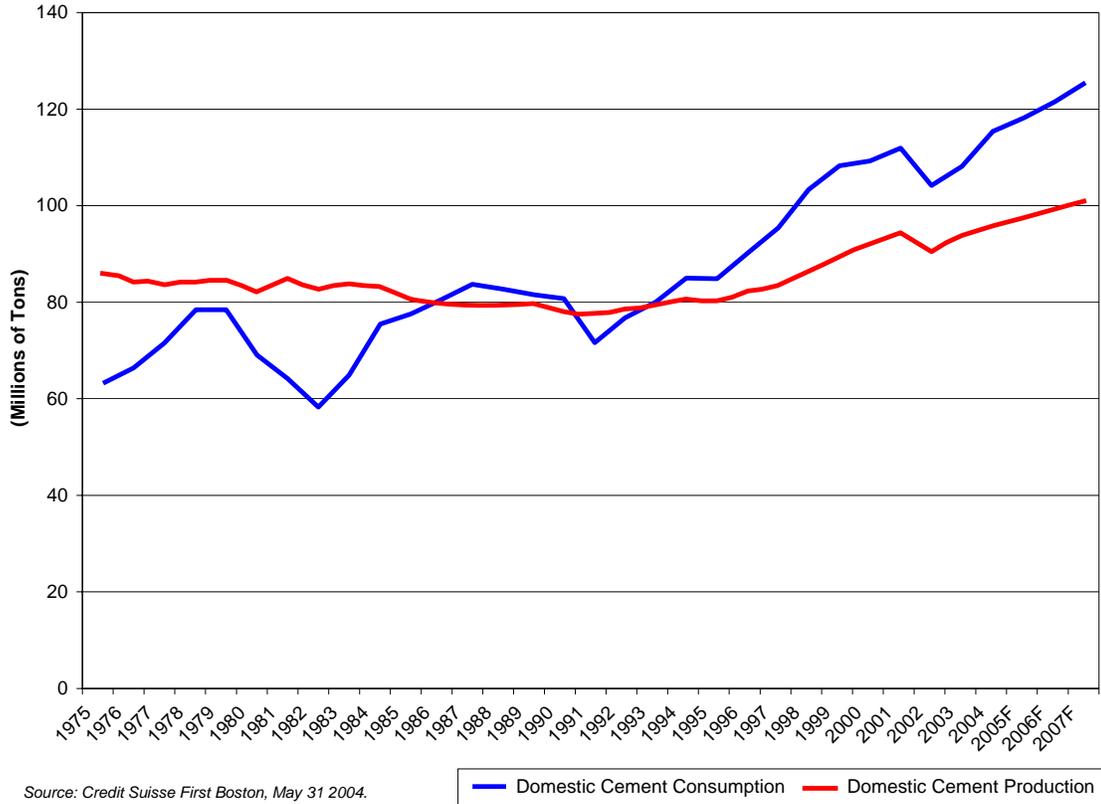
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<sup>5</sup> "Outlook for the Steel Industry," The Wall Street TRANSCRIPT, May 2, 2005.

<sup>6</sup> "Materials," Engineering News-Record, Pg 13. Vol. 254 No. 3, January 24, 2005

<sup>7</sup> Tumazos, Cheung & Saha, "Steel; Exports Rise in 2005..." Prudential Equity Group, LLC, April 29, 2005

