WORKING DOCUMENT

Tolling/Project Delivery Study - State Route 75/282 Transportation Corridor Project

City of Coronado

PRELIMINARY DRAFT FOR DISCUSSION

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Parsons Brinckerhoff

In Association with:

Nossaman LLP

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Executive Summary

1.1 PROJECT BACKGROUND

The State Route 75/282 Transportation Corridor Project (Project), which is currently under environmental study, includes construction of a tunnel located within the City of Coronado (City), San Diego County, California. Specifically, the site is located within the Third Street and Fourth Street couplet between the San Diego-Coronado Bridge (Bridge) and the Naval Air Station North Island (NASNI). The City of Coronado is located adjacent to downtown San Diego about a mile west across San Diego harbor. The City is home to a residential community as well as NASNI, which is the largest United States Navy base and naval air station (when measured by the number of sailors) on the west coast.

The bridge, one of the eight state-owned toll bridges originally operated by the Division of Bay Toll Crossings,[1] was opened in August of 1969 and connects the City to the I-5 freeway south of downtown San Diego. Originally tolled at $1 one-way (roughly equal to $5.75 in today's dollars), toll revenues were initially dedicated to the repayment of the $47.8 million bond issued by the California Toll Bridge Authority. In 1986, when the bonds were fully paid off, toll revenues were used to fund bridge improvements and maintenance, as well as to subsidize ferries and other transit services. In 1992, the California Legislature passed urgency legislation (Sen. Bill 122) transferring tolling authority from the California Transportation Commission (CTC) to the San Diego Association of Governments (SANDAG), the joint powers agency created under state law to address, among other things, regional transportation needs.[2] In 2002, the toll was discontinued by action of SANDAG's Board of Directors.[3] SANDAG's board is composed of a county supervisor and mayors or council members from each of the region's 19 local governments, including the City of Coronado.

The right-of-way for Third Street and Fourth Street is owned by the California Department of Transportation (Caltrans) and maintenance responsibilities are shared between the City of Coronado and the State of California. Currently, the City of Coronado experiences increasingly heavy traffic congestion between the bridge and NASNI. These conditions are most severe during the morning (approximately 5:00 – 8:00 AM) and afternoon (approximately 2:00 – 6:00 PM) peak commute hours.

1.2 PURPOSE OF THIS STUDY

The SR 75/282 Transportation Corridor Project Tolling/PPP Feasibility Study (Study) is intended to assess the feasibility of imposing a toll as one option to generate revenues that would be used to pay for construction, operation, maintenance, and major rehabilitation and replacement costs associated with a tunnel and tolling operation. The study is intended to inform the financial planning and policy decision

[1] The California Toll Bridge Authority ("CTBA"), including the Division of Bay Toll Crossings, was abolished on February 1, 1978. All powers and duties of the CTBA were transferred to the California Transportation Commission. (Streets & Highways Code, § 30050.)

[2] Sen. Bill No. 122 (1991-1992 Reg. Sess.) as chaptered Stats. 1992 c. 20.

[3] San Diego Association of Governments, Board of Directors Resolution No. 2002-11 (eliminating the toll collected on the San Diego-Coronado Bridge effective July 1, 2002).

processes and is not intended to provide the same level of detail normally associated with bond issues or other market transactions and is not intended to study other funding sources that may be considered in addition to tolling.

Project Alternatives

Several construction alternatives have been or are being studied as part of the environmental process. For this study, three alternatives have been identified which represent the range of options under consideration. Their capital costs in year of expenditure dollars are presented in Table 1 below.

Alternative 3 - known as Orange Avenue Underpasses, would retain the existing Third and Fourth Street couplet. This design calls for undercrossings for two westbound through-lanes beneath Orange Avenue at Third Street and an undercrossing for two eastbound through-lanes beneath Orange Avenue at Fourth Street. The Orange Avenue Underpasses constitute the only non-tunnel construction alternative, and represent the lowest level of capital investment.

Alternative 4B - would run beneath Fourth Street and would be designed as a four-lane double deck cut and cover tunnel. The double deck configuration would allow traffic lanes to function independently in accommodating eastbound and westbound traffic. The upper and lower cells would carry the westbound and eastbound traffic, respectively. Alternative 4B is the primary focus of this financial feasibility study.

Alternative 5A - Alternative 5A is planned as twin-bored tunnels that would also run underneath Fourth Street. Each tunnel would contain a reversible lane in order to accommodate traffic in both directions during non-peak hours. The twin-bored tunnel alternative would begin east of Glorietta Boulevard and end west of Alameda Boulevard.

Table 1: Total Estimated Capital Costs by Alternative (Year of Expenditure Dollars, in Millions)[4]

	Alternative 3	Alternative 4B	Alternative 5A
Total Capital Cost	$180 M	$500 M	$590 M

While capital costs for Alternative 5A are presented in the study, SANDAG is in the process of upgrading its transportation forecast model and was only able to provide toll traffic forecasts for Alternative 4B. Nonetheless, the toll traffic projections for travel to and from Coronado via the SR 75/282 bridge are expected to be similar regardless of whether Alternative 4B or 5A is built, though tunnel traffic would be slightly higher under Alternative 4B due to its all-day bi-directional operation.

[4] Cost estimates were developed in 2007 dollars. Escalation of costs from 2007 dollars to year of expenditure dollars is covered in Section 4.1.

Toll Scenarios Analyzed

For purposes of this study it is assumed that tolling begins near the eastern entrance to the future tunnel in 2014, which provides three years of toll revenue during tunnel construction ('pre-completion' tolling). Once the tunnel is open, three different variable toll scenarios for the financial capacity analysis conducted as part of this study. The variable toll scenarios would charge different tolls by travel direction at different times of the day, as shown in Table 2.

Table 2: Tolls Scenarios Modeled and Analyzed

Timing	Toll Scenario	Toll in Each Direction		
		Peak Period/ Peak Direction[1]	Peak Period/ Reverse Direction[1]	Off-Peak Periods[1]
Pre-Completion (2014-2018)[2]	Low Fixed-Rate Toll	$1.50		
2019 forward[3]	Low Variable Toll	$2.50	$2.00	$1.50
	Medium Variable Toll	$3.50	$2.25	$1.75
	High Variable Toll	$5.00	$3.00	$2.25

Toll values shown in year of opening dollars.

Notes:

1. During the morning peak period (6:00 AM to 9:00 AM), the peak direction is westbound (to Coronado), while during the afternoon peak period (3:00 PM to 6:00 PM), the peak direction is eastbound (to San Diego).
2. Pre-completion tolls expressed in year 2014 dollars (first year of pre-completion toll collection). During the pre-completion period, tolls are not assumed to increase with inflation.
3. Tolls assessed after the tunnel is open are expressed in year of opening 2019 dollars and are assumed to escalate by 2.5% each year to keep pace with inflation.

1.3 KEY FINDINGS

Project Financial Feasibility

- **Tolling SR 75/282 corridor traffic to and from Coronado, assuming its acceptance by the community, can make a significant contribution to project funding.**
  - The funding contribution from tolls could range from $330 million to $530 million under the three variable toll scenarios examined, as shown in Table 3.
  - Implementing a fixed $1.50 toll in each direction for three years during construction would provide $140 million of the above total funding contribution.
  - A subsidy of 10% of gross revenue is assumed to be paid to Caltrans as a contribution to maintenance costs for the bridge. This causes a significant reduction in the size of the toll funding contribution to the project cost.

- **Under favorable conditions, a public-private partnership (PPP) in which the private sector would design, build and operate the tunnel using toll financing could provide up to approximately 15% more project funding than public sector delivery with toll financing.**
    - As an alternative to public sector delivery and financing, a private sector design / build / finance / operate (DBFO) concession under a long term (40 year) lease was evaluated. The private concession model, with a longer term financing horizon, may provide a larger toll funding contribution assuming that (1) California's Possessory Interest Tax requirement of the concessionaire is waived or eliminated; (2) that the private sector has access to lower cost, tax-exempt financing via Private Activity Bonds; and (3) the concessionaire would not own the toll revenues in the pre-completion phase, which is assumed to eliminate income tax expense from 2014 to 2018.
    - However, a private sector concessionaire's exclusion from the Possessory Interest Tax (the exclusion is included in new California legislation as described below) is still subject to interpretation in California; and other legal, policy, and financing issues exist that need to be resolved for the project to be delivered more efficiently by the private sector.

Table 3: Financing Generated from Tolls (Year-of-Expenditure Dollars)

Project Delivery Scenario	Variable Tolling Scenario	Total Toll Funding Contribution
Public Sector	Low	$ 330 M
	Medium	$ 370 M
	High	$ 460 M
Private Concession	Low	$ 370 M
	Medium	$ 430 M
	High	$ 530 M

- **The toll funding contribution could range from 100% for Alternative 3 to 90% for Alternative 5A.**
    - With roughly the same expected traffic, slightly lower capital expenditures for toll equipment, and greatly lower overall capital cost, a lower toll rate would be needed to fully fund the capital cost of Alternative 3 as compared to the tunnel alternatives.
    - While it is all traffic to and from Coronado on SR 75/282 that actually gets tolled, traffic and revenue under Alternative 5A may be slightly lower than forecast for Alternative 4B since the 5A tunnel includes fewer overall tunnel lanes than 4B and does not provide bi-directional travel in the peak periods. Additionally, initial capital cost, annual operating and maintenance cost, and tolling rehabilitation and replacement costs are estimated to be higher for 5A than 4B. Therefore, with an anticipation of slightly lower revenue and

significantly higher cost, higher toll rates than analyzed in this study would be required to fully finance Alternative 5A.

- **Demand for travel to and from Coronado via SR 75/282 is relatively inelastic, or insensitive to the additional user costs represented by the toll.**
    - This result, which is based on the toll traffic projections produced by the SANDAG regional travel demand model, is not unexpected. The alternative route to Coronado requires a circuitous path that would add approximately 18 extra miles of travel and time costs in congested freeway or city traffic for the majority of trips.
    - The SANDAG model primarily captures the traveler response to tolls as route diversion, though some change of trip destination is also included. SANDAG is currently updating its model to better simulate tolls, including time of day variable pricing, which should make the tool better suited to providing SR 75/282 toll traffic forecasts in the future.

Project Implementation

- **Current law allows SANDAG to toll the bridge or its approaches, but restricts the maximum toll rate to not more than $1.50 for "class 1" vehicles (cars and light trucks).**
    - However, existing law does not limit SANDAG's authority to toll travel in both the westbound and eastbound directions on the bridge or its approaches.
    - Under current statutes, legislative action would be required to allow SANDAG to charge more than the current maximum toll rate. However, if the project is selected as a public-private partnership based on the rules set forth in SBX2 4 (described below), the toll rate cap and other limitations placed on SANDAG 's toll-setting authority under its existing, delegated authorization would be superseded by the provisions of SBX2 4.
- **The primary criteria for evaluation of the project delivery structure options are (1) compatibility with the project's goals for the project; (2) financial feasibility; and (3) political acceptability.**
    - The project alternative, toll scenario, and financing / delivery method that is best aligned with the project's goals or the most financially feasible may not necessarily be the solution acceptable to bridge and tunnel users or the general public.
- **The recently enacted SBX2 4 (Streets and Highways Code Section 143) authorizes regional transportation agencies (RTAs), such as SANDAG, to enter into public-private partnerships for the delivery of transportation projects.**
    - The vehicle for this must be a "comprehensive development lease agreement" and this ability expires January 1, 2017.
    - Under SBX2 4, the California Transportation Commission will select projects nominated by RTAs for PPP delivery.

- **For public sector development the project itself does not have existing statutory authorization to employ alternative procurement, financing and operational methods and partnerships, such as design-build or other forms of PPPs. However, a joint powers agreement (JPA) initiated by the City of Coronado could use alternative procurement options by partnering with a public entity with the authority to employ such options.**
    - The City of San Diego is a charter city with specific authority to use design-build pursuant to its city charter. If the City of Coronado enters into a JPA agreement with the City of San Diego, and if the JPA agreement designates the City of San Diego as the member whose constraints apply to exercise of powers by the JPA, the JPA would have the ability to use design-build.
- **SANDAG, as part of a JPA with the City of Coronado, may seek to implement the project pursuant to SBX2 4 and pursue California Transportation Commission approval to enter into a comprehensive development lease agreement allowing for design-build authority**.
    - If the City of Coronado is not able to secure design-build authority by seeking CTC authorization to deliver the project under the PPP provisions of SBX2 4 and declines to enter into a JPA with SANDAG and the City of San Diego, it would need to seek a legislative solution for either public sector development or PPP authorization.

2.0 Study Overview

2.1 SCOPE OF WORK

The scope of the study includes of the following:

- Concept for the toll collection system and related facilities, presented in Section 2.2.1 of this report;
- Traffic demand and toll revenue forecasts assuming a fully electronic toll collection system, presented in Section 3.0;
- Capital costs estimate for the toll system, presented in Section 4.1;
- Rehabilitation and replacement cost estimate for the tunnel and toll system, presented in Section 4.2;
- Estimate of annual toll collection cost and tunnel operations and maintenance cost, presented in Section 4.3;
- An evaluation of project delivery options including public-private partnerships (PPPs), presented in Section 5.0;
- A review of current legal issues related to the project and delivery methods, presented in 5.5;
- Preliminary financial feasibility analysis based on the revenue forecasts and cost estimates under two project delivery scenarios, the first one where the project is developed and operated by a public entity, and the second where a private partner delivers and operates the facility as a toll concession, presented in Section 6.0;
- Section 7.0 of this report presents suggested next steps for the City.

2.2 PROJECT DESCRIPTION

The State Route 75/282 Transportation Corridor Project, which is currently under environmental study, includes construction of a tunnel located within the City of Coronado, San Diego County, California. Specifically, the site is located within the Third Street and Fourth Street couplet between the San Diego-Coronado Bridge and the Naval Air Station North Island. The City of Coronado is located adjacent to downtown San Diego about a mile west across San Diego harbor. The City is home to a residential community as well as the NASNI, which is the largest United States Navy base and naval air station (when measured by the number of sailors) on the west coast.

The City of Coronado has been conducting preliminary engineering and environmental studies on the project for several years. These studies have identified several alternatives for the project as outlined below:

- Alternative 1: No Build
- Alternative 2: Travel Demand Management/Transportation System Management (TDM/TSM)
- Alternative 3: Orange Avenue Underpasses
- Alternative 4A: Two Lane Cut and Cover Tunnel

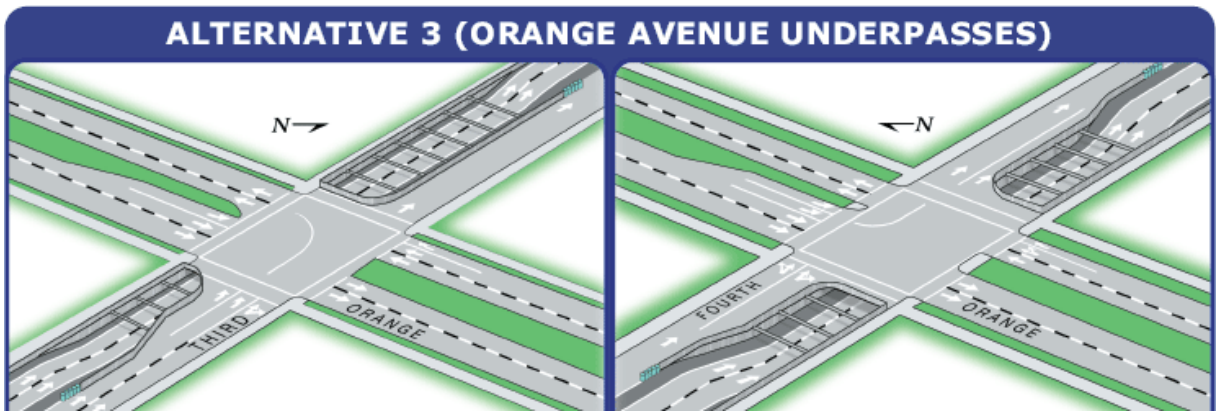
- Alternative 4B: Four Lane Cut and Cover Tunnel
    - Option 1 – West Portal on NASNI Only
    - Option 2 – West Portal on NASNI and City Property
- Alternative 5A: Two Bored Tunnels
- Alternative 5B: Two Bored Tunnels with Security Control at East Portal

The City has requested detailed analysis of two alternatives (4B and 5A) to evaluate the feasibility of financing based on toll revenues. Changes in tolling considerations for Alternative 3 are also briefly discussed in Section 2.2.1.

Alternative 3

Alternative 3, known as Orange Avenue Underpasses, would retain the existing Third and Fourth Street couplet. This design calls for undercrossings for two westbound through-lanes beneath Orange Avenue at Third Street and an undercrossing for two eastbound through-lanes beneath Orange Avenue at Fourth Street. The Orange Avenue Underpasses are the only non-tunnel construction alternative.

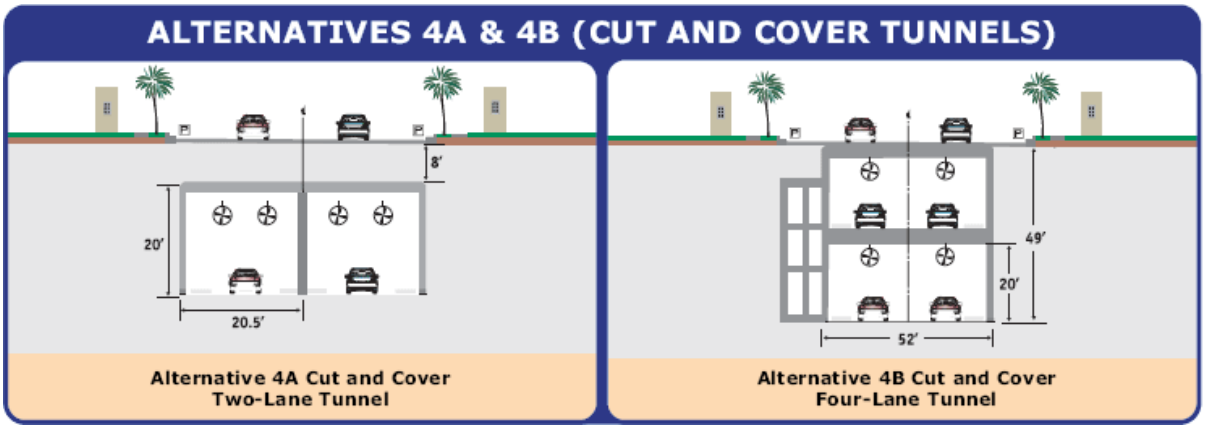
Figure 1: Diagram of Alternative 3



Alternative 4B

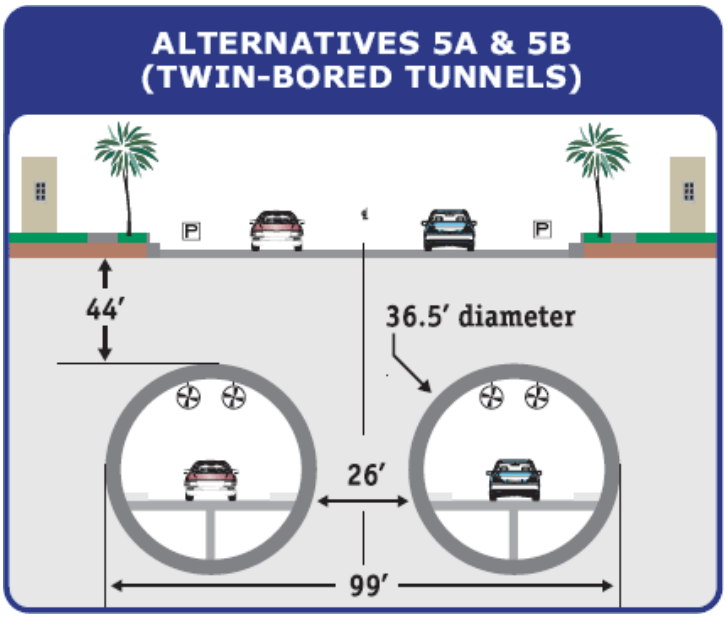
Alternative 4B would run beneath Fourth Street and would be designed as a four-lane double deck cut and cover tunnel, where a trench is excavated and roofed over. The double deck configuration would allow traffic lanes to function independently in accommodating eastbound and westbound traffic. The upper and lower cells would carry the westbound and eastbound traffic, respectively.

Figure 2: Diagram of Alternative 4B (right side)



Alternative 5A

Figure 3: Diagram of Alternative 5A



Alternative 5A is planned as twin-bored tunnels that would also run underneath Fourth Street. Each tunnel would contain a reversible lane in order to accommodate traffic in both directions during non-peak hours. The twin-bored tunnel alternative would begin east of Glorietta Boulevard and end west of Alameda Boulevard.

While costs for Alternative 5A are presented in the study, the San Diego Associated Governments, who provided the traffic forecasts to Parsons Brinckerhoff, is in the process of upgrading its transportation forecast model and was only able to provide traffic forecasts that include tolling for Alternative 4B. Traffic and revenue for Alternative 5A is likely to be slightly lower than forecast for Alternative 4B since 5A includes fewer tunnel lanes than 4B. Additionally, initial capital cost, annual operating and maintenance cost, and tolling rehabilitation and replacement cost are estimated to be higher for 5A than 4B. Therefore, with an anticipation of slightly lower revenue and significantly higher cost, higher toll rates than analyzed in this study would be required to finance Alternative 5A.

2.2.1 Electronic Toll Collection and Supporting Infrastructure

The toll collection system for the project has been configured to reflect the assumptions developed for this study on the operation and features of the tunnel, the City streets, and the bridge, and on the determination of the most cost-effective method of implementing those assumptions. The key features of the toll collection operation are as follows:

- The toll system is anticipated to be a fully electronic open road tolling system that would provide for tolls to be collected from all vehicles for travel in both directions (toward the City of Coronado and the City of San Diego).
- An automatic vehicle identification subsystem would be used, which employs an antenna and requires that vehicles be equipped with a transponder (or 'toll tag').
- For vehicles without a transponder or for those instances when the transponder is not detected, a license plate recognition system (pay-by-plate or video tolling) would be utilized. A similar system is currently in place in Toronto on the 407 toll road and is planned for other toll facilities in North America. In these instances, the vehicle's license plate number would be photographed and added to a 'plate list', or database. The vehicle driver would then have a predetermined amount of time to make payment via mediums such as a website, phone call, mail or convenience store kiosk for travel linked to the license plate on the list. Alternatively, a non-

transponder ETC account could be set up for license plate users. If payment does not occur within the predetermined time window, a bill could be mailed to the vehicle owner. Eventually, failure of the vehicle driver or owner to pay the toll would result in a violation and the court system proceedings that would entail.

- The financial analysis presented in this study does not include any incremental revenue, such as a toll surcharge, for pay-by-plate transactions, nor does it assume any incremental costs associated with collection by that method. In practice, there would likely be an additional cost associated with collecting the tolls from pay-by-plate customers, which could be offset by applying a toll surcharge equal to the average cost. A pay-by-plate toll surcharge would also provide an incentive for regular customers to obtain a transponder.
- Traditional cash payment at a toll plaza was not considered for this project, as this system can lead to traffic congestion at the toll collection plazas and higher operating costs.
- The toll collection system would have two gantries spaced approximately 35 feet apart spanning both directions of travel near the east portal of the tunnel, as well as gantries over the surface street entries and exits to and from Coronado. This combination would effectively toll all traffic to and from Coronado via SR 75/282 as if the toll were placed on the bridge span. Charging lower tolls for high occupancy vehicles (HOVs) or allowing free travel for HOVs is technically possible, but for this study HOVs are charged at the same rate as single occupancy vehicles.

Figure 4: Example of Electronic Toll Collection Gantry (South Bay Expressway - California)

- All electronic and computerized equipment (plaza computer, antenna readers, lane controllers, loop amplifiers and separator amplifiers) could be housed in a toll utility building near the east tunnel portal opposite the electronic toll collection gantries.
- A toll operations center (TOC) at which all data processing occurs, all account processing and license plate image interpretation takes place, all management and auditing functions are

performed and all customer service activities are conducted could be located in the City of Coronado, but does not need to be at the entry plaza location. The TOC can also be located separately from the customer service and violations processing operations.

- Variable message signs would be located on approaches to the bridge, which will show the toll charge for the specific time the vehicle is crossing.
- A three-person City staff is assumed that would be dedicated to oversight of third party vendors responsible for toll collection, accounting, customer service and toll system and tunnel operation and maintenance in a public sector scenario or to oversight of a concessionaire in a private sector scenario.
- Additional costs related to collection of delinquent accounts such as staff, legal fees, and collection agency fees would all be recovered by administrative fees and penalties paid by the violators. These fees are not included in the revenue forecasts and the costs are not included in the estimate of annual operating and maintenance expenses.
- Transponders are assumed to be provided to customers free of charge in order to discourage customers from using the video tolling option, which increases the administrative burden on a toll facility operator.

Tolling Considerations for Alternative 3

Traffic and Revenue Forecasts

Since the proposed tolls are collected from all vehicles, whether connecting to City streets or the tunnel, there likely will not be a sizeable difference in traffic or revenue between any of the alternatives, including Alternatives 3 and 4B. Put another way, for a given toll rate, the toll diversion as a share of 'toll-free' traffic would be essentially the same whether there is time saved going from the bridge to NASNI via the tunnel versus surface streets with grade separations at the couplet and Orange Avenue. Therefore, the revenue forecasts developed for Alternative 4B could also be loosely applied to Alternative 3 and Alternative 5A.

Toll Collection System Capital Cost

With Alternative 3, all toll collection equipment can be mounted on one gantry at the exit from the bridge to the City of Coronado. With the two tunnel alternatives, separate gantries are planned and additional toll collection equipment at the tunnel entrance to allow for the flexibility to potentially charge different tolls to those vehicles using the tunnel. Therefore, Alternative 3 will have slightly lower capital costs for toll collection equipment. However, the reduction in tolling capital cost will be insignificant compared to the overall capital cost savings of the grade separation alternative compared to the tunnel alternatives.

Toll Operations and Maintenance Cost

The annual costs of collecting tolls electronically, servicing customer accounts, collecting from violators, maintaining systems and equipment is a function of the number of accounts, number of toll transactions, and percentage of vehicles with transponders. The operations and maintenance costs related to tolling are anticipated to be approximately the same for the tunnel alternatives as the grade separation alternative. See Section 6.2 for a statement on the financial feasibility of Alternative 3.

2.3 KEY STAKEHOLDERS

As the City of Coronado considers the approach to be used in development of the project, the interests and points of view of the following stakeholders should be considered.

- **The San Diego Association of Governments** - As the regional planning agency SANDAG will be concerned about the regional impacts of adding tolls to traffic to and from Coronado via SR 75/282. SANDAG is the only agency with the authority to toll on the bridge or its approaches and collect the revenue from those tolls. SANDAG will need to approve and be party to any agreements concerning tolls for the project.
- **The California Department of Transportation** – Caltrans builds, operates, and maintains the state highway system. The proposed tolls will be on a state highway, SR 75/282, for vehicles crossing the San Diego Bay using the Coronado Bridge, with the toll applied to the west side approach roadways. Caltrans will be concerned with impacts on bridge traffic and potential funding for bridge maintenance costs.
- **The U.S. Navy** – Almost all the traffic using the new tunnel will be military personnel, civil servants, contractors, and suppliers going to and from the NASNI. The Navy will be concerned about the impact of the tolls on its commuting personnel, and its cost of doing business, which may increase somewhat due to increased transportation costs.
- **Labor Unions** – Organized labor in and around Coronado such as the North Island Association, the San Diego-Imperial Counties Labor Council AFL-CIO, and the Service Employees International Union (SEIU) may be concerned that tolls will make the cost of commuting more expensive.
- **Coronado Residents** – People living near the proposed tunnel will benefit the most from the project in terms of a significant decrease in peak period traffic congestion on their neighborhood streets. There will be cost impacts to these residents and the extent of these impacts will depend on how frequently they use the bridge to go to and from Coronado.
- **Coronado Businesses** – Businesses in Coronado, especially those whose customers come primarily from outside of the City, will be impacted by any reduction in traffic caused by the imposition of a toll on those that cross the bridge. Some businesses that cater to local residents may see a positive impact from the project if the tolls discourage local residents from driving into San Diego for shopping or recreation.
- **The City of San Diego** – The east end of the bridge touches down in the City of San Diego, which may be concerned with any traffic impacts from the tolls or financial impacts on any military personnel, contractors, or suppliers based in the City of San Diego.
- **The City of Imperial Beach** – The only alternative highway route into Coronado is to take SR 75 along the 'Strand' from the south where it connects back to I-5 approximately 10 miles south of where it leaves I-5 in San Diego and connects to Coronado via the bridge. SR 75 goes through the middle of Imperial Beach and that city will be concerned about increases in traffic level caused by toll diversion or, conversely, by the decreases in traffic, which might impact business along the route.
- **The County of San Diego** – Like the City of San Diego, the County may be concerned about the financial impact of the tolls on its residents that work on or sell to the Navy or other business in Coronado.

3.0 Traffic and Revenue Projections

3.1 TOLL SCENARIOS

Three toll scenarios were considered for generating revenues as part of this study each with peak, peak (reverse direction) and off-peak toll rates. They were modeled for build Alternative 4B (the four-lane tunnel alternative). Each was paired with five years of tolling at a fixed toll rate of $1.50 in each direction, prior to tunnel completion ('pre-completion'). The tunnel is assumed to be completed and open for operation in January 2019. All vehicles using the SR 75/282 corridor would be tolled and the tolls would not differ based on whether or not the vehicle traveled through the tunnel. Pre-completion tolls would not vary by time of day or direction of travel.

After the tunnel has opened, tolls are assumed to vary by time-of-day and travel direction (i.e., to/ from Coronado via the existing bridge). These tolls are also assumed to increase annually at the expected rate of inflation, assumed to be 2.5% per year.

Both prior to and after the tunnel is open, tolls would be the same for HOVs and single-occupancy vehicles. Medium and heavy trucks were assumed to pay a higher toll, averaging 2.5 times the toll charged to cars and light trucks, both during pre- and post-completion phases. Table 4 summarizes the toll rates analyzed in both phases. The toll rates vary by direction of travel: during the morning peak period (6:00 AM to 9:00 AM), the peak direction is westbound (to Coronado), while during the afternoon peak period (3:00 PM to 6:00 PM), the peak direction is eastbound (to San Diego). Accordingly, toll rates were set higher in the peak direction and lower in the reverse direction during the peak periods. Off-peak and weekend tolls are the lowest in all three scenarios.

Table 4: Tolls Scenarios Modeled and Analyzed

Timing	Toll Scenario	Toll in Each Direction		
		Peak Period/ Peak Direction[1]	Peak Period/ Reverse Direction[1]	Off-Peak Periods[1]
Pre-Completion (2014-2018)[2]	Low Fixed-Rate Toll	$1.50		
2019 forward[3]	Low Variable Toll	$2.50	$2.00	$1.50
	Medium Variable Toll	$3.50	$2.25	$1.75
	High Variable Toll	$5.00	$3.00	$2.25

Toll values shown in year of opening dollars.

Notes:

1. During the morning peak period (6:00 AM to 9:00 AM), the peak direction is westbound (to Coronado), while during the afternoon peak period (3:00 PM to 6:00 PM), the peak direction is eastbound (to San Diego).
2. Pre-completion tolls expressed in year 2014 dollars (first year of pre-completion toll collection). During the pre-completion period, tolls are not assumed to increase with inflation.
3. Tolls assessed after the tunnel is open are expressed in year of opening 2017 dollars and are assumed to escalate by 2.5% each year to keep pace with inflation.

Toll collection is assumed to be all-electronic, with drivers either paying using a registered transponder linked to an account, or being identified by their license plate for payment via other means (pay-by-plate). The financial analysis presented in this study does not include incremental revenue for a pay-by-plate toll surcharge nor does it include the incremental costs associated with collection by that method. In practice, a toll surcharge for pay-by-plate toll payment would be set at a level to offset the average additional cost of collection by that method.

Figure 5 and Figure 6 graphically illustrate the time-of-day variable toll schedules assumed for the low, medium, and high variable toll cases, by direction of travel.

Figure 5: Weekday Toll Schedules by Scenario—Westbound/to Coronado

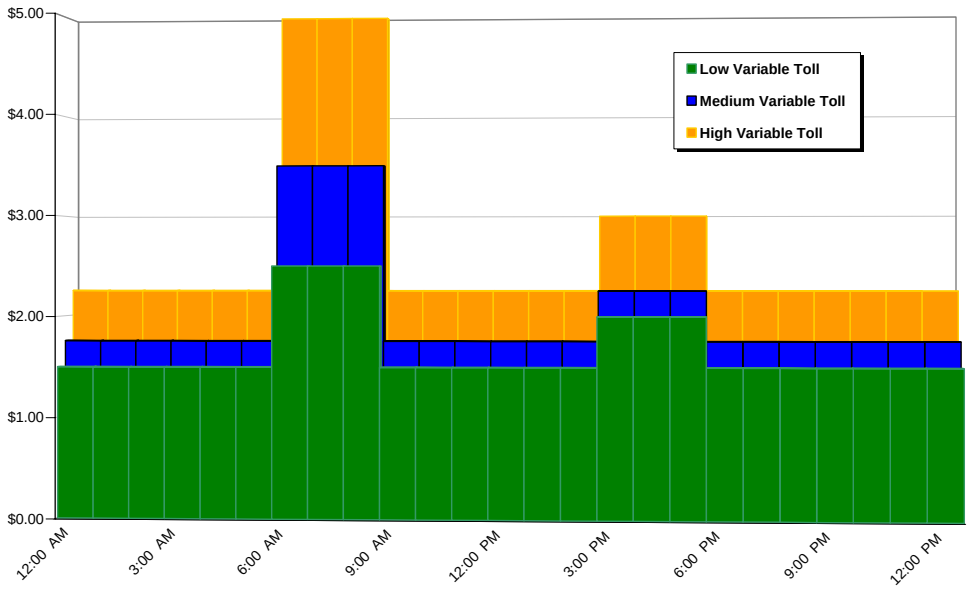
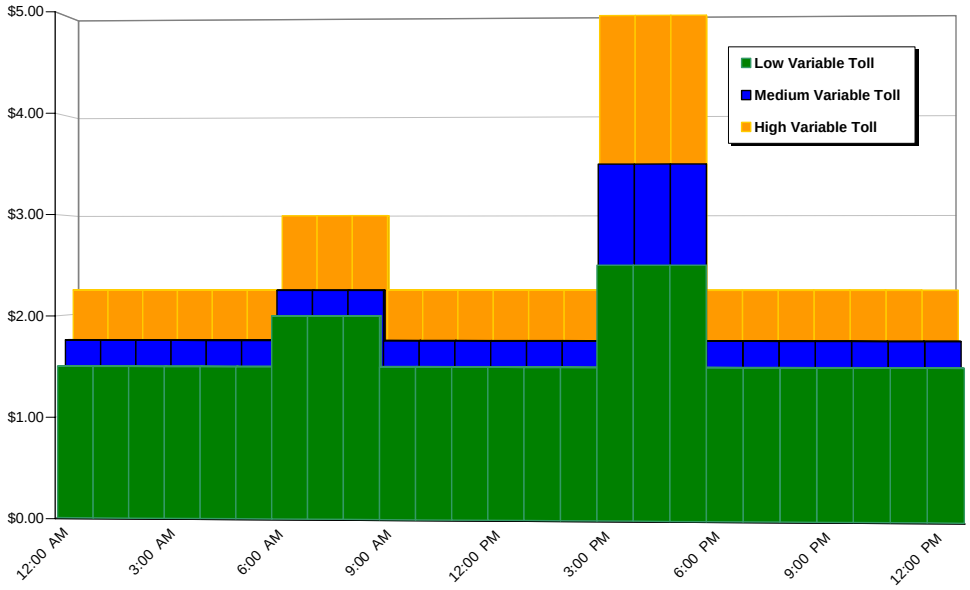


Figure 6: Weekday Toll Schedules by Scenario—Eastbound/to San Diego



The above variable toll schedules and their time intervals correspond to the demand model periods for which traffic projections were available in this study. A more detailed operational schedule with intermediate steps up and down from the peak period tolls would likely be considered for implementation once the basic toll parameters have been decided upon.

3.2 TOLL TRAFFIC PROJECTIONS

3.2.1 Baseline Projections Excluding a Toll on SR 75/282

The San Diego Association of Governments Series 11 transportation forecast model (demand model) was used to forecast peak period and daily traffic. The SANDAG regional transportation demand model is typically used to produce highway and transit forecasts for one or more forecast horizon years, e.g., 2030. The model outputs reflect the 2007. *2030 Regional Transportation Plan* (RTP) and utilize the "Reasonably Expected" network as defined in the RTP, and the Final Series 11 2030 Regional Growth Forecast.

The SANDAG model is the travel demand model most commonly used and accepted in the San Diego region for transportation planning analysis. The model employs the TransCAD transportation planning software, and follows the standard four-step transportation modeling process of trip generation, trip distribution, mode split and route assignment.

The baseline, toll-free traffic forecast produced by SANDAG for the bridge is somewhat lower than the comparable forecast reported in the Draft EIS document. This is likely due to future land use forecasts that have been updated since the DEIS travel forecasting was performed. However, it is not uncommon to have a different forecasts for measuring impacts, where identifying the maximum impact is important from the forecast for financial analysis, where the focus is on minimizing the risk of over-promising revenue. Toll revenue would be higher if the traffic growth projections assumed in the Draft EIS are realized.

For the 2030 forecast year, three toll scenarios and one toll-free scenario were modeled for the four-lane tunnel alternative, 4B. The tolled scenarios included traffic tolled at $0.90, $1.80, and $2.70 in 1999 dollars, referred to as “single toll”, “double toll” and “triple toll” scenarios (SANDAG modeling terminology), respectively. In addition, a tolled scenario was also modeled for the no-tunnel alternative at $0.90 toll (1999 dollars). Base year (2003) toll-free traffic numbers for the bridge were also provided by the model and were used with the 2030 toll-free forecasts to identify the traffic growth trend used to interpolate and extrapolate traffic over the financing period, starting with pre-completion tolling in 2014.

Table 5 presents daily traffic volumes for the SANDAG model base year (2003) and forecast year (2030) on the bridge for the baseline case assuming no toll. The average annual growth rate for typical weekday bridge traffic is estimated to be 0.53%, assuming a constant annual percentage increase in growth between 2003 and 2030. The SANDAG model provides AM and PM peak hour traffic volumes by direction and total off-peak traffic. Peak hour factors are used to convert hourly volumes to peak period volumes and off-peak volumes by direction are derived assuming any given weekday has the same volume of traffic in both directions over the course of the day.

Table 5: Average Weekday Baseline Bridge Traffic by Direction and Time-of-Day

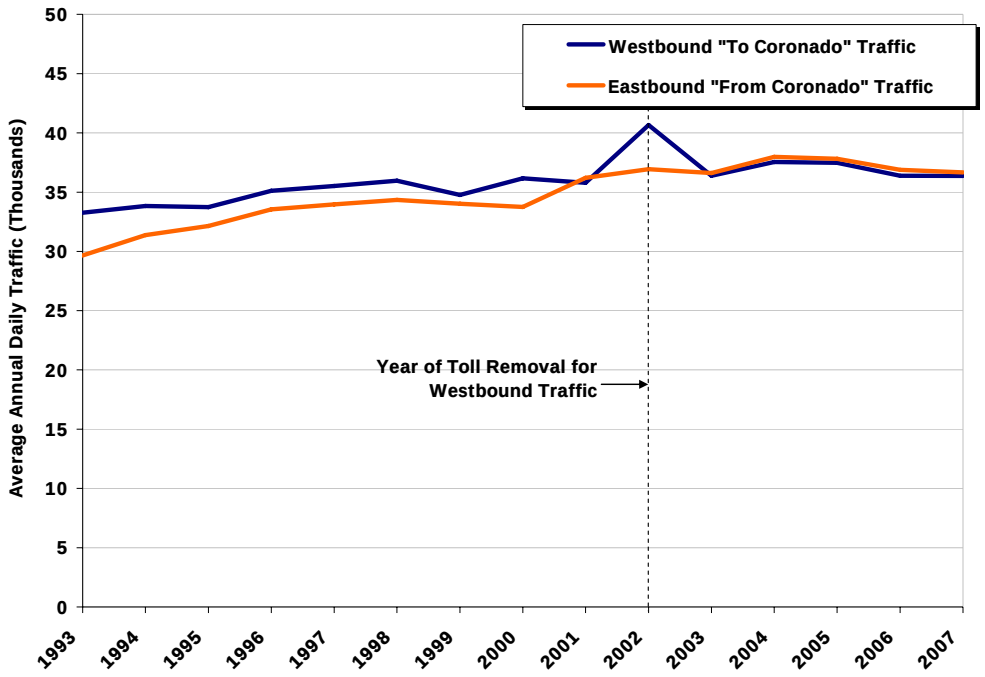
Model Year	Weekday Baseline Traffic (No Tolls)							
	Eastbound to San Diego				*Westbound to Coronado*			
	6-9 AM	3-6 PM	Off-Peak (18 hrs)	Total Daily	6-9 AM	3-6 PM	Off-Peak (18 hrs)	Total Daily
2003	5,731	10,863	23,457	**40,050**	8,786	7,007	23,457	**39,250**
2030	6,605	12,521	27,036	**46,162**	10,126	8,076	27,036	**45,238**

Notes:
1. 2003 traffic by time-of-day and direction are interpolated using the annual growth rate between 2003 and 2030 for toll-free average daily bridge traffic.
2. The SANDAG model assumes a 3-hour peak period containing the peak hour. The ratios of the peak hour traffic to the 3-hour peak period traffic are 0.38 for the AM peak period and 0.34 for the PM peak period.

3.2.2 Bridge Traffic Characteristics

Historical traffic count data were obtained from Caltrans. Average daily weekday and weekend traffic was analyzed for seasonal patterns and time of day, day of week and direction. Figure 7 shows the historical trends in traffic by direction. The average annual growth rate for traffic between 1993 and 2007 was 0.8% for the westbound traffic and 1.6% for eastbound traffic. The nominal $1.00 toll collected from westbound traffic (for a round-trip) on the bridge was discontinued in 2002. This resulted in a one-time, 14% year-over-year increase in traffic in that direction in 2002. Traffic in the eastbound direction remained largely unaffected with the toll removal.

Figure 7: Historical Average Weekday Bridge Traffic by Direction



Traffic on the bridge exhibits seasonal patterns with the month of July and August being the peak traffic months. In 2007, July experienced average daily traffic nearly 10% greater than average monthly ADT, followed closely by August. Figure 8 presents average daily traffic from January 2007 though the end of calendar year. Traffic exhibits some seasonality, peaking in the summer months and dropping off a bit in the winter.

Figure 8: Average Daily Traffic by Month (Thousands), 2007

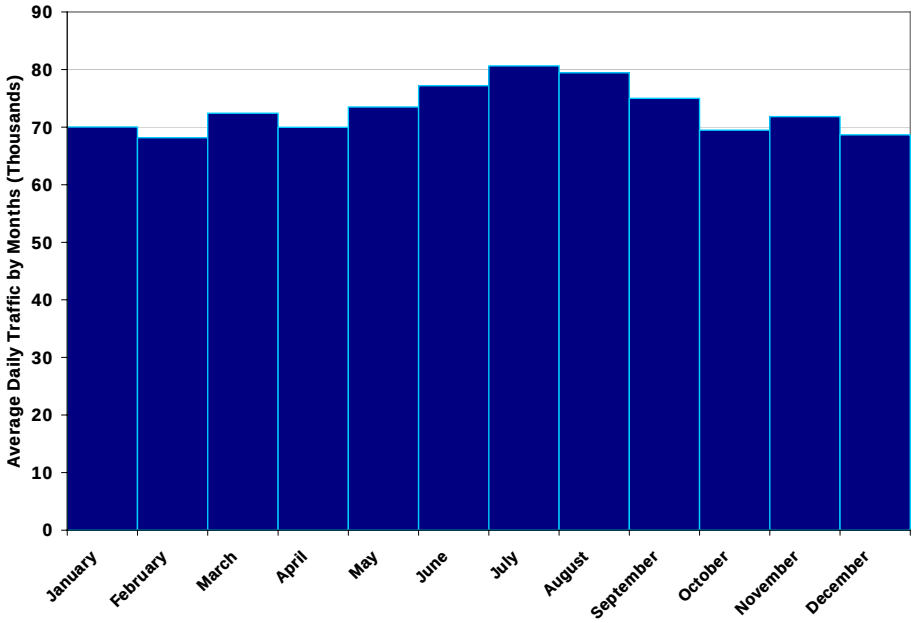


Figure 9 and Figure 10 present the time-of-day variations in weekday and weekend traffic on the bridge. Count data suggest that weekend daily traffic has historically been around 70% of weekday daily traffic. Weekday traffic exhibits two distinct peaks (during the AM and PM peak periods), while weekend traffic peaks once over the 24-hour period, during the mid-day, and rises and falls more gradually than during weekdays.

Figure 9: 2007 Average Weekday Bridge Traffic by Direction and Time-of-Day

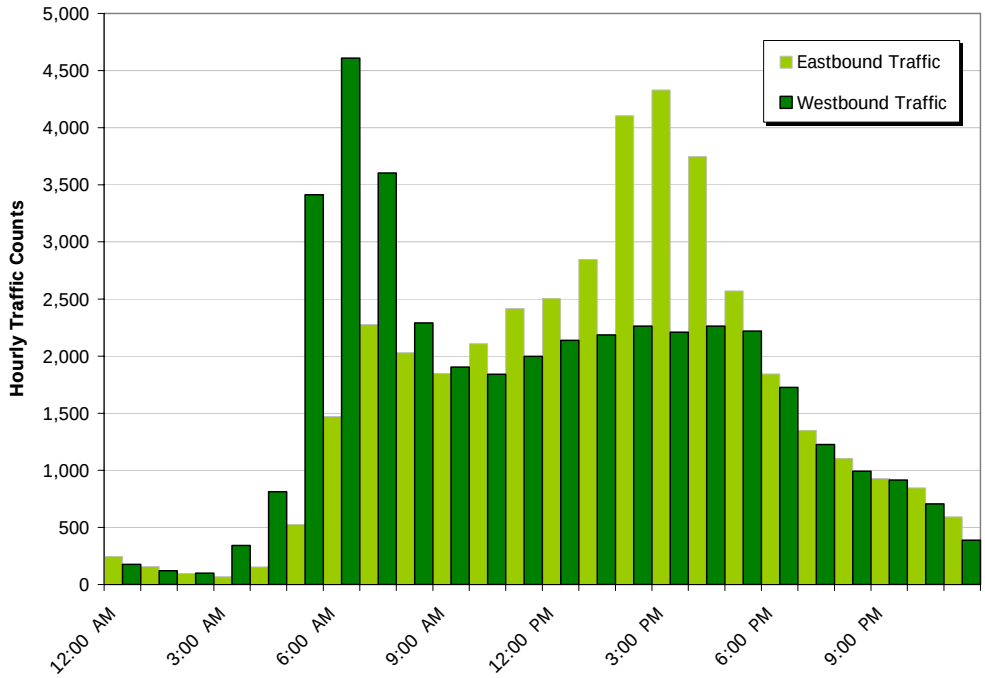
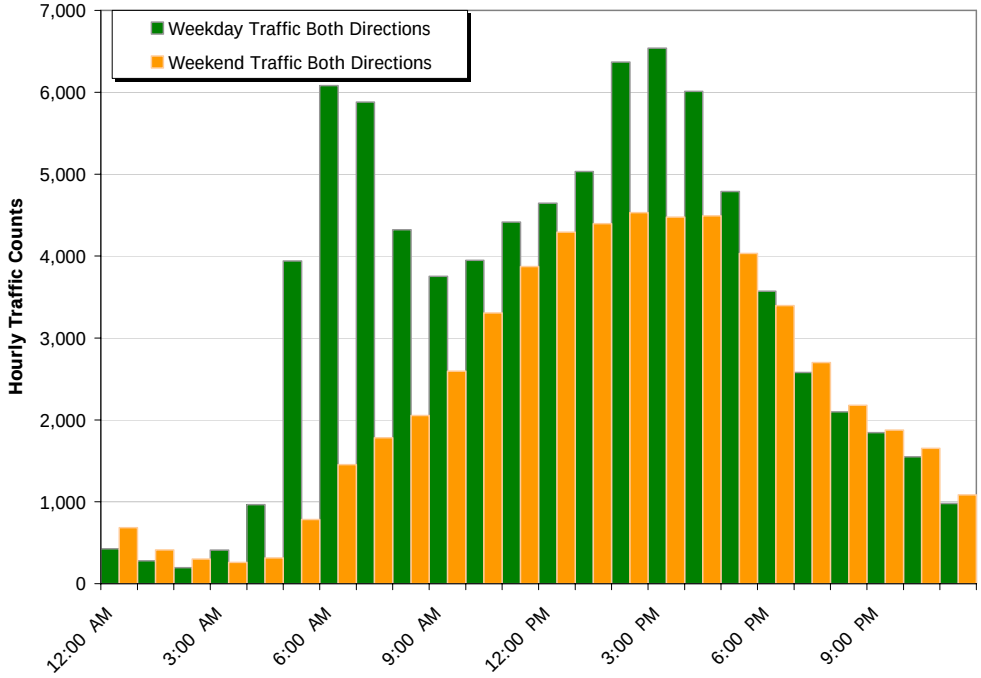


Figure 10: 2007 Average Bridge Traffic by Time-of-Day for Weekdays and Weekends



3.2.3 Toll Traffic Projections and Toll Diversion by Scenario

The initial modeling conducted by SANDAG tested three different fixed-rate tolls in both travel directions for all three model time periods (AM peak, PM peak and off-peak periods). Although none of these modeled cases corresponded directly with the three variable toll scenarios developed for this study, this work did provide 18 toll traffic building blocks varying by time period, direction and toll rate. Traffic projections from the building blocks were then selected to piece together the low, medium and high variable toll scenarios, using the modeled toll rates closest to the variable toll schedule targets for each time period and travel direction. Finally, elasticity adjustments were made to revise the traffic projections to match the target toll by time period and direction for the three variable toll scenarios.[5]

A series of updates are currently being incorporated within the SANDAG travel demand model. Once the updated model is available, SANDAG will be able to update the bridge traffic forecasts using the exact variable toll schedules identified for this study.

Toll rates in the pre-completion tolling phase remain constant at a nominal $1.50 from 2014 through 2018. The SANDAG 2030 model traffic for a single toll ($0.90 in 1999 dollars) was interpolated using the toll-free growth trend to arrive at traffic for each of the pre-completion years. The average daily traffic was then adjusted using a toll elasticity assumption. In addition, annual traffic forecast in the first year of pre-completion tolling was reduced by 10% to account for ramp-up effects as travelers experiment with their options and eventually become accustomed to paying tolls. Table 6 presents annual tolled traffic projections for the five years of pre-completion tolling.

Table 6: Average Weekday Toll Traffic — Pre-Completion Period

Fixed-Rate Toll*	2014	2015	2016	2017	2018
$1.50	69,401	77,902	78,703	79,405	80,289

* Toll rate corresponds to the toll applied in 2014 in 2014 dollars. Tolls remain constant in the pre-completion phase. 2014 traffic includes a 10% reduction reflecting ramp-up effects. Average daily traffic was adjusted using a toll elasticity of -0.2.

In order to estimate traffic for each of the variable tolling scenarios, a procedure similar to the pre-completion phases was adopted. In this phase, traffic forecasts by time period and direction from the SANDAG model runs with toll-rates closest to the respective variable toll schedule targets were used to estimate traffic. For example, for the peak-period, peak-direction toll for the High Variable Toll Scenario (toll rate = $2.89 in 1999 dollars), the peak-period, peak direction traffic volumes for the triple toll model run (toll rate = $2.70 in 1999 dollars) was applied and adjusted using the elasticity assumption to reflect traffic at $2.89. This procedure was repeated for each time period (AM peak period, PM peak period and Off-peak periods) and direction for each of the three variable toll scenarios.

[5] A toll elasticity of demand factor of -0.2 was used; the model traffic by time period and direction was adjusted by -0.2 × % variance in toll, where the variance is defined as the difference between the modeled toll and the target rate for each variable toll scenario, expressed in constant 1999 dollars.

Additional ramp-up adjustments were made for introducing variable tolling and higher overall toll rates once the tunnel is open. Annual traffic in the first year of toll operations after the tunnel is open was reduced by 2%, 5% and 7% for the low, medium, and high variable toll scenarios, respectively. While the additional ramp-up reduction in demand is expected to be more pronounced for the higher toll scenarios, the effect is assumed to be short-lived, not extending beyond the first year of toll operations once the tunnel is open. The bridge is the primary access route to Coronado and eventually, most traffic will go back to using it.

Table 7 presents the total annual bridge traffic for the three toll scenarios during post tunnel completion phase. Toll diversion is greatest for the high toll scenario, with a diversion rate of 15% relative to the no-toll scenario in 2030. Traffic diversion for the low and medium toll scenarios are 8% and 12%, respectively.

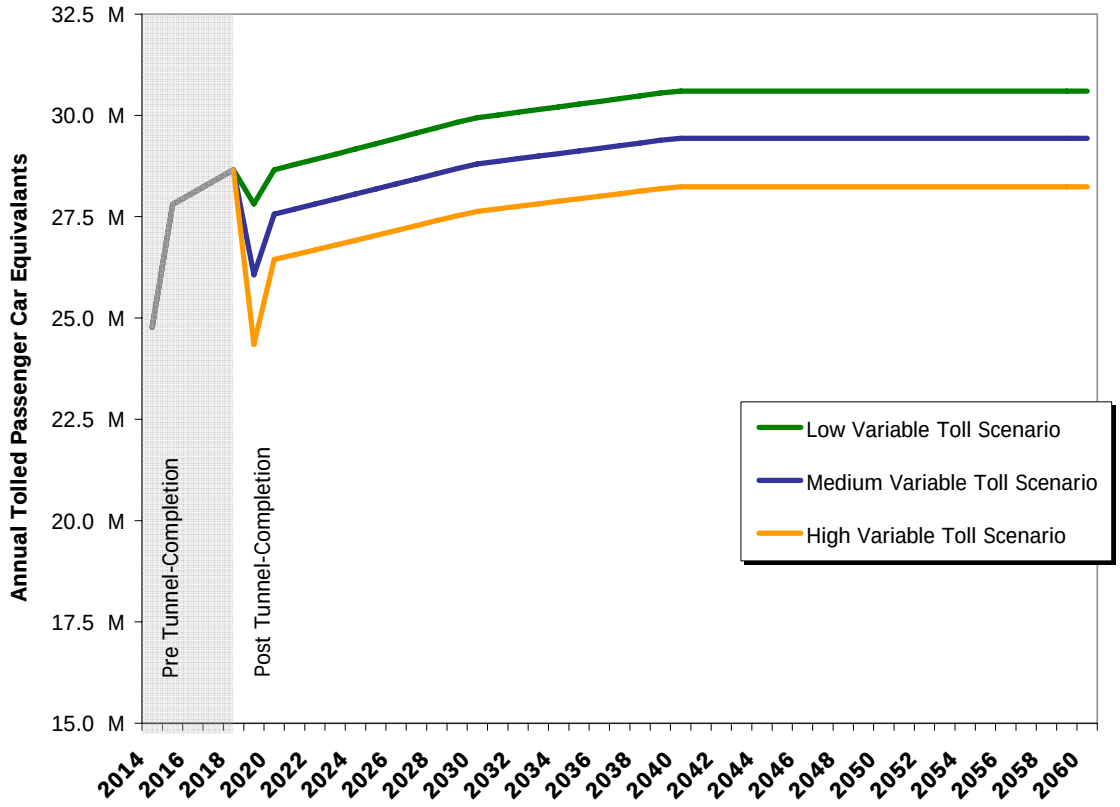
Table 7: Annual Average Weekday Toll Traffic by Direction

Scenario	Maximum Auto Toll Rate*	2020			2025			2030		
		EB	WB	Total Traffic	EB	WB	Total Traffic	EB	WB	Total Traffic
Baseline	-	43,300	42,500	**85,800**	45,000	44,100	**89,100**	46,200	45,200	**91,400**
Low Variable Toll	$2.50	41,200	39,100	**80,300**	42,100	40,000	**82,100**	43,000	40,900	**83,900**
Medium Variable Toll	$3.50	39,900	37,300	**77,200**	40,800	38,200	**79,000**	41,700	39,000	**80,700**
High Variable Toll	$5.00	36,800	37,200	**74,000**	37,700	38,100	**75,800**	38,500	38,900	**77,400**

*Toll rate in 2019 dollars applied to the peak period, peak direction traffic by toll scenario.

Figure 11 presents the toll traffic projections in annual passenger car equivalents (PCEs). Of the total traffic, 5% was assumed to be medium and heavy trucks. Since these vehicles are assumed to pay on average 2.5 times the toll for passenger cars, a factor of 2.5 was used to convert truck volumes to equivalent passenger vehicles.

Figure 11: Annual Toll Traffic 2014-2060 (Passenger Car Equivalent Volumes)



3.3 Gross Toll Revenue Projections

Table 8 presents the annual gross toll revenues generated during the three pre-completion tolling years. The revenues are expressed in nominal dollars and include a 2% reduction for uncollectible accounts and/or transponder and license plate read errors plus the effect of the ramp up adjustments previously noted.

Table 8: Pre-Completion Gross Toll Revenues (Year-of-Expenditure Millions of Dollars)

Fixed-Rate Toll*	Gross Toll Revenues				
	2014	2015	2016	2017	2018
$1.50	$36.2 M	$40.6 M	$41.0 M	$41.0 M	$41.5 M

* Pre-completion tolls expressed in year 2014 dollars (first year of pre-completion toll collection).
During the pre-completion period, tolls are not assumed to increase with inflation.

Gross toll revenues generated by each of the three toll scenarios after opening of the tunnel are summarized in Table 9 below. While toll collection at variable rates would begin in 2019, the 2020 gross annual revenues are presented as representative of the steady-state conditions following the additional ramp-up period in which travelers become accustomed to variable tolls and higher toll rates. 2030 values are also shown since they correspond to the SANDAG travel demand model forecast horizon year.

In addition to ramp-up effects, gross toll revenues also include a 2% deduction for uncollectible accounts and/or unreadable transponders and license plates. Toll rates are assumed to keep pace with inflation, escalating at a rate of 2.5% per year.

Table 9: Gross Toll Revenues (Year-of Expenditure Millions Dollars)

Scenario	Maximum Auto Toll Rate*	Gross Toll Revenues								
		2020			2025			2030		
		EB	WB	Total Revenue	EB	WB	Total Revenue	EB	WB	Total Revenue
Low Variable Toll	$2.50	$26.1 M	$23.4 M	**$49.5 M**	$30.2 M	$27.1 M	**$57.2 M**	$34.9 M	$31.3 M	**$66.2 M**
Medium Variable Toll	$3.50	$31.1 M	$26.8 M	**$57.9 M**	$36.0 M	$31.0 M	**$66.9 M**	$41.6 M	$35.8 M	**$77.4 M**
High Variable Toll	$5.00	$38.4 M	$34.3 M	**$72.8 M**	$44.4 M	$39.7 M	**$84.2 M**	$51.4 M	$45.9 M	**$97.3 M**

*Toll rate in 2019 dollars applied to the peak direction traffic in the peak hour in each scenario.