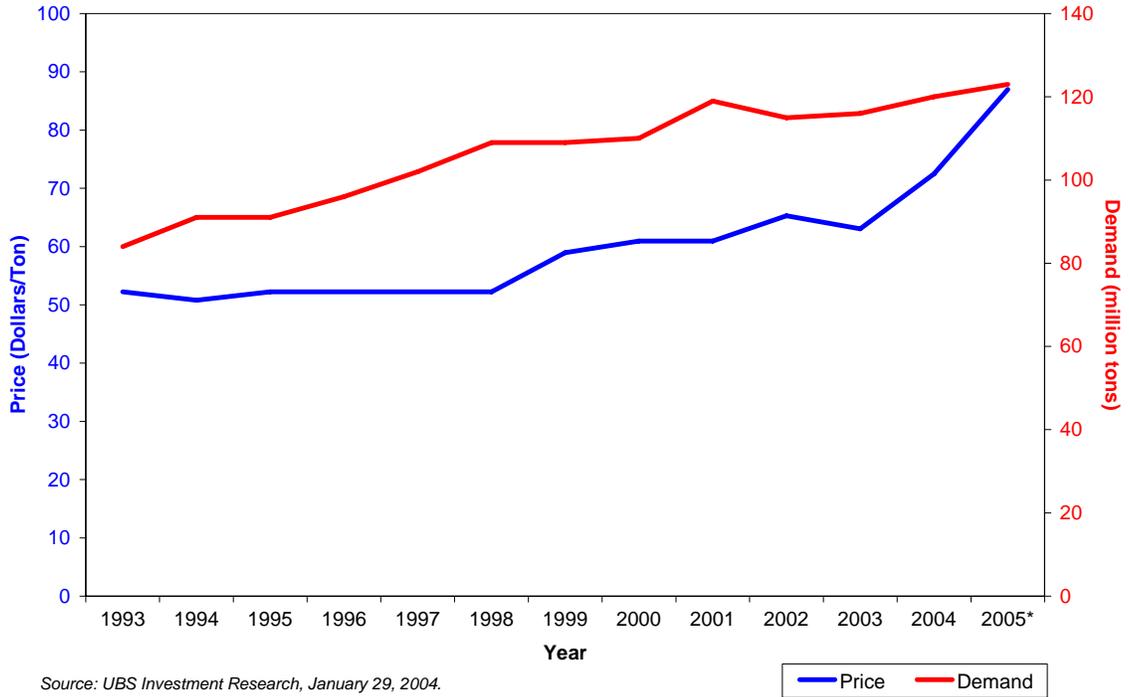
Figure 6 Domestic Cement Production and Consumption



As shown in Figure 6, the US demand for cement in 2004 was approaching one hundred twenty (120) million tons, which was an all time high. Imports of about twenty-seven (27) million tons were needed to fill the gap between domestic production and demand, continuing a historical trend over the last several years.

Figure 7 is a summary of the historical relationship between the demand for cement and the price of the commodity.

Figure 7 Demand and Price Relationship for Cement



As summarized in Figure 7, strong demand for the material, along with increased freight rates, higher energy costs, and a weakening dollar abroad, has driven producers to raise prices nearly thirty-five percent (35%) since the beginning of 2004. Increases in cement prices may also be attributable to a lessening of competition in the supply side of the market due to buy outs of domestic cement manufactures and ready-mix plants by three major global cement producers. The dramatic rise in the price of steel and the timing of the rise in cement prices correlates to the fiscal year 2003/2004 total sum of low bids exceeding one hundred percent (100%) of the Department’s engineer’s estimates for the work. Cement price instability, or more specifically the rapid upward trend in those prices, must be considered as one of the principal causes of the recent trend of low bid prices exceeding the engineer’s estimate.

The demand for cement is expected to continue to rise, but the supply is not anticipated to keep pace, due to the high capital costs associated with production expansion<sup>8</sup>. Short-term forecasts for cement prices indicate a continuing escalation on the order of six to ten percent (6-10%) in 2005<sup>9</sup>. This suggests that

<sup>8</sup> David Brock, Roger Collison, “Buiding Materials”, Credit Suisse First Boston, June 3, 2005.  
<sup>9</sup> David Brock, Roger Collison, “Buiding Materials”, Credit Suisse First Boston, June 3, 2005.