4.0 Project Costs

This section provides a summary of the initial capital expenditures and ongoing operating, maintenance, and major rehabilitation and replacement costs for project Alternatives 4B and 5A. Capital costs, as presented in Section 4.1, are those required to construct the tunnel and associated infrastructure, including the tolling system. In addition to initial capital costs, there are periodic costs related to major rehabilitation and replacement (R&R) of the roadway, tunnel, and tolling system that must also be taken into consideration, as presented in Section 4.2. Operating and maintenance (O&M) costs such as labor, electricity, routine maintenance, electronic toll collection, and any other annual cost related to keeping the tunnel and tolling system operating effectively are presented in Section 4.3.

4.1 INITIAL CAPITAL COSTS

This study assumes the project would be implemented using a Design-Build approach rather than under a traditional Design-Bid-Build. Total capital cost estimates for project Alternatives 4B and 5A have been summarized in Table 10 and then separated in Table 12 and Table 13 into costs that would be borne by a Design-Builder and costs that would be paid by the project's owner.

Capital costs were developed by Parsons Brinckerhoff under its contract for environmental studies using information from previous bids as a basis to estimate the costs for the proposed build alternatives for a majority of work items with additional analysis for the specialty items related to the tunnels. All costs for the toll collection system were estimated as part of this study based on cost incurred on other toll roads around the U.S. Capital cost items have been estimated in 2007 dollars; however because of the considerable amount of time until the start of construction, as well as the multiyear construction period thereafter, it is necessary to escalate the original costs to year-of-expenditure dollars (YOE dollars) in order to determine the amount of funding required throughout the design and construction period.

Table 10 summarizes total estimated capital costs of each project alternative identified earlier in this study (Alternatives 4B and 5A). Soft costs include design and project/construction management.

Table 10: Total Capital Cost Summary (Year of Expenditure Dollars in Millions)

Project Cost Element	Alternative 4B	Alternative 5A
Right of Way/Utility Relocation	$4.2	$3.7
Roadway Items	$59.7	$53.8
Structure Items	$264.5	$348.8
Tolling and ITS	$16.0	$15.1
Contingency	$85.3	$104.6
Soft Costs	$66.5	$68.1
Project Total	**$496.2**	**$594.0**

4.1.1 Capital Cost Escalation

Basis for Escalation

Capital cost estimates were originally estimated in 2007 dollars. In order to determine the additional costs that are expected to occur due to inflation on elements such as construction labor and raw materials, cost estimates in YOE dollars are escalated based on third party economic indices. Because escalation varies from region to region, indices for San Diego or California are used to approximate inflationary effects on project costs. Each major capital expenditure category (Roadway, Structures, Right-of-Way, and Tolling / ITS) is escalated using a unique method depending on the underlying composition of that category's cost.

Escalated Cost Estimate in Year-of-Expenditure Dollars

Using the original cost estimates in 2007 dollars and the basis for escalation explained above, the YOE dollar cost estimate was calculated based on the following methodology:

1. For each cost element contained in the 2007 cost estimate, identify the year project expenditures will occur;
2. Identify the cumulative escalation rates for each year of construction and derive cumulative escalation factors;
3. For each 2007 dollar cost figure contained in the estimate, multiply the cost estimate by the appropriate cumulative escalation factor to calculate the year-of-expenditure cost.

Given an assumed 4.5 year construction period and construction beginning in 2014, some initial 2007 dollars cost estimates grow significantly over the initial construction phase of the project. See Table 11 for annual escalation applied to each expenditure category.

Table 11: Capital Cost Escalation Rates

Capital Item	Period	% Per Year	Source/Index
Roadway / Structures / ROW	2007 - 2009	-3.00%	SANDAG
	2010	0.00%	
	2011	2.00%	
	2012 forward	3.00%	
Tolling and ITS	2008	1.36%	Economy.com California Consumer Price Index
	2009 to 2014	2.45%	
	2015 forward	2.25%	

Sources: SANDAG and Economy.com, a provider of economic analysis, data, and forecasting and credit risk services and a division of Moody's Analytics.

4.1.2 Capital Cost Estimates

Table 12 presents the details of the capital cost estimates in 2007 dollars. Estimated costs are broken into two categories: 1) Designer-Builder costs and 2) Owner costs. The project owner is assumed to maintain control of and directly pay for biological mitigation, right-of-way acquisition and support, project management support, and maintain an additional contingency of 5% of 'hard' capital costs that is separate from the contingency that is assumed for the Design-Builder's portion of cost.

The total project cost in 2007 dollars is estimated at $443.8 million for Alternative 4B, and $537.6 million for Alternative 5A. Designer/Builder costs for Alternatives 4B and 5A are $390.9 million and $485.3 million, respectively. Owner costs for Alternative 4B are $53.0 million and $52.3 million for Alternative 5A.

Table 13 shows each item in year-of-expenditure dollars, factoring in anticipated cost escalation. The total project cost in YOE dollars is estimated at $496.2 million for Alternative 4B, and $594.0 million for Alternative 5A. Designer/Builder costs for Alternatives 4B and 5A are $435.6 million and 532.5 million, respectively. Owner costs for Alternative 4B are $60.6 million and $61.5 million for Alternative 5A.

Tolling is assumed to begin in 2014, prior to the opening of the tunnel in 2019, in order to partially offset the initial capital cost of the project. This 'pre-completion' tolling would require some additional capital expenditures in 2013 in order to procure and set up a functioning interim tolling system by 2014. Though some of the items would not have to be purchased again for the finished project in 2019, certain assets would be used only for the pre-completion phase and replaced when the permanent tunnel and tolling system is constructed. Pre-completion tolling capital expenditures would be the same for each alternative.

Table 12: Cost Estimate by Project Cost Element (2007 Dollars in Thousands)

Designer/Builder Cost Elements	Alternative 4B	Alternative 5A
Right of Way Costs		
Utility Relocation	$3,900	$480
Relocation Assistance / Title and Escrow	$95	$3,005
Right of Way Cost Subtotal	**$3,995**	**$3,485**
Roadway Item Costs		
Earthwork	$397	$11
Structural Section	$2,843	$2,590
Drainage	$3,463	$1,348
Specialty Items	$24,467	$27,059
Environmental	$351	$351
Traffic Items	$7,124	$6,721
Detours	$255	$255
Minor Items	$5,322	$3,934
Roadway Mobilization	$5,855	$4,327
Supplemental Work	$3,246	$2,482
Roadway Items Cost Subtotal	**$53,322**	**$49,077**
Structures Item Costs		
Fourth Street Tunnel	$172,400	$176,800
West Tunnel Approach	$36,700	$78,400
East Tunnel Approach	$29,600	$30,500
Ground Improvement	$0	$36,100
Structural Items Cost Subtotal	**$238,700**	**$321,800**
Tolling Item Costs		
Pre-completion Tolling Costs	$6,114	$6,114
Tolling Systems and Equipment	$6,705	$5,981
Tolling Items Cost Subtotal	**$12,818**	**$12,095**
Soft Costs		
Contingency	$62,610	$75,572
Final Design	$19,405	$23,318
Soft Cost Subtotal	**$82,014**	**$98,889**
Designer/Builder Costs Subtotal	**$390,850**	**$485,346**
Owner Cost Elements		
Biological Mitigation	$14,322	$1,000
Right of Way Acquisition	$1,686	$1,688
Right of Way Support	$3,000	$3,000
Project Management Support	$18,536	$27,279
Contingency	$15,442	$19,323
Owner Costs Subtotal	**$52,986**	**$52,289**
Total Project Cost	**$443,836**	**$537,635**

Table 13: Cost Estimate by Project Cost Element (Year of Expenditure Dollars in Thousands)

Designer/Builder Cost Elements	Alternative 4B	Alternative 5A
Right of Way Costs		
Utility Relocation	$4,142	$508
Relocation Assistance / Title and Escrow	$101	$3,181
Right of Way Cost Subtotal	**$4,243**	**$3,689**
Roadway Item Costs		
Earthwork	$445	$12
Structural Section	$3,184	$2,838
Drainage	$3,878	$1,476
Specialty Items	$27,399	$29,646
Environmental	$393	$385
Traffic Items	$7,978	$7,363
Detours	$285	$279
Minor Items	$5,960	$4,310
Roadway Mobilization	$6,556	$4,740
Supplemental Work	$3,635	$2,719
Roadway Items Cost Subtotal	**$59,713**	**$53,769**
Structures Item Costs		
Fourth Street Tunnel	$191,038	$191,642
West Tunnel Approach	$40,668	$84,982
East Tunnel Approach	$32,800	$33,060
Ground Improvement	-	$39,131
Structural Items Cost Subtotal	**$264,505**	**$348,815**
Tolling Item Costs		
Pre-completion Tolling Costs	$7,188	$7,188
Tolling Systems and Equipment	$8,822	$7,869
Tolling Items Cost Subtotal	**$16,010**	**$15,058**
Soft Costs		
Contingency	$68,046	$83,528
Final Design	$23,045	$27,631
Soft Cost Subtotal	**$91,090**	**$111,159**
Designer/Builder Costs Subtotal	**$435,561**	**$532,490**
Owner Cost Elements		
Biological Mitigation	$14,907	$1,041
Right of Way Acquisition	$1,791	$1,787
Right of Way Support	$3,631	$3,618
Project Management Support	$23,096	$33,988
Contingency	$17,224	$21,067
Owner Costs Subtotal	**$60,647**	**$61,501**
Total Project Cost	**$496,208**	**$593,991**

Table 14 shows total initial capital expenditures by year. A more significant portion of capital expenditures occur in the earlier years of the construction period for Alternative 5A, while there is a more even capital cost distribution in Alternative 4B.

Table 14: Capital Cost Schedule of Expenditures (Year of Expenditure Dollars in Millions)

Calendar Year	Alternative 4B	Alternative 5A
2013	$29,833	$26,151
2014	$55,369	$126,752
2015	$90,108	$227,985
2016	$143,340	$149,297
2017	$113,528	$13,330
2018	$64,029	$50,477
Total	**$496,208**	**$593,991**

4.2 Rehabilitation and Replacement Costs

The following summarizes the rehabilitation and replacement costs related to the tunnel and tolling items to be replaced over the life of the project. R&R costs are assumed to be the same for both project alternatives. Since the project is limited to construction of the tunnel and approaches, and associated tolling equipment, R&R for the bridge is not included in the study. However, a subsidy that would be paid to Caltrans for bridge maintenance is included in the financial analysis.

4.2.1 Rehabilitation and Replacement Cost Escalation

Since most rehabilitation and replacement expenditures occur in the distant future, escalation has a significant effect on total R&R costs over the forecast period. Table 15 below shows the schedule of escalation factors applied to base year costs. Given that R&R contains a significant amount of labor, as well as tangible item purchases, a weighted Consumer Price Index (CPI) and wage average is used in order to calculate the escalation factors used in converting 2009 dollar R&R expenditures to YOE dollars.

Table 15: Rehabilitation and Replacement Escalation Rates

Period	% Per Year	Index Used
2007 to 2008	3.77%	50% California CPI and 50% California Wage
2009 to 2018	2.99%	
2019 to 2038	2.80%	
2039 forward	2.53%	California Long-term CPI

Source: Economy.com, a provider of economic analysis, data, and forecasting and credit risk services and a division of Moody's Analytics.

4.2.2 Rehabilitation and Replacement Cost Projections

Table 16 shows estimated R&R costs for the tunnel replacement categories including ventilation, lighting, drainage, fire protection, electrical, communications, and traffic control. The total forecast period cost of each tunnel alternative is shown at the bottom of the table. R&R costs are assumed to be the same for each project alternative.

Table 16: Tunnel Rehabilitation and Replacement Costs (Thousands of Dollars)

Replacement Item	Cost (2009$ 000)	Useful Life (Years)	Total 40-year Cost (2009$ 000s)	Total 40-year Cost (YOE$ 000s)
Ventilation				
Motor	$7	20	$14	$41
Bearings	$2	10	$6	$17
CO Monitoring System	$4	5	$34	$86
Tunnel Lighting				
Fluorescent Fixtures	$6,400	30	$6,400	$18,596
Light Level Controller	$45	30	$45	$131
Drainage				
Pumps	$32	20	$63	$189
Pump Controller	$11	10	$45	$119
Valves	$110	10	$440	$1,168
Hydro Carbon Detector	$60	10	$240	$637
Oil Water Separator	$40	20	$80	$240
Fire Protection				
Fire Alarm Controls	$23	20	$46	$138
Fire Detection	$76	10	$304	$637
Electrical				
Switchgear	$160	25	$160	$410
Transformer	$185	20	$370	$1,109
Circuit Breakers	$9	20	$19	$56
Automatic Transfer Switch	$17	20	$33	$99
SCADA System	$27	20	$53	$159
Emergency Generator	$165	30	$165	$479
Emergency UPS System	$132	15	$264	$644
Communication System				
Monitors and Cameras	$140	5	$1,120	$2,792
AM/FM/AR Radio Rebroadcast	$110	10	$440	$1,168
SCADA	$56	20	$112	$336
Traffic Surveillance & Control Systems				
Fixed Variable Message Signs	$250	15	$500	$1,219
Lane Use Signals	$4	10	$17	$46
Over height Detectors	$152	10	$608	$1,614
Total Tunnel R&R Costs			**$11,578**	**$32,128**

Table 17 displays estimated R&R costs for the toll collection equipment and the useful lives for each group of items. These costs are separate from the tunnel costs and represent the replacement costs needed to keep the tolling system functioning properly over time.

Table 17: Toll Collection Equipment R&R Item Costs and Useful Lives (2009 Dollars in Thousands)

Item	Useful Life (Years)	Alternative 4B	Alternative 5A
Open Road Tolling Lane	5	$2,727	$2,860
Toll Utility Building (Equipment)	5	$1,794	$2,167
Toll Operations Center	5	$471	$520
CSC & VPC Equipment	10	$513	$513
Lane Controller Software	5	$547	$547
HOST Computer System	10	$963	$963
LC SW Prototype & Factory	5	$547	$547
Lane Test Plan Development	5	$15	$15
HOST Computer System Testing	10	$456	$456
Office Furnishings & Equipment	10	$556	$556

Table 18 shows the escalated costs of replacing tolling equipment and other toll-related items over the forecast period of 40 years, while Table 19 shows the breakdown of total R&R costs by year, including those for the tunnel and for toll collection equipment. Costs are escalated using the methodology discussed in Section 4.2.1.

Table 18: Toll Collection Equipment R&R Costs (Year of Expenditure Dollars in Thousands)

Item	Total 40-year Cost	
	Alternative 4B	Alternative 5A
Open Road Tolling Lane Equipment	$53,674	$56,302
Toll Utility Building (Equipment)	$35,320	$42,664
Toll Operations Center (Equipment)	$9,273	$10,240
CSC & VPC Equipment	$3,864	$3,864
Lane Controller Software	$10,705	$10,705
HOST Computer System	$11,131	$11,131
LC SW Prototype & Factory Testing	$10,705	$10,705
Lane Test Plan Development	$285	$285
HOST Computer System Testing	$5,273	$5,273
Office Furnishings & Equipment	$6,473	$6,473
Total Tolling R&R Costs	**$146,703**	**$157,642**

Table 19: Total R&R Schedule of Expenditures (Year of Expenditure Dollars in Thousands)

Calendar Year	Alternative 4B	Alternative 5A
2022	$807	$807
2023	$8,403	$9,223
2024	$1,310	$1,310
2025	$3,330	$3,330
2027	$927	$927
2028	$10,521	$11,462
2032	$1,064	$1,064
2033	$11,826	$12,907
2034	$1,726	$1,726
2035	$4,387	$4,387
2037	$1,221	$1,221
2038	$14,757	$15,998
2042	$1,387	$1,387
2043	$14,830	$16,237
2044	$2,239	$2,239
2045	$5,683	$5,683
2047	$1,572	$1,572
2048	$38,132	$39,726
2052	$1,781	$1,781
2053	$18,507	$20,314
2054	$2,874	$2,874
2055	$5,191	$5,191
2057	$2,018	$2,018
2058	$24,338	$26,385
Total R&R Costs	**$178,832**	**$189,771**

4.3 Operating and Maintenance Costs

Section 4.3 discusses operating and maintenance cost estimates for the project. These annual expenditures are related to administration, accounting, customer service and operating and maintaining the tunnel and toll collection infrastructure on a day-to-day basis. General assumptions for the tolling operation are discussed in Section 2.2.1. Examples of O&M expenses are those related to maintaining toll collection equipment, processing ETC transactions, customer service functions, labor, security, etc. Some of these costs are fixed or invariant with the number of toll transactions, and some are variable costs estimated as a percentage of revenue. The two primary variable cost items are credit card transaction processing fees and an assumed subsidy of 10% of gross revenue paid to Caltrans to be used as a contribution to maintenance costs for the bridge.

Operation costs for the tunnel largely relate to the supply of power to the tunnel and control center, and control of traffic related functions. Tunnel maintenance costs relate to the maintenance and replacement of essential equipment such as electrical plant, ventilation fans, pumps, and maintenance of the tunnel structure.

4.3.1 Operating and Maintenance Cost Escalation

Like other costs presented earlier in this report, YOE dollar O&M costs for the tunnel, labor, and tolling system are estimated using third party economic forecasts. Since O&M cost projections contain a labor component, the costs derived for tolling and tunnel O&M are weighted with a labor cost inflation factor in addition to the raw material cost factor. These factors are used to inflate annual operating and maintenance costs in order to present the O&M costs in YOE dollars along with the 2008 dollar cost estimates.

Table 20: Operating and Maintenance Cost Escalation Rates

O&M Item	Period	% Per Year	Index Used
Tolling O&M	2009	2.54%	60% California CPI and 40% California Wage
	2009 to 2018	3.07%	
	2019 to 2039	2.84%	
	2039 forward	2.53%	California Long-term CPI
Tunnel O&M	2007 to 2008	3.77%	50% California CPI and 50% California Wage
	2009 to 2018	2.99%	
	2019 to 2038	2.80%	
	2039 forward	2.53%	California Long-term CPI

Source: Economy.com, a provider of economic analysis, data, and forecasting and credit risk services and a division of Moody's Analytics.

4.3.2 Operating and Maintenance Cost Projections

Table 21 provides operating and maintenance cost estimates in 2008 dollars. O&M costs are escalated throughout the forecast period to account for inflation, but not potential increases in the size of the toll collection operation. It is possible that there would be a portion of costs that would increase with a rise in traffic volume. In addition to the items displayed in the table, 10% of gross revenue is paid to Caltrans to be used as a contribution to maintenance costs for the bridge and another 3% of gross revenue is assumed to be paid in credit card processing fees.

Table 21: Annual O&M Costs (2008 Dollars in Thousands)

	Pre-Completion (2014-2018) Both Alternatives	2019 Forward	
		Alternative 4B	Alternative 5A
Tolling Systems Maintenance			
Open Road Tolling Lane Equipment	$19	$64	$68
Replenishment of Spare Parts	$40	$74	$57
Computer Software	$70	$70	$70
Communications and VMS	$1	$1	$1
Tolling Systems – Utility			
Open Road Tolling Lane Equipment Electricity	$8	$15	$18
Cellular Communications Cost for VMS	$2	$3	$3
Electrical Cost for Sign Lighting & VMS	$1	$16	$16
Tolling Systems – Operations/Labor			
Administration	$418	$418	$418
Finance	$154	$154	$154
Maintenance	$564	$564	$564
Toll Collection	$849	$849	$849
Customer Service	$780	$780	$780
Tunnel O&M Costs			
Operating (includes roadway lighting)	-	$1,824	$2,113
Maintenance	-	$1,492	$1,729
Other Operating Costs			
Building Leases	$344	$344	$344
Utilities	$100	$100	$100
Vehicle Leases	$27	$27	$27
Vehicle Maintenance	$18	$18	$18
Incident Response Services	$40	$40	$40
Police Patrol Services	$50	$50	$50
Communications /Advertising**	$100	$100	$100
Travel	$5	$5	$5
Office Supplies	$2	$2	$2
Training	$3	$3	$3
Dues and Memberships	$15	$15	$15
Professional Svcs (Audit, Legal, Engineering)	$100	$100	$100
Transponders	$250	$250	$250
Insurance	$500	$500	$500
Owner Oversight Staff (Director, CFO, Analyst)	$458	$458	$458
Total O&M Costs*	**$4,918**	**$8,338**	**$8,851**

** Excluding credit card processing fees and Caltrans bridge maintenance subsidy.*

*** Communications and Advertising Costs assumed to be $300k first year of operations.*

5.0 Project Delivery Options

5.1 OVERVIEW

Public-private partnerships (PPPs) have long been used to deliver toll facilities outside of the U.S. However, the mature and traditionally stable credit market in the U.S., combined with lower cost tax-exempt financing available to public sector road owners, has generally limited the domestic application of PPPs involving financing. Recently, though, the U.S. toll road sector has seen a noteworthy increase in private sector participation, including a few high-profile transactions involving private financing to pay for a new facility or to pay the owner for a long term lease on an existing facility. While these transactions are most-often referred to as public-private partnerships (PPPs), there are actually many forms of PPPs including those involving private financing.

Several alternatives exist to deliver public infrastructure assets and related services in partnership with the private sector, each strategy allowing for a different level of control, capital investment, and allocation of risks and responsibilities during each phase of a project. Several project delivery options may be available to deliver the tunnel depending on the authority provided under the current legal framework. The limitations imposed by the current legislation are discussed in Section 5.5. This section discuses the strategic implications of the major procurement options that could be used to deliver the project independently of the eventual legal form of the public entity sponsoring the project and its contracting authority (the term 'Project Sponsor' is therefore used in this Section).

The options discussed include[6]:

- **Public authority models**, whereby the infrastructure assets are procured using a **segmented approach** with traditional (such as Design-Bid-Build or DBB) or non-traditional (such as Design-Build or DB) engineering, procurement, and construction contracts on the one hand and operations and maintenance (O&M) service contracts on the other, solely using public funding mechanisms,
- **Public authority models** using an **integrated delivery method** combining infrastructure procurement with long-term operations contract using only public funding mechanisms (Design-Build-Operate-Maintain or DBOM),
- **Concession (or long-term lease) models** combining infrastructure design and construction with long-term operations contract using private sources of funds (Design-Build-Finance-Operate and Maintain or DBFO).

Debt financing for the project, whether a public- or private-finance mechanism is used, is assumed to be non-recourse debt, which would be secured only by toll revenues. If toll revenues are insufficient to cover operating costs and debt service, additional revenue may be needed to support the project. Under a private-sector financing scenario, additional payments from the Project Sponsor may be required to repay the project debt and equity investors. Such additional payments can take the form of an availability payment (see box below).

[6] Other models exist that are not necessarily appropriate for the Project and/or out of the scope of this Study.

Availability payments are fees received for services based on the level of performance achieved. Theses fees are guaranteed by the concession contract (provided the private party performs according to specifications) and paid by the Project Sponsor to the private partner during the period of operations. Such payments are subject to performance criteria (e.g., incident management, lane closure, level of service, air quality, lighting, timely completion of maintenance and rehabilitation activities, etc.) set forth in the concession agreement. When these pre-determined conditions are met, the system is said to be "available," and the corresponding availability payments are made. When these conditions are not fully met, the availability payments are reduced based on rules defined in the contract and on the actual level of performance achieved. Performance-based availability payments can also be used under a service contract or the "O&M portion" of a DBOM.

The choice of an appropriate delivery method for the project (independently of actual legal constraints) depends primarily on the following elements:

- The **definition of the physical assets** to be procured
- The **definition of the services** to be procured (e.g., maintenance of tunnel)
- The **level of control** that the Sponsor wants or needs to retain on specific aspects of the project (assets and/or services) and **the delivery timeline**: moving from top to bottom through the above delivery options the owner's control of specific aspects of design, construction, operation, and ownership generally decrease, while project delivery timelines are shortened and access to private sector capital becomes increasingly possible
- The **level of risk (i.e., responsibility)** that the Sponsor is ready to accept or allocate and the level of risk that potential private sector partners are willing to accept (at a given price). In particular, the degree to which the Project Sponsor as a public client assumes the **direct financial responsibility** for producing the project assets, with options ranging from public sources of funds to private sources of funds, with financing secured by project revenue or revenues from the public Sponsor
- The **amount and source of public funds available** for the project
- The **level of organizational readiness** of the public Sponsor

5.2 RISK ANALYSIS FRAMEWORK

As noted in the Section 5.1, choosing an appropriate delivery method for the project depends on assessing the assets and services to be procured and the type as well as the degree of risk and control to be allocated between the public and private partners. Once the project goals and constraints (e.g., availability of limited public funding) have been established, the choice of the procurement method focuses on the efficient allocation of risks between the public and the private partners, across all

elements of the project, so as to create the right incentives to procure the highest quality assets and services, within the project timeline, and at the lowest cost.

Such analysis can be developed within the analytical framework of a Risk Matrix, defining the project elements, standard project risk categories, probability of occurrence (sometimes qualitative), the consequences associated with the realization of a risk event, the cost associated with the realization of a risk event, and the corresponding risk allocation (i.e., responsibility). The Risk Matrix establishes a common framework for discussing risks among technical experts and across disciplines, and, once completed, serves as a roadmap to the risk allocation throughout the procurement process and the development of contract documents. For the present preliminary assessment, the following aggregate risk categories can be defined[7]:

- **Site risk**

  The risk that the project site will be unavailable or unable to be used at the required time, in the manner or at the cost anticipated (in particular due to unexpected soil conditions), or that the site will generate unanticipated liabilities, with the result that the contracted service delivery and/or projected revenues are adversely affected.

  A sub-category of site risk is the **permitting risk**, which is the risk that necessary approvals may not be obtained or may be obtained only subject to unanticipated conditions that have adverse cost consequences or may cause prolonged delay, or that additional approvals required during the course of the project cannot be obtained.

  Another sub-category of site risk particularly relevant to tunnel projects is **the site condition risk**, i.e. the risk that unanticipated adverse ground conditions are discovered, which cause construction costs to increase and/or cause construction delays.

- **Design, construction, and commissioning risk**

  The risk that the design, construction and/or commissioning of the assets, or certain elements of these processes, results in adverse cost and/or service delivery consequences. The consequences may include delays and/or cost increases, or design and/or construction flaws that may render the infrastructure inadequate for effective service delivery, either immediately or over time.

  Design risk and construction risk include design management and construction management risks, respectively. An illustration of this would be the ineffective oversight of a DB contract that can result in the public Sponsor taking back a risk they have negotiated (and paid) for the contractor to bear.

  Underground construction poses a series of specific risks associated with unanticipated soil conditions, water management, safety, and construction methods.

  The commissioning risk is the risk that either the physical or the operational commissioning tests, which are required to be completed for the provision of services to commence, cannot

[7] Adapted from: Queensland Government, State Development, "Public-Private Partnership Guidance Material, Supporting Documents, Risk Management," August 2002

be successfully completed, hence delaying the start of revenue operations. This risk associated is particularly relevant to the project, which includes advanced mechanical and electronic systems required for video tolling operations and tunnel operations. This category of risk is sometime addressed along with technology risk.

- **Market (or demand) risk**

  The risk that demand for the contracted service will vary from that initially projected, or price for the contracted service will vary from that initially projected, affecting revenue. A primary center of demand risk for the tunnel is the demand associated with the Nimitz Class Aircraft Carriers (CVNs) at NASNI. According to the data published in the SEIS, each carrier in port generates an approximate 4,793 ADT, including approximately 1,392 vehicle trips during the peak periods. This could constitute a major risk for a private party, which could be mitigated by revenue guarantees.

- **Financing risk**

  Financing risks cover all risks associated with the availability, timing, and cost of financing instruments (debt and/or equity) needed to finance the project, whether caused by adverse market conditions, private bidder financial capacity, or change in government regulations (including taxes). A particular subset of financial risk is the refinancing risk, i.e. the potential upside that the project financing can be restructured to materially reduce the project's finance costs. Depending on the other sources of risks born by the private sector (in particular, market risks), this upside could be shared with the public Sponsor.

  Given the lack of liquidity in the marketplace at the time of writing of this report, the unavailability of non-recourse debt and/or equity from the private sector, as well as the associated premiums required could impact project financing.

- **Interface risk**

  The risk that the method or standard of delivery of the contracted services will prevent or in some way impede the delivery of the project's core services or vice versa.

  This risk can materialize during the delivery of separate elements of the projects under segmented delivery methods, if one essential component is delayed, hence delaying the start of revenue service. This risk can materialize during operations where it may be difficult to allocate responsibilities for service disturbance due to incompatibility or lack of coordination between elements of the projects delivered and/or operated separately.

  A particular type of interface risk is the **complementary network risk**, i.e. the risk that the network(s) needed for the private partner to deliver the contracted services will be removed, not adequately operated or maintained or otherwise changed in a way that either prevents or impedes the delivery of the contracted services, affects the quality of the specified outputs or the viability of the project. In the case of the tunnel, the conditions of operations and maintenance of the bridge constitute a primary complementary network risk. The movable median barrier on the bridge provides flexible traffic congestion relief mitigating this risk. Similarly, the street management plan in the City of Coronado affecting the access to the tunnel could be a source of risk for tunnel operations (e.g. light coordination, incident management, etc.).

- **Operations and maintenance risks**

  The risk that the process for delivering the contracted services - or an element of that process (including the inputs used within or as part of that process) - will be affected in a way, which prevents the private party from delivering the contracted services according to the agreed specifications, within the projected costs, or from achieving optimal revenue collection. An example of such risk is the efficiency (or even failure) of the video tolling system capturing images of the users' license plates and the optical character recognition (OCR) system allowing automatic reading of the plates. Poor performance of these systems can lead to revenue leakage or increased costs associated with manual reading of the information collected by the video system.