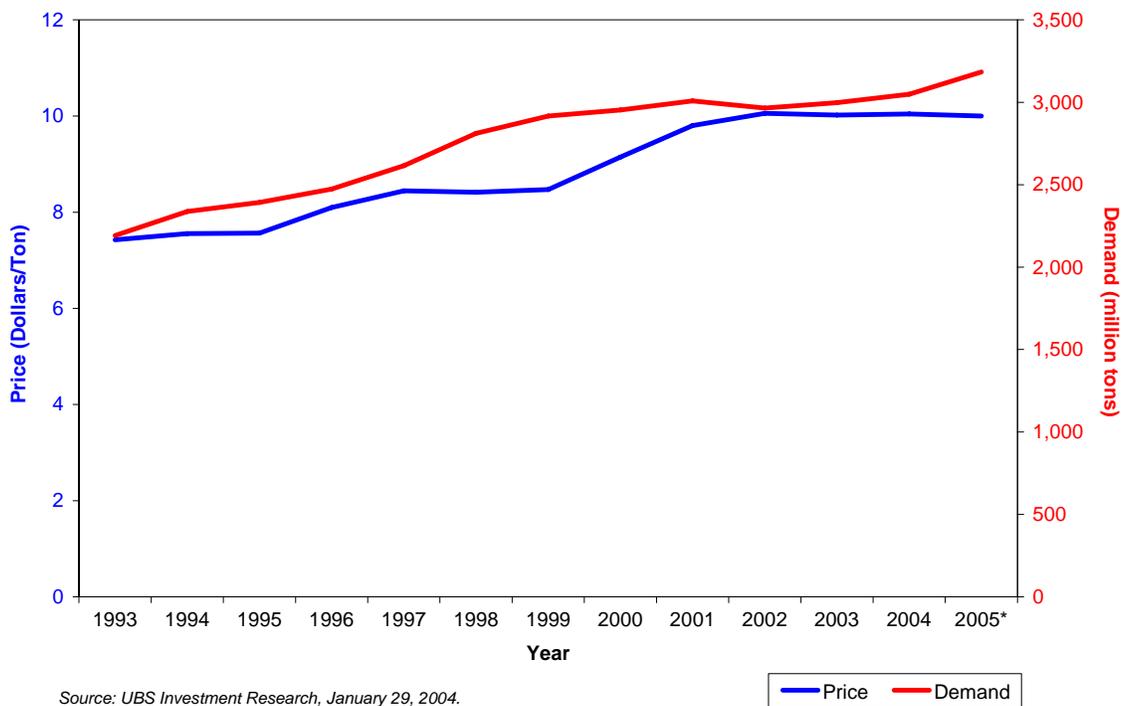
the recent trend of low bids exceeding the Department’s cost estimates is likely to continue, particularly in light of the retrospective nature of the engineer’s estimates and the significant role that the material plays in the Department’s construction contracts.

**C. Aggregates**

The third material assessed as part of this analysis was aggregates, which again plays a significant role in the majority of the Department’s construction work. The domestic demand for aggregates in 2004 was over three thousand (3,000) million tons, which, as with cement, was, unsurprisingly, at an all time high<sup>10</sup>.

Figure 8 is a summary of the historical relationship between the demand for aggregates and the price of the commodity.

**Figure 8 Demand and Price Relationship for Aggregates**



As summarized in Figure 8, domestic prices for aggregates have trended upward along with increasing demand due, in part, to costs for fuel, power, freight,

<sup>10</sup> David Brock, Roger Collison, “Building Materials”, Credit Suisse First Boston, June 3, 2005.

and environmental compliance being passed along to buyers<sup>11</sup>. However, prices appear to have been stable over the last three years. This suggests that prices for aggregates were not a contributing factor in the recent trend of low bid exceeding the Department's cost estimates.

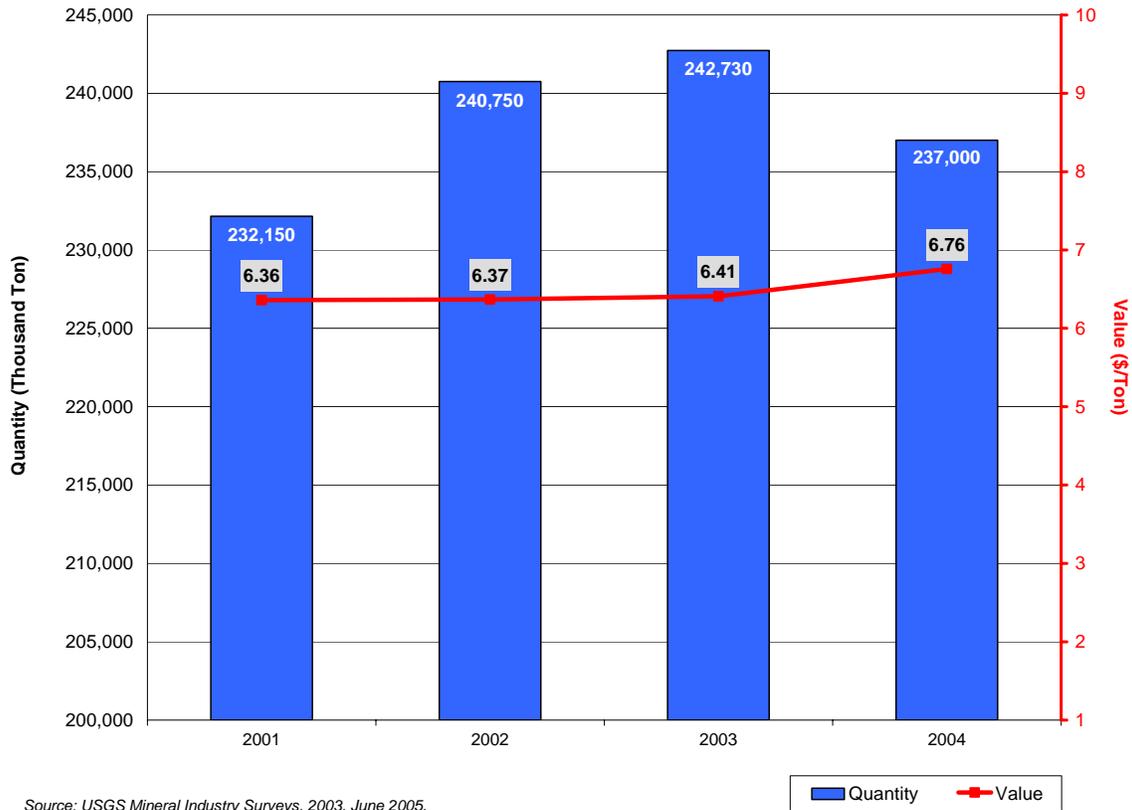
Note that the price for aggregates reflected in Figure 8 does include costs for lime treatment, which the Department requires on occasion to alleviate moisture sensitivity of asphalt pavements, the cause of stripping of asphalt from the aggregates. It is also worth noting that the cost of such treatment is typically six to ten dollars per ton if a treatment facility is available, thereby effectively doubling the cost of the aggregate. If the treatment facility is not in place, the cost of providing the lime treatment can be around \$100 per ton (or ten times the price of the untreated aggregate) if treatment equipment must be mobilized to the production location and project site. These factors are important for consideration as the declining supply of aggregates is expected to result in a decline in the overall quality of the material and increase the necessity for such treatment in order to maintain the overall quality standards on the Department's work.

Figure 9 is a summary of aggregate use in California over the last few years along with data regarding the material's value at the production plant.

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<sup>11</sup> David Brock, Roger Collison, "Buiding Materials", Credit Suisse First Boston, June 3, 2005.

Figure 9 California Aggregate Use and Value



Source: USGS Mineral Industry Surveys, 2003, June 2005.

Review of the data summarized in Figure 9 indicates that California aggregate consumption decreased in 2004 by approximately two and one half percent (2.5%). In addition, data for the first quarter of 2005 indicates a decline in consumption over the first quarter of 2004 of almost fourteen percent (14%). This decrease in California aggregate consumption may, in fact, be attributable to the decrease in the volume of construction work undertaken by the Department in fiscal year 2004/2005.

The demand for aggregates is expected to continue to rise moderately for the short term with increased infrastructure expenditures driving the need for additional material. In the long term, prices are anticipated to continue to increase as supply slows. The decline in supply is because existing pits are becoming exhausted, and permits for new pits are becoming more difficult to obtain<sup>12</sup>. The permitting process for a new pit can take from two to ten years, often with a

<sup>12</sup> David Brock, Roger Collison, "Building Materials", Credit Suisse First Boston, June 3, 2005.

significant initial financial investment with no guarantee of approval<sup>13</sup>. Additional factors that influence the cost of materials that use aggregates are asphalt price, fly ash price, the availability of trucks, the cost of fuel and trucking regulations. As with the forecasts for cement, this suggests that the recent trend of low bids exceeding the Department's cost estimates is likely to continue.

In summary, review and consideration of the markets for certain materials used throughout the range of the Department's construction contracts indicates that the recent instability in the steel and cement markets do appear likely to have been contributing factors in the recent trend of low bid prices exceeding the engineer's estimate. Conversely, it appears that the relative stability of prices for aggregates was not a contributing factor in the recent trend of low bid exceeding the Department's cost estimates. However, continued instability is projected in the markets for steel, cement, and aggregates. This suggests that the recent trend of low bids exceeding the Department's cost estimates is likely to continue in light of the retrospective nature of the engineer's estimates and the significant role that these materials play in the Department's construction contracts.

### ***VI. Other Factors Not Evaluated***

Department management identified a number of potential factors that were thought to be contributing to the recent trends. The Department solicited input from the construction contracting community to confirm if those factors were, in fact, influencing their decisions concerning bidding on the Department's work. To the extent that other factors were involved in those decisions, the construction contractors were requested to illuminate those areas for the Department.

There is potentially a significant number of other considerations relative to bidding on construction contracts. Some of those considerations are unique to the owner's approach to the work; some are unique to the potential bidders, and some depend on the general economic situation at the time the contracts are advertised. The limited time allotted to perform and report on this analysis precluded an exhaustive treatment of all of the factors that may have contributed to the recent trends experienced by the Department. These factors may warrant further study and are listed as follows:

- Insurance companies may have decreased willingness to provide contract bonds since the events of September 11, 2001.