- **Force majeure risk**

  Force majeure risk can be broadly defined as the risk that a specified event entirely outside the control of either party will occur and will result in a delay or default by the Private Party in the performance of its contractual obligations. Like the rest of Southern California, San Diego County has a number of active earthquake faults posing a particular risk affecting all elements of the project from design and construction to long-term operations. The bridge, the major connector to the tunnel, was strengthened to meet current earthquake standards in 2003, mitigating the risk of damages to the project's operations.

Standard risk allocations between public and private partners are presented for each of the primary delivery models in the following Section, and a summary is presented in Section 5.6. Such preliminary risk allocation, however, can be greatly altered by specific contract terms and conditions aimed at better defining particular risks, reallocating risks, or providing for mitigation measures (e.g., insurance, revenue guarantees, or penalties).

5.3 PUBLIC AUTHORITY PROCUREMENT MODELS

Several delivery options can be used by under a public-authority model involving different level of private sector participation and integration among design, construction, operation, and maintenance of the project's physical assets. For a discussion of the legal restrictions associated with these strategies, see Section 5.5.

5.3.1 Design-Bid-Build (DBB)

Description and Risk Allocation

Design-bid-build (DBB) is the traditional infrastructure delivery method used by government agencies, requiring the sequential completion and bidding of design and construction activities. It is commonly used for the procurement of physical assets for repetitive or recurrent typical construction, such as for roads and earth-moving, and for specialized facilities where the design must be completed in great detail and built accordingly in order to meet the owner's requirements.

The owner may either self-perform or retain a design professional to join a project team for the planning, conceptual design and design services. The team seeks the required permits and has the necessary site investigations performed (geotechnical, utilities, hazardous materials, site surveys, drainage, wetlands,

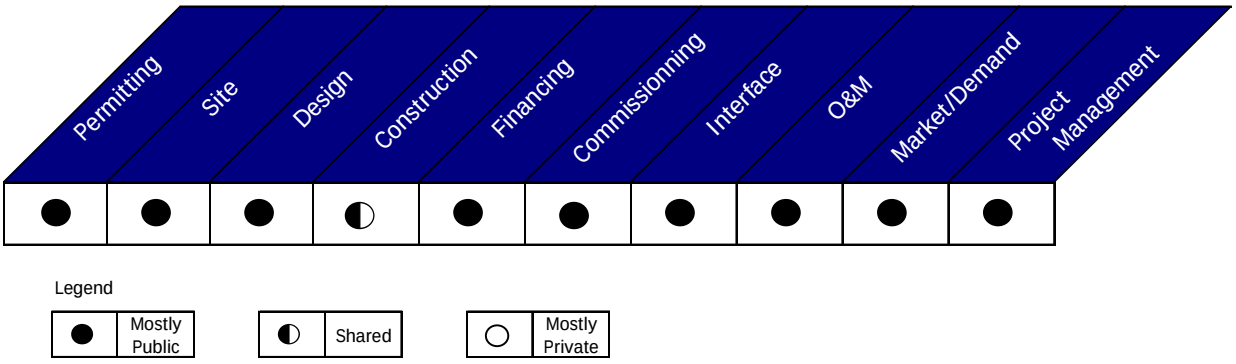
environmental clearances, and permits of all types, etc.). Bid documents are prepared by the team as determined by the owner, or the owner may choose to add a construction management (CM) professional to the team to conduct the bidding process and provide oversight of the construction. The standard risk allocation in DBB contract is presented in Figure 12.

The owner's responsibilities include:

- Defining and providing functional requirements to the designer
- Providing a complete design to the constructor
- Providing standards and contract terms to be followed
- Managing the engineering, procurement, and construction process
- Providing funding

Except under certain limited circumstances, Caltrans is required to bid construction contracts competitively based on 100% design, and hence requires a Design-Bid-Build procurement.

Figure 12: Standard Risk Allocation in Design-Bid-Build Procurement[8]



Bidding, Selection, and Award

The bidding constructors pool subcontractors, suppliers and vendors for information, data and cost and schedule quotes. The constructors perform a risk analysis to define and quantify potential impact on project cost and schedule. Where appropriate, the contractor includes contingencies in the bid price to cover such risks.

The constructor places its bid based on certain design requirements and quantities. The owner's project team evaluates the bids and selects a constructor. This decision is based typically on the lowest responsive price bid, but may be value-based.

Upon selection, the constructor provides its required bonds and insurance certificates to the owner, a contract is signed and work begins. The owner, the design professional, or the CM may be designated to serve as owner's representative (OR) for the contract. Such matters as contract administration, quality

[8] Risk categories are defined in Section 5.2.

assurance and inspection, progress payment processing and contract document interpretation may fall to the OR. The contractor proceeds with the work to completion. The OR inspects the finished facility and accepts it. The construction contract is adjusted for changes as may be appropriate and is closed out. Following this step, the OR services are completed, the project documentation file is indexed and provided to the owner for archiving and the project is considered completed.

Schedule

The requirement to have a complete design before proceeding with construction bids leads to a longer project schedule. There are various ways to accelerate the time required to complete a project, a matter that is often of great concern to the owner. Such methods are often characterized as **fast-tracking**. In general, fast-tracking involves multiple procurements and/or construction contracts operating somewhat in parallel so the project tasks are accomplished concurrently as much as possible rather than serially. This approach requires a well conceived plan with the owner's understanding of the risks and the rewards involved, and a high degree of coordination for the preparation of multiple contract documents and bidding sequences for each of the multiple contracts. The **interface** and **inter-contract coordination** must be spelled-out for each concurrent constructor.

Provided that the design is advanced enough at the time of bid, accelerated delivery may be achieved by bidding the project as a single contract with an incentive clause. The constructor is rewarded if work is completed on or before a set completion, or otherwise faced with a penalty.

Cost

If debt financing is to be used to fund the project, it typically cannot be secured until a firm fixed price for construction is obtained. Using a design-bid-build approach a construction contract is not executed until design is complete (or complete enough to get lump sum bids), bids are received and a contract awarded. This means that the Project Sponsor will have funded most of the design prior to raising funds from debt. Design can amount to 6% to 10% of the construction costs.

5.3.2 Design-Build (DB)

Description and Risk Allocation

By integrating design and construction activities within a single contract to procure a project's physical assets, the design-build (DB) delivery method can accelerate and increase the efficiency of a capital project if the project is selected carefully and the associated risks are evaluated properly. Design-build is not for all projects, however, and should be used primarily when:

- Project scope is well defined and unlikely to be changed by the Project Sponsor
- The Project Sponsor is using debt financing and has limited funds for design
- Funding sources have been clearly identified
- Design and quality are mostly industry standard
- Speed of delivery is important or delivery is required by a certain date
- The ability to limit cost escalation is particularly important

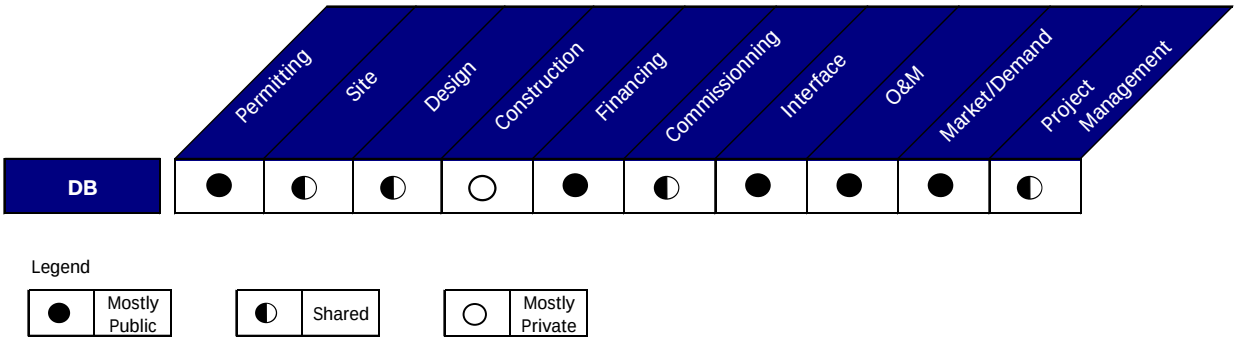
- Strong collaboration is required between design and construction methods/sequencing and/or such collaboration can yield substantial cost savings (this is particularly true of tunneling projects)
- The project is complex - it is preferable to have a single responsible party in charge of coordination

The contracting and oversight of a DB contract requires different capabilities than DBB. When the owner either does not have in-house capabilities or limited resources, the owner often begins by selecting an engineering consultant to prepare the essential conceptual or preliminary design that, along with a set of performance requirements, adequately defines what is required of the DB team. The engineering consultant can assist the owner in defining the project requirements and main specifications and selecting the DB team.

Depending on the size of the project, the private DB team might include a joint venture consortium of construction firms and multiple levels of specialty subcontractors, vendors, suppliers and equipment sources led by a prime contractor. The DB team will also include a designer that may be a joint venture and multiple specialty subcontractors led by a prime design professional may be involved. These subcontractors might include such specialties as geotechnical, drainage and hydraulics, specialty structures and specialty architecture, tolling and ITS systems, utility specialists, to name a few. In this context, the DB contractor plays an essential role in the contract management and administration of the project.

A key point to be noted is that **the design professional party in the DB organization works for the constructor, not directly for the public owner**. Therefore, the attention of the designer is focused on the requirements and expectations of the builder and fulfilling the DB contract documents. Issues such as constructability, use of particular equipment or erection methods, and choice of construction materials among others may control design and be directed by the constructor. The resulting designs and facilities must meet the standards and stated requirements of the owner, but beyond that, the design focus is on the preferred means and methods of the contractor as the client.

Figure 13: Standard Risk Allocation in Design-Build Procurement[9]



Notes: (1) Permitting risk can be transferred, except for environmental approvals, which should remain the responsibility of the public Sponsor

(2) In the case of procurement and installation of technological components, such as the tolling system, commissioning is mostly a private responsibility

(3) The owner typically does 10% to 30% of design work as part of the bid documents and shares the corresponding risk

Bidding, Selection, and Award

The design-build bidding, selection, and award process can be based simply on the lowest price bid, or on a value-based selection process and both usually involve two or three steps. The first step is to request qualifications of the teams and prequalify teams that will be allowed to submit a price proposal. The owner wants to ensure that the designer proposed as part of the design-build team is qualified to design the facility to be bid, and the team has the right experience and financial resources to handle the work. Also, design-build proposals and bids are expensive to put together and usually require some engineering work in order for the contractor to estimate the construction cost. The most qualified contractors will probably not participate if the number of shortlisted firms is more than three or four. In the value-based selection process, the bid price is evaluated together with all the other evaluation points in a matrix of values that is predetermined by the owner before the process begins. The bidder that is judged to provide the 'best value' is awarded the project.

Usually a stipend is offered as a means of partially compensating the competing DB teams. The stipend is meant to improve the quality of the advance designs offered and the overall quality of the bids, and mitigate some of the cost of bid preparation. As a result of paying a stipend, the owner normally is entitled to any designs or ideas contained in those documents.

The final award can be preceded by a 'clarification of bid' period wherein the owner and the DB contractor can discuss the plan and any adjustments. This step may be closed out with a best and final offer (BAFO), which then becomes the basis for the contract. The owner or its representative then assumes the role of facilitator, coordinator, and communicator on behalf of the owner's interests and the DB contractor commences the work.

[9] Risk categories are defined in Section 5.2.

Schedule

By integrating design and construction activities under a single contract and having the designer answer primarily to the constructor, DB allows for schedule acceleration as design activities can be arranged so as to allow the contractor to implement an accelerated schedule and start construction before design is complete, and the request for information process during the construction phase is streamlined. The efficiencies generated by the integration of design and construction can also lead to reduced costs.

Cost

The design-build contracting approach allows the sponsor to obtain a firm fixed price and schedule for completion of the project quickly and with less expenditure of funds than the traditional design-bid-build approach. This is important when the project is to be funded by debt and the sponsor has limited funding of its own for the project.

5.3.3 Service Contract (O&M Contract)

Description and Risk Allocation

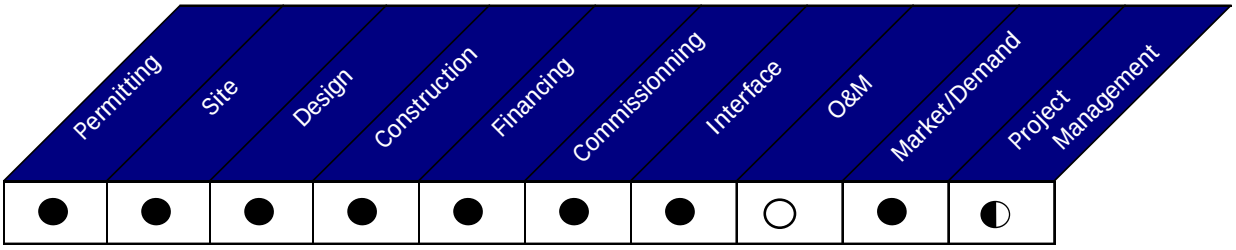
Under a service contract the owner contracts with an operator for operation and maintenance (O&M) of the physical infrastructure, systems or portions of the systems (e.g. tunnel operations on the one hand and tolling system on the other) for a fixed period of time, independent of the actual construction and delivery of the assets. Such contracts are used to manage individual components of complex infrastructure projects to achieve higher operating efficiencies through specialization.

Payments under service contracts can be for a fixed-price, time-and-material, or performance-based (see 'availability payment' box in Section 5.1). When such performance criteria as defined in the contract are not fully met, payment is reduced based on rules defined in the contract and on the actual level of performance achieved. Additional incentives for higher performance can also be created through bonuses or, less frequently, revenue sharing clauses. The Project Sponsor is ultimately responsible for payment for the O&M services, whether the funds are obtained through user fees or paid directly by the Sponsor out of its operating budget.

Such contract arrangement would allow the Sponsor to transfer part of the O&M risk (as defined by the contract), but retain the authority to set tolls. The tunnel would likely require two specialized operating contracts: one for the O&M of the tolling system and one for the O&M of the tunnel and associated management of traffic. If these contracts are kept separate, the Sponsor would retain most of the risk at the interface and the responsibility for coordinating the two contracts. Mitigating this risk would require time and resource commitment from the Sponsor in the development of the contract and during the performance period. O&M activities for the bridge would remain the responsibility of Caltrans. Figure 14 presents the standard risk allocation under a conventional service contract.

Advanced technological components, such as video tolling systems, require not only regular maintenance, but also replacement every 5 to 10 years due to technological obsolescence. O&M contracts are therefore rendered more complicated by the need to procure new components and systems on a regular basis while maintaining traffic and tolling operations.

Figure 14: Standard Risk Allocation in O&M Contracts[10]



Note: The public Sponsor retains responsibility for project management oversight and performance controls

Legend

●	Mostly Public	◐	Shared	○	Mostly Private

Bidding, Selection, and Award

The bidding, selection, and award process is usually defined within the limits of the legal framework (see Section 5.5). Assuming enough competitors are available, selection of a competent operator can be made based on price (for fixed price and time-and-materials contracts), best value, or competitive negotiations.

Schedule

There is no consideration of schedule under a stand-alone service contract other than the duration of the contract itself. Under such a contract, the performance period can only commence when the infrastructure are made available for regular operations after testing and commissioning has been completed. With the tolling system being physically located at grade, near the bridge, it is possible that tolling operations could start before the tunnel is open for traffic. For this study, tolling is assumed to begin in 2014, which is three years before the tunnel construction is complete.

5.3.4 Design-Build-Operate-Maintain (DBOM)

Description and Risk Allocation

Combining a DB for the infrastructure and system procurement, with the responsibility to collect tolls, provide accounting and customer service, and operate and maintain the tunnel and toll collection system for a fixed time period can be done under a Design-Build-Operate-Maintain contract (DBOM, sometimes also called 'turnkey' contract). Under a DBOM the public owner enters into a contract with a single entity, which groups all the functions necessary to the delivery of the assets and services contracted, including infrastructure and systems. Such an entity can either be a Joint Venture of engineering, construction, construction management, technology providers, and operator, or a new corporation, which in turn may subcontract for specific project components or systems and for the required services. The corresponding risk allocation is presented in Figure 15.

[10] Risk categories are defined in Section 5.2.

Under a DBOM, the responsibilities for design and construction of the assets are allocated in the same way as under a DB procurement (Section 5.3.2) and combined with an O&M contract (Section 5.3.3). The Project Sponsor retains ownership of the assets as well as the responsibility for funding the project. As under a service contract, the Project Sponsor also retains control on pricing of the service. Toll revenues under a DBOM contract are collected by the private entity (as a service under the contract) and remitted to the public Sponsor.

Compensation of the private party under a DBOM contract is generally based on performance standards specified in the contract. Such standards define not only the design requirements, but also the detailed operating requirements (see Section 5.3.3). It is the responsibility of the DBOM team to design, build, and operate a system that meets these requirements. Part of the compensation is received as an operating fee (generally indexed on performance) throughout the operating period; part of the compensation can also be linked to the achievement of specific milestones in the delivery of the assets (so as to reduce the financing costs).

With a DBOM procurement, cost efficiencies, schedule acceleration, and increased quality are achieved not only through the combination of design and construction activities (as in a DB), but also by focusing these activities on the ultimate operating performance of the system through strong commercial incentives during the operating period. First, the payment of the operating fees only starts after delivery and commissioning of the assets, creating a natural incentive for accelerating the project delivery. Additional financial incentives can be built-in for early delivery of a performing system. Moreover, additional incentives are created for a higher quality infrastructure because of the contractor's need to minimize its operating and maintenance costs during the entire life of the contract. As a fully integrated delivery method, a DBOM also allows the owner to transfer the responsibility for risks associated with the production of the assets used to deliver the service (including technological obsolescence of the tolling and ITS systems, for instance). Such a delivery method allows the owner to focus on the output, i.e., the delivery of the service to a specified performance level, rather than the design and construction of infrastructure and procurement of systems. It is therefore desirable when the owner can define the type of service, but does not have a detailed understanding of the systems involved, and/or the necessary in-house design, construction and operating capabilities (or does not want to assume such responsibility).

A DBOM will normally include a guaranteed maximum price and guaranteed schedule. It can also be used in combination with short-term financing provided by the private sector, in particular for technological components.

Figure 15: Standard Risk Allocation in DBOM Procurement[11]

	Permitting	Site	Design	Construction	Financing	Commissionning	Interface	O&M	Market/Demand	Project Management
DBOM	●	◐	○	○	●	○	◐	○	●	○

Legend

●	Mostly Public	◐	Shared	○	Mostly Private

Notes: (1) Permitting risk can be transferred, except for environmental approvals, which should remain the responsibility of the public sponsor

(2) The public Sponsor retains responsibility for project management oversight and performance controls

(3) The design is done entirely by the private sector based on performance criteria specified by the owner

Bidding, Selection, and Award

The bidding, selection, and award process is usually defined within the limits of the legal framework (see Section 5.5). Assuming enough competitors are available, selection of a competent operator can be made based on lowest bid (generally preceded by a preselecting process), best value, or competitive negotiations.

5.4 Long-Term Lease / Concession Models

5.4.1 Design Build Finance Operate (DBFO)

Description and Risk Allocation

A concession contract combines all the elements of a DBOM with the responsibility to finance the project allocated to the private party, and is also referred to as a Design-Build-Finance-Operate (and Maintain) contract, or DBFO. It is also sometimes referred to as a long-term lease as it does not include transfer of ownership of the assets to the private sector (this notion is independent of the tax treatment of asset ownership for tax depreciation purposes). Similarly to a DBOM, a DBFO also allows the owner to transfer the responsibility for risks associated with the production of the assets used to deliver the service. It also allows the owner to focus on the output, i.e. the delivery of the service to a specified performance level, rather than the design and construction of specific components. It is therefore most desirable when the owner has a clear vision of the type and level of service desired, but does not necessarily have the design, construction and operating capabilities in-house (or does not want to assume such responsibility) and when public financing is not available or when private financing can generate more funding than public funding.

[11] Risk categories are defined in Section 5.2.

Where in a DBOM the public owner usually contracts directly with the DB Contractor, in a DBFO a new company is in general incorporated for the sole purpose of developing and operating the project. Such a company is referred to as a Special Purpose Vehicle (SPV). The SPV serves simultaneously as a contracting and financing entity, entering into a contract with the public Sponsor to design, build, finance, operate, and maintain the assets of the project, subcontract (oftentimes using turnkey contracts) with contractors and suppliers to deliver the assets and services as per the DBFO requirements, and provide the financing necessary to develop the project.

In addition to the risk allocation and incentive structure of a DBOM, a DBFO allows the public sector to access private capital when public funding is insufficient or not available. Private capital comes in two forms: private equity and debt. Equity participation in a concession may come from the contractors and equipment suppliers involved in delivering the project, as well as private developers (which may also manage the development process) and equity funds seeking investment return aligned with the risk profile of the project or a specific phase of the project development. Some equity investors will be present only during the initial phases of a project (seeking higher return in line with higher risk associated with the design and construction phase); some are ready to take a long-term position only once the project is developed (seeking a longer period of return, often linked with long-term economic growth and inflation). The debt portion either comes from bank loans or bonds placed privately or though public offering. Shareholders also sometimes provide loans that are subordinate to senior project debt as a way to increase the credit worthiness of senior debt and/or increase their stake in the project.

With capital at risk, the participation of private equity and debt also increases the incentives for performance in terms of schedule and costs in the delivery of the project and during operations, as well as incentives for innovation in meeting the concession requirements. The payment of operating expenses, funding of capital and operating reserves, and the repayment of debt obligation being a prerequisite for the payment of dividends, private investors will endeavor to open for revenue service on or before their target date and make every effort to collect revenue.

The Federal government also provides credit assistance to transportation projects through the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA) program for which a concession may qualify. The concession may also receive assistance through the Private Activity Bond program, which allows for the use of tax-exempt bonds issued by the State or a local government entity on behalf of a private enterprise involved in the delivery of public infrastructure and services. The SPV financial structure allows for non-recourse or limited-recourse financing, in which lenders only have recourse to the project assets and revenue sources of the project and whatever additional collateral the Project Sponsor has offered (such as limited letters of credit, funding of reserves, or minimum revenue guarantees) in case of default. Under such financing arrangements the lenders cannot access the other assets of the sponsors or those of the public owner.

Revenues to the concessionaire can come in many different forms and the payment mechanism also serves as a tool for risk allocation. Examples of payment mechanisms include:

- Direct access to user fees, including tolls and other fees, and charges as well as fines,
- Payments made by the public Sponsor based on performance requirements or level of usage of the facility during operations,
- Payment for reaching milestones during construction (a sort of direct subsidy),

- Rights to other commercial revenues derived from the developments of real estate on or above the right of way, and advertising rights, among others.

If expected toll revenues are too low to cover the life-cycle costs of the project and repay capital providers, other types of payments (as described above) may need to be made by the Project Sponsor. However, operating payment may also be made to reduce toll rates and/or create a different set of incentives for operating performance. As with a DBOM contract, any payment for services during operations must be based on clearly defined performance specifications and be reduced when full performance standards are not met.

The private sector frequently accepts demand risks, but will generally not accept risks that it cannot assess (and hence price or mitigate), such as the discretionary pricing power of a government entity. Therefore, should the financing of the project be based on toll revenue (and other user fees), a precise tolling policy establishing how tolls are calculated and increased throughout the term of the concession must also be established.

The same notion extends to other types of payments that may be used to secure financing in order to invest, private sector entities must be able to assess the risk associated with the collection of the revenue and price this risk correspondingly. Hence, any payment from governmental sources must be reasonably secured over the term of the concession in order to attract private investment.

The risk allocation for a typical toll concession contract is summarized in Figure 16. When private financing is secured by toll revenue, the demand risk is fully transferred to the private concessionaire. Alternatively, when the concessionaire is paid through an availability payment mechanism, revenues collected by the concessionaire are remitted to the public sponsor, and hence demand risk is ultimately retained by the public sponsor.

Bidding, Selection, and Award

The bidding, selection, and award process is usually defined within the limits of the legal framework (see Section 5.5). Assuming enough competitors are available, selection of a competent operator can be made based on lowest bid (generally preceded by a preselecting process), best value, or competitive negotiations.

Figure 16: Standard risk Allocation in DBFO Procurement: Toll Revenue or Availability Payment Mechanisms [12]

	Permitting	Site	Design	Construction	Financing	Commissionning	Interface	O&M	Market/Demand	Project Management
User Fees	●	◐	○	○	○	○	◐	○	○	○
Availability	●	◐	○	○	○	○	◐	○	●	○

Legend

●	Mostly Public	◐	Shared	○	Mostly Private

Notes: (1) Permitting risk can be transferred, except for environmental approvals, which should remain the responsibility of the public Sponsor

(2) The public Sponsor retains responsibility for project management oversight and performance controls

(3) The design is done entirely by the private sector based on performance criteria specified by the owner

5.5 Review of Current Legislative and Regulatory Framework

The following legal issues have been assessed by Nossaman LLP, a national law firm specializing in infrastructure, project delivery, and environmental law. For this study Nossaman was asked to review current law in connection with tolling the SR 75/282 corridor and as it may limit options for delivery of the project. Section 5.5 has not been reviewed by SANDAG and, therefore, does not represent the views of SANDAG. To the extent that current law does not authorize or accommodate the City's strategic requirements, this section offers legislative recommendations.

Statutory Authority to Toll the SR 75/282 Corridor

Under existing law, the San Diego Association of Governments is authorized by California law to impose a toll on vehicles crossing the bridge and its "necessary approaches." Although SANDAG eliminated the payment of the toll in 2002, the statutory authority to impose the toll has neither expired by its own terms nor been repealed by subsequent legislative action. Accordingly, Nossaman believes that authority to toll the bridge and its approaches can be reinstituted by SANDAG without further state legislative action. Regarding the amount of the toll, existing law does not limit SANDAG's authority to impose tolls to one direction only, which can be interpreted to mean that SANDAG may charge the maximum toll rate for travel in both the west-bound and east-bound directions. However, under current statutes, SANDAG is limited to charging a maximum rate of not more than $1.50 for class 1 vehicles, a potentially significant constraint on a viable tolling scheme. Additionally, SANDAG does not have express authority to impose fees or charges above the toll rate. However, if the project is selected as a public-private partnership based on the rules set forth in SBX2 4 (described below), the toll rate cap and other limitations placed on

[12] Risk categories are defined in Section 5.2.

SANDAG 's toll-setting authority under its existing, delegated authorization would be superseded by the provisions of SBX2 4.

The recently enacted SBX2 4 (Streets and Highways Code Section 143) authorizes regional transportation agencies (RTAs) to enter into public-private partnership transportation projects via "comprehensive development lease agreements" until January 1, 2017. Under SBX2 4, the California Transportation Commission will select projects nominated by RTAs for PPP delivery. Facilities constructed under this statute may be tolled and revenues generated by the facility dedicated, in part, to provide the private partner with a reasonable return on its investment. Although SBX2 4 may generally not be used to convert "existing nontoll lanes" into toll lanes, Nossaman believes that reimposition of an authorized toll on the bridge approaches as part of the project is not a conversion within the meaning of the statutory prohibition. However, that argument would ultimately need to be accepted by the CTC, who must authorize the project in any event. Thus, the question with respect to the conversion prohibition becomes whether the CTC can be persuaded to authorize a transportation project that involves reimposition of an authorized toll.

Statutory Authority to Toll a Proposed Approach, Possibly a Tunnel, Located at the Base of the Bridge

SANDAG's express statutory authority to toll the bridge includes authority to toll any "necessary approach." Accordingly, Nossaman concludes that authority to toll the proposed approach, whether by tunnel or grade-separation, would fall under SANDAG's express statutory authority. Facilities constructed under SBX2 4 – e.g. the project's proposed approach – may be tolled and the revenues generated by the facilities may be used, in part, to provide the private partner with a reasonable return on its investment. It is unclear what constitutes a "reasonable rate of return" and whether recapture for "excessive" or "unreasonable" returns might be contemplated, though not expressly authorized by the new law.

Legal Requirements Necessary to Implement a Joint Powers Authority (JPA) Governance Structure

Under the Joint Exercise of Powers Act (the JPA Act), the City of Coronado may enter into a joint powers agreement with other public agencies, including but not limited to, SANDAG, the California Department of Transportation, the County of San Diego and the City of San Diego to contract for design, construction and operation and maintenance related to the project improvements and to issue revenue bonds to pay the related cost and expenses.

Legislative Authorization for Video Tolling

In order to install a permanent video toll collection system that allows for post-paid toll use without vehicle pre-registration, Nossaman recommends legislation to expressly authorize the use of video toll technology, including but not limited to, language to address the following elements: (1) detailed notice and penalty periods; (2) opportunity to challenge toll charges; (3) a definition of 'violator' that reflects the payment post-use specific to video tolling; (4) specific authorization to assess administrative charges associated with video tolling; (5) variable pricing authority; (6) an increased cap (up from $1.50) on toll rates for class 1 vehicles; and (7) privacy protections, including findings and declarations to the effect that the use of video technology is meant to further a clear public interest in the efficient administration of state infrastructure.

Whether Any Actions Under the California Environmental Quality Act (CEQA) are Required Prior to the Tolling for the Project

Because tolling as part of the project contemplates the commitment of revenue from the proposed approach, reinstitution of tolls is a project approval under CEQA.

Statutory Authority to Use Design-Build Contracting and Public Private Partnerships

The project itself does not have existing statutory authorization to employ alternative procurement, financing and operational methods and partnerships, such as design-build or PPPs. However, a JPA formed with the City of Coronado may use alternative procurement options by partnering with a public entity with the authority to employ alternative procurement options. The City of San Diego is a charter city with specific authority to use design-build pursuant to its city charter.[13] If the City of Coronado entered into a JPA agreement with the City of San Diego, and if the JPA agreement designated the City of San Diego as the member whose constraints apply to exercise of powers by the JPA, the JPA would have the ability to use design-build pursuant to the rules established by the City of San Diego city charter.