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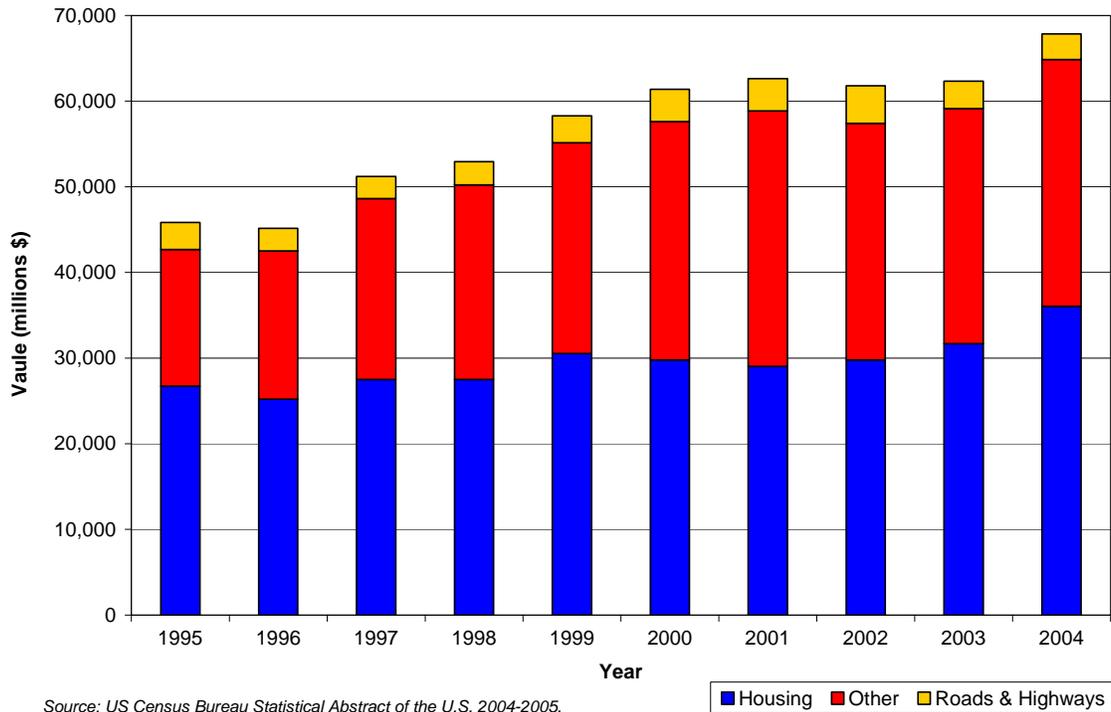
<sup>13</sup> "The Importance of Aggregates and Construction to California's Economy", Construction Materials Association of California, December 2004.

- Higher workers compensation, real estate costs, tax systems, etc. may have caused some contractors to leave California.
- Contractor consolidations may have occurred through buyouts, mergers, bankruptcies, etc.
- Contractors may have experienced shortages of qualified project managers and trade labor skilled in highway construction work.
- The average cost of the Department's projects has escalated in recent years, and may have affected the bidding pool of contractors due to bonding limitations and their inability to pursue larger contracts.
- Liquidated damage amounts are required to be revised biannually, and were revised in November 2001. The resulting increased levels may have affected a contractor's willingness to risk monetary loss or to bid on the Department's work.

### ***VII. Construction Activity***

The focus of the fourth aspect of this analysis was the overall volume of construction work throughout the state, and the makeup and trends associated with the various sectors of this significant component of the California economy. Construction activity in California has trended steadily upward since 1995 (with a minor decline in the year 2002) and was estimated at nearly \$70 billion in 2004. A summary of the overall volume of construction broken into three sectors is shown in Figure 10.

**Figure 10 California Construction Volume by Sector**

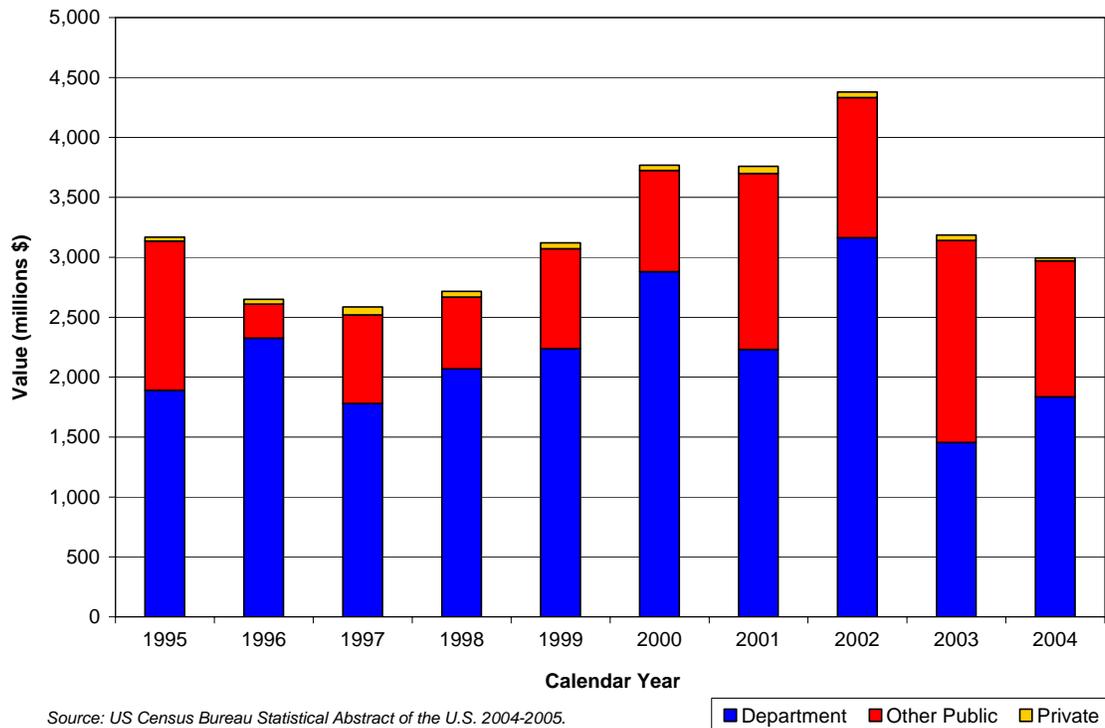


As shown in Figure 10, construction of transportation facilities (bridges, highways and streets) is just one sector of the overall construction industry activity in California. Typically, the roads and highways sector ranges from only about four to eight percent (4-8%) of the total volume, with the average being about six percent (6%). Housing activity, on the other hand, makes up nearly half of the total volume of construction activity in the state<sup>14</sup>. The balance of the total construction volume in the state is comprised of work on various buildings, such as apartments, hospitals, schools, offices, warehouses, etc., and projects such as dams and water treatment and distribution systems. As can be seen in Figure 10, each of these sectors has been contributing to the overall growth in construction volume in California, with the relative contributions of the sectors remaining generally in balance over the last ten years. It should be noted that from this macro-perspective that the overall volume of construction activity during the years 2003 and 2004 increased by approximately \$6 billion.

<sup>14</sup> The Housing construction values used are an approximation of the cost to construct such housing in California, not the actual real estate values. These values were based upon an assumed 46% of western housing starts being in California (as there were in the year 2000), an assumed typical house of 2000 sq ft and an estimated cost of \$83/sf (as was the case in the year 2000) as the cost to build one house. The values calculated do not include the cost of land.

Figure 11 is a summary of the makeup of the roads and highways sector of the California construction market.

**Figure 11 California Roads and Highways Sector Construction**



As can be seen clearly in Figure 11, the Department's work is a sizable portion of the transportation sector averaging approximately seventy percent (70%) of all bridge, road, and highway work performed throughout the state over the last ten years. Consequently, construction contractors doing road and highway work exclusively are primarily dependent upon the Department's spending. Also clear from the data in Figure 11 is the fact that the Department's work volume was significantly down in 2003 and 2004 when compared to previous year's levels. However, there was a rather large increase of non-Department road and highway work in 2003. This increase and the housing construction increase is during the same time frame which the Department experienced the trend of the declining number of bidders. It is reasonable to conclude from these facts that one contributing factor to the declining number of bidders for the Department's work has been the combination of lower levels of work advertised by the Department and the increasing volume of work undertaken by the balance of the transportation sector (as well as in the other increasing sectors) throughout the state.