Additionally, SBX2 4 lease agreements "shall authorize the contracting entity or lessee to use a design-build method of procurement" subject to certain requirements, including implementation of a labor compliance program.

California law does not grant general statutory authorization to state and local governmental agencies to bypass the traditional procurement process and enter into PPP agreements where a private partner may provide multiple services in exchange for the right to collect tolls. However, existing law has been recently expanded by SBX2 4 and includes the following:

- SBX2 4 greatly expands California's participation in the PPP market by extending comprehensive development lease agreement authorization until January 1, 2017 and removing limits on the number and location of PPP projects that Caltrans or RTAs may pursue. Under the new law, Caltrans and RTAs may nominate candidate PPP projects with the California Transportation Commission to decide whether or not to approve PPP delivery for those projects. Presumably, this approval process occurs early in the project procurement process. Caltrans/RTAs are required to submit the final lease agreement to the Legislature for review at least 60 days prior to execution, but Legislative approval is not expressly required;
- SBX2 4 also creates the Public Infrastructure Advisory Commission (PIAC). PIAC will be established by the Business, Transportation and Housing Agency and serve as a clearinghouse of PPP-related services and information. Similar organizations (e.g., Partnerships British Columbia in Canada) have been successful in assisting otherwise inexperienced public agencies with PPP projects. PIAC's services would include: (a) identifying candidate PPP projects throughout California; (b) researching PPP best practices/lessons learned; (c) assembling information related

[13] City of San Diego, City Charter Section 94.2 states: "Notwithstanding any provisions of this Charter to the contrary, the City is not prohibited from awarding contracts for the combined design and construction of public works pursuant to a process of competitive negotiation, provided the process of competitive negotiation is conducted as may otherwise be required by this Charter or the Municipal Code. The City Council shall establish by ordinance guidelines for the award, use, and evaluation of such design-build contracts, and may set an amount below which the City Manager may award such contracts."

to PPPs that Caltrans/RTAs can utilize; (d) upon request and for a possible fee, advising Caltrans/RTAs regarding best practices or the suitability of a particular project; and (e) upon request and for a possible fee, providing procurement-related services to Caltrans/RTAs;[14]

- Caltrans/RTAs may accept unsolicited proposals for PPP projects, provided that they issue a request for competing proposals and they may award the project to the entity that submitted the unsolicited bid provided that they receive at least one other responsible bid;
- Facilities constructed under this statute may be tolled and the revenues generated by the facility may be used, in part, to provide the private partner with a reasonable return on its investment;
- The specific toll rates shall be set forth in lease agreements and any proposed increase in those rates not otherwise contemplated in the lease agreement shall be approved by Caltrans or the RTA, as appropriate;
- Caltrans or the relevant RTA shall always retain ownership of the subject facility;
- At the end of lease term, the private partner must hand over the facility in a condition that meets pre-set performance and maintenance standards;
- Lease agreements shall authorize the private partner to use design-build contracting;
- For projects on the California state highway system, Caltrans employees and consultants are responsible for performing "project development services," such as drafting technical requirements documents and performance specifications, carrying out preliminary engineering and performing construction inspection services;
- Provisions that would infringe on the authority of Caltrans/RTAs to develop, maintain, repair, rehabilitate, operate or lease any transportation project are prohibited. Caltrans/RTAs are not prohibited, however, from utilizing lease provisions that provide for compensation when the private partner can demonstrate that there have been adverse effects on toll revenue/user fees due to the development of competing facilities (excluding projects identified in regional transportation plans, that relate to safety, create incidental capacity increases, add HOV lanes or are outside the project boundaries); and
- An exemption from real property and ad valorem taxes.

Although SANDAG has the existing statutory power to toll – the granting of which is typically a major impediment to statutory authorization and a major component of a revenue-producing partnership with a private operator – it appears unlikely that a private entity would be willing to enter into a PPP arrangement based on that existing authority alone. This is because of the limited purposes for which revenues from tolls may be imposed on the bridge. Even though toll revenues could be used to construct the proposed approach, SANDAG would not be able to dedicate revenues to provide for a reasonable return on investment to a private operator under contract with the agency, a necessary precondition to entering into such a contractual arrangement.

Therefore, it is Nossaman's conclusion that SANDAG, as an eligible regional transportation agency, may instead seek to implement the project pursuant to SBX2 4 and pursue CTC approval to enter into a

[14] Sts. & Hy. Code, § 143, subd. (b).

comprehensive development lease agreement allowing for design-build authority. If the City of Coronado is not able to secure design-build authority by seeking CTC authorization to deliver the project under the PPP provisions of SBX2 4, wishes to use a best value selection process, and declines to enter into a JPA with the City of San Diego,[15] it should seek a legislative solution.

5.6 Summary of Evaluation Criteria for Project Delivery Method

The following table presents a summary of the risk allocation between public- and private-sector partners for the various delivery methods for transportation infrastructure projects discussed in greater details in Sections 5.3 and 5.4. Risk categories are defined in Section 5.2.

Table 22: Summary of Standard Risk of Selected Project Delivery Alternatives[16]

Responsibilities / Delivery Method	Public Authority				Concession (DBFO)		BOO
	DBB	DB	O&M	DBOM	User Fees	Availa-bility	
Permitting (1)	●	●	●	●	●	●	◐
Site	●	◐	●	◐	◐	◐	○
Design	●	◐	●	○	○	○	○
Construction	◐	○	●	○	○	○	○
Financing	●	●	●	●	○	○	○
Commissioning	●	◐ 2	●	○	○	○	○
Interface	●	●	●	◐	◐	◐	○
O&M	●	●	○	○	○	○	○
Market/Demand	●	●	●	●	○	●	○
Project Management	●	◐	◐ 3	○ 3	○ 3	○ 3	○

Legend

Risk Allocation	●	Mostly Public	◐	Shared	○	Mostly Private

Notes

(1) Permitting risk cab be transferred, except for environmental approvals, which should remain the responsibility of the public Sponsor

(2) In the case of procurement and installation of technological components, such as the tolling system, commissioning is mostly a private responsibility

(3) The public Sponsor retains responsibility for project management oversight and performance controls

[15] See the prequalification and design-build provisions in San Diego Mun. Code, § 22.3301 *et seq.*

[16] Build-Own-Operate (BOO) is the equivalent of a full privatization and is not intended for the project, but is shown here for reference. Risk categories are defined in Section 5.2.

Table 23: Summary Evaluation Criteria of Project Delivery Methods

Procurement	Advantages	Disadvantages	Public Sector's Optimal Usage	Conclusions
Design-Bid-Build (DBB)	- Public owner maintains control of all aspects of design and construction	- Significant staff involvement - Longest delivery timeline - Likely most expensive option for the public sector	- Desire to retain maximum control	- Project delivery would likely be achieved faster and at a lower cost with DB - DB could be particularly useful considering the complexity of the project and the advanced technology components and in-house design/construction capabilities - DB also allows for retention of ownership and operational control that is not present with other non-traditional methods - DB only available if the City forms a JPA that includes the City of San Diego or forms a JPA that includes SANDAG and applies for authority under SBX2 4 **- Optimal strategy if City wishes to operate and maintain the project**
Design-Build (DB)	- Single source responsibility and simplified owner role - Limited technical capability required from owner - Improved risk management for owner - Significant time savings - Possibility of delivering the project at a lower cost	- Future design considerations must be detailed up-front to minimize cost of modifications - Public sector has to provide project financing while leaving more control of the project delivery to the private sector	- Limited internal resources to handle design and/or project management - Short timeline until start of revenue service (2014) - Strong desire to reduce or control cost/schedule - Strong need for coordination, especially if different bid packages are used for various components	
Design-Build-Operate-Maintain (DBOM)	**DB advantages plus:** - Private sector has expertise to optimize operational efficiency and to market the service, and pass along some of these efficiencies to the owner by reducing cost - Transfer of most delivery and operating risks	**DB disadvantages plus:** - All desired operating performance must be specified upfront - Public owner loses control of operations during the contract period and must still provide project funding and financing	**DB usage plus:** - Limited to no expertise in operation of similar services - Lack of desire to increase the size of the organization in order to operate the service	- Must obtain DB authority as outlined for DB above **- Optimal strategy if:** **(1) the City does not want O&M responsibility** **(2) toll revenue does not cover entire project cost** **(3) other funding is available**
Design-Build-Finance-Operate-(and Maintain) (DBFO)	**DBOM advantages plus:** - Availability of private capital if/when public sector funding is insufficient	**DBOM disadvantages plus:** - Operating period may need to be longer than under public financing in order for the private sector to repay debt and secure appropriate equity return - Possessory interest tax significantly increases operating costs (not included in the analysis)	**DBOM usage plus:** - Lack of funding to pay for the project	- Must obtain DB authority as outlined for DB above **- Optimal strategy if:** **(1) the City does not want O&M responsibility** **(2) toll revenue covers entire project cost** **(3) City wants to transfer revenue risk to a concessionaire**

6.0 Toll Financial Capacity Analysis

6.1 FINANCIAL SCENARIOS AND ANALYSIS ASSUMPTIONS

The financial capacity analysis was developed based on the traffic and revenue projections and capital cost requirements for Alternative 4B, though the results are largely transferrable to Alternatives 3 and 5A. The financial analysis examined combinations of project delivery options and toll scenarios as follows:

1. Two project delivery scenarios (public sector delivery and financing and private sector delivery and financing as a design-build-finance-operate concession); and
2. Three variable toll rates scenarios (low, medium and high) implemented in 2019 when the tunnel is completed, each preceded by a fixed-rate toll of $1.50 in each direction for five years during construction, beginning in 2014. Net revenues[17] generated prior to the completion of the tunnel (i.e. between 2014 and 2019) are used to reduce the capital costs that need to be financed.

The following describes the assumptions underlying each scenario.

6.1.1 Operating Cash Flow

Once the tunnel is operational in 2019, operating and maintenance costs (Section 4.3) are subtracted from toll revenues (Section 3.0) to obtain the pre-tax cash from operations. Adding interest earnings on cash balances and subtracting taxes paid and rehabilitation and replacement costs (Section 4.2) yield the cash flow available for debt service (CFADS). After accounting for debt service coverage requirements, CFADS is analyzed to identify the total capital cost that can be supported by toll financing over the forecast horizon (30 years for the public financing and 40 years for the private financing scenarios), which is compared with the total capital costs (Section 4.1). Cash available after servicing the debt is distributed in the form of dividends in the private sector scenario and transfers to the project owner in the public scenario. All projections are made in real, YOE dollars.

Financing assumptions during the construction phase and tunnel operating period are presented in Sections 6.1.2 and 6.1.3, respectively. Additional detail on annual revenues and expenditures is provided in the Appendix.

Note that the private sector project delivery scenario discussed below includes a series of favorable assumptions — including access to tax exempt financing and an exemption from the Possessory Interest Tax — in order to demonstrate the conditions under which a private concession would maximize the toll funding contribution to the project.

[17] Calculated as the difference between pre-completion toll revenues and pre-completion operating costs.

6.1.2 Pre-Completion (Construction Period) Financing Assumptions

In both the public and private sector delivery scenarios, net revenues[18] generated between 2014 and 2019 are assumed to be used as available project funding on a 'pay-as-you-go' basis. Since annual toll revenues exceed annual operating costs during this period (as shown in the Appendix), the unfunded capital need is reduced by the corresponding amount, resulting in a lower remaining capital cost amount requiring financing. For the private sector scenario (as well as the public sector scenario), it is assumed that toll revenues generated during the pre-completion phase would be the property of the Joint Powers Authority and that uses of net toll revenues could include a portion of the construction (and associated cost) that has been segregated out as the JPA's responsibility. While this strategy would allocate the revenue risk during the pre-completion period to the JPA, it would eliminate income tax cost that would otherwise be the responsibility of the private concessionaire were the concessionaire begin to collect revenue in 2014. The following presents the financing assumptions during the construction phase.

Public Sector Financing

The public sector project delivery scenario assumes that non-recourse revenue bonds[19] would be issued each year of construction to match capital requirements with interests being capitalized during construction. Issuing bonds every year improves the financial capacity of toll revenue and lowers financing costs over the alternative of a single issue at the outset of construction. In making this assumption it is expected that the ability to toll the SR 75/282 corridor, and therefore make debt service payments, would exist even if the project is not completed.

Each bond issue assumes the following financing costs:

- **Debt service reserve fund (DSRF):** deposit to a debt service reserve fund equal to 10% of the par amount of the bonds (gross bond proceeds).
- **Issuance cost:** Cost of issuance (COI) equal to 3.0% of the par amount of the bonds, including such costs as underwriter fees.
- **Capitalized interest:** interests on outstanding bonds are capitalized prior to full revenue operations following project completion.

Private Sector Financing

In the private sector project delivery scenario instead of issuing bonds annually during construction, the concessionaire is assumed to have access to equity funds and a construction loan. The financial analysis assumes that the concessionaire would finance 30% of the total project cost (net capital cost after accounting for net revenue contributions plus financing costs listed below) with equity, the remainder being financed with a construction loan with the following features:

- **Interest rate during construction:** 5.0% per year.

[18] Ibid.

[19] As non-recourse debt, the bonds would be solely backed by the toll revenue generated by the project rather than by the project owner (City of Coronado). Depending on market conditions at the time of issuance, the JPA may need to provide some credit enhancement to carry out multiple annual bond issues to be repaid with the same future revenue stream, or issue all of the debt in the first year of construction. The latter would increase the interest expenses, and therefore, reduce the net bond proceeds available for construction expenditures.

- **Commitment amount:** depending on the toll scenario, $205 and $350 million.
- **Agent bank fees:** 2.0% of commitment amount in total, payable over the construction period in equal installments escalated using the consumer price index for California.
- **Upfront fees:** 2.0% of commitment amount.
- **Conversion date:** the construction loan is assumed to be converted into long-term debt one year after the end of construction, as noted below.

6.1.3 Financing Assumptions After Tunnel Opening

Public Sector Project Delivery Scenario

Each bond issue consists of a combination of tax-exempt current interest bonds (CIBs) and capital appreciation bonds (CABs). CABs do not have regular 'coupon' payments; instead, all principal and interest is accrued over time and is paid at the maturity date (varying from 1 year to 30 years). As a result, a CAB of the same maturity as a CIB will bear a higher interest rate in order to offset some additional risk perceived by the investor for not receiving periodic repayment. The CIBs and CABs in the analysis have the following characteristics:

- **Term:** 30 years for CIBs and up to 30 years for CABs from the date of issuance.
- **Interest rate:** constant 6.50% for CIBs and 7.10% for CABs – reflecting a 0.60% premium for issuance of CABs over CIBs. These interest rate assumptions, while lower than current rates for BBB rated long-term debt, are higher than many similar projects have received in the past in light of current market conditions where large spreads exist between AAA and BBB rated bonds.
- **Maximum share of CABs:** 40% of total gross bond proceeds.
- **Principal amortization:** principal is amortized one year after the completion of the project, so as to maximize capital funds generated from toll revenues by excluding the first year of ramp-up. This assumption implies that interest is capitalized one more year than the duration of the construction period.
- **Debt service profile and coverage ratio:** CIBs correspond to a level principal and interest repayment schedule. Total debt service with CABs is ascending so as to maintain a constant coverage ratio of 1.6x (cash flow available for debt service in any given year may be no less than 160% of debt service payments in that year).

Private Sector Project Delivery Scenario

As mentioned previously, the private sector delivery scenario assumes that the construction loan is converted into long-term debt one year after the end of construction. This refinancing is assumed to be made up of a single bond issue using tax-exempt private activity bonds (PABs) solely backed by net toll revenues. Private activity bonds for public transportation infrastructure are allowed under a new provision of the Federal Transportation Authorization bill, the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). They provide private sector delivery of transportation projects access to the tax exempt market for the development of transportation projects. As for the public sector scenario, the bond issue consists of tax-exempt CIBs and CABs.[20]

[20] Tax-exempt CABs subject to a change in legislation as the current SAFETEA-LU language restricts the use of PABs to financing instruments that do not defer interest payments, which is not the case for CABs.

- **Concession duration:** 40 years.
- **Debt term:** 40 years for CIBs, up to 30 years for CABs.[21]
- **Interest rate:** constant 6.80% for CIBs and 7.40% for CABs – reflecting a 0.30% premium to account for reduced marketability under the assumption that interest paid on PABs remains subject to the Alternative Minimum Tax (AMT) provisions.
- **Maximum share of CABs:** 40% of total gross bond proceeds.
- **Principal amortization:** principal is amortized starting at the end of the 6-months period immediately following the conversion date.
- **Debt service profile and coverage ratio:** CIBs correspond to a level principal and interest repayment schedule. Total debt service with CABs is ascending so as to maintain a constant coverage ratio. This coverage varies depending on the tolling scenario and is sized such that the return on equity equals 12% per year with a 30% equity participation. The financial analysis assumes that dividend payments to equity holders would be junior to any other cash expense including debt service payment.

The use of tax-exempt PABs, and CABs in particular, would be subject to an expansion of the existing SAFETEA-LU provisions in the next six year transportation act that Congress is expected to begin working on in 2009.

Interest Earnings

The financial analysis assumes that 2.5% interest will be earned every year on the following:

- DSRF fund
- Capitalized interests
- Rehabilitation and replacement fund
- Any positive cash balance

Taxes

- **Federal and State Income Tax**: This is to be paid by the concessionaire as a private enterprise. The Federal income tax is set at 35%, while the California income tax is assumed to be 8.84%. The concessionaire may employ a 20 year tax loss carryforward and a two year lookback for income taxes.
- **Possessory Interest Tax**: This tax is equivalent to property tax and is imposed on entities leasing public land (which is not taxed) for business purposes that generate a profit to the entity. **Based on language in SBX2 4, this tax has been excluded from the analysis.** It should be noted that PPPs exclusion from this tax is still subject to challenge in California. If included, this annual cost to the concessionaire, paid to the County or City, is assumed to equal 1% of the total construction cost excluding soft costs.

[21] The 40 year maturity for CIBs reflects the fact that the duration of a concession agreement would be longer than the maturity of public sector debt. However, considering that CABs are issued at a significant discount below par, the financial analysis assumes that maturity on CABs would not exceed the 30 years maximum maturity of public sector debt. The marketability of non-recourse 40 year CABs is untested and the interest premium that might be required may offset any advantage of the longer maturity.

6.2 PROJECT FUNDS GENERATED

Table 24 reiterates the toll rate assumptions used in the study and Table 25 shows the total estimated net project funds generated for each toll and project delivery scenario. Based on the capital cost needs of Alternative 4B in a public sector delivery scenario, an additional funding or subsidy would be required in an amount ranging from $40 million for the high variable toll schedule to $170 million under the low variable toll schedule. In the private sector project delivery scenario under the favorable assumptions and conditions previously noted, this amount ranges from a surplus of $30 million to a necessary funding subsidy of $130 million.

Table 24: Tolls Scenarios Modeled and Analyzed

Timing	Toll Scenario	Toll in Each Direction		
		Peak Period/ Peak Direction[1]	Peak Period/ Reverse Direction[1]	Off-Peak Periods[1]
Pre-Completion (2014-2018)[2]	Low Fixed-Rate Toll	$1.50		
2019 forward[3]	Low Variable Toll	$2.50	$2.00	$1.50
	Medium Variable Toll	$3.50	$2.25	$1.75
	High Variable Toll	$5.00	$3.00	$2.25

Toll values shown in year of opening dollars.

Notes:

1. During the morning peak period (6:00 AM to 9:00 AM), the peak direction is westbound (to Coronado), while during the afternoon peak period (3:00 PM to 6:00 PM), the peak direction is eastbound (to San Diego).
2. Pre-completion tolls expressed in year 2014 dollars (first year of pre-completion toll collection). During the pre-completion period, tolls are not assumed to increase with inflation.
3. Tolls assessed after the tunnel is open are expressed in year of opening 2019 dollars and are assumed to escalate by 2.5% each year to keep pace with inflation.

Table 25: Financing Generated from Tolls (Millions of Dollars)

Project Delivery Scenario	Variable Tolling Scenario	Capital Cost (Alt 4B)	Pre-Completion Tolling Pay-as-You-Go Funding *	Debt (Net Bond Proceeds) **	Equity (Net Private Investment) ***	Total Toll Funding Contribution	Remaining Funding Required
Public Sector	Low	$ 500 M	$ 140 M	$ 190 M		$ 330 M	$ 170 M
	Medium			$ 230 M		$ 370 M	$ 130 M
	High			$ 320 M		$ 460 M	$ 40 M
Private Sector Concession	Low			$ 160 M	$ 70 M	$ 370 M	$ 130 M
	Medium			$ 200 M	$ 90 M	$ 430 M	$ 70 M
	High			$ 270 M	$ 120 M	$ 530 M	$0 M

* Pre-completion (from 2014 to 2018) toll revenues ($200 million) minus pre-completion operating cost ($60 million).

** Net of deposit to the debt service reserve fund, deposit to capitalized interest fund/interest during construction, issuance costs, upfront fees and/or agent bank fee costs.

*** Private sector equity investment net of funds used to pay for 30% of the financing costs.

The use of equity allows the project to make full use of the cash flows available after debt service payments. This, however, comes at a higher cost of capital (12% vs. 6.5% to 7.1% for debt). In order to achieve the required 12% target return on equity, the debt service coverage ratio in the private concession scenario must be about 2.5x (cash flow available for debt service in any given year is no less than 240% of debt service payments in that year). As mentioned earlier, the possessory interest tax was not assumed to be levied on the concessionaire. The toll funding capacity for a private concession would be significantly decreased if this tax is, in fact, levied.

Alternative 3

With roughly the same expected traffic, slightly lower capital expenditures for toll equipment, and greatly lower overall capital cost, the variable toll rate schedule required to fully fund the capital cost of Alternative 3 would be lower than that for the tunnel alternatives.

Alternative 5A

While it is all traffic to and from Coronado on SR 75/282 that actually gets tolled, traffic and revenue under Alternative 5A may be slightly lower than forecast for Alternative 4B since the 5A tunnel includes fewer overall tunnel lanes than 4B and does not provide bi-directional travel in the peak periods. Additionally, initial capital cost, annual operating and maintenance cost, and tolling rehabilitation and replacement costs are estimated to be higher for 5A than 4B. Therefore, with an anticipation of slightly lower revenue and significantly higher costs, higher toll rates than analyzed in this study would be required to fully finance Alternative 5A.

7.0 Moving Forward

The following is a list of recommended next steps for the City to consider:

1. **Development of a Project Delivery Plan -** Begin an evaluation process to consider public versus private sector delivery of the project and the various PPP options that are available to the City. The process would include further consideration of the favorable conditions required to maximize the funding efficiency of a private concession.
2. **Stakeholder and Customer Input on Tolling –** Establish an agency and community outreach program to provide information on tolling and to solicit feedback from stakeholders on tolling to help fund the project. Potentially conduct some survey or focus group research to better understand how the public may perceive reinstating tolls relative to the benefits of the project.
3. **Traffic and Revenue Forecasting –** Engage SANDAG or an experienced consultant to prepare updated toll traffic forecasts using the updated regional transportation demand model when it is available, and retain a consultant to prepare updated annual revenue projections over the financing period.
4. **Continue Environmental Work** – Complete the environmental studies to the point of selecting a preferred alternative.

Potential Future Steps for Public Sector Delivery

1. **Joint Powers Authority Creation** – Based on the results of the project delivery evaluation, potentially begin dialogue with SANDAG and/or the City of San Diego regarding the formation of a JPA to deliver the project.
2. **CEQA Approval for Reinstating Tolls –** Work with SANDAG to begin CEQA studies to allow tolling for the project.
3. **Toll Legislation –** Potentially begin to pursue legislative action that would allow SANDAG to charge more than the current maximum toll rate of $1.50 per direction for travel to and from Coronado, with the tolls implemented on the approach roadways between the bridge and the tunnel.
4. **Program Manager –** Hire a program management firm to administer the project for the JPA.

Potential Future Steps for Private Sector Delivery

1. **Interagency Agreement -** Enter into a cooperative agreement with SANDAG covering implementation of the project through a PPP.
2. **CTC Application –** Submit an application to the California Transportation Commission for approval of the project as a PPP.
3. **Possessory Interest Tax Opinion** – Conduct further legal research regarding whether legislation in SBX2 4 waives the possessory interest tax that has been levied on private sector concessions in California.
4. **Program Manager** – Hire program management firm to administer project for the City/SANDAG.

Appendix A Net Revenue Tables

Scenario 1: Public Sponsor (Low Variable Toll)

Year	Annual Toll Transactions	Toll Revenue	Interest Earnings	O&M	R&R Fund (Deposit)	Taxes Paid	Net Revenue
2014	23,041	$35,968	$0	($10,795)	$0	$0	$25,173
2015	25,864	$40,341	$0	($11,310)	$0	$0	$29,031
2016	26,128	$40,720	$0	($11,546)	$0	$0	$29,173
2017	26,392	$41,096	$0	($11,788)	$0	$0	$29,308
2018	26,656	$41,469	$0	($12,035)	$0	$0	$29,434
2019	25,876	$46,857	$704	($17,623)	($2,601)	$0	$27,338
2020	26,658	$49,470	$881	($18,288)	($2,779)	$0	$29,283
2021	26,776	$50,933	$1,032	($18,813)	($2,868)	$0	$30,284
2022	26,896	$52,439	$1,168	($19,354)	($2,957)	$0	$31,296
2023	27,016	$53,990	$1,166	($19,910)	($3,048)	$0	$32,199
2024	27,136	$55,587	$1,198	($20,481)	($3,142)	$0	$33,161
2025	27,257	$57,231	$1,255	($21,070)	($3,239)	$0	$34,178
2026	27,379	$58,923	$1,334	($21,675)	($3,337)	$0	$35,246
2027	27,501	$60,665	$1,434	($22,297)	($3,435)	$0	$36,367
2028	27,624	$62,459	$1,369	($22,938)	($3,535)	$0	$37,356
2029	27,747	$64,306	$1,281	($23,596)	($3,635)	$0	$38,356
2030	27,855	$66,171	$1,314	($24,269)	($3,734)	$0	$39,482
2031	27,917	$67,977	$1,317	($24,947)	($3,824)	$0	$40,523
2032	27,979	$69,831	$1,289	($25,643)	($3,914)	$0	$41,563
2033	28,042	$71,737	$1,090	($26,359)	($4,005)	$0	$42,463
2034	28,104	$73,694	$1,009	($27,094)	($4,110)	$0	$43,499
2035	28,167	$75,705	$1,014	($27,851)	($4,219)	$0	$44,650
2036	28,230	$77,770	$1,065	($28,628)	($4,331)	$0	$45,877
2037	28,293	$79,892	$1,174	($29,427)	($4,446)	$0	$47,193
2038	28,356	$82,072	$1,101	($30,248)	($4,564)	$0	$48,361
2039	28,419	$84,311	$1,002	($31,049)	($4,689)	$0	$49,576
2040	28,466	$86,563	$1,119	($31,849)	($4,815)	$0	$51,018
2041	28,466	$88,727	$1,240	($32,651)	($4,933)	$0	$52,383
2042	28,466	$90,945	$1,363	($33,473)	($5,055)	$0	$53,781
2043	28,466	$93,219	$1,280	($34,316)	($5,179)	$0	$55,004
2044	28,466	$95,549	$1,170	($35,180)	($5,302)	$0	$56,237
2045	28,466	$97,938	$1,072	($36,066)	($5,424)	$0	$57,521
2046	28,466	$100,387	$993	($36,974)	($5,545)	$0	$58,861
2047	28,466	$102,896	$946	($37,905)	($5,666)	$0	$60,271
2048	28,466	$105,469	$696	($38,859)	($5,794)	$0	$61,512
2049	28,466	$108,105	$37	($39,837)	($5,933)	$0	$62,372
2050	28,466	$110,808	$185	($40,840)	($6,081)	$0	$64,072
2051	28,466	$113,578	$337	($41,869)	($6,232)	$0	$65,815
2052	28,466	$116,418	$493	($42,923)	($6,387)	$0	$67,601
2053	28,466	$119,328	$384	($44,003)	($6,546)	$0	$69,163
2054	28,466	$122,311	$312	($45,111)	($6,709)	$0	$70,803
2055	28,466	$125,369	$344	($46,247)	($6,876)	$0	$72,590
2056	28,466	$128,503	$451	($47,412)	($7,047)	$0	$74,496
2057	28,466	$131,716	$627	($48,605)	($7,223)	$0	$76,515
2058	28,466	$135,009	$504	($49,829)	$4,326	$0	$90,010
2059	28,466	$138,384	$0	($51,084)	$0	$0	$87,300
Total	**1,276,640**	**$3,772,840**	**$37,751**	**($1,374,066)**	**($178,832)**	**$0**	**$2,257,693**

Note: O&M costs include a subsidy to Caltrans (at 10% of gross toll revenue).