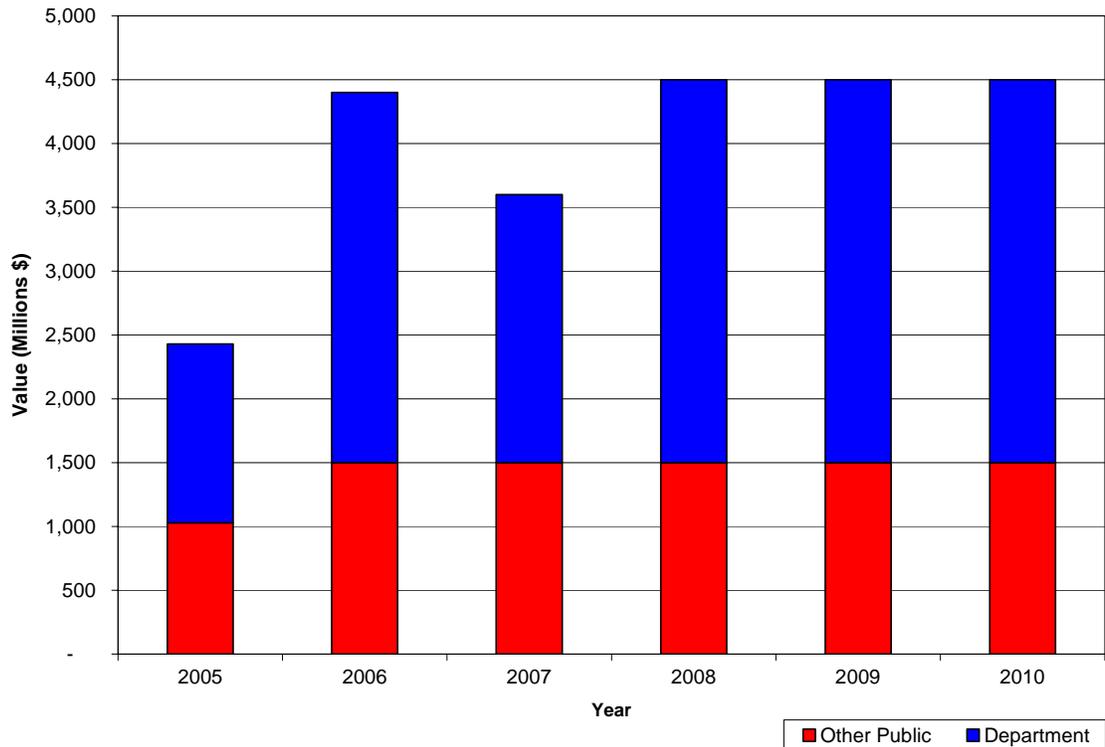
### ***VIII. Forecasted Construction Activity***

As shown in Figure 10 above, road and highway work is only about four to eight percent (4-8%) of the total annual construction work in California, but as shown in Figure 11, the Department is the main source of construction work on highways, streets, and bridges throughout the state. Therefore, an approximate increase of three to four-fold in funding levels for construction spending by the Department in fiscal year 2005/2006, as compared to the previous fiscal year, would not appear to cause much of an impact on the overall \$70 billion California construction industry. However, this increase would definitely affect contractors that principally support the road and highway sector of that industry.

Generally, funds that the Department programs for a specific fiscal year are distributed over that fiscal year and the following two fiscal years in a ratio of 20-50-30 percent, respectively. However, due to the Department putting a hold on contract awards for the past two fiscal years (although project designs continued to be completed) there is currently a significant backlog of projects ready to proceed to bidding and contract award. Because of this large backlog of projects, much of the anticipated increase in programmed funds is expected to be awarded in fiscal year 2005/2006. This will result in a considerable influx of work for the road and highway sector to absorb.

Figure 12 is a summary of the projected volume of construction work for the road and highway sector in California over the next several calendar years. The anticipated Department funding levels for the next several fiscal years have been converted to calendar years in order to provide a more realistic forecast perspective, consistent with the construction contracting community's view of work volume on a cash flow/calendar year basis.

Figure 12 Road and Highway Sector Projected Construction Volume



The non-Department work in the road and highway sector of the California construction industry shown in Figure 12 was assumed to remain constant at \$1.5 billion per year for the next several years, consistent with the actual levels experienced during the 2001-2004 time frame. This may not be the most conservative perspective, as anticipated work in this area may, in fact, increase in the near future due to self-help counties that were successful in obtaining additional funding through local taxes.

As outlined in Section IV of this report, survey responses from the construction contracting community, although relatively few, did provide an indication of significant capacity to be able to absorb the anticipated increase in Department's construction work, as the median reported additional work capacity was \$10 million. Furthermore, over seventy-two percent (72%) of the respondents to the survey indicated that they would more than likely bid on future Department work. This suggests that there is still solid interest in the Department's work in the California construction contracting community and provides another indication that the Department will be able to deliver its projects at the anticipated funding levels.