Scenario 2: Public Sponsor (Medium Variable Toll)

Year	Annual Toll Transactions	Toll Revenue	Interest Earnings	O&M	R&R Fund (Deposit)	Taxes Paid	Net Revenue
2014	23,041	$35,968	$0	($10,795)	$0	$0	$25,173
2015	25,864	$40,341	$0	($11,310)	$0	$0	$29,031
2016	26,128	$40,720	$0	($11,546)	$0	$0	$29,173
2017	26,392	$41,096	$0	($11,788)	$0	$0	$29,308
2018	26,656	$41,469	$0	($12,035)	$0	$0	$29,434
2019	24,251	$53,406	$872	($18,474)	($2,521)	$0	$33,283
2020	25,640	$57,857	$1,098	($19,379)	($2,782)	$0	$36,794
2021	25,754	$59,568	$1,286	($19,936)	($2,872)	$0	$38,047
2022	25,869	$61,330	$1,456	($20,510)	($2,962)	$0	$39,314
2023	25,985	$63,144	$1,484	($21,100)	($3,054)	$0	$40,474
2024	26,101	$65,011	$1,541	($21,706)	($3,149)	$0	$41,696
2025	26,217	$66,933	$1,619	($22,331)	($3,246)	$0	$42,976
2026	26,334	$68,913	$1,714	($22,973)	($3,344)	$0	$44,309
2027	26,451	$70,951	$1,823	($23,634)	($3,442)	$0	$45,697
2028	26,569	$73,049	$1,763	($24,314)	($3,542)	$0	$46,955
2029	26,688	$75,209	$1,673	($25,014)	($3,642)	$0	$48,226
2030	26,792	$77,390	$1,697	($25,728)	($3,741)	$0	$49,618
2031	26,852	$79,501	$1,684	($26,445)	($3,832)	$0	$50,908
2032	26,911	$81,670	$1,632	($27,182)	($3,922)	$0	$52,199
2033	26,971	$83,899	$1,380	($27,940)	($4,012)	$0	$53,327
2034	27,032	$86,188	$1,178	($28,718)	($4,109)	$0	$54,539
2035	27,092	$88,539	$1,184	($29,519)	($4,218)	$0	$55,986
2036	27,152	$90,955	$1,235	($30,342)	($4,330)	$0	$57,518
2037	27,213	$93,437	$1,343	($31,188)	($4,445)	$0	$59,147
2038	27,273	$95,986	$1,270	($32,057)	($4,564)	$0	$60,635
2039	27,334	$98,605	$1,171	($32,907)	($4,688)	$0	$62,181
2040	27,380	$101,239	$1,289	($33,757)	($4,814)	$0	$63,956
2041	27,380	$103,770	$1,409	($34,607)	($4,932)	$0	$65,640
2042	27,380	$106,364	$1,532	($35,478)	($5,054)	$0	$67,365
2043	27,380	$109,023	$1,450	($36,370)	($5,178)	$0	$68,924
2044	27,380	$111,749	$1,328	($37,286)	($5,302)	$0	$70,489
2045	27,380	$114,542	$1,205	($38,224)	($5,423)	$0	$72,100
2046	27,380	$117,406	$1,090	($39,186)	($5,545)	$0	$73,765
2047	27,380	$120,341	$997	($40,172)	($5,666)	$0	$75,501
2048	27,380	$123,350	$710	($41,183)	($5,793)	$0	$77,083
2049	27,380	$126,433	$37	($42,220)	($5,932)	$0	$78,318
2050	27,380	$129,594	$185	($43,283)	($6,080)	$0	$80,417
2051	27,380	$132,834	$337	($44,372)	($6,231)	$0	$82,568
2052	27,380	$136,155	$493	($45,489)	($6,387)	$0	$84,772
2053	27,380	$139,559	$384	($46,633)	($6,546)	$0	$86,764
2054	27,380	$143,048	$312	($47,807)	($6,709)	$0	$88,844
2055	27,380	$146,624	$344	($49,010)	($6,876)	$0	$91,081
2056	27,380	$150,290	$451	($50,244)	($7,047)	$0	$93,450
2057	27,380	$154,047	$627	($51,508)	($7,223)	$0	$95,943
2058	27,380	$157,898	$504	($52,805)	$4,323	$0	$109,920
2059	27,380	$161,845	$0	($54,134)	$0	$0	$107,712
Total	**1,232,160**	**$4,377,246**	**$44,784**	**($1,452,639)**	**($178,832)**	**$0**	**$2,790,560**

Note: O&M costs include a subsidy to Caltrans (at 10% of gross toll revenue).

Scenario 3: Public Sponsor (High Variable Toll)

Year	Annual Toll Transactions	Toll Revenue	Interest Earnings	O&M	R&R Fund (Deposit)	Taxes Paid	Net Revenue
2014	23,041	$35,968	$0	($10,795)	$0	$0	$25,173
2015	25,864	$40,341	$0	($11,310)	$0	$0	$29,031
2016	26,128	$40,720	$0	($11,546)	$0	$0	$29,173
2017	26,392	$41,096	$0	($11,788)	$0	$0	$29,308
2018	26,656	$41,469	$0	($12,035)	$0	$0	$29,434
2019	22,654	$65,379	$1,185	($20,031)	($2,451)	$0	$44,082
2020	24,599	$72,756	$1,498	($21,315)	($2,785)	$0	$50,154
2021	24,709	$74,907	$1,756	($21,930)	($2,876)	$0	$51,857
2022	24,819	$77,122	$1,988	($22,563)	($2,968)	$0	$53,580
2023	24,930	$79,403	$2,071	($23,213)	($3,060)	$0	$55,200
2024	25,041	$81,751	$2,174	($23,883)	($3,156)	$0	$56,887
2025	25,153	$84,169	$2,291	($24,572)	($3,253)	$0	$58,635
2026	25,265	$86,658	$2,414	($25,280)	($3,351)	$0	$60,440
2027	25,377	$89,220	$2,542	($26,009)	($3,450)	$0	$62,303
2028	25,491	$91,859	$2,489	($26,759)	($3,549)	$0	$64,039
2029	25,604	$94,575	$2,395	($27,531)	($3,650)	$0	$65,789
2030	25,704	$97,318	$2,403	($28,318)	($3,748)	$0	$67,654
2031	25,762	$99,973	$2,360	($29,106)	($3,840)	$0	$69,387
2032	25,819	$102,701	$2,266	($29,916)	($3,931)	$0	$71,120
2033	25,877	$105,503	$1,956	($30,748)	($4,021)	$0	$72,689
2034	25,934	$108,381	$1,596	($31,604)	($4,112)	$0	$74,262
2035	25,992	$111,338	$1,497	($32,483)	($4,216)	$0	$76,136
2036	26,050	$114,376	$1,547	($33,387)	($4,329)	$0	$78,209
2037	26,108	$117,497	$1,656	($34,316)	($4,444)	$0	$80,393
2038	26,166	$120,703	$1,583	($35,270)	($4,563)	$0	$82,453
2039	26,225	$123,996	$1,484	($36,208)	($4,687)	$0	$84,586
2040	26,268	$127,308	$1,601	($37,146)	($4,812)	$0	$86,951
2041	26,268	$130,491	$1,722	($38,080)	($4,930)	$0	$89,202
2042	26,268	$133,753	$1,845	($39,038)	($5,052)	$0	$91,508
2043	26,268	$137,097	$1,762	($40,020)	($5,176)	$0	$93,663
2044	26,268	$140,524	$1,620	($41,027)	($5,300)	$0	$95,818
2045	26,268	$144,037	$1,449	($42,059)	($5,421)	$0	$98,007
2046	26,268	$147,638	$1,269	($43,116)	($5,542)	$0	$100,249
2047	26,268	$151,329	$1,092	($44,201)	($5,663)	$0	$102,558
2048	26,268	$155,112	$735	($45,313)	($5,790)	$0	$104,745
2049	26,268	$158,990	$37	($46,452)	($5,929)	$0	$106,645
2050	26,268	$162,965	$185	($47,621)	($6,077)	$0	$109,452
2051	26,268	$167,039	$337	($48,819)	($6,228)	$0	$112,329
2052	26,268	$171,215	$492	($50,046)	($6,384)	$0	$115,277
2053	26,268	$175,495	$384	($51,305)	($6,543)	$0	$118,031
2054	26,268	$179,883	$312	($52,596)	($6,706)	$0	$120,893
2055	26,268	$184,380	$343	($53,919)	($6,873)	$0	$123,931
2056	26,268	$188,989	$451	($55,275)	($7,045)	$0	$127,121
2057	26,268	$193,714	$627	($56,665)	($7,220)	$0	$130,455
2058	26,268	$198,557	$503	($58,090)	$4,297	$0	$145,267
2059	26,268	$203,521	$0	($59,551)	$0	$0	$143,969
Total	**1,186,725**	**$5,451,218**	**$57,914**	**($1,592,255)**	**($178,832)**	**$0**	**$3,738,045**

Note: O&M costs include a subsidy to Caltrans (at 10% of gross toll revenue).

Scenario 4: Concession (Low Variable Toll)

Year	Annual Toll Transactions	Toll Revenue	Interest Earnings	O&M	R&R Fund (Deposit)	Taxes Paid	Net Revenue
2014	23,041	$35,968	$0	($10,795)	$0	$0	$25,173
2015	25,864	$40,341	$0	($11,310)	$0	$0	$29,031
2016	26,128	$40,720	$0	($11,546)	$0	$0	$29,173
2017	26,392	$41,096	$0	($11,788)	$0	$0	$29,308
2018	26,656	$41,469	$0	($12,035)	$0	$0	$29,434
2019	25,876	$46,857	$14	($17,623)	($2,325)	($9,818)	$17,104
2020	26,658	$49,470	$788	($18,288)	($3,002)	($6,829)	$22,139
2021	26,776	$50,933	$967	($18,813)	($3,073)	($7,277)	$22,737
2022	26,896	$52,439	$1,143	($19,354)	($3,145)	($7,740)	$23,344
2023	27,016	$53,990	$1,193	($19,910)	($3,276)	($7,734)	$24,263
2024	27,136	$55,587	$1,283	($20,481)	($3,402)	($7,821)	$25,165
2025	27,257	$57,231	$1,411	($21,070)	($3,498)	($8,193)	$25,881
2026	27,379	$58,923	$1,573	($21,675)	($3,586)	($8,659)	$26,577
2027	27,501	$60,665	$1,773	($22,297)	($3,665)	($9,234)	$27,242
2028	27,624	$62,459	$1,826	($22,938)	($3,759)	($9,704)	$27,885
2029	27,747	$64,306	$1,873	($23,596)	($3,858)	($10,163)	$28,562
2030	27,855	$66,171	$2,060	($24,269)	($3,936)	($10,787)	$29,238
2031	27,917	$67,977	$2,239	($24,947)	($4,009)	($11,389)	$29,871
2032	27,979	$69,831	$2,409	($25,643)	($4,082)	($12,008)	$30,507
2033	28,042	$71,737	$2,411	($26,359)	($4,172)	($12,504)	$31,113
2034	28,104	$73,694	$2,411	($27,094)	($4,265)	($13,009)	$31,736
2035	28,167	$75,705	$2,466	($27,851)	($4,349)	($13,608)	$32,363
2036	28,230	$77,770	$2,556	($28,628)	($4,429)	($14,267)	$33,003
2037	28,293	$79,892	$2,691	($29,427)	($4,503)	($14,996)	$33,657
2038	28,356	$82,072	$2,629	($30,248)	($4,596)	($15,584)	$34,273
2039	28,419	$84,311	$2,534	($31,049)	($4,697)	($16,184)	$34,915
2040	28,466	$86,563	$2,641	($31,849)	($4,772)	($16,999)	$35,584
2041	28,466	$88,727	$2,734	($32,651)	($4,838)	($17,784)	$36,188
2042	28,466	$90,945	$2,812	($33,473)	($4,903)	($18,595)	$36,787
2043	28,466	$93,219	$2,666	($34,316)	($4,988)	($19,252)	$37,328
2044	28,466	$95,549	$2,526	($35,180)	($5,072)	($19,949)	$37,874
2045	28,466	$97,938	$2,439	($36,066)	($5,147)	($20,737)	$38,427
2046	28,466	$100,387	$2,392	($36,974)	($5,216)	($21,604)	$38,986
2047	28,466	$102,896	$2,398	($37,905)	($5,275)	($22,560)	$39,555
2048	28,466	$105,469	$2,146	($38,859)	($5,357)	($23,346)	$40,052
2049	28,466	$108,105	$1,372	($39,837)	($5,500)	($23,652)	$40,488
2050	28,466	$110,808	$1,389	($40,840)	($5,567)	($24,677)	$41,113
2051	28,466	$113,578	$1,536	($41,869)	($5,665)	($25,604)	$41,977
2052	28,466	$116,418	$1,678	($42,923)	($5,766)	($26,550)	$42,857
2053	28,466	$119,328	$1,546	($44,003)	($5,896)	($27,289)	$43,686
2054	28,466	$122,311	$1,449	($45,111)	($6,024)	($28,079)	$44,545
2055	28,466	$125,369	$1,449	($46,247)	($6,140)	($29,017)	$45,413
2056	28,466	$128,503	$1,514	($47,412)	($6,251)	($30,037)	$46,318
2057	28,466	$131,716	$1,637	($48,605)	($6,362)	($31,096)	$47,289
2058	28,466	$135,009	$1,449	($49,829)	($467)	($31,919)	$54,243
2059	28,466	$138,384	$1,218	($51,084)	$0	($32,763)	$55,755
Total	**1,276,640**	**$3,772,840**	**$77,238**	**($1,374,066)**	**($178,832)**	**($719,021)**	**$1,578,159**

Note: O&M costs include a subsidy to Caltrans (at 10% of gross toll revenue).

Scenario 5: Concession (Medium Variable Toll)

Year	Annual Toll Transactions	Toll Revenue	Interest Earnings	O&M	R&R Fund (Deposit)	Taxes Paid	Net Revenue
2014	23,041	$35,968	$0	($10,795)	$0	$0	$25,173
2015	25,864	$40,341	$0	($11,310)	$0	$0	$29,031
2016	26,128	$40,720	$0	($11,546)	$0	$0	$29,173
2017	26,392	$41,096	$0	($11,788)	$0	$0	$29,308
2018	26,656	$41,469	$0	($12,035)	$0	$0	$29,434
2019	24,251	$53,406	$13	($18,474)	($2,262)	($11,596)	$21,088
2020	25,640	$57,857	$974	($19,379)	($3,000)	($8,418)	$28,034
2021	25,754	$59,568	$1,195	($19,936)	($3,073)	($8,971)	$28,783
2022	25,869	$61,330	$1,410	($20,510)	($3,146)	($9,542)	$29,542
2023	25,985	$63,144	$1,499	($21,100)	($3,267)	($9,648)	$30,628
2024	26,101	$65,011	$1,627	($21,706)	($3,384)	($9,851)	$31,696
2025	26,217	$66,933	$1,792	($22,331)	($3,478)	($10,342)	$32,575
2026	26,334	$68,913	$1,990	($22,973)	($3,565)	($10,930)	$33,434
2027	26,451	$70,951	$2,223	($23,634)	($3,644)	($11,633)	$34,262
2028	26,569	$73,049	$2,308	($24,314)	($3,736)	($12,234)	$35,073
2029	26,688	$75,209	$2,386	($25,014)	($3,833)	($12,829)	$35,920
2030	26,792	$77,390	$2,602	($25,728)	($3,913)	($13,591)	$36,760
2031	26,852	$79,501	$2,808	($26,445)	($3,987)	($14,327)	$37,550
2032	26,911	$81,670	$3,004	($27,182)	($4,062)	($15,087)	$38,344
2033	26,971	$83,899	$3,029	($27,940)	($4,150)	($15,726)	$39,112
2034	27,032	$86,188	$3,050	($28,718)	($4,241)	($16,380)	$39,899
2035	27,092	$88,539	$3,124	($29,519)	($4,324)	($17,133)	$40,687
2036	27,152	$90,955	$3,231	($30,342)	($4,405)	($17,950)	$41,490
2037	27,213	$93,437	$3,380	($31,188)	($4,481)	($18,842)	$42,306
2038	27,273	$95,986	$3,329	($32,057)	($4,572)	($19,600)	$43,087
2039	27,334	$98,605	$3,242	($32,907)	($4,670)	($20,375)	$43,896
2040	27,380	$101,239	$3,355	($33,757)	($4,746)	($21,368)	$44,723
2041	27,380	$103,770	$3,450	($34,607)	($4,814)	($22,327)	$45,473
2042	27,380	$106,364	$3,527	($35,478)	($4,880)	($23,318)	$46,216
2043	27,380	$109,023	$3,377	($36,370)	($4,964)	($24,161)	$46,905
2044	27,380	$111,749	$3,228	($37,286)	($5,045)	($25,050)	$47,596
2045	27,380	$114,542	$3,129	($38,224)	($5,120)	($26,037)	$48,290
2046	27,380	$117,406	$3,067	($39,186)	($5,189)	($27,108)	$48,989
2047	27,380	$120,341	$3,051	($40,172)	($5,250)	($28,277)	$49,693
2048	27,380	$123,350	$2,774	($41,183)	($5,330)	($29,283)	$50,328
2049	27,380	$126,433	$1,969	($42,220)	($5,458)	($29,816)	$50,909
2050	27,380	$129,594	$1,961	($43,283)	($5,527)	($31,066)	$51,680
2051	27,380	$132,834	$2,112	($44,372)	($5,627)	($32,197)	$52,750
2052	27,380	$136,155	$2,256	($45,489)	($5,729)	($33,353)	$53,841
2053	27,380	$139,559	$2,125	($46,633)	($5,855)	($34,305)	$54,891
2054	27,380	$143,048	$2,027	($47,807)	($5,981)	($35,315)	$55,973
2055	27,380	$146,624	$2,025	($49,010)	($6,096)	($36,476)	$57,066
2056	27,380	$150,290	$2,087	($50,244)	($6,209)	($37,725)	$58,200
2057	27,380	$154,047	$2,205	($51,508)	($6,321)	($39,018)	$59,404
2058	27,380	$157,898	$2,010	($52,805)	($1,500)	($40,082)	$65,521
2059	27,380	$161,845	$1,770	($54,134)	$0	($41,178)	$68,304
Total	**1,232,160**	**$4,377,246**	**$99,724**	**($1,452,639)**	**($178,832)**	**($902,463)**	**$1,943,037**

Note: O&M costs include a subsidy to Caltrans (at 10% of gross toll revenue).

Scenario 6: Concession (High Variable Toll)

Year	Annual Toll Transactions	Toll Revenue	Interest Earnings	O&M	R&R Fund (Deposit)	Taxes Paid	Net Revenue
2014	23,041	$35,968	$0	($10,795)	$0	$0	$25,173
2015	25,864	$40,341	$0	($11,310)	$0	$0	$29,031
2016	26,128	$40,720	$0	($11,546)	$0	$0	$29,173
2017	26,392	$41,096	$0	($11,788)	$0	$0	$29,308
2018	26,656	$41,469	$0	($12,035)	$0	$0	$29,434
2019	22,654	$65,379	$13	($20,031)	($2,213)	($14,864)	$28,285
2020	24,599	$72,756	$1,311	($21,315)	($3,011)	($11,196)	$38,544
2021	24,704	$74,944	$1,365	($21,630)	($3,075)	($11,936)	$39,561
2022	24,808	$77,122	$1,424	($22,503)	($3,160)	($12,699)	$40,593
2023	24,913	$79,289	$1,482	($23,283)	($3,271)	($13,005)	$41,967
2024	25,017	$81,442	$1,545	($23,993)	($3,374)	($13,412)	$43,325
2025	25,163	$84,169	$1,479	($24,572)	($3,499)	($14,115)	$44,491
2026	25,265	$86,636	$2,240	($25,280)	($3,556)	($14,923)	$45,639
2027	25,370	$89,226	$3,033	($26,000)	($3,636)	($15,852)	$46,758
2028	25,475	$91,808	$3,776	($26,750)	($3,737)	($16,687)	$47,865
2029	25,580	$94,376	$4,545	($27,488)	($3,821)	($17,523)	$49,012
2030	25,704	$97,149	$5,321	($28,216)	($3,902)	($18,530)	$50,147
2031	25,829	$99,903	$6,089	($28,949)	($3,982)	($19,507)	$51,216
2032	25,954	$102,651	$6,832	($29,684)	($4,057)	($20,515)	$52,292
2033	25,877	$101,501	$7,144	($30,448)	($4,142)	($21,411)	$53,346
2034	25,934	$103,381	$7,203	($31,604)	($4,230)	($22,329)	$54,421
2035	25,992	$105,300	$7,275	($32,783)	($4,314)	($23,355)	$55,498
2036	26,050	$107,255	$7,348	($33,987)	($4,395)	($24,455)	$56,588
2037	26,108	$109,249	$7,422	($35,216)	($4,473)	($25,639)	$57,691
2038	26,166	$111,283	$7,496	($36,470)	($4,552)	($26,698)	$58,764
2039	26,224	$113,356	$7,571	($37,748)	($4,627)	($27,785)	$59,867
2040	26,282	$115,468	$7,647	($39,051)	($4,704)	($29,095)	$60,976
2041	26,339	$117,621	$7,723	($40,380)	($4,780)	($30,365)	$61,983
2042	26,369	$119,815	$7,800	($41,736)	($4,857)	($31,676)	$62,983
2043	26,398	$122,050	$7,878	($43,118)	($4,934)	($32,850)	$63,931
2044	26,428	$124,326	$7,957	($44,527)	($5,012)	($34,082)	$64,878
2045	26,458	$126,643	$8,036	($45,962)	($5,091)	($35,422)	$65,823
2046	26,268	$147,638	$4,282	($43,116)	($5,177)	($36,859)	$66,768
2047	26,268	$151,329	$4,230	($44,201)	($5,241)	($38,406)	$67,711
2048	26,268	$155,112	$3,906	($45,313)	($5,317)	($39,803)	$68,586
2049	26,268	$158,990	$3,047	($46,452)	($5,431)	($40,741)	$69,414
2050	26,268	$162,965	$2,994	($47,621)	($5,501)	($42,394)	$70,443
2051	26,268	$167,039	$3,151	($48,819)	($5,602)	($43,889)	$71,881
2052	26,268	$171,215	$3,299	($50,046)	($5,706)	($45,416)	$73,346
2053	26,268	$175,495	$3,170	($51,305)	($5,828)	($46,749)	$74,783
2054	26,268	$179,883	$3,071	($52,596)	($5,951)	($48,148)	$76,260
2055	26,268	$184,380	$3,066	($53,919)	($6,067)	($49,708)	$77,752
2056	26,268	$188,989	$3,121	($55,275)	($6,181)	($51,364)	$79,291
2057	26,268	$193,714	$3,229	($56,665)	($6,295)	($53,075)	$80,908
2058	26,268	$198,557	$3,022	($58,090)	($1,994)	($54,565)	$86,929
2059	26,268	$203,521	$2,766	($59,551)	$0	($56,110)	$90,626
Total	**1,186,725**	**$5,451,218**	**$140,280**	**($1,592,255)**	**($178,832)**	**($1,227,152)**	**$2,593,259**

Note: O&M costs include a subsidy to Caltrans (at 10% of gross toll revenue).

Appendix B Estimated Construction Cash Flow

Alternative 4B	Semi-Annual Period Ending	30/Jun/13	31/Dec/13	30/Jun/14	31/Dec/14	30/Jun/15	31/Dec/15	30/Jun/16	31/Dec/16	30/Jun/17	31/Dec/17	30/Jun/18	31/Dec/18
	Year	2013		2014		2015		2016		2017			
	Capex Percent Complete	0%	6%	10%	17%	27%	35%	50%	64%	78%	87%	94%	100%
Project Capital Expenditures	*Total (Y.O.E. Dollar 000s)*												
DESIGNER/BUILDER COSTS													
Tolling Items	$16,010		$7,188									$571	$8,251
Roadway Items	$59,713				$8,458	$8,548	$5,760	$5,845			$6,110	$12,403	$12,588
Structural Items	$264,505				$12,621	$25,511	$25,784	$52,335	$53,114	$53,905	$27,354	$13,881	
Right of Way Items	$4,243				$2,535	$1,708							
Designer/Builder Contingency	$68,046		$1,438		$4,216	$6,812	$6,309	$11,636	$10,623	$10,781	$6,693	$5,371	$4,168
Design	$23,045		$11,453	$11,592									
OWNER COSTS													
Biological Mitigation	$14,907		$7,414	$7,493									
Right of Way Acquisition	$1,791				$1,070	$721							
Owner Contingency	$17,224		$359		$1,181	$1,788	$1,577	$2,909	$2,656	$2,695	$1,673	$1,343	$1,042
ROW Support	$3,631				$2,169	$1,462							
Project Management Support	$23,096		$1,981	$2,006	$2,030	$2,053	$2,076	$2,099	$2,122	$2,146	$2,170	$2,194	$2,219
Total Capital Cost	*$496,208*		*$29,833*	*$21,091*	*$34,279*	*$48,603*	*$41,505*	*$74,825*	*$68,515*	*$69,528*	*$44,001*	*$35,762*	*$28,267*
	Cumulative Expenditures		$29,833	$50,924	$85,203	$133,806	$175,311	$250,136	$318,651	$388,179	$432,179	$467,942	$496,208

Alternative 5A	Semi-Annual Period Ending	30/Jun/13	31/Dec/13	30/Jun/14	31/Dec/14	30/Jun/15	31/Dec/15	30/Jun/16	31/Dec/16	30/Jun/17	31/Dec/17	30/Jun/18	31/Dec/18
	Year	2013		2014		2015		2016		2017			
	Capex Percent Complete	0%	4%	7%	26%	43%	64%	81%	89%	90%	92%	97%	100%
Project Capital Expenditures	*Total (Y.O.E. Dollar 000s)*												
DESIGNER/BUILDER COSTS													
Tolling Items	$15,057		$7,188									$571	$7,298
Roadway Items	$53,769				$10,379	$10,490	$10,602	$5,380	$2,730	$2,771	$2,812	$5,708	$2,896
Structural Items	$348,815				$68,059	$68,786	$86,900	$70,555	$35,803			$18,713	
Right of Way Items	$3,689				$3,317	$372							
Designer/Builder Contingency	$83,528		$1,438		$15,688	$15,855	$19,500	$15,187	$7,707	$554	$562	$4,998	$2,039
Design	$27,631		$13,732	$13,899									
OWNER COSTS													
Biological Mitigation	$1,041		$518	$523									
Right of Way Acquisition	$1,787				$1,607	$180							
Owner Contingency	$21,067		$359		$4,088	$3,982	$4,875	$3,797	$1,927	$139	$141	$1,250	$510
ROW Support	$3,618				$3,253	$365							
Project Management Support	$33,988		$2,916	$2,951	$2,987	$3,021	$3,055	$3,089	$3,123	$3,158	$3,193	$3,229	$3,265
Total Capital Cost	*$593,991*		*$26,151*	*$17,374*	*$109,378*	*$103,053*	*$124,932*	*$98,007*	*$51,289*	*$6,622*	*$6,708*	*$34,469*	*$16,008*
	Cumulative Expenditures		$26,151	$43,525	$152,902	$255,955	$380,887	$478,895	$530,184	$536,805	$543,514	$577,982	$593,991

Appendix C Nossaman Memo - Legal Issues and Requirements

DRAFT FOR DISCUSSION PURPOSES

NOSSAMAN LLP | **Memorandum**

TO:

FROM: NOSSAMAN LLP

DATE: March 18, 2009

RE: San Diego-Coronado Bridge and Proposed Approach - Tolling and Procurement
280942-0001

EXECUTIVE SUMMARY

The City of Coronado has asked us to identify and assess the following legal issues in connection with reimposing tolls on the Coronado Bridge and a proposed approach. To the extent that current law does not authorize or accommodate the City's strategic requirements, this memorandum offers legislative recommendations.

1. Whether and to what extent existing law provides statutory authority to toll the Coronado Bridge.

Under existing law, the San Diego Association of Governments ("SANDAG") is authorized by California law to impose a toll on vehicles crossing the Coronado Bridge and its "necessary approaches." Although SANDAG eliminated the payment of the toll in 2002, the statutory authority to impose the toll has neither expired by its own terms nor been repealed by subsequent legislative action. Accordingly, we believe that authority to toll the bridge and its approaches can be reinstituted by SANDAG without further state legislative action. Regarding the amount of the toll, existing law does not limit SANDAG's authority to impose tolls to one direction <u>only</u>, which can be interpreted to mean that SANDAG may charge the maximum toll rate for travel in both the west-bound and east-bound directions. However, we note that under current statutes, SANDAG is limited to charging a maximum rate of not more than $1.50 for class 1 vehicles, a potentially significant constraint on a viable tolling scheme. Additionally, SANDAG does not have express authority to impose fees or charges above the toll rate.

The recently enacted SBX2 4 authorizes regional transportation agencies ("RTAs") to enter into public-private partnership ("PPP") transportation projects via "comprehensive development lease agreements" until January 1, 2017. Under SBX2 4, the California Transportation Commission ("CTC") will select projects nominated by RTAs for PPP delivery. Facilities constructed under this statute may be tolled and revenues generated by the facility dedicated, in part, to provide the private partner with a reasonable return on its investment. Although SBX2 4 may generally not be used to convert "existing nontoll lanes" into

toll lanes, we believe that reimposition of an authorized toll on the Coronado Bridge as part of the Corridor Project is not a conversion within the meaning of the statutory prohibition.

2. Whether and to what extent existing law provides statutory authority to toll a Proposed Approach, possibly a tunnel, located at the base of the Coronado Bridge.

SANDAG's express statutory authority to toll the Bridge includes authority to toll any "necessary approach." Accordingly, we conclude that authority to toll the Proposed Approach, whether by tunnel or grade-separation, would fall under SANDAG's express statutory authority.

Facilities constructed under SBX2 4 – e.g. the Corridor Project's Proposed Approach – may be tolled and the revenues generated by the facilities may be used, in part, to provide the private partner with a reasonable return on its investment.

3. The legal requirements necessary to implement a joint powers authority ("JPA") governance structure.

Under the Joint Exercise of Powers Act (the "JPA Act"), the City of Coronado may enter into a joint powers agreement with other public agencies, including but not limited to, SANDAG, the California Department of Transportation ("Caltrans"), the County of San Diego and the City of San Diego to contract for design, construction and operation and maintenance related to the proposed SR 75/282 Transportation Corridor improvements and to issue revenue bonds to pay the related cost and expenses.

4. Whether any actions under the California Environmental Quality Act ("CEQA") are required prior to the SANDAG reinstituting tolls on the Coronado Bridge.

Because the re-institution of tolls as part of the Corridor Project contemplates the commitment of Bridge revenue to the Proposed Approach, reinstitution of tolls is a project approval under CEQA.

5. Whether and to what extent statutory authority to use design-build contracting and public private partnerships ("PPP") exist for purposes of the design, construction and operation of the Proposed Approach.

The proposed SR 75/282 Transportation Corridor improvement project itself does not have existing statutory authorization to employ alternative procurement, financing and operational methods and partnerships, such as design-build or PPPs. However, a JPA formed with the City of Coronado may use alternative procurement options by partnering with a public entity with the authority to employ alternative procurement options.

Additionally, SBX2 4 lease agreements "shall authorize the contracting entity or lessee to use a design-build method of procurement" subject to certain requirements, including implementation of a labor compliance program.

DRAFT FOR DISCUSSION PURPOSES

BACKGROUND AND ISSUES

Coronado Island is located adjacent to downtown San Diego about a mile west across San Diego harbor. The island is home to a residential community as well as the largest United States Navy base and naval air station on the west coast. The San Diego-Coronado Bridge (the "Coronado Bridge" or the "Bridge"), one of the 8 state-owned toll bridges originally operated by the Division of Bay Toll Crossings,[1] was opened in August of 1969 and connects the island to the I-5 freeway south of San Diego. Originally tolled at $1 one-way, toll revenues were initially dedicated to the repayment of the $47.8 million bond issued by the California Toll Bridge Authority. In 1986, when the bonds were fully paid off, toll revenues were used to fund bridge improvements and maintenance, as well as to subsidize ferries and other transit services. In 1992, the California Legislature passed urgency legislation (Sen. Bill 122) transferring tolling authority from the California Transportation Commission ("CTC") to the San Diego Association of Governments ("SANDAG"), the joint powers agency created under state law to address, among other things, regional transportation needs.[2] In 2002, the toll was discontinued by action of SANDAG's Board of Directors.[3] SANDAG's board is composed of mayors, council members, and a county supervisor from each of the region's 19 local governments, including the City of Coronado.

In an effort to address the traffic congestion encountered along State Routes 75 ("SR-75") and 282 ("SR-282"), locally known and referred to as Fourth Street and Third Street, the City of Coronado is considering the feasibility of building and tolling an additional approach (the "Proposed Approach") that would directly connect the Coronado Bridge toll plaza to Naval Air Station, North Island ("NASNI"), and reinstituting the toll on the Coronado Bridge to provide a revenue source to fund the SR 75/282 Transportation Corridor improvements (the "Corridor Project"). Alternatives for the Proposed Approach currently under consideration include a twin bore traffic tunnel and a grade-separated roadway along surface routes.

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[1] The California Toll Bridge Authority ("CTBA"), including the Division of Bay Toll Crossings, was abolished on February 1, 1978. All powers and duties of the CTBA were transferred to the California Transportation Commission. (Streets & Highways Code, § 30050.)
[2] Sen. Bill No. 122 (1991-1992 Reg. Sess.) as chaptered Stats. 1992 c. 20.
[3] San Diego Association of Governments, Board of Directors Resolution No. 2002-11 (eliminating the toll collected on the San Diego-Coronado Bridge effective July 1, 2002).

DRAFT FOR DISCUSSION PURPOSES

ANALYSIS

I. Tolling the San Diego-Coronado Bridge.

A. SANDAG's Statutory Tolling Authority.

The authority to fix toll rates and other charges for all toll bridges, tubes, or other toll highway crossings is generally vested in the California Transportation Commission (the "Commission").[4] With respect to the San Diego-Coronado Bridge, however, the Commission's toll setting authority was transferred to SANDAG in 1992.[5] Streets and Highways Code Section 30796.7(b) provides that "the San Diego Association of Governments, on behalf of the state, may impose a toll on vehicles crossing the San Diego-Coronado Bridge." The San Diego-Coronado Bridge is defined as "the bridge, together with necessary approaches, across the San Diego Bay connecting the Cities of San Diego and Coronado."[6] Among other things, the statute limits SANDAG's toll setting authority with respect to class 1 vehicles,[7] establishes SANDAG's account and auditing requirements, and dictates the allocation priority for revenues from tolls.[8]

As noted above, SANDAG discontinued the toll in 2002 by action of their Board of Directors.[9] However, nothing in the statute – i.e. a sunset date – and no subsequent legislation[10] has been chaptered that would repeal SANDAG's authority to toll the Bridge under existing law. Therefore, SANDAG is legally permitted to reinstitute a toll pursuant to existing original statutory authority.[11]

1. Legislative History; Authority to Toll.

An inquiry into the legislative history of Senate Bill 122 (1992), the measure amending Section 30796.7 and transferring toll authority from the CTC to SANDAG, suggests

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[4] Sts. & Hy. Code, §§ 30101 and 30003.
[5] Sts. & Hy. Code, § 30796.7(b).
[6] Sts. & Hy. Code, § 30796 ("[t]he San Diego-Coronado Bridge is the bridge, together with necessary approaches, across the San Diego Bay connecting the Cities of San Diego and Coronado"); Sts. & Hy. Code, § 30769.7.
[7] Sts. & Hy. Code, § 30769.7(b).
[8] Sts. & Hy. Code, §§ 30796(b), (c)(1)-(h).
[9] San Diego Association of Governments, Board of Directors Resolution No. 2002-11 (eliminating the toll collected on the San Diego-Coronado Bridge effective July 1, 2002).
[10] In 2002, Sen. Bill 1432 (Alpert) was introduced in order to repeal those provisions but was not successful.
[11] For purposes of this memorandum, we assume that no federal funds are contemplated for the Project, eliminating the need to garner specific federal approval to toll. 23 U.S.C. 301 ("Except as provided in section 129 of this title with respect to certain toll bridges and toll tunnels, all highways constructed under the provisions of this title shall be free from tolls of all kinds.") In the event that federal funds are used to construct the Project, approval by the Secretary of Transportation would be required to overcome the general prohibition on tolling roads constructed using federal funds. 23 U.S.C. § 129(a)(1). Federal participation may be permitted for the initial construction, reconstruction, rehabilitation, and feasibility study of toll highways, bridges and tunnels, including the approaches to these facilities where federal approval has been obtained. Such federal approval is contingent upon the execution of a toll agreement dedicating toll revenues first to debt service, a reasonable return on private investment, and operation and maintenance. 23 U.S.C. § 129(a)(3). The process by which federal project approval by the Secretary under 23 U.S.C. section 106, based on the plans, specifications and estimates for actual construction of the project, could proceed.

that, in passing the bill, the California State Legislature anticipated the eventual discontinuation of the Bridge toll at some unspecified future date.[12] Although SB 122's legislative findings and declarations acknowledged that "[l]ocally elected officials in San Diego County are strongly supportive of the continuation of tolls as a pricing scheme and as a source of revenue for improving transportation service in the corridor," these declarations also stated that "other than for the purposes expressed in paragraph (4) [transportation services to reduce travel demand in the transportation corridor or alternative forms of transportation], there is no need for a state-imposed toll on the bridge, and any toll charge after June 30, 1995, should be imposed by an association of locally elected officials for the purposes expressed in paragraph (4)."[13] However, while these findings and declarations may be revealing of legislative and public sentiment on the issue of tolling the Bridge, they do not limit SANDAG's tolling authority beyond that which is provided in the statute and noted above.

2. Toll Collection Per Crossing: One-Way or Round Trip?

In interpreting a statute, courts will "follow the Legislature's intent, as exhibited by the plain meaning of the actual words of the law" and will not add, omit or alter words to conform the meaning of the statute to a presumed intention.[14]

Under current law, SANDAG is expressly authorized to authority to "impose a toll on vehicles crossing the San Diego-Coronado Bridge."[15] The only limitation on the amount of the toll that shall be established by SANDAG is that "at no time shall the rate of toll for class 1 vehicles exceed one dollar and fifty cents ($1.50) per vehicle."[16]

By contrast to the fairly broad grant of toll rate-setting authority to SANDAG, the Legislature has granted more limited authority with respect to tolling in two directions. For example, Section 27282 of the Bridge and Highway District Act,[17] under which the Golden Gate Bridge and Highway District was formed,[18] provides that the bridge and highway district board "may fix tolls for travel in one direction only on a facility of travel constructed by the district, with no tolls collected for travel in the other direction."[19]

Based on the absence of such proscriptive language in the rate-setting authority granted to SANDAG, we conclude that the $1.50 cap on the rate of toll for class 1 vehicles applies to the toll amount imposed on vehicles for a single crossing of the Coronado Bridge.

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[12] Sen. Bill No. 122 (1991-1992 Reg. Sess.) (findings and declarations Paragraphs 1-5).
[13] *Id.* (emphasis added).
[14] *People* v. *Loeun,* 17 Cal.4th 1, 9 (1997); Code Civ. Proc., § 1858; *California Teachers Assn.* v. *Governing Bd. of Rialto Unified School Dist.,* 14 Cal.4th 627, 633 (1997); *Burden* v. *Snowden* 2 Cal.4th 556, 562 (1992).
[15] Sts. & Hy. Code, § 30796.7(b).
[16] *Id.*
[17] Sts. & Hy. Code, § 27000 *et seq.*
[18] Sts. & Hy. Code, § 27500 *et seq.*
[19] Sts. & Hy. Code, § 27282.

3. Operation of Toll Collection by Private Contractor.

SANDAG's authorizing statute grants SANDAG the power to "enter into and perform all necessary contracts."[20] Nothing in the statute authorizing SANDAG to collect tolls on the Coronado Bridge otherwise limits SANDAG's contracting capacity for toll collection or other related services.[21] Presumably no joint powers agreement entered into by SANDAG, the City and other partnering entities for the purpose of the Corridor Project would place any further restrictions relevant to this question. To the extent that toll collection positions are state civil service positions, there could be an issue under Article VII of the California Constitution.[22] This question may turn on whether the toll collection was performed by Caltrans employees prior to the suspension of the tolls. Absent any such limitations, however, we conclude that SANDAG may contract with a private entity for the toll collection and related operations, including system installation and maintenance, for the Coronado Bridge.

Keep in mind, however, that with respect to a project financed with tax exempt bonds, as is proposed for the Corridor Project, contracts for services beyond those incidental to the operation of the facilities (e.g. janitorial services) are subject to management contract rules developed by the Internal Revenue Service. In general, to satisfy these regulations, the contract must provide for reasonable compensation for services rendered with no compensation based, in whole or in part, on a share of net profits from the operation of the facility. The regulations permit certain arrangements in consideration of compensation paid and contract term.

4. Toll Rates and Variable Pricing.

In order to manage congestion and reduce proposed video-tolling costs, the City of Coronado is considering charging drivers different toll rates depending on the time of day traveled and the degree of congestion on the facility. Under the current proposal, drivers with transponders would be charged three toll rates, a peak period rate, off-peak day rate and nighttime rate. Drivers without transponders might be charged an additional $1 per use as a toll or an administrative fee or convenience charge.

SANDAG's toll setting authority with respect to the Coronado Bridge is derived from the CTC's authority to set rates. The CTC has broad authority to "fix the <u>rates of toll and other charges</u> for all toll bridges, tubes, or other toll highway crossings" within its jurisdiction, except as otherwise provided by law.[23] Although CTC has clear authority to fix rates for tolls and other charges, SANDAG's toll authority is somewhat more limited. The additional proscriptions on SANDAG's authority to set tolls are as follows:

- SANDAG must conduct at least one public hearing before establishing the toll; and

[20] Pub. Util. Code, § 132354, subd. (g).
[21] Sts. & Hy. Code, § 30796 *et seq*.
[22] Cal. Const., art. VII, § 1.
[23] Sts. & Hy. Code, § 30101.

- SANDAG shall set all toll rates, except that class 1 vehicle tolls may not exceed one dollar and fifty cents ($1.50) per vehicle.[24]

With respect to a variable pricing scheme on the Coronado Bridge, the statute does not expressly limit SANDAG's authority to setting a single toll rate. Instead, the statute appears to contemplate several tolls by stating that "all tolls on the bridge shall be at the rates established by [SANDAG]."[25] Based on this language, we conclude that SANDAG may set different rates that reflect peak, off-peak and nighttime use of the Coronado Bridge without additional legislative authorization, so long as the toll rate for class 1 vehicles does not exceed the statutory limit of $1.50.

With respect to recouping costs associated with the increased back-office operations required by video tolling (relative to both cash and transponder-based accounts) or other charges as invoiced administrative fees, it is unclear whether, as the recipient of "the authority of the [CTC] relative to tolls on the bridge," SANDAG inherited the CTC's rate-setting authority with respect to "other charges." If the transfer of authority was intended by the Legislature to be a broad grant of rate-setting authority, the failure to expressly transfer rate-setting authority for "other charges" could be interpreted as a legislative oversight. However, the Legislature may have intended to limit SANDAG's authority to the setting of tolls only by leaving rate-setting authority for charges with the CTC. In the latter case, imposition of an administrative fee to cover video tolling costs would require action by the CTC. Additionally, it is unclear whether the limitation on class 1 vehicle tolls is limited to the toll itself or includes any "other charges" that might be imposed to cover costs of administration of toll collection.

Whether the Legislature intended to grant SANDAG the power to assess administrative charges or other fees on the Coronado Bridge cannot be answered definitively here. However, that there are instances in which the Legislature has granted broader tolling authority, expressly including the power to impose tolls and user fees, suggests that the Legislature conveyed only limited powers to SANDAG exclusive of the power to impose other charges. For example, SANDAG was recently granted tolling authority for State Route 11 in San Diego County (the "Corridor") in connection with the Otay Mesa East Toll Facility Act.[26] SANDAG's tolling authority, while limited to users of the Corridor, is for the imposition of "tolls and user fees," which may be adjusted as set forth in the statute.[27]

5. Use of Toll Revenues.

Section 30796.7 of the Streets and Highways Code provides that the revenues from any tolls imposed on the Coronado Bridge shall be used in the following order of priority:

- Expenses related to the collection of tolls, including, but not limited to, the installation and operation of an automated toll collection system, as well as

[24] Sts. & Hy. Code, § 30796.7.
[25] *Id*.
[26] Sts. & Hy. Code, § 31460 *et seq*.
[27] Sts. & Hy. Code, § 31474, subd. (a)

operation of the bridge, including, but not limited to, reimbursement for any operating and retrofitting costs and for improvements to the bridge and its approaches;[28]

- Costs incurred by SANDAG in administering the toll collection, including (A) transportation services that either increase the capacity of the bridge and its approaches or reduce the demand for travel in the transportation corridor that includes the bridge, (B) alternative forms of transportation within the transportation corridor that reduce congestion and air pollution, and (C) capital improvements related to bikeways.

Our conclusion is that, as an approach to the Bridge, the construction of the Proposed Approach as well as the installation and operation of a toll collection system to toll the Coronado Bridge are authorized uses of the toll revenue under the statute.

B. Tolling by SBX2 4 Public-Private Partnership.

SBX2 4 authorizes RTAs to seek CTC approval to use performance-based infrastructure partnerships to develop transportation projects. With CTC approval, the RTA may enter into a comprehensive development lease agreement that permits the contracting entity to collect tolls and user fees for the approved facilities.

1. Use of Toll Revenues.

Under the new law, toll revenues are to be dedicated to the payment of " the costs associated with operations, toll and user fee collection, administration of the facility, reimbursement to the department [Caltrans] or other governmental entity for the costs of services to develop and maintain the project, police services, and a reasonable return on investment" to the private partner.[29] Any excess toll or user fee revenue can be applied to either (a) indebtedness incurred by the contracting entity, (b) improvements to the facility, or (c) in the case of regional transportation agency, paid to that agency for use in improving public transportation in and near the project. The collection of tolls may be extended after expiration of the lease, but once the facility reverts back to Caltrans or the RTA, toll revenues may only be used for improvement, operation and maintenance of the facility.[30]

While we generally conclude that the construction, operation and maintenance of the Corridor Project are authorized uses of toll revenues, the statute fails to clearly address certain issues, raised here for your consideration. First, the new law fails to provide a clear priority use of revenues, particularly with respect to debt service. The permissible "capital outlay" costs could be interpreted to include debt and debt service of the contracting entity, but later language specifies that excess revenues may be applied to indebtedness, leaving the question of whether revenues or just "excess revenues" may be directed towards debt.

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[28] Bridge maintenance is funded by the state pursuant to Sts. & Hy. Code, § 188.4.
[29] Streets & Highways Code, §143(j)(1).
[30] Sts. & Hy. Code, §143(j)(3).

Additionally, it is unclear what constitutes a "reasonable rate of return" and whether recapture for "excessive" or "unreasonable" returns might be contemplated, though not expressly authorized by the new law.

2. Toll Rates and User Fees.

SBX2 4 provides that specific toll rates and user fees are to be established in the lease agreement. Increases not identified or established in the agreement are to be approved by Caltrans or the regional transportation agency after at least one public meeting.[31] Importantly, the measure eliminates a past prohibition against assessing tolls and user fees on noncommercial vehicles with 3 or fewer axles for transportation projects developed by a Section 143-authorized comprehensive development lease agreement.

As noted in Section I.A.4 (Toll Rates and Variable Pricing) above, the City of Coronado is considering using a variable pricing scheme for tolls and is interested in charging certain user fees.

If SANDAG receives CTC approval for PPP delivery of the Corridor Project, SANDAG may toll the approved facilities as negotiated and set forth in the lease agreement. Importantly, SBX2 4 authorizes the collection of both tolls and "user fees" for the facilities. This authorization is substantially less proscriptive than the toll setting power SANDAG has under its express authority to toll the Coronado Bridge (see Section I.B.3 "Toll Rates and Variable Pricing" below). The new law would require SANDAG to hold a public hearing on the lease agreement and submit the draft agreement and any public comment to the Legislature for review. SBX2 4 does not require that the Legislature approve of the lease agreement or the rates of toll or user fees contained therein. [32] The new law simply provides that the Secretary of Bus. Trans. & Housing, or the Chair of the Senate or Assembly fiscal or relevant policy committees provide comments and that SANDAG "consider those comments prior to executing a final agreement" and "retain the discretion for executing the final lease agreement."[33]

3. Free Lane Conversion.

Although SBX2 4 may not be used to convert "existing nontoll lanes" into toll lanes, we believe that reimposition of an authorized toll on the Coronado Bridge as part of the Corridor Project is not a conversion within the meaning of the statutory prohibition. However, that argument would ultimately need to be accepted by the CTC, who must authorize the project in any event. Thus, the question with respect to the conversion prohibition becomes whether the CTC can be persuaded to authorize a transportation project that involves reimposition of an authorized toll.

For more regarding the CTC approval, Caltrans participation, lease agreement requirements and a discussion of the SBX2 4 procurement process, see Section V.B. Existing Law, Public Private Partnerships, below.

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[31] Sts. & Hy. Code, §143(j)(2).
[32] Sts. & Hy. Code, §143(c)(5).
[33] *Id*.

4. Operation of Toll Collection by Private Contractor.

As noted above in Section I.A.3 above, nothing in SANDAG's authorizing statute[34] or its grant of statutory authority to toll the Coronado Bridge[35] limits SANDAG's capacity to contract with a private contractor for toll collection or other related services. Additionally, no such statutory prohibition is contained in SBX2 4 (the revised § 143 *et seq*.). In the absence of limitations on the position of toll collector raised by Article VII of the California Constitution,[36] SANDAG is likely permitted to contract with a private entity for toll collection of the Coronado Bridge, so long as the content of those contracts conforms with the management contract rules referenced above.

C. Toll Collection, Video Tolling.

Prior to the elimination of the toll on the Coronado Bridge, SANDAG employed a single conventional toll plaza with individual toll booths for cash collection. In light of significant advancements in tolling technology, the City of Coronado is considering the use of a combination electronic toll collection ("ETC") and video tolling system. The use of the two technologies together would allow users to pay tolls without stopping.

ETC uses radio frequency identification ("RFID") technology whereby an overhead antennae detects a signal from a transponder mounted on the windshield of a vehicle passing through the toll collection site and debits the associated prepaid account. Video tolling, on the other hand, does not rely upon RFID transponders linked to prepaid accounts in order to process toll users. Nor are drivers categorized as either valid users or violators (users without a transponder or cash) upon passing through the toll collection site. Instead, vehicle information is obtained through video image capture of the vehicle license plate while the vehicle is passing through the tolling zone. Tolls are then charged by either the debiting a prepaid account associated with a license plate number or, in the absence of a prepaid account, by invoicing the registered owner of the vehicle associated with the license plate number. In the latter case, the entity responsible for administering the toll collection system would identify and locate a toll user by requesting and receiving personal information about the registered owner of the vehicle from the California Department of Motor Vehicles ("DMV"). A toll user invoiced by such a process would be deemed a violator only after having failed to pay invoiced toll charges in a timely manner after having been provided the opportunity to do so.

A toll collection system using video image capture raises certain legal questions, including those related to personal privacy and extending the credit of the state.

1. Video Tolling Administration & Enforcement; Statutory Authorization.

Unlike existing law that provides a detailed procedure for the identification and enforcement of toll evasion violators, there is no statutory procedure outlining the administration and enforcement of a video toll collection system. Because the procedure by which a tolling

[34] Pub. Util. Code, § 132354, subd. (g).
[35] Sts. & Hy. Code, § 30796 *et seq*.
[36] Cal. Const., art. VII, § 1.

authority using cash or transponder technology is authorized to identify, locate and pursue a toll evader is drafted to address users that fail to pay a toll at the point of service, an issue that is not clearly dealt with in the statutes is the change in the meaning of the term "violator" with respect to the payment of toll charges.

Section 23302(a) of the Vehicle Code states that it is prima facie evidence[37] of a toll violation for any person to enter any vehicular crossing without (1) sufficient cash to pay the toll, (2) a transponder, or (3) "other electronic toll payment device" associated with an Automatic Vehicle Identification account[38] with a balance sufficient to pay those tolls. Section 23302(b) of the Vehicle Code provides that, for vehicular crossings that use electronic toll collection as the only method of paying tolls, it is prima facie evidence of a violation for any person to enter any vehicular crossing without a transponder or other electronic toll payment device.

This legislative scheme creates a Catch-22, since under a video toll collection system, drivers who fail to pay by cash, transponder, pre-registration or other means at the vehicular crossing itself, while immediately liable for those toll charges, should not be considered violators. However, under current law, someone using the video tolling site would technically be creating a prima facie case of a violation. A system that contemplates a user becoming subject to penalties as a "violator" only in the event of failure to timely pay invoices for toll charges does not fit precisely into the current statutory scheme.

For the installation of a permanent video toll collection system that allows for post-paid toll use without vehicle pre-registration, we would recommend a change in the statute to include provisions consistent with video tolling, including detailed notice and penalty periods consistent with the processing time required to administer post-paid invoicing, a definition of the term "violator" specific to video tolling, and the express authority to employ such technology.

Notwithstanding the current inconsistencies between the existing statute and video tolling, we conclude that video tolling could proceed without legislation because of the wording of the statute, specifically the term "prima facie." Because Section 23302 only establishes prima facie, not conclusive, evidence of a toll violation, the presumption of a violation may be rebutted by a toll user having timely paid toll charges after receipt of invoice. If the City decides to follow this approach, we would propose that the administering agency pass a resolution defining video tolling procedures for purposes of the demonstration project, including procedures to support pre-registration and post-paid video tolling, if both will be pursued. Further, there should be clear signage and instructions establishing video tolling principles at the demonstration project site. Both would support a legal argument to rebut the conclusion that a violation has occurred. Since the administering agency would be directing

[37] Evid. Code, § 602 ("A statute providing that a fact or group of facts is prima facie evidence of another fact establishes a rebuttable presumption." This means that the user of the video tolling vehicular crossing would have the burden of showing there was no toll violation. The effect of leaving this evidentiary standard in place with respect to video tolling sites would be to place an administrative burden on the processing agency and a degree of uncertainty and burdensomeness on the individual user.)

[38] See generally Cal. Code Regs,. tit. 21, § 1702.1 (describing Automatic Vehicle Identification ("AVI") accounts and transponder equipment).

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enforcement, it would also be within its power not to treat such individuals as prima facie violators.

2. Video Tolling; Privacy.

Privacy concerns have received significant attention over the past 40 years, resulting in the passage of substantial legislation on the state and federal level. The use of video tolling raises significant constitutional, statutory and common law privacy issues with respect to two legally cognizable interests: the right of the individual to conduct personal activities without unwarranted intrusion and the right of the individual to keep personal information private. These interests are implicated because a video tolling collection system (a) records a toll user's license plate in the absence of a civil or criminal violation, (b) requires the disclosure of personal information about a registered driver from the state department of motor vehicles ("DMV") and (c) requires that the personal information so obtained be retained by the system's administering agency. These components of a video tolling system implicate the following state and federal privacy laws:

- **Right to Privacy Under the California Constitution:** Article I, Section 1 of the California Constitution protects two legally recognized interests.[39] First, the State Constitution protects the interest of the individual in preventing the dissemination or misuse of sensitive and confidential information.[40] Second, the State Constitution protects the interest in "making intimate personal decisions or conducting personal activities without observation, intrusion or interference."[16] An individual's reasonable expectation of privacy with respect to either interest is an objective entitlement founded on "broadly based and widely accepted community norms."[17] Privacy concerns are not absolute and must be balanced against other competing interests.[18] An interest derived from "legally authorized and socially beneficial" activities of government reduces the relative strength of the interest in privacy afforded the individual.[19] As such, the constitutional guaranty of privacy does not prohibit the enactment of reasonable rules and regulations adopted in the exercise of the state's police power.[20]

  The use of video cameras to capture vehicle images and document vehicle toll crossings implicates the fundamental right of the individual to conduct personal activities without unwarranted intrusion or observation because driver movements are observed and recorded using video technology. However, the privacy interest is balanced against the public benefits of video tolling, including traffic safety, operational efficiency, congestion relief and emissions reductions. The strength of the privacy interest depends

[39] Cal. Const., art. I, § 1; *Valley Bank of Nev. v. Super. Ct.* (1975) 15 Cal.3d 652, 656; see also *Garstang v. Super. Ct.* (1995) 39 Cal.App.4th 526, 533.
[40] *Valley Bank of Nev., supra*, 15 Cal.3d at 656.
[16] See generally *Edgerton v. State Personnel Bd.* (2000) 83 Cal.App.4th 1350.
[17] *Ragge v. MCA/Universal Studios* (C.D.Cal. 1995) 165 F.R.D. 601, 604-05.
[18] See *Hill v. Nat. Collegiate Athletic Assn.* (1994) 7 Cal.4th 1, 15.
[19] *People v. Martinez* (2001) 88 Cal.App.4th 465, 479 (citing *Hill v. Nat. Collegiate Athletic Assn.*, supra, 7 Cal.4th at 37-38).
[20] *Elliott v. Haskins* (1937) 20 Cal.App.2d 591, 699.

on the circumstances surrounding the invasion. Therefore, the "observational invasion" will be minimized if video tolling is implemented in a manner only intrusive enough to achieve the social objective, such as limiting image capture to only the license plate. The reasonableness of the privacy invasion may also be enhanced by maintaining a cash-only lane for drivers wishing to remain anonymous. Weighed against the public interest in the efficient administration of the Project, the individual privacy interest is likely to yield. However, because this is a new technology, there is no precedent that answers the question directly.

Video tolling also implicates the second constitutional right of the individual: to keep personal information, private. This is because disclosure of DMV records is necessary to accommodate users who forego preregistration but still want to traverse the Coronado Bridge. As above, the privacy interest is balanced against the public benefits. The degree of intrusion may be minimized by prudent program implementation, including comprehensive retention and security measures to keep records confidential. The privacy interest would again likely yield to the greater public interest. Legislative history substantiates this conclusion. At the time the constitutional amendment to add "privacy" moved through the Legislature, a California Legislative Counsel Opinion concluded that DMV disclosure laws were not restricted by the constitutional privacy right.[21]

- **California Claims Regarding Tortious Invasion of Privacy:** The Civil Code creates a cause of action for invasion of privacy specific to the capture of visual images, sound recordings and other impressions. Although adopted to "reduce aggressive paparazzi-like behavior,"[41] Section 1708.8 creates a broad civil liability for physical and constructive invasions of privacy using cameras and other electronic devices.[42]

  Neither statutory theory of tortious invasion of privacy appears to apply in the context of video tolling. First, license plate video image capture does not require a physical invasion of land. Second, an individual has no reasonable expectation of privacy while driving in an automobile on the roadways, as is required by the constructive theory. The United States Supreme Court has repeatedly affirmed this principle, distinguishing the high degree of privacy protection afforded a person's home from a person's vehicle.[43] Therefore, use of video imaging technology to capture images of vehicles passing through toll collection sites raises no unanticipated risk of privacy invasion under the statutory tort.

- **Common-Law Privacy Claims:** In addition to the statutory rights and remedies created by Civil Code Section 1708.8, the courts have developed common law privacy torts to address four distinct injuries: intrusion, public disclosure of private facts, false light, and

[21] 3 Assem. J. (1972 Reg. Sess.) p. 5682 (granting unanimous consent to printing Ops. Cal. Legis. Counsel, No. 13370 (June 30, 1972) Right of Privacy – Public Records).
[41] Off. of Sen. Floor Analyses, 3rd reading analysis of Sen. Bill No. 262 (1997-1998 Reg. Sess.) Aug. 26, 1998.
[42] Civ. Code, §§ 1708.8(a), (b).
[43] *U.S. v. Knotts* (1983) 460 U.S. 276, 281; see also *U.S. v. Karo* (1984) 468 U.S. 705, 707, 721.

misappropriation.[44]

None of these common law tortious invasions appear tailored to address a conceivable fact pattern stemming from the operation of cameras in a video tolling project. However, if such a fact pattern arose, the general rule regarding the invasion actionable under the tort would weigh against finding any liability in the video tolling context. Video cameras for transportation enforcement purposes have become increasingly commonplace. The objective reasonable person is unlikely to consider camera imaging by video tolling to be "highly offensive." Limited record-sharing between government agencies for toll administration is also unlikely to offend the reasonable person to the measure required by the common law.