### IX. Conclusions

The purpose of this California Construction Market Analysis is, in part, to identify what factors may be contributing to the recent trends of fewer bidders and higher low bid amounts and to research how those various factors contribute to these trends. Department management identified a number of potential factors that may be contributing to the recent trends. The Department then solicited input from the construction contracting community to confirm if those factors were, in fact, influencing their decisions concerning bidding on the Department's work. To the extent that other factors were involved in those decisions, the construction contractors were requested to illuminate those areas for the Department.

It is important to note that there are potentially a significantly large number of reasons that come into consideration relative to bidding on construction contracts. Some of those reasons are unique to the owner's approach to the work; some are unique to the potential bidders and some dependent on the general economic situation at the time the contracts are advertised. Clearly, the limited time allotted to perform and report on this analysis precluded an *exhaustive* treatment of all of the factors that may have contributed to the recent trends experienced by the Department. Even with such limitations, the analysis did identify a number of factors that appear to have had an effect on either the number of bidders or the prices bid on recent Department construction work. These factors include:

- ❖ The complexities associated with the Department's construction contracts (such as traffic handling requirements, CPM scheduling specifications and certain labor compliance requirements);

These appear to have contributed to both the declining number of bidders (as some contractors chose to avoid such complexities) and to the increase in bid prices (as contractors incorporated additional costs or contingencies to meet the requirements of the contract).

- ❖ The declining volume of work advertised and awarded by the Department during the last fiscal year in conjunction with an increasing volume of road and highway work advertised and awarded by other public agencies during that same time frame;

This appears to have contributed to the declining number of bidders responding to the Department.

- ❖ The dramatic rise and unpredictability of certain material prices (such as steel, cement, and aggregates);

This appears to have contributed to the increasing low bid prices being received by the Department.

- ❖ The perspectives of the construction contracting community regarding the Department's contracts and contract administration. (Contracts are viewed as ambiguous or inadequate, and contract administration is viewed as somewhat adversarial and unresponsive to the contractor's concerns.)

In addition, this analysis was to assess if the recent trends and their underlying factors will adversely impact the delivery of the Department's future construction program, particularly in the current fiscal year. This concern is magnified in light of an approximate increase of three to four-fold in funding levels for new construction work in fiscal year 2005/2006, compared to the approximate \$1 billion for construction work advertised in fiscal year 2004/2005. Due to a significant backlog of projects ready to be advertised and awarded, much of the anticipated increase in programmed funds is expected to be awarded in fiscal year 2005/2006. This will result in a considerable influx of work for the road and highway sector to absorb.

The analysis did identify a number of factors that suggest that the Department will, in fact, be able to achieve its programmatic objectives. These factors include:

- ❖ The continued volume of road and highway construction work anticipated to be performed by other public agencies, while competing with the Department's projected work for the construction contractor's interest and resources, should not preclude a competitive bidding environment for the Department.

It is important to note that while the construction industry is, for the most part, very responsive to meeting the needs of owners, this responsiveness is not typically instantaneous. Existing contractual obligations and resource limitations will, most likely, contribute to a certain time lag from when the Department increases the level of its advertised work and the bidding volume returns to historical norms.

- ❖ The anticipated level of new construction contracts to be advertised in fiscal year 2005/2006 is in addition to the single San Francisco Oakland Bay Bridge Self-Anchored Suspension Span contract currently estimated at \$1.5 billion. While this significant contract will commit a particular contractor

(or joint venture) for a considerable amount of time and require significant resources to execute, this should not adversely impact the California construction community's ability to respond to the balance of the Department's advertised work.

- ❖ The limited number of respondents to the survey used as part of this analysis did provide an indication of significant capacity to absorb the anticipated increase in the Department's construction work, as the median reported additional work capacity was \$10 million.

Over seventy-two percent (72%) of the respondents to the survey indicated that they would more than likely bid on future Department work.

- ❖ The projected continued instability in the markets for steel, cement, and aggregates suggests that the recent trend of low bids exceeding the Department's cost estimates is likely to continue, particularly in light of the retrospective nature of the engineer's estimates and the significant role that these materials play in the Department's construction contracts.

This suggests that the actual awarded value of the Department's new construction contracts will continue to exceed the Department's cost estimates, and, as such, the actual number and scope of projects that is accomplished for a given level of available funds may be fewer than expected.