- **California and Federal Laws Regarding Confidentiality of License Information:** The Project's tolling elements may require the collection of information from DMV records. Generally, such information is protected from disclosure by provisions in California's Vehicle Code and by the Federal Driver's Privacy Protection Act (the "DPPA").[45] Vehicle Code Section 1808 *et seq.* bars the DMV from making available or disclosing personal information about a person unless such disclosure is in compliance with the DPPA.[46] The federal DPPA prohibits the knowing disclosure of personal information, except that disclosures to any government agency for use in carrying out agency functions, including those related to motor vehicle or driver safety, are permitted.[47] Disclosures permitted by the DPPA remain subject to state prohibition against the sale or distribution of a person's photograph or physical description unless requested by the licensee.[48]

  As applied in the context of tolling, the DPPA does not bar the request and receipt of registration information from the DMV in order to identify and invoice users of video tolls.

- **California Case Law Regarding Public Agency Supervision of Private Operators:** If the Project's toll-collection functions are contracted out to a private-sector service provider, then that service provider should be carefully supervised by the responsible public agency. In 2001, a Superior Court in San Diego granted a motion to dismiss hundreds of citations that were based upon photographs captured by red-light cameras. The court determined that the automated enforcement program administered in San Diego lacked sufficient oversight by the relevant government agency over the private operator of the system as required by the authorizing statute.[49] This case does not raise issues with the reliability of the technology or the extent to which confidential personal information is used in the course of administering an enforcement program based upon

[44] See Elder, David A., *Privacy Torts*, (2002).
[45] 18 U.S.C. § 2721 *et seq*.
[46] Veh. Code, § 1808(e).
[47] 18 U.S.C. § 2721(b).
[48] Veh. Code, § 12800.5(a)(2).
[49] *People v. Allen* (2001) order excluding evidence, D579275.

camera technology. Instead, it suggests that, if the system is to be managed and maintained by a private operator, adequate oversight mechanisms must be implemented by the parties.

- **Federal, State, and Local Laws Regarding The Scope of Image Capture:** If the Project's tolling element is implemented by use of cameras, then state and federal laws may limit the scope of the images that those cameras may capture. For example, California Vehicle Code Section 210 suggests the image that is captured by any "automated enforcement system" may include only a photograph of the vehicle's license plate and the driver of the vehicle for identification purposes.[50] The automated parking control programs administered by the City and County of San Francisco are subject to a requirement to angle cameras "so as to capture video images of parking violations" and not other drivers, vehicles and pedestrians.[51]

3. Video Tolling; Extending the Credit of the State.

Article XVI, Section 6, of the State Constitution provides that "[t]he Legislature shall have no power to give or to lend, or to authorize the giving or lending, of the credit of the State . . . ."[52] The question is whether post-paid video tolling violates the constitutional credit provision by having the state make a prohibited "loan" of public funds to a driver in the amount of the toll charge for the period of time between using the toll site and paying the invoiced charges. It is arguable that the delay between the service (going over the bridge) and the invoicing and payment is not really an extension of credit, but the language of the Constitution appears broad enough for the opposite argument to be made.

Nevertheless, the prohibition against giving or lending government property or credit to private persons does not preclude expenditures or appropriations that are made for a "public purpose."[53] The public purpose must be more than merely in the interest of the governmental entity, but must be "in furtherance of [its] particular public purpose."[54] While most cases interpreting this section deal more specifically with outright gifts, as opposed to extensions of credit, the public purpose doctrine has also been applied to the issue of claimed credit extensions.[55]

In the case at hand, a JPA established to implement the Project would be tasked with the public purpose of toll collection for the Coronado Bridge. By implementing video tolling, the JPA would merely be selecting a means by which to fulfill its purpose. Therefore, a limited private loan or extension of credit incidental to toll collection, if any, would be for a bona fide public purpose and not barred by the Constitution as advancing public monies for private benefit.

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[50] Veh. Code, § 210.
[51] Veh. Code, § 40240.
[52] Cal. Const., art. XVI, § 6.
[53] *Redevelopment Agency of City of San Pablo v. Shepard* (1977) 75 Cal.App.3d 453, 457; see also *Bd. of Sup'rs of City and County of S.F. v. Dolan* (1975) 45 Cal.App.3d 237, 243.
[54] *Golden Gate Bridge and Highway Dist. v. Luehring* (1970) 4 Cal.App.3d 204; 208-10.
[55] See *City of Montclair v. Donaldson* (1962) 205 Cal.App.2nd 201, 206.

II. Tolling the Proposed Approach.

A. SANDAG's Statutory Tolling Authority; "Necessary" Approach.

SANDAG's existing statutory tolling authority encompasses the Bridge as well as "necessary approaches" to the Bridge.[56] As proposed, a tunnel or grade-separated roadway will serve as a direct vehicular connection between NASNI and the Coronado Bridge, achieving some measure of congestion relief by moving vehicular traffic off of the Bridge's existing surface approaches (SR 75/282). Therefore, it is our conclusion that the Proposed Approach serves as a "necessary approach" to the Bridge under the meaning of the statute and is subject to SANDAG's statutory tolling authority. Our conclusion is consistent with the City of Coronado's stated purpose for seeking an additional route to supplement the existing surface approaches to the Bridge – accommodating Bridge traffic.

In the event that the Proposed Approach is not considered a "necessary approach" to the Coronado Bridge, SANDAG would not have tolling authority with respect to the Proposed Approach under current law. Instead, the authority to toll the tunnel or grade-separated roadway would either require authorization to toll as a special district[57] OR an express grant of a franchise from the California Department of Transportation ("Caltrans") pursuant to legislative authorization.[58] Absent this express grant, no toll may be collected for the use of a public road. Current law does not expressly authorize the City or Caltrans to grant a franchise for a Proposed Approach in the SR 75/282 Transportation Corridor. Therefore, legislation would be required.

B. Tolling by SBX2 4 Public-Private Partnership.

As discussed in Section I.B. above, SANDAG may seek to implement the Corridor Project by following the procedures authorized by SBX2 4. Any transportation project proposed and submitted by SANDAG will require CTC approval before facilities may be procured and subsequently tolled. With CTC approval, toll and user fees may be set by lease agreement as described in Section I.B. However, nothing in SBX2 4 limits the eligibility of the Proposed Approach for consideration by CTC. For more on CTC approval, Caltrans participation, lease agreement requirements and a discussion of the SBX2 4 procurement process see Section V.B Existing Law, Public Private Partnerships, below.

III. Legal Requirements for Implementation of the Joint Exercise of Powers Act.

Under the Joint Exercise of Powers Act (the "JPA Act"), public agencies may make agreements with other agencies in order to jointly exercise commonly-held powers.[59] The

[56] Sts. & Hy. Code, §§ 30796 and 30004.
[57] Sts. & Hy. Code, § 27000 et seq.
[58] Sts. & Hy. Code, § 30800.
[59] Gov. Code, §§ 6500 et seq.

joint powers agency ("JPA") is a public entity separate from the parties to the agreement. When creating such a JPA, the provisions of Government Code Section 6500 *et seq.* should be carefully reviewed. The following discussion highlights the main issues regarding the powers and mechanics of implementation under the JPA Act for consideration in contemplating a JPA governance structure.

- **Eligible Public Agencies, Defined.** For the purposes of the JPA Act, a "public agency" includes, but is not limited to, the State of California, any state department or agency, a city, regional transportation commission of California, or any joint powers authority formed pursuant to the JPA by any of these agencies.[60]

  The City of Coronado, SANDAG, Caltrans, the City of San Diego and the County of San Diego are all public agencies eligible to enter into a joint powers agreement under existing law.

- **Joint Powers Agreements, Contents.** A joint powers agreement defines the powers and limitations of the joint powers agency formed by the agencies that are party to the agreement. The joint powers agreement must state the purpose of the agreement, the method by which the purpose will be accomplished and strict accountability of all funds contemplated by the agreement.[61]

- **Joint Powers Agency, Notice.** Whenever a joint powers agency is created as a separate legal entity, notice of the agreement must be filed with the Secretary of State, or the joint powers agency will be precluded from issuing any bonds until the filing is complete.[62]

- **Joint Powers Agency, Limitations on Powers.** The exercise of power by the JPA is limited to powers shared by all the parties to the JPA, subject to the proviso that "such power is subject to the restrictions upon the <u>manner of exercising</u> the power of one of the contracting parties, which party shall be designated by the agreement."[63] (For application to design-build, see procurement discussion below.)

- **Power to Issue Revenue Bonds, Purpose.** The JPA authorizes a joint powers agency to issue revenue bonds to pay the cost and expenses of a wide range of public projects, including construction of local streets, roads, and bridges.[64] Proceeds of the bonds may only be used for the project provided in the bond indenture authorizing bond issuance.[65]

  The Proposed Approach and the installation of automated toll collection facilities on the Coronado Bridge fall under the list of public projects for which a joint powers agency may issue revenue bonds.

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[60] Gov. Code, § 6500.
[61] Gov. Code, § 6503.
[62] Gov. Code, § 6503.5.
[63] Gov. Code, § 6509 (emphasis added).
[64] Gov. Code, § 6540 et seq.; Gov. Code, § 6546.
[65] Gov. Code, § 6548.

- **Power to Issue Revenue Bonds, Authorization.** In order to exercise the power to issue bonds, the local agency[66] parties to the joint powers agreement that will make revenue bond-related payments must authorize by ordinance each separate bond issue proposed by the joint powers agency.[67] Each ordinance must state that it is subject to the referendum provisions under Elections Code Section 9142. Notice of enactment of an ordinance subject to referendum must be published within 15 days after adoption.[68]

  As "local agencies" within the meaning of Government Code Section 6542.5, the City of Coronado, SANDAG, and the City of San Diego must pass and provide notice of the aforementioned ordinances in order to exercise the power to issue bonds. Caltrans, as a department of the state, is not subject to this requirement.

- **Bond Repayment.** The Government Code also dictates the sources of bond repayment. The funds or revenues from which a joint power agency may pay a revenue bond <u>may</u> include <u>existing funds</u> as described in the indenture as security for the bonds but <u>must</u> include revenues derived from the operation of the project for which the bond proceeds are used.[69]

  Use of toll revenues as well as revenue from "other sources" as broadly referred to by the statute as the source of funds for bond repayment is consistent with existing law.

  We understand that the City is interested in providing "additional revenues" to support or act as a form of guarantee for the bonds issued by the JPA to fund the Proposed Approach. In that instance, the constitutional debt limitation contained in Article XVI, § 18 of the California Constitution would likely apply to it. This provision limits the amount of indebtedness that a city may incur in any given year without a vote of the electorate and provides, in relevant part:

  > No county, city, town, township, board of education, or school district, shall incur any indebtedness or liability in any manner or for any purpose exceeding in any year the income and revenue provided for such year, without the assent of two-thirds of the voters of the public entity voting at an election to be held for that purpose.

  A city, or other specified public entity, violates the constitutional debt limitation by entering into a transaction that creates indebtedness or liabilities exceeding its income

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[66] Gov. Code, § 6542.5 (a local agency is defined as "any public agency designated in Section 6500 other than the federal government or any federal department or agency, this state, an adjoining state, or any state department or agency.")

[67] Gov. Code, § 6547 (such authorizing ordinance shall describe the project to be funded by the revenue bonds, the maximum amount of the bonds proposed to be issued, and the anticipated sources of revenue to redeem the bonds.)

[68] Gov. Code, § 6547.2. In the event of a successful referendum election on the authorizing ordinance, no ordinance authorizing bond issuance for the same purpose may be passed by that agency for a period of one year from the date of the referendum.

[69] Gov. Code, §§ 6549, 6550.

and revenue for the year the contract is made without approval by a two-thirds vote of the electorate.[70] The validity of the transaction is measured at the time the transaction is entered into.[71] As a result, whether or not the City actually dedicated revenue to bond repayment in the future would be immaterial. Operation of the constitutional debt limitation suggests, therefore, that the City would be required to seek and obtain a two-thirds vote of the electorate before proceeding to use City revenues to backstop JPA revenue bonds.

- **Liability for Bonds.** Bonds issued under the JPA do not constitute a debt, liability or obligation of any of the public agencies that are parties to the agreement creating the joint powers agency, nor is any personal liability on the bonds attributable to any member of the governing body of a joint powers agency.[72]

IV. Project Approval Under the California Environmental Quality Act ("CEQA").

CEQA applies to "discretionary projects proposed to be carried out or approved by public agencies."[73] An approval is the decision by a public agency which commits the agency to a definite course of action in regard to a project.[74]

Reported cases on the time of "approval" focus on the point in project evolution where an agency commits itself to "a definite course of action." Said in a slightly different manner, some of the cases indicate that approval occurs, and environmental documentation must be completed, prior to any decision which might close off the "alternative of continuing the status quo."[75]

It is evident that the decision by SANDAG to re-impose tolls on the Bridge is a change in the status quo regarding the Bridge, and therefore is an "approval" under CEQA. Although there is an exemption to CEQA for establishment of tolls, it applies only to tolls for the purpose of meeting operating expenses.[76] We understand that the revenues from the bridge toll will be dedicated to construction of the Proposed Approach (with perhaps 10% of gross revenue earmarked to subsidize bridge maintenance), so the exemption will not apply here. Moreover, this commitment of revenues indicates that the imposition of tolls is an "approval" of the SR 75/282 Corridor Project because it commits to a definite course of action regarding development of the Proposed Approach.

Even if the imposition of tolls is an "approval" under CEQA, the action may not require CEQA compliance if it is not a "project" under CEQA. The CEQA Guidelines provide

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[70] *In Re County of Orange*, 31 F.Supp.2d 768, 775-77 (1998); *County of Los Angeles*, 231 Cal. App. 2d 603 (1965).
[71] See, e.g., *Arthur v. City of Petaluma*, 175 Cal. 216, 223-24.
[72] Gov. Code, §§ 6547.8 and 6551.
[73] Pub. Res. Code § 21080(a).
[74] 14 CCR § 15352(a).
[75] *Citizens for Responsible Government v. City of Albany*, (1997) 56 Cal. App. 4th 1199.
[76] See, Pub. Res. Code, § 21080(b)(8).

that the definition of a "project" under CEQA does not include the creation of a government funding mechanism or other government fiscal activity that does not involve commitment to any specific project that may result in a potentially significant physical impact on the environment.[77] As noted above, however, the toll revenues will be directed primarily to the development of the Proposed Approach, and therefore the imposition of tolls is an approval requiring CEQA compliance.

In approving the Bridge tolls, SANDAG can act as a "responsible agency" under CEQA[78] and rely on the environmental documents supporting the Project for CEQA compliance. If SANDAG wants to approve the imposition of tolls prior to completing the environmental documents for the Project, the approval will require some other type of CEQA documentation. The form and content of such documentation is beyond the scope of this memorandum. If SANDAG wants to proceed with an earlier CEQA clearance for the tolls, we suggest further discussion amongst the team members to gather the relevant facts and strategize on the form and content of that document.

V. <u>Project Delivery Using Design-Build and Public-Private Partnerships</u>.

A. Existing law, Design-Build.

Since the early 1990's, transportation agencies have increasingly become interested in using design-build as a means of accelerating project delivery and providing cost certainly early in the design process. Under California law, Caltrans is the agency delegated with primary responsibility for the design, construction and operation of state-owned transportation facilities, although Caltrans on occasion relies on local agencies to deliver projects. Except under certain limited circumstances, Caltrans is required to competitively bid construction contracts based on 100% design.[79] Caltrans cannot use design-build without special authorization because their enabling legislation generally mandates that the design be completed before bidding out construction work.

Most local agencies are subject to a competitive bidding requirement but are not subject to a requirement to completely design the project before letting a construction contract.[80] Some agencies have the ability to use design-build without special legislation—although they may be forced into a low-bid selection process since design-build contracts include construction work. Various agencies have sought specific design-build authorization from the California Legislature, and a number of design-build statutes are currently on the books applicable to specific agencies or types of agencies, or to specific types of projects.

Although the recent enactment of AB 642 (Chapter 314, 2008) expanded the express statutory grant of authority to use design-build provided under Public Contract Code

[77] 14 CCR § 15378(b)(4).
[78] Pub. Res. Code § 21069.
[79] See, e.g., Pub. Cont. Code, § 10100 *et seq*.
[80] See, e.g., Pub. Cont. Code, § 20100 *et seq*.

Section 20175.2 to all, and not just some, general law cities, the authority continues to exclude roads or bridges.[81]

In general, to determine whether a particular agency has the ability to enter into design-build contracts, it is necessary to review the laws applicable to that agency and the type of project in question. As an example, the Orange County Transportation Agency ("OCTA"), as a transit operator, has the ability to use design-build for transit projects under Public Contract Code Sections 20209.5 *et seq*. OCTA used that authority for a design-build contract for the SR-22 HOV lane project some years ago, but the statute has since been revised to provide that it cannot be used as the basis for a highway design-build project.

Despite the lack of express authorization, the City may nevertheless be able to use design-build for its proposed project, based on one of the following approaches.

1. JPA Member With Design-Build Authority.

As noted above, in exercising the powers granted to a JPA by its member agencies, the JPA is subject to the same restrictions that apply to one of its member agencies as designated in the JPA agreement. A JPA formed by the City and another agency would therefore have the ability to enter into contracts using the procurement methodologies applicable to the other agency, if that agency is designated in the JPA agreement. The Alameda Corridor Transportation Authority ("ACTA"), a joint powers agency formed by the Cities of Los Angeles and Long Beach, used this approach. Its Mid-Corridor Design-Build Contract was procured using a "lowest ultimate cost" methodology allowed by the charter of the City of Los Angeles.

The City of San Diego is a charter city with specific authority to use design-build pursuant to its city charter.[82] If the City of Coronado entered into a JPA agreement with the City of San Diego, and if the JPA agreement designated the City of San Diego as the member whose constraints apply to exercise of powers by the JPA, the JPA would have the ability to use design-build pursuant to the rules established by the City of San Diego city charter.

2. "Low-Bid" Design-Build Procurement By City.

The Local Agency Public Construction Act[83] provides that "when the expenditures required for a public project exceed $5,000, it must be contracted for and let to the lowest responsible bidder."[84] This law would preclude the City from using a "best value"

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[81] Pub. Cont. Code, § 20175.2, subd. (b)(1) ("[i]t is not the intent of the Legislature to authorize [design-build] for transportation facilities, including, but not limited to roads and bridges".

[82] City of San Diego, City Charter Section 94.2 states: **"**Notwithstanding any provisions of this Charter to the contrary, the City is not prohibited from awarding contracts for the combined design and construction of public works pursuant to a process of competitive negotiation, provided the process of competitive negotiation is conducted as may otherwise be required by this Charter or the Municipal Code. The City Council shall establish by ordinance guidelines for the award, use, and evaluation of such design-build contracts, and may set an amount below which the City Manager may award such contracts."

[83] Pub. Cont. Code, § 20100 *et seq*.

[84] Pub. Cont. Code, § 20162.

selection process for a design-build contract, but does not expressly preclude selection of a design-builder on a low-bid basis.

It should be noted that a low-bid procurement for a design-build project is complicated by the statutory requirements for selection of design professionals under the "Little Brooks Act" (Gov. Code, § 4524 *et seq*.). These procedures are used when hiring professional consultants, including architects, engineers, construction managers and other similar professionals, and requires that the selection of these professionals be based on the "demonstrated competence and on the professional qualifications necessary for the satisfactory performance of the services required."[85] Where a low-bid selection methodology is used, agencies typically include a prequalification step in the procurement process allowing qualifications of the design member of the team to be considered. It is during this initial step that agencies may prequalify prospective bidders and typically includes an appeals process for disputing proposed prequalification ratings.[86] Using a low-bid design-build approach under the Act does not appear to impair this existing prequalification procedure.

Yet another complication concerns the Subletting and Subcontracting Fair Practices Act, requiring contractors to name major subcontractors in their bids. This is problematic for design-build contracts, because subcontract bid packages are traditionally based on a 100% design and therefore it may not be possible for bidders to comply. A number of agencies have overcome this obstacle by relying on an agency determination that necessity required a modified process. The County of Orange obtained an opinion of the California Attorney General's office that an exemption from the statute applied where such a finding was made. It is not clear whether the circumstances surrounding the City's project would justify a similar finding by the City Council.

3. SBX2 4 Design-Build Authority.

Transportation projects selected by the CTC for delivery by public-private partnership are authorized to use design-build[87] in accordance with the procurement process, labor compliance program, and other requirements specified by revised SBX2 4.[88] Highlights of the design-build authority provided for SBX2 4 PPP transportation projects include:

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[85] Gov. Code, § 4526.
[86] Pub. Cont. Code, § 20101(c) ("[a] public entity may establish a process for prequalifying prospective bidders pursuant to this section on a quarterly basis . . .")
[87] Please note that the enactment of SBX2 4 also authorized the Design-Build Demonstration Program (Gov. Code, § 6800 *et seq*., which allows the limited use of design-build for transportation agencies. Specifically, local transportation entities may be authorized to use design-build for up to five local street or road, bridge, tunnel, or public transit projects and Caltrans may use design-build for up to ten state highway, bridge or tunnel projects. Because the Corridor Project involves a state highway, bridge or tunnel project, this aspect of the new law does not grant SANDAG, a regional transportation planning agency, with the authority to use design-build.
[88] Sts. & Hy. Code, § 143, subd. (e).

- Labor Compliance. Depending on the date of contracting, the transportation entity[89] shall either implement a labor compliance program or contract with an entity to implement such a program (unless the agency or design-build entity has entered into a collective bargaining agreement for the project). The transportation entity may be required to pay a fee to Caltrans to support its efforts in prevailing wage enforcement and labor compliance enforcement.[90]
- Procurement Process. The transportation entity shall prepare documents setting forth the scope and estimated cost of the project; an RFP with certain prescribed elements, including, but not limited to whether the selection method is low-bid or best value; an RFQ for prequalifying bidders soliciting certain required information; and notice requirements.[91]
- Progress Reports. The transportation entity is to provide yearly reports during the project, including such information as estimated schedule for completion and recommendations to improve the design-build process.

B. Existing law, Public Private Partnerships.

California's transportation projects have been traditionally funded by user fees, including state fuel and vehicle taxes. However, legislative reluctance to raise the gas tax, higher mileage vehicles and the potential for the state's budget deficit to trigger an "emergency" suspension of Proposition 42 all combine to make the traditional sources either unreliable or inadequate to meet growing demand. Transportation agencies are looking increasingly towards the implementation of public-private partnership ("PPP") programs to fill the funding gap.

California law does not grant general statutory authorization to state and local governmental agencies to bypass the traditional procurement process and enter into PPP agreements where a private partner may provide multiple services in exchange for the right to collect tolls. However, existing law has been recently expanded by SBX2 4 and provides the following PPP authority:

1. Streets and Highways Code Section 143 (SBX2 4, 2009). This recently revised statutory scheme authorizes Caltrans and regional transportation agencies ("RTAs") to (i) enter into "comprehensive development lease agreements" with public and private entities, or a consortia of those entities, for transportation projects. Until the recent passage of SBX2 4, this statutory authorization was limited to a pilot project for four projects designed to improve goods movements, including exclusive truck lanes, and the development and operation of high-occupancy toll lanes.[92]

SBX2 4 greatly expands California's participation in the PPP market by extending comprehensive development lease agreement authorization until January 1, 2017 and removing

[89] Defined to mean Caltrans or a local transportation entity, which includes SANDAG as a "consolidated agency created pursuant to Chapter 3 (commencing with Section 132250) of Division 12.7 of the Public Utilities Code. Gov. Code, §§ 6801, subd. (g), (h).
[90] Pub. Cont. Code, § 6804, subd. (a)-(c).
[91] See Pub. Cont. Code, § 6805.
[92] Sts. & Hy. Code, § 143.

limits on the number and location of PPP projects that Caltrans or RTAs may pursue. Under the new law, Caltrans and RTAs may nominate candidate PPP projects with the California Transportation Commission ("CTC") to decide whether or not to approve PPP delivery for those projects. Presumably, this approval process occurs early in the project procurement process. Caltrans/RTAs are required to submit the final lease agreement to the Legislature for review at least 60 days prior to execution, but Legislative approval is not expressly required.

A "transportation project" means one or more of the following: planning, design, development, finance, construction, reconstruction, rehabilitation, improvement, acquisition, lease, operation, or maintenance of highway, public street, rail, or related facilities supplemental to existing facilities currently owned and operated by the department or regional transportation agencies that is consistent with the requirements of subdivision (c). The projects authorized by the new law shall be designed to achieve (1) improved mobility through improved travel times or reducing delay in the corridor, (2) improve operation/safety in the corridor, (3) provide quantifiable air quality benefits in the region, and (4) address known forecast demand.[93]

SBX2 4 also creates the Public Infrastructure Advisory Commission ("PIAC"). PIAC will be established by the Business, Transportation and Housing Agency and serve as a clearinghouse of PPP-related services and information. Similar organizations (e.g., Partnerships British Columbia in Canada) have been successful in assisting otherwise inexperienced public agencies with PPP projects. PIAC's services would include: (a) identifying candidate PPP projects throughout California; (b) researching PPP best practices/lessons learned; (c) assembling information related to PPPs that Caltrans/RTAs can utilize; (d) upon request and for a possible fee, advising Caltrans/RTAs regarding best practices or the suitability of a particular project; and (e) upon request and for a possible fee, providing procurement-related services to Caltrans/RTAs.[94]

Other highlights of the PPP procurement process and lease terms required by SBX2 4 include:[95]

- Caltrans/RTAs may accept unsolicited proposals for PPP projects, provided that they issue a request for competing proposals and they may award the project to the entity that submitted the unsolicited bid provided that they receive at least one other responsible bid;
- Facilities constructed under this statute may be tolled and the revenues generated by the facility may be used, in part, to provide the private partner with a reasonable return on its investment;
- The specific toll rates shall be set forth in lease agreements and any proposed increase in those rates not otherwise contemplated in the lease agreement shall be approved by Caltrans or the RTA, as appropriate;
- Caltrans or the relevant RTA shall always retain ownership of the subject facility;

[93] Sts. & Hy. Code, § 143, subd. (a)(6), (c)(2)-(4).
[94] Sts. & Hy. Code, § 143, subd. (b).
[95] See generally Sts. & Hy. Code, § 143.

- At the end of lease term, the private partner must hand over the facility in a condition that meets pre-set performance and maintenance standards;
- Lease agreements shall authorize the private partner to use design-build contracting;
- For projects on the California state highway system, Caltrans employees and consultants are responsible for performing "project development services," such as drafting technical requirements documents and performance specifications, carrying out preliminary engineering and performing construction inspection services;
- Provisions that would infringe on the authority of Caltrans/RTAs to develop, maintain, repair, rehabilitate, operate or lease any transportation project are prohibited. Caltrans/RTAs are not prohibited, however, from utilizing lease provisions that provide for compensation when the private partner can demonstrate that there have been adverse effects on toll revenue/user fees due to the development of competing facilities (excluding projects identified in regional transportation plans, that relate to safety, create incidental capacity increases, add HOV lanes or are outside the project boundaries); and
- An exemption from real property and ad valorem taxes.

A non-urgency bill chaptered during extraordinary session, SBX2 4 will take effect 90 days after the extraordinary session of the Legislature is adjourned.

Although SANDAG has the existing statutory power to toll – the granting of which is typically a major impediment to statutory authorization and a major component of a revenue-producing partnership with a private operator – it appears unlikely that a private entity would be willing to enter into a PPP arrangement based on that existing authority alone. This is because of the limited purposes for which revenues from tolls may be imposed on the Coronado Bridge. Even though toll revenues could be used to construct the Proposed Approach, SANDAG would not be able to dedicate revenues to provide for a reasonable return on investment to a private operator under contract with the agency, a necessary precondition to entering into such a contractual arrangement.

Therefore, it is our conclusion that SANDAG, as an eligible regional transportation agency, may instead seek to implement the Corridor Project pursuant to SBX2 4 and pursue CTC approval to enter into a comprehensive development lease agreement allowing for design-build authority.

2. Streets and Highways Code Sections 149.1-149.4. Sections 149.1-149.4 authorize SANDAG to undertake specified tolling and public-private partnership projects.

These tolling and PPP projects are specific to the development of value pricing for HOV lanes on Interstate 15 and other transportation corridors, with revenues dedicated to the improvement of transit services. The statutory provisions do not appear broad enough to constitute an express grant to the City of Coronado or a JPA of the authority to use a PPP approach to the Project.

3. Government Code Sections 5956-5956.10 (AB 2660 (1996)). Authorizes local governments to pursue PPPs for a range of "fee-producing infrastructure projects," but explicitly excludes the use of toll roads on state highways.[96]

LEGISLATIVE RECOMMENDATIONS

- **Legislative Authorization for Video Tolling:** In order to install a permanent video toll collection system that allows for post-paid toll use without vehicle pre-registration, we would recommend legislation to expressly authorize the use of video toll technology, including but not limited to, language to address the following elements: (1) detailed notice and penalty periods; (2) opportunity to challenge toll charges; (3) a definition of "violator" that reflects the payment post-use specific to video tolling; (4) specific authorization to assess administrative charges associated with video tolling; (5) variable pricing authority; (6) an increased cap (up from $1.50) on toll rates for class 1 vehicles; and (7) privacy protections, including findings and declarations to the effect that the use of video technology is meant to further a clear public interest in the efficient administration of state infrastructure.

- **Legislative Authorization for Design-Build:** SBX2 4 provides some design-build authority independent of PPP delivery, but does not, for the reasons noted in footnote 87 herein, apply to the Corridor Project. If the City of Coronado is not able to secure design-build authority by seeking CTC authorization to deliver the Corridor Project under the PPP provisions of SBX2 4, wishes to use a best value selection process, and declines to enter into a JPA with the City of San Diego,[97] it should seek a legislative solution.

[96] Gov. Code, § 5956.10.
[97] See the prequalification and design-build provisions in San Diego Mun. Code, § 22.3301 *et seq*.